

TELEWRITER-128

TUTORIAL/USER'S MANUAL

COGNITEC

To facilitate your transition from Telewriter-64 to Telewriter-128, we list here the new features and changes to the program, with references to the new manual.

1) MACROS --- chapter VII.

2) OPTIONS MENU & OPTIONS FILE -- chapter VI. Provides control of display parameters: Background Color, Character color, 24, 25, or 28 line display; Monochrome on/off

3) VIEW PRINT (Print Preview) -- Chapter IV, Section 2D, also chapt V last half of section 4J & section 4L

4) F1 or E keys take you to the Editor from anywhere in the program. F2 takes you to the Main menu from anywhere in the program. SHIFT-F2 takes you to the Format menu from anywhere. SHIFT-F1 takes you to the Options menu from anywhere. From the Main menu, F2 takes you to the Print and Format menu.

5) THE EDITOR

- A. 3 status windows -- CTRL-I (Info)
- B. Both CTRL- and CLEAR- keys can be used for Editor commands.
- C. A true block move has been added to the Editor. The command for this is CTRL-M. (Telewriter-64's CLEAR-M, no longer takes you to the Main Menu. The F2 function key now does that.)
- D. Visible carriage returns -- CTRL-:
- E. Case-sensitivity in the Find and Global replace commands -- Chapter VI, section 5
- F. Find & Global replace can now search for and replace all Telewriter special characters -- embedded control codes, carets, begin and end markers, carriage returns.
- G. wordwrap occurs at the current value of Characters per Line (not only at the edge of the screen as in Telewriter-64)
- H. Set Chars/line from Editor -- CTRL-@
- I. Overstrike Mode -- CTRL-O
- J. Instant On-line HELP (CTRL-H)
- K. Dual Speed cursor (arrow key held down alone, arrow key SHIFTED)
- L. Key Repeat, Settable repeat and delay rates, dual speed cursor & delete keys -- Chapter VI, section 9 (Options Menu)
- M. Key click -- CTRL-L
- N. On-screen foreign, math and special symbols corresponding to printer control codes (Redesign Control character sub-menu in Options menu - Chapter VI)
- O. CLEAR-V (page finder command) eliminated
- P. CLEAR-S & CLEAR-U (the Speed Mode commands) have been eliminated. Speed mode is now automatic. You never have to think about it again (if you ever did before).
- Q. End Markers not deleted after a partial print or partial save (so you can do more work on the same block without the need to reset the End Marker)
- R. Setting a Begin or End marker (CTRL-B, CTRL-E) automatically deletes that Marker if it's currently set

S. Word delete -- CTRL-Y

T. Non breakable space now generated by ALT-SPACEBAR

5) I/O

- A. Faster more efficient DISK I/O -- Chapter III
- B. Quick save to disk without leaving the editor -- CTRL-Q
- C. All disk files are now exclusively in ASCII -- a conversion program is provided if you need to convert your old Telewriter-64 files to load into Telewriter-128. Or, simply use the Telewriter-64 ASCII option to convert your files for Telewriter-128.
- D. Auto file backup -- (Chapter VI. Options Menu)

6) PRINTING

- A. Print automatically advances to the end of the last page when done (and prints page number if desired) -- a new embedded command suppresses this when desired (^BX - Chapter V, section 4C)
- B. Multiple copy print (#Print), print formatted file to disk (*print)
- C. Epson commands maintained but no longer documented in the Telewriter-128 manual.

7) EMBEDDED COMMANDS

- A. Embedded control code definition lines can now include 18 numbers instead of 15
- B. Footers -- Chapter V, section 4G
- C. Additional Header (& footer) Commands Chapter V, section 4F
- D. Hanging indents, new Margin controls - Chapter V, sect. 4P
- E. Flush right embedded command -- Chapter V, sect. 4N
- F. Addition new page commands - Chapter V, section 4C
- G. Any line beginning (or containing) a caret will not wordwrap and will not be aligned
- H. The backslash character (used for automatic page numbers within a header or footer) is generated by either ALT-/ (ALT-slash) or SHIFT-@ (SHIFT at sign).
- I. ability to specify the number of printing control codes in a definition line (Chapter V, section 4K)
- J. Justification ON/OFF controllable with embedded format command (^J+, ^J-)

8) Reset key will generally put you right back in Telewriter.

TABLE OF CONTENTS

I. INTRODUCTION

- 1 THIS MANUAL
- 2 WORD PROCESSING AND TELEWRITER-128: AN OVERVIEW
- 3 DISPLAY DEVICES
- 4 RUNNING TELEWRITER-128: DISK
- 5 RUNNING TELEWRITER-128: CASSETTE

II. WRITING: THE EDITOR

- 1 ACCESSING THE EDITOR; END OF TEXT MARKER; THE CURSOR
- 2 INSERTING TEXT: WORDWRAP
- 3 MOVING THE CURSOR
- 4 THE CTRL KEY
- 5 DELETING TEXT
- 6 ALIGNMENT
- 7 INVISIBLE CARRIAGE RETURNS
- 8 AVOIDING ALIGNMENT: PARAGRAPHS
- 9 AVOIDING ALIGNMENT: LISTS
- 10 PLAY
- 11 READING IN A FILE
- 12 READ IN DEMO TEXT FILE: DISK
- 13 READ IN DEMO TEXT FILE: CASSETTE
- 14 SCROLLING
- 15 PAGING
- 16 FINDING A STRING: DIALOGUE BOXES
- 17 GLOBAL SEARCH AND REPLACE
- 18 WILD CARD SEARCH
- 19 BLOCK COMMANDS: BEGIN AND END MARKERS
- 20 BLOCK COPY
- 21 BLOCK MOVE
- 22 BLOCK DELETE
- 23 OVERSTRIKE MODE
- 24 CHARACTERS PER LINE
- 25 40/80 COLUMN MODE
- 26 KEYCLICK
- 27 AUTO SPEED MODE
- 28 DISABLE WORDWRAP
- 29 HELP
- 30 INFO
- 31 SPEED
- 32 SPECIAL KEYS
- 33 MEMORY FULL

III. THE MAIN MENU

- 1 OVERVIEW: STORAGE AND RETRIEVAL
- 2 DISK ACCESS
 - A. READ IN FILE
 - B. SAVE FILE: FILENAME CONVENTIONS
 - C. QUICK SAVE; DEFAULT FILENAME
 - D. APPEND
 - E. %SAVE
 - F. FILE LIST
 - G. KILL DISK FILE

- H. CHANGE FILENAME
- I. PRINT FILE LIST
- J. DEFAULT DRIVE
- K. DISK ERRORS
- L. I/O TO CASSETTE

3 CASSETTE ACCESS

- A. READ IN FILE
- B. SAVE FILE
- C. APPEND FILE
- D. %SAVE
- E. VERIFY
- F. TAPE HANDLING
- G. CASSETTE ERRORS

4 MAIN MENU: CASSETTE AND DISK

- A. <F1> EDITOR
- B. <F2> FORMAT MENU
- C. NEW DOCUMENT
- D. OPTIONS
- E. QUIT TELEWRITER
- F. TOTAL CHARS; FREE MEM

IV. FORMATTING AND PRINTING

1 FORMAT AND PRINT MENU

2 PRINTING

- A. BAUD RATE
- B. PARTIAL PRINT
- C. PRINT ABORT
- D. VIEW PRINT
- E. # PRINT: NUMBER OF COPIES
- F. * PRINT: PRINT TO DISK

3 FORMATTING

- A. SPACING
- B. MARGIN
- C. CHARS/LINE
- D. UPPER/BOTTOM MARGINS
- E. LINES PER PAGE
- F. NUMBER PAGES
- G. WHERE: PAGE NUMBER POSITION
- H. RIGHT JUSTIFICATION; NON-BREAKABLE SPACE
- I. ONE PAGE
- J. AUTO-LF/EPSON
- K. DIRECT CODES
- L. TYPEWRITER
- M. FONT

V. ADVANCED FORMATTING AND PRINTING

- 1 EMBEDDED FORMAT COMMANDS: OVERVIEW
- 2 EMBEDDED FORMAT COMMANDS: EXAMPLE
- 3 EMBEDDED FORMAT COMMANDS: RULES
- 4 OTHER EMBEDDED COMMANDS

A. ALIGNMENT PROTECTION

B. CENTERING

C. NEW PAGE / NEW PAGE NUMBER

D. SETTING TAB STOPS: DEFINITION LINES

E. HEADERS

F. ADDITIONAL HEADER CONTROLS

G. FOOTERS

H. EMBEDDED CONTROL CODES

I. EMBEDDED CONTROL CODES: EXAMPLE

J. STACKING EMBEDDED COMMAND LINES

K. PRINTABLE CONTROL CODES, FOREIGN SYMBOLS

L. NON-PRINTING LINES

M. FLUSH LEFT LINES

N. FLUSH RIGHT LINES

O. JUSTIFY ON/OFF

P. HANGING INDENTS

5 CHAIN PRINTING

A. CHAIN PRINTING: CASSETTE

B. CHAIN PRINTING: DISK

C. CHAIN PRINTING: DISK AND CASSETTE

VI. OPTIONS MENU

1 CHARACTER COLOR

2 BACKGROUND COLOR

3 MONOCHROME

4 LINES ON SCREEN

5 FIND IGNORES CASE

6 AUTO-FILE BACKUP (DISK ONLY)

7 VPRINT DELAY

8 REDESIGN CONTROL CHARACTERS: FOREIGN AND MATH SYMBOLS

9 KEY-RATE MENU

10 SAVE/INSTALL: OPTIONS FILE

A. DISK OPTIONS FILE

B. CASSETTE OPTIONS FILE

VII. MACROS

1 OVERVIEW

2 DEFINING MACROS

3 SPECIAL CHARACTERS IN MACRO DEFINITIONS

4 SAVING THE DEFINITIONS

5 VIEWING AND EDITING CURRENT MACROS

I. INTRODUCTION

1 THIS MANUAL

This tutorial is intended to get you writing with Telewriter-128 almost immediately. No knowledge of programming or word processing is assumed, but you should be familiar with the Tandy Color Computer 3 - especially with the use of DISK or CASSETTE for storing and retrieving information.

This tutorial will guide you quickly through all the functions of Telewriter-128. In what follows, then, simply do exactly what the tutorial says. This will allow you to start using the system immediately, and quickly learn its basics.

2 WORD PROCESSING AND TELEWRITER-128: AN OVERVIEW

Simply stated, a word processor allows you to 1) WRITE and EDIT text, 2) FORMAT and PRINT it, and 3) SAVE it to disk or cassette, and READ it IN at some later time.

These 3 distinct functions are mirrored in the structure of Telewriter and in the organization of this Tutorial. The Editor is where you Write and Edit text. The Main Menu let's you Save text to disk or cassette and Read it back in from there. The Print and Format Menu is where you prepare the text for Printing.

Additionally, Telewriter's embedded commands let you change formatting and send printer controls, on the fly, from anywhere in the text. And the Options Menu lets you customize certain features of the program.

3 DISPLAY DEVICES

The Color Computer 3 can be used with a number of different display devices (RGB Monitor, Monochrome Monitor, B&W TV, Color TV). For this reason, Telewriter-128 provides a simple way for you to control many aspects of the screen display (screen color, character color, etc.), to suit both your particular hardware, and your personal preferences.

For the purposes of this tutorial, the starting values for Telewriter-128's screen display should be adequate for any display device. Later you will learn how to customize the display to exactly match your needs.

Should there be a significant legibility problem, try adjusting your Monitor or TV, first. Try different settings of color, hue, brightness, and contrast. If the display is still not legible enough for you, read the first 5 sections of Chapter VI in this manual, which discuss using the Options Menu to customize the screen display.

If you are using a small TV, and the words are pushed too far to the left, you will need to switch to 40 column mode (see Chapter I, section 25), or switch to a larger TV or to a Monochrome or RGB monitor. First, though, see if your TV has a knob that moves the image to the right. (Note that the examples below assume you are using the standard 80-column display -- though almost all of them will work exactly the same in either mode. An inexpensive (\$80) monochrome monitor is, however, the preferred display device for word processing on this system.

4 RUNNING TELEWRITER-128: DISK

The first thing you should do is make a backup copy of the Telewriter-128 disk and put the original away for safe keeping. Use the BASIC "BACKUP" or "COPY" command as described in the Radio Shack Disk BASIC Manual.

To run Telewriter-128, place the backup of your original Telewriter disk in drive 0, type LOADM"TW128, and hit ENTER. The copyright notice will appear and the program will load. When it's done, the Main Menu will appear on the screen.

5 RUNNING TELEWRITER-128: CASSETTE

For your convenience, there is a complete copy of Telewriter-128 on both sides of the tape. Start, now, with Side 1, and place the Telewriter tape in your recorder and rewind it. Reset the counter to 000 and press the PLAY button. Type CLOAD and hit ENTER. The program will be found (at about 010 on the counter) and loaded into memory. The top of the screen should say F TELE128 while the program is loading.

When this is done and the screen says "OK", leave the Play button on, type RUN and hit ENTER. The copyright notice will appear, and the recorder will start again, reading in the bulk of Telewriter-128. Loading time is about 2 minutes. When the recorder stops, you will be looking at the Main Menu.

II. WRITING: THE EDITOR

1 ACCESSING THE EDITOR; END OF TEXT MARKER; THE CURSOR

The Main Menu will be discussed in Chapter III. Right now, consider it, simply, as the gateway to the Telewriter Editor.

A menu is basically a list of commands, each invoked by its first letter. The top command in the right column of the Main Menu is "Editor", so hit the E key and you'll instantly be in the Editor. The menu is gone and you now have a blank screen for writing.

At the upper left of the screen you'll see a curved symbol \$ in reverse video. This marks the End of Text and it's at the very beginning of the page because you haven't typed any text in yet (the End and the Beginning are still the same).

Now hit the ENTER key 5 times, then hit the Up Arrow key 5 times. What you've just done is push the End of Text Marker out of the way. It isn't normally necessary to do this, but it makes things neater, and so it's done now, simply to avoid confusion while you work through the tutorial.

The ENTER key works like the Carriage Return on a typewriter: it ends the present line, and moves you down to the start of the next line. Everything following it is pushed down a line, each time you hit ENTER, including the End of Text marker.

The flashing square you now see at the top left of the screen is the Cursor. The Cursor marks your current place in the text. It flashes so it can be spotted quickly in the midst of a screenful of letters.

2 INSERTING TEXT: WORDWRAP

Now, just type. Type :

Now is the time fo

This illustrates the most fundamental functioning of the Editor: Any key hit (except for the Arrow keys, SHIFT, CTRL, CLEAR, ALT, F1, F2 and BREAK) is inserted into the text directly at the Cursor position on the screen. The Cursor moves ahead one character

position so it still points to the same character it stands at. The last typed character is directly "behind" the Cursor (to the left of the Cursor).

Now finish the sentence by typing:

r all good men to come to the aid of their party.

Notice that as you were typing the word "party", it was suddenly shifted to the next line. This is called Wordwrap. As soon as you type past the right margin, the program starts a new line for you, and any word you've started is moved instantly down to the new line, along with the Cursor. Everything below this point will be pushed down a line.

In typewriter terminology, what's happening is that Carriage Returns are now done automatically for you, at just the right point. You no longer have to decide when to do them and you no longer have to do them. As a result, the ENTER key (the Computer's equivalent of a typewriter's Carriage Return) is used most often to create blank lines in the text or to separate paragraphs.

Now type 4 or 5 lines of anything you want, to get the feel of the Editor. Don't worry about mistakes. Everything you type not only appears on the screen, but is also simultaneously stored in memory. The place in memory where the text is stored is referred to as the text buffer. It can hold from 1 to 48,000 characters worth of text. What you see on the screen is simply a movable window into any portion of the text buffer.

3 MOVING THE CURSOR

When you've finished typing a few additional sentences, hit the Left Arrow key a number of times. With each press the Cursor moves 1 character to the left. Now, press the Left Arrow key and continue to hold it down. The Cursor keeps moving until it gets to the beginning of the text. (This point is called the "top of text" because it's the very top or start of the text buffer. Beyond this, there's no where left to go.)

Notice that when the left-moving Cursor got to the beginning of a line, it next went directly to the end of the preceding line of text. That's because the Cursor will not go just anywhere on the screen. It only goes where there is actual text.

Hit the Right Arrow key a few times. Now press it and hold it down for a few seconds, and then, while still holding it down, press SHIFT and hold that down for a few seconds. Notice that when you hold the SHIFT key down as well as the Cursor (Arrow) key, the Cursor moves even faster. Releasing the Arrow key stops it. Continue to hold the Right Arrow or SHIFT & Right Arrow keys down until the Cursor gets to the End of Text Marker. Like the

Top of Text (the other end of the text buffer, the Cursor will not go past this point.

Hit Up Arrow a few times and then hold it down. Then, do the same with the Down Arrow key. Note that the Cursor will move in the direction of the Arrow key, but stay at the left margin. Again, holding the Up or Down Arrow key down will keep the Cursor moving in the Up or Down direction, and holding down SHIFT at the same time will move the Cursor even faster. At the moment, however, there's not enough text in the buffer to show this adequately.

4 THE CTRL KEY

The CTRL key (or "Control Key") on the Color Computer 3 keyboard is used with other keys to execute commands in the Telewriter Editor. Some examples will illustrate this.

Hold the CTRL key down and hit the Up Arrow key. The Cursor will jump to the top of text (if it wasn't already there). Hold the CTRL key down and press the Down Arrow key. The cursor will jump to the bottom of the text (the End of Text Marker). Hold the CTRL key down and hit Up Arrow again, to put the Cursor back at the top of text.

Hold the CTRL key down and press Right Arrow. CTRL-Right Arrow moves you to the end of the current line. Hold the CTRL key down and hit Left Arrow. CTRL-Left Arrow moves you to the beginning of the line. (From here on, instead of saying "Hold the CTRL key down and hit Up Arrow," we'll simply say "Hit CTRL-Up Arrow".)

Changes can be made anywhere in the text, simply by moving the Cursor there and typing in what's to be added, or hitting the delete key to delete unwanted or erroneous text (see 5 below).

To summarize the Cursor commands:

Right Arrow	= move Cursor 1 char right
Left Arrow	= move Cursor 1 char left
Up Arrow	= move Cursor up 1 line
Down Arrow	= move Cursor down 1 line

CTRL-Right Arrow	= Cursor to end of line
CTRL-Left Arrow	= Cursor to start of line
CTRL-Up Arrow	= Cursor to top of text
CTRL-Down Arrow	= Cursor to bottom of text

SHIFT-Any Arrow	= fast repeat cursor in that direction
Hold Any Arrow	= slower repeat cursor in that direction

Note that the CLEAR key on the right side of the keyboard functions exactly the same as the CTRL key. Any command such as CTRL-Up Arrow, will have the exact same effect if the CLEAR key is held down instead of the CTRL Key. Wherever CTRL- is used in this

manual, you can substitute CLEAR-. This is to maintain command compatibility with Telewriter-64, and, as a bonus, allows execution of any command with only 1 hand.

5 DELETING TEXT

Now move the Cursor to the "g" in good (in the top line), and hit the red BREAK key. The "g" is deleted and the rest of the line moves to the left to fill the gap. The Cursor stays put and now points at the character ("o") originally to its right.

Hit the BREAK key again. The "o" is deleted. Hit it again, and the next "o" is gone. Hold the CTRL key down and hit BREAK. The space before the Cursor is deleted. So, the BREAK key deletes the character at the Cursor, CTRL-BREAK deletes the character directly before the Cursor.

Hold down the BREAK key for a few seconds and notice that the Delete function repeats. Delete the letters "d men to come to" this way. Similarly, CTRL-BREAK, if held down, will repeat for deletes behind the Cursor. Hold it down and delete "time for all" this way. (If the repeat rate is too slow or too fast for you, don't worry. We'll show you how to change it in Chapter VI.)

Now hit CTRL-Up Arrow to move the Cursor to the top of the text again. Hold CTRL down and hit the "K" key. CTRL-K is the "Kill" line comand. It deletes everything from the Cursor through the end of the line. Because the Cursor is at the beginning of the line, the entire line is deleted and the lines below it move up to fill the vacuum.

6 ALIGNMENT

After doing the above deletes, you'll be left with the word "party" followed by the lines that you've typed in. Like this:

party. These are the words that you've typed in. These are more of the words that you've typed in. These are still more of your own words.

Now place the Cursor at the "p" in "party" and retype the first 10 words of the sentence. You'll get something like this:

Now is the time for all good men to come to party. These are the words that you've typed in. These are more of the words that you've typed in. These are still more of your own words.

Notice that the first line far exceeds the right margin and overflows (wraps around) onto the next screen line. What's more, this next screen line falls far short of the right margin, even though there's text following which could fill it out. Situations like this can arise on screen when you type into a pre-existing

line of text or delete the end of a pre-existing line. It's called an overflow or continuation line, and it's the occasional by-product of editing a line.

Hit CTRL-Up Arrow to move the Cursor to the N of Now. Hit CTRL-Right Arrow and note that the Cursor moves to the end of the next line on the screen. Now hit DOWN Arrow, then Up Arrow. Notice in moving back up, that the cursor jumps right over the overflow portion of the line, and moves to the actual beginning of the line.

Hit Down Arrow now, and the Cursor again jumps past the overflow portion of the line. The Cursor commands treat a continuation line like a single line, even though it might occupy 2 or more lines on the screen.

Hit Left Arrow a few times, and notice that the Cursor moves onto the end portion of the overflow line. Though the Up and Down Arrow keys won't go to the continuation part of the line, the Left and Right Arrows will.

Since continuation lines make the text look sloppy and can cause some confusion with certain editing functions, it is best to eliminate them whenever they arise. For this purpose, the CTRL-A (Alignment) function exists. So hit CTRL-A and notice how the mess above changes immediately into:

Now is the time for all good men to come to Party. These are the words that you've typed in. These are more of the words that you've typed in. These are still more of your own words.

CTRL-A Aligns the text. That is, it pulls short lines together and makes sure that each line is as long as it can be without exceeding the margin. Thus both fragmented and overflow lines are neatly taken care of. As a general rule, hit CTRL-A whenever editing leaves short fragmented lines or overflow lines that exceed the right margin.

7 INVISIBLE CARRIAGE RETURNS

Now hit CTRL-Up Arrow to jump back to the first character of the text, then hit CTRL-Right Arrow to move to the end of the top line. Notice that the Cursor is sitting at a blank space there. This is really an invisible character that marks the end of each line. It's called a Carriage Return Character or CR, for short.

Hit CTRL-: (CTRL-colon) and all the invisible Carriage Returns will be made visible (as reverse video Left Arrows). Every line on the screen (except a line that overflows) ends with a CR. A blank line on screen consists of nothing but a CR. Now hit CTRL-: again to return them to invisibility. (CTRL-: "toggles" back and forth between visible and invisible CRs).

Now, with the Cursor still sitting at the invisible CR at the end of the first line, hit the BREAK key. This deletes the Carriage Return character. Notice that by deleting the CR, you've created one long continuation line as discussed in section 6 above. Now hit ENTER and note that everything's returned to normal. Hitting ENTER inserts the Carriage Return character at the Cursor position, marking the end of that line, starting a new one, and moving the Cursor down to the beginning of that new line.

Hit Left Arrow now, so the Cursor is back at the CR at the end of the first line. Hit BREAK so the invisible CR is deleted once again, and the line below is pulled up into a continuation line. Now try another way to clean this up. First, hit the SPACEBAR to separate the 2 words that were combined when you deleted the CR. Now hit CTRL-A to align the text. Again it returns to normal.

Overflow and fragmented lines are simply side effects of editing which you should be familiar with so they won't cause confusion when they arise. The best approach is to eliminate them with CTRL-A as soon as they appear. This will leave you with a better looking display and save you time, since the presence of overflow lines can slow certain Editor functions.

One more effect worth noting involves inserting into a line and Wordwrap. Move the Cursor to the second space after the period following the word "Party" in the first line. Now start typing:

Now is the time for

after which, your screen looks something like this:

Now is the time for all good men to come to Party. Now is the time for These are the words that you've typed in. These are more of the words that you've typed in. These are still more of your own words.

Note that as you were typing the word "time", Wordwrap occurred, and the text ahead of you on the line, moved down with the current word to form a new line. The following text was pushed down a line to make room for this new line, so the text now looks fragmented. Again, this is a situation where you'd want to hit CTRL-A to close up the gaps in the fragmented lines. So, do.

8 AVOIDING ALIGNMENT - PARAGRAPHS

But there are other situations where you don't want short lines merged to make longer ones -- for example, at the end of a paragraph. So Telewriter will not merge the end of one paragraph with the beginning of the next, as long as you specify paragraphs in one of the two standard ways: either by indenting the first

line by 1 or more spaces, or by leaving a blank line (a line space) between each paragraph. These two methods are shown here:

The first way of indicating separate paragraphs is to separate them by a line space.

This is the second paragraph. The line space before it prevents its first line from being merged into the short line at the end of the preceding paragraph.

The second way of indicating paragraphs is to indent the first line of each paragraph.

This is the second paragraph and if a CTRL-A is done, it will not be merged into the preceding line. The amount of indenting can be as little as 1 space.

To see this in action, jump to the top of text (CTRL-Up Arrow), Cursor down to the 3rd line on screen, and hit ENTER. You've just broken the text into 2 paragraphs (don't worry if happened in the middle of a sentence -- this is just for demonstration purposes). Now hit CTRL-A and voila! Nothing happens. But that's exactly what you want. The 2 separate paragraphs stay separate. Alignment doesn't merge them.

9 AVOIDING ALIGNMENT - LISTS

If you typed in the following list:

```
1 Carrots
2 Apples
3 Oranges
4 Peas
5 Cauliflower
```

and then hit CTRL-A, the alignment process would pull all the short lines together so you wind up with:

```
1 Carrots 2 Apples 3 Oranges 4 Peas 5 Cauliflower
```

(If you want to try this yourself, jump to the bottom of the text with CTRL-Down Arrow, and type in the list. Then hit CTRL-A and observe the results.)

One way to avoid having these short lines aligned is to indent each line in the list by 1 space. This makes the alignment routine think each line is the first line of a paragraph, so it will not combine it with the preceding line. This works OK if you're willing to have your lists indented by 1 or more spaces.

But there will be situations where even indenting by a single space will be unacceptable. For these situations, Telewriter

provides an "embedded command" that protects specially marked blocks of text from being effected by Alignment. This embedded command will be discussed in Chapter V, section 4A, below.

10 PLAY

At this point, it might be worthwhile to spend a few minutes simply playing with the Editor. Write something with it, or clean up or modify what's already in memory using the Cursor and Delete commands.

11 READING IN A FILE

So far, you've been working with Telewriter-128's Editor to write and edit text. But, before returning to learn more Editor functions, let's do a quick digression into Reading in a text file.

Hit the F2 key and you jump instantly to the Main Menu. This is the same menu you saw when you first ran Telewriter-128. It gives you access to storing and retrieving text files on disk or cassette and access to the Editor. Use of this menu will be covered fully in Chapter III.

For now, the idea is to Read in the DEMO file that comes on the Telewriter-128 disk and cassette. This large chunk of text will be used to demonstrate other features of the Editor, after first introducing you to the process of Reading in a text file. (Note that Reading in a file will destroy anything previously in the text buffer, so the words you've just been working with will be gone forever.) At this point, cassette users should skip to section 13.

12 READ IN DEMO TEXT FILE: DISK

The Telewriter-128 disk has a file on it called DEMO.TXT. To read this file in, hit R in the Main menu. The Menu will disappear and the top left of the nearly blank screen will say "Select file to read". Below this, 2 names will be listed: DEMO.TXT and DEMO2.TXT -- the former, in reverse video. Simply hit ENTER now, and the DEMO.TXT file will be Read in. (The Read in command will be covered in detail in Chapter III.)

During the Read in, a box will appear at the center of the screen with the flashing word "Reading" and the name "DEMO.TXT" at the bottom. When it's done, you'll be instantly returned to the Editor, where you'll be looking at the beginning of the text just Read into the text buffer from the DEMO.TXT file.

13 READ IN DEMO TEXT FILE: CASSETTE

On Side 1 (label side) of the Telewriter-128 tape, the DEMO file immediately follows the program itself. So, with Side 1 of the

tape in the recorder, at the same point where it stopped after loading the program, hit the recorder's Play button.

Now, still in the Main Menu, hit the "R" key to invoke the Read in command. A box will appear at the center of the screen asking for a filename. Simply hit the ENTER key. This causes the program to Read in whatever file is next on the tape.

When you hit ENTER, the word "searching" will appear in the box and then, a few seconds later, change to "Reading in". The word "DEMO" will appear in the lower portion of the box indicating the name of the file being Read in.

When it's done, the program will automatically jump back to the Editor, and you'll be looking at the beginning of the text you just Read into the text buffer from the DEMO file on the cassette.

14 SCROLLING

Now, hold down the Down Arrow key. The Cursor runs quickly down the lines, at the left margin, and, when it gets to the bottom of the screen, the text scrolls up line by line. Keep holding the key down for a few seconds as the text scrolls by. Then, without releasing the key, also hold down the SHIFT key. The scrolling speed will noticeably increase.

This is the Dual Speed Cursor. If just the Arrow key is held down, the Cursor moves continuously at one speed. If you then press the Shift key down as well, the Cursor moves at a faster rate of speed. These 2 different rates can be set to any values, fast or slow, using the Options Menu (Chapter VI).

Now test the dual speed cursor with the Up Arrow and observe the text scrolling smoothly down the page.

15 PAGING

Scrolling allows you to move quickly through the text line by line. Paging moves you through the text in larger chunks.

Hit CTRL-Up Arrow to get back to top of text. Now hit CTRL-P, the Page command. The screen will rewrite in about a second and you will be at the next screenful of text in your document. For continuity, the Page command takes you 22 lines ahead, so the new screen of text starts with the bottom 2 lines of the previous screenful. (It's like turning to the next page in a book, with the last 2 lines of the previous page carried over to the top of the new page.)

Hit CTRL-P a few more times. Note that the Cursor appears at the second screen line of each new page.

To Page in the reverse direction, hit CTRL-- (CTRL-minus sign). You are moved backward by one screenful of text, and the cursor now sits at the bottom line of the screen. For continuity sake, this bottom line was the top line of the preceding page -- Just as though the text had slid quickly down 23 lines.

16 FINDING A STRING: DIALOGUE BOXES

The Find command allows you to quickly search the entire text for a precise string of characters that you specify. To see the Find command in action, jump to the top of text (CTRL-Up Arrow) and hit CTRL-F (Find). A rectangular "dialogue box" will appear at the center of the screen.

Dialogue boxes are used throughout Telewriter-128 as a way to pass information between the program and the user. They generally work the same, regardless of the situation: 1) To edit a line you're typing into a dialogue box, use the Left Arrow key to delete the previous character. 2) To get cleanly out of a dialogue box without its operation being performed, hit BREAK.

At the top of a dialogue box, there's usually a "prompt" asking for certain information. In the case of "Find", the prompt asks you to "Enter string to find." Below the prompt is a flashing Cursor, waiting for your input. You can now type in any string of characters you'd like to Find in the text. When you hit ENTER to terminate the string, the command goes into effect. So type in:

the

This is called the "search string" because it's the string of characters you're searching for. Hit ENTER now, and, after the dialogue box disappears, the Cursor will be sitting at the first instance of the word "the" that it finds. To find the Next one, hit CTRL-N. The Cursor will be sitting at the next "the".

Hit CTRL-N a few more times. The Cursor will jump to the next occurrence of the string "the" each time. If it's not on the current screen page, it'll jump to a new screen page. When it can find no more instances, it stays put at the last one it's found. If you jump back to the top of text (CTRL-Up Arrow), and hit CTRL-N, it'll move through the text once again, finding each successive occurrence of the search string "the".

The CTRL-F and CTRL-N commands start their search at the current Cursor position and search in the forward direction through the text. This means that to search the entire text, simply start the search with the Cursor at the top of text.

The Find and Next commands are useful, not only to find a certain word or string for modification, but also as a way to move quickly to a given point in the text.

-- What Can You Search For?

The "string" you search for can be anything -- a single letter, a word, a group of words -- upto 29 characters long. If you search for a phrase of more than one word, it will be found even if it's broken up by the end of a line. (To do this, the Find routine will allow a Space character in the search string to match a CR (Carriage Return) character in the text.)

The search string can contain any character you can type on the keyboard (letters, numbers, symbols) and, in addition, you can include certain special characters.

For example, the ENTER key normally ends the input of the search string and executes the Find command. But if you want to include a Carriage Return in the search string, you can do so by simply hitting CTRL-ENTER. A reverse video Left Arrow appears in the string when you do this, to indicate the presence of the CR there.

Similarly, a number of other "special characters" discussed later in this manual (like: Begin and End Markers, embedded control characters, and embedded format commands) can all be included in search strings simply by hitting the exact same key combinations that invoke them in the Editor (e.g. hitting CTRL-B puts a "Begin Marker" in the search string).

17 GLOBAL SEARCH AND REPLACE

A simple extension of the Find feature is Global (or selective) search and replace. Essentially you search for a given string as in "Find", but now, each time you find it (using CTRL-N), you have the option of changing it, with a single command, to another string of characters you've specified.

Go to the top of text again and hit CTRL-G (Global search & replace). The dialogue box will appear as it did in Find. Type:

the

and hit ENTER. The Cursor will now drop down a few lines in the dialogue box and prompt you with "Enter replacement string". Type in the word:

some

and hit ENTER. When the dialogue box disappears, the Cursor will be sitting at the first found instance of the word "the". Hit CTRL-R (Replace), and the word "some" will replace "the". Hit CTRL-N a few more times and selectively change some of the next few instances of "the" to "some", just by hitting CTRL-R. (If replacing text this way leads to some fragmented lines, feel free to re-Align them at any point with the CTRL-A command.)

To move rapidly through a Global search and replace, hold the CTRL key down with one finger and rest 2 other fingers on the N and R keys, so you can alternate easily between the two.

If you want to delete (rather than replace) the same string a number of times, you'd follow the same procedure, but type nothing in when the dialogue box requests a "replacement string". Instead, just hit ENTER. This will cause the found string to be replaced with nothing -- i.e. deleted.

18 WILD CARD SEARCH

You may specify an "incomplete" string for the Find and Global search and replace commands. If an Up Arrow (↑) is included in the search string (by hitting the Up-arrow key on the Color Computer), that position in the string will match any character. Because of this, the Up Arrow is called a "wild card". You can use any number of "wild cards" in a given string. For example, hit CTRL-F and type in the search string:

the↑

Now, when you go through the text with CTRL-N finding instances of this string, you will match words like "there", "these", "theme", and "the end".

19 BLOCK COMMANDS: BEGIN AND END MARKERS

There are times when you want to effect a chunk (or Block) of text all at once. The Block Move, Block Copy and Block Delete operations work on chunks of text that may be many paragraphs long or only a few words or a few letters long.

The Editor provides a simple way to mark the beginning and end of the chunk of text you want to deal with. To see this, jump to the top of the text and hit CTRL-B. A reverse-video, right-pointing square bracket appears on the screen at the Cursor. This is the Begin Marker, and it designates the start of the block of text you will be dealing with.

Now, cursor down 2 lines and press CTRL-E. A reverse video, left-pointing square bracket appears at the beginning of the line. This is the End Marker and it marks the End of the block you will be dealing with.

The "Begin" and "End" Markers can go anywhere -- at the beginning, middle or end of a line -- but, if both markers are used, the Begin Marker must Precede the End Marker.

You can only set one Begin and one End Marker at a time. If, say, an End Marker is already set, and you set another one somewhere

else in the text, the first one will be deleted. The same is true if you set a Begin Marker when another Begin Marker is already set.

20 BLOCK COPY

Before making a Block Copy of the text you've just marked, let's first make some space so the Copy will be obvious. Move the Cursor to the top of text, hit ENTER twice, and cursor back up 2 lines to the top.

Now, press CTRL-C (for Copy). The 2-line block will be copied to the current Cursor position. The screen will be rewritten, the Begin and End marks will be deleted and the Cursor will be sitting at the beginning of the block as copied. The original of the copy is left intact, where it started, a few lines away on the screen.

You can Copy a block to any place in the text, but you cannot Copy a block into itself. You can, however, use Block Copy to copy a line of text from the Editor, into a "Find" or "Global replace" dialogue box, to be used as either a search or replace string.

21 BLOCK MOVE

Block Move, works exactly like block Copy, except the original is not left intact. The original is deleted. Thus, it's been truly "moved" from its original place in the text to wherever the Cursor is when you hit CTRL-M (the Move command).

Let's illustrate this by moving the copy you just made. With the Cursor still at the top of text, hit CTRL-B. Cursor down 3 lines and hit CTRL-E. You have now surrounded the block you just copied (plus a blank line) with a Begin and an End Marker.

Cursor down, now, to the first letter of the first word of the second paragraph, and hit CTRL-M (Move). The screen will refresh and the 2 lines you had marked at the top of the screen, will have been moved to the 2nd paragraph. Note that the blank line has been moved as well, and separates the moved chunk from what was formerly the 2nd paragraph. Also note that the Begin and End Markers are gone after the operation is done.

The maximum size of a block of text to be moved is about 8,000 characters. If you exceed this size, a dialogue box will appear telling you that the "Operation is too big" and giving you the amount it's too big by.

22 BLOCK DELETE

Block Delete is a Block operation like Copy and Move, except it DOES NOT use the Begin Marker, and, as its name implies, it wipes out a chunk of text.

Move the Cursor to the end of the 1st paragraph and put an End Marker there (CTRL-E). Jump back to the top of the text. The Block Delete command (CTRL-X) will delete the chunk of text between the Cursor and the End Marker. (The Cursor must always come before the End Marker in the text buffer.)

So hit CTRL-X (X for eXcise). A dialogue box appears asking you if you're sure. This is because you're about to irrevocably destroy a chunk of text. If you're sure you want to lose it, hit Y to complete the operation (hitting any other key will prevent the delete from happening).

The chunk of text you've marked will disappear. Note that the entire block has been "removed" -- There are no leftover blank lines. As with the other two block operations, the End Marker is gone as well.

23 OVERSTRIKE MODE

In Telewriter-128 you're always in Insert Mode. That is, you just type and text is always inserted wherever the Cursor is, on screen and in the text.

But sometimes it's more efficient to just "type over" something than to delete it first and type in something new. If you hit CTRL-O (Overstrike Mode) you'll be able to do just that. Now, when you type, the character under the Cursor will be replaced by whatever key you hit and the Cursor will move one character to the right. Nothing will be inserted, only changed (replaced).

So, hit CTRL-O. Notice that the Cursor changes from a flashing black square to a flashing line. This tells you that you're in Overstrike mode. Go to a line with text on it and type "12345" and notice how each number replaces the character that was formerly there. Notice that the delete key (BREAK) still works as usual. Also note that CTRL-SPACEBAR will insert a single Space (only in Overstrike Mode). This can be useful when you suddenly want to insert a character or two without leaving Overstrike mode. (Once inserted, the Space can always be overwritten.)

To return to normal insert mode, hit CTRL-O again. Notice that the Cursor changes back to the usual flashing black square. It is useful to have something remind you if you're in Overstrike mode -- otherwise you can destroy a significant chunk of text by blindly typing over it, while you think you're just inserting.

At the end of a line, where there's no more text to type over, overstrike acts just like regular insert mode, with Wordwrap and everything. If, however, you hit ENTER while in Overstrike mode, you will get a Carriage Return as usual, but the character formerly at the Cursor will be gone -- replaced by the CR.

24 CHARACTERS PER LINE

You can change the length of the lines of text on-screen (Characters per Line or Chars/Line) at any time with the CTRL-@ command. Chars/Line is the width of the lines on screen and in the printout, and it sets the point in a line where Wordwrap will occur and where lines will be cut by the Align (CTRL-A) command.

Hit CTRL-@ and a dialogue box appears, telling you the current value of Chars/Line, with a flashing Cursor waiting for your input. When Telewriter first starts up, Chars/line is set to 63.

Type in the number 50, and hit ENTER. The dialogue box goes away and the screen rewrites, but now it's much narrower than before. The text has been realigned so no line exceeds 50. To return things to the way they were, hit CTRL-@, type 63 and hit ENTER. The text widens out again to a line width of 63 Chars/Line.

The maximum value you can type in for Characters Per Line is 127, but, since the width of the screen is 80, and since the maximum width of the print line on most printers is 80, you should generally type in a number less than 80. Standard typewriter lines tend to be between 60 and 70 characters long, so a number in the mid-60's usually works pretty well.

Note that if you do set Characters Per line to a number greater than 80, the text you already have on screen will turn into a jagged mess, and when you type in new stuff, wordwrap will occur at the far right margin of the screen (column 80). Even alignment won't be able to clean this mess up.

Chars/Line can also be set from the Format Menu, and more information on that will be given in Chapter IV.

25 40/80 COLUMN MODE

The optimal way to do serious word processing is with the 80-column display that the Color Computer 3 provides. However, since this generally requires a Monochrome or RGB Monitor to look decent, the Color Computer 3 also provides a 40-column screen to be used with those TVs that can't handle the 80-column display (some TVs can).

By hitting CTRL-0 (CTRL-Zero), you can shift Telewriter-128 into this 40-column mode. The characters are bigger and thus more readable on a TV, but a 40-column line loses the "feel" of the actual document you're working on.

So we recommend you avoid the 40-column mode if you can, but, if you have to use it, Characters Per Line (CTRL-@) must be set to 39

while you're in the Editor. This is important in order for alignment (CTRL-A) to work properly to get rid of overflow lines, and to keep things neat appearing on the screen.

Use this 39 character line in the Editor, and then, when you go to Print, re-set Characters Per Line in the Format Menu to the actual line width you want the text printed at (like 64 or 68). See Chart IV for more on Chars/Line.

To get out of 40-column mode, just hit CTRL-0 again. This toggles back and forth between the 40 and 80 column mode.

26 KEYCLICK

If you're using a TV or a monitor with audio input, Telewriter-128 can produce an audible click each time a key is pressed. CTRL-L will toggle back and forth between Keyclick ON and Keyclick OFF, each time you hit it.

27 AUTO SPEED MODE

Once you have large amounts of text in the text buffer, typing speed (inserting and deleting) would normally get a little slow when you edit in the early part of the document. That's because all the text ahead of the Cursor must be pushed forward to make room for a newly inserted character (or pulled back to fill the gap left by a just-deleted character). The more text there is to push or pull, the longer it takes.

Normally, this delay isn't noticeable to the user until there are about 13,000 characters (about 6 typed pages) ahead of the Cursor. But at that point, fast touch typists would start to notice a slowdown in response to their typing speed.

Telewriter-128 completely avoids this problem with its "Auto Speed Mode" feature. Whenever you move into the earlier parts of your document to do some editing, Telewriter senses this and shifts into Auto Speed Mode. You can now insert and delete at top speed, without noticing any slowdown (even if there are 48,000 characters ahead of the Cursor!).

Since Telewriter uses your first keypress (an insert or delete) in this earlier part of the document to switch to Speed Mode, there is a very slight delay at only this very first keypress. From then on, response to your typing is instantaneous. Only when you move to a different place in the document (more than 500 characters away) will there be another slight delay as Telewriter readjusts the Speed Mode environment.

But, in general, you never really need to think about Speed Mode. Just cursor wherever you want and type at your top speed. Just remember that if you're working on a fairly large document (greater than 20,000 characters) and you jump around into earlier

parts of it to do some editing, you will occasionally experience a tiny delay at the very first keypress in a new section. Thus, if you immediately start typing at top speed when you first move someplace new in the document, you may lose a keystroke or 2 after the first. But, from then on, you can continue typing at your usual speed.

28 DISABLE WORDWRAP

In general, Wordwrap is an important word processor feature. But there are occasionally times when you don't want the end of the line to break cleanly at the margin as you type. You might want to control things yourself without the program interfering with its automatic Wordwrap.

For these occasions (which most of you will never encounter), CTRL-D (Disable Wordwrap) will turn Wordwrap off. With Wordwrap disabled, your typing will just continue to the end of the screen and then wrap around to next line (probably in the middle of a word), if you don't explicitly hit ENTER. You can, thus, wind up with one big continuation line -- severely degrading the clarity of the text and the performance of the system.

To put Wordwrap back into operation, hit CTRL-W (Wordwrap). In general it is not a good idea to disable Wordwrap -- but you should be aware of this feature, in case, one day, you accidentally hit CTRL-D. If you suddenly notice your lines failing to Wordwrap when you type, hit CTRL-W (and then clean up the overflow lines with CTRL-A).

29 HELP

Telewriter-128 has a lot of features and a lot of commands and codes. To help you learn, and to refresh your memory when you need it, Telewriter provides 8 pages of On-line Help. These pages list all the Telewriter-128 Editor commands, all the embedded format commands, and other special characters.

To see the Help pages, hit CTRL-H. The text will be replaced on-screen by the first page of Help, which lists the Editor commands. Any key you hit now, will move you, page by page, through the help screens. Hitting the red BREAK key will take you back to the text, while hitting a number key from 1-8 will take you directly to that page of Help. Hitting CTRL-- (CTRL-minus sign) will move you back a page in the help screens.

30 INFO

There are a number of useful pieces of information Telewriter will give you if you hit CTRL-I (Info). Do it now, and the "Info window" will appear at the center of the screen.

This window tells you where you are in the current line (At column), what line you're in relative to the start of the text (in line) and how many lines are in the text buffer now (total lines).

Hit any key now, except BREAK, and you'll get a 2nd Info window telling you the approximate word count (total words), what character you're at relative to the start of the text (at character), how many characters are in the buffer (total characters), and how much room is left in the buffer for more text (free space).

Hit any key again and you'll see a third window which tells you if overstrike mode is ON or OFF, if Wordwrap is ON or OFF (enabled or disabled) and if "Find ignores case" is ON or OFF (more about that in Chapter VI).

Hit any key again, and the window disappears and you're back in the text. Hitting the BREAK key in any window before this, would have had the same effect. In the 2nd or 3rd windows you can hit CTRL-- and back up to the previous one.

If a Begin or End Marker is set, the Marker itself will appear in all 3 Info windows. If the End Marker is set, the "In line" will always be 1, and "Total lines", "Total words", and "Total characters" will indicate the amount of text between the Cursor and the End Marker.

If you have a lot of text in the buffer, the first Info window will take a few seconds to appear, but moving between the 3 windows from that point on will always be instantaneous.

31 SPEED

Telewriter-128 can generally keep up with the fastest typing speeds. However, if there are any characters ahead of the Cursor on the line, when Wordwrap occurs, it may miss the next key if it's typed in very rapid succession.

This will only be of concern to fairly fast typists, and will never be a problem if the Cursor is always at the very end of the line as you type. That is, the Cursor should be at the invisible CR character whenever you're typing in new text at top speed. If even a space follows the Cursor, it may miss the next typed character immediately after Wordwrap occurs.

If you notice that characters are being missed at the beginning of lines, right after Wordwrap, simply hit CTRL-Right Arrow. This will move you to the true end of the line. Delete any excess spaces and Continue typing from there. Typed characters will not be missed from that point on.

If you are editing into a pre-existing line and want to avoid the problem, hit ENTER at the point where you're typing in, and hit

Left Arrow once, so you're now sitting at the end of a line, and continue typing from there. When you're done, hit CTRL-A to rejoin the line you artificially broke when you hit ENTER.

32 SPECIAL KEYS

Along with the standard keyboard characters, Telewriter-128 provides a few extra. Most are generated using the ALT key and a number: ALT-1 is | ALT-3 is ~ (tilde) ALT-8 is [ALT-9 is] ALT-- is _ (underline character) ALT-/ is \ (backslash) ALT-, is { and ALT-. is }. There is also a TAB key, CTRL-ENTER, which will be discussed in detail in Chapter V.

33 MEMORY FULL

When you run out of room in the text buffer (when you've filled it with 48K of text), a dialogue box will appear with the message "memory full". Hit any key to make the dialogue box go away and return to the text.

If you now try to type at this point, you will just keep getting the "memory full" error until you delete some text.

There are a number of ways to proceed from this point. If you are typing in new text at the end of the buffer, you could partial Save (explained in the next chapter) say, the first half of your current text buffer, and then delete it, so you can continue on.

III. THE MAIN MENU

1 OVERVIEW: STORAGE AND RETRIEVAL

The Main Menu serves as a gateway to the Editor and to the other 2 menus (the Format and Options Menus), but its main function is Saving what you write to disk or cassette, and Reading saved files back into Telewriter from disk or cassette.

Since disk and cassette work somewhat differently, and since there are a few differences between the cassette version's Main menu and the disk Main menu, we'll describe the disk commands in section 2 below, and the cassette commands in section 3. If you have Telewriter-128 on cassette, skip section 2 and read section 3. If you have the disk version, read section 2 and, optionally, Section 3, since the disk version can access the cassette Main menu as well.

2 DISK ACCESS

Hit the F2 function key while in the Editor (or any other menu, for that matter), and you'll jump immediately to the Main menu.

This menu consists of 2 columns. The left column has 8 commands all of which deal with files on disk. The right column has 6 commands, all of which take you to other places in the program. Each command is invoked by hitting the key corresponding to its (capitalized) first letter. The Main menu commands will now be described in order.

A. READ IN FILE

The "Read in file" command (R) allows you to read a text file from disk into the text buffer, where you can work on it with the Editor.

So, with a backup of the Telewriter disk in drive 0, hit the R key in the Main menu. The Menu will suddenly disappear, the prompt "Select file to read" will appear at the top of a blank screen, and all the text files on the disk will be listed there. (Non-text files, such as programs, will not be listed.)

The Telewriter-128 disk, has only 2 text files on it when you receive it: DEMO.TXT & DEMO2.TXT, so these are listed. Notice

that the first name in the list appears in reverse video. This is actually the result of a large Cursor sitting on the name. Hit Down Arrow and notice that the Cursor moves to the second name and now that appears in reverse video. If there were more files, hitting Down Arrow would move the Cursor to them, one at a time.

Hit Up Arrow and notice that the Cursor moves back up to the first filename. So, to read a file from disk into the Telewriter Editor (into the text buffer), simply cursor through the list of files on screen and hit ENTER when the Cursor's on the one you want. (On some monitors, you may have to play with brightness and contrast controls to be able to read the reverse video name clearly.)

So, put the reverse video Cursor on DEMO2.TXT and hit ENTER. A dialogue box will appear with the word "Reading" flashing at the top, and the name of the file (in this case "DEMO2.TXT") displayed at the bottom. When the file is done reading in, the box will disappear and you'll be back in the Editor, looking at the first page of the DEMO2 file on screen.

Note that once you've hit R and gotten the file listing, you can change your mind and not read anything in. To get out of Read in mode, and back to the Main Menu, simply hit the BREAK key. As a general rule, the BREAK key will get you gracefully out of dialogue boxes and file listings without changing anything and with no damage done.

B. SAVE FILE: FILENAME CONVENTIONS

The Save file command allows you to SAVE all your current work to disk. So hit S, and a dialogue box appears with a flashing Cursor at the bottom. Above it is the prompt: "Enter filename". So type in the filename TESTFILE and hit ENTER. (Remember, if you make a mistake typing something into a dialogue box, use the Left Arrow key to back up and retype it.)

The word "Saving" will flash at the top of the dialogue box and the filename you've given will appear at the bottom. When the Save is complete, the box goes away and you're still facing the Main Menu. Hit F (File list) and all the files on your disk will be shown. Notice that TESTFILE TXT is among them.

Remember that when you Save a file to disk, if a file already exists on disk with the same name, all text in that disk file will be wiped out and completely overwritten by what you Save now from the current text buffer. Though this can be devastating if done by accident, it's precisely what you want to happen when you're updating a file (see section C below).

Note that the filename you type in must conform to the standard RS DOS filename format as described in the Radio Shack Disk Basic Manual. That is, the name can have upto 8 characters (letters, numbers, and most of the symbols on the keyboard) followed by an

optional extension which is a slash (/) or a period (.) followed by 1, 2 or 3 characters. Thus A.TXT, 8LETTERS.TXT, A.1, 1.A, LETTER.D23, are all legal filenames.

If you do not supply an extension when you Save a file, a /TXT extension will automatically be added. (You typed in only "TESTFILE", but the disk directory showed it as TESTFILE.TXT.) If you include the / or the . but no extension, then no extension will be added.)

A colon and a drive number can also follow the filename. If you have more than one disk drive, this will direct the file to the drive of your choice. Thus, NOTE.TXT:1 will save the current text under the name NOTE.TXT on the disk in Drive 1. See "Default Drive" below for more on this.

If you hit the S command and then decide not to Save anything, just hit the red BREAK key and you'll be back in the Main Menu.

To significantly INCREASE THE SPEED OF SAVES AND READS, format your blank data disks with the RS DOS command: DSKINIO,6 (instead of just plain DSKINIO).

C. QUICK SAVE: DEFAULT FILENAME

Often, a word processing session will consist of: reading in a file you've been working on, spending a few hours adding to or editing it, and then re-saving it, to be worked on more, later. Usually the file keeps the same name, so that when you re-save it, the old version is replaced by the latest version.

To protect against power failures or sudden machine crashes, it's usually good practise to save the file (and thus all the latest updates) every few minutes. The "Default filename" makes it easy to do frequent Saves by eliminating the need to type in the same filename each time.

So hit S in the Main menu, now, to get the Save dialogue box. At this point, you'd normally type in a filename and hit ENTER, but, instead, look at the 2nd line in the box. It says "Default File: TESTFILE.TXT". That means that if you simply hit ENTER now (instead of typing in a filename), the current contents of the text buffer will be saved under the "default" filename: TESTFILE.TXT. (A "default" is a preset name or value that gets used if you don't specify a different name or value.)

"Default file:" in the Save dialogue box, is always set to the name of the last file Saved or Read in. In this case, you had just Saved TESTFILE.TXT, and when you did so, that became the "Default file".

Now, everytime you make some changes to it in the Editor, just hit F2 to get to the Main menu, hit S to get the Save dialogue box,

and then just hit ENTER. Since TESTFILE is the current default filename, the updated contents of the text buffer will be saved back to disk as TESTFILE, each time. In this way, the file on disk can be updated without the need to type in its name when you Save it.

But there's an even easier way to do all this without leaving the Editor. So go into the Editor and pretend you've just made some changes to the text and want to re-save it now.

Hit CTRL-Q (for Quick Save) and a dialogue box will appear right over your text, exactly like the Save dialogue box in the Main Menu. Notice that the "default file:" is TESTFILE.TXT. So hit ENTER and the current (updated) version of the text is saved back under its original name (TESTFILE.TXT). Then the dialogue box disappears, and you're still right in the text.

Thus, every few minutes, as you work, you can instantly Save the latest updated version of TESTFILE.TXT by just hitting CTRL-Q and then ENTER, right from the Editor. This makes it painless to always have the latest update of your work on disk.

Of course, at any point, you can type a completely new filename into the dialogue box and hit ENTER. The current contents of the text buffer will be Saved under that name, and that name will now become the new default filename.

D. APPEND

The Append command works exactly like Read In. You hit A in the Main menu, use the reverse-video Cursor to select a file from the list that appears, and hit ENTER. The file you've selected is now read into the text buffer, but, instead of replacing what was already there (as Read In does), the new file is appended or added onto the end of what you have in the buffer already.

If the file you're Appending, plus the text already in the buffer, exceeds the space available in memory, Telewriter reads in as much as possible and then reports "Memory full" in a dialogue box. Hit any key and you'll be back in the Editor, but you must delete something before you can type anything more in. (See Chapter II, section 33, for more on the Memory full condition.)

E. % SAVE

% (per cent) or "partial" Save allows you to save to disk a part of what's in the text buffer. Before invoking this command you must first designate the chunk of text to be Saved. You do this by first putting an End Marker (CTRL-E) at the end of it, and then moving the Cursor to the point where you want the Partial Save to begin. This is all done, of course, in the Editor. (Note: Use the Cursor to designate the start of the block to Save. Don't use the Begin Marker!!)

Then, go to the Main Menu (F2), and hit %. A dialogue box appears and, from here on, everything works exactly as it does in the Save dialogue box: you give a filename and hit ENTER (or just hit ENTER to use the default filename), and all the text in the Editor between the Cursor and the End Marker will be Saved to disk under that name.

Note that after a %Save, the End Marker will still be set in the text. If you do not intend to do another block command on the same block (e.g. a block delete), then you should probably delete the End Marker.

F. FILE LIST

If you hit F in the Main Menu, the names of all Files on disk will be listed on the screen in the standard RS DOS format. If you have more than 1 drive, the files on the disk in the currently set "default drive" (see section J below) will be listed.

At the end of this Directory listing, Telewriter prints the number of free granules remaining on the disk. If the listing exceeds the size of the screen, you can pause it with the usual Basic Shift-@ command, and, then, hit any key to continue it.

When the listing is done, the flashing cursor will appear below the last line. Hit any key to return to the Main Menu.

G. KILL DISK FILE

This is the same as the RS DOS "KILL" command. Hit K in the Main Menu and all the files on disk will be listed. Use the Down Arrow and Up Arrow keys to put the Cursor on the name of the file you want to Kill. Then hit ENTER.

Before the file is deleted, a dialogue box will appear asking you if you're sure (once you Kill a disk file, it's gone for good). Hit Y and the file will be deleted. Hit anything else and it won't be deleted. Either way, you'll be immediately returned to the Main menu. If you want to get out of the Kill command and return to the menu without killing anything, just hit BREAK.

H. CHANGE FILENAME

To change the name of a file on disk, hit C (Change filename) and all the disk files will be listed on screen. Cursor to the filename you want to change, and hit ENTER.

A dialogue box appears with the name just selected at the top, followed by the prompt "Enter new filename". Type in the new name and hit ENTER. When it's done, the dialogue box disappears and you're back in the Main Menu. A File list (F) will reveal that the new name is there and the old name is gone.

Note that if no extension is given with the new filename, the original extension will be used.

I. PRINT FILE LIST

The "Print file list" command will print the names of all files on disk to your printer in RS DOS format. When you hit P, a dialogue box will appear, asking for an ID. This will allow you to label the printout so you know what disk it's for.

After you type in an identifying label and hit ENTER, the printer will print the ID, space once, print the name of each file followed by its size and then, print the number of free granules at the end. Then, the dialogue box will go away leaving you back in the Main Menu.

Note that you must have first set the appropriate BAUD rate for your printer in the Telewriter Format menu (see Chapter IV). Also, if your printer is not set to do auto-line feeds, then all the names will be printed over each other on the same line.

J. DEFAULT DRIVE

If you have more than one disk drive, you need a way to specify which drive will be accessed by a given command. To do this, you set the Default Drive. The number following the "Default Drive" command in the Main Menu, indicates which drive is currently selected. (If you have only 1 drive, simply leave this value set to 0 at all times.)

Thus, if you hit the F command (File List) and Default Drive is set to 1, then the listing that appears on the screen will be for the disk in drive 1. If you Save a file, and default drive is set to 1, then that file will be saved to drive 1.

Note that you can override the Default Drive setting when you Save, by specifying the drive you want, in the filename. Thus, even though Default Drive may be set to 1, the filename LETTER.TXT:0 would be Saved to Drive 0.

To set Default Drive, hit D in the Main Menu. A dialogue box appears with the current value. Hit the number you want (0,1,2, or 3) and then hit ENTER. The dialogue box will disappear and "Default Drive" in the Main Menu will now be followed by the number you just set.

There is also a shortcut for setting the Default Drive. In the Main Menu, simply hit the number 0, 1, 2, or 3. The screen will flash and Default Drive will now be set to whatever number you hit. Thus, if Default Drive is set to 0, and you wish to quickly examine the files on drive 1, just hit 1 then F. To jump back to look at drive 0, just hit 0 then F.

Beware of setting Default Drive to a drive number you don't have. For example, say you have just one drive (drive 0), and Default Drive (accidentally?) gets set to 1. If you then do some disk operation (File List, Save, etc.) the disk will be silent for about a minute and nothing will appear to be happening. Eventually, there will be an error message, from which BREAK will return you to the menu. But during this wait, it's easy to panic and think the system has crashed -- so always check the value of Default Drive first, in these situations.

Note that Telewriter will not let you set Default Drive to any number other than 0,1,2, and 3, but you can still set it to 3 even if you have only 1 drive.

K. DISK ERRORS

Telewriter-128 Disk error messages appear in the top border of the dialogue box. When an error message occurs, hitting any key will get you out of the box and back to the Main Menu. The possible disk errors are as follows:

- 1) Disk full error: Possibly some, but probably not all of the file has been saved to the disk before it ran out of room. Re-save the file to another disk with enough room, and delete the incomplete file first saved, to avoid future confusion.

(Note: If "Auto file backup" is ON and there's a TW*BAK.TXT file on the disk, delete TW*BAK.TXT, turn Auto file backup OFF in the Options menu and then try the Save all over again. See Chapter VI on the Options Menu for more information.)

- 2) Bad Filename Error: Your filename is too big (more than 8 characters in the name or more than 3 in the extension). Nothing happens, the program doesn't even try to go to the disk.

Solution: type in a legal filename (note: avoid use of period (.) or slash (/) or colon (:)) except as separators for extension or drive number. See Radio Shack Disk Basic manual for info on what constitutes a legal filename.

- 3) Memory Full: This happens if you try to Append a file which would exceed the capacity of the text buffer. As much of the file as possible is loaded, but probably not the whole file. Memory is now completely full. You can't type anything in until you delete some text.

- 4) I/O ERROR: I/O means Input/Output -- Input is Reading in a file, Output is Saving a file. So I/O refers to both: I/O means anything involving reading in or saving a file.

If the disk drive makes noise and then you get an I/O Error, that could mean the diskette is bad, or the file you're trying to Read is bad. Maybe the directory's been destroyed or there's no disk in the drive. Maybe it's an unformatted blank disk or a disk that's had its data destroyed by exposure to an electro/magnetic field.

If the drive makes no noise and you get an I/O error, that might mean the drive isn't turned on (if it has a power switch), or it isn't connected. It could also mean you've specified a drive # higher than number of drives you have. (See paragraph 6, section J above on "default drive".)

- 5) Write protect error: You've tried to save to a disk that's write protected. Un-write-protect it, or use a disk that isn't.

L. I/O TO CASSETTE

The Disk version of Telewriter-128 provides for Storage and Retrieval of text files on cassette as well as disk. To access this capability, simply hit I (I/O to cassette) in the (Disk) Main Menu and the cassette Main Menu will appear. Using this, you can Save and Read in Telewriter-128 text files on cassette. Thus, disk users might still want to read the next section.

To get back from the cassette Main Menu to the disk Main menu, use the I command ("I/O to Disk") in the cassette menu. This command is not found in the Main Menu on a cassette only system.

Beware: Once you go to the cassette Main menu, all future F2 keypresses will take you back there. You should return to the Disk Main Menu as soon as you're through with the cassette operation. Otherwise, a few minutes down the road, you may do a Save that you expect to go to disk, but instead find yourself spending several minutes listening to the cassette relay click, as it tries to save your current text buffer to cassette. You must now wait til this undesired cassette Save runs its course and then return to the disk Main menu.

3 CASSETTE ACCESS

To get to the Main Menu from the Editor (or from anywhere in Telewriter), hit F2. You'll then be looking at 2 columns of commands. The left column has 5 commands all of which deal with files on cassette. Each command is invoked by hitting the key corresponding to its (capitalized) first letter. These commands will now be described in order.

A. READ IN FILE

The "Read in file" command allows you to Read a text file from cassette into the text buffer, where you can work on it with the

Editor. Since you've already read in the Telewriter DEMO file (Chapter II, section 13) we'll simply review the procedure in a little more detail.

With a tape in the recorder, position it so it's sitting just a little before the file you want to Read in (using the counter #s on the recorder and a written log of the files on the tape). Put the recorder on Play and hit R (Read In). A dialogue box will appear with the prompt "Enter file to read in". At this point, just hit ENTER. The word "searching" will appear in the dialogue box while the program searches for the next text file on the tape. When the file is found, the box will say "Reading in" with the name of the found file at the bottom.

When it's done Reading in, you're returned to the Editor with the first page of the file on screen, in front of you.

B. SAVE FILE

To demonstrate saving a file to tape, take the Telewriter-128 tape out of the recorder, and put in a blank one. Rewind to the beginning, reset the counter to 000 and fast forward past any leader on the tape. Then press Record and Play down together.

Go to the Main Menu and hit S (for Save). A dialogue box will appear, waiting for you to type in a filename. So type TESTFILE and hit ENTER. The tape will start and all the text in the buffer will be stored on the tape in a file called TESTFILE. (The filename you use can be no longer than 8 letters, and should give some information about its contents.)

During the Save, the word "saving" will flash in the dialogue box. When it's done, the recorder will stop, the dialogue box will be gone, and you'll be back in the Main Menu.

C. APPEND FILE

The Append command works essentially the same as Read In but, instead of replacing what was already in the text buffer (as Read In does), the new file is appended or added onto the end of what you have in the buffer already.

To test this, rewind the tape you've just Saved TESTFILE on, and position it just before the start of that file. Put the recorder on Play and hit A (Append). A dialogue box will appear with the prompt: Enter file to Append. Hit ENTER and the tape will start and the dialogue box will say "searching". When it finds the next file on the tape (TESTFILE), the box will change to say "appending", and the filename TESTFILE will appear at the bottom. The contents of the tape file TESTFILE will now be appended to the end of the current contents of your text buffer.

When the file finishes Appending, the Editor screen will reappear, with the Cursor sitting at the beginning of the text that was just Appended. Behind the Cursor is all the text that was already in the buffer. You might want to cursor and page through the whole text now to see the difference made by Append.

If the file you're Appending, plus the text already in the buffer, exceeds the space available in memory, Telewriter reads in as much as possible and then reports "Memory full" in a dialogue box. Hit any key and you'll be back in the Editor, but you must delete something before you can type anything in. See Chapter II, section 33 for more on the Memory full condition.

D. % SAVE

% (per cent) or "partial" Save allows you to save to cassette a part of what's in the text buffer. Before invoking this command you must first designate the chunk of text to be Saved. You do this by putting an End Marker (CTRL-E) at the end of it, and by moving the Cursor to the point where you want the Partial Save to begin. This is all done, of course, in the Editor. (Note: Use the Cursor to designate the start of the block to Save. Don't use the Begin Marker!!)

Then, go to the Main Menu (by hitting F2), and hit %. A dialogue box appears and, from here on, everything works exactly like regular Save: you give a filename and hit ENTER and all the text in the Editor between the Cursor and the End Marker will be saved to cassette under that name.

When you return to the Editor, after the Save, the End Marker will still be set. If you plan no more block operations on that chunk, it's a good idea to delete the End Marker.

E. VERIFY

The Verify command will read through the next text file on tape, til the end, but it will not read it into the text buffer, and it won't effect anything already in memory.

The Verify command is useful: 1) after a Save, to make sure the file was properly saved without errors; 2) to find and display the next filename in case you get lost in the tape; and 3) to position you at the very end of a given file.

To test out Verify, rewind the tape with TESTFILE on it, set the counter to 000, and put the recorder on Play. Hit V to invoke the Verify command. The tape will start, the screen will go blank, and a dialogue box will appear in the middle with the word "Searching".

When it hits the beginning of the next file on tape, the name of that file will appear in the box. As Verify reads through the

file, two lines of text will appear at the top of the screen, changing with every click of the computer. Once the file has been completely scanned, the dialogue box will say "FILE Okay!". Hit any key now to get back to the Main Menu.

Should some kind of error occur, the tape will stop and the words "I/O ERROR" will appear in the top border of the box.

Hit any key to get back to the Main Menu. The I/O error means something is wrong with the tape or with the data on the tape at that point. If the file is not a Telewriter (ASCII) text file, you get the I/O error message at the very beginning (just after the name is reported in the box), but this does not mean that the data in that file is bad.

If you get an I/O error when you try to Verify something you've just Saved, then you should try to Save it again at some other place on the tape or on another tape. But first, rewind the tape and re-try the Verify on that same file again, just to be sure.

F. TAPE HANDLING

Tape can be a little tricky to work with, sometimes, so, here are a few tips that will hopefully give you some control over it. We'll use Verify as the example, but everything we say about Verify will hold true for Read In and Append as well (unless stated otherwise).

When you hit Verify, 3 things can happen (in the dialogue box):

- 1) If you are currently going over blank tape, the word "searching" will appear, but not be flashing.
- 2) If you have started the tape somewhere in the middle of a file (anywhere after the beginning of the file), then you are going over the stored data of that file, and the word "searching" will flash -- about every 3 seconds.
- 3) When Verify finds the beginning of a file, the word "Searching" goes away and the filename is displayed in the dialogue box. (For a Read in or Append, the word "reading" or "appending" also appears, flashing every 3 seconds.)

Now, if, for some reason, you want to get out of a Verify (or a Read in or an Append) before it's done, -- you need to do different things, depending on which of the 3 states you're in:

- 1) If the word "Searching" is flashing (about every 3 seconds), it's simply a matter of holding down the red BREAK Key for one or two flashes of "searching". When you do that, the Verify will abort, the dialogue box will disappear, and you'll be back in the Main Menu.

- 2) If a file has been found, so that the word "searching" is gone and the filename is in the dialogue box, and you are in the Verify command, then you simply need to hold down the red BREAK key in order to stop the process -- just as in 1 above.

If, however, you are in the midst of a Read in or Append, the only way to stop the process before it runs its course is to hit the Stop button on the recorder. Wait a second, and then hit the Play button again. At that point (or maybe when it stopped), an I/O ERROR message will appear in the dialogue box. Hit any key, now, and you're back in the Main Menu.

- 3) If the word "Searching" is there and is not flashing (and a filename has not yet been found), then the first thing you need to do is make it flash. It is not flashing because it is not going over any data - it is going over essentially blank tape.

So you need to stop the recorder and rewind or fast forward the tape to a point where you know something is stored. If necessary, put in another tape that you know has some Telewriter text on it. Then, position the tape in the recorder so it'll be on a chunk of text, hit Play, and the word "searching" should start flashing (because now it's going over data, not blank tape). Once that happens, use the technique of number 1 above: Hold down the BREAK key for 3-7 seconds. The box will disappear and you'll be back in the Main Menu.

For the Save and % Save commands, once you hit ENTER in the dialogue box, there's no way to stop them (even when the word "saving" is flashing). But, whether the cassette is on or not, or connected or not, the Save will eventually run its course and return to the Main Menu (the larger the file you have in memory, the longer it will take). It's just a matter of waiting.

G. CASSETTE ERRORS

An I/O Error (Input/Output Error) during a Read in, Append, or Verify, usually means that the tape is bad at that point, or something was wrong when the file was saved originally. When this happens, you should back up to the beginning of the file and try again -- just in case.

If you continue to get I/O error, the problem is either the file or the recorder. You might test the recorder by trying to read in other text files from other tapes. If you get a lot of I/O errors, the problem is probably your recorder and you should check it out.

If the problem is only in that one file, then, odds are, that file is lost. You can, however, retrieve all of the file up to the point of the error on the tape.

To do this, fill the text buffer with more text than is in the file with the error. It doesn't matter what you put in the buffer -- type in gibberish and do a bunch of block copies, or read in a file and maybe append a few more -- just so more space is taken up in the text buffer than is used by the file you're after.

Now try to Read in the defective file. When you hit the I/O error, go to the Editor. Starting at the top of the text buffer, you should see the beginning of the "bad" file. Read through it and there'll come a point where it stops and the gibberish you originally filled the buffer with will take over. Block delete from that point to the end, and you've salvaged the first part of your damaged file, up to the I/O error. So now take this and re-Save it someplace else. That's probably as good as you're gonna' do.

4 MAIN MENU: CASSETTE AND DISK

The right column of commands and the bottom row of status information are common to both the disk version and the cassette version of Telewriter-128. The commands are concerned with moving you to the other parts of the system.

A. <F1> EDITOR

The first command in the right column says "<F1> Editor". This means that hitting either the F1 function key or the E key will get you into the Telewriter-128 Editor from the Main Menu. (Note that E and the F1 key will get you to the Editor from any other menu in the system.)

B. <F2> FORMAT MENU

Hitting the F2 function key in the Main Menu will take you to the Print and Format Menu. Note that the F for "format" is not capitalized in the menu. That means that F won't get you to the Print and format menu, only F2 will. (The Print and Format Menu will be discussed in Chapter IV.)

Note that the F2 key normally takes you to the Main menu from anywhere else in the system. Only in the Main menu, will F2 take you to the Format Menu. What this means is that you can move quickly back and forth between the Main and the Format menu by just hitting F2.

Also note that SHIFT-F2 will take you to the Print and Format menu from anywhere in the system.

C. NEW DOCUMENT

Hitting N (New document) in the Main Menu, takes you into the Editor just like E does, but it also starts a "new document". That

is, it wipes out everything already in the text buffer and starts anew. Since it can be so destructive, it first puts up a dialogue box to make sure you want to go ahead with it. If you hit Y in response to the "are you sure" prompt, it will empty out the text buffer and put you into the Editor. If you respond with any other key, it'll simply return to the Main menu without destroying anything.

D. OPTIONS

Hitting O will take you to the Options Menu which will be discussed in Chapter VI. Note that SHIFT-F1 will get you to the Options menu from anywhere in the system.

E. QUIT TELEWRITER

Hitting Q in the Main Menu takes you out of Telewriter-128 and back to BASIC. Any text you have in memory will be lost, so be sure to Save anything you want to keep, before quitting. Telewriter-128 will prompt you with an "Are You Sure", so you have a second chance to reconsider.

F. TOTAL CHARS; FREE MEM

The bottom line of the Main Menu gives memory information: The number after "Total Chars" is the total number of characters in the text buffer; the number after "Free Mem" is the amount of space left in the buffer for characters. On initialization, this number is around 48000, indicating that 48000 characters can be typed into the buffer (approx. 24 typed pages). As text is added (typed in or Read in) Total Chars increases and Free Mem decreases. Free Mem cannot go below zero. When an insert would cause this to happen, a "Memory full" error message will appear on the screen. Chapter II, Section 33 gives more information on the memory full condition.

IV. FORMATTING AND PRINTING

1 FORMAT AND PRINT MENU

The Format and Print Menu allows you to set up the final format of your document (margins, line spacing, etc.) and then print it. To get to the Format Menu from the Main Menu, hit the F2 Function key. (The F2 key will move you back and forth between the Main menu and the Format menu.). To get to the Format menu from the Editor, hit SHIFT-F2 or hit F2 twice (the first hit gets you to the Main menu, the second to the Format menu.) Though its full name is "Format and Print menu", for brevity, we'll usually refer to it simply as the Format menu.

2 PRINTING

It's up to you to get your printer working properly with the Color Computer 3. But once you can do an LLIST or PRINT #-2 in BASIC on the Color Computer 3, and have it print out properly on your printer, then you're ready to print from Telewriter.

A number of different Print commands are found in the lower half of the Format menu. The 8th command down in the 1st column is the "Print document" command. So just hit P, now, and your printer (if it's properly set up) will Print out the contents of the text buffer.

While this happens, 2 numbers appear in the "Printing" dialogue box. After the words "printing #" the program displays the number of copies left to print (if you're not doing a multiple copy print, this number will be 1). Below this, a second number indicates how many characters are left to print (if you're using a sizeable printer buffer, this is the number of characters left to send to the buffer.)

If the printer is turned off or not on-line, a "Printer not online!" Error message will appear in the dialogue box. Hit any key to get back to the menu, then put the printer on-line and hit P again.

If you've started a print, and want to stop it now, hit the BREAK key. (For more information on "Aborting" a Print like this, see section C below.)

A BAUD RATE

If your printer or your printer interface (usually a serial to parallel interface) allows you to set BAUD rates, then you can (and must) set Telewriter-128 to match that BAUD rate.

The BAUD rate is the rate at which data is sent from the computer to the printer. The program transmits at a certain rate, and the printer (or interface) receives at a certain rate, and the two rates must match. So first determine the BAUD rate your printer or interface is running at and then set Telewriter to match it.

Note that if you can print from BASIC without doing anything, then you're running at 600 BAUD. That's the rate the Color Computer starts at, and the rate most Radio Shack Printers are set for. Telewriter-128 also starts out at 600 BAUD, so if that's what your printer's set for, you won't need to set BAUD rate in Telewriter.

If you do want to set BAUD rate, look at the 6th command down in the right column of the Format menu. XMIT RATE (for transmit rate) is the rate at which Telewriter transmits characters to the printer (the BAUD rate).

So hit the X key and type the appropriate number into the dialogue box that appears. To determine what that appropriate number is, refer to the chart below. Find the BAUD rate you want (the BAUD rate that your printer or interface is set for), and type in the number to the right of it in the chart. Then hit ENTER. The menu will display the new transmit rate.

<u>printer baud rate</u>	<u>Xmit rate value</u>
110	498
120	458
300	180
600	87 or 88
1200	41
2400	18
4800	6
9600	1

Thus, to set a BAUD rate of 9600, set Xmit rate to 1. Remember that the BAUD rate of the program must match the BAUD rate of the printer (or interface).

B PARTIAL PRINT

If you'd like to see only a small section of the text buffer printed out, you can do this with the %Print or Partial Print command. This follows the Print command in the Format menu.

Before you can do a partial print, you must first go into Editor and designate the block of text you want printed. Do this by

first cursoring to the end of it and putting an End Marker there (CTRL-E). Then move the Cursor to the beginning of the block and leave it there. The Cursor will mark the point where the program starts printing. Now hit F2 twice (or SHIFT-F2) to get to the Format menu.

Hit the % key and the word "%printing" will appear in the dialogue box (along with the 2 numbers described in the preceding section) as the marked chunk of text in the buffer is printed out.

Note that after a partial (%) print, the End Marker will still be set in the Editor. If you do not intend to do another block command on the same block (like another Partial print or a partial save), then you should delete the End Marker.

C PRINT ABORT

If you need to stop the printout suddenly, at any point, you can do so by hitting the BREAK key (hold it down for a few seconds if the printing does not stop immediately). Eventually, the printing will stop, the dialogue box will disappear from the screen and you'll be back in the Format menu.

Note that if you have a printer buffer either outside your printer, or in your printer, then hitting BREAK will only stop the flow of data from Telewriter to the printer buffer. The printer will continue printing until its buffer is empty. In this case, to stop the printing, you'll need to turn the printer off, or otherwise clear the print buffer.

D VIEW PRINT

You can waste a lot of paper trying to "get it right", so Telewriter-128 provides a View Print (or Print Preview) feature which allows you to see on-screen almost exactly what the paper printout will look like. Left, Right, Top and Bottom margins, Line spacing, Page Breaks, Headers, Footers, Centering, Justification, and Page numbering are all accurately shown.

So, hit V in the Format Menu (Vprint is the 7th command down in column 2) and, in place of the menu, the text now scrolls past you on the screen as it will appear on the printed page.

You can stop it at any point, for closer examination, by hitting any key. To restart the scroll, hit any key again. To slow the rate at which the text scrolls by, hold down the SHIFT key. Let it go and the scroll continues at its normal speed. To abort the View Print, hit the BREAK key.

Notice that the BREAK key jumps you back into the Editor instead of simply returning you to the Format menu. Also notice that the place in the text you've been returned to in the Editor, is the same place in the text at which you hit the BREAK key in the Print

preview. That means that whenever you see something in the Print preview that you don't like (a widow or orphan line, for example), just hit BREAK. Then, in a split second, you'll be right where you need to be in the Editor to fix it.

If you don't hit BREAK, the text will run its course to the end of the printout and then stop, with a reverse video "EOF" at the bottom of the screen. At this point, hitting any key will take you back to the Format menu.

Note that you can initiate a View print without leaving the Editor by hitting CTRL-V. This makes it even more efficient to go quickly back and forth between the View Print and actual text to fix any formatting problems that arise. The only difference is that, at the end of the screen printout, if you don't BREAK out, you'll be returned to the Editor, rather than the Format menu.

The use of embedded control codes (discussed in Chapter V, section 4H) can somewhat distort the appearance of the Print Preview. Section 4J in the same chapter, offers some solutions to this.

E # PRINT: NUMBER OF COPIES

The #Print (Number print) command allows you to print as many copies of your document as you want, in one shot. If you hit the # key, a dialogue box will appear, asking you for the number of copies. Type in the desired number and hit ENTER. The program will then proceed exactly as with the Print command, except it will reprint the document the number of times specified. The dialogue box that appears during this, indicates the number of copies remaining to print.

F * PRINT: PRINT TO DISK

The *Print command in the Format menu lets you "Print" the current file to disk. This means that character for character, what would go to the printer, now goes to a disk file -- i.e. a perfectly formatted file, with all the spaces inserted for margins and justification, with headers and page numbers printed at the appropriate places on each page.

Hit asterisk (*) and the dialogue box that appears will ask you to "Enter name of file to spool to". Type in a legal RS DOS filename and hit ENTER and the formatted file will be saved to disk. If you provide no extension, a .SPL extension will be added to the filename.

This command will only be useful to you if you have some other program that needs to access a formatted text file -- i.e.: a file in which all the "embedded commands" (see Chapter V below) have been replaced by their final results. A communications program, for example, would probably prefer this type of file to one with embedded formatting and control codes.

3 FORMATTING

There are several key factors involved in determining the final appearance (or "format") of your printed document. These factors, or "format parameters" include: Top margin, Bottom margin, right Margin, Characters per line, line Spacing, Lines per page, right Justification, page Numbering, and page number position.

The format parameters occupy the upper half of the Format menu, and each is followed by a number, or the word ON or OFF. These numbers are the current values of the format parameters. When you first run the program, you will see the preset or "Default" values. To change these values at any time, simply hit the first (Capitalized) letter of the parameter, and type a new value into the dialogue box, followed by ENTER. The new value then appears in the menu, beside the parameter.

Note that values set in the Format menu cover the entire printout. If you wish to change margins, spacing, etc., during printing, you need to use Embedded Format Commands. These will be described in the next chapter. Now, we'll go through the Format parameters as they appear in the Format menu.

A SPACING

To set line Spacing, hit S and type in a number followed by ENTER. For single spacing, type in 1; for double spacing, type in 2. Though you can set Spacing to any number upto 127, for most normal documents, 1 and 2 will be the only numbers you'll use. This value is initially set to 1 by the program. Also note that a value of 0 will cause single spacing.

B MARGIN

To set the left Margin, hit M, type in a number and hit ENTER. When you first run the program, left Margin is already set to 8 (the "default"). This means the printer will do 8 spaces at the beginning of each line.

You can set Margin to any number from 0 to 127, but on an 80-column printer, a value of only 40 would cause each line to start half way across the page. Though there are times when you might want to do just that, standard left Margins are generally between 5 and 12 spaces wide.

C CHARS/LINE

Hitting C (Chars/Line) in the Format Menu is the same as hitting CTRL-@ in the Editor. It puts up a dialogue box that allows you to set Characters Per Line. This number, combined with the left Margin value just described, determines what the Right Margin will be for the printed document.

To figure the right margin (if you need, or want to do so), add the (left) Margin value to the Chars/Line value, and (since most printers print 80 columns wide), subtract that from 80.

So, if Margin is set to 8, and Chars/line is set to 63, then: $8 + 63 = 71$, and $80 - 71 = 9$. Thus, the right margin will be 9 spaces wide, and, if the paper is properly aligned in the printer, the document using these settings (Margin=8, Chars/Line=63) should print centered on the page. (Proper alignment means that when Margin is set to 0, the printer will start printing at the left edge of the paper - just after the perforation.)

Note that if you're using an 80 column printer (which, odds are, you are), the sum of Margin + Chars/Line should never exceed 79. If this happens, you will see "printer overflow lines" (lines that break off at the right edge of the paper or wrap around the left margin causing extra blank lines), and top and bottom margins will come in the wrong places.

(The exceptions to this "less than 80" rule are: wide carriage printers with 132 columns, condensed print (usually providing 132 columns), and proportionally spaced print, which often squeezes 85 or 90 characters into 64 columns of mono-spaced print.)

Note that when you set Chars/Line in the Format menu, the text currently in the buffer will be aligned to this new value at the same time -- just as if you'd set Chars/Line in the Editor or hit CTRL-A there. Since you don't see the text when you set this value from the Format menu, don't be confused if you return to the Editor and notice some changes in alignment.

D UPPER/BOTTOM MARGINS

Upper Margin sets the number of blank lines the printer will leave at the top of each page before it prints the text. Bottom Margin sets the number of blank lines the printer leaves at the bottom of each page, before the perforation that separates the pages.

Telewriter-128 initializes both these values to 5. You can set them to any number upto 127, but numbers greater than 10 don't make much sense since there are only 66 lines on a page.

To set Upper Margin, hit U and type in the new value, followed by ENTER. To set Bottom Margin, hit B and type in the new value followed by ENTER.

E LINES PER PAGE

For standard 8 1/2 X 11 printer paper and standard line space width of 1/6 inch, Lines per page should always be set to 66. Since it's initialized to that value by the program, you generally don't have to set it.

If, for some reason, you do want to set it, hit L, type in the new value and hit ENTER. (If you're using non-standard size paper or a line-space width other than 1/6 inch, then you'll have to determine the number of lines per page yourself by counting the # of line feeds it takes to span the full page.)

Please note: To do double and triple spacing you DO NOT change the value of Lines per Page. Changing the value of Spacing takes care of everything.

F NUMBER PAGES

The "Number pages" parameter determines whether pages will be automatically numbered during printout. If it's set to zero, then pages will not be numbered. If it's set to any number other than zero, then pages will be numbered consecutively, beginning with that number. Though 1 is probably the most popular value for this parameter, you can set it as high as 32700.

The page number is always printed 3 lines up from the bottom of the page. For this reason, if you want pages numbered in this fashion, Bottom Margin must be set to a value of 3 or greater.

Note: For the page breaks to come where you want them (i.e. before and after the perforation of the computer paper), it's important that you start printing with the paper set at just the right point -- with the print-head of the printer somewhere at, or slightly above, the top of page.

You can quickly work this out by trial and error by setting Upper Margin (U) to 0 and doing a print (P) and then abort (BREAK) after a line or 2 has printed. If the top line of text is on the very first available line after the perforation, then use this position every time you start a print.

To set the Number pages parameter, hit N, type in the desired starting page number (or zero) and hit ENTER.

G WHERE -- PAGE NUMBER POSITION

The Where value determines where the page number will be positioned on its line. To center it, for example, take one half the Chars/Line, add the Left Margin value, and set WHERE to that. So, if Margin=8, and Chars/Line = 63, then set WHERE to 39 ($63/2 + 8$). To set the value of this parameter, hit W, type in the desired value and hit ENTER. The new value will appear beside it.

The page numbering method just discussed is the "quick and dirty" kind: easy to do, but not a lot of control. In Chapter V, sections 4E-G we'll show you how to put page numbers anywhere, on any line, at the top and/or bottom of the page.

H RIGHT JUSTIFICATION; NON-BREAKABLE SPACE

The Justify command in the Format menu, works a little differently from the others. It has only 2 values, ON or OFF. If it is ON, text will be right justified on printout. If it is OFF, your document will be printed with a ragged right edge.

To change the value of Justify, hit the J key. Each time you hit it, the value changes to its opposite. If Justify is set to OFF, hit J and it gets set to ON. Hit J again and it gets set back to OFF. (This is often referred to as "toggling" back and forth). Because there are only 2 values involved here, this is a more efficient way to set it than using a dialogue box.

Note that when text is right justified, the program inserts spaces in the printout to fill out the lines. It does this only where there are already spaces. But there are times when you don't want additional spaces inserted between certain words. To prevent this from happening, and to keep certain word combinations together (i.e. not broken up at a margin), the "Non-breakable" space character is provided.

Hitting ALT-SPACEBAR in the Editor generates a non-breakable space in the text, at the Cursor position. On screen, it appears as a Left arrow, but it will print as a space. If it falls between 2 words (or 2 numbers or a word and a number), these words will not be split up by alignment, and additional spaces will not be inserted BETWEEN them during justification.

At this point, it might be a good idea to see how all these parameters come together in the printing of a document. So align the paper in the printer (as described above) and set all the values we've just discussed. Set page numbering to 1, Justification to 1, and Bottom Margin to 4. Now hit P (Print) and let the printing run its course so you can see page breaks, page numbering, and justification.

I ONE PAGE

If you use single sheets of paper rather than continuous fan-fold computer paper, you will want to set One Page to ON. This parameter, like Jusify, has only 2 values, ON and OFF. Hit O (One page) and the value changes to its opposite.

During printout, if One Page is set to ON, the printer will pause at the very bottom of each page, and a dialogue box will appear, waiting for some input from you. Once you've inserted a fresh sheet of paper, restart the printout by hitting ENTER. To cancel the rest of the print run at this time, hit BREAK. (Note that if you have a sizeable printer buffer, the dialogue box will appear long before the printer actually pauses.)

One page also works this way for View Print, #Print and *Print.

J AUTO-LF/EPSON

The Auto-LF/Epson parameter can be set to 1 of 7 values (0 through 6), but only 3 are really relevant:

- 1) For Most Printers, Auto-LF/Epson should be left at 0 and forgotten about.
- 2) A setting of 5 means that Telewriter will send a Line Feed character to the printer at the end of every printed line (along with the Carriage Return character it always sends to mark the end of each line). What that means is this:

Most printers automatically supply a Line Feed whenever the computer sends them a Carriage Return. Often, there is a "dip switch" so the user can set whether this will happen or not. We recommend that if your printer is set this way, you leave it, and, if it isn't, that you set it to supply an Auto Linefeed. Once you do that, you can leave Auto-LF set to 0.

If, however, when you print, you get only one line on the page which prints over and over itself, and if you can find no way to set your printer to provide an Auto Linefeed, then simply set Auto-LF/Epson to 5 and try Printing again (some Daisy wheels and older printers seem to require this).

- 3) If you get normal printing, but no Upper and Bottom margins, then try setting Auto-LF/Epson to 4 and printing again (old Okidata printers sometimes needed this).
- 4) The 1 and 2 settings were used in the original Telewriter 1.0 to specify the use of an Epson MX-80 (the original Epson). These settings are maintained for command compatibility for early owners of the original Telewriter. At this point in history, however, they are fairly irrelevant and any Epson printer should be handled just like any other printer, with Auto-LF/Epson set to 0 (or 5)

K DIRECT CODES

Most printers use what are known as "Printer Control Codes" to provide access to different fonts, modes, and print qualities (italics, boldface, etc.). The "Direct codes" command (D), lets you send these codes Directly to the printer from the Format menu.

Though different printers usually use entirely different codes from each other, here's a quick demonstration that any printer can use. Hit D, and type the number 10 into the dialogue box appears. Now, when you hit ENTER, your printer should do a line feed. Type in 12 and hit ENTER, and it should do a form feed.

Notice that the dialogue box stays around even after you type in a number and hit ENTER. This allows you to type in a sequence of control codes. Remember you must give one value at a time followed by ENTER. For example, if the printer wants the codes 27 81 to do boldface, then type in 27, hit ENTER and then type in 81 and hit ENTER. To get out of Direct code mode and back to the Format menu, hit the BREAK key.

The number you type in can range from 0 to 255, and its effect will depend on your printer. Consult your printer manual for a list of its control codes. Make sure you use Decimal values for Telewriter -- not hexadecimal or alphabetic, as listed in some printer control code tables.

L TYPEWRITER

The last command in the right column is "Typewriter". This is a minor feature which allows you to type in a line and have it immediately printed by the printer.

When you hit T, the Format menu will be replaced by a nearly blank screen which says "Typewriter--Press <BREAK> when done", at the top. You can simply type now, and whatever you type will be printed out as soon as you hit ENTER. After that, you will stay in the same screen, and the Cursor will move down to the next line so you can keep typing lines one after the other. When you're through, just hit BREAK and you'll be returned to the Format menu.

A line can be modified at any point before you hit ENTER, but the only editing control you have is the Left Arrow key, which deletes the previous character and backs the Cursor up one.

There is, of course, no Wordwrap in Typewriter mode, and none of the values set in the Format menu will have any effect on the line printed out. So, if you want a left margin, for example, you will have to supply it yourself by hitting the SPACEBAR a number of times.

M FONT

The 6th command down in the left column is the Font command. This is another command leftover from the early Telewriter 1.0, and maintained here for compatibility with early users. It should be left at 0.

V. ADVANCED FORMATTING AND PRINTING

1 EMBEDDED FORMAT COMMANDS: OVERVIEW

Format parameters set in the Format menu, hold for the entire document. If you set Margin to 8 there, the margin will be 8 spaces wide, from page 1 to page 100. But there are times when you need to change the values of certain format parameters at different places in the text.

To handle these situations, Telewriter-128 provides Embedded Format Commands. These are commands that are actually placed in the text -- yet they can have the same effect as parameters set in the Format menu.

Embedded Format commands, since they do occur inside the body of the document, need a way to be distinguished from normal text. For this purpose the Caret symbol (^) is used. Any line in the text that begins with a Caret is treated as a "command line" and is not printed. Instead, it is used to change the values of various format parameters (or to perform other dynamic tasks in the text).

You can use Embedded Format Commands to set almost all the parameters that you set in the Format Menu. These include: Spacing, Margin, Chars/line, Upper margin, Lines per page, Bottom margin, page Numbering and Justification.

2 EMBEDDED FORMAT COMMANDS: EXAMPLE

In writing articles and papers, it is common practise to set off long quotes by indenting them on both sides. So let's assume you're working on a document, and you suddenly come to a 3-line quote you want indented in this fashion during printout.

Assuming that your document has a left Margin of 8 and a right margin of 8 (Chars/Line=64), then, to achieve the desired results, you'd want to change the left Margin to 16 and the right margin to 16 (Chars/line=48) for just those 3 lines. (See Chapter IV, section 3C for the simple math to convert between right margin and Chars/line). This would indent them a little less than an inch on each side, relative to the current margins.

You can be accomplish this in Telewriter using an embedded format command. In this case, to get the printout to change Margin to

16 and Chars/line to 48 when it gets to the quote, we'd immediately precede the quote with this embedded format command line:

```
^M16 C48
```

When the printout comes to this point in the document, the Caret (^) tells it not to print this line, but, instead, to execute the commands in it. The first command is M16, which causes the Margin (M) to be changed to 16. The second command on the line, C48, changes Chars/Line (C) to 48.

Then, after the quote has printed, since Margin and Chars/Line are still set to 14 and 48 respectively, we need to return to the original settings (Margin=8, Chars/Line=64) for the remainder of the document. To do this, we follow the quote immediately with:

```
^M8 C64
```

Here's a fragment of a political article, showing how this would look on-screen:

This point was probably best made in the Senator's opening remarks, when he said:

```
^M16 C48
Blah blah, blah blah, blah blah blah blah, blah blah... uhhh
and further, blah blah blah blah blah blah blah. And don't
overlook, uhhh, blah blah...
^M8 C64
```

Of course, several members of the Senator's own party were quick to voice their total opposition to this concept.

Then, when this is printed, it'll look approximately like this:

This point was probably best made in the Senator's opening remarks, when he said:

```
Blah blah, blah blah, blah blah blah blah,
blah blah... uhhh and further, blah blah
blah blah blah, blah blah. And don't
overlook, uhhh, blah blah...
```

Of course, several members of the Senator's own party were quick to voice their total opposition to this concept.

3 EMBEDDED FORMAT COMMANDS: RULES

a. Since there is no Caret symbol (^) on the Color Computer keyboard, Telewriter uses a CTRL-key combination for it. To type the Caret symbol, hit CTRL- period (CTRL-.). A Caret (^) will appear on the screen at the Cursor. This is the character you need at the beginning of all embedded format command lines.

b. Embedded format commands must be on their own line -- that is, not mixed on the same line as regular text.

c. The format parameters that can be changed (and the letter codes that stand for them in the command line) are:

M = left Margin	S = Spacing	C = Chars/line
U = Upper margin	B = Bottom margin	L = Lines/page
N = Number pages	J = Justify	

Note that the letter used in the command line to stand for the parameter is exactly the same as the key you would hit in the Format menu to set the value of that parameter.

d. Any format parameter not set by an embedded command, simply uses the value already set in the Format menu, so you only need to specify the parameters you want to change. A new value will hold until another embedded format command changes it.

e. An Embedded format command line always begins with a Caret (^), which is followed by one or more format commands. Each format command consists of a letter representing the parameter to be changed (M, C, S, U, B, J, L, or N), and a number, which will be the new value (except J, which is discussed in section 4, below).

The parameter letter must be followed immediately by the number indicating the new value. No space should separate the letter from the number. However, when more than one Format command is put on a line, they must be separated by one or more spaces. Thus, a command like:

```
^M12 C66 S2 B5 U5
```

will change the left Margin to 12, Chars/line to 66, Spacing to double-spacing (2), Bottom margin to 5, and Upper margin to 5. Note again, that the parameter and its value are not separated (as in M12), and that different commands are separated by a space (as in S2 B5 U5).

f. The commands can all be put on the same line as shown above, or they may each be put on a separate line. (In this case, each line must begin with a Caret.) Thus, the four lines below have the exact same effect as the one line above:

```
^M12
^C66
^S2
^B5 U5
```

- g. There must never be more than 1 caret in a single embedded command line - and the only place that caret is allowed is at the beginning of the line.
 - h. An embedded command line should never exceed one line on the screen, though any number of lines can follow one another as shown in f. above.
 - i. Alignment will have no effect on embedded command lines, and will not combine them with other lines.
 - j. Wordwrap will have no effect on embedded command lines, and they will not be broken if you exceed the right margin while you type them in. If they exceed the right edge of the screen, they will simply wrap around onto the next screen line, creating a continuation line. Though you can break them yourself by hitting ENTER at any point in the line, you should never do so (the fragmented part won't work properly, if at all).
- Note that these same circumstances regarding wordwrap will also hold if you accidentally (or even intentionally) place a caret in a normal line of text.
- k. The command letters can be either Upper Case or Lower, but Upper is recommended because it stands out better.
 - l. If an embedded command line actually prints out (on your printer or during a print preview), that means you have made a syntax error in the line. Examples of possible syntax errors would include: Separating a command letter from its number by a space (^M 10); Using a non-existent command letter (^K10); or including another caret symbol on the command line (^M10 ^C64).
 - m. The embedded format commands just discussed only take effect during printout. However, after a Print or print preview, any changes in Chars/line will still be present in the text when you return to the Editor. The 4 line quote above, for example, would still be only 48 characters wide. However, hitting CTRL-A would instantly realign it to the current setting of Chars/Line (64 in this case).
 - n. Avoid having any extraneous spaces at the end of an embedded command line.
 - o. Changing the Bottom margin does not take effect until the next page after the command is given. In general, Lines per page should not be changed unless you know exactly what you want to do.

4 OTHER EMBEDDED COMMANDS

Besides being used to indicate Embedded Format Command lines, the Caret serves to designate other special commands that need to be placed in the text.

These other embedded commands are involved in such functions as: Protecting blocks from Alignment, Centering, Forcing New Pages (form feeds), Headers, Footers, Printer Control Code Definitions, Disk Chain Printing, Setting Tab stops, and marking non-printing "comment" lines.

Unless otherwise indicated, these "other" embedded command lines follow the exact same rules specified above for embedded "format" command lines.

Note that most of the commands discussed below cannot be combined on the same line with each other or with the 8 embedded format commands (M, C, S, U, B, J, L, N) described above. Some even deal with functions far removed from changing format parameters. They can, however, be placed freely in "stacks" of embedded command lines in the text (see section J below for more on "stacks").

A ALIGNMENT PROTECTION

In Chapter II, you saw how the CTRL-A (Align) Command pulls together all short lines not separated by a blank line or indented.

But sometimes you want short lines left alone by the Align command. This is especially true of lists and columns and other things that are best formatted by hand. For this purpose, Telewriter provides the embedded command

(Caret-semi-colon), also known as "the non-align code". This simple embedded command line, placed around a block of text, will prevent alignment from operating on that block.

As an example, type in the list from Chapter II, section 9, and surround it with the non-align code, so the screen looks like this:

```

^;
1 Carrots
2 Apples
3 Oranges
4 Artichoke
5 Cauliflower
^;

```

Now hit CTRL-A and notice that the list isn't aligned. Delete the two non-align code lines (;) and hit CTRL-A again. This time the list will be combined into 1 line by the alignment routine.

Note that the non-align codes must be used in pairs. The first one protects everything that follows it from being aligned, and the second one allows everything after the protected block to be properly aligned again. Thus, if there is no second one, the remainder of the text will go unaligned when you hit CTRL-A.

Should you have fragmented and/or overflow lines in your on screen text, even after hitting CTRL-A or setting Chars/line, the most likely cause of this will be a single (unbalanced) non-align code somewhere preceding the fragmented text in the buffer.

The non align command (;) should always be the only thing on its line. It should not be combined with any other embedded commands on the same line, either preceding or following it.

During printout, the non-align code also prevents its block from being right justified (if Justification is set to ON at the time).

An embedded format command to change Chars/line (^C) should never be put inside a block that is surrounded by the non-align code (;). This would force an alignment to occur on some of the very text you're trying to protect from alignment, and also prevent alignment from effecting the text that follows the second non-align code of the pair. Similarly, the ^MD, ^M+, ^M-, ^M=, and ^M* commands (discussed below) should never go inside a non-align block, because part of their function includes resetting Chars/line.

B CENTERING

To have a line centered automatically on printout, simply begin it with ^* (on the same line). This is done on a line by line basis so each individual screen line you want to center must begin with ^*.

For example, a heading that looked like this on the screen:

```
^*Arthur Rimbaud
^*70 Market St
^*Venice, CA 92116
```

would print out as

```
Arthur Rimbaud
70 Market St
Venice, CA 92116
```

Note that this centering command will not work properly if double-width or condensed characters are used. Such lines must be

centered by hand (counting characters and using spaces to center the line).

C NEW PAGE / NEW PAGE NUMBER

There are times, in the midst of printing a document, when you need to suddenly start a new page (like going to a new chapter, or printing several different documents in the same text buffer, or forcing a new page to eliminate widow and orphan lines). The ^N command, placed anywhere in the text (on a line by itself), will cause the printer to jump to a new page when it is encountered during printout. It will then space down for the Upper Margin as currently set, and continue printing with the line right after the ^N in the text buffer.

If the ^N is followed immediately by a number, it will start page numbering using that number. For example, the embedded command ^N10 will jump to a new page, and start page numbering at 10 when it gets to the bottom of that page.

You can also use the ^N command followed by an equal sign and a number, to set a new page number without forcing a new page. For example, ^N=10 will cause the current page to be numbered 10 when the bottom is reached. Page numbering will continue sequentially from there, unless another ^N= is encountered. The command ^N=0 is somewhat special. Like setting "Number pages" to zero in the Format menu, it turns automatic page numbering off.

Normally, when a document finishes printing, it will automatically advance to the bottom of the last page (and print the page number if page numbering is on). If you wish to prevent this, use the ^BX embedded command. This command says, essentially, "Don't advance to the bottom of the last page when done." If, however, auto page numbering is on, the ^BX will be overridden and the document will go to the bottom of the last page anyway, in order to print the final page number. To avoid this, use the line:

```
^N=0 BX
```

This turns off page numbering so the ^BX won't be overridden.

D SETTING TAB STOPS: DEFINITION LINES

So far you've seen embedded command lines used exclusively to "command" the printout to take certain actions: "Change the left margin to 8!" "Start a new page!" or "Center this line!"

But another important use of the embedded command line structure is as a "definition line". A definition line is an embedded command line that "sets something up", but doesn't have an immediate effect when it is encountered. The simplest example of a definition line in Telewriter, is the embedded line that's used to set tab stops.

So, to do just that, jump to the top of text with CTRL-Up Arrow and hit ENTER to push the top line down a line. Then hit Up Arrow, so the Cursor is now back at the top of text. This is the only place the tab stop definition line can go. (Most of the other types of definition lines can go anywhere.)

Now type Caret-T (^T), followed by a space. Now, simply type in the screen column numbers where you want the Tab stops to be set. Each number must be exactly 2 digits and each 2-digit number must be separated by a space. So, to set tabs at columns 5, 9, 20, 30, 38, and 45, you'd put the following Tab definition line at the very top of text.

```
^T 05 09 20 30 38 45
```

To determine the column numbers you want for your tab stops, simply cursor over to those points on the screen and hit CTRL-I at each one. The first "Info window" will appear, and the first number in it ("At column:") tells you what column you're at. Subtract 1 from this number, and use the result in the Tab definition line. (This is a lot easier than manually counting characters -- but if you do count manually, remember to still subtract 1 to get the actual number to use.)

Since there's no Tab key on the Color Computer, Telewriter uses CTRL-ENTER for this purpose. (Hold down CTRL and hit ENTER.) If there is no Tab definition line in a document, hitting CTRL-ENTER will tab over to column 5, and that's all.

Once you've put a tab stop definition line at the top of text, hitting CTRL-ENTER anywhere in the text will tab you over to the next tab stop on the current text line, as defined in the Tab stop definition line.

If you hit CTRL-ENTER on a blank line, it will insert spaces in the text until it gets to the next tab stop. If there's text on the line, the tab key will simply move the Cursor to the next tab stop on that line. If the next tab stop lies beyond the end of the text on that line, then the Cursor will move to the last character on the line (including space and CR) and insert spaces beyond that point, until it gets to the next tab stop.

You should be aware, then, that invisible spaces can be left lying around unnoticed as a result of tabbing someplace and then not putting anything there. Wherever possible, you should delete these extraneous spaces, as they can sometimes cause confusion in the editing process.

Also remember that a tab definition line, placed anywhere except the absolute top of text, will not set tab stops.

E HEADERS

To cause a header to print at the top of each page beginning with page 2, use a "header definition line" like this:

```
^H3 TELEWRITER-128
```

EMBEDDED COMMANDS

A header definition line, like all other embedded command lines, must begin with a Caret. But the Header definition must also have a Caret (^) at the end of the line, in order to work properly.

The beginning Caret is followed by the letter H (for Header), which is followed immediately by a number. This value sets the number of blank lines which will separate each header from the actual body of text on the printed page. A space must follow the number and then comes the actual text of the header, followed, at the very end, by the second Caret.

During printout, the example header definition line above, would work like this: First, at the top of each page, would come the Upper Margin (as set in the Format menu or with a ^U embedded format command). Then the header itself (TELEWRITER-128EMBEDDED COMMANDS) would print, followed by 3 linefeeds and then the actual text would begin for that page.

The header definition line should occur at the very top of text. If you also have a Tab stop definition line, the tab line should go first, followed on the next line by the Header definition. Other embedded command lines can precede the header definition as well, as long as there are no blank lines or lines of text between them.

If there are one or more lines of text or blank lines anywhere between the Header definition and the very top of text, then the Header will begin a page later than it should (on page 3 instead of page 2).

When the Header is printed, it will not be effected by the current left Margin -- so you must control its positioning explicitly with spaces in its definition line.

The header definition should be kept on a single line. Like all embedded command lines, it will not wordwrap when you exceed the right margin, but will continue out to the right edge of the screen. If it exceeds the 80 column screen width, it will simply wrap around onto the next screen line (as a continuation line). Again, like all the other embedded command lines, it will not be effected by the Alignment command (CTRL-A) or by setting or re-setting Chars/line.

Therefore, as long as you don't hit ENTER anywhere inside the Header definition line, it will not get broken up. The Header and

Footer definition lines are the only situations in the Telewriter Editor where an overflow line is preferred to a wordwrapped line.

It is also a good idea to keep header definitions separate from the first line of actual text in the buffer by at least 1 blank line. If this is not done, and the header definition line is broken by hitting ENTER in the line, as described above, then the first line of text may be improperly aligned.

The total number of characters in the Header cannot exceed 255.

-- Header Page Numbering

If you put a backslash character (\) in a header definition line, then, when the actual header is printed at the top of each page, the backslash in the definition line, will be replaced in the printed header by the current page number.

The backslash character is produced by hitting ALT-/ (hold the ALT key down and hit the slash (/) key). When used anywhere outside a Header definition, the backslash will simply print as a backslash.

Using this header definition line:

```
"H3 TELEWRITER-128
```

```
page \
```

produces a header that looks like this, at the top of page 10:

```
TELEWRITER-128
```

```
page 10
```

The starting page number for the document is still set with the Number pages parameter in the Format menu or with an embedded format command (^N=). Normally, you will set it to 1 if you're printing from the beginning of a document. In the example just given, this would cause the first header that prints (at the top of page 2), to say "page 2". Subsequent pages will say "page 3", "page 4", etc.

If Number pages (or ^N=) is set to zero, then the first header printed (on page 2) in the above example, would erroneously say "page 1". Though setting Number pages to 0 in the Format menu prevents automatic page numbering at the bottom of the page, it does not prevent a header from printing the page number if a backslash is present in the definition line.

Defining a header (or footer) which includes a backslash, will, however, prevent automatic page numbers, even though Number pages in the Format menu is set to a non-zero number. That value will now be used to determine the starting page number for the backslash in the header (or footer).

To have complete control over the placement of page numbers, you can define a header with no text, which will only print page numbers.

For example, the header:

```
"U1 N=100
```

```
"H2
```

```
- \ -
```

will print page numbers (with a hyphen on each side) centered at the top of each page, 2 lines up from the first line of text. Preceding the Header definition, the ^U1 embedded format command sets Upper Margin for 1, which means that the Header will print 1 line down from the top of each page. The "N=100" command means that the number of the first page will be page 100, and the first page number that appears in the first header will be 101.

F ADDITIONAL HEADER CONTROLS

There are 4 additional header commands that provide more control:
^H+ ^H- ^H= ^HP.

^H+: If you put a Plus sign between the H and the number in the header definition line, (^H+3.....) you will get an immediate header. This means the header will start on the very first page instead of waiting til the second. You might use this if you are printing a document in sections, where the first printed page is not necessarily the first page of a chapter or the document itself. You can also use this form if a blank line or line of text between the header definition and the top of text causes the header to start a page later than you want.

^H-: This command simply shuts off the Header. It can be placed anywhere in the text (on an embedded command line only, of course). As soon as it occurs in the text, all subsequent pages will not have headers printed at the top. Unlike the normal ^H command or the ^H+ command, the ^H- command does not have a number or text following it, and it should not have a Caret symbol at the end.

^H=: This works exactly like ^H- to turn headers off, except that it also turns automatic page numbering back on. This is necessary to get automatic page numbering at the bottom of each page once header page numbering has been used in the document. (As soon as a backslash appears in a header (or footer) definition, automatic page numbering is shut off. And the ^H= command is the only way to turn it back on)

^HP: This disables headers for a single page. It works exactly like ^H-, but, after 1 page, the Header starts printing again. It is useful, for example, in preventing headers from printing at the top of a page that starts a new chapter.

G FOOTERS

Footers work a lot like headers. In fact, if you take the Header lines given as examples above, and changed "H" to "F", then the former header lines would now print at the bottom of each page (as footers) instead of at the top of each page.

The Footer definition line must end as well as begin with a caret, and a backslash placed in a footer definition, will cause the current page number to print in the footer.

There are only 2 main differences between headers and footers that you need to be aware of. First, the line that defines the Footer does not need to be at the exact top of text. In fact, it just needs to come somewhere before the end of the first page. (Though you should probably put it around the top of your text just to keep it out of the way.)

Second, the number immediately following the F, indicates how many lines up from the bottom of the page, the footer will be. Thus a footer definition line of "F1....." will position the footer on the very bottom line of the page (just before the perforation). "F2" would position it 1 line up from that.

Note that this is not symmetrical with the way Headers are positioned. Because of this, the Bottom margin (set in the Format menu) must be large enough to accommodate the footer. If, for example, the footer is defined with an "F3", then Bottom margin must be 3 or greater for the footer to print.

If a plus follows the F in the footer definition line (e.g. "F+1....."), you'll get an immediate footer. This works exactly like an immediate header -- it'll cause a footer to be printed at the bottom of the very first page instead of waiting for the second page.

The "F-" and "F=" and "FP" footer commands work exactly like their Header counterparts.

Note that while Multi-line headers are possible in Telewriter-128 (see the end of section K, below), multi-line footers done the same way will not work properly.

H EMBEDDED CONTROL CODES

Many printers have the ability to change type style, print boldface, underline, do superscripts, and so on. To access these features, the printer must be sent special "control codes". These control codes vary from printer to printer, and should be listed and described in your printer manual.

Telewriter's "Embedded control code" feature allows you to send any sequence of control codes to any printer, at any time during printing. There are two parts to using embedded control codes: the definition line and the embedded control character.

- 1) The embedded control code definition line begins with a Caret (^), followed by the letter D, followed by a number from 1 to 9, followed by a space, followed by a sequence of from 1 to 18 numbers, whose values can range from 0 to 255. The letter D and the one digit number that follows it (1-9) must not be separated by a space.

Here are 2 examples of embedded control code definition lines:

```
^D1 27 88
^D4 27 36 27 33 27 118 49 27 81
```

The first line defines an embedded control character (1) that will send the printer control codes 27 and 88. The second line defines another control character (4) that will send the codes 27 then 36 then 27 then 33, 27, 118, 49, 27 and 81.

- 2) The embedded control character is what actually causes the control codes in the definition line to be sent to the printer (Remember, the definition line only "defines" a sequence of control codes.)

There are 9 different control characters you can use. On screen, they appear as the numbers 1 thru 9, in reverse video. This reverse video number corresponds to the first number in the definition line (the number immediately after the D).

Thus, when the reverse video 1 (1) is encountered in the text during printout, it will cause the sequence of control codes in definition line D1 to be sent to the printer. Whenever a reverse video 4 is encountered, the codes in line D4 will be sent (i.e. 27, 36, 27, 33, 27, 118, 49, 27, 81).

The embedded control characters are shown on screen in reverse video to distinguish them from the regular numbers which you use in writing. To produce them on the screen, you need to hold the CTRL key down and hit one of the nine number keys (1-9). The reverse video version of that number will appear on the screen at the Cursor position.

So, go into the Editor if you're not already there, and hit CTRL-1. A reverse video 1 (1) appears. Hit a few more CTRL-number combinations (CTRL-3, CTRL-7, etc.) and watch what appears on screen. (You may need to turn up the brightness on your monitor to read the reverse video characters clearly.)

Remember that when these reverse video embedded control characters are encountered during printout, they will not be

printed. Instead, the number of the control character (1-9) will tell the program which definition line to look at (D1-D9) to find the control codes it will now send to the printer.

I EMBEDDED CONTROL CODES: EXAMPLE

To make this clear, let's look at an example. The Toshiba 321 printer manual tells us that underlining on that printer is started by the codes 27 73, and stopped by the codes 27 74. So, to enable us to underline with this printer, we'll define 2 embedded control characters with these 2 definition lines.

```
^D1 27 73
^D2 27 74
```

Now, to underline something anywhere in the text, we just put the control character **^** before it, and the control character **^** after it -- which looks like this on-screen:

This is just some random text to illustrate underlining the word **^Underline^**. And this is some more random text.

This would print as follows, on a Toshiba P321:

This is just some random text to illustrate underlining the word **^underline^**. And this is some more random text.

When the text is printing and the control character **^** is encountered, the program looks at the definition line with the same number (^D1) and sends whatever values are on it. In this case, 27 and 73 get sent to the printer, and this puts it into underline mode, as desired.

Printer control codes should be described for you in the manual accompanying your printer. It is up to you to be certain that you're using the proper codes to achieve the desired effects. Sometimes printer manuals give the codes in "Hexadecimal" or alphabetic characters. The numbers you use in an embedded control code definition line in Telewriter must be decimal. If your manual does not supply decimal values for control codes, use an ASCII conversion table that converts to decimal values.

Each embedded control code definition must be alone on its own line -- no text, and no other embedded commands may go on this line. As long as this condition is met, the control code definition lines can be placed anywhere in the text. Because of this, you can redefine any control character (1-9) any number of times. The new definition goes into effect only when the definition line is encountered during printout. Any instance of that control character appearing before this point, will use the original definition.

As with embedded format lines, if all or part of the control code definition line actually prints out (on the printer or during View print) that means it contains a syntax error. Examples of syntax errors would include: a space between the D and the control character number (^D 1 27), or using a number higher than 9 for the control character number (^D25 27 18).

You should also avoid having extraneous spaces at the end of an embedded control code definition line.

J STACKING EMBEDDED COMMAND LINES

If a control character appears in the text before it has been defined by a definition line, it will have no effect. For this reason, it is generally good practise to define the control characters you will use in a document, at the very top of the text, before the start of the body of the document.

Since Tab Stop and Header definition lines must go at the top of the text as well, what you wind up with, there, is something we'll call a "stack" (of definition lines) -- looking something like this:

```
^t 05 10 15 25
^d1 27 81
^d2 27 82
^d3 27 73
^d4 27 74
^d5 27 42 50
^d6 27 42 49
^dp9 94
^H4 Telewriter-128
^F+2
^M9 C63 S1 U1 B5 N=1 J+
```

EMBEDDED COMMANDS ^
page \

Text starts here or farther down, preferably separated from the stack by at least 1 blank line.

This keeps the rest of your document file fairly neat, and gets all this stuff out of the way at the very beginning.

Notice that the tab definition line comes at the very top and no blank lines or text lines separate anything in the stack from the top. That includes the header definition line which needs this condition in order to start properly on page 2.

An embedded format command line (^M9 C63 S1 U1 B5 N=1 J+) is included in the stack for convenience. These values are normally set in the Format menu, but putting them in the text like this, means you never have to remember what margins you used for this document. When you go to print, as long as this format line precedes any text, your entire document will abide by these margins and disregard the Format menu settings for the same

parameters. (Of course, embedded format command lines can still appear anywhere else throughout the text, whenever you want to change these initial values temporarily or permanently.)

Stacking control code definition lines at the very top of the text like this (before the Header definition line), can come in very handy when doing a View Print (Print Preview).

Normally, when View Print encounters embedded control characters in the text, it sends their associated control codes to the screen just as it would send them to the printer. Unfortunately, the screen doesn't react to these codes the way the printer does, and it simply puts a character on screen that corresponds to the code. This will usually throw off the line width and justification of text lines with embedded control characters, and will also toss in some strange and unexpected characters.

But by stacking all your control code definitions at the top of text as shown above (before the start of the actual document), and by using CTRL-T to initiate the View Print (rather than CTRL-V in the Editor, or V in the Format menu), the problem is avoided.

CTRL-T works something like Partial Print (%Print). That is, while CTRL-V starts the View Print from the very beginning of the buffer, the CTRL-T command will begin the View Print at the current Cursor position. Therefore, if you set the Cursor at the beginning of the line right after the last control code definition, and use CTRL-T to start the print preview, none of the embedded control code characters (1-9) will get defined.

This means that when the print preview encounters an embedded control character in the text, it will find no definition for it and will thus send nothing to the screen to try to represent it. As a result, the embedded control characters will have no distorting effect on the print preview.

Note that this technique will not eliminate any control characters that are defined later in the text. (But see section L below, for a solution to this, and a slightly different approach to the whole problem.)

K PRINTABLE CONTROL CODES, FOREIGN SYMBOLS

Embedded control codes are usually just that -- non-printing codes that get sent to the printer to control a certain function. When justifying text, Telewriter does not count these codes because they normally don't put actual printing characters on the line.

But embedded control codes can also be used to access special "printing" codes, found on many printers, for things like foreign and math symbols. In this case, you need to let Telewriter know that a control code definition will send 1 or more printable

characters. The program will then be able to count them for the purpose of right justification.

To do this, simply change the D in the definition line to DP, so a typical embedded "printing" code definition line now looks something like this:

```
^DP1 94
```

This line defines the embedded control character **█** to send an ASCII 94, (which prints as a Caret on many printers). This form works fine if each code in the line is printable. But sometimes a line like this might send a number of codes, only one or some which actually print. For example, to send a Caret printed in boldface, on a Toshiba 321, the definition line would be:

```
^D1 27 81 P94 27 82
```

Since 27 81 initiates boldface and 27 82 ends bold face, only one code on this line actually needs to be counted as a printing character (the 94). By putting the P in front of the code, you tell the program that this is the only printing code on the line, and that the others should not be counted.

The rule here is simply to put a P before every code on the line that will print. (That is the easiest way to remember it, though you can actually put the P before any of the codes. What really matters is the number of Ps in the line. Thus, you could just as well have written the above line as:

```
^D1 P27 81 94 27 82
```

The main rule to remember, in that case, is that you can only use one P per individual code number.

Printing control codes have another interesting application in the world of headers. To do a multi-line header, all you need is an embedded control code which sends a Carriage Return to the printer. The decimal number 13 will do just that, so, if you want to use multi-line headers, start by defining a control character to send a decimal 13. A line like: ^D1 13 will do the trick.

(Of course you can use any number from 1-9 after the D, but make sure this number is not redefined anywhere else in the document. It must stay in effect at all times for the multi-line header to work properly throughout the entire document.)

Now, simply include the control character in the header definition line wherever you want the next line of the header to begin. In this example:

```
^H3 this is the 1st line█ this is line 2
```

the embedded control character **H** will cause a Carriage Return when the header is printed, so that everything following it on the header definition line, will be the second line on all the printed headers. The number of lines following the header, in this case 3 (^H3), will be counted from the last line of a multi-line header, not the first.

Note that the Carriage Return does not have to be defined as a printing control code (^DP1 13) because Carriage Returns aren't counted for right justification.

L NON PRINTING LINES

There are times when it's useful to make brief notes to yourself within a document. Since, you don't want these notes printed out with the rest of the document, Telewriter provides a simple way to put non-printing "comment lines" anywhere in the text.

If you place a Caret-T (^T) code at the beginning of a line, that line will be ignored during printout (that is, it won't be printed when you print the rest of the document). This will work anywhere in the text except for the very first line of the text buffer. In that position, ^T is treated as the tab stop definition line (see section 4D above).

The ^T code, used as a comment line marker, is only good for one line at a time. Each comment line must begin with it's own ^T, and the ^T must be followed by a space. An example would be:

```
^T Left Margin = 6, Chr/lin = 63, Spacing = 1
^M6 C63 S1
```

In this example, the ^T comment line is used to describe what's happening in the embedded format command line directly below it. Thus, these "comment lines" can be especially useful for telling you what your embedded command lines mean or what your embedded control code definition lines are doing.

In conjunction with the View print feature, the ^T code can be used to "comment out" the control code definition lines. Thus, putting a ^T (space) before each embedded control code definition line, will prevent that line from going into effect. This means that the control characters will not be defined, and, when they're encountered during View Print, they will not distort the Print Preview with unrecognizable characters.

This is simple to accomplish since you can use use Global search and replace first, to change all ^Ds to ^T ^Ds before you do the View print, and then to change all the ^T ^Ds back to ^Ds, just before you go to do an actual paper printout.

Note that "commenting out" embedded command lines is the only time when 2 Carets can legally appear on the same line (other than in Header and Footer definitions).

M FLUSH LEFT LINES

If a ^T command line comes at the very top of the text, it sets tabs. If it comes anywhere else, and the ^T is followed by a space and then text, it is a non-printing comment line (as just described).

However, if the ^T is not followed by a space, then the text line that follows it will be printed, but will not be effected by alignment (CTRL-A). That is, this single line (from the ^T to the CR that ends the line) will not be combined with either the preceding line or the subsequent line when you hit CTRL-A to align the text, or set a new Chars/Line value.

In general, if you have more than 1 line you want protected from alignment, a pair of non-align codes (;) around them, is the recommended way to go. ^T is provided as a quick and dirty way to take care of a few lines here and there.

N FLUSH RIGHT LINES

The ^> code (Caret-greater-than), has an opposite effect. If you begin a line with it, that line will be printed flush right on the page (ending at the same right margin as the rest of the document). Like ^T, this code is only good for one line at a time.

O JUSTIFY ON/OFF

The ^J+ and ^J- commands are provided to turn right justification ON and OFF dynamically, during printout. The ^J+ command turns it ON, ^J- turns it OFF. The J command takes no value and can be combined on an embedded format line with the other format commands (M, C, U, B, etc.)

P HANGING INDENTS

Sections 5B and 5C below feature examples of the use of hanging indents. Notice that each numbered line "hangs" a little farther out into the left margin than all the other lines in its paragraph. Put another way, every line in each numbered paragraph is indented, except the first (the one with the number).

And that is precisely what the ^MD command does. It causes all subsequent text to be indented except for the very first line immediately following it. The number of spaces to indent is specified in the value which immediately follows the ^MD on its own line. As usual, there is no space between the MD and this number. This command should immediately precede the paragraph it is to effect and must not be separated from it by a blank line.

Once you initiate a hanging indent, all text after the very first line, will stay indented until another command brings it back to the normal margin. The embedded command that does this is `^M-` followed by the same number that followed the initiating `^MD`. The following example shows an abbreviated version of what the screen looked like to produce the hanging indents of section 5B below.

`^MD3`

1) The filename that follows `Q` must be separated from the `Q` by a space.

`^M-3 MD3`

2) If the extension used on a given file is `/TXT`, you don't need to specify the extension in the `^Q` line. If the extension

`^M-3 MD3`

3) If a `^Q` line occurs before the end of the text, it will be acted on at that point and the rest of that file will not be `^M-3`

Now back to some normal text.

In each instance after the first, the indent is brought back to the normal left margin by the `^M-3` command. The `^M-` command is different from the standard `^M` command (to set left Margin) in that it changes both the left Margin and Chars/Line at the same time by the same amount: decreasing the Margin value by that amount, and increasing the Chars/Line value by that amount.

The effect of this is to keep the right margin in exactly the same place on the printed page, while the left margin is pulled to the left. (The `^MD` command does the same thing, but in the opposite direction, and, not on the very first line that follows it.)

Similarly, the `^M+` command (followed immediately by a number) increases the left Margin by that value, while simultaneously decreasing Chars/line by the same amount. The right margin stays put while the left margin is pushed in.

In this manual, the `^M-` and `^M+` commands are used in pairs to emphasize section headings -- pulling them out from the body of the text and into the left Margin.

For example, on screen, the heading for the next section looks like this.

`^M-3`

5 CHAIN PRINTING

`^M+3`

The `^M*` command followed by a number increases both right and left margin by the same amount (thus shifting a chunk of text to the right with respect to the rest of the document) and the `^M*` command pulls the text in on both sides with respect to the margins of the rest of the document.

In a sense, these 4 Margin commands don't accomplish anything you couldn't already do with a combination of the `^C` and `^M` commands, but the big advantage in using them is that you only need to supply the amount of change to the margin, rather than the absolute Margin value and the absolute Chars/line value for each change.

Note that a hanging indent (`^MD3`) or the `^M+`, `^M-`, `^M*`, and `^M=` commands will not work properly inside a non-align block (`^;`), because they change the Chars/line value which in turn causes the text to be re-aligned. (See section 4A above, for more.)

5 CHAIN PRINTING

In a 128K Color Computer 3, there's room in memory for about 24 double spaced typed pages at one time. This will be enough for most applications, and, in those cases, the entire text can be contained in one file.

But, for situations where the amount of text exceeds the 48K limit of the Telewriter text buffer, the Chain Printing feature is provided. It allows for any number of files on tape or disk, to be printed out, one after the other, in one complete document of any length, without user intervention.

Because of the differences between disk and cassette, chain printing is performed somewhat differently in the 2 media. So we discuss them separately in the next 2 sections. Disk users can skip section A, cassette users can skip B.

A CHAIN PRINTING: CASSETTE

To chain print from cassette, the files to be printed, must first be stored, one after the other, in the proper sequence, on a single tape. For illustration, we'll say we have a 60 page paper, consisting of 3 files (about 20 pages each) named `CHAPT1`, `CHAPT2` and `CHAPT3`. So, on tape, first save `CHAPT1`, then, right after it on the tape, `CHAPT2`, followed by `CHAPT3`.

To now print this 60 page document straight through, first, rewind the tape and Read in `CHAPT1`. The tape is now positioned right before the beginning of the next file in the chain, `CHAPT2`.

Go into the Format Menu and hit `Q` (Queue command). Type the number of files remaining in the chain (in this case, 2) into the dialogue box and hit `ENTER`. Set up all print parameters as usual.

put the cassette recorder on Play and put the printer on-line, and at the top of the page.

Now just hit P. The current contents of the text buffer will immediately print out. Then, when that's done, the cassette recorder will start up and the next file (CHAPT2) will be read in and printed.

The printing will pick up from exactly where it left off on the page, so you can break up a document into files at any point. Of course, it's more convenient all around if you save longer documents in complete, distinct chapters, but, if you don't, Telewriter-128's chain printing feature will handle them without losing continuity.

Once it finishes printing CHAPT2, it will read in the next file, CHAPT3, and print that. It will then stop, and return control to the Format menu. It has printed the 2 additional files you told it to print when you set Queue to 2.

At any point during all this, you may abort the printing with the BREAK key or you may abort the file read in (see Chapter III, section 3F). Both return you cleanly to the menu, but you should set the Queue value back to zero unless you want to do chain printing immediately again.

Be aware that if Queue is set to a non-zero number and the recorder is not on or there are no files left on the tape, that, after a print, the program will not return to the menu. It will be trying to find the next file on the tape to print. If you get hung up after a print and the Queue value is, in fact, not zero, turn on the recorder and intentionally abort a file (see Chapt III, section 3F).

So, basically, follow this warning: ALWAYS BE SURE THAT THE VALUE OF QUEUE IN THE FORMAT MENU IS ZERO IF YOU ARE NOT CHAIN PRINTING. This value should only be non-zero when you are "chain printing". Otherwise, the system will appear to lock up after printing.

B CHAIN PRINTING -- DISK

Assume you have an 80 page document to print and it takes up 4 separate files on disk: DOC1/TXT, DOC2/TXT, DOC3/TXT, DOC4/TXT. To print these 4 files as one document, you only need to have a simple 1 line embedded command line in the text, at the end of each of the first 3 documents.

So, in the text, at the end of the first file, DOC1/TXT, you want the line:

^Q DOC2/TXT

Similarly, you want the line ^Q DOC3/TXT at the end of the DOC2 file, and you want ^Q DOC4/TXT in the text at the end of DOC3.

Now, when Telewriter prints a file, if it suddenly encounters an embedded command line that begins with ^Q, it will stop printing and immediately read in the file whose name follows the Q.

It will then pick up from where it left off on the page, and print out the new contents of the text buffer. So, if you Read the file DOC1 into the text buffer and hit P in the format menu, it'll print to the end of the text buffer where it encounters the line ^Q DOC2/TXT.

That line will cause it to read in and print DOC2. When it reaches the end of DOC2, the ^Q DOC3/TXT line at the end of that will cause DOC3 to be read in and printed, and, of course, the ^Q line at the end of DOC3, will read in the 4th file in the chain, DOC4/TXT, and print it.

Since DOC4 does not have a ^Q line at the end, the print stops at the end of that file, and the full document has been printed out in one shot. The rules for chain printing are summarized as follows:

- 1) The filename that follows Q must be separated from the Q by a space.
- 2) If the extension used on a given file is /TXT, you don't need to specify the extension in the ^Q line. If the extension is anything other than /TXT, you must specify it in the ^Q line. The drive number need not be specified, but, if it's not, the current default drive will be searched for the file. Including the drive number will enable you to chain print one document from files stored on different drives.
- 3) If a ^Q line occurs before the end of the text, it will be acted on at that point and the rest of that file will not be printed. Instead, the file named in that ^Q line will be immediately read in and printed.
- 4) The End Of Text Marker must not be on the same line as the ^Q line. If this happens, you will get a file not found error when it tries to get this file from the disk for printing. So, even though you generally want the ^Q line at the very end of the text, make sure it is at least one line above the End of Text Marker.
- 5) At any point during printing, you may abort the entire process by holding down the BREAK key. This will get you back to the Format menu, and any more files in the chain will not be printed.

- 6) Note that the chain will be broken and the printing stopped if the next file in the chain is not found or if an I/O error is encountered.

C CHAIN PRINTING -- DISK & CASSETTE

There are a few things to be a little wary of when chain printing on either disk or cassette.

- 1) When you are saving files that will be chain printed, you can actually break them anywhere and they will print cleanly, but it is strongly recommended that you end and begin files (for chain printing) at paragraph boundaries.

This is really important only if you are right justifying the text. Telewriter-128 will not justify the last line in the text buffer. This means that, if the next file simply began with the next line in the same paragraph, then, on printout, you'd have a paragraph with an unjustified line in the middle.

- 2) If you are using headers, the header definition line must appear at the top of each file in the chain, and it must appear at the top of the first file printed. After the first file, all header definitions in the chain must use immediate headers (^H+) unless you explicitly don't want a header printed on the first page of this file.
- 3) All embedded control codes used must be re-defined at the top of each file in the chain. Otherwise, the embedded control characters won't be defined in that file, and if used there, they will not work when that file is printed.

VI. OPTIONS MENU

The Telewriter-128 Options Menu allows you to customize and fine tune many aspects of the program to suit your hardware and your personal preferences. With the Options menu, you can control things like the screen and character color, key repeat rates, the number of lines on screen, even the appearance of embedded control characters.

To get to the Options Menu, hit O in the Main Menu. You can also get to the Options menu instantly by hitting Shift-F1 in the Editor or in the Main or Format menu.

1 CHARACTER COLOR

Hitting C in the Options menu will change the color of the characters on screen by adding 1 to the Character Color Number each time you hit it. When the value gets to 63, it cycles back to 0. Hitting the Up Arrow will also increase the Character Color number by 1. Hitting Down Arrow will decrease the number by one.

2 BACKGROUND COLOR

Hitting B changes the Background color of the screen by adding 1 to the Background color number each time you hit it. When it gets to 63, it will start back at 0 on the next keypress. Hitting Left Arrow will also increase the Background color number by 1. The Right Arrow key will decrease it by 1.

Use this command and the Character color command to experiment with the colors of the screen display until you come up with the combination you like.

If you are using a Monochrome monitor, you will only see a change every 16 numbers. These changes are, of course, not in color, but, in shades of green or amber.

3 MONOCHROME

Set Monochrome to ON if you're using a monochrome monitor or black and white TV, or if you just want to get rid of the color on your color monitor or TV.

Each time you hit M in the Options Menu, the value of Monochrome will switch to its opposite. If Monochrome is set to ON, then hitting M will set it to OFF, and vice versa.

LINES ON SCREEN

You have a choice of having a 24, 25, or 28 line screen display. A 28-line screen will show you 17% more text at one glance than a 24 line screen, but some monitors may not be able to handle it. The 25-line screen display provides more space between lines, which, for some, might give a clearer display.

Each time you hit L in the Options menu, the value of Lines on Screen will cycle through the values 24, 25, 28.

FIND IGNORES CASE

When the Find command (CTRL-F in the Editor) tries to find a given string in the text, there are 2 ways it can look. One is to make sure that uppercase letters match only uppercase characters, and lowercase matches only lowercase. This is called being "case-sensitive" (being sensitive to whether a character is upper case or lower case).

The other way, is to ignore case. Thus, if "Find Ignores Case" is set to ON, the search string "time" will match: time, Time, TIME, etc., and the string "TIME" will match the same set of "time"s.

If "Find Ignores Case" is set to OFF, then the word "time" will only match "time" and not "Time" or TIME. Thus, in this mode, Find would miss any instance of "time" that begins a sentence.

In general, you should leave "Find Ignores Case" set to ON. Hitting F in the Options menu, sets this value to its opposite. If it's ON when you hit F, it changes to OFF, and vice versa.

Setting "Find Ignores Case" to ON, also causes Global search and replace to capitalize the first letter in the replace string if it's capitalized in the string currently being replaced. That means if you're replacing all instances of the word "time" with the word "tide" and you hit an instance where "Time" begins a sentence, then it will be replaced with "Tide". The capitalization of the first letter is maintained.

AUTO FILE BACKUP (DISK ONLY)

In the course of working on one file for a long period of time, it's a good precaution to save it to disk every few minutes, or after every significant change or addition.

A further safeguard is to maintain the last saved version of a file as a "backup". Each time you save the current version. This way, if the current file on disk somehow gets corrupted or

destroyed, you can turn to the backup version which will lack only the very last update.

If Auto File Backup is set to ON in the Options menu, a backup file will automatically be made, everytime you save a given file to disk (after the very first save). If it's set to OFF, no backup file will be made. Hitting A in the Options menu switches Auto file backup between the 2 states, ON and OFF.

If you have a lot of disk space, or you're working on small files, you might want to leave Auto File Backup ON most of the time, just to have the automatic protection. However, once you start running out of disk space, the backup file starts to get in the way. At this point, simply delete it and set Auto File Backup to OFF.

The name of the backup file on disk is always TW*BACK.TXT and it always contains the previous version of the file you've just saved (if Auto File Backup was set to ON when you saved it and if the file already existed on disk).

Here is how the backup works. Say you are saving a file called STORY3. If Auto backup is ON, the program will first look for a file called STORY3 on disk. If it finds one, it deletes any file on disk called TW*BACK/TXT and renames STORY3 to be TW*BACK/TXT. Then it saves the new STORY3. So TW*BACK is really just STORY3, the last time you saved it.

If it doesn't find STORY3, it will still delete TW*BACK, if such a file exists, and then save your current text buffer as STORY3. Thus, when you look at the disk, there will be no backup copy at all, because this is the first time you saved STORY3 to that disk.

7 VPRINT DELAY

If you hold the SHIFT key down during a Print preview, the scrolling speed of the text will slow considerably. Vprint delay in the Options menu determines what this slower speed will be.

To set Vprint delay, hit V and type the desired value into the dialogue box. The higher the number, the slower the text prints to the screen. The lower it is, the faster it prints. Remember that this is not the rate of the print preview itself, but the slower rate caused by holding the Shift key down.

8 REDESIGN CONTROL CHARACTERS: FOREIGN AND MATH SYMBOLS

Hitting R in the Options Menu, brings up a whole new menu (a "sub-menu"). This menu allows you to specify what each embedded control character will look like on screen. Instead of the reverse video numbers 1-9, normally used, the control character can be made into any character (including math and foreign symbols) that the Color Computer 3 can display.

As an example of how you'd use this feature, let's assume you want to use the word cliché in your document and that your printer can print the é character. (Some printers will be able to do this, others, not. Consult your printer manual to see what yours can do in this regard).

In order to print a special character like é, the printer will need to be sent a control code representing that character. The Toshiba 321SL, for example, will print an é if you send it a (decimal) 187. To do that, you simply define a "printing" embedded control code:

```
^DP1 187
```

and then, whenever you want to use é in the text, just hit CTRL-1. This, of course, gives you a reverse video 1 on screen so that the word that will print on paper as "cliché", will actually appear on screen as "clich1". It gets the job done, but it would be nice to see it on screen exactly as it'll print.

And that's where the "Redesign" sub-menu comes in. It allows you to make the 1 look like an é on screen. So, go into the Options Menu and hit R to get the "Redesign control characters" sub-menu. You'll see a 3-column display. The first column gives the actual control character number (1-9), the second column shows exactly how that control character will appear on the screen, and the 3rd column is the ASCII value of the on-screen character.

By changing the value in the 3rd column, you can change the on-screen appearance of the control character whose number (1-9), appears in the 1st column.

So let's change the appearance of the 1st control code (the one defined by ^DP1, which normally appears on screen as 1). The prompt at the bottom of the screen asks "Which control code". Hit 1, now, to change the 1st control character.

When you do this, a new prompt appears, asking you for the "New value for CTRL-1". To get the number you need here, first consult the ASCII hi-res text screen table in the back of the Color Computer 3 manual. This table shows you all the normal and special characters that the Color Computer can display on screen, and it tells you the number that will display this character.

The table lists the é character and says that the ASCII code to generate it is 130. For the special characters with ASCII values greater than 128, you need to subtract 128 to get the number that the "Redesign" menu wants. Subtracting 128 from 130 leaves 2.

So type in 2 in response to the "New value..." prompt, and hit ENTER. Look at the 2nd column of row 1, and you'll see that the reverse video 1, formerly there, has changed to é. Return to the Editor and hit CTRL-1 and é appears on-screen at the Cursor.

Remember now, that this é is still really the control character 1 in disguise, and that, when encountered during printout, it still looks at the ^D1 definition line to see what code it must send. So from here on, you just type: "clich" CTRL-1, and you'll see the word "cliché" on screen as well as in your printed document.

When you're all done working in this sub-menu, hit the red BREAK/ESC key to return to the Options Menu, or hit F1 or E to return to the Editor, or F2 to go to the Main Menu.

9 KEY-RATE MENU

Hitting K in the Options menu will bring up the Key-rate sub-menu. There are 7 settings in this menu, 6 of which deal with the keyboard Auto repeat speed and delay.

For the purposes of these settings, the keys are considered in 2 groups: 1) The alphabetic keys, including numbers, symbols and the SPACEBAR, and 2) The 4 cursor keys plus the BREAK (delete) and CTRL-BREAK (back-delete) keys.

There are 2 numbers to set for each group: the key repeat delay and the key repeat speed. The delay determines how long the key has to be held down before it begins to repeat, and the repeat speed determines how fast the keys will repeat.

The lower the repeat speed number, the faster the keys repeat when held down, with 0 (zero) being the fastest speed. The larger the delay number, the longer you have to hold the key down before it repeats. If, however, the delay is set to 0, then the keys in that group will not repeat at all.

Since Telewriter-128 features a dual-speed Cursor, there are 2 pairs of speed and delay values for the Cursor and delete keys: one pair for the key alone, another pair for a Cursor (or delete) key plus the SHIFT key. Telewriter is initially set so that a holding down the SHIFT key provides a faster repeat speed and a shorter delay than the Un-SHIFTed Cursor/BREAK keys. Though, the Key rate menu allows you to set these to whatever you want, generally the SHIFTed keys should be the faster ones.

Setting values in the Key-rate menu works differently from the other menus: numbers, not letters, are used to specify the parameter to be set.

So go to the Key-rate menu and hit 1. A dialogue box will appear with the current key repeat delay for the "alpha"(betic) keys. To change the value, type in the new number and hit ENTER. When you're returned to the Key-rate menu, hit 2 and type in the repeat Speed for the "alpha" keys. You can set the other Delay and repeat Speeds in the same fashion.

These numbers are mainly a matter of personal taste. Experiment with them as you use the program, until you find the ones you prefer.

Be careful not to set delay values too low for the alpha keys or the unSHIFTed cursor/delete keys. This can result in extra characters or unexpected deletions in the text if an alphabetic or delete key is held down a split second too long when you only want to hit it once.

The 7th value you can set in the Key rate menu is "Keyclick tone". If you have the keyclick feature turned on, you might want to adjust this value to provide a more audible or pleasing sound when you hit a key. Simply hit 7 in the Key-rate menu and type in a new value. Then hit some keys and see what it sounds like. Experiment with different values til you get what you want.

10 SAVE/INSTALL: OPTIONS FILE

The Options File saves ALL the values you've set in the Options and Format menus as well as all the Macros you've defined (see Chapter 7, below), so you don't have to reset them every time you run Telewriter. Though they accomplish the same ends in both systems, the disk and cassette Options files are handled differently. Section A, below, describes the operation for Disk users, and section B describes the Cassette Options file. Cassette users should still read section A on the Disk Option file, in order to understand its basic functioning.

A DISK OPTIONS FILE

Each time you run Telewriter-128, the Options File is automatically loaded and used to set all the values in the Format and Options menus and to set up pre-defined Macros.

Any time you make changes to the Options or Format Menu settings (or to the Macros) and you'd like to keep these changes permanently, go into the Options Menu and hit S (the "Save Options to disk" command). When the dialogue box appears asking you for a drive number, hit 0,1,2, or 3, depending on which drive you want the Options file to go to.

Then, when you hit ENTER, all current Options, Format menu settings and Macros will be Saved to disk in a file called TW*DEFS.BIN. Previous settings will be overwritten.

The next time you run Telewriter-128 from this disk, all the settings you have now, will be sitting there waiting for you when the program comes up. The settings have been automatically installed from that TW*DEFS.BIN file.

If you run Telewriter from another disk which gives you different settings, and you want these, simply place this disk in any drive and hit I in the Options menu. The "Install Options" command will go to the drive you specify in its dialogue box, find the TW*DEFS.BIN file there, and Install all the settings and Macros it contains. All current settings will be replaced by these new ones.

Most people, after an initial period of experimentation with different settings, will eventually find one set they prefer, then put this on their Telewriter-128 program disk, and rarely bother with the Options menu or the Options file again.

Other people may choose to keep separate program disks, each with a different Options file for different circumstances. One disk might have Format settings and Macros for personal letters, another might have different Format settings and Macros, for writing papers. Still another disk might have Options Menu screen settings for an RGB monitor, while another might have settings for a Monochrome monitor.

You can also use the Change filename command in the Main menu to change the name of the TW*DEFS.BIN file to some descriptive name and keep a number of them on one disk. Just remember, that in order to Install one (or have it automatically installed at run time) it must be renamed back to TW*DEFS.BIN.

B CASSETTE OPTION FILE

Though the Options file has the same effect in a cassette system, the way it is dealt with is a little different. Automatically loading the Options file when you initially run Telewriter is not really viable on cassette. Instead, you must go to an Options file you have stored on tape somewhere, and use the Install command in the Options menu to load it.

In terms of Saving Options and Installing Options from the Options menu, you want to deal with these cassette Option files pretty much the way you deal with regular text files. That is:

Once you've used Telewriter-128 a bit and you have a set of Options, Format settings and Macros that you want to use all the time, simply set these up in the program, go to a blank place on a data tape, and press the Play and Record buttons on the recorder. As soon as you hit S in the Options menu, the tape will start and the Options file will be saved. If you make further changes now or at a later date, you can Save a new Options file at a later place on the same tape or on another tape. You might want to put it on its own tape or just Save it on a tape with your other text files.

On tape, the Options file is named TW*DEFS, though you don't need to know this to Save it or Install it. You can, however, save a

number of different Options files, with different settings for different writing situations or different hardware. Since the file will always be called TW*DEFS on tape you will need to keep some descriptive information in your tape logs as to the nature of the Options etc. it contains.

To Install an Options file, when you first run the program or at any time in the midst of using the program, simply put the tape with your Options file into the recorder and position it to just a little before the start of the Options file. Go into the Options Menu and hit I. The tape will start, and will search until it finds the the first file named TW*DEFS, and then Install it.

The same procedures are used here in terms of I/O errors and aborting loads, as were described in the sections on Reading in and Saving cassette text files (Chapter III, section 3).

VII. MACROS

1 OVERVIEW

There are certain words and phrases which you use frequently in the course of writing, and it's a shame to have to type them over and over again every time.

Telewriter-128's Macro facility gives you 26 individual key commands, each of which can insert upto 127 characters into the text with a single keypress. Not only can you store frequently used terms or proper names, but also things like multi-line headings to use at the top of letters. You can even store whole sets of printer control code definitions or frequently used embedded format commands.

2 DEFINING MACROS

To define a Macro, start in the Telewriter Editor and hit CTRL-; (CTRL-semi-colon). The "Macro definition screen" will appear, with a list of the currently defined Macro keys at the top, and a prompt to "press key you wish to define or hit ENTER to view current macros".

So let's say you're writing a Telewriter-128 manual and you're gonna' be using the word Telewriter-128 a lot. It would be nice not to have to type it in everytime, so let's define a Macro to do it.

The macro key can be any alphabetic key from A to Z (no numbers or symbols). So hit T (for Telewriter-128) in the Macro definition screen. Immediately, a new prompt appears on the screen, showing you the current definition of that key, if any, and asking for a new one.

Now, simply type in the word or phrase you want that key to represent. In this case, type in "Telewriter-128", and hit ENTER. The Macro for T is now set and you're returned to the Editor. Cursor to some open space and hit ALT-T (hold down the ALT key and hit T). The word Telewriter-128 will instantly write out at the Cursor.

Hit CTRL-; now, to return to the Macro Screen, and then hit T. The "current definition" is displayed -- in this case "Telewriter-128" -- and then the prompt to "Enter new definition". Whatever you type in now will become the new definition for ALT-T, wiping out Telewriter-128. But, if you want to keep the ALT-T combination for Telewriter-128, simply hit the BREAK key. You'll be returned cleanly to the Editor without effecting the current definition of ALT-T. Note, however, that hitting ENTER at this point would also return you to the Editor, but the current definition of ALT-T would be replaced with nothing.

3 SPECIAL CHARACTERS IN MACRO DEFINITIONS

A powerful feature of Telewriter-128 Macros is their ability to include many of Telewriter's special characters. The Caret (^), all the embedded control characters (CTRL-1 - CTRL-9), and the Carriage Return character (normally invisible) can all be included in a Macro definition.

When you want the CR character to appear in a Macro definition, hit CTRL-ENTER. A reverse video Left Arrow will appear, representing the Carriage Return character. Though this Macro may be only a single line in the Macro definition screen, when it's actually invoked in the Editor with the proper ALT-key combination, the Carriage Return will cause it to print on screen (and in the text) as 2 lines. Thus, a Macro can generate many lines of text on the screen, even though its definition is just a line or two long. This is useful, for example, for 3 or 4 line letter headings.

To put the Caret character in a Macro definition, simply hit CTRL-. (CTRL-period). This will appear as a Caret (^) in the Macro definition, exactly as it does in the Editor. This allows you to insert whole sets of Control character definition lines or Embedded format commands with a single Macro key. For example, a single keypress could instantly insert the following sequence of control code definitions at the top of your text, whenever you start a new document.

```
^t toshiba codes
^d1 27 81
^d2 27 82
^d3 27 73
^d4 27 74
^d5 27 42 2
^d6 27 42 0
^d7 27 18
^d8 27 20
^dp9 94
^M9 C63 S1 U1 B5
```

To define a Macro to do this, you simply go into the Macro definition screen and type it in exactly as you would in the

Editor -- the only difference is that where you would normally hit ENTER to go to a new line, hit CTRL-ENTER to put the Carriage Return character into the Macro line. When you execute the Macro in the Editor, the Carriage Return character will give you the separate lines you want, as shown in the example above.

Similarly, to put any or all of the 9 embedded control characters in the Macro definition, just hit the normal Editor key combination for that character (CTRL-1, CTRL-2, etc.). The character will appear in the Macro definition line exactly as it does on screen.

4 SAVING THE DEFINITIONS

In a short amount of time, you can develop a large set of Macros and you certainly don't want to type them in every time you run Telewriter. So, like the Options and Format menu settings, all the Macros you define are saved in the Options file (TW*DEFS.BIN) everytime you "Save Options to Disk (or cassette)" from the Options menu.

So, whenever you define a new Macro that you want to keep around for next time, go to the Options menu and hit S, and save the Options file to disk (or cassette). Similarly, make sure you boot up with or Install this Options file when you want to use the particular set of Macros.

5 VIEWING AND EDITING CURRENT MACROS

Everytime you hit CTRL-; and go to the Macro definition screen, the top line tells you which keys have already been defined. To see what these definitions are, hit the ENTER key. The line "Current macro definitions" will appear, and, below that, the definition for the (alphabetically) first Macro key that's been previously defined.

Hit ENTER again, and the (alphabetically) next Macro will be written out on the next few lines. Keep hitting ENTER and it will display each key and its associated Macro definition, in alphabetic sequence.

To stop viewing these at any point, just hit the BREAK key, and you will be returned to the first prompt, asking you to give a key to be defined. At this point, either hit a key from A-Z to define a new one, or hit BREAK to get back to the Editor. Hitting ENTER here will start listing the Macro definitions all over again.

Of course, you can view the definition of an individual key by just hitting that key when the prompt asks for a key to define.

You can edit the Macro line as you type it in, by using the Left Arrow key to delete the last character and back up the Cursor. If you have a change to make in a short Macro, it's usually no big deal to type all or part of it over again.

However, if you have a long or complex macro, and need to make a change in it, you can actually use the Telewriter Editor to do this. Let's use a simple example to stand for the complex example: changing the ALT-T Macro definition from Telewriter-128 to Telewriter-1024, without retyping.

First, go into the Editor, to a blank line, and hit ALT-T. Of course it writes out "Telewriter-128". Use the Editor, now, to change this to Telewriter-1024, then surround the new word with Begin and End markers, just as you would for a block Copy.

Now hit CTRL-; to go into the Macro definition screen. Hit T to define the T key, and the current definition: "Telewriter-128" will be written out, followed by the prompt asking for a new definition. Now, simply hit CTRL-C, exactly as you would in the Editor to do a block Copy. "Telewriter-1024" will be written into the Macro definition, and, if you now hit ENTER, that becomes the new definition.

Of course, it'll take a much longer and more complex definition (like the sequence of printer control lines shown above) to really illustrate the value of this capability.

Note that block Copying Embedded control characters and invisible CRs from the Telewriter Editor into Macro definitions, will work exactly as if you'd typed them into the Macro definition line.