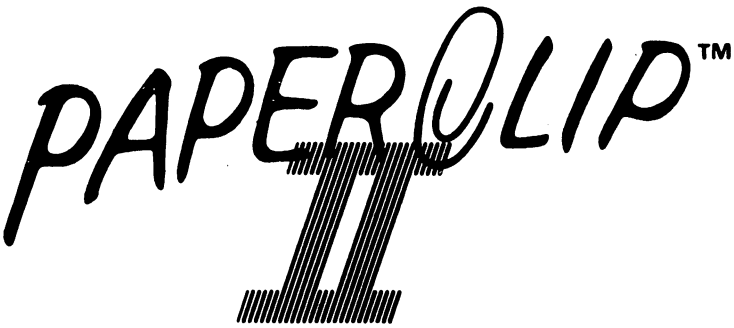
PAPERCLIP™

PAPERCLIP II for the 128



Professional Word Processor
for the Commodore 128

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It's an old adage in the computer industry that no piece of software is ever really finished. PaperClip II is no exception — we are continually improving and updating it. Thus you may find loose sheets inserted into the manual, or a 'read.me' file on your program disk. These contain information on improvements made since this manual went to press.

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September, 1986

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INTRODUCTION

...ON READING THIS MANUAL!

Welcome to PaperClip II — The Manual. This part of the PaperClip II package has been designed as a Reference for users who want to know more about PaperClip II and its many functions and capabilities. It is not a step-by-step course on how to use PaperClip II. If you wish to take a few lessons on PaperClip II, first we suggest that you close this book and open **Tutorial.**

If you have read and worked through the Tutorial and/or Crash Course and are thirsty for more information on PaperClip II, or just need to look something up, then you have opened the right book. Read pages 3 to 5, if all you need is a general overview of PaperClip II; use the Contents and Index pages to find the facts you need, or just read the whole manual.

Then, put both books down somewhere handy, because you'll be referring to them often — especially this one — and use PaperClip II!

UNPACKING PaperClip II

In addition to this manual, your PaperClip II package should contain the following:

- PaperClip II Tutorial Guide
- PaperClip II program diskette
- PaperClip II key (a small plastic cube)
- PaperClip II warranty and registration card

To use PaperClip II you will need:

- Commodore 128 computer
- Commodore 1541 or 1571 disk drive, or equivalent
- Commodore 1902 or 1700 series video monitor, or equivalent
- Printer (optional)
- Printer interface (if your printer is not plug compatible with Commodore 128)
- at least 2 blank data diskettes

For more information on printers and interfaces, see Appendix D.

WHAT PaperClip II CAN DO

Word-processing systems can be divided into two categories:

WYSIWYG (What You See Is What You Get)
— which format your text on the screen as you type, and

Post-Formatting word-processors
— which format your text during printing.

PaperClip II is a post-formatting word-processor. This means that you include special formatting instructions in your text that tell PaperClip II exactly how you want your document to look when printed. The advantages of post-formatting include enormous flexibility and speed — you can concentrate on writing, composing and editing — then turn your attention to formatting afterwards, rather than being distracted by minor details while you're composing.

SCREEN DISPLAY

PaperClip II can use the full capability of either 40- or 80-column displays. Text, border, and background can be set to any of 16 different colors. Both B&W and color screens can be used effectively.

EDITING

PaperClip II provides fast, easy, full screen editing. Enter and edit text with smooth 4-way cursor motion, insert, delete and backspace — plus insert mode and fast, accurate, word-wrap. Create single documents up to 250 columns wide or 999 lines deep, with lightning fast scrolling.

Screen-up, screen-down, go to top, go to end — provide effortless editing and review. Handle tables easily — set, move, delete, erase, shift, and sort columns. Column arithmetic and numeric tabs make numeric charts and tables painless.

You can set, move, copy, and delete phrases and blocks of text. Change the letters in a phrase to upper or lower case instantly. Or take a range of text and save it to disk for later use. Create 'instant phrases' — single keystrokes can enter entire phrases. Set numeric and regular tabs — clear all tabs or one at a time. Set underlining, boldface, italics, superscript and subscript characters and phrases.

CHARACTER SETS

PaperClip II can use modified or custom character sets.
French and Standard come with PaperClip II.

COLUMNS
Manipulate columns — set, move, delete, and copy columns of numbers or words — sort alphabetically

SEARCHES
Find words or phrases instantly and, if you like, replace them automatically with something else. Search using 'wild cards' that match many similar phrases.

PITCH
Depending on your printer you can vary printing pitch — condensed, expanded, 10, 12, and 15 pitch — change the number of lines printed per inch too.

MARGINS, PAGE LENGTH, AND PAGING
You can set and vary left, right, top, and bottom margins. There is a margin release command as well as automatic indentation — to the left or right. Justify text, making both right and left margins even — or right-align text, making the left side ragged.

Specify any size paper (up to 250 columns by 250 lines), and the number of lines printable on each page. You can start a new page at a specific place, or start a new page only if there are not enough lines left on the current one.

HEADERS AND FOOTERS
Header and footer margins can be set separately and, if you wish, 'locked' so they won't follow text margin changes. Vary the pitch in headers and footers separately from text. Put an automatic page number in a header or footer — set it to any starting value.

LINKING FILES
To print very long documents, you can link files with a command that names the next file, or be prompted to directly enter the next filename. Other commands will print text directly from another file without losing place in the present document.

PRINTING
You can preview on-screen, or print on your printer — switch back and forth instantly. Pause between pages, print continuously, or change while printing. You can stop printing (to correct a mistake, etc), then restart printing at the top of that page.

Video output — 40, 80, 160 and 320-columns wide. Change printer device number, print directly to parallel or RS232 printers.

LOADING & SAVING TEXT

Save documents to disk, load them from disk, and merge text from other disk files. Copy linked global files in proper order automatically. You can load and save text as sequential data files for compatibility with database programs and others — Commodore and ASCII formats.

DISK HANDLING

Disk housekeeping is easy with PaperClip II — scratch files, format new disks, validate old disks, rename files, check disk drive errors, set the disk device numbers PaperClip II will use.

SPELLPACK SPELLING CHECKER

Use PaperClip II's fast spelling checker to scan your text for typos and misspellings. Correct errors, add new words to the dictionary, and skip over correctly spelled names, etc. Scans the entire document with one command.

TABLE OF CONTENTS

Create a table of contents or index list with correct page numbers automatically, then edit for professional results.

FORM LETTERS (MAIL MERGE)

Take a list of words, numbers, or phrases created by PaperClip II, a database, mailing list, or other program — then use variable blocks to create accurate personalized form letters.

TELECOMMUNICATIONS

Using a modem and telephone line with PaperClip II, you can telecommunicate with other computers, opening up whole new sources of information — electronic mail, news, referencing, electronic shopping, local bulletin boards and international services, stock market quotes— quickly and easily.

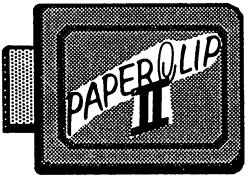
GETTING STARTED

The Commodore 128 system consists of at least three components — keyboard (computer), monitor, and disk drive. You will probably (although not necessarily) also have a printer. Each of these components must be turned on separately.

Hook everything together using the manuals that came with the equipment as a guide. Then turn on the monitor. If you are using a multi-mode monitor such as the Commodore 1902, set the video mode switch to 'RGB'. There should be a light somewhere on the front to show you the power is turned on.

Check that there's no diskette in the disk drive unit — if there is remove it before turning on the power. Now, after you've turned the disk drive on, take your PaperClip II program disk out of its jacket and gently insert it, PaperClip II side up (the back contains the SpellPack dictionary), into the drive and close the door.

Get your PaperClip II key — the small plastic cube you found in the PaperClip II box when you opened it.



Before you turn on the computer, gently but firmly insert the key into **Control Port 2** on the right hand side of your computer.

If you are using a composite 40 column monitor such as the Commodore 1701, 1702, or 1703, make sure the 40/80 DISPLAY key is up. If you are using an RGB-type monitor such as the Commodore 1902, make sure the 40/80 DISPLAY key is down.

Now turn the computer on.
The video screen displays the message: **BOOTING PaperClip II System Disk...** After a while, about 30-90 seconds, you'll see a brief Copyright message, then a white bar across the top of the screen that reads **PaperClip II**. You're ready to start using PaperClip II.

Not working? Make sure the program disk is correctly inserted in the disk drive, the PaperClip II 'key' is properly inserted, and that everything is hooked up and turned on correctly. Check the manuals that came with the computer and disk drive. If you still can't get it to work, contact your dealer.

DUPLICATING THE PaperClip II DISKETTE

Once you have everything working, before you start really using PaperClip II, make a backup copy of the PaperClip II program diskette using the instructions below, and store the original diskette in a safe place. You should also back up all your important data disks often. Remember, BOTH sides of the PaperClip II distribution disk need to be duplicated. Copy each side onto a separate disk — it's not a good practice to turn a diskette over and use the reverse side.

Make sure the disk drive is empty, then turn the computer on. If it's already on, turn it off and on again to reset it.

Put the PaperClip II diskette in the disk drive, type

RUN "diskcopy" RETURN

The program will prompt you for source (the disk you want to duplicate) and destination (the disk you want to copy onto) disks. In this case, the source will be your original PaperClip II diskette, and the destination is a new, blank diskette. Follow the on-screen instructions for exchanging disks, etc. Remember to duplicate both sides of the original, each to a separate new disk. When you're finished, re-load PaperClip II by putting your new copy of the PaperClip II disk in the drive, then restarting the computer.

Load "Backup 64K", 8
Run

TAKING CARE OF YOUR DATA

Floppy disks — the medium on which you will be storing text — must be handled with care. They are actually quite tough, but if you abuse them too much, or too often, they will not be reliable for very long.

Here are some guidelines:

- Keep up-to-date backup copies of all your data and program disks.
- Keep each disk in its storage envelope.
- Never remove a disk from the drive while the drive activity light is on.
- Never leave a disk in the drive when turning it on or off.
- Never touch the disk surface: handle only by the protective jacket.
- Don't bend or handle disks roughly.
- Don't leave disks on top of the monitor or disk drive.

  Fill out disk labels using a felt-tip pen BEFORE attaching them. Never write on the disk jacket or label with a lead pencil or ball-point pen.
- Keep disks away from magnetic fields, such as those generated by telephone bells.
- Don't expose disks to excessive heat or direct sunlight.
- Anytime you invest a significant amount of time and energy in the data stored on a diskette, **duplicate it!**
- Save early, and save often.

REFERENCE

SCREEN DISPLAY

MENUS

PaperClip II uses several menus to adjust, set, and control many functions. A menu is displayed by pressing the appropriate key. Once visible, it can be removed by pressing either the same key used to invoke it, [ESC] or **space bar.**

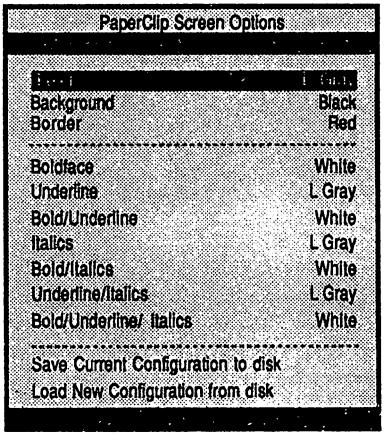
A menu consists of a list of options surrounded by a thick border. Each entry is named on the left side, and the current setting is shown to the right. A highlight bar will appear on one of the menu entries. This bar can be moved up and down with the cursor keys [↑] and [↓]

Once the highlighting bar has been moved to the desired entry, that function can be selected, or that setting can be altered. For menu entries which select from one of several pre-set settings, use + and - to cycle through those available. If the menu entry causes some action, pressing [RETURN] will usually initiate that function.

SCREEN OPTIONS MENU

[SHIFT] [F2] displays the **Screen Options** menu

The **Screen Options** menu lets you change the screen color of text, background, and border; and the colors of various printing options (such as underline or boldface) displayed during video output.



COLOR

Cycle through the 16 available colors in each using + and - PaperClip II will not let you select the same color for both background and text — if it did, you wouldn't be able to see what you were doing.

You may select the colors displayed during video preview. While this is really up to personal taste, we find that selecting light grey for regular text, and white for boldface is a good basic setting. Generally, use brighter colors for the boldface, and darker colors for italics, etc.

SAVING THE CURRENT PaperClip II CONFIGURATION

When PaperClip II starts up, it automatically checks the disk for a file called **pcii auto-config**. This file tells PaperClip II exactly how to set itself up, including the screen colors, printer file, and so on...

To save your configuration, press

SHIFT F2

to bring up the **Screen Options** menu. Move the highlight bar down to **Save Current Configuration to disk**, and press

RETURN

PaperClip II will ask

File name?

You may save any number of configurations. If you want the current configuration to be automatically re-instated on start-up, choose the **pcii auto-config** default by pressing

RETURN

The question **Drive number?** appears next. Enter the drive number where your start up copy of the PaperClip II disk is and press

RETURN

PaperClip II will save the current configuration. When altering a menu setting, make the necessary changes and then save the configuration to have the new settings reloaded the next time you start up.

LOADING A NEW PaperClip II CONFIGURATION

You may have several configuration files saved on disk. To use a specific configuration, load it in as described below...

Press

SHIFT F2

to bring up the **Screen Options** menu.

Move the highlight bar to **Load New Configuration from disk**, and press

RETURN

PaperClip II will ask

File name?

Enter the filename of the configuration you want to use. If you want to reload the same configuration automatically loaded by PaperClip II at start up, choose the name **pcii auto-config**, then press

RETURN

PaperClip II will load the specified configuration file. It will check for printer file or character set filenames; if present it will load them from disk as well. All parameters controlled by menus are saved in the configuration.

CHANGING LINE LENGTH

Since PaperClip II is a post-formatting word-processor, it is not necessary to have the editing width the same as the printing width. When working with tables and charts which will be printed wider than the screen width (40 or 80 characters), editing is much easier when the line length matches the printing width.

Remember, the line length during editing does not affect printing. Changing the line length simply makes editing wide charts and tables easier. The editing line length can be set from the screen width up to a maximum of 250.

For instance, if you want to create a chart which will be 120 characters wide when printed, you might set the line length to 125. Characters on the screen will appear the same size, but as the cursor moves toward the right edge the text will 'scroll' across the screen horizontally.

To change the line length, type

CONTROL SHIFT L RETURN

PaperClip II will ask

Line Length?

then

Are you sure?

Press

Y RETURN

to accept the new setting. Save your text before doing this. Changing the line length will erase all the text in memory.

The usual reason for extending the line length is to make the creation and editing of wide charts and tables easier. PaperClip II's column functions require that each line of text in a column end with a RETURN Since the line length has been extended, each line of text in the chart fits on one screen line, with a RETURN at the right.

Tabs are often used when entering tabular information. Tabs are set by their screen column position. Since the screen can be made very wide, you can use tabs over the full width of your chart.

When you save a text file, the line length setting is stored with it. If you save your text with a line length of 125, PaperClip II will adjust to that line length when the text file is loaded in.

You may need to change the editing line length of an existing text file. For instance, you may discover that you need to include several additional columns in a table you've been working on. Heres how to change the line length:

First, save the text on disk with

[CONTROL] S

Make sure you have saved the text. Then change the line length to the new size needed.

[CONTROL] [SHIFT] L [RETURN]

Finally, merge the text from disk into PaperClip II with the append function.

[CONTROL] A

PaperClip II will load the text in, fitting it into the current line length. Remember, make sure the text has been saved on disk, then set the new line length. Finally, bring the text in with the append function. This technique can be used to change the line length of both new and existing documents.

If you switch from using an 80-column monitor to a 40-column one, you will find that text saved while using the 80-column display will still have a line length of 80 when loaded while using the 40-column display. If you load text created with a 40-column line length while using an 80-column display, PaperClip II will automatically convert the text to a line length of 80.

MULTILINGUAL CHARACTERS

There are 21 keys and corresponding screen symbols which PaperClip II has defined as multilingual. When you press [ESC] followed by one of these multilingual keys, the special symbol assigned to that key will be displayed. The shape of the symbol that appears is defined by the **character set** PaperClip II is currently using. PaperClip II has the ability to load different character sets.

To enter a multilingual character into your text, press

[ESC]

followed by one of these keys...

1 2 3 4 5 6 7 8 9 0 + ↑ @ * : ; , ? / . =

PaperClip II will then display the symbol associated with that key.

When PaperClip II starts up, it will try to load the character set specified by the **pcii auto-config** file. If one of the files is missing, or there isn't a character set filename specified in the configuration, PaperClip II will use the Commodore 128's built-in character set. The symbols which correspond to the multilingual keys will then appear as small graphics shapes. Multilingual printing will still work properly, and the symbols will appear correctly when you load the correct character set.

The **french** character set, provided on the PaperClip II disk, is loaded automatically when PaperClip II is started (assuming that both the configuration file and the character set are on the disk). Another set can be selected later on, or the setting in the configuration file on disk can be changed.

Each multilingual character can be defined as any symbol you wish. You can define the on-screen shape by loading a character set, and control the printed form via the printer file. They are handled in a special way, with a separate section of the printer file describing how they are to be printed. This allows you the flexibility to use PaperClip in many multilingual situations.

See also Printing Multilingual Characters, under Output.

CHARACTER SETS

When PaperClip II starts up, it will try to load the character set specified by the **pcii auto-config** file. If it can't find the configuration file, or the character set is missing, or there isn't an alternate character set specified, PaperClip II will use the Commodore 128's built-in character set.

The PaperClip II diskette contains an alternate character set. The **french** character set is specified in the **pcii auto-config** file shipped with PaperClip II, as the alternate set to load at start up.

To load an alternate character set, press

SHIFT F4

to display the **File Options** menu

Move the highlight bar to **Character Set** and press

RETURN

Type the character set filename you want and press

RETURN

PaperClip II will load the specified character set from disk, and use it to display the text. If you have used any multilingual or special formatting characters (such as underline, boldface, superscript), these symbols will be displayed correctly.

CHARACTER SETS — SETTING THE START-UP DEFAULT

You can make an alternate character set the default on start up. The character set must be on the same disk you use to start up PaperClip II. Load the character set you want to make the default, then invoke the **Screen Options** menu by pressing

SHIFT F2

Move the highlight bar to **Save Current Configuration to Disk**, press

RETURN

PaperClip II will prompt with the filename **pcii auto-config** — this is the name of the configuration file PaperClip II looks for when it starts up. If you save a configuration with a different name, it won't be referred to automatically at start up. To save the current configuration, including the character set you have loaded, press

RETURN

Enter the drive number where your PaperClip II start up disk is, then press

RETURN

USING YOUR OWN CHARACTER SET

PaperClip II's multilingual characters are just a number of characters that are grafted on the the existing regular character set. It is possible to build your own character set using a special program called a '**Character Set Editor**'. Character set editing programs are available from many sources. Check with your local Commodore User's Group, or your PaperClip II dealer, for information on this type of program.

If you have a character set editor, and want to define your own multilingual characters for PaperClip II, you'll need to know the screen display codes for the multilingual keys.

The following table lists each of PaperClip II's multilingual keys, and its screen display code. When you type a multilingual key, PaperClip II places a specific number into the computer's screen memory. That number is the same value a BASIC program would 'poke' into screen memory to display that symbol. Changing the shape associated with a multilingual character's screen display code will change that character's appearance in PaperClip II.

Key	Screen Display Code
1	92
2	95
3	102
4	96
5	97
6	98
7	104
8	94
9	113
0	105
+	117
/	114
↑	93
@	115
*****	107
:	120
;	119
,	118
?	91
.	121
=	127

See also Printing Multilingual Characters, under Output.

BASIC EDITING

SPECIAL KEYS

[CONTROL] Pressed once, it switches to Control mode. Pressed again, it cancels Control mode.
If a command has been started, pressing [CONTROL] will cancel it.
In some cases [CONTROL] will act differently; those cases are noted where they occur.

[ESC] Pressed before entering an embedded formatting character, or a multilingual key, it tells PaperClip II to interpret the next keystroke differently. Pressing [ESC] or [CONTROL] while PaperClip II is waiting for the next key cancels it.

[RETURN] Indicates the end of a paragraph or command.

[ESC] [RETURN] Erases text to the right of the cursor during editing.

[NO SCROLL] Turns **Telecommunications** mode on & off.

[SHIFT] [F2] Displays the **Screen Options** menu.

[SHIFT] [F4] Displays the **File Options** menu.

[SHIFT] [F8] Cycles through the video output widths.

[SHIFT] [INST DEL] Inserts one space to the right of the cursor.

[INST DEL] Deletes the character to the left of the cursor.

[←] (Above [CONTROL]) Deletes the character to the right of the cursor.

When answering questions for a command on the prompt line...

RUN STOP — Screen reads 16 characters from the cursor position in text.

SHIFT + RUN STOP — Displays the response used previously.

SHIFT + CLR HOME — Erases the current response.

CLR HOME — Moves the cursor to the left end.

TAB — Re-displays default prompt

Moving around in text

↑ — Moves the cursor upward in text.

↓ — Moves the cursor downward in text.

← — Moves the cursor to the left in text.

→ — Moves the cursor to the right in text.

CRSR — Moves the cursor to the right in text.

SHIFT + CRSR — Moves the cursor to the left in text.

SHIFT + CRSR — Moves the cursor upward in text.

CRSR — Moves the cursor downward in text.

CONTROL + ↓ — Moves the cursor rapidly downward in text.

CONTROL + SHIFT + ↑ — Moves the cursor rapidly downward in text.

CONTROL + CRSR — Moves the cursor rapidly downward in text.

CONTROL + SHIFT + CRSR — Moves the cursor rapidly toward the top of text.

CONTROL + SHIFT + ↓ — Moves the cursor rapidly toward the top of text.

CONTROL + ↑ — Moves the cursor rapidly toward the top of text.

F1	Moves the cursor 22 lines down in text.
F3	Moves the cursor 22 lines up in text.
F7	Switches word wrap on & off.
CLR HOME	Moves the cursor to the top left of the screen. Pressed again it jumps to the top of text.
SHIFT RUN STOP	Moves the cursor to the bottom of text.
SHIFT RETURN	Steps to the beginning of the next line without altering text.
ESC RUN STOP	Sets a bookmark at the current line. Two bookmarks can be set.
RUN STOP	Immediately moves to one of the bookmarks. Press again to move to the alternate bookmark.

Tabs

SHIFT CLR HOME	Sets or releases a tab stop at the current column
CONTROL N	Sets or releases a numeric tab at the current column
CONTROL SHIFT CLR HOME	Clears all tab stops
TAB	Moves the cursor to the next tab stop
ESC TAB	Skips to the next numeric tab, by-passing regular tabs

REGULAR TABS

Tabs quickly move the cursor to specific column positions, often while entering information in the form of a chart or table. Tab positions are shown in the Tab Line, the thin line across the very top of the screen. A tab can be set in any column position.

PaperClip II provides two types of tabs. Tabs are marked by a reverse-field block in the tab line at the appropriate column. Numeric tabs are indicated by a highlighted **N**. It is possible to set both tab types at the same column position.

Regular tabs are similar to those of a typewriter. To set a regular tab, move the cursor to the column position you want to tab to later and press

SHIFT CLR HOME

A small block symbol will appear in the Tab Line at the top edge of the screen. This marks the tab position. Regular tabs can be set in any column position, as many tabs as the line length can be set.

To move the cursor to a tab stop, press

TAB

The cursor will jump to the next tab stop to the right. If there are no tabs set to the right, the cursor will move to the leftmost tab on the next line down. After moving the cursor to the tab position, PaperClip II will act as if you had used the cursor keys to move the cursor there.

To remove a single tab, move the cursor to the tab stop, using the TAB key or cursor keys, then press

SHIFT CLR HOME

The small block marker will disappear from the Tab Line.

To remove all the tab stops currently set, press

CONTROL SHIFT CLR HOME

This command will remove all tabs, both regular and numeric.

NUMERIC TABS

Numeric tabs are designed to make the entry of numbers into tables easier. Numeric tabs have two important differences from regular tabs. The first is called **numeric mode**. The second difference is that numeric tabs move after they have been set.

To set a numeric tab, position the cursor in the desired column, then press

CONTROL N

A highlighted **N** will appear in the Tab Line. PaperClip II will switch into numeric mode; the status line will show ***NMR***. PaperClip II also switches to numeric mode when the cursor is tabbed to a numeric tab stop.

To use a numeric tab, press

[TAB]

Depending on the characters you type next, PaperClip II will do one of two things. If you enter numeric characters, they will be inserted to the *left* of the cursor position, and the cursor will stay put. If you type a non-numeric character, PaperClip II will quit numeric mode and enter the text as normal. Numeric characters are specified as:

1 2 3 4 5 6 7 8 9 0 + - (, $ [SHIFT] **space bar**

Numbers entered into a chart using numeric tabs will be lined up with the decimal points in the column where the numeric tab is set.

In detail, here is how numeric tabs are used. When the cursor moves to a numeric tab PaperClip II switches to numeric mode. This is indicated by ***NMR*** on the Status Line. Any numeric characters typed will be pushed to the left of the cursor, lining up the decimal points on successive lines. When the decimal point (the period key) is pressed, PaperClip II recognizes it as non-numeric and cancels numeric mode. The decimal point is entered at the cursor position, and the cursor moves to the right. Further text is entered as usual, until you tab to a numeric tab stop again. Up to 16 numeric tabs can be set.

To remove a numeric tab, move the cursor to the column where the tab is set. It is recommended that you use the [TAB] key to do this. Then press

[SHIFT] N

The numeric tab at that position will be removed.

As an example, consider the following sequence.

Clear the text area, then move the cursor to column 10. Press

[CONTROL] N

A numeric tab will be set at column 10. Enter the number

123.

Notice that the ***NMR*** indicator disappeared when you pressed the . (period) key. Now enter the rest of the number

45 [RETURN]

Now we will enter the next number in the table. Press

[TAB] 67.890 [RETURN]

Notice how the two decimal points are in the same column position.

NUMERIC TABS — DYNAMIC POSITIONING

Numeric tabs take into account non-printing formatting symbols embedded in text: such as the begin underline symbol. If you have a begin underline symbol in column 1 and a regular tab in column 5, when you pressed [TAB] the cursor would move to column 5. Since there are only four real spaces to the left of the cursor, the text entered at that tab will print four spaces from the left margin. The text on the next line entered without the formatting symbol using the same tab stop will print five spaces from the margin. In general, embedded formatting symbols upset the printed alignment of tables created with regular tabs.

If you use a numeric tab instead, when you press [TAB] the cursor will jump to column 6 in the line with the begin underline symbol. Although this doesn't seem to line up properly on your screen, it will line up properly on your printer since the begin underline symbol doesn't print. No matter how many non-printing formatting symbols appear in the line, the numeric tab will always position itself so that the text will be properly tabbed on the printed page.

When setting numeric tabs, it is recommended that the cursor be positioned on a line free of formatting symbols. If these symbols do appear to the left of the cursor when a numeric tab is being set, it may not position itself in exactly the column you expect it to.

To move the cursor directly to the next numeric tab, ignoring any regular tabs, use

[ESC] [TAB]

CAPS LOCK

To enter text using capital letters only, use the [CAPS LOCK] key. Press

[CAPS LOCK]

The key will remain depressed. The letters ***LOK*** will appear on the Status Line. Any letter keys you type will be capitalized, while other characters, such as numbers and punctuation, will not.

To stop using Caps Lock, press

[CAPS LOCK]

again. The key will rise to the original position, and the ***LOK*** message will vanish from the status line.

INSERT MODE

[C:] turns Insert mode on and off.

When it starts up, PaperClip II is operating in **Insert** mode, and the indicator ***INS*** is displayed in the status line. Text typed in will be inserted, the old text being pushed to the right, ahead of the cursor.

Insert mode can be turned off. When you do this, new text entered will **overwrite** the existing text, replacing it.

To switch insert mode on and off, press

[C:]

INS will appear on the Status Line when insert mode is active.

If you press [RETURN] while the cursor is in the middle of a paragraph, and insert mode is active, PaperClip II will split the paragraph at the cursor position.

If [RETURN] is pressed while insert mode is off, the text to the right of the cursor will be erased, and the paragraph will be split at the cursor position.

INSERT SINGLE BLANK LINE

To insert a blank line at the cursor position, press

[CONTROL] +

PaperClip II will insert a blank line, and move the text under the cursor down one line. The blank line will have a **return** marker in column 1.

When you have inserted enough lines, press

CONTROL

INSERT MULTIPLE BLANK LINES

To insert a large or specific number of lines quickly, press

CONTROL |

PaperClip II will ask

Number of Lines to insert?

Enter the desired quantity, up to 255, then press

RETURN

The specified number of blank lines will be inserted above the cursor line, pushing the existing text down. The new lines will have **return** markers in column 1.

DELETE SINGLE LINES

To delete the line the cursor is currently resting on, press

CONTROL -

The line the cursor was on will be deleted, and the text below will move up to fill in.

When you are finished deleting lines, press

CONTROL

Be careful using this command, there is no **Are you sure?** guarding against accidental deletion.

ERASE TEXT

To erase all text below the cursor, including the line the cursor is resting on, press

CONTROL E RETURN

If you have not set a line range, PaperClip II will ask

Are you sure?

Press

Y [RETURN]

to erase all the text from the bottom up to and including the line the cursor was on.

If a line range is currently set, PaperClip II will ask

Erase range only?

Press

N [RETURN]

to erase all the text below the cursor. You can erase the range only, leaving the rest of text intact by answering

Y [RETURN]

The area occupied by the line range will be replaced with spaces – **return** markers will not be placed at the beginning of each line.

QUITTING PaperClip II

To stop using PaperClip II, quit the program, and discard all text in memory, press

[CONTROL] [SHIFT] X [RETURN]

PaperClip II will ask

Are you sure?

Answer

N

to continue using PaperClip II without altering text. Press

Y [RETURN]

to completely reset the Commodore 128 computer. PaperClip II will remove itself from memory, then initiate a normal reset, just as if you had turned the power on. **Make sure you've saved any text in memory before doing this.**

Note: Since the computer will act as if it was just turned on, it will restart the PaperClip II program if the disk is still in the disk drive. Take the PaperClip II disk out of the drive before quitting to avoid this.

LINE RANGES

A line range is defined as a set of adjacent lines of text. Once set, a line range can be moved, copied, deleted, erased, saved to disk, or appended into another text file.

To set a line range, move the cursor to the first line of text to be included in the range, then press

CONTROL R RETURN

The line the cursor is on will be highlighted. To further define the range, use the ↓ CRSR keys. If you go too far, use the ↑ and SHIFT CRSR keys.

Once you highlight the exact section you want as the line range, press

RETURN

PaperClip II will make note of exactly where the line range is. If you insert extra lines above, or edit the text, PaperClip II will keep track of it.

To quit without setting a line range, press

CONTROL

TRANSFERRING A LINE RANGE

Once set, you can move the line range to a new location with the transfer function. To transfer the line range, position the cursor on the line where the range is to be moved to, and press

CONTROL T RETURN

The line range will be inserted at the new location, pushing the text under the cursor (including the line the cursor was on) down, and the original line range will be removed.

Note: You cannot move a range into itself. Position the cursor at a new location outside of the set range.

COPYING A LINE RANGE

A copy of a line range can be made with the range copy function. Position the cursor on the line where the new copy is to be placed,

then press

CONTROL C

PaperClip II will ask

Number of copies?

You can make up to 255 copies of the original line range at a time. Enter the number of copies, then press

RETURN

For a single copy, just pressing RETURN will use the default of 1.

The specified number of copies will be inserted at the cursor location, pushing the text under the cursor (including the line the cursor was on) down. The original line range will not be altered or removed. Once set, the range can be copied again and again, until another range function is used.

Note: You cannot copy a range into itself. Position the cursor outside of the original range.

DELETING A LINE RANGE

To delete a line range, define it with

CONTROL R RETURN

then remove it with

CONTROL D RETURN

PaperClip II will ask

Are you sure?

To quit without deleting the range, press

N RETURN

or CONTROL

To delete the range, press

Y RETURN

The line range will be deleted.

ERASING A LINE RANGE

Set the line range with

CONTROL R RETURN

Then erase the line range, replacing it with blank lines, by pressing

CONTROL E RETURN

If PaperClip II asks

Are you sure?

then you did not set the line range properly. Press

N RETURN

or

CONTROL

to abort without erasing any text.

If PaperClip II asks

Erase range only?

press

Y RETURN

to erase the range.

To quit without erasing anything, press

CONTROL

If you want to erase all text below the cursor, press

N RETURN

PaperClip II will ignore the range setting, and erase the text below and including the line the cursor is on.

PHRASES

The phrase commands can be used to rearrange parts of a sentence, or transfer part or all of a sentence to another paragraph, or rearrange sentences within the same paragraph.

A phrase can be anything from a single character to an entire paragraph. Phrases cannot include **return** markers, and cannot span several paragraphs.

To use the phrase commands, you first defined the text you want as the phrase, then use one of the other phrase commands to work on that phrase.

SETTING A PHRASE

To define some text as a phrase, press

CONTROL P RETURN

The character the cursor was on will be highlighted. To further define the phrase, use the cursor keys ↓ → CRSR CRSR

Select all text up to the next period by pressing S (for sentence).

Press W (for word) to include the next word in the highlighting.

If you highlight too much, use ↑ ← SHIFT CRSR and SHIFT CRSR until the phrase is defined correctly.

To quit without defining a phrase, press

CONTROL

Once you have the phrase highlighted properly, press

RETURN

PaperClip II will remove the highlighting from the screen, but remembers exactly what you have defined as the phrase. If you insert or delete text around the phrase, PaperClip II will keep track of where the phrase is.

MOVING A PHRASE

To move a phrase from its original location, and insert it at a new one, use the move phrase command. Position the cursor at the spot where you want the first character of the moved phrase to appear, then press

CONTROL M RETURN

The phrase will be removed from its original location, and inserted at the cursor position. The character the cursor was on will be pushed to the right as the phrase is moved.

Note: You cannot move a phrase into itself. The cursor must not be positioned on any character of the set phrase when using the move phrase command.

COPYING A PHRASE

To insert a copy of the set phrase without removing the original, use the copy phrase command. Set the phrase to be duplicated, then position the cursor where the copy is to be inserted. Press

CONTROL K RETURN

The set phrase will be inserted at the current cursor position. The original set phrase will not be altered or deleted. Since the original phrase is still set, you can use this command to insert several copies of the phrase. For instance, you could set a phrase over a person's name, then any time you need to type that persons name, simply use the copy phrase command. PaperClip II will insert a copy of the name, just as if you had typed it in.

Note: You cannot copy a phrase into itself. The cursor must not be positioned on any character of the original phrase.

DELETING A PHRASE

To delete a phrase quickly, use the delete phrase command. This command, unlike other phrase functions, sets and deletes the phrase in one operation.

To delete a phrase, position the cursor over the first character of the phrase, then press

CONTROL Y

The character the cursor was on will be highlighted. To further define the phrase to be deleted, use the cursor keys ↓ → CRSR CRSR

Select all text up to the next period by pressing S (for sentence).

Press W (for word) to include the next word in the highlighting.

If you highlight too much, use the ↑ ← SHIFT CURSOR and SHIFT CURSOR keys until the phrase is defined exactly.

To quit without deleting the phrase, press

CONTROL

Once you have the phrase highlighted properly, press

RETURN

The phrase will be deleted immediately. Be careful with this command, there isn't an **Are you sure?** safeguard.

Note: This is the only phrase function which doesn't use CONTROL P to set the phrase first.

CHANGING CASE OF A PHRASE

Once a phrase has been defined with CONTROL P, you may set all the characters in the phrase to capitals or lowercase letters. To set all text in a phrase to one case, press

CONTROL SHIFT K

The prompt

Change to upper case?

will appear. If you want all the text to be converted to small letters, press

N RETURN

If the phrase is to be forced to all capital letters, press

Y RETURN

To quit without changing case, press

CONTROL

DEFINING AN INSTANT PHRASE

Often during the writing of a document, several phrases will recur many times. To save typing, PaperClip II allows up to 52 instant phrases to be defined. Each of these phrases is associated with a specific alphabetic key.

Instant phrases can be a maximum of one screen line long, and must end with a **return** marker. The line above must also end with a **return** marker.

To define an instant phrase, press

£

The ✓ symbol will appear. Now press the key you want to assign the phrase to. You may select from any of the 26 lowercase letter keys, or one of the 26 uppercase (shifted) letter keys. To assign a phrase to the T key, press

T=

Now type in the text you want to include in the instant phrase. Almost any text which can be typed is allowable. For instance, you could assign an instant phrase for a ✓ command, or a person's name. To assign the text

This is an instant phrase

to the T key, type

This is an instant phrase RETURN

The entire command should look like this...

✓t=This is an instant phrase←

In general, an instant phrase is defined by entering a ✓ followed by the key to be defined (shifted or un-shifted), the = key, then the actual text of the phrase followed by RETURN

Here are some more examples of instant phrases...

✓m=✓lm+10:rm-10←
✓Y=Yours truly,←
✓b=Beta Beta, Los Angeles, CA←

USING AN INSTANT PHRASE

Once you have defined an instant phrase, it can be entered into text easily. Position the cursor where you want the instant phrase to appear, then press

[ESC]

followed by one of the keys you have defined. If the instant phrase key is uppercase, press [SHIFT] while pressing the assigned key to invoke it.

The defined instant phrase will be entered into text just as if you had typed it. If ***INS*** is turned on, the text will be inserted. If insert mode is turned off, the instant phrase will over-type existing text to the right, just as if you had typed it in.

For instance, if you have an instant phrase defined as

↙d=Dear Sirs,↵

...then pressing

[ESC] D

would enter the text **Dear Sirs,** into text.

When you invoke a defined phrase, PaperClip II scans your text from line 1 down, looking for a phrase definition matching the key you pressed. If it finds no matches, PaperClip II will continue to flash the cursor without an error message.

Note: If the same instant phrase key has been defined several times, only the first occurrence will be used.

COLUMNS

PaperClip II provides a variety of powerful commands to assist in the creation of columns, charts and tables. The ability to manipulate the columns after they have been entered provides enormous flexibility.

When using PaperClip II's column functions, set the editing line length at least equal to the printed width of the table. If you are using a printed page wider than your screen width (80 columns), use the command CONTROL SHIFT L to match the editing line length to the printing width. Many of the column functions cannot operate properly if each printed line occupies more than one line on the screen.

SETTING A COLUMN

Before you can use any of the column editing functions, you must define the area to be included in the column. A column can be set over any rectangular area of text. Some column functions will require that each line included in the column end with a **return** marker. In any case, each line must have a **return** marker to prevent functions such as justification and word wrap from disturbing the printed alignment of columns.

Position the cursor in the upper left corner of the area to be included in the column. Now, set the column by pressing

CONTROL SHIFT C RETURN

The character the cursor is on will become highlighted. Use the ↓ CRSR → and CRSR keys to expand the highlighting. Notice that the column area is always square. **Return** markers can be included in the column. Pressing S will extend the highlighting to the rightmost edge of text. If you over extend the highlighting, use the ↑ SHIFT CRSR ← and SHIFT CRSR keys to reduce the size. Once the area is correctly highlighted, press

RETURN

PaperClip II will record the column definition and remove the highlighting. Once a column is set you should refrain from heavily editing the text around it until after you have completed the column operations you intend to do. PaperClip II can keep track of the column settings under most conditions, but some editing functions can cause the column definition to become incorrect.

MOVING A COLUMN

In a table consisting of several vertical columns, the move function can be used to rearrange the columns horizontally. Each line of the table must end with a **return** marker. Do not use move to transfer columns of text to another area of the text, only to move columns around within the table. Define the area to be moved with

CONTROL SHIFT C RETURN

Then position the cursor where the upper left corner of the column is to be moved. Press

CONTROL SHIFT M RETURN

The column will be inserted at the new location, and deleted from the original position. This function operates in a similar manner to the phrase move function – inserting, then deleting for each line in the column. For this reason it is important that there be **return** markers on each line, so that the inserting and deleting on one line will not disrupt the text in the lines below.

Generally, move is only used to rearrange columns horizontally in a table, where the new position is on the same line as the original.

For example, move could be used to change the table below so that the first names are in the second column, rather than the first.

John	**Doe**	**Anywhere**	←
Sam	**Spade**	**Nowhere**	←
Fred	**Ferdinand**	**Somewhere**	←

To exchange the first and last name columns, you would set the column over the first names, starting with the cursor on the **J** of John, extended to include the space character directly in front of the **F** in Ferdinand. After setting the column, place the cursor on the **A** in Anywhere, then invoke the move command. The column containing first names will be inserted after the last names column, and the original will be deleted. Now the table will look like this...

Doe	**John**	**Anywhere**	←
Spade	**Sam**	**Nowhere**	←
Ferdinand	**Fred**	**Somewhere**	←

SHIFTING A COLUMN

Unlike moving a column, shift can be used to manipulate any block of text. It is not necessary to have **return** markers at the end of each line. Shift closely corresponds to the 'cut and paste' method of laying out tables using a sharp knife and glue to rearrange columns. When you shift a column, it is placed at the new position on top of the text already there, replacing it. The original column is erased, being replaced with blanks.

Define the area to be shifted with

CONTROL SHIFT C RETURN

Position the cursor where the upper left corner of the column is to be placed, and press

CONTROL SHIFT S RETURN

The column will be placed in the new location, replacing the existing text. The original column will be filled with spaces.

A useful technique when editing tables is to create the table at the end of text, where there is plenty of room to maneuver. If you need to temporarily put a column aside, use shift to place it further down, below the end of text. Later on, you can pick it up and place it where it belongs. Once the table is completed, use the line range transfer function to place it in the correct position in your document.

REPEAT A COLUMN

Once you have set a column, you may place a duplicate of it anywhere in text. This can be very useful for filling in repetitive tables where many of the columns contain very similar information. Repeat operates much like shift, except that the original is not erased.

To duplicate a column, define the column with

CONTROL SHIFT C RETURN

Position the cursor where the upper left corner of the copy is to be placed, and press

CONTROL SHIFT R RETURN

The copy will be placed in the new location, replacing any existing text. The original column will be left unaltered.

Be sure to open up a space for the new column, since the copy will replace existing text with the copied column. If you place the repeated column over the original, the copy will over-write the original column.

INSERTING SPACE IN FRONT OF A COLUMN

When you are constructing a chart you may discover that you need to open up space within the chart for another column of data. If you have sufficient room to the right of the current chart, you can expand with the insert function.

Set a column over the text you want to push to the right, then press

CONTROL SHIFT |

PaperClip II will ask

Number of spaces to insert?

You may enter any number up to 255. Enter the amount of space you need, and press

RETURN

If you enter a number larger than the amount of free space to the right, each line will be pushed to the right edge. This can be a handy way to right align the text in a column.

You can then free space to the right by saving the document, extending the editing line length, then appending the text back in. PaperClip II will fit the text to the wider setting, and provide you with the room you need to expand your chart.

DELETING A COLUMN

You can remove a column, closing up the space it occupied. First define the area to be deleted with

CONTROL SHIFT C RETURN

Once set, delete the column with

CONTROL SHIFT D RETURN

The column will be deleted and any text to the right will be drawn back to fill in the space

This function requires that each line end with a **return** marker in order to operate correctly.

ERASING A COLUMN

If you want to replace a column with blank spaces, use the erase function. Erase simply replaces the text in the defined column with spaces.

Specify the area to be erased with

CONTROL SHIFT C RETURN

Once set, erase the column with

CONTROL SHIFT E RETURN

The defined column area will be replaced with space characters.

COLUMN ARITHMETIC

PaperClip II can perform addition and subtraction within columns. This can prove very useful when creating numeric tables which have numerous totals and subtotals.

Negative numbers can be indicated with either a minus sign or a left parenthesis anywhere in the number. PaperClip II will match the style of the result to that of the column. If the numbers in the column use commas and a leading dollar sign, so will the result. If the result is negative, PaperClip will use a minus sign or parentheses in the result, depending on which is used in the column.

Letters and other non-numeric characters found in a column will be ignored. For example, all of these have the same value:

123.45 **$123.45**
123.45% **12$3.45**
123a.45

A column that can be added by PaperClip II would be...

147.75
$100
(12.00)
-15
98,654

This would produce a result of **$98,874.75**

ADDING A COLUMN

To sum a vertical column of numbers, highlight the column in the usual way with

CONTROL SHIFT C RETURN

Be sure to include all parts of the number in the column, including dollar signs, and minus signs. If they are not included in the column, PaperClip II won't correctly calculate the result. Only include one vertical set of numbers in the column. PaperClip II cannot add several columns of numbers at once.

After the column has accurately defined the numbers to be added, place the cursor where the decimal point of the result is to be placed. Since most columns of numbers will be entered using numeric tabs, you can use the TAB key to correctly place the cursor where the decimal point should go. Make sure the result is not placed inside the column being added.

When you have positioned the cursor properly, press

CONTROL SHIFT =

PaperClip II will calculate the result, and display it on the tab line. If you do not want to enter the result into text, press

CONTROL

To have the result transferred into text, press

RETURN

The result will be placed with the decimal point under the cursor.

NUMERIC PRECISION

PaperClip II's math is accurate to 38 decimal digits. If a result requires more than 38 digits, it will cause the **Overflow error** message to appear. Unless you are totalling very long numbers, it is unlikely that you will encounter this error.

ADDING A ROW

PaperClip II can also be used to sum a horizontal row of numbers. Rather than adding the numbers in a vertical column, PaperClip II calculates the total of the numbers across the top row of the column.

Set the column to include all the numbers in the row you want to add. If you include more than one line in the column, each line in the column will be totalled, with the results for each placed in a column with the decimal points aligned under the cursor.

Position the cursor where the decimal point of the result is to be placed. Make sure the cursor is not placed inside the column being added.

When you have positioned the cursor properly, press

CONTROL SHIFT H

PaperClip II will calculate the result, and display it on the tab line. If you do not want to enter the result into text, press

CONTROL

To have the result transferred into text, press

RETURN

The result will be placed into text, with the decimal point at the cursor position. If several rows were included in the column, each row will have its result placed under the result from the row above. creating a column of results.

Note: Adding a row uses the same separators used for defining fields during sorting. If you are having problems with horizontal addition, check the field separators. If they are not set to the same character (usually spaces) used to separate the numbers in the row, PaperClip II will not be able to correctly determine where one number ends and the next begins.

Field separators are set by pressing,

CONTROL SHIFT Q

PaperClip II will ask

Field separators?

Since PaperClip II can add up to 16 numbers in each row, you must specify the 16 characters separating the fields (numbers). While you may only be adding one or two numbers in each row, it is recommended that all 16 separators be defined. The first character is

the separator between the first and second numbers, the next divides the second and third...

In most cases, the separators should be spaces. Press

space bar

16 times, then press

RETURN

SETTING THE DECIMAL POINT

Unless you change it, PaperClip II will calculate and display results with all significant digits. Normally the number of digits to the right of the decimal point corresponds with the values being added. The decimal point floats, positioning itself in the total automatically. This is the start up default setting.

You can specify how many digits are to be displayed to the right of the decimal point, and PaperClip II with either fill in with zeros or round off accordingly.

To set the number of decimal places displayed to a fixed value, press

CONTROL .

PaperClip II will ask

Number of decimal places?

Enter the number you want. To force the result to be displayed without any fractional part, enter **0**. You can set the number of decimal places displayed in the result from 0 to 38. If you set it to 255, PaperClip II will display results according to the decimal places of the numbers in the column added (floating).

Regardless of the precision specified for the result, all internal calculations are carried out using the full 38 digit accuracy. Only the result is trimmed to fit the number of decimal places specified.

SORTING A COLUMN

PaperClip II has the ability to sort the contents of a column, arranging the data in either ascending or descending order. This is one of the most powerful column functions. Up to 16 fields may be defined, with complete control of the sorting sequence.

Unlike the other column functions, sorting requires that the entire area to be sorted be included in the column definition. If there are three fields in each line of the column, but you only intend to sort by the first entry in each line, all three entries must be included in the column before sorting. If you omit part of the table from the column, PaperClip II will not transfer that text when re-arranging the data according to the sort.

For example, suppose you had the following table in your text...

Chuck Wagon←
Ben Dover←
Terry Dactyl←
Sal Amander←
Perry Scope←

To sort this, you would set the column so that it included the area from the **C** in Chuck down to the **P** in Perry, and over to the right far enough to include all the **return** markers. You may include all the space to the right of the **return** markers by pressing the **S** key while setting the column. This ensures that all the text to be sorted will be included in the column.

Once you have set the column, you can sort it. To start sorting the column, press

CONTROL SHIFT A RETURN

You will be asked a number of questions before the sort begins

Field number?

PaperClip II looks at each line of the column as a series of **fields** and **separators**.

In the example, the fields are two words, separated by a space. If we want to sort this list by last name, we would tell PaperClip II to sort by the **second** field. Starting from the left edge of the screen is field one.

To find field two, it continues right, looking for the first field separator. This is often the space character (space is the default separator). Everything up to the first separator is considered part of field one. After the first separator is the text for field two.

Using field numbers you control which fields PaperClip II will compare when performing the sort. If you sort a list of first and last names by field number 2, the column will be sorted by last names.

More?

Often, you will have to sort the list by more than one field. In a list of names, many could have the same last name. You need to sort by last name, and where they are the same, sort by first name as well. To sort by more than one field, answer

Y RETURN

to this question. PaperClip II will then ask you for the next field. Remember, these fields will only be sorted when all the fields compared prior are the same. Up to 16 fields may be defined for the sort.

When you have defined all the fields you want to sort by, press

N RETURN

Ascending order?

You can choose ascending or descending order for your sort. Ascending order will place the smaller values (a, b, c) at the top of the list. If you answer

N RETURN

the column will be sorted with the smallest values at the bottom.

Ignore leading spaces in fields?

When working with columns, the area between fields is often filled with spaces. If the sort separators are spaces, and the column to be sorted has spaces within the actual fields, PaperClip II won't know which spaces are separating actual fields, and which are the extra spaces between the fields.

PaperClip II can be instructed to skip over extra spaces by answering

Y RETURN

As PaperClip II scans across a row in the column, it will look for the next separator as usual. Once the next separator is found, any further spaces, up to the next non-space character, will be ignored. This allows you to use the space character as the field separator, even when the column data itself contains many extra spaces.

To acknowledge every space character when sorting, answer

N RETURN

PaperClip II will sort the column. Each item in the first field is compared with the corresponding field in the other rows of the column. If numeric fields are found, they will be compared as numeric values. A field containing **1.23** will be evaluated as being less than a field containing **12**. When fields containing numbers occur in the same column position as fields containing text, or both text and numbers, the numeric field is always considered to be smaller in value.

For example, the column...

5.23
fred
teen3
52

sorted into ascending order would result in

5.23
52
fred
teen3

Numeric comparisons are made only if the fields being compared both contain numeric data, fields containing text with the number will be compared as text strings, not numeric values.

FIELD SEPARATORS

In the first sorting example, the list was very simple, consisting of two words separated with a single space. For more complex tables, PaperClip II provides two functions to accurately define and set the sorting separators. Consider this table...

Basic Basic	**21.25**	**29.95←**
Computers	**5.25**	**9.95←**
The Joy of Word Processing	**18.50**	**24.95←**
Computers and You	**4.00**	**15.95←**

Since each line contains a varied number of words and spaces, we must use non-space separators. You can set specific characters as separators.

For this example, we will put specific separator characters in front of each column of numbers. Then, when we sort the column, PaperClip II

will be able to correctly determine the start and end of each field.

Move the cursor to the space just to the left of the **2** in 21.25. Press

CONTROL SHIFT C RETURN

Press

↓

until the highlight bar is even with the **4** in 4.00. Press

RETURN

You have set a column one character wide in front of the second field. This is where the first field separator should go.

Now we will fill this thin column with a special character. We can then use this special character as the field separator, instead of the space character. Press

CONTROL SHIFT W

PaperClip will ask

Character with which to fill column?

Press

SHIFT **space bar**

A thick underline symbol will appear. This is called a hard space character. It is described in more detail later. It prints like a regular space, but we can use it as a field separator. Press

RETURN

PaperClip II will fill the set column with the new character. Now we have a unique symbol defining the boundary between fields one and two.

SETTING THE FIELD SEPARATORS

Before sorting with the new separator, you must tell PaperClip II what the new character is. Press

CONTROL SHIFT Q

PaperClip II will ask

Field separators?

Since PaperClip II can sort up to 16 fields, you must specify the 16 separators. While you may only be using one or two for a given sort, it is recommended that all 16 be defined. The first character is the separator between fields one and two, the next divides fields two and three...

For this example, press

SHIFT **space bar**

16 times. This will fill the response line with hard space symbols. Press

RETURN

Now that the field separations are properly defined, the table can be sorted. Set a column over the table with

CONTROL SHIFT C RETURN

Be sure to include everything from the **B** in Basic Basic to the **C** in Computers And You and out beyond the **return** markers. Press

RETURN

Now sort the column. Press

CONTROL SHIFT A RETURN RETURN RETURN RETURN

The table will be sorted into ascending order by title. Since the end of field one is clearly marked, PaperClip II can correctly sort the two titles beginning with **Computers**.

SEARCHING TEXT

PaperClip II has the ability to scan text for specific phrases, or text strings. These search strings can be very accurately defined. You may need to check for a specific term, or a person's name, or find a paragraph containing a certain phrase. These tasks are handled with three commands – **Find**, **Hunt**, and **Search & Replace**.

FIND SEARCH STRING

To search text for a specific text string, use the command

CONTROL F

PaperClip II will ask

Search string?

Enter the text you wish to search for. The search string may be up to 22 characters long.

Once you have entered the search string, press

RETURN

Unless you specify otherwise, PaperClip II will not distinguish between upper and lower case. This allows you to find words which appear both in the middle of sentences and capitalized at the beginning. Searching for **the** will match **the**, **The**, **THE**...

PaperClip II will start from the cursor position, scanning downwards. It will continue until it finds a match or reaches the end of text. When a match is found, the cursor will be placed just after the matched string.

Note: PaperClip II searches forward from the current cursor position. To be sure of finding all occurrences of your search string, move the cursor to the top of text before starting the search.

When the end of text is reached, PaperClip II will check for a global link (**↙nx:**) command.

If there isn't one, PaperClip II will conclude the search and the message **Search ended** will appear on the tab line.

If it finds a link, it will ask

Fetch next file?

To continue searching in the next file, press

Y [RETURN]

Note: This will erase the document currently in memory.

To stop the search without loading the next file, press

N [RETURN]

or

[CONTROL]

SPECIAL SEARCH CHARACTERS

Several characters have special meanings when entered in a search string. These allow you to define the search accurately, or find many similar strings. Each special character is entered into the search string, either taking the place of another character, or modifying the meaning of the one following.

\ Produced by pressing [£]
Matches any character, sometimes called a 'wildcard' symbol
Searching for **t\e** will match **the**, **tbe**, **t4e**, ...

? Matches any alphabetic character
t?e will match **the**, **tbe**, but not **t7e**

[Matches strings only at the beginning of a word
The search string **the** would match **then** and **clothe**
[the would match **then** but not **clothe**

] Matches strings only at the end of a word
the] would match **clothe** but not **then**
To search for a complete word, bracket it with **[ ]**
[the] will only match **the**

' The character following must match exactly, including case
The ' (single quote) symbol only affects the following character
'the will match **the** but not **The**
To search for a special character, precede it with '
To find the string **ab?** you would specify **ab'?**

If you need to search for a formatting character such as **begin underline** or **end-italics**, press

ESC

just as you would to enter the same character into text. Then press the appropriate key for that symbol.

HUNTING FOR A SEARCH STRING

Once you have found the first occurrence of a string, you can continue the search without re-typing the search string. The hunt command will scan through text, starting with the cursor position. This can save a lot of effort, especially if you need to look for the same string in several documents. PaperClip II will start hunting from the character under the cursor to the bottom of text.

To hunt for the next occurrence of the search string, press

CONTROL H

PaperClip II will search from the cursor position downwards until it finds a match or reaches the end of text. When a match is found, the cursor will be placed just after the matched string.

If the end of text is reached, the message **Search ended** will appear.

SEARCH AND REPLACE

A useful feature is the ability to search for a string, and replace some or all occurrences with a different string. This is called searching and replacing. If you need to change a word or phrase, in a line range or across several documents, this can be a time-saver.

You can specify up to five search strings, each with its own replacement. You can search all of text, text just in a line range, or many globally linked files.

To search for a search string, and replace it with another, press

CONTROL @

PaperClip II will ask several questions:

Search String?

Enter the search string. Use special search characters where needed. When the search string is entered, press

RETURN

Replace with?

When PaperClip II finds an occurrence of the search string, this is the text that will replace it. Enter the replacement and press

RETURN

Note: Be careful if you use wild card characters in the replace string. The corresponding character in text will not be replaced.

More?

You can define up to five search and replace operations. This is most useful when many changes have to be made to linked documents, but can be used with text in memory as well. Answer

Y RETURN

if you want to specify another search and replace pair.

If you have already set up all you need, press

N RETURN

Query before replacement?

If you answer

Y RETURN

PaperClip II will display each occurrence where it is found, and wait for you to indicate whether or not it should proceed with the replace operation.

If you press

N RETURN

PaperClip II will automatically replace every occurrence of the search sting.

Global?

If you answer

N [RETURN]

PaperClip II will begin searching from the current cursor position in text.

Answer

Y [RETURN]

to do a global search, looking through a series of globally linked files.

Note: Before starting a global search, be sure to save the text in memory first. PaperClip II will load the first global file immediately, erasing any text previously in memory.

Search and replace in range only?

If you answered N to global searching, and a line range is currently set, PaperClip II will ask if you want to limit the search to the text in the line range. To search all of text, ignoring the line range boundaries, press

N [RETURN]

To search within the range only, press

Y [RETURN]

If you use global search and replace, PaperClip II will ask

Query on next file?

When PaperClip II is finished with each section of a global chain, it can ask if it should load the next linked file.

If you want PaperClip II to ask for your go-ahead each time, answer

Y [RETURN]

If you want all files checked automatically, press

N [RETURN]

File name?

When working with global files, you must tell PaperClip II the filename of the first text file in the chain. Type in the name of the file you want to start searching with and press

RETURN

Don't forget to save the text in memory first!

PaperClip II will start the search. If you specified a global file, it will be loaded into memory now.

For each of the five possible search strings, PaperClip II will scan the document. If the search is not global, text will be checked from the cursor position to the end of text. When searching within a range, the cursor position is ignored.

When a match is found, it will be replaced, confirming first if you requested querying before replacement. When it reaches the bottom of text, PaperClip II will check for another search string. If you have specified several, it will scan the text again, looking for the new search string.

After the text has been searched, PaperClip II will do one of several things. For global searches, it will ask

Fetch next file?

if you specified that you wanted to confirm each file query. Before loading the next text file, PaperClip II will save the current one, providing at least one string was replaced in the text. If the text hasn't been altered, the next text file will be loaded in directly.

If the search was not global, the message

Replace ended

will appear.

UNFORMATTING TEXT

Unformat is associated with communications, but not part of the communications mode. Text captured from remote systems (such as news services, on line help, and electronic mail) is often formatted, each line of text ending with a **return** marker. The unformat command can remove these extra **return** markers, making the text much easier to edit.

In order to do its job, the unformat command makes several assumptions about the form of the text received. It scans down the text, looking for a blank line with only a **return** marker on it. The text up to that point is taken to be a single paragraph. Every **return** marker, save the one on the line above the blank line, is deleted. The text is then re-flowed into a single paragraph.

If the text was created with a blank line between each paragraph, this process results in a document much like the original. Unformat will not properly deal with tables or lists of text, such as addresses. You can set a line range over each area of text that Unformat can handle properly, then proceed to unformat each range individually. In any case, always save the text before using Unformat.

To unformat text, press

CONTROL U RETURN

PaperClip II will ask

Margin for unformatting?

When unformatting the text, **return** markers found to the right of the indicated margin will be stripped out. Those found in a column position less than or equal to this setting will be retained. In most cases, the default value of **1** will work well. Text originally formatted for a printer may appear with a consistent left margin of several spaces. For this type of text, enter a margin value which will include the spaces to the left of each **return** marker.

To remove ALL the **return** markers, regardless of their position, enter

0 RETURN

Every **return** marker in the text area selected will be removed, save the very last one. This can be used to concatenate several paragraphs together.

To accept the default setting of **1**, press

RETURN

If you have set a line range, PaperClip II will ask

Unformat in range only?

If you want PaperClip II to unformat the text within the line range, answer

Y RETURN

If you want PaperClip II to unformat all of text, press

N RETURN

PaperClip II will ask

Are you sure?

If you have saved your text, and want PaperClip II to try unformatting the text, answer

Y RETURN

To abort without affecting text, press

N RETURN

or

CONTROL

SPECIAL PRINTING

PaperClip II provides special commands to control the printed appearance of your text. Underlining, boldface, and italics are available. Text can be superscripted or subscripted, automatically hyphenated, and include multilingual characters. Special print commands can be defined and used anywhere in text.

Print enhancements appear in text as special characters. Each has a specific function, and several can be entered together. The **french** character set provided on the PaperClip II diskette defines these characters with shapes which remind you of their function.

Each function is entered by pressing [ESC] followed by the key to initiate that feature. A special symbol will appear to indicate the function. Commands such as underlining have a second symbol to mark where the feature is turned off.

During printing, these special symbols will be interpreted, and the printed text will reflect the enhancements defined in the text. The symbols themselves will not appear. Because they can appear in the midst of text, they are called **embedded** formatting characters. These embedded symbols can appear almost anywhere in text.

Remember, these characters do not appear in the printed text, instead they act as switches which modify the appearance of the printed document. These commands can be combined, with several functions in operation. Simply enter each command, PaperClip II will keep track of what to print. For instance, you could print text in underlined boldface italics — with one of the words superscripted.

UNDERLINING

PaperClip II can underline printed text. During printing, when an underline begin symbol is encountered, all text following will be underlined until the underline off character is reached. Anything from a single character to an entire paragraph may be underlined.

To mark the text which follows as underlined, position the cursor where the underlining is to begin, then press

[ESC] [SHIFT] [

A symbol indicating underline begin will appear. Text following this marker will be underlined until the underline end character is found.

To mark the end of underlining, press

ESC SHIFT]

The text between the two markers will be underlined when printed.

These markers may be edited just like regular text. You can insert and delete them, search and replace them, and include them in phrases, ranges and columns. Only during printing will they exercise control over the printed appearance of your text.

THE UNDERLINE CHARACTER

There may be times when you need to print an underline without any text, An example would be the place for a signature in a contract. Some printers won't underline spaces, only printable text will be underlined. To get around this problem, PaperClip II has assigned a special underline character. Technically, this character is part of the multilingual group, but in practice it is usually used for entering underline characters.

To enter an underline character, press

ESC .

A small underline symbol will appear. This will print as a single underline character. The printer will interpret this as an actual character, rather than an enhancement of other text. In this way, you may create underlines despite a printer's interpretation of the underline function.

If your printer will underline spaces without it, you won't need to use ESC .

BOLDFACE

To print text in boldface, press

ESC SHIFT (

A small marker will be placed into the text at the cursor position. Text following will be printed in a darker, bolder style.

To switch boldface printing off, press

ESC SHIFT)

Text appearing between the two markers will be printed in boldface.

ITALICS

Italics is a slanted, stylized version of regular printed characters. To engage italics printing, press

PaperClip II will print the text following in italics. Many printers cannot print italics. In those cases, the printer file usually has defined an alternate function to replace italics. For example, many dot matrix printers which cannot do italics print will have a special high quality print mode used when italics is requested.

To end italics printing, press

SUPERSCRIPTING

Superscripted text is printed slightly above the rest of the line of text. Often it is printed using smaller characters. Superscripting is used in mathematics, denotes special notes or conditions, etc.

To superscript a single character, press

The very next character will print superscripted. Text following that next character will print normally.

To superscript several characters, press

All text between this superscripting on symbol and the next superscripting off characters will print in superscripted form.

To turn superscripting off, press

SUBSCRIPTING

Subscripted text is printed slightly lower than other text on the same line. Often it is printed using small characters.

To subscript a single character, press

ESC SHIFT **$**

The very next character will print subscripted. Following text will print normally.

To subscript several characters, press

ESC SHIFT **!**

All text between the subscripting on and subscripting off characters will print in subscripted form.

To turn subscripting off, press

ESC SHIFT **"**

HARD SPACE

Spaces in text are used to indicate where each word ends. During printing each line of text is broken at a space character. Usually this is the proper place to end one line of print and start the next. There are cases where two words should not be separated. For instance, an address should not have the number printed at the end of one line, and the street name appearing at the beginning of the next.

PaperClip II provides a way to keep words joined together, yet still printed with the proper spacing. A hard space will print as a regular space, but PaperClip II interprets it as a printed character, part of a longer word.

To enter a hard space, joining two smaller words as one, press

SHIFT **space bar**

A small bar will appear. This symbol will be printed as a space. During formatting, it will be treated as a printed character, and the text will not be divided. If there isn't enough room at the end of a line to accommodate the entire sequence of words and hard spaces, it will be moved to the beginning of the next line.

For example, to keep the address **123 Main Street** from being inadvertently separated, you would enter

123

then press

SHIFT **space bar**

followed by

Main Street

The number **123** would always print on the same line as **Main.**

CONDITIONAL HYPHEN

If your writing involves many long words, you may want to indicate appropriate places in those words where hyphenation could be placed during formatting. During printing, PaperClip II checks for conditional hyphens. If a word will fit without being hyphenated, the conditional hyphen won't be printed.

During printing, if a word with a conditional hyphen is too long to fit at the end of a line, PaperClip II will calculate whether the word would fit when hyphenated. If the hyphenated word would fit, PaperClip II will print the first part of the word at the end of one line (with a hyphen), and the rest of the word on the next line.

Remember, a conditional hyphen will appear on the printed page only if it is needed to make a word which is otherwise too long fit at the end of a line.

To mark a word with a conditional hyphen, place the cursor where a hyphen would be grammatically correct, then press

ESC -

A thick hyphen will appear in the word.

BREAKPOINT

If your text includes long words which include hyphens, you may find the breakpoint useful. For instance, chemical names often have several parts, each connected with a hyphen. You can tell PaperClip II to divide a long word at a non-space character, using the breakpoint to indicate where the word could be divided during printing.

To mark a possible division point in a long word, position the cursor where the word could be broken during printing, then press

CONTROL SHIFT !

If a word containing a breakpoint is too long to fit at the end of a line, PaperClip II will calculate whether the word would fit if split. If so, PaperClip II will print the first part of the word at the end of one line (up to the breakpoint), and the rest of the word on the next line.

Remember, the breakpoint will be used only if it is needed to fit a word which is otherwise too long.

For example, **hypo-allergenic** could be entered as

hypo-

followed by the breakpoint symbol, then

allergenic

The special symbol after the hyphen is the breakpoint marker.

SENDING SPECIAL CHARACTERS TO THE PRINTER

While PaperClip II supports most functions through the printer files, some printers have extra features or modes that aren't directly supported. For instance, your printer may have an envelope feeder which needs a special command to load the next envelope. A letter quality printer may allow an alternate set of symbols to be printed, but the command isn't built into the printer file.

Normally, instructions for the printer are generated by PaperClip II, but occasionally you may want to need a function which PaperClip II doesn't understand. For example, you may be preparing a presentation which deals with British pounds instead of dollars. You know from your printer manual that your printer can print that symbol, but the printer file doesn't support it.

You can assign special codes to each of ten digits, then send these codes directly to the printer during output. The command

✓x=y←

defines the digit **x** (any number from 1 to 9) as equal to the value **y**

To include the special code in the information sent to the printer, press

ESC **&**

The symbol ↑ will appear in text at the cursor position. The digit immediately following will cause the corresponding code to be sent to the printer.

Special characters **1** to **5** are defined as 'printing'. PaperClip II will assume that the code sent to the printer caused a character to be printed, taking up space in the printed text. If justification or centering is engaged, it is important that PaperClip II know exactly how many characters have been printed.

Digits **6** to **9** are considered non-printing. During output, PaperClip II will assume that the code didn't actually print anything, but was used for some non-printing purpose, such as changing print style.

As an example, the code sequence to print a £ on a Roland 1011 is

27, 82, 3, 35

These four codes need to be sent to the printer in that order to print a single £ character. To set up this sequence, you type a format line like this:

✓6=27:7=82:8=3:1=35←

Note that three of the codes are assigned to 'non-printing' digits; only the last is defined as a printing character. Since £ is printed as one character, only the **1=35** entry will be counted as printing when calculations for centering and justification are made.

When you want to include the £ character in your text, you would type

ESC **& 6** ESC **& 7** ESC **& 8** ESC **& 3**

In our example, the final result might look like this on the screen...

My estimates show the cost would be
↑6↑7↑8↑1 35,286.50.

But it would print like this...

My estimates show the cost would be £ 35,286.50.

FORMATTING TEXT

PaperClip II is a post formatting word-processor. The text you type isn't properly formatted until it is printed. During editing, there is a simple relationship between the text on the screen and the final, printed page. Formatting commands are placed directly in the text, providing tremendous flexibilty in editing the text and controlling its eventual output.

Text can be printed in columns as narrow as one character, and as wide as 250. The page itself can be 1 line long, 250, or endless. A single character can be right justified, or the entire text printed in compressed print. Post formatting allows you to change any print parameter instantly.

Because the text is formatted at print time, it is important that you don't try to format the text during editing, inserting extra spaces or splitting lines to improve the appearance in edit mode. You control the final appearance with the formatting commands described here.

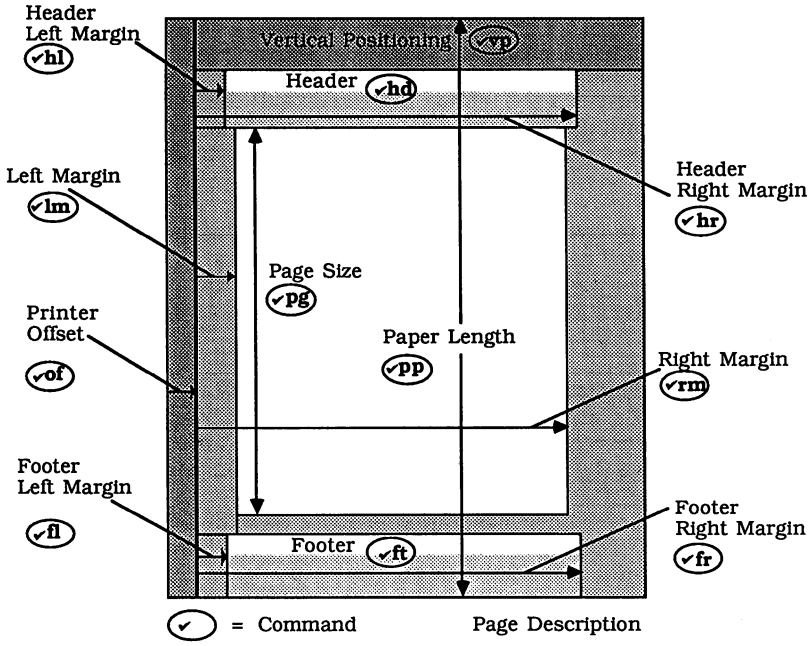
PaperClip II makes some basic assumptions about how the text will be printed. Each page is 66 lines long, 56 used for printing, 6 lines to the inch. The left margin is set to column 10, the right edge is column 70. Print pitch is 10 characters per inch, plain text, starting with page number 1.

Each formatting command must appear on a line beginning with a **checkmark** symbol (✓). The line before must end with a **return** marker (←). More than one command may appear on the same line, with a few exceptions noted where they occur. When several formatting commands are on the same line, they are separated by a colon.

Formatting directives only affect the text which follows them, they have no effect on text already printed.

PaperClip II divides each printed page into several regions. The paper length contains the vertical position, the header offset, the actual page size (printing area) and the footer offset. To the left of the text area is the printer offset and the left margin. The right margin defines how much blank space appears to the right of the text area.

The PaperClip II Page



LEFT MARGIN

PaperClip II uses a default margin setting of 10. This means the leftmost character printed on the paper will appear in column 10. You may set the base left margin from 1 to 250. The left margin can't be set right of the right margin.

To change the left margin setting, enter the command

✓lm

followed by the new left margin value. For example, the command to set the left margin to column 21 would be

✓lm21←

The left margin can be adjusted relative to its current base setting. You can move the margin in or out any specified amount. To adjust the left margin setting relative to its current value, insert a + or - character before the number.

To widen the left margin 17 spaces, narrowing the printed text, you would use the command...

✓lm+17←

To shrink the left margin by five, the command would be...

✓lm-5←

Relative margin commands are always based on the current **fixed** margin settings. Relative adjustments do not accumulate; the margin is calculated from the last setting used to move the base margin position. The following sequence sets the left margin to column 25...

✓lm20←	(base margin set to Column 20)
✓lm+10←	(margin adjusted to Column 30)
✓lm-3←	(margin adjusted to Column 17)
✓lm+5←	(margin adjusted to Column 25)

To turn off relative adjustments, use the command

✓lm+0←

RIGHT MARGIN

The default right margin setting is 70. This means the farthest right text will be printed on the paper is column 70. The right margin can vary from 1 to 250. The right margin can't be set less than the left margin.

To adjust the basic right margin setting, enter the command

✓rm

followed by the new left margin value. For example, the command to change the right margin to column 96 is

✓rm96←

The right margin can also be adjusted relative to its current setting. To adjust the right margin relative to the current fixed value, use + or - between the command and the number.

The command

✓rm+20←

moves the right margin out 20 spaces, expanding the printed text.

To reduce the right margin 10 columns, the command would be...

✓rm-10←

Relative margin commands are always based on the current **fixed** margin settings. Relative adjustments do not accumulate; each new adjustment is calculated from the base margin value.

To reset the right margin to the current base setting, use...

✓rm+0←

COMBINING FORMAT COMMANDS

Many formatting commands can be grouped together on one line. This helps reduce the on-screen clutter, and makes the command easier to follow. After entering the first command of a group, enter a colon instead of pressing [RETURN] Then enter the next command. When the last command has been entered, press

[RETURN]

For example, to adjust both left and right margins, and set the printer spacing, the command could be

✓lm15:rm80:sp2←

PAPER LENGTH

Regular 8 1/2" by 11" paper will hold 66 lines of text printed at 6 line to the inch. This is the default used by PaperClip II. If you are using different length paper, or change the number of lines printed per inch, you will need to change the page length setting.

Because formatting commands do not affect the text printed before they are encountered, you must place the paper length command above any printing text if the first page is to be measured correctly. In most cases, the command will be very near the top of text.

To set the paper length, enter the command

✓pp

followed by the new length in lines. For instance, to set the paper length to 72 lines, the command would be...

✓pp72←

When a **✓pp** command is encountered, PaperClip II will make several assumptions. First, it will conclude that the printer is currently positioned at the top of a new page, and the length of the paper is that specified. It also assumes that every line on each page is to be used for printing. Since you will usually want some blank lines between the end of one page and the start of the next, the **✓pp** command is often accompanied by a new page size setting.

Note: The paper length represents the total amount of space available on each page. The settings for page size, vertical positioning, header and footer spacing should not total more than the current paper length.

PAGE SIZE

You can control how many blank lines appear between the last line printed on one page and the first line on the next. This is done using the page size command. You can have PaperClip II print one line per page, up to the number of lines set in the page length. The default setting is 56 lines per page. To change the page size, enter the command

✓pg

followed by the number of lines to be printed on each page. To use only 30 lines on each page, the command would be...

✓pg30←

When **✓pg** is encountered, PaperClip II will assume that the printer is at the top of a new page

VERTICAL POSITION

If you are using letterhead paper, you can have PaperClip skip a few lines before starting to print. The vertical position command tells PaperClip II how many blank lines to leave at the top of the page. The default setting is to skip **zero** lines.

To set the vertical position, the command is

✓vp

followed by the number of blank lines to appear at the top of each page. The command to skip 6 lines at the top of each page would be...

✓vp6←

Don't set vertical positioning larger than the page size.

PRINTER OFFSET

If you use a wide carriage printer, or print narrow labels, you can offset the printed output to the right. Unlike the margin commands, offset shifts the entire output without changing the relative positioning of the margins, centering, etc. This is often handy if you need to print the text farther to the right on the paper, but can't move the paper to the left any more.

To offset the printed output to the right, the command is

✓of

followed by the number of spaces to be inserted before each line of text. The command to shift the printed output 10 columns would be...

✓of10←

LINE SPACING

PaperClip II uses a default line spacing of 6 lines per inch. This provides a paper length of 66 lines when using 11" paper. There are two other settings available.

The actual line spacing is determined by values in the printer file loaded from disk. A printer file has three line spacing entries, one each for 6 lines per inch, 8 lines per inch, and a third which is defined as an optional line spacing. The optional spacing is often set to 4 lines per inch.

To change the line spacing, enter the command

✓ls

followed by the new setting. If you enter 6 or 8, the line spacing will be set to 6 or 8 lines per inch respectively. If you enter any other value,

PaperClip II will use the optional line spacing entry in the printer file to determine the line spacing.

To print 8 lines to the inch during output, the command would be...

✓ls8←

Be careful with the **✓ls** command. If you change the line spacing part way down the printed page, PaperClip II will not be able to correctly calculate where the end of the paper occurs. If possible, issue the line spacing command before any printing text, or immediately after a force page command.

PRINT SPACING

You can have PaperClip II print your text single, double or triple spaced. The default print spacing is single spaced.

To change the print spacing, the command is

✓sp

followed by the new spacing. PaperClip II will print each line of text, then add blank lines until the number specified is reached before printing the next line of text.

To separate each line of text with three blank lines, the command would be...

✓sp4←

To select single spaced printing, use the command

✓sp1←

PRINT PITCH

PaperClip II uses a default print pitch of 10 characters per inch, often called pica. This provides 80 characters per line using 8 1/2" paper. Other settings are 12 pitch (elite print), 15 pitch (compressed print) and an optional pitch (usually double width print).

The actual print spacing is determined by tables in the printer file. Each printer file has four line spacing entries, one for each of the possible pitch settings.

To change the print pitch, enter the command

✓pt

followed by the new setting. If you enter a value other than **10**, **12** or **15**, PaperClip II will use the optional pitch defined in the printer file. To print at 12 characters to the inch, the command would be...

✓pt12↵

Remember, PaperClip II calculates the margins based on character counts. When you change the print pitch, PaperClip II will continue to calculate the margins based on the current settings. The actual margin will vary since characters printed at the new pitch will occupy a different amount of space. ie: 12 pitch provides 96 characters per line using 8 1/2" paper.

INSERTING BLANK LINES

To leave a large area free of text (space for a picture or chart), you can insert a specific number of blank lines into the printed output. The **✓ln** command uses less space in text than many **return** markers.

To insert blank lines in the printed text, the command is

✓ln

followed by the number of blank lines needed.

To create an open area 15 lines long the command would be

✓ln15↵

If PaperClip II reaches the end of the page while processing the command, blank lines not yet inserted will be skipped. The **✓ln** command will also be ignored if it occurs prior to printing text at the top of a printed page.

COMMENTS IN TEXT

Text following a comment command will be ignored during printing. The text can be a note to yourself, the document filename, a spare variable block, or other text you do not want to print.

To enter a comment in text, the command is

✓cm:

followed by the comment text. A comment cannot span several lines of text, and must end with a **return** marker. If a comment is placed on line one at the top of text, it will be presented as the default filename for the **Save** command.

A sample comment would be

✓cm:This text written Tuesday afternoon.←

PAUSE DURING OUTPUT

During printing, you may need to suspend the output temporarily. For instance, you may need to change the paper color, or exchange the printwheel on a daisy wheel printer. The pause command will stop output, and place the text following the command in the tab line as a prompt.

To pause output, insert the pause command in text at the desired location. The pause command is

✓ps:

followed by the prompting text. The prompt should be less than one screen line long, and must end with a **return** marker.

The command to pause prior to printing a color coded index would be

✓ps:Insert the RED paper now!←

To continue printing after a pause, press **space bar**.

FORMATTING INSTRUCTIONS

The formatting commands that follow can be entered in several forms. In general, PaperClip II checks the first two characters of a command, then scans forward, looking for either a space or a digit. If a space is found, PaperClip II will accept the words **on** or **off** in addition to the digits **1** (on) and **0** (off).

This means that you can enter the commands in the style that feels most natural. For example, the command to turn justification on can be expressed as...

✓ju1←
✓justification on←
✓just-kidding 1←

✓ju on←

Note: Only the first command style, two characters followed by a single digit, will be understood by PaperClip programs prior to PaperClip II. If you need to exchange text files with earlier versions of PaperClip, limit yourself to this stricter format.

JUSTIFICATION

When your text is printed, it is usually left aligned. This means the left margin will be even while the right edge is ragged. This is the default print style.

PaperClip II can format the printed text so that each line is exactly the same length. During printing, extra spaces are inserted between each word until the last word is even with the right margin. This results in a neat right margin — full justification.

To evenly align both margins, the command is

✓ju on←

Text following will be printed fully justified.

To turn justification off, the command is

✓ju off←

Remember, only the first two characters of each command are checked.

Note: Justification takes precedence over right alignment. Turning justification on causes the following text to be justified, regardless of the right alignment setting.

CENTERING

PaperClip II can center printed text between the current margins automatically. All text printed between the centering on and centering off commands will appear on the printed page accurately centered between the margins. If you are centering a title, place a **return** marker after each line.

To center the text following, the command can be either

✓cn on←

or

✓ce on←

The centering command will accept either spelling, and is the only case where two different letters are allowed for the same command.

To stop centering text, the command is

✓ce off←

Note: Centering takes precedence over both justification and right alignment. Turning centering on causes the following text to be centered, ignoring the current settings for justification and right alignment.

RIGHT ALIGNMENT

Text can be evenly aligned against the right margin, producing a ragged left appearance. Often used for address blocks in correspondence, right alignment is the reverse of the default left alignment.

To right align text, the command is

✓ra on←

To cancel right alignment, returning to the previous text format, use

✓ra off←

Note: Right alignment will be overridden by both centering and justification.

FORCED PAGING

You may want to control where on the page a certain part of text is printed. For instance, charts and tables should be positioned to avoid having part on one page, the rest on the next. You may want to ensure that a new section heading starts at the top of a page, or that a new paragraph isn't started on the last line of a page.

You can control the placement and pagination of the printed output with the force page command. When the command

✓fp←

is encountered, PaperClip II immediately advances the paper to the top of the next page, printing any headers or footers necessary.

You can have PaperClip II calculate the amount of free space remaining, and advance the paper if there is insufficient space for the next block of text. When a number follows the force page command, PaperClip II will calculate how many lines remain to be printed before advancing to the top of the next page.

For instance, you may have a chart which occupies ten lines when printed. To ensure that at least ten lines remained on the current page, the command would be

✓fp10←

If ten or more lines remained on the current page, PaperClip II will continue printing on that page. If there are less than ten lines available, PaperClip II will advance to the next page.

MARGIN ADJUST

The margin adjust command allows you to temporarily alter the left margin setting, adjusting it in or out a specified amount. For example, if you wanted to indent a single paragraph, you could use the command

✓ma+5←

The very next paragraph would have the first line indented five spaces. Margin adjust only affects the first line of the paragraph immediately following the command. Text after the first line will be printed according to the current margin settings.

To extend the first line of the next paragraph left by 3 columns, the command would be

✓ma-3←

Note: Don't use numbers which will result in the left margin being adjusted to less than one or greater than the right margin.

AUTOMATIC INDENTATION

Automatic indentation allows you to set a the left margin for the first line of each paragraph to a different value than the rest of the text. This

is useful for indenting the first line of each paragraph. For example, to indent all following paragraphs by 5 spaces, the command would be

✓ai+5←

This will result in each paragraph having the first line of text start five spaces in from the current left margin. The text you are reading has been indented in this manner. Only the first line in each paragraph is affected by automatic indentation.

You can also set the automatic indentation to extend the left margin outwards a given amount. For instance, to provide room for an asterisk in the left margin before each new paragraph, the command could be

✓ai-3←

This provides an easy way to visually identify each important point in the text. Take care not to use settings which result in illegal margin positions.

To turn automatic indentation off, use the command

✓ai+0←

Automatic indentation will be overridden by centering. Be sure to turn automatic indentation off when you are finished with it. If it is not turned off, it will carry through a global file chain, affecting the printing of the rest of the document. If the margin settings in later sections of a global document seem to be acting strangely, check the automatic indentation command. It may still be turned on.

HEADERS AND FOOTERS

PaperClip II can place a single line header at the top of each page, and a single line footer at the bottom. If you print long documents, this can be very useful. Automatic page and chapter numbers are available, and text can be centered, left and right aligned, with separately controlled pitch and spacing.

HEADERS

To insert a header above the main body of the text, enter the command

✓hd

Now enter the number of lines above the main text where the header is to be placed. A setting of **1** would print the main text on the very next line below the header. To place the header on the fifth line above text, enter

5

The next character is called the separator. A header consists of three components — the separator is used to mark the division between each section. Prior to the release of PaperClip II, the separator was always a comma, and the character after the number setting the vertical header position had to be a colon. This meant that it was not possible to print a comma in the header text.

With PaperClip II, the character immediately following the number is taken to be the text separator for that header. For now, enter the default separator

:

The text entered next will appear left aligned in the printed header. Text appearing after the first separator will be centered, text entered after the second separator will be right aligned. For instance, either of the commands

✓hd5:left,middle,right↵
✓hd5:left:middle:right↵

will print **left** five lines above text at the left edge, **middle** centered five lines above the main text, and **right** positioned at the right margin five lines up from text.

If you need to leave an area of the header empty, enter the separator anyway. PaperClip II will keep track of the correct areas. For example

✓hd1:,,PaperClip II←

puts **PaperClip II** at the top right corner of every page, just above main text.

Note: To print a header on the very first page, you must place the header command above any printing text. Once text has been printed, changes to the header will not appear until the next page.

If you want a header to appear on the second page, but not the first, place the command after the first paragraph.

FOOTERS

To place a footer below the main body of the text, enter the command

✓ft

Footer position is based on the number of lines **above** the end of the page. Enter the number of lines above the end of the paper where the footer is to be placed. A setting of **1** would print the footer on the very last line of the page. To place the footer five lines up from the end of the page, enter

5

The next character is called the separator. Prior to the release of PaperClip II, the separator had to be a comma. The character after the number was not used as a separator, and had to be a colon. This made it difficult to print a comma in the footer text.

With PaperClip II, the symbol following the number is used as the section separator. For example, to use **!** as the text separator, press

!

The text entered next will appear left aligned. Following the first separator the text will be centered, after the second the text will be right aligned. For instance, the command

✓ft5!DRAFT!!May, 1986←

puts **DRAFT** flush left and **May, 1986** flush right at the bottom of each page, five lines above the end of the paper

Remember, text for each area is normally separated by commas, but you can select any other separator This is useful if you want a comma to appear in the header or footer text – in a date, for instance. If you use a different separator, substitute that character for the colon as well. For instance,

✓ft5!DRAFT!!March 25, 1986←

will put **DRAFT** flush left and **March 25, 1986** flush right.

PAGE NUMBERING

You can include the current page number in a header or footer. When you place a special pair of characters in the text of the header or footer, PaperClip II will automatically substitute the current page number during output.

PaperClip II substitutes the correct page number wherever the symbols <> appear in a header or footer. For example, the command

✓ft5:,,<>←

will print the page number at the bottom right corner of each page. The <> characters must be adjacent, if they are reversed or separated by spaces, PaperClip II will simply print them as is.

SETTING THE PAGE NUMBER

PaperClip II normally assumes that the starting page is number one, then increments the page number every time a new page is started. You can override this default, setting the starting page number to any value you want.

Once you set the new number, PaperClip II will count from that number forward. To set the current page number to five, enter

✓p#5←

PaperClip II will immediately note the new value – the next header or footer printed will reflect the new setting.

ADJUSTING THE PAGE NUMBER

You can increase or decrease the page number from the current setting by placing the adjustment in a page number command. For instance

✓p#-2←

would decrease the current page number setting by two.

CHAPTER NUMBERS

PaperClip II also provides a method for inserting chapter numbers into a header or footer. Unlike page numbers, chapter numbers are controlled directly, they will not be automatically adjusted. During printing, PaperClip II will substitute the current chapter number wherever the symbols **[ ]** appear in a header or footer. For example, the command

✓ft5:,Chapter [ ] ←

will print the current chapter number centered at the bottom of each page. The **[ ]** characters must be adjacent, if they are reversed or separated by spaces, PaperClip II will simply print them.

SETTING THE CHAPTER NUMBER

PaperClip II will not change the chapter number automatically. When you want to start a new chapter, you must explicitly enter the new setting.

To set the current chapter number to three, enter

✓ch3←

PaperClip II will immediately note the new value — the next header or footer incorporating a chapter numbers will print the new value.

ADJUSTING THE CHAPTER NUMBER

You can add to or subtract from the current chapter number. The command

✓ch+7←

will add seven to the chapter number setting.

HEADER MARGINS

You can assign distinct margins to the header, separate from the text settings. Until you change them, PaperClip II assumes that the header is to use the same margins as text.

To set the left margin for the header, the command is

✓hl

followed by the new setting. To set the header left margin to column 14, the command would be

✓hl14←

To set the right header margin to 75, the command is

✓hr75←

FOOTER MARGINS

Like the header, the footer margins can be explicitly defined.

To position the left footer margin in column 10, the command would be

✓fl10←

To set the right footer margin to 85, the command is

✓fr85←

MARGIN LOCK

Header and footer margins normally follow text margin adjustments, even after using the header and footer margin commands. They will be matched to the text margins when the text margins are changed. You can avoid this by locking the header and footer margins.

Once locked, only header and footer margin commands will affect the settings. You will still be able to change the text margins, but text margin changes won't alter the header or footer settings.

To lock the header and footer margin settings, insulating them from future text margin adjustments, use the command

✓ml on←

To unlock the header and footer margins, allowing them to follow text margin changes, enter the command

✓ml off←

HEADER PITCH

The pitch used to print the header is usually the same as the current text pitch. You can select another pitch for the header. If you do, remember that the header margins are based on character widths, so you may have to adjust the header margins after changing the pitch.

To change the header print pitch to 12 characters to the inch, the command would be

✓ph12←

The same pitch settings available for main text can be used in the header.

FOOTER PITCH

The pitch used for the footer can be different from the text pitch. Since the footer margins are defined by the character size, you may have to adjust the margins when altering the pitch.

To set the footer to compressed (15 characters per inch) print, the command would be

✓pf15←

All four pitch settings can be used in the footer.

LINKING FILES

PaperClip II has a maximum text size of 499 lines, (999 using a 40-column screen). While this is sufficient for most letters, memos and general work, it may not be enough to accommodate longer, more complex tasks. To print a large document, you create several small text files, then print them in sequence. PaperClip II can link these smaller text files together, producing a much larger document than would otherwise be possible.

There are several ways to print a document which is too large to fit in memory at once. Text files can be linked together like a chain, with each file containing a 'link' to the next. This is called a **global** file chain.

A related command allows files to be linked together freely. During output, PaperClip II will ask what the next segment is called when the current one has been printed, using a **non-specific** link.

Text files can be listed by filename in the order that they will be printed, using a set of **external file link** commands.

Finally, the contents of a disk file can be transferred directly to the printer, allowing complex graphics or printer setup sequences to be utilized. These files can contain special pre-arranged commands to print a fancy letter head, or supply unusual commands to the printer.

GLOBAL FILE LINKS

When PaperClip II reaches the end of text during output, it checks for special linking commands. If a global link is found there, PaperClip II can automatically load the next text file and continue printing. This process can be repeated again and again, allowing very large documents to be generated without any visible breaks.

To enter a global link, position the cursor at the end of text, in column 1. The line above must end with a **return** marker. Enter the command as

✓nx:

Immediately following the colon place the filename of the next segment to be printed. For instance, if the next text file to be printed is called **part two**, then the command would look like...

✓nx:part two←

PaperClip II will automatically load **part two** when the end of the text is reached during output.

When loading a text file, pressing

in response to the prompt

File name?

will present the filename from an **✓nx: link** (if there is an **✓nx:** at the end of text) on the prompt line.

To chain a large document together, put an **✓nx:** command on the last line of every text file but the last. Files linked in this way can be treated as one in operations such as output, search and replace, and find/hunt.

Note: The ✓nx: link must be the last entry in the text file.

NON-SPECIFIC LINK

Similar to a global link, the non-specific link must be placed at the end of a text file. The filename of the next section is not entered into the command. Instead, when PaperClip II encounters the non-specific link, it will ask for the **File name?** on the tab line. You then enter the name of the next segment to be printed.

The advantage is that you can change the order of printing, or include another segment, simply by entering the appropriate filename. You don't need to determine which section to print until it is time to actually print.

The non-specific link must be on the last line of text, and the line above must have a **return** marker. The command is

✓lk←

EXTERNAL FILE LINK

External file links depend on a control file which list the filenames of each part to be printed. During output, PaperClip II will fetch each segment in turn, first saving the control file. When each segment has been printed, the control file will be reloaded and output will continue. The control file can contain any normal commands, including printing text, margin settings, and global file links.

The command is entered as

✓ex:

followed by the filename of the segment to be printed.

External file links can join many small files without having to load and then save each with the correct global link, or remember the filenames using non-specific links.

A sample external file might look like this...

✓lm10:rm70:pt12←
Hello←
✓ex:file one←
✓ex:file two←
The end.←

To print text using external links, simply load the file containing the external file list, then start output in the usual way.

PaperClip II will set the margins and print pitch, then print **Hello.**

The text in memory will be saved as the control file.

Next, PaperClip II will load and print **file one**, then **file two.**

Finally, PaperClip II will print **The end.**

Settings are carried from file to file, providing a smooth transition from one file to the next.

Note: Only one level of external files is allowed. In other words, files called in by an external file link can have linking commands themselves (✓nx:, ✓lk:, or ✓ep:) but may not have another ✓ex: command.

Since PaperClip II must save the control file between sections, the disk in drive 0 must not be write protected, and must provide sufficient space to store the control file.

EXTERNAL FILE PRINT

Unlike all the other linking commands, external print is not meant to print text created with PaperClip II. Instead, it is designed to allow full control of complex printer functions.

The file specified by the external print command will not be loaded as text during output, but the data contained in the file will be transferred directly from the disk to the printer. PaperClip II will not attempt to alter or interpret the file contents.

For instance, you could use this command to print a graph or other picture on a printer capable of high resolution printing. Simply instruct your drawing program to 'print to disk', storing an exact image of the commands normally sent to the printer to reproduce the picture in a disk file.

Later, during output, you can instruct PaperClip II to include the graphic in the text by sending the disk file containing the printer instructions directly to the printer with the external print command.

If you have a printer or a printer buffer that needs a complex instruction sequence, external print can be used to transfer the contents of a pre-configured disk file. This can make the daily use of these devices much simpler.

To transfer the contents of a disk file directly to the printer, use the command

✓ep:filename←

where **filename** is the disk file to be transferred. When this command is reached during output, PaperClip II will open the file, read the data, directly transferring it to the printer, then continue with the text output. The data will simply be read from the disk, a byte at a time, and sent directly to the printer.

If your printer has a bit image mode, you can create pictures, headings, and so forth using other programs and use them in a PaperClip II document. This can be tricky, since PaperClip II won't be able to keep track of its position on the page. A little experimentation here could pay off nicely.

Note: PaperClip II does not analyze or interpret the contents of the disk file in any way. If the paper in the printer is advanced, or other print parameters changed, PaperClip II won't know about it. Be sure to adjust the paper length and similar settings to compensate.

OUTPUT

PaperClip II can output text in many ways. Before actually printing your text on paper, you can preview it with 40, 80, 160 or 320 columns displayed across the screen. The preview screen can be scrolled left, right, up and down. If an error is spotted, you can stop and correct it, then restart output from the top of that page.

During printed output, the video screen displays the text as it is printed. The text in memory can be printed, or a file on disk can be specified as part of a global file chain. PaperClip II can stop after each page, or print continuously, include data for variable blocks, and automatically create multiple copies.

Before actually printing your text on paper, you can use video output to check for formatting errors, review the general layout, and examine the pagination.

VIDEO PREVIEW WIDTHS

Depending on the monitor you are using, you can select from several preview text widths. Press

SHIFT F8

If you have a 40-column monitor, you can choose from 40, 80 and 160 column settings. At 160 columns, each character is represented by a small block, rather than as an actual symbol.

When using an RGB monitor, or an adaptor cable with a composite monitor, you can select from 80, 160 and 320 column displays. The 80 and 160 selections will provide readable text, at 320 columns, block symbols are displayed.

VIDEO OUTPUT - PRINT PREVIEW

To start video output, press

CONTROL V

PaperClip II will ask several questions prior to starting. These are basically the same parameters you must supply for printed output, allowing PaperClip II to provide an accurate preview of the text.

Fill variable blocks?

If you are using variable blocks in your text, press

Y [RETURN]

PaperClip II will ask

File name?

Enter the name of the file containing the data to be inserted into the variable blocks and press

[RETURN]

Starting page?

PaperClip II can skip forward to any specified starting page. The page number you enter here is compared with the actual page number of each page as PaperClip II scans forward in the text.

Enter the desired starting page and press

[RETURN]

Global?

If the text to be previewed is part of a global chain, press

Y [RETURN]

Enter the name of the first file and press

[RETURN]

PaperClip II will immediately load that file into text. Be sure the text in memory has been saved.

After answering the questions, PaperClip II will begin presenting the formatted text on the screen

If the text extends beyond the right edge of the screen, the screen can be scrolled sideways using [←] [→] PaperClip II will pause the output while you are shifting the screen about. If you need to inspect text which has scrolled off the top of the screen, press [↑] Scroll back down with [↓] To continue scrolling downwards, press **spacebar**.

Pause output scrolling by pressing

space bar

To completely abort video output while paused, press

CONTROL

Restart by pressing

space bar

again. To cancel video preview while the text is scrolling by, press

CONTROL CONTROL

Video output will pause automatically at the end of each page. Continue to the next page by pressing

space bar

If you don't want the pause between pages, hold down

C

for several seconds. This will make the output continuous.

VIDEO OUTPUT OPTIONS

Once video output has begun, several options are available. You can switch from single page to continuous preview and back to discontinuous. Output can be switched to the printer at the end of any page, and a page just previewed can be repeated on the printer.

Because PaperClip II is extremely busy when producing output, these keys should not be quickly tapped, but held down for one or two seconds. This gives PaperClip II a chance to acknowledge the keystroke and respond to it.

To switch to continuous output, press

C

PaperClip II will no longer pause after each page.

To switch to discontinuous, or single sheet output, press

D

PaperClip II will pause at the end of the next page, waiting for a keystroke before continuing.

When PaperClip II is paused at the end of a page, you can switch to printed output by pressing

P

The next page of text will be printed on the printer.

When paused at a page break, you can ask PaperClip II to output the page just previewed to the printer by pressing

R

PaperClip II will repeat the output of that page, sending it to the printer.

VIDEO PREVIEW COLORS

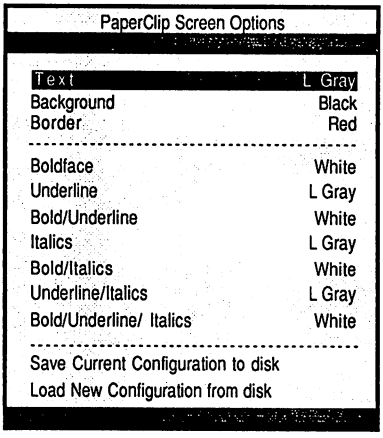
During video output, print enhancements such as boldface, underline, etc., are displayed in different colors. You can change these colors to any combination you find appealing.

To change the colors used in video preview to show special printing, press,

SHIFT F2

The PaperClip II Screen Options menu will appear (see opposite page). The top three entries control the basic screen colors. Note that the border color of the 80 column RGB screen is not adjustable. The center grouping lists each combination of boldface, italics, and underlining.

Move the highlight bar to the display section you want to change, then use the + and – keys to adjust the color setting



SELECTING THE PRINTER FILE

The PaperClip II program disk includes 'printer files' for most popular printers. These 'printer files' tell PaperClip II how to properly control your particular printer.

Refer to Appendix D to select the correct printer file to match your equipment. The printer file is PaperClip II's link with your printer. Take the time to select the correct entry. When you find the name of the printer file to use, press

SHIFT F4

to invoke the **File Options** menu.

Move the highlight bar to **Printer File** and press

RETURN

PaperClip II will ask

File name?

Enter the name of the printer file you need and press

RETURN

PaperClip II will load the printer file from the disk and install it inside the program.

Once you have loaded the printer file, press

SHIFT F2

to display the **Screen Options** menu.

Move the highlight bar to **Save Current Configuration To Disk** and press

RETURN

When PaperClip II starts up, it checks for a file called **pcii auto-config**. This file tells PaperClip II exactly how to set itself up. It 'configures' PaperClip II – the name of the printer file is part of this information.

In response to the **File name?** prompt, press

RETURN

Enter the drive number your start up disk is in. PaperClip II will save the configuration. When you start up PaperClip II, your printer file will load automatically.

PRINTING

To output text to the printer, press

CONTROL O

PaperClip II will ask several questions.

Continuous output?

If you are using single sheets of paper in the printer, and want PaperClip II to pause after each page, answer

N RETURN

To print continuously without delaying after each page, press

Y RETURN

Fill variable blocks?

When using variable blocks within the text, you must tell PaperClip where the data to fill them is coming from. If you have variable blocks in the text and want to fill them from a disk file, press

Y RETURN

If you don't want PaperClip II to bother with variable blocks, press

N RETURN

Number of copies?

You can ask PaperClip II to print up to 255 copies of the document. If you want several identical copies, enter the quantity and press

RETURN

If you only need a single copy, just press

RETURN

Starting page?

PaperClip II can skip forward to a specified starting page. The page number is compared with the actual page number as PaperClip II scans the text. When the page numbers match, PaperClip II will begin printing. Enter the desired starting page and press

RETURN

Global?

If the text to be printed is part of a global chain, press

Y RETURN

PaperClip II will ask

File name?

Enter the name of the first file in the chain and press

RETURN

PaperClip II will immediately load that file into text. Be sure the text in memory has been saved.

PaperClip II will begin printing.

The text is displayed on the screen as it's printed on the paper. Pause output scrolling by pressing

space bar

To completely abort video output while paused, press

CONTROL

Restart by pressing

space bar

again. To cancel output while actively printing, press

CONTROL CONTROL

If your printer has an internal buffer, it may print a few lines before stopping.

PRINTER OUTPUT OPTIONS

Once printing has started, several options are available. You can switch between single page and continuous output. Output can be switched from the printer to video preview at the end of any page. Output can be halted completely, an error in the text corrected, and output resumed from the top of that page.

PaperClip II is very busy when printing. When using the keyboard to switch functions, hold the key down for one or two seconds. This gives PaperClip II a chance to accept the keystroke.

To switch to continuous printing, press

C

To switch to discontinuous, or single sheet output, press

D

PaperClip II will then pause at the end of the next page, waiting for a keystroke before continuing.

When PaperClip II is paused at the end of a page, you can switch to video output by pressing

V

RESTARTING OUTPUT

If you notice an error during printing, or video preview, you can stop output, correct the error, then restart output at the top of the last page. As long as the text or command you alter is part of the last page being output, you may restart the output after editing.

After halting output, you can edit the text, save the corrections, view a directory, and many other functions. If you are using global or external files, be sure to save the text before resuming output.

Restart cannot be used if the error occurred above the last page break. If you are previewing page three when you notice an error at the bottom of page two, you cannot use restart.

To restart output at the top of the last current page, press

CONTROL SHIFT P

PaperClip II will resume printing. All its internal settings will be restored, and the text is assumed to be the same one used for the previous output.

QUICK OUTPUT

You can have PaperClip II quickly begin printing, using all the default settings, by pressing

CONTROL SHIFT O RETURN

PaperClip II will begin printing right away. Once started, you can switch to continuous output by holding down

C

for a few seconds.

OUTPUT TO DISK

You can redirect the entire printer output from PaperClip II into a disk file. This can be useful when formatting text for transfer to another computer, or to help in analyzing a printer file problem.

To direct all output to disk, press

SHIFT F4

to display the **PaperClip File Options** menu.
Move the highlight bar to **Printer Output**

Set the printer output device number to that of your disk drive.

Now, when output is started, PaperClip II will ask

File name?

Enter the filename that PaperClip II is to send the printer output to, then press

RETURN

PaperClip II will ask

Drive number?

Enter the drive number where the output is to be sent, and press

RETURN

PaperClip II will output the text, writing every byte normally sent to the printer into the disk file. When output is concluded, PaperClip II will close the disk file.

Note: If you are using Output to Disk to prepare text for transmission via telecommunications, be sure to select the appropriate printer file. Files sent to a Commodore system should use the CBM ASCII printer file. For non-Commodore ASCII systems, use True ASCII.

FILE HANDLING

An important feature of any word processor is the ability to store documents and other text on diskettes for later retrieval. Disks can be used to store information in many forms. PaperClip II can save documents, line ranges, and lists of data on disk. Information from other programs, such as addresses from a mailing list, or part numbers from a database, can be used with variable blocks in form letters.

Information is stored on diskettes in files. A file is a set of related information which is referred to by a name. This is similar to a folder in a filing cabinet. The papers in a folder are kept together, and the folder has a name. Unlike a filing cabinet, a disk can hold only so much information, and not one bit more. You can't 'squeeze' an extra file onto a disk.

Like a paper folder, almost any kind of information can be stored in a disk file. To help keep track of the information, there are several types of files. Each type of file is designed to hold its data in a certain way. While many programs use these conventions, others do not. The file type is only an indicator of the way the data in that file is stored.

In addition to the actual files, each disk contains a special file called the directory. This file contains a list of the names of all the other files on the disk, what kind they are, and how much space each occupies. The directory also tells you the name of the disk, and how much space is unused, available for another file.

PaperClip II can store text on disk as a document or a data file, and load text from either. The disk directory can be displayed on the screen, or retrieved as a document, edited and printed.

Before you can save anything on a disk, it must be formatted. If the disk you are using is fresh out of the box, it must be formatted before PaperClip II will be able to store text on it. Formatting is a process of magnetically mapping the surface of the disk into small partitions, called blocks. At the same time, the disk directory is created, listing the name of the disk and the free space. Formatting a disk is described Direct Disk Commands — Formatting A Disk

SAVING TEXT

The usual way to save text on disk is as a complete document. Each document is given a name. PaperClip II will save the complete text along with the current line length and tab settings. The document is saved in **PRG** format, which is compatible with the text files of several other word-processing programs.

Make sure the disk you want to save the text on is formatted, and has a sufficient number of blocks free. The more lines you have to save, the more blocks it will need. A full text area will need about 160 blocks on the disk.

When you are ready to save your text, press

CONTROL S

PaperClip II will ask

Filename?

Disk filenames can be up to 16 characters long. Each file stored on a diskette must have a unique name. Letters, numbers and punctuation characters are allowable.

Limit the use of punctuation. Many have special meanings for the disk drive. While the disk drive will usually understand that these characters are part of a filename, in some situations they will be misinterpreted. Avoid using *** ? , : " @ # $ % & =**

If you have placed a comment (**✓cm:**) at the top of text, PaperClip II will automatically display the text following the colon as the suggested filename. This helps avoid typing errors in the filename.

If Line 1 does not have a comment, the last filename used will be displayed. Be careful here, the filename may be that of a saved range, or contain special 'wildcard' symbols. Check the suggested filename carefully.

If the filename suggested is wrong, use the editing keys ← → INST DEL and CLR HOME to correct it. To clear the name completely, press

SHIFT CLR HOME

Once you have the correct filename, press

RETURN

PaperClip II will ask for

Drive number?

If you have one disk drive, with a single diskette slot, always answer

0 RETURN

If you have several disk drives, you can use numbers **0** and **1**, as appropriate. Disk drives and device numbers are discussed in detail in Device Numbers.

Before saving the document, PaperClip II will check several things. If there is a file already listed in the disk directory with the same filename, PaperClip II will ask

Replace existing file?

To replace the file on disk with the document in memory, press

Y RETURN

PaperClip II will erase the file on disk with that name, then proceed to save the text in memory.

If you don't want to erase the file currently on the disk, press

N RETURN

or

CONTROL

If the diskette has not been formatted, or some other disk problem is detected, a disk error message will be displayed on the tab line. Some common disk errors are discussed in Common Disk Problems.

While the text is being saved, the tab line will show the drive number and filename in the form **0:filename**. The line counter in the status line will rapidly increment, indicating how many lines have been saved so far. When the document has been fully saved, the cursor will start flashing again. The filename will remain displayed on the tab line. The tab line will reappear when you start typing.

SAVING A LINE RANGE

There will be times when you wish to take a paragraph from one document and place it in another. Often, you will have written some text for another work and find that it would be useful to include it in your new writing.

You can save a line range on disk, where it can be loaded into another document. If you frequently re-type the same paragraphs, charts or other text fragments, this can prove very handy. You can move blocks of text from file to file by saving ranges from one file and appending them to another.

To save a line range, define it in the usual way with [CONTROL] R [RETURN] then press

[CONTROL] Q

PaperClip II will ask

Filename?

Enter the name you want to save the range with, then press

[RETURN]

Enter the drive number where the disk is, and press

[RETURN]

If there is a file already listed in the disk directory with the same filename, PaperClip II will ask

Replace existing file?

To replace the contents of the disk file with the line range, press

Y [RETURN]

PaperClip II will erase the existing disk file, then save the line range.

If you don't want to erase the existing file, press

N [RETURN]

or

[CONTROL]

If a disk problem is detected, the error will be displayed on the tab line.

When the document has been fully saved, the cursor will start flashing again. The filename will remain displayed on the tab line until you start typing.

The line range will be saved on the disk in the same format as a text file. There is no difference between a saved line range and a regular document. You can load a saved range as a document; and generally use it as you would any other text file.

LOADING TEXT

Once text has been saved on disk, it can be retrieved at any time. Loading a text file does not remove it from the disk. You can load it again and again. Loading a text file from disk replaces any text currently in memory. The line length and tab line will be restored to the settings in use when the text was saved.

If you know the filename of the text to be loaded, press

CONTROL L

PaperClip II will ask for

Filename?

Type the name of the text file on disk.

If you are not sure of the filename, first display the directory of the disk containing the text file. Place the cursor on the first letter of the filename you want to load. Press

CONTROL L

When PaperClip II asks

Filename?

press

RUN STOP

Once you have the correct filename entered, press

RETURN

When specifying the filename to be loaded, you may use special 'wildcard' characters. These characters have special meaning for the disk drive.

When using wildcards, the first filename which matches will be loaded. The asterisk * can match any number of characters. For example, the filename

fil*

will match

filename
filer
filter queen

An asterisk alone will match the first file on the disk. Do not place any characters after an asterisk in a filename.

The question mark **?** will match any individual character.

fil?er

will match any of

filter
filber
fil9er

Several question marks may be used in a single filename, with or without an asterisk. Be very careful when using these wildcards. It is very easy to load the wrong file. Never use a wildcard in a filename when saving.

If you have two disk drives, or a single drive with two slots, both disks will be scanned for the file to be loaded. If the filename cannot be found, the message

62,file not found,00,00

will be displayed on the tab line.

If the file is found, the text will be loaded into memory. The tab line will show the filename, and the line indicator on the status line will increment as the text is loaded.

PaperClip II will match the line length to the setting in effect when the text was saved. Tab settings in effect at the time the text was saved will be reinstated.

If the file can't be loaded, isn't the correct type, the disk drive is empty, the disk isn't formatted, or some other disk problem arises, the error will be displayed on the tab line. Common disk errors are discussed Appendix C.

Note: Loading a file erases any text in memory — make sure you've saved the file you're working on before loading another one.

APPENDING TEXT FROM DISK

Any text file on disk may be appended into the text currently in memory. The text file could be a saved line range, or an entire document. When a text file is appended, it is inserted into the existing text. Provided there is sufficient room, there is no limit on the amount of text that can be appended from disk. If the text was saved with a different line length, it will be modified to fit the setting in use.

To append text from disk, position the cursor on the line where the new text is to be inserted.

If you know the filename of the text to be appended, press

CONTROL A

PaperClip II will ask for

Filename?

Type the name of the text file on disk.

If you are not sure of the filename, first display the directory of the disk containing the text file. PaperClip II will remember where the cursor in text was. Place the cursor on the first letter of the filename you want to append. Press

CONTROL A

When PaperClip II asks

Filename?

press

RUN STOP

Once you have the correct filename entered, press

RETURN

The text from the file on disk will be inserted into the text in memory at the cursor position. Existing text below the cursor, including the line the cursor was on, will be pushed down to make room.

If the text being appended was saved with a different line length than the setting currently in use, it will be converted by the append function. This is an easy way to change the editing line length of an existing text file. Simply append the current text file into memory after setting the line length to the new size. Tab settings are not transposed when using append, they will have to be re-set.

GLOBAL FILE COPYING

For large documents which use global file links, PaperClip II provides an easy method to copy all the linked files to another disk. The global file copy command will load each file in turn, then save it to the new disk. This requires two single disk drives, or a dual slot drive.

Put the source disk (the one containing the files to be copied) in one drive, and a destination disk in the other. The destination disk must be formatted, and have enough free blocks to hold all the linked files. Global file copy won't erase or change files already on the destination disk.

Make sure the text in memory has been saved — it will be erased during the file copy. To start global file copy, press

CONTROL G

The first prompt asks

Copy tab line(s)?

When PaperClip II saves a document, it usually saves the tab settings along with the text. If you tell PaperClip II not to save the tab lines, programs which don't expect the tab information, such as WordPro, will be able to load the text file from disk properly. If you load these files into PaperClip II, the text will still look fine, only the tab line won't be updated.

Unless you need to use the text with a different word-processing program, copy the tab settings with the text. Press

Y RETURN

To copy the text files, leaving the tab information behind, answer

N RETURN

The second prompt asks for

File name?

Enter the name of the first file in the global chain, then press

RETURN

The next prompt asks

Drive number?

You must have both disks inserted for global file copy to work. Enter the drive number the source disk is in, then press

RETURN

PaperClip II will load the specified file from the source disk, then immediately save it with the same name on the destination disk. Next it will look for a **↙nx:** command at the end of the text. If it finds one, that file will be loaded, then saved on the destination drive. This will continue until a text file is loaded which doesn't have a link at the end.

You can use this command to copy files which aren't globally linked. Enter the filename of the text you need copied; PaperClip II will load and save it, then stop since the end of the text doesn't have a global link. Start the command again to copy the next file, and so on...

DIRECTORIES

DISK DIRECTORY

When a diskette is formatted, a special section is set aside for the directory. The directory is used by the disk drive to keep track of the other files stored on the disk. In addition, the disk name is kept in the directory. You cannot erase the directory, or manually add information to it.

When PaperClip II saves a file on the disk, the disk directory is updated with the name of the file, what type it is, and how much space it takes up. There is a finite amount of storage on a diskette, so the directory also keeps track of the free space available.

Storage on a diskette is allocated in blocks. As you store more files on a disk, the number of blocks unused diminishes. Don't try to fill a disk to capacity before starting another. If the disk runs out of room while PaperClip II is saving your text, some of it won't be saved.

You should always keep your disks labeled. Try to keep the labels accurate and informative. A disk labeled 'Disk number 2' is not very helpful when you are looking for text you saved three months ago.

Even with a well labeled disk, it can be convenient to see the actual directory as it is stored on the disk. PaperClip II provides two methods for accessing the directory. You can simply view it on the screen, scrolling up and down if there are many entries, or you can load the directory as a special text file. As text, you can edit and format it, then print it on paper. This is a great way to keep those disk labels accurate.

VIEWING A DISK DIRECTORY

To view a disk directory on the screen, first make sure the disk is in the drive. Then press

CONTROL

If you have one disk drive, with a single diskette slot, press

0

If you have several disk drives, use **0** or **1** as appropriate. Disk drive numbers are discussed in greater detail Device Numbers.

The screen will clear, and the indicator ***DRC*** will appear in the status line. After a short pause, the disk name will appear at the bottom of the screen along with some other letters and numbers. This is the disk **header.**

On the left will be either

DISK DRIVE #0: or **DISK DRIVE #1:**

depending on where the disk is. Next is the disk name, up to 16 characters long. Following the name is the disk identification. The ID is two characters, defined when the disk was formatted. Finally, at the very left, is the disk type — two characters used to determine the drive type that originally formatted the disk.

Press and hold the [↓] key. The disk directory will scroll up the screen. Release [↓] to pause the scrolling, press it again to continue.

While the directory is scrolling, the cursor is not visible. If you want to use the cursor before the end of the directory appears, release the [↓] key, then press

[CONTROL]

The cursor will appear at the top of the directory. Once you have done this you cannot scroll down to see additional filenames.

To view the entire directory, hold [↓] until the end of the directory appears. When the cursor reappears, you can scroll about the directory.

The last line of the directory will read **BLOCKS FREE = xxx**, where **xxx** is the number of unused blocks available on the disk. Depending on the drive, a freshly formatted disk, not yet used to save files, may have either 664 or 1328 blocks free.

DIRECTORY MODE

Notice the ***DRC*** indicator on the status line. PaperClip II is in directory mode. Filenames which have scrolled off the top can be seen by pressing [↑] PaperClip II won't scroll more than 250 files back — it's unlikely you will have that many.

To quickly scroll the directory list up and down, press [CONTROL] before pressing the cursor key. This is the same fast scrolling used for text.

In directory mode only a limited number of commands are available. These include load, save, append, erase, and direct disk commands.

Functions which could alter text are disabled.

While in directory mode, screen reading can be used to respond to filename prompts for loading, appending, saving, etc. Just remember to position the cursor properly *before* you invoke the command.

DIRECTORY FILE TYPES

For each file stored on the disk, the directory will show the filename, general file type, and the number of blocks that file occupies.

PaperClip II documents are stored as **prg** files. The PaperClip II program, and other computer programs, will also show as **prg** types.

Data files are usually marked **seq**, whether they were created by PaperClip II or some other program. The file type **usr** is often used as a disk 'marker'. The SpellPack dictionary disk has such a file.

Note: File type is only an indicator of the file contents. It is up to you to know what each file actually contains.

If an asterisk appears next to a directory entry, that file has not been properly stored on the disk. During the course of writing the data on the disk, an error was encountered which prevented completion. This could be caused by removing the disk while the activity light is on, or the disk may have a bad spot which won't correctly hold the magnetic information.

The most common cause of an unfinshed file is saving text without enough free blocks available. If the message

72,disk full,xx,xx

appears while saving text, that file will be incomplete. Files marked with an asterisk will often show 0 blocks used.

Do not erase a file marked with an asterisk. To remove the entry, validate the entire disk. This is described in Direct Disk Commands.

QUITTING DIRECTORY MODE

To continue editing the text, you must quit directory mode. Press

If the text hasn't reappeared yet, press

CLR HOME

again.

DISK DIRECTORIES USING WILDCARDS

PaperClip II can use pattern matching to show only a subset of directory filenames. This is similar to the wildcards used with search strings in text. If your disks tend to have a large number of files, this can make it much easier to find a specific one.

The actual pattern matching is done by the disk drive, and the resulting list is then transferred to PaperClip II. Because of this, mistakes in the search pattern will result in an error message from the disk drive, rather than from PaperClip II.

Several special characters can be used to describe the filenames to be listed. The syntax, or grammar is quite specific. If a message such as **33,syntax error,xx,xx** appears, the disk drive was unable to interpret the pattern supplied. The contents of the disk will not be altered by using an incorrect pattern.

To view a disk directory using a search pattern, press

CONTROL 2

PaperClip II will ask

Filename?

The pattern you enter here will be sent to the disk drive. Filenames which fit the pattern will be transferred to PaperClip II and displayed. Those that don't match will be skipped. Remember, PaperClip II doesn't use the pattern, it simply forwards it to the drive.

An asterisk * will match any number of characters at the end of the filename. There can be only one asterisk, and it must be the last character in the filename in the pattern. For example...

fre*	will match **fred**, **freddy**, **free 1000**, **freedom fighter**...
fre*dy	is invalid, the asterisk must be the last character in the filename pattern.
*	will match every filename, showing all files on the disk. This is the same as a regular view directory command.

The question mark **?** will match any single character. Several can be used in the same pattern, combined with the asterisk when needed. For example...

fre?dy	matches **freddy**, **freDdy**, **fre7dy** but not **frederick**
fre?d?	matches **freddy**, **freddd** and **freido**
fr?d*	matches **fred**, **frederick**...

You can specify the file type as well.
To see all the **prg** files on the disk, type

***=prg**

To list all files which start with **P** and have a file type of **seq**, type

P*=seq

Enter the appropriate pattern, and press

RETURN

The disk header will appear, followed by those filenames which fit the pattern. The number of blocks free will then be displayed. If you have two disks, both directories will be scanned and displayed.

PaperClip II will always check for two disks. If you have a single disk drive, or two drives with only one disk inserted, an error message may appear on the tab line. This simply indicates the second disk was not found.

LOADING A DIRECTORY AS TEXT

PaperClip II can load a disk directory as text. You can then edit, sort and print the directory as a regular text file. This is useful for labeling your diskette sleeves with the directory, or incorporating the directory into another document.

Text below the cursor, including the line the cursor is on, will be replaced by the directory information. Position the cursor where the directory is to be placed, then press

CONTROL 3

PaperClip II will prompt

Filename?

Enter the pattern of the filenames to load using the asterisk and question mark wildcards. To load the entire directory of all files, press

* RETURN

The disk directory will scroll up the screen. At the same time, it will be entered into text at the cursor position. If you have two drives, both directories will be loaded. When the directory is finished, PaperClip II will return to edit mode with the directory in text.

PaperClip II checks for both disks. If you have a single disk drive, or two drives with only one disk inserted, an error message may appear on the tab line. This simply indicates the second disk was not found.

SEQUENTIAL DATA FILES

PaperClip II can load and save text as a document file, or a data file. A document is saved as a block, with information such as line length and tab settings stored along with the text in a special format.

A data file contains only the actual text, without any extra information. The text is saved in a simple format that many other programs can understand.

A data file is also called a sequential file. The information in it can only be accessed in sequence. To retrieve the seventh item in a data file, the first six must be read before the seventh can be accessed.

Sequential files are used by PaperClip II for variable block and table of contents files. In addition, text saved as a sequential file can be exchanged by many programs. For example, a database program may generate a list of names and addresses as a data file. PaperClip II would be able to load that file, edit the list, then print the text.

SEQUENTIAL FILE FORMATS

There are two standards data in a sequential file can conform to. Files created by programs on Commodore computers commonly use a format known as **Commodore ASCII**. Unfortunately, most other computers store their information in a format called standard, or true **ASCII**.

The basic information content in either type is the same, only the format is different. Because data files do not have any formatting information stored with them, you must tell PaperClip II which type is being used. Unless you are exchanging data with a non-Commodore computer, you won't need to change the data type from the default of Commodore ASCII.

To change the sequential file data type, press

SHIFT F4

The **File Options** menu will appear.

Move the highlight bar to **Sequential File Format**

Use the + and – keys to select the desired format.

When the setting is correct, press

ESC

to remove the menu.

SAVING A SEQUENTIAL FILE

Make sure the disk you want to save the text on is formatted, and has a sufficient number of blocks free. A full text area will need about 160 blocks free. The text will be stored in **seq** type file.

When you are ready to save your text as a sequential file, press

CONTROL Z

PaperClip II will ask

Filename?

Disk filenames can be up to 16 characters long. Each file stored on a diskette must have a unique name. Letters, numbers and punctuation characters are allowable. Avoid using *** ? , : " @ # $ % & =**

Once you have entered the filename, press

RETURN

PaperClip II will ask for

Drive number?

If you have one disk drive, with a single diskette slot, always answer

0 RETURN

If you have several disk drives, you can use **0** and **1**, as appropriate. Disk drive and device numbers are discussed in detail in Device Numbers.

If there is a file already listed in the disk directory with the same filename, PaperClip II will ask

Replace existing file?

To replace the file on disk with the text in memory, press

Y [RETURN]

If you don't want to erase the file currently on the disk, press

N [RETURN]

or

[CONTROL]

If a disk error is encountered, the error message will be displayed on the tab line.

While the data is being written, the tab line will show the drive number and filename, in the form **0:filename**. The line counter in the status line will increment after each paragraph. The cursor will start flashing when the save has been completed. The filename will remain displayed on the tab line until you start typing.

LOADING A SEQUENTIAL FILE

Loading a sequential data file replaces any text currently in memory. PaperClip II will not check the contents of the file. You should be fairly sure the file contains text data before loading it in.

If you know the name of the sequential file, press

[CONTROL] J

PaperClip II will ask for

Filename?

Type the name of the data file on disk.

If you are not sure of the filename, first display the directory of the disk containing the text file. Place the cursor on the first letter of the filename you want to load. Press

[CONTROL] J

When PaperClip II asks

Filename?

press

Once you have the correct filename entered, press

When specifying the filename to be loaded, you may use special 'wildcard' characters. When using wildcards, the first filename which matches the pattern will be loaded. Use the same pattern characters as described for disk directories.

If you have two disk drives, or a single drive with two slots, both disks will be scanned for the file to be loaded. If the filename cannot be found, the message **62,file not found,00,00** will be displayed on the tab line.

If the file is found, the text will be loaded into memory. The tab line will show the filename, and the line indicator on the status line will increment as the text is loaded.

If the file can't be loaded, or some other disk problem arises, the error will be displayed on the tab line. Common disk errors are discussed in page Appendix C.

Note: Loading a data file erases any text in memory — make sure you've saved the text you're working on before loading another one.

DIRECT DISK COMMANDS

The disk drive in a Commodore computer system is intelligent. It has its own microprocessor and memory, just like the computer. It can carry out commands independent of the computer. This allows it to perform such functions as formatting a new diskette, or validating a used one, while you continue to use the computer.

Since the disk drive is a separate computer, you need to be able to tell it what to do. PaperClip II can send commands to the disk drive via the **command channel**. This is a special link between the computer and the drive, like a telephone 'hot line'. PaperClip II doesn't examine the commands you send, it simply forwards them to the drive for interpretation.

Whenever you tell the disk drive to do something, it will prepare a reply. You can ask PaperClip II to read this message. This is called 'reading the disk error message'. The reply isn't forwarded until the command has been completed, so PaperClip II may have to wait a moment before displaying the message on the screen.

There are many disk commands, the most common are described here. Refer to the manual that came with the drive for more information.

SENDING A DIRECT DISK COMMAND

To send a direct command to the disk drive via the command channel, press

CONTROL SHIFT >

The tab line will display

>

Enter the command to be sent and press

RETURN

PaperClip II will immediately send the command to the disk drive. If the drive is already busy processing a previous command, PaperClip II will wait until the drive accepts the new command. As soon as the command has been properly sent, PaperClip II will return to normal editing. It will not check to see if the command was interpreted correctly.

To abort the command, without sending anything to the drive, press

CONTROL

PaperClip II will return to editing without sending the command.

ERASING A DISK FILE

To erase a file from the disk, you need to send a command to the drive telling it the filename, and what you want it to do. Make sure the disk is in the drive, then press

CONTROL SHIFT >

The tab line will change to

>

To erase a file from the disk, we need to send the **scratch** command. This tells the drive to scratch (erase) the file from the directory, and mark the blocks used by that file as available, adding to the free blocks count. Press

S

The letter S stands for scratch. Next enter the drive number the disk is in. If you are using a single drive, enter

0:

Now type in the filename of the disk file you want to remove from the disk. If the disk directory is visible, using screen reading can help avoid erasure of the wrong file accidentally.

You can use filename pattern matching, but be sure you know exactly which files will match the wildcards. For instance

>s0:file*

would delete all files whose names began with **file**

>s0:fi?ename

would scratch **filename**, **fikename**, **firename**...

Note: While it is technically possible to un-erase files using a special program, consider file erasure as permanent. If you are unsure about the exact filename, or the contents of the file, don't erase it!

To quit without sending the command to the disk drive, press

CONTROL

After entering the filename to be erased, press

RETURN

PaperClip II will immediately send the command to the disk drive. If you have entered the command correctly, the filename specified will be removed from the directory.

FORMATTING A DISK

When you remove a new diskette from the box for the first time, it is completely blank. The surface has no particular magnetic pattern. Before the disk drive can store information on it, the disk must be **formatted**. Formatting is the process of magnetically mapping the disk surface into many small areas, called blocks. In addition, a special area called the directory is organized and space for it set aside. Only after this has been done can information be stored on the disk.

When you format the disk, you provide a name and an ID code. The disk name is up to you, use something which will provide some indication of the data you will store on the disk. The disk ID is a two character code used by the drive to keep track of the diskettes as you exchange them, taking one out and inserting another, during daily use. While the drive will usually know which disk is which, it is a good idea to use a different ID for each disk you format.

To format a diskette, put it in the disk drive. Be sure you put the correct disk in – any data stored on the disk will be completely obliterated by the formatting operation. Now press

CONTROL SHIFT >

The disk command prompt will appear...

```
>
```

To format a disk we need to send the **new** command. Press

N

Enter the drive number. If you are using a single drive, enter

0:

Now type in the name you want to label the disk as. Up to 16 alphanumeric characters are allowed. After the disk name, enter a comma, then a two character disk ID. Choose a unique pair that haven't been used with another diskette. Again, both letters and numbers are allowed.

The resulting command should look like this...

>n0:diskname,ID

To quit without formatting the diskette, press

CONTROL

To format the disk in the specified drive, press

RETURN

VALIDATING A DISK

If the disk drive can't complete a command for some reason, it may not be able to clean up properly afterwards. This could be due to a damaged disk, or caused by opening the drive door while the activity light was still on. If a disk operation hasn't concluded correctly, the file being worked on at the time will be marked with an asterisk.

When this happens, the first thing to do is duplicate the diskette. After making sure you have a copy of the affected disk, you should **validate** the original disk. Validation causes the disk drive to check every file listed in the directory, looking for inconsistencies and errors.

When you've used a disk for a while, saving, re-saving and scratching files on it, some of the blocks may become lost. They aren't being used by a file, but aren't included in the free blocks either. Validate your work disks occasionally. This will provide some indication of the disk's general health.

As a disk becomes worn, errors will start to occur more frequently. When this happens, don't validate the disk any more. Copy the files onto a new disk, and discard the old one. It is much better to discard a suspect disk than to wait until it loses some valuable text.

When the validation process is finished, every file still listed in the directory has been thoroughly checked. Any files found to be in error, or incomplete, will be removed from the directory.

To validate a suspect disk, press

CONTROL SHIFT >

The disk command prompt will appear...

>

If you are using a single drive, enter

V **0** RETURN

The disk drive will trace through the contents of a disk, checking for any files that are incorrectly stored. These will be removed. A directory entry marked with an asterisk means the file is incomplete. Validating the disk is the only way to properly remove these files.

If the validation cannot be completed, the disk error light will flash. This indicates a problem which cannot be corrected. Read the disk error message to find the cause of the error.

READING THE DISK ERROR MESSAGE

After every disk function, the disk drive prepares a reply. PaperClip II automatically checks this when you use built in commands such as load and save. When you issue a direct disk command, PaperClip II doesn't check the disk reply automatically.

You can ask PaperClip II to read this message directly. This is called **reading the disk error**. It's called an error message even if there wasn't any problem. The reply isn't returned until the disk command is completed, so PaperClip II may have to wait a moment before displaying the message on the screen.

Any time you use direct disk commands, immediately check the resulting disk status. The error message is updated every time a disk command is issued, so you must read it before issuing another command if you want to see the result of the first command.

To retrieve the current disk status message, press

CONTROL SHIFT <

The disk status message will be displayed on the tab line.

The disk status can only be read once. If you read it a second time, the drive will report **00,OK,00,00** regardless of the success or failure of the last operation.

Common disk errors are listed in Appendix C, Summary of Error Messages. Your disk drive manual will provide a complete list of all possible disk errors.

DEVICE NUMBERS

Each peripheral connected to the Commodore 128's **serial bus** has a unique **device number**, much like house numbers on a street. When the computer needs to communicate with an external device, such as a disk drive, it uses the device number. Before PaperClip II can use a specific device, it needs to know what the device number is.

In addition to the device numbers, PaperClip II needs to know whether you have one or two disk drives, with single or dual disk slots.

If you have a single disk drive, the device number is usually **8**. If you have two single drives, the second should be set to device number **9**. While this can be done with a special program, it is better to have it permanently changed by your computer dealer.

If you have a 1571, there is a switch on the back, please refer to your 1571 manual on Changing Device Numbers as to how these switches should be set.

SETTING THE DISK DEVICE NUMBER

You must match the disk device number settings to your equipment before PaperClip II can properly control the disk drives. PaperClip II can utilize either one or two single slot disk drives, or one dual slot drive. (A dual slot drive has two diskette slots within the same cabinet). You must tell PaperClip what type of drive you are using, in addition to the device numbers.

To adjust the disk device numbers, display the **File Options** menu. Press

SHIFT F4

Move the highlight bar to **Disk Drive Device Number**.

If you have only one disk drive, either single or dual slot type, you should select **8**. This is the default setting. If you have many drives with various device numbers, select the appropriate number for your equipment.

SETTING THE DISK DRIVE ARRANGEMENT

Adjust the disk arrangement in the **File Options** menu. Press

SHIFT F4

Move the highlight bar to **Disk Drive Arrangement.**

PaperClip II needs to know the arrangement of your disk drives. If you have two separate single slot drives, select **Two Single.** If you have one drive, either single or dual slots, select **One (Dual).**

During disk operations, references to drive number **0** will access the main device number specified in Disk Drive Device Number. If Two Single is selected, all references to drive number **1** will be passed to the next device number up from that specified by Disk Drive Device Number. This has the effect of making two single slot drives act as one dual slot drive.

For example, if the Disk Drive Device Number is set to eight, references to drive **0** will work with device number **8.** For drive number **1**, device number **9** will be used instead.

SETTING THE DICTIONARY DEVICE NUMBER

To set the dictionary device number, use the **File Options** menu. Press

SHIFT F4

Move the highlight bar to **Dictionary Device Number.**

When using SpellPack, PaperClip II will use the device number listed here to access the dictionary disk. If you have a one disk drive, either single or dual slot, you should select **8.**

If you are using two single slot drives, select either **8** or **9**, depending on which drive you intend to place the dictionary disk in during spell checking.

SETTING THE PRINTER DEVICE NUMBER

There are several ways to connect a printer to the Commodore 128 computer. PaperClip II can work with printers connected to the user port, the RS232 port, and the serial bus. Printers connected to the serial bus can be plugged in directly, or with a printer interface.

If your printer is manufactured by Commodore, it probably plugs into the **serial bus** directly. The cable from the printer will plug into the back of the disk drive. Some printers made by other companies also connect directly to the serial bus. These are usually advertised as being 100% compatible with a certain Commodore printer.

Most non-Commodore printers will be connected to the computer through a **printer interface**. This is usually a small box with a cable connected to the printer, and a second cable plugged into the back of the disk drive. These printers are often called **parallel printers**, because the interface transfers data to the printer using a parallel technique.

If you have an **RS232 serial** printer, it is probably connected to the RS232 port, in the left rear corner of the computer, using a small adapter. In some cases, this same port is used to directly connect a parallel printer, using a very simple cable adapter.

Find out how your printer is connected to the computer. To set the configuration to match your printer setup, press

SHIFT F4

to invoke the **File Options** menu.

Move the highlight bar to **Printer output**

If your printer is made by Commodore, check the back for a small switch. This switch is used to set the device number to **4** or **5**. The usual setting is 4. Set the device number in the menu to match.

If you are using a parallel printer connected with a printer interface to the serial bus, check the interface settings. Most will be set to device 4. Match the menu to the device number the interface is using.

If the printer is connected to the port in the left rear of the computer, check whether it is using an RS232 or parallel hookup. If the printer is using a simple parallel interface on the **user port**, set the menu selection to **parallel**. If the printer is using an RS232 serial interface, select **RS232**.

RS232 printers will need several other settings adjusted before they will print properly. The menu entries for **RS232 Baud Rate**, **RS232 Word Length**, **RS232 Parity**, and **RS232 Handshaking** must be correctly set. See the appendix on RS232 printing for more detail on RS232 printer settings.

When the printer settings correlate to the equipment you are using, press

The menu will disappear.

PRINTING TO DISK

PaperClip II can be instructed to send output intended for the printer to a disk file instead. This can be useful when sending text to another computer via modem. Occasionally another program you want to transfer information to will require that it too be formatted. Redirecting the output to a disk file is called printing to disk.

To print to disk, set the printer device number to 8 using the **File Options** menu. When you issue the command to print, PaperClip II will ask you for the filename to send the output to. All output intended for the printer (including printer commands and control codes) will then be sent to the sequential file on disk.

Remember to reset the printer output setting afterwards.

AUTOMATIC TABLE OF CONTENTS

PaperClip II can create a table of contents file, containing text entries and page numbers. This can be used to generate text for an index, table of contents, or similar table.

First, the table of contents command specifies the file used to hold the contents text. Next, each entry is placed in the text at the appropriate point. During either video or printer output, PaperClip II will open the specified file. As each table entry is encountered, it will be added to the disk file along with the current page number. When the output is completed, the disk file will be closed.

The resulting data file can be loaded and edited. Each entry will have the page number it occurred on listed. This makes the creation of an accurate indexed list quite straightforward.

To prepare your text for automatic table of contents generation, near the beginning of the text place the command

✓tf:

followed by the drive number, colon, and filename.
For example, to send the data to a file called **raw contents** on drive **0**, the command would be

✓tf:0:raw contents←

Each place in the text where an entry should appear in the contents file, place the command

✓tb:

followed by the text to be included in the contents file. PaperClip II will copy the text into the specified data file, along with the current page number.

For example, the command

✓tb:Reducing Overall Costs←

would copy the text **Reducing Overall Costs** into the contents file, followed by the current page number. When the entire output has been processed, PaperClip II will close the contents data file.

The text in the contents file can now be loaded using

CONTROL J

Edit the text, and print it out.

Note: If you need to output the text without creating a new table of contents file, replace the ✓tf: command with ✓cm:

Do not use the table of contents commands in conjunction with external file links or output to disk. If you select too many disk based functions, they will start to override each other, confusing both the disk drive and PaperClip II.

FORM LETTERS

PaperClip II can incorporate lists of data into special place holders in text prior to printing the document, then automatically load a new set of data, and print the text again, continuing until the data has been exhausted. This is often called mail merge, since a common use is to fill in the same form letter many times with names and addresses from a mailing list or similar program.

PaperClip II can be used to create, edit and print the actual data as well as incorporate it into text during printing. Prior to output, the variable blocks may be filled with data from a disk file, the information can be entered by hand, or both methods can be combined.

An example of a form letter would be...

> August 25, 1986←
>
> Dear Ms. Dianne MacLead,←
>
> Our records show that the amount overdue on your account is $526.50. Please submit this amount in order to keep your valued account in good order. If this amount has been paid then disregard this notice.←
>
> Sincerely,←
>
> Alicia DeSoto←

The text for every letter sent to an overdue account would be the same. Only the name and the amount owed varies from one to the next. You can create a **form letter** with holes where the information that changes can be inserted. These holes are called **variable blocks**.

There are three stages to using variable blocks — creating the form letter, generating the variable data, and printing the filled out form letters.

VARIABLE BLOCKS

PaperClip II uses a special pair of symbols called a **variable block** marker to note each spot where extra text is to be inserted before printing the text. To enter a variable block into text, position the cursor where the inserted text is to appear, then press

CONTROL B

A pair of small squares will be inserted into the text. These blocks will not be printed, they simply act as a marker indicating where data is to be inserted.

CREATING A FORM LETTER

If we modify the letter above, replacing the name and amount with variable block markers, it would look like this...

August 25, 1986←

Dear ■■ ,←

Our records show that the amount overdue on your account is $ ■■. Please submit this amount in order to keep your valued account in good order. If this amount has been paid then disregard this notice.←

Sincerely,←

Alicia DeSoto←

Now we need to set up the variable data to be used with this letter. Save the form letter on disk.

CREATING A VARIABLE DATA FILE

The variable data used in a form letter is stored in a separate data file on disk. This file could be created using PaperClip II, or it could be generated by a database or mailing list program. For the example form letter, the text would be entered as follows.

Erase all text, then enter the following information.

Annie Ablative←
12.36←
Mr. A. Galapagos←
85.26←
Mrs. Begonia←
789.23←

Notice that each item is followed with a **return** marker. When PaperClip II is filling each variable block, the **return** marker indicates the end of one data item and the start of the next.

Variable data files must be stored on the disk in **sequential** format. To save the data file on disk, press

CONTROL Z

PaperClip II will ask

File name?

Use the name **data file** and press

RETURN

When the prompt

Drive number?

appears, answer

0 RETURN

to store the data file on drive **0**.

PRINTING A FORM LETTER

Load the form letter saved earlier into text. For the example we will preview the form letters on the screen, but they could just as easily be printed. Press

CONTROL V

PaperClip II asks

Fill variable blocks?

Press

Y RETURN

Next question is

Variable file name?

Enter the name **data file** and press

RETURN

PaperClip II will check the drive for the file before continuing. The last question is

Global?

Press

RETURN

The first copy of the form letter will scroll onto the screen.

When the end of the first letter is reached, pressing **space bar** will present the same letter again, but the first set of data will have been replaced by the second, and so on until the disk file is exhausted. When there is no more data in the disk file, the message **Out of variable data** will appear.

MANUAL VARIABLE BLOCK COMMANDS

In addition to filling and emptying variable blocks during output, you can directly empty all variable blocks, enter new data for each one by hand, or from a disk file, and even switch data files in midstream.

To empty all variable blocks in text, press

CONTROL SHIFT N RETURN

To move the cursor directly to the next variable block in text, press

CONTROL SHIFT F

If there are no further variable blocks in text, the message **Out of variable blocks** will appear.

To select a data file from which to fill the variable blocks directly, press

CONTROL SHIFT Z

PaperClip II will ask

File name?

Enter the name of the disk file containing the data to be inserted into the variable blocks and press

RETURN

This command can also be used to switch data files, or restart the current one by re-entering its name.

To insert the next data item from the currently selected file into the next variable block, press

CONTROL SHIFT B RETURN

PaperClip II will transfer a single data item into the next available variable block. This is very handy when you want to see exactly where each data item from the file will go, one at a time.

To fill all variable blocks in text with data from the currently selected data file, press

CONTROL SHIFT V RETURN

Each variable block will be filed in turn from the information in the data file. This command requires that all of the blocks be empty. Use CONTROL SHIFT N RETURN to ensure this.

MULTIPLE DATA ITEMS PER LINE

When many data items have to be entered into a data file, several can be placed on each line of text using a special separator character. This separator is entered by pressing

ESC £

and will appear in the text as \

For instance, the data from the previous example could be entered as...

Annie Ablative\12.36←
Mr. A. Galapagos\85.26←
Mrs. Begonia\789.23←

This allows each line to hold several related data items. When filling variable blocks, PaperClip II will recognize \ as a valid data separator.

VARIABLE BLOCK TECHNIQUES

If you are using variable blocks to hold street addresses, remember that each line of the address is a separate data item, and will require another variable block. If some addresses have fewer lines than others, add blank lines to the shorter ones to ensure that every address contains the same number of data items.

PaperClip II doesn't examine the contents of the data file, it simply retrieves enough data items to fill all the variable blocks, then prints the document.

You may have a data file which contains too many data items for the form letter you want to print. You can absorb extra data items by placing variable blocks in a comment in text. For instance, if you needed to skip over one data item for each copy of the form letter printed, you could use the command

✓cm:Skipped items ■■ ←

PaperClip II will fill the variable block in the comment just like any other, but it won't appear in the printed output since it is part of a comment.

Note: Variable blocks cannot be used at the same time as external file links or output to disk.

TELECOMMUNICATIONS

Telecommunications is the process of exchanging information with another computer using a telephone line. With the communications mode built into PaperClip II, you can access electronic mail, on line libraries, airline bookings, computerized shopping, local bulletin boards, free software...

Before you can explore the possibilities telecommunications presents, you will need a modem. A modem is used to connect your computer to the telephone line in your house. It translates the computer's data into a stream of high pitched tones. These tones are sent over the telephone line to another modem, which converts the tones back into computer data.

Because telephone lines are not designed to carry computerized data, it is transferred at a limited rate. Exactly how fast is determined by the capacity of the modem you buy, and the modem at the other end of the line. Both computers will need a modem, and both modems must be set to the same speed.

PaperClip II has been designed to work with many popular modems. Refer to the listing below. If your modem is not listed, it may be similar to one which is supported. Check your modem manual. The modem will need to be connected to the phone line. Direct connect modems use a cable designed to plug directly into a modular phone jack. If this is not possible, you can use an acoustic modem, into which the telephone handset is placed. Acoustic modems are generally very simple, and won't dial or answer the phone.

TELECOMMUNICATIONS BASICS

Computer systems store information, such as a PaperClip II document, in small pieces called bytes. Each byte is made up of 8 bits. When you send data via telecommunications, each bit is sent individually, followed by the next, until the entire byte is sent. Many of the settings in PaperClip II's **Communications Options** menu deal with the various ways of sending each byte.

When you use PaperClip II to call a remote computer, many things happen. PaperClip II uses the modem to dial the number. When the remote end answers, PaperClip II listens for a **carrier** tone. This is a special whistling sound an answering modem makes. When the carrier is detected, your modem will respond with its own carrier, using a slightly different tone.

Once the two modems have linked carriers, each reports **carrier detect** to its computer. PaperClip II announces that it has connected, and waits for you to press

RETURN

If you don't respond within one minute, PaperClip II assumes you have left it unattended, and hangs up.

Once connected, each key you press is immediately sent to the other computer via the modem. Characters received from the remote system are displayed on your screen. This is telecommunications — transferring information from one computer to another.

Most dial up systems require you to press a certain key once or twice before they respond. In addition, they usually echo back any characters they receive from you. In this way, each key you press is sent to the remote computer, which sends it right back to your end. When the character arrives at your modem, PaperClip II displays it on the screen. In this way you see what you are typing.

USING PaperClip II COMMUNICATIONS

Telecommunications is an independent system within PaperClip II. The command style is different from the rest of PaperClip II.

Computer telecommunications has its roots in remotely operated teleprinters (remote control typewriters). Many of the terms and techniques used today are based on these original telecommunicators. Described below are some of the most common terms used.

Baud Rate — Used to describe how quickly information is transferred between computers. The higher the baud rate, the less time it takes to exchange a given amount of data. Baud rate can also be expressed as bits per second, or BPS. The baud rate you use is determined by the slowest component in the link between the computers. If you have a 1200 baud modem, and your friend has a 300 baud modem, then 300 baud is the fastest you can exchange information.

Parity — Data sent over telephone lines is subject to interference. Clicks and buzzes during telephone conversation appear as incorrect or missing bits during data communications. Parity is a system of marking each byte of data before it is sent, then checking the received byte's marker for errors. Both ends must agree on the type of parity checking to use, otherwise every byte will be interpreted as incorrect by the receiving computer.

Some systems do not bother with parity, and neither send parity information nor check it on reception. Occasionally, a system which is advertised as not using parity will actually be using MARK or SPACE parity.

Word Length – Computer information is often stored in a form called ASCII in which only 7 of the 8 bits in each byte are used. Since the 8th bit is never used, many ASCII systems only send the 7 bits, reducing the time needed to send each byte. Both ends must use the same word length setting, otherwise the receiving end will lose count of which bits are for which byte.

Duplexing – Many information networks automatically echo back information they receive. As you type on the keyboard, each character is sent to the other system. Each is instantly echoed back. The received data is displayed on your screen, and you see the characters you type. This is called **Full Duplex**, sometimes called **echoplex**.

Other systems do not provide this automatic echo. If you set PaperClip II to **Half Duplex**, characters will be displayed as you type them, rather than waiting for the echo.

Text Buffer – PaperClip II can send from and receive text using the same memory used for normal editing. You can load a document in from disk, switch over to telecommunications, and send it out. When capturing, PaperClip II copies received data into text as it comes in.

XON/XOFF – Sometimes the computer at the other end won't be able to keep up with the data from PaperClip II. It needs to tell your computer to wait until it is ready for more. A protocol called **XON/XOFF** is used to control the flow of data.

A special character called XOFF is sent when the receiving system needs a breather. The sending computer then waits for an XON character before continuing. This is sometimes called CTRL S, CTRL Q handshaking.

File Transfer Protocol – When transferring the contents of a disk file, it is important that the received file be exactly the same as the original. Several error checking and correcting methods have been developed to assure the integrity of file transfers. These protocols guarantee that the information sent will be received correctly. The data is sent in small segments, along with several statistics and other checks. Each segment is checked, and if in error, re-sent. This process continues until the data has been transferred correctly. If a segment can't be received error-free, the transfer is aborted.

Most computers use the **XMODEM CRC** protocol. If the CRC method is not recognized, they revert to standard XMODEM. Bulletin boards operated with Commodore equipment often use the **Punter C1** protocol.

SPECIAL KEYS USED IN COMMUNICATIONS

Many remote systems use special **control codes** for functions such as pausing transmission, aborting a command, requesting help, etc. These codes are sent by holding down [CONTROL] while pressing another key. For this reason, PaperClip II has a different command key in communications mode.

To issue a command in communications mode, hold down the [C=] key while pressing the key for that function. For example, the command

[C=] R

means press [C=] then press and release the R key while still holding the [C=] down.

Control codes will be shown in the form

[CONTROL] C

which means hold [CONTROL] down, then press and release the C key with the [CONTROL] key held down.

The keys applicable to communications are...

[NO SCROLL]	Switch communications mode on and off
[F1]	Display the **Communications Options** menu
[F3]	Display the **Dialing Options** menu
[F5]	Start text capture or transmission
[CONTROL]	Used in conjunction with a letter key to send control codes to the remote system.
[SHIFT] [CLR HOME]	Clear the communications screen
[C=] B	Adjust the baud rate between 300, 1200 and 2400
[C=] W	Adjust the word length between 7 and 8 bits
[C=] P	Cycle through the five possible parity settings

C= D Switch between full and half duplex operation

C= H Hang up immediately

C= C Alternate which clock is displayed

C= Z Reset the displayed clock to zero

C= T Start file transmission using the current protocol

C= R Start file reception using the currently set protocol

C= CLR HOME C= CLR HOME Move the cursor in text to the top of text

C= RUN STOP Move the cursor in text to the end of text

C= ↓ Move the cursor down in text

C= ↑ Move the cursor up in text

C= ← Move the cursor left in text

C= → Move the cursor right in text

C= RETURN Move to the beginning of the next line in text

Communication Options and **Dialing Options** menus are available in communications mode. They provide selections for almost any equipment configuration and communications setting.

Once you have selected the appropriate settings for your equipment, you can save the current configuration. When PaperClip II starts up next time, it will automatically match the settings to those saved.

SETTING UP FOR COMMUNICATIONS

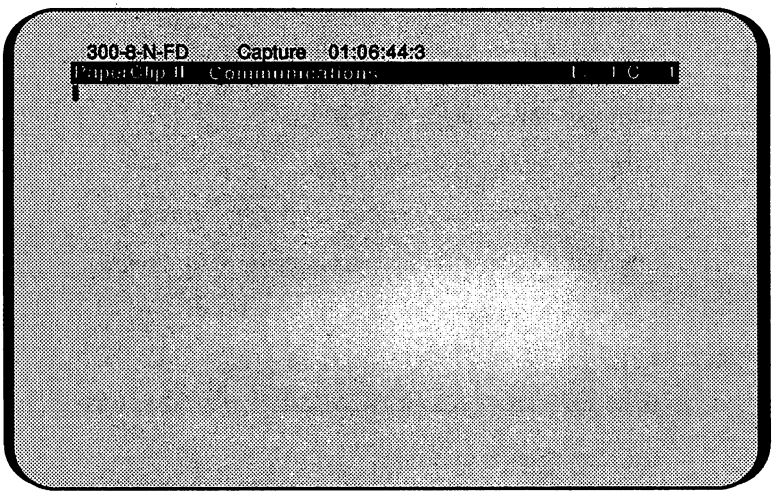
To switch to the communications mode, leaving text intact, press

NO SCROLL

The main communications screen will appear.

When you need to switch back to editing mode, press

NO SCROLL



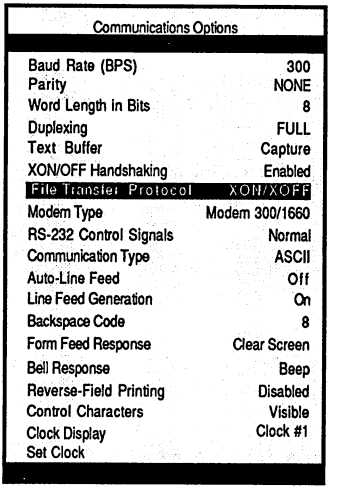
The tab and status lines display the present communication settings.

Before you can start using telecommunications, you must tell PaperClip II exactly what equipment you are using, and what type of remote system you will be calling.

To display the **Communications Options** menu, press

F1

This menu is used to describe the equipment you have, and how to respond to the remote computer.



To change a menu setting, move the highlight bar with ↑ and ↓ Select the correct setting using + and – When the menu accurately reflects your equipment configuration, press

ESC

SELECTING YOUR COMMUNICATIONS OPTIONS

Baud Rate
The baud rate determines how quickly information is transferred between computers. If you have a 300 baud modem, select 300. If you are using a faster modem, select from the speeds listed in the modem manual. Never set this higher than the baud rate your modem was designed for. PaperClip II can operate from 50 to 9600 baud. 9600 baud is not available when using a 40–column display.

Parity
This is not determined by your modem, but is part of the protocol used to transfer information between computers. Both PaperClip II and the remote computer must be set to the same parity. Parity may be selected from: NONE, ODD, EVEN, MARK, SPACE.

Many systems don't bother with parity and will work with parity set to NONE. Check the information packet for the service you are calling for the correct parity. If you aren't sure, try using NONE.

Word Length
You can choose either **7** or **8** bits. Because ASCII uses only 7 of the 8 available bits in each byte, many systems ignore the last bit, skipping on to the next byte instead. Since data is communicated a bit at a time, this results in quicker information transfer. It's important that both ends use the same word length. Again, this depends on the system you are calling.

Duplexing
Most systems automatically echo back information they receive. Each character you type in is echoed back and appears on your screen. This is called **full duplex**.

For systems which don't provide this echo, use **half duplex**. Characters will be displayed directly on your screen as you type.

Text Buffer
One of the most useful features of built in communications is that you can directly access the text while on line. You can load a document into text, edit it, switch to communications, then send the text to the other computer. You can capture information sent from the remote system into text, then switch back to edit mode, save it on disk, then switch back to on line.

Set this to indicate whether you will be sending text to the other computer, or capturing incoming data.

XON/XOFF Handshaking
When receiving data, the computer may need to request the far end to momentarily stop sending data. It does this by sending a special **XOFF** character. The sender will wait until it receives an **XON** character.

While most systems adhere to this protocol, some don't. Set this to **Enabled** unless the remote system doesn't use handshaking. XON/XOFF is sometimes called **CTRL S, CTRL Q** handshaking.

File Transfer Protocol
When transferring files direct from disk, PaperClip II can employ any of several file transfer protocols. For simple text transfers, **XON/XOFF** protocol may be used. It does not provide any error checking, merely pausing data flow in response to XON and XOFF characters from the receiver.

For more critical files, you may select from **XMODEM CRC**, **XMODEM**, and **Punter C1** protocols. These check the data thoroughly – if an error is detected, the data is re-sent. Most systems use XMODEM CRC, which is an improved version of the original XMODEM protocol. If the

CRC enhancement is not recognized by the remote system, PaperClip II will revert to standard XMODEM. Some older systems may become confused by the CRC attempts. For these, select regular XMODEM.

Punter C1 is used mainly by Commodore-specific bulletin boards.

Modem Type
PaperClip II has been set up to work with a wide variety of popular modems. If your modem is listed below, use that selection. For those not listed, you will need to determine which modem listed here is similar to yours. Check your modem manual. You must select the correct modem type before using PaperClip II for telecommunications.

Vicmodem/1600
This is the original Commodore modem designed for the VIC-20 computer. A simple device, supporting 300 baud with carrier detection, manual answer/originate selection, no dialing capability. Many older non-Commodore modems are similar to the Vicmodem. If you aren't sure what modem selection to use, this is a good first try.

1650
Commodore modem, supports pulse dialing, carrier detection, auto-answer, manual answer/originate selection. Use this setting for 300 baud Volksmodems.

Modem300/1660
Commodore modem, supports pulse dialing, auto-answer, manual answer/originate selection. Early models did not provide carrier detection.

Mighty Mo
Computer Devices International modem, supports pulse dialing, carrier detect, auto-answer, electronic answer/originate selection.

HesModem II
Manufactured for Human Engineered Software (HES), supports pulse dialing, carrier detect, auto-answer, electronic answer/originate selection.

Modem1200/1670
Commodore modem, similar capabilities to Hayes modems, provides result codes. Supports auto-answer, pulse and tone dialing, carrier detect, electronic answer/originate selection, 300 and 1200 baud operation.

Note: When first turned on, this modem defaults to automatically answering the phone. If you use this modem, either disconnect the phone line when not using communications, or enter the commands to disable auto-answer immediately after starting PaperClip II. If you don't, the modem will answer the phone whenever anyone phones! The modem command is ATS0=0 [RETURN]

Hayes
Hayes SmartModems and compatibles. Supports 300, 1200, 2400 baud, auto-answer, pulse and tone dialing, carrier detect, electronic answer/originate selection. PaperClip II automatically makes use of the call progress monitoring and automatic baud rate matching features provided in 1200 and 2400 baud Hayes modems.

Other RS232
Similar to Hayes, this setting is intended for systems connected via an RS-232 interface, such as the Commodore VIC-1011A, and the **Batteries Included** 232-1. If you are using a cable to transfer data between two computers in the same room, not using the phone lines, use this selection.

PaperClip II will make full use of any special features offered by your modem. Modems not listed may work with a setting meant for a similar modem.

RS232 Control Signals
Some unusual interface cards and older modems designed for the VIC-20 and Plus-4 computers may require the control signals inverted. If you are using a modem listed above, set this to **NORMAL**. If control lines are being interpreted backwards, try using **INVERTED**.

Note: Few modems will require INVERTED.

Communication Type
While most telecommunications systems use ASCII, some systems operated with Commodore computers use a modified form called Commodore ASCII. Use the **Commodore** setting for these systems. If you are not sure which type the remote system will be expecting, use the **ASCII** setting.

Auto-Line Feed
Computer telecommunications began with teleprinters, which were really remote control typewriters. These printers had specific commands for returning the print head to the left side of the paper (Carriage Return) and advancing the paper to the next line (Line-Feed). The terms **carriage return** and **line-feed** come from this.

Some systems have combined these functions, and automatically assume line-feed when they receive carriage return. When PaperClip II receives a carriage return, it moves the cursor to the left edge of the screen. If **Auto-Line Feed** is set to **ON**, the cursor will automatically move down to the next line. If it is set **OFF**, PaperClip II will expect a line-feed character to move the cursor down.

If the system you are communicating with sends line-feeds, set this to OFF, otherwise text will be displayed double spaced.

Line Feed Generation
When you press [RETURN] PaperClip II sends a carriage return character to the remote computer. If this selection is set to ON, a line-feed character will be sent right afterwards. If the other system doesn't need line-feeds, set this to OFF.

Most remote systems will operate properly with line-feed generation set to ON.

Backspace Code
When working with a remote computer, [INST DEL] is the only key that can be used to backspace. The actual character expected by the remote computer varies. Most ASCII systems such as Compuserve use a value of **8** to indicate a backspace (delete) function.

Commodore-specific systems usually expect ASCII **20** to indicate backspacing. DEC (Digital Equipment Corp.) computers often need a setting of **127** to backspace properly. Select the code which matches the system you are calling.

Form Feed Response
When PaperClip II receives a form-feed character, which would advance the paper in a teleprinter to the top of the next page, it checks here to see what to do.

If you select **Ignore**, PaperClip II will not alter the display at all. Select LINE FEED to move the cursor down one line when a form-feed character is received.

Clear Screen will erase the text on the screen and place the cursor in the top left corner when a from-feed is encountered.

Bell Response
If your computer monitor includes a speaker, PaperClip II can beep when it receives a **bell** character from the other computer. If you want PaperClip II to remain silent, select **Ignore**.

Reverse-Field Printing
When communicating with Commodore-specific systems which send reverse-field text, set this to **Enabled**. If you are not working with a Commodore system, or want to disable these effects, select **Disabled**.

Control Characters
Only a few of the many **Control Codes** possible are actually used by most computers. PaperClip II refers to this setting to determine what to do when a control code is received that it doesn't understand. Often these characters appear as a result of telephone line interference. If you select **Visible**, these characters will be displayed in reverse field. **Visible (NC)** allows them to be displayed, but not captured into text. To ignore these codes entirely, select **Ignore**.

Clock Display
PaperClip II has two 24 hour clocks which run continuously. When you connect with a remote computer, Clock #2 is reset to zero. This is useful to keep track of how long you have been connected to the remote computer. Clock #2 stops when the carrier detected signal from the modem turns off. Clock #1 runs continuously. Select which clock is to be displayed at the top of the screen.

Set Clock
To set the currently displayed clock to a new time, press

RETURN

PaperClip II will ask

New clock setting:

Enter six digits representing the new time, in the format **HHMMSS**. **HH** is the hour in 24 hour format, **MM** is the minutes, and **SS** is the seconds. For example, 11:25 PM would be entered as

232500 RETURN

Pressing CONTROL while entering a new time will return to the menu without changing the clock setting.

Once set, the clocks will continue to keep time, even if you switch back to editing mode.

DIALING

Provided your modem is capable, PaperClip II can dial the phone number of another computer, wait for an answer, check for a proper carrier, then prompt you when the connection is made. If the number doesn't answer, or is busy, it can try other numbers until it gets through. If you need to collect electronic messages while you are away, you can have PaperClip II answer the phone, capture the information, then disconnect when the caller is finished.

Up to 10 numbers can be held in the phone number list. Each is stored with all the pertinent settings for that particular service. If you are talking to another computer user, and want to send or receive some computer data, PaperClip II can immediately pick up the phone, either as the originator of the call, or the answerer.

Before dialing a remote computer, make sure you have adjusted the various communication options to correspond with the those used by that system. In particular, check the modem type and baud rate. These must be correct for communications to work.

Note: Be sure the number you are calling will be answered by a modem! Don't use PaperClip II to call if you are unsure. Call by voice first, if a modem answers, hang up and and use PaperClip II to call back. It is very poor practice to call a phone number by modem if a person may answer the phone.

DIALING OPTIONS

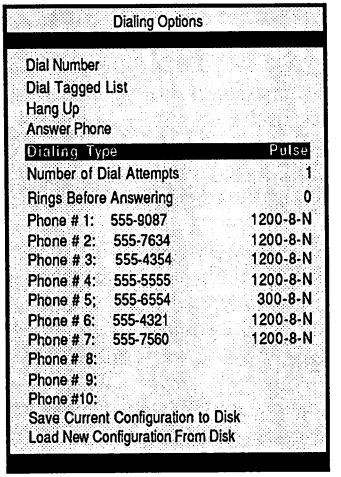
To display the Dialing Options menu, press

F3

This menu is used to store the phone numbers of a remote system, control the actual dialing operation, and save the configuration to disk. To invoke a command, or change a setting, move the highlight bar with ↑ and ↓ To adjust a setting, or enter a new value, use + and –

To actually execute the command, press

RETURN



Dial Number
Provided your modem can dial, use this command to dial a number directly without entering it in the phone number list.

To dial a phone number directly, press

RETURN

PaperClip II will ask

Phone number?

Enter the phone number. You may enter up to 14 characters. During dialing, PaperClip II will dial each digit in turn, pausing for 2 seconds when a comma is encountered. The letters A, B, C, D, are considered valid digits, and will be dialed if a touch tone modem is in use.

Some systems require that the calling modem provide the initial carrier. If an R is included in the number, PaperClip II will dial in answer mode. An **!** will cause the modem to go on-hook for 1/10 second when it is encountered in the dial sequence. Other letters and symbols in the phone number will be ignored.

Once you have entered the correct number, press

RETURN

PaperClip II will cause your modem to dial the number. During the actual dialing, the tab line will display **Dialing: CONTROL = abort.**

To abort while PaperClip II is still dialing the number, press

CONTROL

The modem will immediately cease dialing and hang up.

Once dialed, PaperClip II waits for a carrier detected indication from the modem. While it is waiting for the carrier, the message

Waiting: RETURN = online; CONTROL = abort

will be displayed.

To quit while waiting for a carrier from the remote end, press

CONTROL

PaperClip II will hang up the modem, cancelling the call.

To ignore the presence or absence of a carrier during the wait for carrier detect, proceeding immediately to online mode, press

RETURN

PaperClip II will proceed to the online mode, by-passing the wait for a carrier indication. If you are using a modem which does not supply a carrier detect signal to the computer (early Commodore 1660), this is how you get online.

If 30 seconds pass without carrier detection, and RETURN hasn't been pressed, PaperClip II will cancel the call and hang up.

When PaperClip II detects a proper carrier signal, it displays the message

Connect: Press RETURN or CONTROL

If the speaker in your monitor is hooked up, you will hear a beeping tone. This alerts you that a connection has been established, as you may have stepped away from the computer during the wait for the call to get through. If you find the sound distracting, turn the volume setting on the monitor down. To disconnect from the remote system, press

CONTROL

To acknowledge the modem link, press

RETURN

The **Dial Number** function can be used to switch directly from a voice call to online. Position the highlight bar, then press

RETURN RETURN RETURN

PaperClip II will immediately switch to online, causing the modem to 'pick up the extension'. Now hang up the voice phone. When the person at the other end instructs his modem to 'answer' the phone, then hangs up his handset, you will have switched from voice call to modem link without hanging up. Remember, one end must pretend to originate the call, the other to answer. Which modem does which is not important when switching from voice. Just be sure the other person knows which function to invoke.

Dial Tagged List
Once you have made several entries in the phone number list, each can have a **tag** set (see **Phone #** below). PaperClip II can dial each tagged number in turn until a successful connection is made.

To dial the currently tagged numbers, position the highlight bar, then press

RETURN

PaperClip II will start with the first tagged number. The number will be dialed, then PaperClip II will wait for a carrier. If no carrier is sensed after 30 seconds, PaperClip II will hang up, then dial the next tagged number. Each number will be tried in turn, cycling through the list. To cancel tagged dialing, press

CONTROL

When a successful connection is made, and the carrier sensed, PaperClip II will display

Connect: Press RETURN **or** CONTROL

If the speaker in your monitor is hooked up, you will here a beeping tone. After one minute, PaperClip II will hang up, assuming you have left the room. To go online, press

RETURN

After connecting with a carrier, the tag for that phone number will change from an asterisk to a dash. During tagged dialing, the **Number of Attempts** setting is ignored.

Note: Tagged dialing won't work with modems which don't signal carrier detect (early Commodore 1660 modems).

Hang Up
While online, with a carrier present, this function can be used to quickly hang up, disconnecting from the other computer. If a carrier is not present, PaperClip II will not attempt to hang up. To hang up immediately, disconnecting from the remote system, press

RETURN

PaperClip II will issue the hang up instruction to the modem. If the modem is a directly controlled on-hook/off-hook type (1650, 1660, Mighty Mo, HesModem II), PaperClip II switches to on-hook.

For the Commodore 1670 and Hayes modems, the **DTR** signal will be switched to false. After 1/10 second, if neither carrier detect nor **DSR** has fluctuated, PaperClip II will send the escape code **+++**. After 1 1/2 seconds, if carrier detect is still unchanged, PaperClip II will send the **ATH** command. Finally, **DTR** is switched back to true.

Note: You cannot hang up when using a modem which does not provide a carrier detect signal (early Commodore 1660's).

Answer Phone
This function is used to cause the modem to go immediately online in answer mode, producing an answer tone. **Answer Phone** can be used to switch directly from a voice call to online. Position the highlight bar, then press

RETURN

PaperClip II will immediately switch to online, causing the modem to 'pick up the extension'. Because the modem is set to answer mode, you will hear a shrill tone from the handset. Hang up the voice phone. When the person at the other end instructs his modem to 'dial' the phone without a number, then hangs up his handset, you will have switched from voice call to modem link.

Remember, one end must pretend to originate the call, the other to answer. Which modem does which is not important when switching from voice. Just be sure who is doing which.

If another computer has called you, use this function to answer the ringing phone. The modem will go off hook in answer mode, providing a carrier to the calling modem.

Note: Be sure the caller is a computer. The carrier is quite harsh; if a person is calling, this can be annoying.

Dialing Type
PaperClip II can use either tone or pulse (rotary) dialing. Set this according to the capabilities of your modem and your telephone service. In order to use tone dialing, you must have touch tone telephone service, and your modem must have tone dialing capability. PaperClip II supports tone dialing on Commodore modem1200/1670 and Hayes modems.

Select the correct setting with + and –

Number Of Dialing Types
When dialing a phone number using either **Dial Number**, or **Phone #**, PaperClip II will re-try for the number of attempts shown here. There is a short delay between re-tries to allow for settling of the phone exchange equipment, and to provide some chance for a caller to get through.

Adjust the setting with + and –

Rings Before Answering
When connected to a modem which can sense and signal ringing, PaperClip II can answer the phone automatically. Use this setting to indicate how many rings to delay before answering. A setting of **0** means don't answer. Rings from separate calls will not accumulate. If no rings are detected for 10 seconds, PaperClip II will start counting from zero again.

Adjust with + and –

Phone # x
PaperClip II can hold ten phone numbers in this list. Each number is stored with the communications settings in use when the number was entered. Each number can be dialed directly, or tagged to be dialed in sequence.

To enter a new phone number, position the highlight bar over the entry to be changed, then press

+ or –

PaperClip II will ask

Phone number?

Enter the phone number. You may enter up to 14 characters. If you are resetting the phone number in order to update the associated settings, press

RUN STOP

to redisplay the old phone number.

During dialing, PaperClip II will dial each digit in turn, pausing for 2 seconds when a comma is encountered. The letters A, B, C, D, are considered valid digits, and will be dialed if a touch tone modem is in use.

Some systems require that the calling modem provide the initial carrier. If an R is included in the number, PaperClip II will dial in answer mode, issuing a carrier immediately. An ! will cause the modem to go on-hook for 1/10 second when it is encountered in the dial sequence. Other letters and symbols in the phone number will be ignored.

Once you have entered the correct number, press

RETURN

PaperClip II will store the phone number in the list. The settings currently in use for baud rate, parity, word length, duplexing, communication type, auto-line feed and line-feed generation will be saved with the number. The new number will be displayed in the menu, with the selected baud rate, word length and parity shown to the right.

To dial a selected phone number, press

RETURN

PaperClip II will instruct your modem to dial the number. While dialing, the tab line will display

Dialing: [CONTROL] = abort

To quit while PaperClip II is dialing, press

[CONTROL]

The modem will immediately hang up.

Once the number has been dialed, PaperClip II waits for a carrier detect signal from the modem.

The message

Waiting: [RETURN] = online; [CONTROL] = abort

will be displayed while waiting for the carrier.

To hang up while waiting for a carrier from the remote end, press

[CONTROL]

To ignore the presence or absence of a carrier and proceed immediately to online mode, press

[RETURN]

PaperClip II will ignore the absence of carrier, going online immediately. If you are using a modem which does not supply a carrier detect signal (early Commodore 1660), this is how you get online.

If 30 seconds pass without carrier detection, and [RETURN] is not pressed, PaperClip II will hang up. If the number of re-tries specified in **Number of Dial Attempts** has not been reached, PaperClip II will dial the number again.

When PaperClip II detects a proper carrier signal, it displays the message

Connect: Press [RETURN] or [CONTROL]

If the speaker in your monitor is hooked up, you will hear a beeping tone. This alerts you that a connection has been established. To proceed online, press

RETURN

To tag the number for inclusion in the **Dial Tagged Number** function, press

T

An asterisk symbol will appear beside the number. If this number is dialed during tagged dialing, and connection to the remote system is made, the asterisk will be replaced with a dash.

To untag the phone number, press

T

a second time.

SAVE CURRENT CONFIGURATION TO DISK

This command will save the current configuration on disk, including all menu selections, phone numbers, screen colors, etc. This is the same command available in the **Screen Options** menu.

Move the highlight bar down to **Save Current Configuration**, and press

RETURN

PaperClip II will ask

File name?

You may save any number of configurations. If you want the current configuration to be automatically reinstated on start up, choose the **pcii auto-config** default by pressing

RETURN

The question

Drive number?

appears next. Enter the drive number where your start up copy of the PaperClip II disk is and press

RETURN

PaperClip II will save the current configuration.

LOAD NEW CONFIGURATION FROM DISK

You may have several configuration files saved on disk with different names. To load a specific configuration, press

RETURN

PaperClip II will ask

File name?

Enter the filename of the configuration you want to load. If you want to reload the configuration which was automatically loaded by PaperClip II at start up, choose the name **pcii auto-config**

When you have entered the desired filename, press

RETURN

PaperClip II will load the specified configuration file. It will check for printer file or character set filenames; if present it will load them from disk as well. All menu parameters will be restored to those saved in the configuration.

Be careful loading a new configuration while online. The communications parameters will be set to those in the configuration file. If they are different from those in use, you could be disconnected from the remote computer.

USING COMMUNICATIONS

Described here is the general method used to telecommunicate with a remote computer. Each system will be different – be prepared to spend time learning how the world of telecommunications works. With a little patience, your modem will connect you to a rich variety of information sources.

The first thing to do is find out what information system you want to call. Besides the many commercial services available, there are literally thousands of private systems and bulletin boards available. To subscribe to a commercial service such as Compuserve, you will need a starter information packet containing information you need to use the system. This includes the communication settings to use, the local phone number to call, and information on billing rates and charges.

Many smaller bulletin boards, often operated by local computer user's groups, do not charge callers. These boards offer an excellent way to experiment with telecommunications, and contact others with similar interests. Ask your local dealer what boards are in operation, and who to contact before signing on. It is considered polite to call the board operator by voice before using his system, although this varies from board to board. Common settings for these boards are 300 baud, 8 bits, no parity.

Once you have arranged access to a remote computer, enter the suggested settings into the **Communications Options** menu, then enter the phone number into the list. Now, position the highlight bar over the phone number, and press

RETURN

PaperClip II will dial the number, then listen for a modem carrier. If a modem answers, PaperClip II will announce that a carrier is present, and wait for you to press

RETURN

Now you are online. At this point most remote systems will expect you to type one or two specific keys before responding. If you are not sure what response is expected, try pressing RETURN once or twice. When the remote system recognizes your typing, most will present a welcoming message and a short menu.

You are telecommunicating! The remote system doesn't know you are using PaperClip II, or anything else about your computer system. What you type is sent to the other system, and what it sends to you is displayed on your screen.

USING ADVANCED FEATURES

When you have accumulated some experience with a remote system's commands and services, you can make use of the advanced features in PaperClip II's communications mode. You can request something on an interesting subject, then have PaperClip II capture the entire

transmission as text. While still online, you can switch to edit mode, save the new text on disk, then switch back online to capture something else. Or prepare a message before dialing, then while online send the text as electronic mail.

For larger text files and programs, you can transmit directly from disk, or download with full error checking and correction. One of the most important features of communications mode is that the full power of the PaperClip II word-processor is just a keystroke away.

To capture received data into text, select **capture** from the **Text Buffer** entry in the **Communications Options** menu. Position the cursor in text properly, the received text will be entered starting at the cursor position. Connect with the remote computer, and prepare it to send the desired text. Just before issuing the command to send the data to you, press

F5

The tab line will change from **Capture** to **Capturing**. All text received will be entered into text as it is displayed on the screen. When the text you wanted to capture has been received, press

F5

PaperClip II will stop capturing. While still connected to the remote computer, you can switch to edit mode, and save the text on disk.

To send text to the remote system, load it from disk, switch to communications, set the **Text Buffer** to **send**, then go online. When ready to send the text, press

F5

PaperClip II will send the text, starting from the current cursor position. While the text is being transmitted, the tab line will show **sending**. If the remote computer requests a pause by sending an XOFF character, the tab line will display **XOFF-WAIT** while PaperClip II waits for an XON character to resume transmission.

Note: While online, switching to edit mode disables the reception of new data. Information received from the modem while in edit mode will be ignored.

Often, text captured from another computer will have been formatted, with a **return** marker at the end of each line. Before you can edit this text easily, you will need to unformat it. Refer to **Unformatting Text**.

FILE TRANSFER

You can use PaperClip II to transfer entire disk files between your your system and a remote computer. The three basic techniques are called XON/XOFF, Xmodem, and Punter C1.

XON/XOFF protocol does not involve any error checking. It simply allows the receiving computer to control the flow of text information using XOFF and XON commands. Usually this method is used to quickly transfer a small to medium sized text file when a few errors can be tolerated.

Xmodem can be used to transfer a disk file with error checking and correction. A smarter version of this is called Xmodem CRC, which has improved error detection capabilities.

Punter C1 is a file transfer protocol used mainly by Commodore specific bulletin boards. It is a much improved version of the original Punter protocols, and is only compatible with systems using the C1 version.

Select the protocol you wish to use by pressing

F1

The **Communications Options** menu will appear. Move the highlight bar to **File Transfer Protocol**

Select the desired protocol using the + and – keys.

XMODEM AND XMODEM CRC

When using Xmodem CRC, PaperClip II will switch to regular Xmodem if the remote system does not recognize the CRC commands. For most systems, you should select Xmodem CRC.

XMODEM TRANSMISSION

To transmit a disk file to the remote computer, press

C= T

The status line will display the message **Transmit File**
The tab line will prompt

File name?

Enter the name of the disk file you want to send, then press

RETURN

The communications parameters will re-appear on the tab line. PaperClip II will open the disk file, preparing for transmission, then wait for the receiving system to request the first block of data. The message

Waiting to start

will appear on the main screen. To abort the transmission, press

CONTROL

If 80 seconds elapse without a proper command from the other system, the message

Transfer aborted

will appear and PaperClip II will close the disk file.

Once the remote system requests the first block, PaperClip II will display the block and retry statistics. Each block is 128 bytes in size. Up to 10 retries on each block will be made. If a block is sent ten times, and the receiver still has not received it correctly, the transfer will be aborted.

XMODEM RECEPTION

To receive a file using Xmodem, press

C R

The status line will display the message **Receive File**

The tab line will prompt

File name?

Enter the name of the disk file you want to send, then press

RETURN

PaperClip II will ask

Drive number?

Enter the drive number where the received file is to be stored.

Next the question

Program file?

appears. If the data you are about to receive is actually a computer program, press

Y RETURN

The file will be stored as a **PRG** type file. If the file will contain data, such as a text file, answer

N RETURN

PaperClip II will then create an **SEQ** type file on the disk. If a file with the same name is found on the disk, the question

Replace existing file?

will appear. To erase the existing file, replacing it with the data about to be received, press

Y RETURN

The communications parameters will re-appear on the tab line. PaperClip II will open the disk file, preparing for reception. It will immediately send a request to the sending computer for the first block of data. The message

Waiting to start

will appear on the main screen. To abort the transfer, press

CONTROL

A progress report will appear on the screen in the form

Block xx; **Attempt** yy

If no response from the remote system is received after ten seconds, another request will be sent. If you have selected Xmodem CRC, PaperClip II will switch to regular Xmodem after three attempts. After 80 seconds has elapsed without a proper response (10 attempts), the message

Transfer aborted

will appear. PaperClip II will close the disk file.

SPELLPACK

PaperClip II contains a spell checking and correction system called SpellPack. SpellPack will scan your entire document, comparing each word with a large dictionary. After checking the text, each word in text for which there was no match in the dictionary is displayed.

If the word displayed is correctly spelled, such as a place name, you can tell PaperClip II to simply skip on to the next word. When such words appear often, PaperClip II can temporarily learn that word. Further occurrences will not be presented as incorrect.

When PaperClip II displays a genuine spelling error, you can correct it on the spot. The correction will replace the mistake instantly.

The SpellPack dictionary contains about 38,000 entries. While this is enough to cover most commonly used words, everyone will have some favorites which have not been included in the dictionary. You may add your own words to the dictionary, limited only by the amount of disk space. Using a 1541 disk drive, you can have up to 50,000 words, give or take a few. With a 1571 drive, the dictionary could be increased to around 100,000 words. Of course, this will depend on the actual words you choose.

SpellPack is designed to be fast. Checking time depends on the size of the document, and the range of words used. Using a 1571 drive, the time to check a document will usually be under a minute.

SpellPack consists of two components — the SpellPack mode built-in to PaperClip II, and the dictionary disk. Since you can add words to the dictionary, you can create your own custom dictionaries, each containing words used in a specific field.

USING SpellPack

Before using SpellPack, make sure the **Dictionary Device Number** setting in the **PaperClip File Options** menu matches your equipment setup.

Load the document to be checked into text, then press

CONTROL SHIFT Y

PaperClip II will ask you to insert the dictionary disk into the proper drive with the prompt

Insert dictionary disk and press return

If you want to return to editing immediately, without checking spelling, press

CONTROL

When the dictionary disk has been properly inserted into the drive, press

RETURN

PaperClip II will check the disk in the drive. If it is not a valid dictionary disk, the prompt asking for the dictionary will reappear.

Once the disk has been accepted, the prompt

Global?

will appear. If you want to check and correct the spelling of a series of linked files, press

Y RETURN

PaperClip II will ask for

File name?

Enter the name of the first file in the chain to be checked, then press

RETURN

The specified document will be loaded into text. PaperClip II will start to check spelling.

To check the text in memory, press

RETURN

PaperClip II will ask

Delete words from dictionary?

Press

RETURN

PaperClip II will begin to check the spelling. The document will be scanned several times, each pass checking longer and longer words. The indicator

Checking:

on the tab line displays the word being checked. A **checkmark** (✓) symbol next to the word indicates it was found in the dictionary. This happens quite quickly, don't worry if some words seem to be skipped — they haven't.

If no errors were detected after the entire text has been checked, the tab line will display some statistics, including the number of words checked.

In most cases, the first suspect word will be highlighted in text. The tab line will prompt

Not found:

followed by the suspect word. You have several choices here.

If you want to quit SpellPack, and continue normal editing, press

CONTROL

You may correct the spelling, entering a replacement word. To replace the incorrect word, press

F5

PaperClip II will prompt

Replace with?

If you decide not to alter the word in text, press

CONTROL

This is the only time CONTROL won't completely abort a command. Be careful not to press it twice, the second press will cancel SpellPack.

Enter the replacement word. Be aware that PaperClip II will not check the spelling of the new word. It is up to you to enter the correction properly. When the replacement has been entered correctly, press

RETURN

The new word will replace the original, and PaperClip II will display the next misspelled word.

If the word is correctly spelled, press

F1

PaperClip II will skip forward to the next suspect word.

If the misspelled word appears many times in the text, pressing

F3

will cause PaperClip II to 'learn' that word. For the rest of the document, that spelling will be considered correct until the next time text is checked by SpellPack.

If the word is correct, and is a word you use often in your writing, press

F7

PaperClip II will display the message

Fetching dictionary

When the referenced dictionary file has been read, the new word will be added to the dictionary and the message

Added

will appear. After adding the word, PaperClip II will move on to the next suspect word.

When adding new words, the message

Updating dictionary

will appear occasionally. PaperClip II is inserting the new words into the dictionary on disk.

This process will continue until every word not found in the dictionary has been examined. The tab line will display the following statistics:

Checked:xxxx **Found:**xxxx **Added:**xxxx

Note: Legitimate words used out of context will not be detected. For instance, if you write "I met a bare in the woods yesterday" PaperClip II will simply assume you know what you're talking about and pass over the error.

The dictionary disk is used constantly during the spell checking process. For this reason, always have several backups made. In addition, backup the dictionary disk any time you add many new words.

MAINTAINING THE SpellPack DICTIONARY DISK

Your dictionary is flexible — you can tailor it to your particular field. It's important to keep and maintain backups of your dictionary disk as you build on it — the more words you add, the more irreplaceable it becomes.

Occasionally you may add an incorrect word to the dictionary. If you haven't added many words since the last backup, use the backup and add words to re-create the dictionary. If that isn't possible, PaperClip II provides a method for removing unwanted words directly. Be careful, backup the dictionary disk before starting.

To remove incorrect or unwanted words, erase all of text. Then type in the word or words you want to delete from the dictionary. Start up SpellPack in the normal way. When the question

Delete words from dictionary?

appears, answer

Y RETURN

PaperClip II will immediately display the prompt

Remove?

To quit without removing words from the dictionary, press

CONTROL

To skip to the next word, leaving this entry in the dictionary, press

F3

To delete the displayed word from the dictionary, press

F7

The message

Fetching dictionary

followed by

Deleted

will appear. When the word has been removed from the dictionary, the next word in text will be highlighted.

APPENDIX A: COMMAND SUMMARY

SCREEN DISPLAY

Change screen colours	SHIFT F2
Change character set	SHIFT F4
Word wrap on/off	F7
Change line length	CONTROL SHIFT L

BASIC EDITING

Delete to left of cursor	INST DEL
Delete to right of cursor	←
Control mode	CONTROL
Escape mode	ESC

EDITING COMMANDS ON THE TAB LINE

Screen-read cursor characters	RUN STOP
Restore previous entry	SHIFT RUN STOP
Clear entry	SHIFT CLR HOME
Restore original default entry	TAB

CURSOR MOVEMENT

Move cursor up in text	↑ or SHIFT CRSR
Move cursor down in text	↓ or CRSR
Move cursor left in text	← or SHIFT CRSR
Move cursor right in text	→ or CRSR
Rapid scroll up in text	CONTROL ↑
Rapid scroll down in text	CONTROL ↓
Pause during rapid scroll	SPACE
Move to top left of screen	CLR HOME
Move to top of text	CLR HOME CLR HOME
Move to bottom of text	SHIFT RUN STOP
Move to begining of next line	SHIFT RETURN
Move down one screen (22 lines)	F1
Move up one screen (22 lines)	F3
Set Bookmark	ESC RUN STOP
Move to bookmark	RUN STOP
Set/Clear tab at cursor column	SHIFT CLR HOME
Set/Clear numeric tab in cursor column	CONTROL N
Move to next tab setting	TAB
Move directly to next numeric tab	ESC TAB

Clear all tab settings	CONTROL SHIFT CLR HOME
All caps mode	CAPS LOCK
Insert Mode on/off	C=
Delete line cursor is on	CONTROL -
Insert line at cursor position	CONTROL +
Insert mulitiple lines	CONTROL I
Erase text	CONTROL E
Unformat text	CONTROL U
Exit from PaperClip II	CONTROL SHIFT X

LINE RANGES

Set range	CONTROL R
Transfer range	CONTROL T
Copy range	CONTROL C
Delete range	CONTROL D
Erase range	CONTROL E
Save range	CONTROL Q

PHRASES

Set phrase	CONTROL P
Move phrase	CONTROL M
Copy phrase	CONTROL K
Set and delete phrase	CONTROL Y
Insert instant phrase	ESC key
Change case in phrase	CONTROL SHIFT K

COLUMNS

Set column	CONTROL SHIFT C
Move column	CONTROL SHIFT M
Shift column	CONTROL SHIFT S
Repeat column	CONTROL SHIFT R
Insert spaces before column	CONTROL SHIFT I
Delete column	CONTROL SHIFT D
Erase column	CONTROL SHIFT E
Add column	CONTROL =
Add row	CONTROL SHIFT H
Set Decimal point	CONTROL .
Sort column	CONTROL SHIFT A
Define field separator	CONTROL SHIFT Q

SEARCHING TEXT

Search and replace	CONTROL @
Find search string	CONTROL F
Hunt for current search string	CONTROL H

SPECIAL PRINTING

Underline on	ESC SHIFT [
Underline off	ESC SHIFT]
Underline spaces	ESC .
Boldface on	ESC SHIFT (
Boldface off	ESC SHIFT)
Italics on	ESC SHIFT <
Italics off	ESC SHIFT >
Superscript next character	ESC SHIFT #
Superscript on	ESC SHIFT %
Superscript off	ESC SHIFT '
Subscript next character	ESC SHIFT $
Subscript on	ESC SHIFT !
Subscript off	ESC SHIFT "
Hard space	SHIFT space
Conditional hyphen	ESC –
Conditional breakpoint	CONTROL SHIFT !
Send user-defined character to printer	ESC & digit

OUTPUT

Change printer file	SHIFT F2
Printer output	CONTROL O
Printer output (default settings)	CONTROL SHIFT O
Video output	CONTROL V
Video output display width	SHIFT F8
Restart output	CONTROL SHIFT P
Print previous page	R (at page break)
Switch to printer output	P (at page break)
Switch to video output	V (at page break)
Switch to continuous output	C
Switch to discountinuous output	D
Select parallel printer output	SHIFT F4
Select RS232 output	SHIFT F4
Set printer device number	SHIFT F4

FILE HANDLING

Save text file	CONTROL S
Save range	CONTROL Q

Load text file	CONTROL L
Append (insert) file	CONTROL A
Abort loading	CONTROL
Disk directory for drive 0	CONTROL **0**
Disk directory for drive 1	CONTROL **1**
View selective directory	CONTROL **2**
Load directory as text	CONTROL **3**
Save sequential file	CONTROL Z
Load sequential file	CONTROL J
Select sequential file format	SHIFT F4
Send disk command	CONTROL SHIFT **>**
Scratch file	CONTROL SHIFT **>s0:filename**
Format disk	CONTROL SHIFT **>n0:diskname,id**
Validate disk	CONTROL SHIFT **>v0**
Read disk drive error message	CONTROL SHIFT **<**
Set disk device number	SHIFT F4
Set dictionary device number	SHIFT F4
Select disk drive arrangement	SHIFT F4
Global file copy	CONTROL G

FORM LETTERS (VARIABLE BLOCKS)

Variable data separator	← **marker** or ESC ✓
Insert variable block into text	CONTROL B
Move to next variable block	CONTROL SHIFT F
Fill next variable block from data file	CONTROL SHIFT B
Fill all variable blocks from data file	CONTROL SHIFT V
Empty all variable blocks	CONTROL SHIFT N
Close current data file, open another	CONTROL SHIFT Z

TELECOMMUNICATIONS

Telecommunications Mode on/off	NO SCROLL
Control Menu	F1
Dialing Options Menu	F3
Erase menu from display	ESC or CONTROL
Select menu entry	↑ CSR ↓
Change setting in menu	← CSR →

SPELLING CHECKER

Invoke spelling checker	CONTROL SHIFT Y
Skip to next word	F1
Skip and ignore further occurrences	F3
Correct spelling	F5
Add word to dictionary	F7

APPENDIX B: SUMMARY OF FORMAT DIRECTIVES

ENTERING FORMAT INSTRUCTIONS

The checkmark begins each line of format instructions. It is produced by pressing the [£] key. If several instructions are included on one line they are separated by colons **:** Each format line must end with a **return** marker.

Paperclip II scans the first two letters of each instruction, then skips forward looking for either a space or a digit. Once it finds a space, it can accept either a digit or the words **on** or **off**. This allows for several variations in instruction format – any instruction can be turned on or off by **1** or **0** or **on** or **off** preceded by at least one space. The first two letters in the instruction are all that count in terms of PaperClip II identifying the option you're referring to.

You can say

✓cnter on← or ✓cn1←

and

✓lmargin 10← or ✓lm10←

FORMAT COMMAND SUMMARY

INSTANT PHRASES

Assigns the letter x to an instant phrase. An instant phrase cannot be longer than one screen line.	✓x=phrase←

BASIC FORMATTING

Centering on	✓cn on← or ✓ce on←
Centering off	✓cn off← or ✓ce off←
Justification on	✓ju on←
Justification off	✓ju off←
Right alignment on	✓ra on←
Right alignment off	✓ra off←

Comment within text	✓cm: x x x x x←
Insert X blank lines in output	✓lnX←
Set print spacing to X lines	✓spX←
Set line spacing to X lines per inch	✓lsX←
Set print pitch to XX	✓ptXX←
Set header pitch to XX	✓phXX←
Set footer pitch to XX	✓pfXX←

MARGINS

Set text left margin	✓lmX←
Set text right margin	✓rmX←
Set header left margin	✓hlXX←
Set header right margin	✓hrXX←
Set footer left margin	✓flXX←
Set footer right margin	✓frXX←
Lock header and footer margins	✓ml on←
Unlock header and footer margins	✓ml off←
Adjust relative left margin	✓lm+X← or ✓lm-X←
Adjust relative right margin	✓rm+X← or ✓rm-X←
Next paragraph margin adjust	✓ma+X← or ✓ma-X←
Automatic indentation	✓ai+X← or ✓ai-X←

PRINT POSITIONING

Paper length	✓ppXX←
Page size	✓pgXX←
Vertical positioning	✓vpXX←
Printer offset	✓ofXX←
Force new page during printing	✓fp←
Force new page if insufficent space	✓fpXX←

HEADERS AND FOOTERS

Set header X lines above text	✓hdX:left,middle,right←
Set footer X lines above end of paper	✓ftX:left,middle,right←
Insert current page number	<>
Set current page number to X	✓p#X←
Adjust page number by X	✓p#+X← or ✓p#-X←
Insert current chapter number	[ ]
Set current chapter number to X	✓chX←
Adjust chapter number by X	✓ch+X← or ✓ch-X←

FILE LINKING

Global file link at end of text	✓nx:filename←
External file link from control file	✓ex:filename←
Non-specific global file link	✓lk←
Print external file contents	✓ep:filename←

OUTPUT

Pause during output with prompt	✓ps:prompt text←
Define digit X to user defined value Y	✓X=Y←

CREATING A TABLE OF CONTENTS

Define contents file name on drive X	✓tf:X:filename←
Define table of contents entry	✓tb:entry←

APPENDIX C: SUMMARY OF ERROR MESSAGES

No Line Range set
A Line Range function was selected and no Line Range had been set. Set the Line Range and select the function again.

No Phrase set
A Phrase function was selected and no Phrase had been set. Set the phrase and select the function again.

Column not set
A Column function was selected and no Column had been set. Set the Column and select the function again.

Error: Device not present
When an attempt was made to send information to the disk drive or printer (for example, saving a file), the device did not respond and was deemed to be "not present". Make sure that the disk drive and printer are turned on and connected to the computer properly. Also make sure that the device numbers in the system are the same as the ones which PaperClip II is using.

Error: External device timeout
When the computer tried to get information from the disk drive (for example, loading a file) the disk drive did not respond in time. This is a "timeout". It usually is an indication that the device is not present but there may be other problems. Follow the procedures for "Device not present" error above.

No text to save
An attempt was made to save a text file when there was no text in memory. This will not apply to the Line Range Save.

Out of text memory
When doing an insert function of some sort and it was necessary to insert a line, this error will be generated if the last line of text is used. In other words no line could be inserted without destroying text. This can also occur during a file load or file append if the incoming file cannot fit into the text memory.

No tab stops set
The tab key was pressed when there were no regular or numeric tabs set. Set up your tabs beforehand.

No search string
A Find, Hunt, or Search and Replace function was called and the search string did not contain any characters. A "null" search string cannot be searched for. Set up your search string properly.

Out of Variable Data
Either CONTROL SHIFT B or CONTROL SHIFT V was executed and no more data could be retrieved from the current variable file. If variable data was being read during output then this would indicate the end of output.

Out of Variable Blocks
Either CONTROL SHIFT F or CONTROL SHIFT B was executed and there were no variable blocks found after the cursor position.

Overflow error
During a Column Add or a Row Add, the running total exceeded 38 digits. Even if fixed-point addition is specified, floating-point addition is used internally and fixed-point is only handled when the result is to be printed out. This is a rare error.

OUTPUT ERRORS

Whenever an error is generated during output the cursor will be left at the place in text where the error was encountered.

Format error
During output, PaperClip could not make the line fit between the margins. There is no break in the line — no spaces, breakpoints, or conditional hyphens were found. Also check the margin settings.

Syntax error
A formatting directive could not be interpreted. Check to make sure that the directive is entered properly.

Margin error
The margins have been set to an illegal value. The left margin must always be less than the right margin. The ✓**ma** directive must not make the left margin less than 1. Check to make sure that your margins are set up properly and that the ✓**ma** and ✓**ai** values are not to large.

Paging error
The total number of lines established by adding up the **✓hd**, **✓ft**, **✓vp** and **✓pg** values must not exceed the total number of lines on the page set by the **✓pp** directive. Also, the **✓vp** value must be less than the **✓pg** value. Check all paging directives, notably the **✓hd** and **✓ft** values.

Header error
This error can occur when either the header or footer is to be printed. It is usually caused by the header overflowing the margins. Another cause has to do with the centering of the central portion of the header/footer. If it cannot be centered properly without overlapping either the left portion or the right portion then this error will be generated.

Illegal quantity error
A value outside of acceptable bounds was encountered while evaluating a number for a directive. Change the number. Check for a missing **return** marker.

Output Terminated
Output will be aborted if the printer does not respond when PaperClip tries to print. This error is usually the result of a **Device not present** error and is only generated when printing is first started

APPENDIX D: PRINTER FILES

WHAT A PRINTER FILE IS

One of PaperClip II's strongest features is the ability to use virtually all the possible features of a printer. This powerful capability is possible through the use of individual printer files which tell PaperClip II how to communicate with your printer. Each printer file contains a listing the functions that printer is capable of performing, and the codes used to control those functions.

Although many printers perform very similar functions, such as underlining, the codes and commands chosen by various printer manufacturers to control these functions varies widely. Printer files are used to compensate for this lack of standardization.

So before you can do any printing with PaperClip II, you must select the appropriate printer file using the **PaperClip File Options** menu. If you choose the wrong printer file, don't worry, nothing will be harmed – although your printout may be unreadable. If the printer file isn't right, PaperClip II won't be able to control the printer properly.

PRINTER FILE NAMES

The PaperClip II diskette contains printer files covering a wide variety of printers, probably including one that is right for your printer. The printer files are listed in the directory as two block entries with funny-looking file names usually of the form...

xxxx-y-zzz-ss

xxxx represents the name of the printer. For example, a printer file name starting with **mx80** is designed for an Epson MX80 printer.

y Appears as either **a** or **p**
This indicates the character representation the printer uses. Commodore manufacture printers (and some compatible makes) use a different coding system called Commodore ASCII. The major difference between Commodore ASCII and standard ASCII is the coding used to differentiate upper and lowercase letters. If the wrong type of printer file is used, upper and lower cases may be reversed, or all text may appear as capitals.
a indicates true ASCII (most non-Commodore printers).
p indicates CBM (Pet) ASCII (for Commodore type printers).

zzz Appears as **alf** or **nlf**
This indicates whether PaperClip II should expect the printer to have 'auto line-feed' enabled. An **alf** printer file expects the printer to automatically advance the paper after receiving a carriage return. **nlf** printer files are designed for printers which need a separate 'line-feed' character to advance the paper.
If you select an **alf** file and your printer prints over and over on the same line, switch to an **nlf** printer file.
If you select an **nlf** printer file and the printed output is always double spaced, switch to **alf**.

ss If present, **ss** indicates that this printer file will do super and sub-script printing using full size characters. Regular, non-ss printer files do subscripting using small symbols, or not at all. If super and subscripts are not printing properly, try using an **ss** printer file. **ss** printer files tend to print somewhat slower, so if you don't need super or sub-scripting, choose a printer file without an ss suffix.

CHOOSING A PRINTER FILE

The printer files supplied on the PaperClip II diskette cover many popular printers. In most cases, one of these will properly match your printer. Even if none match perfectly, you may find one that is close enough to be satisfactory. In the event that none of the printer files supplied will accomodate your particular printer, there are several possible solutions.

You can use a utility program, **printer setup**, to create your own printer file, entering all the necessary information from your printer's manual. Someone else may have created the needed printer file, check with your dealer or local users group. Since new printers are being introduced continually, Batteries Included may have a printer file available to match your printer, created after the program was shipped. Contact our Customer Support division for information on newly created printer files.

If you elect to create your own printer file, and it works well, we would appreciate receiving a copy. There are probably others like you with the same printer. If you send us a copy of your efforts, we will add it to our library, making it available to other PaperClip II owners. We cannot, however, provide any royalties, credit or reimbursement for donated printer files.

Once you've chosen a printer file, test it by loading the text file called **printer test** on your PaperClip II program diskette, then print it out.

To do this, put the PaperClip II disk in the drive, then press

CONTROL L

PaperClip II will ask

File name?

Type

printer test RETURN

PaperClip II will load the text file **printer test**. This document, when printed, will exercise almost every print combination PaperClip II can produce. Since many printers are not capable of every print combination, the printer files for those printers simply ignore those commands which can not be performed.

Select a printer file from the list on the next few pages. To load that printer file, preparing PaperClip II to print, press

SHIFT F4

The **PaperClip II File Options** menu will appear.

Move the highlight bar to **Printer File.** Press

RETURN

PaperClip II will ask

File name?

Enter the name of the printer file you wish to try. Be sure to enter the exact spelling as it is listed. If you are not sure, check the disk directory before displaying the menu. When you have entered the filename, press

RETURN

If you are using an unusual printer interface, or one that can perform many special conversions, etc, be sure to set the **Printer Output** device in the **PaperClip File Options** menu. The most important point with any printer interface is that it be set up to pass data from the computer to the printer **unchanged**. This means that every character and command sent by PaperClip II to the printer must be passed on to the printer,

without any additional conversations. Many interfaces call this method of operation 'transparent' or 'non-Commodore' mode.

Make sure your printer is set up, turned on, and has paper. To test the printer file, press

CONTROL SHIFT O RETURN

PaperClip II will start printing. If something starts going wrong when you print, such as the paper feeding rapidly, or not advancing at all, press CONTROL CONTROL Check your interface settings and printer connections, make sure you have the correct printer file, and try again. You may have to try several printer files before finding the right one.

Once the printer has finished, check the printout. See if each line has been printed in the manner described in the text. For instance, text which reads, **This is printed in 12 pitch.** should be printed 12 characters to the inch. If some features didn't print properly, check your printer manual. If your printer doesn't implement a given feature, PaperClip II won't be able to print in that style.

Choose the printer file which provides the best success.

The following lists most of the printer files on the PaperClip II diskette and the printers they are designed to support. Keep in mind that this list is always expanding. Check the PaperClip II disk for a text file called **READ.ME**. If present, it will describe changes and improvements made since this manual went to press. Often, several printers are supported by one printer file. If you can't find your printer listed, try a printer file meant for a similar printer.

COMMODORE PRINTERS (and compatibles)

1525-p-alf	Commodore 1515 and 1525 VIC printers 5 and 10 pitch print only Italics produces reverse field print No underline, boldface, super or subscripting possible
1526-p-nlf 1526-p-nlf-ss	Commodore 1526 printer ss entry provides super and subscripting
2022-p-nlf 2022-p-nlf-ss	Commodore 2022 and 2023 printers 5 and 10 pitch only, italics produces reverse field print ss entry allows super and subscripting
4022-p-nlf 4022-p-nlf-ss	Commodore 4022, 4022p and 4023 printers 5 and 10 pitch only, italics produces reverse field print ss entry provides super and subscripting

6400-a-alf	Commodore 6400 letter quality printer
6400-a-nlf	All functions except italics
8023-p-nlf	Commodore 8023P printer
8023-p-nlf-ss	5, 10 and 15 pitch, italics produces reverse field print ss entry provides super and subscripting Note: Pseudo letter quality mode is invoked as follows... Set pitch to 15, place a carriage return on the next line, then set the pitch to 6
mx80p-p-nlf	Epson MX80 'PET' converted printers (ESSNA Ltd.)
mx80p-p-nlf-ss	May not work with all versions of printer Italics produces reverse field print
1361-p-nlf	Commodore MPP1361
1361-p-nlf-ss	
dps1101-a-alf	Commodore DPS 1101 printer
dps1101-a-nlf	
mps1000-a-alf	Commodore MPS1000 printer
mps1000-a-nlf	p entries for use with Commodore mode
mps1000-p-nlf	a entries for use with IBM mode
mps1000-p-nlf-ss	
mps801-p-alf	Commodore MPS801 printer
mps802-p-nlf	Commodore MPS802 printer
mps802-p-nlf-ss	
mps803-p-alf	Commodore MPS803 printer
oki120-p-alf	Okidata Okimate120 printer
oki120-p-nlf	
sg10c-p-alf-drf	Star Micronics SG10C printer (Commodore model)
sg10c-p-alf-nlq	nlq entry provides higher quality printing
sg10c-p-alf-ss	drf entry provides draft quality printing
Pet ASCII	Outputs straight Commodore ASCII, no control codes

ASCII PRINTERS

550-a-alf-dp 550-a-alf-ss-dp 550-a-alf-ss-wp 550-a-alf-wp 550-a-nlf-dp 550-a-nlf-ss-dp 550-a-nlf-ss-wp 550-a-nlf-wp	Seikosha GP-550CD dp entries provide faster data processing print quality wp entries provide higher quality printing
5530-a-alf 5530-a-nlf	NEC Spinwriters 5530, 7730, 3530, etc Supports all functions execpt italics
737-a-alf 737-a-nlf	Centronics 700 series printers All functions supported except italics
8300p-a-alf 8300p-a-nlf	Commodore 8300P, DPS1101 letter quality printers TEC F15, some C. Itoh Starwriters Most Diablo and Qume type printers All functions supported except italics Note: DPS1101 printers require position 3 on DIP switch SW1 to be turned on
can1080a-a-alf can1080a-a-nlf	Cannon 1080A inkjet printer
citizen-a-alf citizen-a-nlf	Citizen printers
citoh1550s-a-alf citoh1550s-a-nlf	C. Itoh 1550 printer
compact.ro-a-alf compact.ro-a-nlf	Olympia RO Compact
cr1-a-nlf	
cr2-a-alf cr2-a-nlf	
daisy-a-alf daisy-a-nlf	Daisywriter letter quality printer
dp80-a-alf dp80-a-nlf	Admate

dwx305-a-alf dwx305-a-nlf	
dx15-a-alf dx15-a-nlf	Star Micronics DX15
elete.5-a-alf elete.5-a-nlf	Axiom
exp400-a-alf exp400-a-nlf	Silver Reed
exp500-a-alf exp500-a-nlf	Silver Reed
f10s-a-alf f10s-p-alf f10s-p-nlf f10s-a-nlf	TEC F10 letter quality printer, some C. Itoh Starwriters All functions supported except italics p entries transmit in PET ASCII Note: TEC F10 must be set in Serial print mode for these printer files to work properly. This is not to be confused with RS232 serial data transmission to the printer. On some units this is controlled by pin 1 on the right hand set of DIP switches. These switches can be found just inside the front lip of the printer lid.
facit4510-a-alf facit4510-a-nlf	Facit 4510 printer
fx80-a-alf fx80-a-alf-ss fx80-a-nlf fx80-a-nlf-ss	Epson FX80 printers ss entries provide full size super and subscripting All functions supported
gemini-a-alf gemini-a-alf-ss gemini-a-nlf gemini-a-nlf-ss	Star Micronics Gemini 10, 10X, 15 and 15X printers ss entries provide full size super/subscripting Note: Gemini 10 and 15 units we worked with would not allow small super and subscript characters to be mixed with wide pitch print. Use the ss entries if this combination is necessary.
gx100-a-nlf	
hr15-a-alf hr15-a-nlf	Brother HR15, HR15 XL and HR25

juki600-a-alf juki600-a-nlf	Juki 6000 printer
juki6100-a-alf juki6100-a-nlf	Juki 6100 printer
kxp1090-a-alf kxp1090-a-nlf	Panasonic KX-P1090 printer
kxp1091-a-alf kxp1091-a-nlf	Panasonic KX-P1091 printer
lq1500-a-alf-dp lq1500-a-alf-wp lq1500-a-nlf-dp lq1500-a-nlf-wp	Epson LQ1500 24 pin printers
lx80-a-alf lx80-a-nlf	Epson LX80 printer
m120/10-a-alf m120/10-a-nlf	Blue chip M120/10 printer
mt160-a-alf-dp mt160-a-alf-wp mt160-a-nlf-dp mt160-a-nlf-wp	Mannesmann Tally MT160L printers wp entries support high quality print mode dp entries support draft quality mode Italics produces proportional print Note: Units we worked with would not allow super and subscript characters to be printed in boldface. Note: Proportional print mode ignores margin settings.
mx80-a-alf mx80-a-alf-ss mx80-a-nlf mx80-a-nlf-ss	Original Epson MX80's, Epsons without Graftrax alf entries do not underline or boldface Only ss entries support super and subscript printing Italics and 12 pitch not available
mx80iii-a-alf mx80iii-a-alf-ss mx80iii-a-nlf mx80iii-a-nlf-ss	Epson Mx80 III, MX100 III, Epsons with Graftrax Plus All functions except 12 pitch supported ss entries provide full size super and subscripting
mx82iii-a-alf mx82iii-a-nlf mx82iii-a-nlf mx82iii-a-nlf-ss	Epson MX82 III, Epson MS82 with Graftrax Plus All functions supported ss entries provide full size super/subscipting

mx100-a-alf-ss	Epson MX100 II, MX80 II, MX82, Graftrax Epsons
mx100-a-nlf-ss	alf entry does not underline or boldface
	All functions suppported except italics and 12 pitch
oki10-a-alf	Okidata Okimate10 printer
oki10-a-nlf-c	c entry produces color printing
oki82 -a-alf	Okidata 82and 82A printers
oki82-a-nlf	5, 10, 12 and 15 pitch print
	nlf entry provides boldface and underline
oki84-a-alf	Okidata 84 printer (some Okidata 92 printers)
oki84-a-nlf	All functions supported
	Italics produces high quality proportional printing
oki92-a-alf	Okidata 92 printer (some Okidata 84 printers)
oki92-a-alf-ss	All functions supported
oki92-a-nlf	ss entries provide full size super and subscripting
oki92-a-nlf-ss	Italics produces high quality proportional printing
oliv-a-alf	Olivetti typewriter printers
oliv-a-nlf	
olym-a-alf	Olympia typewriters and printers, ESW 101, RO, etc
olym-a-alf-ss	ss entries provide super and subscripting
olym-a-nlf	
olym-a-nlf-ss	
olymcomp2-a-nlf	Olympia Compact2 printer
pana1351c-a-alf	Panasonic
pana1351c-a-nlf	Panasonic
pc8023-a-alf	NEC PC8023A, TEC 8510A, some C. Itoh prowriters
pc8023-a-alf-ss	ss entries provide super and subscripting
pc8023-a-nlf	
pc8023-a-nlf-ss	
pr2300-a-alf	Olivetti PR2300 ink jet printer
pr2300-a-nlf	
pr5500-a-alf	Olivetti
pr5500-a-nlf	

royal-a-alf	Royal Letter Master
royal2015-a-alf royal2015-a-nlf	Royal Alpha 2015 printer
sg10-a-alf sg10-a-nlf	Star Micronics SG10 printer
spirit80-a-alf spirit80-a-nlf	Mannesmann Tally Spirit 80
tp1-a-alf	Smith Corona TP1 printer ASCII printer with backspace and underline characters
trans130-a-alf trans130-a-nlf	Transtar 130 printer
trans140-a-alf trans140-a-nlf	Transtar 140 printer
ttx1014-a-alf ttx1014-a-nlf	TTX printer model 1014
ultraiii-a-alf ultraiii-a-nlf	Ultrasonic III Messenger
Pet ASCII	Transmits Commodore ASCII, no control codes
True ASCII	Transmits standard ASCII, no contrlol codes

PRINTER FILE CREATION

If none of the printer files supplied on the PaperClip II diskette are suitable for your printer, you can elect to create your own. Included on the PaperClip II diskette is a utility program which can be used to create a printer file containing the codes and commands needed for your printer to work properly with PaperClip II.

A printer file provides a translator between PaperClip II and your printer. Among the thousands of printers in the world, there is little agreement on what functions are available, let alone how they are controlled. When PaperClip II is printing, each character and special function is looked up in the printer file before it is sent to the printer.

As an example, consider a common word processing technique; underlining printed text. On most letter quality, daisy wheel type printers, PaperClip II would send the character to be underlined, followed by a backspace command, then print the actual underline symbol. The result would be an underlined character on the paper.

The problem is that dot matrix printers often cannot backspace in the middle of a line of text, they must print everything in one sweep across the page. To compensate, many dot matrix printers have an 'underline mode', where the word processor can define the text to be underlined before it is actually printed. Once the entire line of text is set up, the printer can print everything in one go. For other printers, PaperClip II must print each line twice, once for the basic text, and a second pass for special effects such as underlining.

Unfortunately, each printer manufacturer has seen fit to create his own commands for these functions. The result is an endless array of possible printer commands. This is what printer files are for. Each is tailored for a specific printer, and contains everything PaperClip II needs to know in order to properly control that printer.

CREATING YOUR OWN PRINTER FILE

Creating your own printer file is fairly tedious, and should not be attempted by someone who isn't patient, familiar with computers, and willing to devote several hours to the task. You will need your PaperClip II program disk and your printer manual. Before you start, sit down and study your printer manual. You need to have a good idea how each printer function works, how it is controlled, and what it is for.

It's easier to modify an existing printer file than to create a new one from scratch, so load PaperClip II and, using the printer test program, find the printer file that gives the best results on your printer. Keep this printout handy so you can identify and skip over the areas that don't need modification.

Reset your Commodore 128 to BASIC. When the **READY** prompt appears, insert your PaperClip II program disk. Enter the command

run "printer setup*" RETURN

This program will ask a series of questions regarding the commands used by your printer to perform various functions.

Load character set?

If you intend to use PaperClip II with an alternate character set, answer

Y RETURN

Then enter the filename of the alternate character set.
Otherwise, answer

N RETURN

The next question is

Load previous file?

If you wish to modify an existing printer file, answer

Y RETURN

Type in the name of printer file which currently provides the closest match to your printer.

If you want to start fresh, and build a new printer file, enter

N RETURN

The question

Null character?

will appear. You will need to determine an appropriate 'null' character for your printer file. The null character is used to indicate to PaperClip II that a certain function does not apply, or is to be skipped over. You must choose a character that PaperClip II will NEVER need to send to the printer. For instance, many printers only use 7-bits of each byte. All commands are composed of numbers from 0 to 127. For these printers, 255 would make a good null character.

When PaperClip II is printing, each character to be sent to the printer is first compared with the null character. If the two match, PaperClip II doesn't send the character at all. The null character simply indicates 'I am not a character which should be sent to the printer'. The null character will never be sent to the printer by PaperClip II.

Enter an appropriate null character value. Unless your printer or interface specifically uses the value of 255 for some function, use 255 as the null character. Do not use zero, it is used by most printers. In any case the number must be between 0 and 255, inclusive.

PRINTER FILE STRUCTURE

There are two main sections in a printer file. The first is the character section, and deals with the numerical codes for the various characters your printer can print. Each symbol you want PaperClip II to be able to print must be defined here. If the printer file does not have a valid entry for a given symbol, that character can not be printed.

The second area is the control section. It deals with commands to control your printer. Every printer function PaperClip II needs to able to perform must be documented here. Functions such as line feed, boldface, and so forth.

Move through the questions of each section using [↑] and [↓] Pressing [F1] will get you to the first question of the character section. Press [F3] to move to the top of the control section. When entering the actual codes, use the [←] [→] [DEL] keys to edit the entries.

Press [F7] to save your new printer file on disk. Remember, you can't save your file on the original PaperClip II program disk since it does not have a write protect notch. Make a backup disk of the program disk, or save the printer file on another disk.

PRINTABLE CHARACTER CODES

The first question in this section is

Value for "@"?

These questions cycle through each printable character, requesting a code value for each. The number displayed below each question is the value currently assigned to this character. For non-Commodore printers, this is often referred to as the character's ASCII code. Every character your printer can produce will have its own unique code. When PaperClip II wants to print that character, it will send the code entered here to the printer.

Refer to your printer manual for the appropriate codes for each character. The codes are usually listed as a chart in an appendix of the printer manual. Be careful, some printer manuals may list the character codes using hexadecimal numbers. If some character codes are given as letter/number combinations (ie: 2F), the codes are probably listed in hexadecimal notation. If this is the case, you will need to find another chart, or someone who can convert hexadecimal numbers.

Press [↓] to cycle to the next question, and [↑] to step back. To change an entry, delete it using [INST DEL] [INST DEL] [INST DEL] then enter the number you want, and press [RETURN] If you change a number and then press [↓] your change will be rejected and the previous value retained. Don't forget to use [RETURN] when you're making changes.

If you are using a non-Commodore printer, the only thing that is likely to need changing in the character section is the multilingual codes. If you intend to print these special symbols, you will have to enter the codes — they're at the end of the character section. You can get there quickly by pressing

[F3] [↑]

This will place you at the end of the multilingual character area.

Your printer may have to 'construct' certain multilingual characters by printing a character, backspacing, then printing a second character such as an accent. For this reason you are asked for

"Second character?"

for each multilingual character. If your printer can backspace, and you need to use this technique to create the desired symbol, enter the second character here. If the second character is not needed, enter the null character value.

When you're satisfied that the values for the printable numbers and letters are correct, move on to the control section by pressing

F3

PRINTER CONTROL CODES

Control codes consist of sequences of up to five numbers. Step through these with → and ← keys. Edit them with INST DEL and RETURN, as usual. Don't forget to use RETURN to accept the new value.

The first two questions are:

Carriage return (line feed)?
Carriage return (no line feed)?

If you printer has auto-line feed, enter the carriage-return code listed in your printer manual (usually 13) for the first question and your null character for the second.

If your printer doesn't have auto-line feed enabled, enter the null vale for the first and the carriage-return code for the second.

One of the codes must be the null character.

Line feed character?
Backspace character?
Underline character?

Enter the values from your printer manual for these characters.

Printer initialize characters?

Sometimes called 'printer reset', this usually consists of a sequence of characters (up to 5). This sequence will be sent to the printer just before a document is to be printed. If your printer or printer interface needs a special command to prepare it for printing, enter the codes here. Press RETURN or → after entering each value to move to the next. After entering five codes, you are asked

Secondary address?

You will be asked this question after each five code sequence. This applies mainly to Commodore type printers. If your printer needs a secondary address, enter the appropriate number between 0 and 31. During printing, the code sequence will be sent to the printer using the secondary address specified. If your are using a Cardco or similar

printer interface, you should use the printer initialize command and secondary address to lock the interface into 'transparent' mode. For Cardco interfaces, this is usually secondary address 25. If your printer does not use a specific secondary address, enter the null character.

Line begin characters?

This sequence will be sent to the printer prior to each printed line. Some printers require that a special command precede each line of text. If your printer doesn't, enter null characters.

Underline begin characters?
Underline end characters?

Enter the command sequence your printer needs to turn on its built in underlining mode. If your printer does not have a built-in underline mode, or it cannot be turned on and off within a printed line of text, enter null characters here.

Boldface begin characters?
Boldface end characters?

If your printer has a built-in boldface, emphasized or double-strike mode, enter the commands codes here. If the boldface mode cannot be turned on and off within each printed line, or boldface is simply not available, enter null characters.

When printing underlined or boldface text, PaperClip II will check the code sequences above. If they are present, PaperClip II will use those codes to turn underline and boldface on and off as needed. If those sequences are unavailable, PaperClip II will check for valid backspace and underline characters. If these are present, PaperClip II will print boldface and underlining using the backspace to print the bold or underlined part of each character.

Underline begin (no line feed)?
Underline end (no line feed)?
Boldface begin (no line feed)?
Boldface end (no line feed)?

If neither method of underlining or boldface is available, and your printer is set up without automatic line feed enabled, PaperClip II will try to underline and boldface text by making two passes over each printed line. The first pass will print the main text. Then PaperClip II will send the appropriate code sequence entered here, BEFORE any text for the second pass is sent. PaperClip II will then print the enhanced text as a second pass over the line. If both underline and

boldface need this treatment, another pass will then be made. Use this method only if there is no other way to create underlined or boldface text on your printer.

If your printer uses one of the previous boldface and underline methods, or has auto line feed enabled, enter null characters.

Superscript begin characters?
Superscript end characters?
Subscript begin characters?
Subscript end characters?

If your printer has superscripting and subscripting modes, enter the appropriate codes here. Some dot matrix printers automatically turn on a double-printing mode with superscripting or subscripting begins. Check the printer manual carefully; if this is the case, add the appropriate code to turn off double-printing to the end sequences.

If you are using a letter quality daisy wheel type printer, super and subscripting is often accomplished using forward and reverse half line-feeds. To superscript text, the line feed is set to 1/2 line, then a reverse line feed is issued, followed by the superscripted text. To end superscripting, enter the code to advance the paper by 1/2 line-feed. This involves setting the line feed direction, size, etc. Be sure to reset them to normal in the end sequences.

Italics begin characters?
Italics end characters?

If your printer has a built in italics mode, enter the appropriate control sequences. Usually this applies only to dot matrix printers. If italics is not available, enter null characters.

Value to add for italics characters?

Your printer may not have an italics mode per se, but define italics text with an 'offset'. This is a number which when added to a character code, causes that character to be printed in italics. If this is how your printer creates italics, enter the offset value here.

Pitch = 10 characters per inch?
Pitch= 12 characters per inch?
Pitch = 15 characters per inch?
Optional pitch?

PaperClip II supports four basic pitches; your printer may support more. Enter the codes needed by your printer to select print pitches

which most closely match each PaperClip II pitch selection. Check the printer manual carefully; your printer may require you to turn each pitch off before turning another on.

Line spacing = 6 lines per inch?
Line spacing = 8 lines per inch?
Optional line spacing?

PaperClip II supports three line spacings; your printer may have more or fewer built in. Match the PaperClip II line spacing to those available in the printer as closely as possible. With some printers, line spacing is changed by adjusting the number of incremental steps the paper advances for each line feed.

You may want to do it this way if your printer does not have a superscript/subscript mode and you need to use super and subscripting.

Microspacing for boldface (using bs)?

If your printer has a built-in boldface, double-strike, or emphasized modes, enter null characters. With some daisy wheel type printers, boldface is actually created by printing each character twice, with the second impression slightly offset from the first. This is sometimes called shadow bold printing. When PaperClip II is using backspacing for boldface, it can use microspacing to move a tiny bit forward before making the second strike. If your printer has microspacing, enter the appropriate commands here. In most cases, you should select the smallest possible increment.

Forced 8-bit characters begin?
Forced 7-bit characters begin?

If all the printer control commands you have been entering are numbers less than or equal to 127, enter null. If any of the printer codes you have entered are greater than 127 (except the null character), and your interface handles only seven bits, you must enter the command sequence to turn 8-bit character mode on and off. This mode causes the printer to assume that characters received between the 8-bit on and 7-bit on commands has the eighth bit set on.

Number of line feeds per line?
Superscript mode?

If your printer has built in super and subscript modes, enter **1** for the first question and **0** for the second. If your printer does not have super and subscript modes, and cannot perform reverse half line feeds, PaperClip II can create super and subscripted text by making three

passes across the paper, each 1/3 line apart. The first pass would be for superscripted characters only. The second pass, 1/3 line lower, would print the main text for that line. The third pass will print any subscripted characters needed.

If you want to use this method, you must carefully coordinate the settings for line spacing, number of line feeds, superscript mode and auto-line feed. Enter **3** for the first question. To tell PaperClip II that it must make three passes, enter **128** for the second. Be sure you really need superscripting and subscripting before choosing this method. Also, reset the line spacing (number of lines per inch) to 1/3 the normal amount so that each line feed will move the paper a third of a line.

Microspacing on (SPS)?
Microspacing off (SPS)?

If your printer does not have a microspacing mode, enter null characters.

If your printer does have a microspacing mode, PaperClip II can perform justification by inserting both whole spaces and microspaces between each word in the line. This will result in equal spacing between each word on the line, providing a neater looking printed page.

To do this, PaperClip II needs to know how to switch on microspacing, how big each microspace is, whether microspacing turns itself off automatically, and how to resume normal spacing.

Enter the codes needed to switch microspacing on and off (use the smallest increment possible).

Byte position for microspace size?
Offset for spacing byte (SPS)?

If your printer does not have a microspacing mode, enter the null characters. If the microspacing cannot be adjusted by altering one of the bytes in the sequence, answer **0** for the first question, null character for the second.

The first question identifies which code in the 'microspacing on' sequence controls the actual microspace size. If one of the bytes in the 'microspacing on' sequence controls the actual microspace size, enter the position (1 to 5), otherwise enter **0**.

For the second question, subtract **1** from the code in the 'microspacing on' sequence that controls the microspace size and enter that value.

Semiproportional spacing mode?
Number of microspaces per space (pt10)?
Number of microspaces per space (pt12)?
Number of microspaces per space (pt15)?
Number of microspaces per space (optional pitch)?

If your printer does not have a microspacing mode, enter **0** for the first question and null for the rest.

If your printer does support microspacing, the base number you must enter for the first question is **128**. Add **64** if the microspacing mode must be turned on before each microspace. Add **1** more if the pitch setting should be reset after microspacing is used.

For the last four questions, enter the number of microspaces that equal a regular space for each different pitch setting.

Space character (SPS)?

If your printer does not have a microspacing mode, enter the null character. If it does, enter the code for the character that PaperClip II should send to the printer during microspacing to move one microspace. While this is usually the space character (code 32), some printers achieve microspacing via a graphics print mode. In this case, a code of **0** is usually appropriate.

Multi-lingual character set on?
Multi-lingual character set off?

If your printer does not support multi-lingual characters, enter null characters. If it does, enter the appropriate codes here.

Before printing each multilingual character, PaperClip II will send the multilingual on sequence. After printing the actual multilingual character, the multilingual off sequence will be sent.

Secondary address for text?

For non-Commodore printers, enter the null character. On Commodore printers, it can be between **0** and **31**. If your printer does not specify a particular secondary address to send text to, enter the null character. If you are using a Cardco interface you might want to set this to 25. Then you won't need to type a BASIC command to lock the interface

into 'transparent' mode each time you run PaperClip II.

Remember to press [RETURN] to enter the new value before saving the printer file.

This is the last question. To save your printer file, press

[F7]

You will be asked for a filename for the printer file, and the drive number to store it on. Unless you have a dual slot disk drive, use drive number **0**.

HOW PaperClip II USES THE PRINTER FILE

Before any text is printed at the start of output, the printer initialize (reset) and current line spacing sequences are sent.

The following command sequence is used for each line of text printed.

The line spacing sequence is sent. Two serial bus un-listen/listen sequences may be issued if the line spacing sequence is sent to a secondary address different from the secondary address for text.

The line begin sequence is sent. Two serial bus un-listen/listen sequences may be issued if the sequence has to be transmitted to a secondary address different from the secondary address for text.

The pitch setting sequence is sent. Two serial bus un-listen/listen sequences may be issued if the sequence has to be transmitted to a secondary address different from the secondary address for text.

The printer offset and left margin spaces are sent.

If underlining, boldface, italics, superscripting, and subscripting are engaged, the appropriate begin sequences are sent.

The actual text is sent. If special characters or modes are used within a line, they are turned on and off as needed.

The underlining, boldface, italics, superscripting, and subscripting end sequences are sent if these functions were turned on.

If necessary, second and third passes are made for multi-pass underlining or boldface.

The paper is advanced to the next line.

APPENDIX E: PRINTER CONNECTIONS

SERIAL BUS

PaperClip II can work with printers connected to the Commodore 128 computer in 3 ways. The most common printer hookup uses the **serial bus**. If you are using a Commodore printer, or a non-Commodore printer with an interface, the cable for the printer will plug into a round connector on the rear of the disk drive.

Each serial printer and/or interface has a 'device number'. PaperClip II uses these numbers to control each disk drive and printer. The most common device number for a printer is **4**. PaperClip II uses a default of **device 4**.

RS232 PRINTER OUTPUT

If your printer uses an RS232 connection to receive data, PaperClip II can use an RS232 interface connected to the **user port** at the left rear of the Commodore 128.

There are two types of RS232 interfaces, those designed for the Commodore 64&128 computers and older interfaces meant for VIC-20 computers. PaperClip II has been tested with the Commodore 1011A interface, and the BI 232-1 interface from Batteries Included.

Select direct RS232 output via the **PaperClip File Options** menu. Press

SHIFT F4

Move the highlight bar to **Printer Output**

Use the + and – keys to select **RS232**

The menu entries under **Printer Output** are used to set the correct RS232 parameters needed by your RS232 printer and interface.

Set the **RS232 Baud Rate** to match that used by your printer. Refer to your printer manual for the possible settings. Start with a fairly low setting, say 50 baud, before trying faster rates. For most printers, best throughput will be attained with 1200 to 4800 baud.

RS232 Word Length must be matched with that of the printer.

RS232 Parity must match the parity used in the printer. If you are not sure of the correct setting, select **NONE**.

RS232 Handshaking – There are four selections possible.

The entries labeled **Inverted** are meant for use with older VIC-20 style interfaces. The **Standard** setting should be used with proper interfaces designed for the Commodore 64 and 128 computers.

If you select **3-line**, PaperClip II will ignore any signals from the printer to pause, or delay output. This can be useful when testing various settings and interface combinations. At high baud rates, selecting 3-line will result in PaperClip II producing output faster than the printer can print it, resulting in missing or garbled text.

X-line allows PaperClip II to properly respond to handshaking (data flow control) signals from the RS232 printer. PaperClip II will monitor the **data set ready** and **clear to send** signals from the printer.

RS232 INTERFACE CONNECTIONS

PaperClip II generates the RS232 output signals internally, and does not utilize the built-in RS232 software of the Commodore 128. PaperClip II uses the following 5 signals to communicate with an RS232 printer.

DTR Data Terminal Ready
Tells the printer when PaperClip II is ready to communicate

DSR Data Set Ready
Signal from the printer indicating the printer is ready to print.

RTS Request to Send
PaperClip II uses this signal to indicate that it wants to send more data to the printer

CTS Clear To Send
Used by the printer to tell PaperClip II when it is ready to receive more data

XMT Transmitted Data
This line is used to send the actual data to be printed

Note: Because the hardware in the Commodore 128 does not supply the proper RS232 voltage levels, an interface will be needed.

Signal	User Port Connection	Signal Direction	RS232 pin
DTR	Pin E	To printer	20
DSR	Pin L	From printer	6
RTS	Pin D	To printer	4
CTS	Pin K	From printer	5
XMT	Pin M	To printer	2

The following sequence occurs during printing to an RS232 printer. If 3-line handshaking has been selected, remember that PaperClip II will ignore the CTS and DSR signals from the printer.

- Set DTR and RTS to true. This tells the printer that PaperClip II is ready to print, and has data waiting.

The following process is repeated until the text has been printed.

- Check the DSR signal. If it is false, abort the output. If this is the very first character to be printed, the message **Output terminated** will then appear. If DSR goes false during further printing, the message **Device not present** will appear.

- Check the CTS signal. If true, proceed to sending a character to the printer. If false, go back and check DSR again. This continues until CTS becomes true. While PaperClip II is waiting for CTS, the CONTROL key can be used to abort output.

- Send a character to the printer, check DSR and CTS again.

Note: RS232 communications is wrought with complications. As such, it can be frustrating for a novice to set up. If you are having great difficulty, seek help from your local computer dealer.

One final note – there is no such thing as 'standard' RS232. Each printer, interface and computer manufacturer interprets RS232 differently. The names used to describe signals and pins vary, even the physical connectors may not match. RS232 requires ingenuity, patience, and good guesswork.

PARALLEL PRINTER OUTPUT

PaperClip II can use a simple adaptor plugged into the user port to directly drive printers containing a Centronics parallel connection. These adaptors are often sold as part of a package containing both software and the adaptor. PaperClip II does not need the software supplied with the adaptor, it uses its own.

Parallel adaptors which work with PaperClip II include the BI 2001-1 C64/128 printer adaptor from Batteries Included, and the C-64 Link printer cable.

Note: This is not to be confused with a parallel printer connected to the Commodore 128 via an interface plugged into the rear of the disk drive.

Pins used for parallel printing via the user port.

Signal	**6526 Pin**	**User Port Pin**
Parallel Data	PB0	C
	PB1	D
	PB2	E
	PB3	F
	PB4	H
	PB5	J
	PB6	K
(MSB)	PB7	L
Strobe (active low)	PA2	M
Printer busy (or ACKNLG)	FLAG	B

When using a direct parallel adapter with PaperClip II, turn the printer on **after** PaperClip II has started up. If you turn the printer on ahead of time, PaperClip II may not realize the printer is ready to go. If this happens, turn the printer off and back on.

APPENDIX F: UTILITY PROGRAMS

On the PaperClip II diskette is a program which allows you to use a single disk drive to make duplicate copies of your important diskettes. If you have a disk copying program from another source, such as the DOS shell program supplied by Commodore on the 1571 demo disk, you may use that.

DISKCOPY

This program allows you to use a single disk drive such as the Commodore 1541 or 1571 to duplicate the contents of a disk (unless it is copy-protected). To use it, turn your computer on without the PaperClip II disk in the disk drive. Now, put the PaperClip II disk in the disk drive, close the drive door, then type

run "diskcopy" RETURN

Follow the program's instructions on the screen to make your backup. The disk you want to copy is called the source, or original disk. The new copy may be referred to as the copy, target, or destination disk.

QUICK COPY OF PAPERCLIP II

If all you need to do is transfer a copy of the PaperClip II program to a new disk, you can do the following.

Make sure the destination disk has been formmated, and has plenty of free space. Insert the main PaperClip II program disk. Load the program into the computer with out running it. Use the command

dload "paperclip ii*" RETURN

Now, insert the new disk into the disk drive. Type

dsave"paperclip ii" RETURN

This will save the entire PaperClip II program on the new disk.
To transfer the printer file and charater set to the new disk, re-insert the original disk. Type

run RETURN

PaperClip II will start up, then load the printer file and character set currently defined in the **pcii auto-config** file. Once everything has been set up, and PaperClip II is running, insert the new disk with the copy of

PaperClip II in the drive. Press

SHIFT F2

Move the highlight bar to **Save Current Configuration to disk** Press

RETURN RETURN

PaperClip II will save the current configuration on the disk, then ask

Save printer file?

Press

Y RETURN

When the question

Save character set?

appears, press

Y RETURN

The new disk now contains the PaperClip II program, the auto-config file and the selected printer file and character set.

SETTING THE PaperClip II DISK FOR AUTO BOOT

When you turn your Commodore 128 computer on, it checks the disk in the drive for a special file. This file is called the 'boot sector'. If it is present, it will be automatically loaded and run. This is why the original PaperClip II distribution disk automatically starts up. You can place a boot sector on each PaperClip II diskette using a small utility program.

To use it, turn your computer on without the PaperClip II disk in the disk drive. then put the PaperClip II disk in the disk drive, close the drive door, and type

run "createboot*" RETURN

The program will then request that you insert the PaperClip II disk that you want to automatically start up into the disk drive. Follow the on screen instructions. Because the boot information must be placed on a specific place on the disk, it is possible that some other file already occupies that area. If this occurs, you will need run the **createboot** program before copying the actual PaperClip II program onto the disk.

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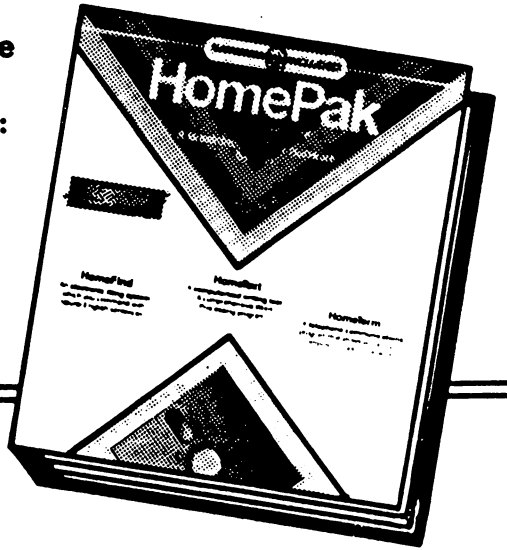

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BATTERIES INCLUDED

NEED HELP?

Having problems? Have you got questions about Batteries Included software? Call the ***BI Customer Support Hotline.*** *We'll be glad to help you in any way we can. Because this is a* ***free service*** *we must ask that you* ***keep your questions brief and to the point.*** *Since a limit of 5 minutes of free service is permitted per call, prepare your query carefully and have pertinent materials (e.g. your manual) on hand when you phone; there will be an additional charge for calls over five minutes. Our hours are 9am to 4pm (est), Monday to Friday. Best time to call — mornings . Worst time to call — midday. If our lines are busy, please be patient. Do not call our switchboard; they cannot patch you through or take messages for customer support. If you would rather not phone, or your question or problem is not urgent, please do write. We'll be glad to send you a personal reply.*

Please note:

Customer support is a free service for registered owners only.
Please make sure you have sent in your registration card.

Customer Support (416) 881•9816

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