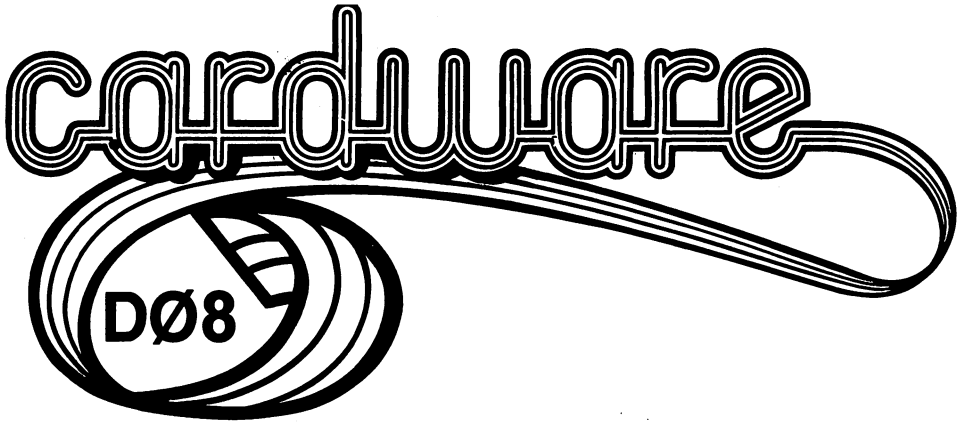Instructions For

cardware

DØ8

SUPER PRINTER
UTILITY PROGRAMS

cardco, inc.

300 S. Topeka • Wichita, Ks. 67202

SUPER PRINTER UTILITY PROGRAMS

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DISCLAIMER OF LIABILITY
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GUARANTEE
****

Super Printer Utility (disk) is guaranteed for as long as it owned by its original purchaser subject to the following limitations:

1. This guarantee is limited to the successful loading of the disk only. If this disk fails to load successfully, it will be repaired or replaced at the option of CARDCO, Inc. It will be the responsibility of the owner of the disk to return the defective disk to CARDCO, Inc. for replacement. The owner of the disk must include a letter stating that a replacement is being requested, a receipt showing proof of purchase and the defective disk.

2. This guarantee does not cover any loss of data or any other consequential loss or liability that may be incurred through the use of programs on this disk.

Any and all correspondence and/or replacement requests should be directed to:

<div align="center">

CARDCO, Inc.
Attn. Customer Service
300 S. Topeka
Wichita, Ks. 67202

</div>

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SYSTEM SET UP
****

Your system must consist of a Commodore 64 computer and one or more Commodore 1541 disk drives (or 1541 compatable disk drives). Set up and turn on your system as described in your Commodore instruction manual.

Insert the SUPER PRINTER UTILITY master disk into your disk drive and type on your computer:

LOAD"*",8:<shift/run stop>

The program will load the SUPER PRINTER UTILITY program and display the main menu. If the program does not load or if your computer "locks up" turn off the computer and the disk drive and repeat the set up procedure. Turn on your computer and wait about 10 seconds before turning on your disk drive. Now try to load the program as described above. If the program still fails to function, you should contact your dealer or CARDCO's customer service for assistance and/or replacement of your disk.

USING SUPER PRINTER UTILITY
****

Once the SUPER PRINTER UTILITY program is loaded the main menu will appear on your screen:

CARDCO'S SUPER PRINTER UTILITIES

1. SUPER PRINTER UTILITIES
2. BANNER HEADLINE MAKER
3. WORD PROCESSOR
4. MAILING LIST
5. CALCULATOR
6. JOYSTICK SCREEN DRAW
7. LARGE POSTER MAKER
8. SPRINT PRINT BUFFER/SPOOLER
9. MORE PROGRAMS--------------

* MAKE YOUR SELECTION (1-9)

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If you selected 9, another page or screen of programs will come on your screen:

CARDCO'S SUPER PRINTER UTILITIES

1. Convert ASCII to WRITE NOW FILE
2. Convert WRITE NOW to ASCII FILE
3. Convert CBM ASCII to ASCII FILE
4. Convert ASCII to CBM ASCII FILE
5. BASIC program cross reference
6. FILE PRINTER BUFFER
7. INDEX GENERATOR
8. Convert WRITE NOW file for MODEM
9. Return to page 1 --------------

* Make your selection (1-9)

MORE PROGRAMS ON THE OTHER SIDE OF DISK

Instructions for these programs will be covered in order starting with 1. Super Printer Utilities on page 1.

PRINTER UTILITY PROGRAMS
****

Choosing option 1 on page 1 of the main menu will result in the booting of a program and the following appearing on your screen:

                    CARDCO C/? UTILITIES
    1. PRINTER UTILITY
    2. BANNER

    WHICH PROGRAM?

If you choose 1 again the following will appear.

    1: COMMODORE 1525 (or any printer with CARDCO +G type interface)
    2: EPSON, GEMINI, PROWRITER

    WHICH PRINTER (1 or 2)?

SPECIAL NOTE: If you are using an Epson type, Star type, or similar compatable printer screen dumps will be a lot faster if you select option 2. But you can use all other functions of option 1 if you select it.

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We'll cover the Commodore printer option first. If you are using a Commodore 1515,1525 or MPS-801 printer, **OR ANY PRINTER PROPERLY INTERFACED WITH A CARDCO +G TYPE INTERFACE,** you may use this option.

After choosing the number 1, a LOADING ADDRESS option menu will come on the screen:

LOADING ADDRESS

```
0:   $C400
1:   $C000
2:   $9400
3:   $7400
4:   $5400
```

WHICH ADDRESS (0-4)?

Choosing a particular loading address places the program in memory at the specified address. Press "Y" in answer to the "PRINTER OPTION" prompt for the correct listing for your choice. For instance if you used the default address of 0, the program is loaded into memory at hex address $C400 and your command list would look like this for the commodore printer:

```
SCREEN DUMP (HORZ)-----SYS 50176
INIT KEYED ROUTINES----SYS 50179
EXIT KEYED ROUTINES----SYS 50182
SCREEN DUMP (ASCII)----SYS 50185
SCREEN DUMP (VERT)-----SYS 50188
REVERSE SCREEN--------POKE 50194, S
REVERSE CHARACTER-----POKE 50195, C
FORCE FLAG------------POKE 50196, F
CK01 KEYPAD ENABLE----POKE 50197, KE
OUTPUT MODE-----------POKE 50198, OM
DEVICE#---------------POKE 50199, DV
SECONDARY ADDRESS-----POKE 50200, SA
WIDTH (HORZ.)---------POKE 50201, W
COLOR MODE (VERT)-----POKE 50202, CM
USER SCREEN ENABLE----POKE 50203, UE
LORES START PAGE------POKE 50204, LO
HIRES START PAGE------POKE 50205, HI
COLOR START PAGE------POKE 50206, CO
PRINTER TYPE (ASCII)--POKE 50207, PT
NON ASCII (ASCII)-----POKE 50208, NA
2X2 COLOR DOTS (VERT)-POKE 50211, C2
4X2 COLOR DOTS (VERT)-POKE 50243, C4
KEYPAD DEFINITIONS----POKE 50275, KD
UTILITY PROGRAMS-----------50417
```

Normally the INIT routines can only be enabled once without completely resetting your system. When you're working with the POKE statements, a call must follow the POKE address. For instance you want to call a REVERSE SCREEN so you POKE 50194, S. S has to be a number. A 128 would give you a reverse screen, while a Ø would give you a normal screen. Likewise the POKE for a device number or secondary address works in the same manner. For POKEing a device number we need to do the following POKE 50199, DV. DV can be a number 4 for printer device number four. You could use a 5, or any printer device number you choose.

But before you enter any commands or call any routines your screen should give you the following information:

NOTE: Check your command list for the SYS(?????) value to INITialize keyed screen dump.

TYPE: SYS(?????)   <RETURN>

YOU GET: 1****************************1
           5 SUPER 1525 V4.1 - (C) 1984 5
           2 S MEIROWSKY - CARDCO, INC 2
           5****************************5

           READY.

TYPE: NEW   <RETURN>

YOU GET: READY.

The program is now installed and it provides you with an "invisible" KEYED utility. Notice the SYS number 50179 on your ready screen? The INIT KEYED ROUTINES on your command list should match the SYS given on this ready screen. You can print the current video screen (Lores or Hires) to the printer using several methods, intercept characters going to printer and interpret them using two methods. You also have access to a numeric keypad software driver for the CARDCO CK/1 numeric keypad.

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SUPER PRINTER UTILITY PROGRAMS

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USING SUPER KEYS
****

Pressing certain SUPER KEYs (F1, F3, F5, and F7) in combination with the Shift, Commodore and CTRL keys will allow you to execute a utility program. Here's a listing of the SUPER KEYs and what utility they call:

CTRL and Shift

F1--enables graphic out
F3--screen dump (horiz)
F5--ASCII screen dump
F7--Reverse screen mode on

CTRL and Commodore

F1--enable hex out
F3--screen dump (vert)
F5--keypad enable/disable
F7--Reverse screen mode off

CTRL

F1--multi color mode (vert)
F3--single color mode (vert)
F5--disable graphic & hex out
F7--disable SUPER 1525

The SUPER KEYs allow you 12 "new" keys to enable some fancy new things on your printer. These combinations will not give a false key response through the internal keyboard scanning routine. The eight original function keys are still available to the user or for program use.

All of these routines can be called without pressing a SUPER KEY. They can be executed by a BASIC SYS or machine language JSR. This lets the user print the screen or enable/disable certain modes at any time. Also the optional POKE locations are provided to help give control over the use of the utilities.

SUPER PRINTER UTILITY PROGRAMS

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SUPER KEY SCREEN DUMP
****

There are three types of screen dumps available from the SUPER KEYs; i.e., (1) ASCII (quick) screen dump; (2) Horizontal dot print out; (3) Vertical dot print out.

The ASCII screen dump prints the LORES characters from the screen to the printer inside a box of periods horizontally centered on the printer. This is a very quick dump since it sends only ASCII characters to the printer.

The Horizontal screen dump is a dot image of the current video screen. Each bit for the screen represents one pixel bit on the printer.

The Vertical screen dump is a 2X2 expanded dot image of the screen except that every color has its own dot image in the SUPER Multicolor mode. When the VIC chip is displaying a multicolor bit, the printer will receive a 4X2 dot matrix representing every color bit on the screen (320X200). If the SUPER 1525 is in the Single Color mode, a screen bit of 1 will produce a 2X2 solid (dark) matrix and a 0 will produce a 2X2 clear (white) matrix to the printer.

Two other types of dumps are available using the character or interpret mode. This interpret mode allows the SUPER 1525 to grab each character before it is transmitted to the printer and send other related data in the original character's place. For instance, the graphics out mode (CTRL & Shift--F1) gets screen character dot data and sends it to the printer for each character. This will work for any currently displayed character set. Since this interpret mode was designed for the 1525, the 8X8 screen character cannot be sent to the printer, instead only the 7 top vertical bits of the character will be sent. The enable hex out SUPER KEY sends hexidecimal characters for each printer byte.

SUPER KEY EXTRAS
****

A keypad driver program is provided for the CARDCO   CK/1
numeric keypad.   The driver is basically the   same one
supplied with the keypad, but its location--here in   this
SUPER KEY--is more convenient for the user and an extra
we're happy to supply.

We mentioned earlier that all of these routines could be
called without pressing a SUPER KEY. They can be executed by
a BASIC SYS or machine language JSR.   This lets the   user
print the screen or enable/disable certain modes at any
time. Also the optional POKE locations are provided to help
give control over the use of the utilities. Here's some
TECHNICAL INFORMATION that can help you to understand what's
happening when you use the SUPER KEYs and how to get around
using them if the need arises.

When you use SYS, the initialize routine, the following
happens:

Checks operating system vectors used in SUPER 1525
for reinitialization while already enabled,   and   saves
old   vectors.   Set   vectors   to point to the SUPER 1525
routines.   When the operating system jumps through   the
vectors, it will jump to the SUPER 1525 routines instead
and execute them.   After the SUPERs routines are   done,
if applicable, it will continue with the program pointed
to by the original vectors.   These vectors could be   the
power up vectors or a new set defined by a user or a
program. When the SUPER 1525 is disabled, it   will
restore the vectors to their original position.   The
vectors affected are NMI ($0318), IRQ ($0314), BRK
($0316),   CHAR   OUT   ($0326).   Pressing RUN/STOP and
RESTORE will not reset SUPER 1525.

The following lists the storage, decimal offset and a
description of what resides in the various locations:

000--SYS location for horizontal screen dump.

003--SYS location to initialize function keyed routines.

006--SYS location to exit the function keyed routines.

009--SYS location for horizontal ASCII screen dump.

012--SYS location for vertical screen dump.

015--Overall printer utility version number.

018--Reverse screen flag. 0=no, 128=yes or inverse screen
bits going to printer. Won't work on multicolor mode of
vert. screen dump or ASCII screen dump.

019--Reverse character flag. 0=send all char. to printer.
128=reverse on/off chars will be interpreted.

020--Force mode. 0=send all non ASCII chars (Commodore
chars) to printer as a dot matrix from the char ROM (RAM) of
computer. All standard ASCII chars are sent as an ASCII
byte to the printer in which the printer uses its char set
to print char. 128=send all chars to printer as a dot
matrix from char ROM.

021--Keypad enable flag. 0=Don't scan CK/1 keypad. 128=scan
keypad.

022--Character output mode. 0=normal. 64=graphic dot mode.
128=hex mode.

023--Printer device number.

024--Printer secondary address

025--Width. In the horizontal screen dump & char out mode.
Each dot is sent: 0=once. 128=twice.

026--Color mode for vertical screen dump 0=each bit sent to
printer is either a black or white 2X2 matrix.
128=multicolor mode and each bit's color is looked up in the
color data dot table and sent to the printer.

027--User gives address of screen. 0=SUPER 1525 gets the
address of the screen from the video chip in which it gets
the pixel data to be sent to the printer. 128=User gives
the upper 8 bit address of each of the screen pages needed.
When this is done, the SUPER 1525 references the following
locations to get the screen data. This is supplied so you
can print something not currently being displayed on the
screen.

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OPTION 2 - Epson, Star, Prowriter
****

If you chose the number 2 for the Gemini, Epson, or Prowriter type printers, your screen would have given you the title screen that looks like the this:

PRINTER INTERFACE UTILITY PROGRAMS

    1: SCREEN DUMP
    2: KEYED SCREEN DUMP
    3: GRAPHIC CHARACTER PRINT

        PUSH SPACE BAR

The next screen you would see looks like this:

LOADING ADDRESS

0: $CC00
1: $C800
2: $9C00
3: $7C00

WHICH ADDRESS?

If you use the default loading address of 0, your command list will look like the following:

```
SCREEN DUMP:             SYS 52224
INIT KEYED SCREEN DUMP:  SYS 52227
EXIT KEYED SCREEN DUMP:  SYS 52230
INIT CHARACTER PRINT:    SYS 52233
EXIT CHARACTER PRINT:    SYS 52236
REVERSE SCREEN:          POKE 52242 , S
REVERSE CHARACTER:       POKE 52243 , C
FORCE FLAG:              POKE 52244 , F
KEY CHARACTER:           POKE 52245 , K
HEX DUMP:                POKE 52246 , H
DEVICE#:                 POKE 52247 , DV
SECONDARY ADDRESS        POKE 52248 , SA
```

        PUSH SPACE BAR TO CONTINUE

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But before you get a command list, you will be asked if you'd like the printer option (answer Y or N--Y for a hard copy of command list and N for a screen copy of the command list) You'll also be asked for a device number and a secondary address.

TYPE OF PRINTER

Ø   Gemini 1Ø or Gemini 15
1   Epson MX-8Ø or FX-8Ø
2   Prowriter 851Ø

    Which Printer?   <RETURN>

After choosing Ø, 1, or 2 as the type of printer a line will ask:

Single or Double Density?

You should respond with an S or D <RETURN> to place the dump into single or double density.

The program will now load and position itself in the chosen memory location. After this function is complete the screen will display:

        CARDCO, INC.

        READY.

As with the Commodore printer option, the loading address selection changes the command list.

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OPTION 2 - BANNER
****

    If you were to choose the #2 or BANNER option from the
SUPER PRINTER UTILITIES menu #1, you would get the following
prompt:

    WHAT PRINTER ARE YOU USING?
        1. EPSON MX SERIES
        2. EPSON FX SERIES
        3. STAR Gemini SERIES
        4. Prowriter or C.itoh

    ENTER YOUR CHOICE HERE   (1-4 PLEASE)

The next prompt is:

    PLEASE SELECT EITHER:

        1. GOTHIC STYLE TYPE
                OR
        2. MAGNETIC STYLE TYPE

            ENTER YOUR CHOICE HERE

And the next two prompts:

    DO YOU WANT TALL, MED, OR SHORT (T/M/S)

    PRINT ON UPPER OR LOWER LINE (U/L)

Now, you'll see WORKING printed on your screen. Then the
prompt:

    ENTER YOUR MESSAGE HERE:

    YOU WILL BE LIMITED TO 254 CHARACTERS

    YOU MAY USE ALL THE UPPER AND LOWER CASE LETTERS, THE
    NUMBERS Ø THROUGH 9 AND THE FOLLOWING: (SPACE), (!),
    ("), ($), ('), (,), (.) AND (-)

    PRESS * TO EXIT FROM THIS PROGRAM

(Normally pressing the * key takes you back to the Tall,
Med, or Short Screen)

SUPER PRINTER UTILITY PROGRAMS

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WORD PROCESSOR
****

This word processor is a far cry from CARDCO's WRITE
NOW!-64 professional word processor. But it is an adequate
word processor for the price (free) and should give you some
adequate use.

The title screen tells the programmer's name and who did
modifications to the program. Next you'll get a menu with
the first letter of each option in reverse. Use the letter
to select the option. Here's what the main menu looks
like:

```
            DO YOU WANT TO: R EAD WHAT YOU WROTE
                           W RITE SOMETHING NEW
                           A DD TO WHAT YOU WROTE
                           E DIT WHAT YOU WROTE
                           I NPUT FROM DISK
                           O UTPUT TO DISK
                           P RINT THE OUTPUT
                     '     S ET TABS
                           F REE MEMORY
                           D ISK DIRECTORY
                           Q UIT AND GO TO BASIC


            ENTER YOUR CHOICE NOW:
```


Say you want to write something new, so you push W.
You'll get two screens of instructions. Here's the first
screen:

This program operates just like a typewriter. You must
enter your left and right margins. You can then type the
number of characters allowed on each line. You will hear a
tone when you are about to run out of room on a line. You
may use the delete key to delete and the backwards arrow key
to tab ahead.

PRESS ANY KEY TO GO ON

Doing so results in more instructions:

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To center a line of text use the check mark (shifted @ key) as the first character of the line you want centered. To advance to the next page use the up arrow key as the only character on the line. Press the 'F1' function key to return to the main menu when you have entered all your text.

ENTER LEFT MARGIN (3-70): ? <RETURN>

ENTER RIGHT MARGIN (3-70): ? <RETURN>

*NOTE: enter the number of spaces you want in the right hand margin; i.e., enter 5 for a 5 space right hand margin.

Your next screen will state:

BEGIN TYPING NOW:

When you are done writing, you can press F1 to get back to the main menu. To READ what you wrote press R. If you typed something, it will come up on your screen with a message below it like:

**That's all on this page.
Press <RETURN> to go on.

<RETURN> will take you back to the main menu.

The functions on the main menu are self explanatory. F1 will normally take you back to the main menu. Occasionally a menu will accompany a call; for instance, if you choose E to Edit what you wrote, you'll get the following menu:

F1 to return to the menu
F3 to search for a word
F5 go to the previous line
F7 go to the next line
to delete the line
(up arrow key) to insert a new line
*   to correct the line
Press return when text is OK.

MAILING LIST
****

The first screen of your MAILING LIST will look like the following:

ARE YOU STARTING A
(N)EW LIST
OR
CONTINUING AN
(O)LD LIST

PRESS (N OR O) KEY

If you choose the O option, you can call a file from disk storage.

If you choose the N option, you can begin entering answers to the prompts. You will be told:

THIS WILL BE ITEM xxx
xxx MAY BE ADDED

PRESS * TO QUIT AND GO TO THE MAIN MENU

The prompts are:

Enter the last name (up to 20 characters) <RETURN>

Enter the first name (up to 16 characters) <RETURN>

Enter the address (up to 22 characters) <RETURN>

Enter the city (up to 18 characters) <RETURN>

Enter the state (up to 2 characters) <RETURN>

Enter the ZIP code (up to 5 characters) <RETURN>

If you press * to QUIT, you quit entering names, and you are taken to the main menu; i.e.,

```
      A   DD MORE NAMES
      E   DIT THE LIST
      V   IEW THE LIST
      S   ORT THE LIST
      F   ILE THE DATA
      P   RINT THE LIST
      M   AKE MAILING LABELS
      Q   UIT???
```

ENTER YOUR CHOICE
A, E, V, S, F, P, M, Q

Pressing   A   will   take   you   to   the   enter   mode of the
program.

Pressing E will give you a menu:

        Edit Entries Mode   28 entries on file

        *   Return to menu
        F   irst entry
        N   ext entry
        P   rev. entry
        L   ast entry
        S   earch for entry
      ###   item number

    ENTER YOUR CHOICE?

?   <RETURN>

    ENTER * and <RETURN> for main menu

    First Name   Last Name
    Address
    City, ST
        ZIP

EDIT? (Y/N)

If Y is entered, you'll see:

    THIS WILL BE ITEM

    PRESS * TO QUIT AND GO TO MAIN MENU

    ENTER LAST NAME (up to 20 characters)

You can reenter last & first name, address, city, state, & zip or press * and <RETURN> to go back to the original item # with the edit? (Y/N) prompt.

Choosing N returns you to the edit entries menu.

Choosing P for prev. (previous) entry will automatically take you to the next lowest entry number.

Choosing L for last entry takes you to the last entry made.

Choosing S for search for entry gives you the prompt--

        ENTER ITEM TO FIND?

The item you enter MUST be a last name. If more than one entry has the same last name, choose N (for no correction) and the next entry with the same name will come on screen. When you're out of names you'll get a prompt to press any key--doing so will return you to the edit entries menu.

Choosing an item number (e.g., 24) will take you to the same item number.

Choosing V allows you to view the list. An instruction screen will appear--

    PRESS CURSOR DOWN TO GO DOWN THE LIST
    PRESS CURSOR UP TO GO UP THE LIST
    PRESS ANY LETTER TO GO TO THAT SECTION OF THE LIST
    PRESS * TO RETURN TO THE MAIN MENU

    These instructions are applicable after entry item #0 appears. Using the cursor up key, cursor down key, any lettered key, or the asterik will take you to entry item #0. Once you have item #0 on screen the instructions are, again, applicable.

Choosing S for Sort the list will give you the prompt:
    DO YOU WANT TO SORT BY:
    (Z)IP CODE OR BY (N)AME ALPHABETICALLY

Just press the key (either Z or N) and the program will
begin its pass and swap routine.
You can only use a zip sort or an alphabetical swap; these
two cannot be used simultaneously.

Choose F to File the Data--this is disk type storage.

Choose P to Print the list.   The print will begin
immediately in the following format:
First & Last Name Address City, ST ZIP

Choose M to make mailing labels. The first prompt is:

    HOW MANY LINES DO YOU WANT BETWEEN LABELS?

Respond with a number between Ø & 9.
The next prompt is:

    PREPARE YOUR PRINTER
    PRESS ANY KEY TO START PRINTING

Pressing any key will start printing the labels on the left
hand margin. The number you input on the lines between
labels will separate the labels with the # of empty lines.

Pressing Q will Quit the mailing list program and return
you to the normal C-64 screen you see on power up.

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CARD CALCULATOR
****

The first prompt you'll see is:

DO YOU WANT INSTRUCTIONS?

(Y OR N)

If you answer "Y" the second prompt is:

ON THE SCREEN OR THE PRINTER

(S OR P)

The instructions for the calculator program are also written here for your convenience.

Card calculator operates just like your four function calculator with some unique added features. To use card/calc you should enter numbers just like you would with a normal calculator. First enter a number, then enter the operation you want to perform. For example

Press 3 then + then 3 then <RETURN>

This will add 3+3 and show the total.

CARD/CALC FEATURES

1. Your choice of fixed decimal point or floating calculations.

2. You may optionally print all numbers and totals on your printer.

3. The memory total is displayed at all times on the screen.

4. The last number entered doesn't need to be entered again for repeating calculations.

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CARD-CALC SPECIAL KEY FUNCTIONS
****

KEY   FUNCTION

F1   ADD TOTAL TO MEMORY
F3   SUBTRACT TOTAL FROM MEMORY
F5   RECALL FROM MEMORY
F7   CHANGE SIGN (+/-)
P   TOGGLE PRINTER ON/OFF
F   TOGGLE FIXED/FLOATING POINT
(POUND) EXIT PROGRAM RETURN TO BASIC
DEL   DELETE LAST ENTRY
HOME   CLEAR ALL (EXCEPT MEMORY)

CARD/CALC OPERATIONS
****

To perform a calculation enter the first number then press the sign key (+/-*) for the operation desired then enter the next number. Now you may either press the return key to get the result of the calculation or press another sign key if you want to perform another operation on the result, the running total will be shown in the light area at all times.

For example, press 3 then press the * now press 8 now press + now press 9 now press / then press 3 <RETURN>. This will give you the operation ((3*8)+9)/3.
For repeating calculations like 4*4*4*4* press 4 then * then * then * then * then press <RETURN> for the total.

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JOYSTICK SCREEN DRAW
****

Your   first   prompt   is:
        DO YOU WANT INSTRUCTIONS?
            (Y OR N)

If you answer "Y", the second prompt is:

        ON THE SCREEN OR THE PRINTER

            (S OR P)

The instructions are also listed here for your convenience.

    This program will allow you to draw on the screen of
your C-64 in the highest resolution graphics available.   To
attain the best resolution this mode is limited to one color
drawing only. Plug your joystick into joy control port #2.
After these instructions are complete there will be a short
pause before the screen clears and you can start drawing.

THE DRAW MODE:

    Pressing   the   F1   function key puts you into the
draw/erase mode. Holding the fire button of your joystick
down while moving the target will draw. With the fire
button up, you can move without drawing or affecting
anything already on the screen.

THE DRAW/ERASE MODE:

    Pressing   the   F2   function key puts you into the
draw/erase mode. Holding the fire button of your joystick
down while moving the target will draw. With the fire
button up, you will erase anything on the screen as you move
over it with the target.

THE ERASE MODE:

    Pressing   the   F3   function key puts you into the erase
mode. Holding the fire button of your joystick down   while
moving the target will erase. With the fire button up, you
can move without erasing or affecting anything already on
the screen.

RETURN TO BASIC: Press "F6"

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LARGE POSTER MAKER
****

This Program can be used with any printer (Commodore as well as any printer interfaced with a proper interface) to make banners as long as you need. It features height and width adjustments as well as a repeat function so you can print several banners unattended.

Your first screen will show:

LARGE POSTERS

TYPE POSTER MESSAGE

?

Enter message and <RETURN>
A number of prompts follow the initial prompt. The prompts are:

TIMES TO REPRINT
VERTICAL MULTIPLIER
HORIZONTAL MULTIPLIER
PRINTING CHAR IS Ø=*, 1=CHAR

Your message will appear very briefly followed by a fetching character and rotating character message. Next the screen will clear and reprint will appear in reverse followed by a colon and the # of reprints you selected. When done printing, you're returned to the basic "ready" prompt.

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OPTION 8 - Sprint Print Buffer/spooler
****

Choosing this option will load and execute the machine language buffer/spooler program. This program is transparent when in use. This means that after it is loaded you won't have any prompt to tell you that it is there unless you execute one of the Sprint Print special commands.

After the program loads you will only be prompted with the standard:

READY

on your screen. Don't think that nothing has happened!! Try one of the commands as shown in this section. Sprint Print is truly a powerful program.

SPECIAL NOTE: Sprint Print, the program and the name, and all documentation pertaining to Sprint Print are copyrighted by Q R&D and are reproduced here under agreements between Cardco and Q R&D.

The following section will provide a guide to the use of the Sprint Print program and it's special commands.

ADDITIONAL INFORMATION

To stop printing while in optimized bucket mode, you may press: <F1>. You will have to hold the <F1> key for about a second to stop output from the buffer.

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PRINTER BUFFER/SPOOLER COMMANDS
****

1. Buffer Size and Location - *B

    Sprint Print allows you to select an 8K, 16K, or 24K
buffer. You can also choose where in machine memory you
want the buffer to be located. To set the size and location
of the buffer in immediate mode:

        TYPE: *Bn <RETURN>

where n is a number from Ø through 7 corresponding to the
buffer size and locations shown below:

    #   Size Location
    Ø/1 8K   EØØØ to FFFF(under kernal RAM)
    2   8K   AØØØ to BFFF(ROM under BASIC)
    3   16K   EØØØ to FFFF and AØØØ to BFFF
    4   8K   8ØØØ to 9FFF(normal location for BASIC mem.)
    5   16K   EØØØ to FFFF and 8ØØØ to 9FFF
    6   16K   AØØØ to BFFF and 8ØØØ to 9FFF
    7   24K   EØØØ to FFFF, AØØØ to BFFF, and 8ØØØ to 9FFF

    For example, to set the buffer size at 8K, located from
AØØØ to BFFF in the computer's memory, enter the command:

        *B2<RETURN>

The computer will respond:

    8K selected

    If the *B command is entered after a CMD directive it
will be executed, but the action will not be reported on the
screen.

    Certain hardware additions to the C-64, such as parallel
interfaces   and   keypads, require   the use of specific
locations in memory. When the Sprint Print buffer is used
in conjunction with these hardware devices its location must
be set so that it does not interfere with them. The manuals
to your hardware additions should state which areas of
memory they utilize.

    It is important to set the buffer size and location
before entering other data; this will prevent inadvertently
overwriting important data when the buffer is created.

2. Buffer Exit - *E

The command to close and Exit the buffer is:

*E <RETURN>

When used with "bucket" mode, this command will output the buffer contents to the printer and one copy will be printed out.

3. Buffer Copy - *C

To copy the contents of the buffer, use the following command:

*C <RETURN>

The buffer, both in "normal" and "bucket" mode, must be closed (*E) before you may execute the Copy command. If you enter the Copy command while the buffer is open you will get the following error message:

?Buffer Open Error

To print multiple copies of the buffer contents, use the command:

*Cn<RETURN>

Where n is the number of copies that you want.   For example, the command:

*C6<RETURN>

will print 6 copies of the buffer contents. Up to 255 copies of the buffer may be made. Sprint Print will also accept a variable for the number of copies.

The jump command (see 4, below) will abort the copy command after printing has begun.

4. Jump to End of Buffer - *J

During output of the buffer, you may wish to stop the printing. The Jump command:

*J<RETURN>

allows you to jump directly to the end of the buffer without printing the intervening material.   The contents of the buffer remain intact.   You may add additional data to the end of the buffer using the append (*A) command.   The copy command (*C) will restart printing from the beginning of the buffer.

5. Append - *A

If you have closed the buffer, and then wish to add more data; you may use the Append command.

*A <RETURN>

The Append command re-opens the buffer without resetting the buffer pointers, allowing you to add to the end of the current buffer.   If you have not previously opened and closed the buffer, the Append command will generate the message:

?No Previous Buffer Error

Attempting to Append to an open buffer results in:

?Buffer Open Error

6. Buffer Reset - *R

To reset the buffer and clear the buffer contents, enter the command

*R <RETURN>

the computer will respond:

Are you sure? Y

Press Y or <RETURN> and the buffer will be reset. Any other response will abort the Reset command.

This command will be used most frequently to clear the contents from a buffer that is "open." You may also reset a "closed" buffer and then add new information to this buffer by using the append command (*A); this will eliminate the need to re-establish the buffer using the "OPEN" command format.

7. Printer Speed - *S

Sprint Print allows you to control print speed by controlling the rate at which your printer receives data. Normally you would want a printer to run as fast as possible, but there are times when you may want it to print more slowly. It is possible to vary the printer speed from zero characters per second up to the maximum speed of your printer and interface. (If you set a speed greater than your printer can run, it will print at its maximum. The default print speed is set at 1000 cps (*S1000).)

To change the printer speed, enter the command:

*Sn <RETURN>

where n is the desired speed in characters per second. For example:

*S80<RETURN>

will set the speed at which your printer is sent data to 80 cps. The print speed can be changed at any time before or during printing. You can use the *S command to interrupt the printing operation.

Enter the command:

        *SØ<RETURN>

The printer will stop.   Entering any speed greater than zero, for example,

        *S1ØØØ<RETURN>

will restart the printing at the point where it had been interrupted.   The Jump and Copy commands will also allow you to stop printing operation, but, in contrast to the *SØ command, will allow you to resume printing only at the beginning of the buffer contents.

   Sprint Print will accept a variable for print speed.

8.   View Output - *V

   The View command allows you to View material as it is being sent to the buffer.   The command is:

        *V<RETURN>

9.   Diverting Error Messages - *D

   In normal printer use, error messages appear on the screen but do not appear in the hardcopy.   Sprint Print allows you to divert all errror messages to the printer. Enter the command:

        *D<RETURN>

The Divert Error Messages command is cancelled by the Return to Normal command (see 13, below).

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10. Divert Input - *I

This command will divert all input responses to the
printer rather than the video display. Your hardcopy will
reflect not only data requests, but the input responses as
well. The command is:

        *I<RETURN>

You should use the divert input mode to obtain a
correctly formatted hardcopy when programs with input
statements are run. The carriage return which normally
follows the input response will be sent to the printer if
the input response itself is sent to the printer.

NOTE: When diverting input to the printer, it is
necessary to use the Video mode (*V) when running programs
with input requests in order to see input responses on the
video display.

The Divert Input command is cancelled by the Return to
Normal command (see 13, below).

11. Optimize - *O

It is possible to further increase the speed of the
printer when operating in "bucket" mode. The command:

        *O<RETURN>

makes the printer the priority device rather than the
computer. This means that transmission from the buffer to
the printer overrides all other computer functions.
(Normally, Sprint Print only sends information to the
printer when the computer is not busy.) The Optimize
command will operate only when the buffer is in "bucket"
mode.

In optimized mode printing will begin as soon as the
buffer is closed (*E). You will not be able to use the
computer until the printing is completed.

To stop printing after output has begun, hold down the
<F1> key. The Copy command (*C) will restart printing from
the beginning of the buffer.

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12. Graphics - *G

If you own a commodore 1525 printer, you may use either the standard Commodore character set or the Sprint Print character set with fully descending characters and underlining. To use the Sprint Print character set, enter graphics mode. You can specify graphics mode when you first establish the buffer by using logical address 18 or 19 in you "OPEN" statement (see Buffer Mode, above). It is also possible to shift to graphics mode without having to close and then re-open the buffer by using the graphics mode command:

        *G<RETURN>

If you give the command to shift to graphics mode after material is already in the buffer, only the material entered after the Graphics command will print in the Sprint Print character set. Material present in the buffer before the command was entered will print out in the standard Commodore character set.

To switch from the Graphics mode to the standard character set, enter the Return to Normal command (see 13, below).

Your printer will not print the Sprint Print character set as rapidly as the standard Commodore character set.

13. Return to Normal - *N

The Normal command cancels all of the following features:

        Divert Error Messages
        Divert Input
        Video Mode
        Optimize
        Total Mode (see 15 and 16, below)

Owners of Commodore 1525 printers can use *N to switch from the Sprint Print character set to the standard character set without closing and re-opening the buffer.

NOTE: If you own a printer other than the Commodore 1525, do not use the *N command while the buffer is open. First close the buffer, enter the normal command, and then use the append function to continue loading material into the buffer:

> *E<RETURN>
> *N<RETURN>
> *A<RETURN>

14. Print Mode - *P

The easiest way to establish a buffer in the "normal" mode is with the command:

> *P<RETURN>

This command is equivalent to the following:

> OPEN16,4<RETURN>
> CMD16<RETURN>

The print command turns the buffer into the output device. All output, including most error messages, is sent to the buffer (and eventually to the printer). To direct all error messages to the buffer, use the Divert Error Messages (*D) command. All Sprint Print Utility commands, except for Optimize (*O), can be used with the Print command.

The Print command assumes that the printer is device number 4 and that the secondary address equals 0. If your printer is device number 5, enter the command as:

> *P5<RETURN>

If you wish to use a different secondary address, include the device number and the secondary address in your command. For example:

> *P4,4<RETURN>

NOTE: If you are using a CARDCO +G interface with your printer, you must enter the device number and a secondary address when using the *P command.

If the buffer is already open when you enter the *P command, you will generate a "?Buffer Open Error"

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15. Total Mode - *T

Many programs that you will want to run while using
Sprint Print contain statements to direct data to the
printer. The Total mode allows such programs to be run
successfully. In effect the Total command directs all
printer output to the spooling buffer. (Attempting to run
these programs using the *P or Sprint Print OPEN commands
will normally generate a ?Buffer Open Error.)

The command to create a buffer in the total mode is:

        *T<RETURN>

Now simply communicate with the printer in the regular
manner, just as if the spooling buffer were not present.
All printer output will be directed to the buffer. To run a
program with printer output statements, place the program
diskette in you disk drive and enter:

        LOAD"program name",8<RETURN>

        RUN<RETURN>

the program will run and you will be able to use your C-64
computer, to whatever extent your program allows, while the
output is printing. The Sprint Print Utility commands
including Graphics, Video, Divert Error Messages, and Divert
Input will function in the Total mode. Select these
features before loading your program into the buffer.

After your program has finished running, type:

        *E<RETURN>

This will close the buffer and you may print copies (*C) of
the buffer contents or reset the buffer (*R).

The Return to Normal command (*N) cancels the Total
mode.

16.   Total Bucket Mode - *TB

The   Total   Bucket   mode   is essentially the same as the normal Total mode except that output is   not   printed   until the   buffer   is   closed   (hence   "bucket" mode).   Select the Total Bucket mode with the command:

*TB<RETURN>

All Sprint Print Utility commands including the Optimize (*O)   command   function   with   the   Total   Bucket mode.   The format   for   running   a   desired   program   is   the   same   as described   for   the normal Total mode.   To output the buffer contents, type:

*E<RETURN>

The Copy (*C) command then can be used   to   make   additional copies.

The   Return   to   Normal   (*N)   command cancels the Total Bucket mode.

17.   Buffer Status - *F

Periodically, you may want to   determine   how   full   the buffer   is.   For instance, this may be true when entering a large   amount   of   information   in   the   "bucket"   mode. Similarly, during the actual printing operation you may want to know how much of the buffer remains to   be   printed.   To determine the buffer status, enter the command:

*F<RETURN>

The computer will respond:

nnnnn CHAR IN BUFFER,mm.m% FULL

These   values represent the number of characters (nnnnn) and the percent (mm.m)   of   the   buffer   which   has   yet   to   be printed.

An additional command is available to determine how many characters in total have been loaded into the buffer. For instance, after a buffer has been printed:

type: *F<RETURN>

The computer will report

Ø CHARS IN BUFFER,Ø.Ø% FULL

because there are no characters waiting to be transmitted to the printer. If you type:

?TC<RETURN>

the computer will report the total number of characters which have been loaded into the buffer.

NOTE: The command *F updates the buffer status and should always precede the ?TC command.

In program mode *F will update the buffer status but will not generate output. To determine the number of buffer characters left to print out, use the command ?BS%. The following lines of code indicate an acceptable programming format:

110 REM *F
120 PRINT TC:PRINT BS%

You will find the buffer status command most useful while entering information into the buffer. Since the buffer will be "open," the information reported by the computer will be included in the buffer contents and ultimately will be printed out. Often this is not desirable. To avoid including the status information in the buffer contents, close the buffer before you request the buffer status:

*E<RETURN>
*F<RETURN>
?TC<RETURN>

Then use the append function to continue adding desired
information to the buffer.

type: *A<RETURN>

This sequence of commands will allow you to determine how
full the buffer is without introducing unwanted material.

If you attempt to add data to a buffer which is
completely full, the buffer will automatically print out
some data to allow more data to be sorted. However, the
"overflow" data which is printed will be lost from the
buffer contents.

18.   Spooling direct from Disk - *"file name"

The Sprint Print spooling buffer allows you to transfer
a sequential file directly from the disk drive to the
printer. The command format is :

*"file name"<RETURN>

The name of the sequential file should be typed within the
quotation marks. To obtain the maximum speed, select the
Optimize bucket mode.

NOTE: Logical address 23 and drive channel 7 are
reserved during this operation.

19.   Re-link Buffer - *L

Should you disable the buffer by pressing the <run/stop>
and <restore> keys, it is possible to relink the buffer
pointers and save the buffer contents by entering the
command:

*L<RETURN>

the computer will respond with the message:

OK

when the buffer is relinked.

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20.   User Prompt Select - *U

    All Sprint Print commands start with the * character.
This is known as the User Prompt. Sprint Print allows you
to select a different prompt character, if you wish.   The
form of the command is:

            *Uc<RETURN>

where c is the new prompt character. For example, if you
type:

            *U@<RETURN>

the screen will display:

        PROMPT CHANGED TO "@"

and all Sprint Print commands will have @ as the user
prompt. To reset the user prompt to *, enter the User
Prompt Select command without specifying a new character:

            @U<RETURN>

The screen will respond with:

        PROMPT CHANGED TO "*"

            21.   Quit - *Q

    The Quit command disables Sprint Print and resets the
computer. To quit Sprint Print type:

            *Q<RETURN>

Sprint Print will ask you if you are sure you want to quit.
Typing   Y   or   <RETURN> will quit Sprint Print and return
operation to BASIC. Any other response will cancel the
command and Sprint Print will continue operation.

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22. Using Sprint Print Commands in BASIC

All commands for the Sprint Print full-spooling buffer used in program mode as well as in immediate mode, within a BASIC program the commands are accessed by REM statements. Each command must begin a separate REM statement. The following sample program demonstarates the proper format and shows how some Sprint Print commands can be used:

```
10 REM Print Squared Values
20 REM *P
30 REM *I
40 REM *V
50 INPUT "ENTER A NUMBER ";A
60 IF A<1 THEN 90
70 PRINT A " SQUARED IS " A*A
80 REM *F
85 PRINT BS% " CHARS IN BUFFER": GOTO 50
90 REM *E
```

The *P command selects the Print mode of the full-spooling buffer; no "OPEN" statements are required to establish the buffer or to communicate with the printer. Because we want input responses sent to the buffer, the *I command is included in the program. The *V command is always used with *I so that input requests are displayed on the screen.

Lines 80 and 85 demonstrate how to use the Buffer Status command. The "PRINT BS%" statement is used to determine how many characters have been loaded into the buffer. *F immediately precedes the "PRINT BS%" statement.

Finally, *E closes the buffer.

NOTE: BS and TC are reserved variables in Sprint Print.

Remember, the easiest way to use a BASIC program with the Sprint Print full-spooling buffer is to select the Total Mode (*T or *TB, see 15 and 16 above). Using this mode, you write your printer statements in the normal format you are accustomed to using. This single command then automatically directs all printer output through the buffer.

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23. Creating Sequential Text files

It is often convenient to output word processor files
through Sprint Print or the Sprint Print Word Processing
Utility.   This may be true for owners of 1525 and 801
printers who wish to take advantage of the Sprint Print
graphic character set with true descenders and underlining.
This may also be true for persons who wish to take advantage
of Sprint Print's enhanced output speed and ability to
append word processing and text files.

Most word processing programs for the C-64 require the
use of most of the computer's memory. Therefore, these
programs generally cannot be run with Sprint Print directly.
Sprint Print and the Sprint Print Word Processing Utility
can be used to print out sequential text files from the
buffer or to spool sequential text files directly from disk.
PaperClip(tm) and WordPro 3 Plus/64(tm) are word processing
packages which can easily generate output in the form of
sequential text files. In both programs, printer output may
be directed to disk as a text file rather than to the
printer itself.

To create printer output as a sequential text file in
PaperClip(tm), you must change the printer device number to
8 by typing:

                    <CTRL> # 8 <RETURN>

Output the text normally. You will be asked to name the
file, and it will be saved to disk as a sequential text
file.

To create printer output as a sequential text file in
WordPro 3 Plus/64(tm), you may select the printer device
number to be 8 when entering the program, or you may type
"D" instead of <RETURN> when outputting text. This will
direct the output to disk. You will be asked to name the
output file, and it will then be saved to disk as a
sequential text file.

The non-program files that you receive by modem are
generally text files.   These files are saved to disk as
sequential text files by most terminal programs.   Such
files, therefore, can be easily used with Sprint Print and
the Sprint Print Word Processing Utility.   Many terminal
programs allow you to easily create sequential text files
and to save them to disk.

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CONVERSION OF FILES PROGRAMS
****

The first four programs on page 2 of the main menu do
conversions from one type of file to another. These
programs are easy to use, as all you need to do is follow
the instructions on the screen. The instructions for the
first option--Convert ASCII to WRITE NOW file are as follows
are typical of the two programs:

ENTER THE NAME OF THE FILE TO READ
(Enter the name of the file you want converted)

PRESS * FOR DIRECTORY

?

ENTER THE DEVICE NUMBER TO READ FROM
(This is the Device number (ie. 8 usually) that the
disk is in that contains the file you named above.)

ENTER THE DRIVE NUMBER TO READ FROM
(This is Ø unless you are using a dual disk drive)

(S)TANDARD OR (C)OMMODORE ASCII?

ENTER THE NAME OF THE FILE TO CREATE
(This should be different than the above file name)

ENTER THE DEVICE NUMBER TO WRITE TO

ENTER THE DRIVE NUMBER TO WRITE TO

And that's all there is to converting an ASCII file to a
WRITE NOW file. You can now use what was an ASCII file with
the WRITE NOW!-64 professional word processor.

The first four conversion routines pay attention to
special escape codes, margins, etc. The option 8--CONVERT
WRITE NOW FILE FOR MODEM--does not pay attention to any
special features that may already be in the file. The modem
program sends everything exactly as it gets it. In other
words the codes in a file are left imbedded in the file.

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BASIC PROGRAM CROSS REFERENCE
****

The Basic Cross Referrence Utility will completely analyze any of your BASIC programs and print the following:

Program length in bytes
Source & Destination Lines for All GOTOs, GOSUBs, and THENs
All PEEKs, POKEs, SYS & USR values
A Full variable table listing:
    All variable names (including arrays)
All lines containing the variable
A listing of all lines containing specified commands or functions.

When you have loaded this program, the programmer's name and address will appear for a short time followed by:

        BASIC PROGRAM X.REF
        1: Line Numbers
        2: Variables
        3: POKE, PEEK, SYS, USR
        4: BASIC keywords

and a number of prompts will appear. The first being:

        Program Name?

you respond by inputting the name of the BASIC program you want to reference. Then these prompts will appear:

        Starting Line#?
        Search for POKE, PEEK, SYS, USR?
        Search for BASIC keywords
        Screen or Printer?
        Columns Available

The program will then process the information you have input and print the results of your cross references.

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FILE PRINTER BUFFER
****

This program may call for you to reference the instructions for the Sprint Print Buffer/Spooler, as the instructions listed there will apply to much of what you're doing with this program. When you load this program, you will notice a note at the bottom of the screen:

NOTE: You must have loaded SPOOLER for this program to work properly.

Another thing to note well is the fact that this program will only perform as it should when using an ASCII type file.

INDEX GENERATOR
****

The first thing this program asks for is:

NEW FILE
OR
CONTINUE OLD FILE?
(N/C)

The prompts following the file type are:

Will you be printing in - - -

1) Normal Print (10 CPI)
2) Elite Print (12 CPI)
3) Condensed Print (15 CPI)
4) Expanded Print (5 CPI)
5) Other

After you've selected what type of print you want, you will be asked:

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Enter the ASCII CHR$ value for the code required by your printer to print in this size of print. Press <RETURN> after each value entered.

The next prompt will ask you to:

Enter the maximum number of characters that can be printed on your paper in the character size you selected.

Followed by the prompts:

Enter index title

Enter left margin:

Enter # of Columns across (1-6)

Enter column width (12 to xxx)?
                    the max. will show

Enter # of lines to be printed per page:
                    the max. will show

This program reacts to data in much the same way as the mailing label program does. * does not allow you to actually quit the program, but gives you a menu like:

                A   DD MORE DATA?
                E   DIT AN ITEM?
                V   IEW THE LIST?
                S   ORT THE LIST?
                F   ILE THE DATA?
                P   RINT THE LIST?
                C   HANGE THE PARAMETERS
                Q   UIT?

        Enter your choice:

        A, E, V, S, F, P, C, or Q

NOTE: This program will not function on the Commodore 1525 or MPS 801 printers.

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THE OTHER SIDE
****

The other side of this disk contains a HIRES loader program and about 20 HIRES pictures you'll be able to dump to your printer using either of the screen dumps on this disk.

To load the program type:

    LOAD"*",8:<shift & run/stop>

the program will load and instructions on how to use it will appear on your screen.

NOTE: Cardco's pictures include:

E.J. Lippert II	President
Breck Ricketts	Vice President
Rob Bottorff	Customer Service Supervisor
Herb Robinson	Customer Service
David Lotton	Customer Service
Bruce Reed	Customer Service

These pictures were taken using Cardco's new video digitizer system. We hope to be able to market the digitizer with software and a black & white camera for about $199.95 - $249.95 by March of 1985.