

Saving Our HEATH Eight-Bit Machines!

SEBHC JOURNAL

Volume 1, Number 6

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SEBHC JOURNAL

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LETTERS: BRICKBATS, BOUQUETS, etc.

Dear SEBHC JOURNAL Editor:

I just got the newest Heathkit catalogue today. Gawd! Apples and IBM clones! I knew it was coming, but it's disturbing all the same.

The microcomputer was born in the mid-1970's. Its' fathers were those lone innovators and entrepreneurs with sufficient vision and foresight to see WHAT IT COULD BE, rather than what it is. Its' mothers were the high-tech companies of Silicon Valley. They put American technology to work producing the microchips that [later] became the body of the micro.

The corporate giants of the computer field had nothing at all to do with the birth of the micro. They lived in a snug and secure world where only THEY could produce computers. Where marketing sold, rather than performance. Where users must buy or lease software with restrictive license agreements. Where progress was carefully limited, lest it interfere with sales of last year's model.

The micros changed all that. [Because] they were "open" systems that you could build and maintain yourself. Software became [reasonably] cheap and [readily] available; you could even write your own. Operating systems were "generic"; you could add memory, printers, or disc drives to your heart's content. Prices fell drastically, and performance went up rapidly.

The giants eventually realised that the micro was here to stay. So they decided that they must have the [lucrative] market for their own. They couldn't compete in technology; the micro manufacturer could produce a new product in three months which would take IBM [at least] 3 years. So they chose the best weapons of their choice: money and marketing.

The giants have been very successful. The pioneers of the seventies have all been driven out or absorbed by Corporate America. Today's micros aren't getting smaller and simpler, but are getting bigger, more complex and more costly. To get what some consider an "adequate" system costs a small fortune. Software is often copy-protected, subject to restrictive license agreements. Copying has replaced innovation. Marketing hype has replaced facts and figures. Progress has nearly halted; just try to think of any important or outstanding new programs or hardware developments in the past year.

We've come almost full circle, with control of computers getting right back into the giant's hands. This trend is madness. The computer is not yet perfected; now is not the time to "standardize design".

And Zenith has changed Heathkit from part of the solution to part of the problem. Zenith is no computer company; its' forte is entertainment electronics. It can't compete with the marketing power and name recognition of IBM. And Zenith can't compete in price by manufacturing "off-shore". Their only hope lies in innovation and progress. The more Zenith tries to copy other people's designs, the worse it will fall behind.

It is beyond hope to expect Zenith's management to change for the better. They've already ruined their TV business with stodgy products and lackluster [market] performance; now they're out to repeat that action in their share of the computer industry. I can only hope that what's happening will get through to Zenith's top brass in time for them to sell Heath Company before it too, is dragged down into oblivion as other micro-computer makers were.

Yours truly,
(name withheld by request)

Dear "Name Withheld"--

You have described the situation concisely and succinctly. I'm glad that a computerist such as yourself has enough courage and intelligence to tell off Zenith's brass hats. But, in my own experience, there is not one corporate board member at the top of any large company who has either a) imagination, or b) foresight. These fat-bottomed characters would rather die than say NO to the boss. Looks as if it is up to the general public and the myriads of share-holders to Give Them The Message: "INNOVATE, ELSE WITHER AWAY!"

What this world needs are more guys emulating folks such as "The WOZ" and his pioneering chums! Your editor is too old to copy their inspired gee-whizz-ery, but he IS trying to keep Heath's best eight-bit machines alive until Something Really Much Better Comes Along To Replace Them. You can bet your bottom dollar that IBM or the clonemakers won't produce it, just more of the same...

* The Smithsonian now has 2 micro-history bits. Heath's prexy, Bill Johnson, donated an H9 terminal and H8 computer, vintage 1977, for permanent exhibit as part of a display entitled, "The Information Revolution." On receiving these historical items, Smithsonian's John B. Eklund cited Heath Company as, "one of the key early pioneers in the microcomputer field...and one of the first manufacturers to supply a complete system including computer, monitor, keyboard and operating system software" at reasonable prices to the general public.

[Are you reading us, Zenith?]

ELECTRONIC TWO-COLUMN "PASTEUPS"

by

L. E. Geisler

In Hank Lotz's premier issue of the "Staunch 8/89er" (Oct-Nov-Dec, 1986) he printed a rather complex but thought-provoking and useful "How-2" article for using MAGIC WAND to print two-column text under CP/M with a daisy-wheel printer.

Here's how I do something quite similar with my Epson MX-80 printer--including graphics--when putting together each issue of the SEBHC JOURNAL.

PAGE SIZE CONSIDERATIONS --

The "default" 8-1/2-inch x 11-inch printer page is sixty-six lines at 6 lines to the inch long. Usually text is set up to use sixty of those lines. Text is limited to exactly eight inches across the page so as to leave a one-quarter inch margin on each side. (Assuming you center the paper correctly and are using the full page width.)

To get two columns on a page we must restrict the number of letters and spaces in each column while providing pleasing left and right page margins and roughly half the margin's blank space between columns. My Epson MX-80 dot-matrix printers support both 80 and 132 "columns" of text across the page. If I retain the "default" left and right margins and assume 4 spaces for the center, at 80 spaces/line each column gets just 38 text spaces out of the 80. Text will be quite legible but will use up lots of paper. Also we're limited to two only letter pitches or widths (normal and expanded) for regular text.

Using condensed (132 chars/spaces/line) mode, each column can be 60 spaces wide (2x60=120+12 extras). We'll still have a nice white separator between columns plus the original 1/4-inch margins. Of the extra 12 spaces, 8 are used for the column separator, 4 for either right or left hand page binder offset. Of course the text is a bit harder to read, but we can put lots more on a page, and have more pitches (compressed, normal and expanded) available. Using my recently DOTS PERFECT-modified MX-80 (see the review on page 7) in Near Letter Quality and Double-Strike mode, the resulting condensed text is easy to read and pleasing to the eye. (Type is almost as nice as the daisy-wheel printer does, PLUS GRAPHICS CAPABILITY. If you want anything better you'd have to consider laser printing which costs many, MANY BIG* BUCKS!)

TEXT PREPARATION --

It's best if you have a good editor or text processor

which permits inserting "transparent" printer control characters in the finished text. These characters may affect appearance of your prose as you type it; therefore it's best to insert printer codes AFTER you're finished with the text. Newline Software's TEXT PROCESSOR (TXTPRO), in both HDOS and CP/M versions, works quite nicely for me. On the other hand, you might try Software Toolworks' PIE and TEXT and get similar results.

Here's how I do it: First I set the processor's left margin to zero, right to 59 (or 1 and 60 in TXTPRO's case). This gives 60 spaces total for column one. Now I turn on justification so I can get even left and right margins. TEXT PRO's justification mode is called PAD; it asks where to insert hypens as it runs through the text. TXTPRO also has an INSERT mode which allows you to insert letters or words in the middle of sentences without typing over what's there already. And it keeps track of the cursor position by space and line number on line 25. It's a nifty package!

Next I start entering text. I include plenty of room for any graphics I may want to include as I enter text. I don't worry if I put in too much blank space; I always send my first draught out to the printer for error-checking and correction in any event. Usually I leave about six blank lines at top of the page, so my columns are usually 54 lines long when the page is finished. Also I have to compose at least sixteen full 2-column pages for a 20-page issue (allowing for vendor ads and the occasional illustration or cartoon). If you're going to print a long item in two-column format, do only one page (2 columns) at a time and save to disc with "PAGE1.TXT, PAGE2.TXT", etc. to prevent accumulating a monstrously unwieldy text file! Later, if you like, tie the separate files together with PIP.

Let's assume we've written two full columns and are ready to make them into one 2-column page. If you have VEDIT, its macro function lets you pick up column two and set it up alongside column one. You can then shift the page right or left on the screen to see how lines match up.

But I have TXTPRO.ABS for HDOS (TXTPRO.COM for CP/M) with only FIND, SWAP and COPY functions available. TXTPRO does have a macro function, but I'm leery about using it so I use subterfuge in text formatting. To make sure I've a nice center strip between columns, I reset the margins for column two to the right by eight spaces. (Left margin is now 9 and right is 68.) This provides the necessary white space between columns, with four spaces left over for 3-hole punching. I set the margins differently for odd and even pages, if finished text is to be printed on both sides of sheets in book form. Also I keep a special list of HDOS LP.DVD and CP/M Graphics Text Formatter printer codes handy -- in case!

[Continued on next page]

Under HDOS you must have a suitable printer device driver (mine is Lindley Systems Epson MXV44.DVD) capable of passing your printer's unique escape (control code) sequences. Here's a brief run-through of the basic procedure which applies to either HDOS or CP/M (I've shown only MXV44 escape codes between parentheses):

- 1 - Insert Emphasised, Condensed-character Control (~[G"O) code at top of column one. (CALLIGRAPHY-II codes elsewhere)
- 2 - Place a Continue Line Control (~@) code after every line (including blank lines) in column 1.
- 3 - Skip cursor down to the 1st line of column 2 and place a unique character in the line above line 1 (such as CTRL-L).
- 4 - Press fl (FIND) key, then insert the unique character (I use CTRL-L as it shows in reverse video after the STRING:_ prompt, then press fl (down) key.
- 5 - Press FIND key twice and see a blinking block cursor sitting on your unique cue character.
- 6 - Move cursor down to col. 2, line 1.
- 7 - Press blue (SWAP) key, picking up col 1, line 1. Note: Cursor goes to absolute top of the page on this first move.
- 8 - Skip cursor down to text line 2 and press keypad IL key (SHIFT-IL is a NO-NO!) making COPY space for SWAPPED line.
- 9 - Press white (COPY) key and see col 2, line 1 inserted in the blank line. Cursor is now on a new blank line below the just-inserted line.
- 10 - Press keypad DL key, then down-arrow key (just once), then the IL key, skipping a line and opening the next one.
- 11 - Press FIND key twice. Blinking block cursor again sits over your cue character. Bring cursor down to previously SWAPPED line and press keypad DL key ONCE, deleting line and leaving cursor on the next line one of column 2.
- 12 - Repeat steps 6 through 11 until all column 2 lines have been placed between column one's lines, including blank lines. (If you're worried about the blank lines in column two, just type a few periods on each so you'll know blanks are supposed to be there; delete periods later.)
- 13 - Check the entire file for mistakes. Now press IO, then EXIT keys. TXTPRO saves the original as (name).BAK, and the new one as (name).TXT. Change file names later if you like.
- 14 - Copy the newly-formatted file to LP: and see how cleverly you did!

Under CP/M I use Skycastle Computer Products' Graphics Text Formatter (CALLIGRAPHY-II) with TXTPRO.COM to do a similar job. Its unique MX-80 codes are placed differently in a text file than in HDOS, but the end result is identical.

Now for the "fun" part! CALLIGRAPHY can be used to mix both text and graphics in the same printer file. Therefore you must absolutely, *POSITIVELY* do all text formatting BEFORE adding the CALLIGRAPHY codes. After text has been formatted into two-column form (the continue-line control code is a backslash -\- rather than ~@), you can tack on the

page header, any graphics font calls (Old English, Roman, PIC.NS3, etc.), then on separate lines for each of these codes: Condensed-letter (.F C), Set Left Margin (.LM 0), Set Right Margin (.RM 79). Then save your new file under the original name like this: (dev#):orignam.ext<CR>. Then rename the newly-saved file as orignam.GTF (Graphics Text Formatted) after TXTPRO exits to the A> prompt.

The next step is to send your .GTF file to the printer. You enter this command string at the A> prompt: 'GTF (dev):filename<CR>'. GTF munches around for what seems like hours, loading all the various graphics files and suchlike, then the printer burps fitfully and prints out your two-column page(s).

If you were very careful in putting the entire complex schmatteratti together, you'll get a beautiful page of text and graphics combined, all in one swell FOOP! (I play it safe and just insert the condensed text and margin codes above my first line of text, then save the text file as TEST.GTF. That way it's easier for me to spot mistakes and correct them BEFORE including graphics. Avoids aspirin!)

NOTE: In the CP/M CALLIGRAPHY-II package there is NO Double-Strike Condensed mode command. That is why I use the MX-80 with DOTS-PERFECT installed--it doesn't let CALLIGRAPHY strip out pre-set printer double-strike mode as happens with the LX-80. Skycastle Computer Products' programmer has told me he's working on a patch for CALLIGRAPHY-II which will correct that problem real soon now. Incidentally, with the MX-80 locked into double-strike and NLQ modes, text and graphics are a lot denser because each line is printed twice, the second print-bead pass filling gaps left on its first pass. Think You'll Be Fixing That Too, Mike?

CONCLUSION --

I hope this article will help some of you incipient desktop publishers put together better looking printouts for your local HUG group's newsletter. Although I've NOT included lots of details because not everyone has a setup similar to mine, you should have enough information that you may concoct a similar professionally-working technique for your own H/Z eight-bit (maybe even a dual-CPU) system.

And if it works for you every time, write it up and send it in for us to consider publishing here. You'll get either a one-year extension on your subscription, or a free one-year subscription to have sent as a gift to anyone you designate, in payment for your article.

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REMEMBER: H/Z 8-Bit Computers Really Are FUN !!

PRODUCT REVIEW -- By A. Stapher, Editorial Assistant

Items Reviewed: 19/89 FLICKER-FREE TERMINAL UPGRADE KIT
and

19/89 SUPERSET TERMINAL UPGRADE KIT
For Heath/Zenith H/Z-19 Terminals and
H89/Z80 Computers

Availability: Shipped from stock (about 10 days turn
around)

Price: 19/89 FFKit, \$29.95; 19/89 SUPERSET,
\$49.95 -- U.S. Funds only. Plastic,
(VISA, Master Card) or Cheques

Manufacturer: Technical Micro Systems, Inc.
P.O. Box 7227
Ann Arbor, MI 48105
313-994-0784

Warranty: 90 days from delivery if installed
strictly in accord with manufacturer's
instructions (both products).

Item 1 -- 19/89 Flicker-Free Upgrade Kit:

This kit consists of several CMOS replacement integrated circuits, a short length of Kynar hookup wire, and a detailed, fully-illustrated instruction manual. The kit does exactly what its name implies, that is, it removes those annoying "black flecks" and display flicker caused by unsynchronised, periodic screen-refreshes. Additionally, the Z80 terminal CPU is speeded up from two to 3Mc/S without affecting performance in any way. Also, you are able to select a wide range of terminal baud rates--75 through 38,400--and the terminal runs cooler due to the low-power CMOS ICs used.

Item 2 -- 19/89 SuperSet Terminal Upgrade Kit:

The SuperSet Terminal Upgrade Kit consists of a set of low-power CMOS ICs which replace the standard H/Z character generator, keyboard and program EPROMs, display RAMs and several other high-current ICs. These new integrated circuit packages are much faster than the originals and, in addition, they draw much less power than the original ICs. After installing the SuperSet Upgrade, your H/Z terminal or computer will run much cooler and it will have a much longer life while consuming less electric power. The SuperSet Upgrade kit includes all the Flicker-Free kit's features plus:

- + Four text-mode character fonts: Standard H19, Enhanced, VT-100 and NORCOM GT-PROM*

- + Four graphic sets: Standard, DEC special graphics, GT-PROM*, Greek Alphabet and Math Symbols
- + Faster screen operation and response (terminal Z80 CPU runs at 3Mc/Sec instead of 2Mc/Sec)
- + Greater baud-rate selection--from 75 to 38,400 without any other change in performance
- + On-screen digital clock with set, reset, and timer modes (also software accessible from a running program)
- + Non-destructive SuperSet Functions Menus

All SuperSet menus of available functions are displayed on the screen's right-hand side by a simple 2-key CTRL-ESC call, overlaying whatever is already there. The main menu is divided into three different sections from any one of which you can select several different sub-menus. While in a menu, you can usually set the terminal to any legal mode with one keystroke. Upon setting a mode, the menu instantly vanishes without having affected your program's operation in any way, only the screen's appearance, depending upon function chosen. This is very impressive, to say the least. And if you decide against a function, typing a RETURN deletes the menu without introducing the RETURN into the resident program. Because SuperSet firmware is located on the terminal card it does not take vital computer memory space. A program in memory can access SuperSet functions, or if its' code prevents this, you can use the keyboard to access any desired function and the program never knows about it!

Installation and Instruction Manual --

Installation is quite easy if you're reasonably handy with a soldering iron and capable of following the highly detailed illustrations in the instruction manuals. But I recommend you have a reasonably-expert electronics kit builder either help you, or do the job for you if you've never successfully built an electronics kit. There is nothing in either kit that will harm your terminal or computer in any way, but inexpert workmanship most surely will!

Being an old hand at solder slinging, I installed one FF kit in the JOURNAL's H19, and the other in my H89 in under two hours while watching some favorite TV comedies. Both gratifyingly worked immediately upon power up, and have yet to give us any trouble at their highest baud rates, although we normally run everything at 9600.

In all honesty, I must say I didn't personally install the SuperSet. Lee Hart of TMSI had offered to put it in my H89 if I'd lend it to him to use at HUGCON-V as a demonstrator, an offer I couldn't think of refusing! My H89 also had a TMSI H-1000 board in her tummy during HUGCON-V. Afterward her H89 CPU went back in and the SuperSet remained in place.

Upon repossessing Heather, my first move was to check out the various SuperSet menus described in the instruction manual and examine the different type fonts and graphics sets. Then I entered and ran some of the MBASIC demonstration programs from the manual. Because I had a "pre-release" kit, the example programs didn't work exactly as I expected them to, stopping without showing complete font and graphics examples.

Since my place is a short fifteen-minute walk from TMSI, I took manual and MBASIC disc with the copied demo program over for Lee Hart to check out. After about a half hour, he discovered a typo in the demo program manual listing because his printer sometimes skips a '}' symbol! All we had to do was insert it in line 1210, changing "IF I41 THEN GOTO 1220 ELSE I4=1" to "IF I4>1 THEN..." and the program ran like a boxfull of freed wild rabbits. Upon returning home I inserted the manual's program changes in the original program and watched SuperSet strut its' stuff until my missus called me for supper (for the tenth time).

The next day I created a sample CALLIGRAPHY-II file of a few SuperSet graphics and character fonts and printed them out. They're almost exactly like the screen version and you can get a pretty good idea of how nice they'll look on your screen.

In conclusion, I can honestly say that the SuperSet Terminal Upgrade kit is worth every penny Lee is asking for it. Both kit's manuals are extremely well written and lavishly illustrated. In addition, the SuperSet manual compiles all Heath's loosely-organized H19/H89 instruction manual's data into well-organized groups. Nothing is left for you to guess at, or wonder about. In itself, SuperSet's manual is worth just as much as the SuperSet upgrade kit's price.

Both Flicker-Free and SuperSet kits work exactly as advertised. The only fault I can find is that you can't send SuperSet's special fonts directly to a dot-matrix printer. But don't be too surprised if Lee grants that wish soon!

ADDENDUM: Lee Hart recently told me he has a new, expanded-font ROM which increases the present SS character font sets from four to *16* for only \$29.95! Also, he has another item which makes use of that empty ROM socket on the terminal card at 0436. It is a completely self-contained, self-powered real time-and-date clock plus programmable 2k-video RAM expansion, all in one 24-pin IC. The real-time clock sells at \$29.95 also. The clock can be made to print time and date into a text file whenever desired. This can be a very handy bookkeeping feature, letting you keep track of date and time if you're working under contract or want to check your progress. [I've got to get that clock Real Soon Now! -- ed.]

Examples of TMSI's SuperSet are shown below. We regret that due to lack of time we were unable to prepare more examples for your edification...

A. Standard Heath Characters

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPp
QqRrSsTtUuVvWwXxYyZz0)1!2@3#4\$5%
6^7&8*9(-_+=+~\|{}[];:'"/?,<.>

B. Modified Heath SuperSet Graphic Characters

• ¶ | - + ~ J L r ² → ■ ▨ ↓ . . ¢
^ _ ' a b c d e f g h i j k l m n
" = 1 7 T t ± t X / \ - _ | | |
o p q r s t u v w x y z { | } ~

C. SuperSet's NORCOM GT-PROM Character Sets

AaBbCcDdEeFfGgHhIi
JjKkLlMmNnOoPpQqRr
SsTtUuVvWwXxYyZz01
23456789!@#%&'<>
- _ = + ~ \ | { } [] ' " ; : / ?
^ - ¢ a b c d e f g h i j k l
m n o p q r s t u v w x y z
~ 1 ~ ~

[EDITOR'S NOTE: There's an excellent tutorial in SEBHC JOURNAL, Issue No. 2, in which Lee Hart describes how he "downloads" special graphics character fonts to his Okidata printer. You can adapt his method or develop your own for a different dot-matrix printer, such as Epson's LX-80, which can accept and store a file of special characters. In our case, Mr. Stapher couldn't use our LX-80--it was unavailable--and he had to use Skycastle's CALLIGRAPHY-II package to make and send the above fonts to our MX-80. It took a lot of his time and effort, and we owe him a debt of gratitude!]

by
Leonard E. Geisler

Afterward, when I checked the printer out according to the instruction manual, Big Surprise! It worked * Exactly * as advertised! When I connected it to our reliable H8 and ran the printer through all its' new "native" fonts and modes to see if text I'd formatted with CALLIGRAPHY-II would print as it had before modification there was absolutely no difference, except that CALLIGRAPHY couldn't "unset" Near Letter Quality and Double-Strike modes when it printed in

condensed mode! That was a real eye-opener--well worth the modest price of Dots Perfect.

Our MX-80 now prints the same Near Letter Quality font as our LX-80 (AND in Condensed mode too!), plus special characters found on the Epson-manufactured ibm-5152 graphics printer. A few lines of MBASIC lets you see this character set, or just set printer's SW1-2 dip switch ON for regular use.

MBASIC ibm-CHARACTER SET PRINTER TEST PROGRAMME
(Courtesy of Brian at Dresselhaus)

```
10 LPRINT CHR$(27)"x3"  
20 FOR I=32 TO 254  
30 LPRINT I* "CHR$(I)  
40 NEXT I
```

Note that this test programme **WILL NOT WORK** with your printer set in Near Letter Quality mode; it must be in draft mode. Be prepared to see it print a continuous string of numbers and characters down the left-hand side of three and a half sheets of tractor-fed paper. This is ok if you may later want to find out a particular ibm character's ASCII number, but to just see just the characters, enter and run this programme listing:

```

5 REM          MX-80TEST.BAS          ibmCharsTest
7 LPRINT CHR$(27)"E":REM  Turn on emphasised mode
10 LPRINT CHR$(27)"x3":REM  Turn on ibm chars
20 FOR I=33 TO 69:LPRINT CHR$(I);:NEXT I
30 LPRINT:LPRINT:REM      adds spaces for clarity
40 FOR I=70 TO 106:LPRINT CHR$(I);:NEXT I
50 LPRINT:LPRINT
60 FOR I=107 TO 143:LPRINT CHR$(I);:NEXT I
70 LPRINT:LPRINT
80 FOR I=144 TO 180:LPRINT CHR$(I);:NEXT I
90 LPRINT:LPRINT
100 FOR I=181 TO 217:LPRINT CHR$(I);:NEXT I
110 LPRINT:LPRINT
120 FOR I=218 TO 254:LPRINT CHR$(I);:NEXT I
130 LPRINT CHR$(27)"x4":REM  shut off ibm mode
140 LPRINT CHR$(27)"@":END:REM  printer powerup reset.

```

This programme prints out six lines of 36 characters each except the 3rd line; ASCII number 127 is non-printing. See unspaced sample printout below:

Be SURE To Tell 'em You Read About It In The JOURNAL!

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SOFTWARE REVIEW --

Program name: TWIST and SHOUT

Price: Any CP/M or MS-DOS computer, \$34.95
Special: One MS-DOS or ZDOS and one CP/M version, \$49.95.

Hardware: Runs on any computer supporting CP/M, ZDOS, MS-DOS or PC-DOS. "IBM compatibility IS NOT required. Specify the disc format when ordering.

Printers: Supports Anadex, Apple, C. Itoh, Centronics, Data Products, DEC, Epson and Epson compatibles, H-P, IBM and compatibles, IDS, MPI, NEC, Mannesman Tally, Okidata, Smith Corona & Toshiba (more are being added daily)

Vendor: SPECTRE TECHNOLOGIES, Inc.
22458 Ventura Blvd., Suite E
Woodland Hills, CA 91364
818-716-1655 (9 - 5 PST) or
1-800-628-2828, Extension 918 (24 hrs)

Payment: Cheque, Money Order, VISA, Master Card or American Express

Editor's comment: Recently I received a Beta Test package of software for possible review in the JOURNAL. Of the two programs included (TWIST and SHOUT) I was able only to test SHOUT--an abbreviated sample is on our cover. But since the only spread sheet program I have (Software Toolworks' ZEN-CALC) runs under HDOS and the software test package had two different versions included, neither of which is HDOS-compatible, I loaned the CP/M version to Lee Hart of TMSI and the MS-DOS version to Glenn Warren for them to evaluate and comment upon. Lee hadn't completed his evaluation by press time, but Glenn had, and his report follows.

The writers of "TWIST AND SHOUT" don't claim they'll set the world on fire, and they probably won't. But what their programs are intended to do, they do very well.

This pair of unusual printing utilities does two things. "TWIST" prints files vertically (rotated by 90 degrees, that is) on a page, while "SHOUT" prints banner-sized messages the same way along the length of tractor-fed paper. I've tried them, and they work with a minimum of hassle. CP/M and MSDOS versions of the utilities are available. The CP/M version comes in four formats: Osborne single-sided single density, Kaypro single-sided double density, Morrow MD2 single-sided, double density and Heath/Zenith ss,dd.

The MS-DOS "TWIST AND SHOUT" disc I was loaned for evaluation purposes contained executable versions of the programs, along with overlays (printer drivers) for many dot-matrix printers, three typefaces used by "SHOUT", a list of printers supported, and a sample spreadsheet file for user demonstration. A READ.ME file used for between-printing updates of the manual may or may not appear on your disk--it did on mine.

Program installation is easy. You simply look through the "PRINTER.LST" file for the appropriate printer overlay, and rename that overlay as "PRINTER". This is done after you make a working disk (including system tracks) from the distribution disk. The manual guides you gracefully through this procedure with appropriate notes and comments. What if your printer isn't listed? Just give the company a call; they say that they will try to generate an overlay for you.

I tested this software on hardware that was available to me on my lunch hours--a Zenith 158, and a C. Itoh 8510 printer. Although this is MSDOS equipment, I've no reason to think its' performance would be much different--maybe better --on CP/M equipment. [YES, on H89s! -- ed] Only one glitch occurred during testing. When I first tried "TWIST", only garbage printed. Back to the manual, where the "most likely cause" was using the wrong printer overlay. Sure enough, specifying the correct overlay solved the problem.

"TWIST" operates in either 'menu' or 'command line' mode. Menu mode is used to set printing parameters such as margins, form size, and character spacing. Once these are set to your liking, the command line mode is used: simply type 'TWIST file.nam' and you are in business. I printed files generated from Wordstar and Multiplan as well as the demonstration file. The Wordstar file was formatted for 150 columns, and printed perfectly. If a Wordstar file contains dot commands, it must first be sent to a disc and then printed out from the disc.

With Multiplan, all files to be "TWISTED" must be printed to disc -- this seems true for all the spread sheets listed in the manual. After I did that, my test 165 column Multiplan file printed with no problems. Other spreadsheets are supported, including: Lotus 1-2-3, Symphony, CalcStar, Super Calc, Perfect Calc, and MicroPlan.

If you want to generate party or advertising display banners, "SHOUT" will do it with ease and precision. "SHOUT" operates only in the 'menu' mode, which allows you to change form width and several other parameters. One option, 'quick output', will use alphanumerics to print the banner letters when switched on, and will utilize full graphics when off.

[GOTO Pg 9]

Three typefaces are available: Times Roman, Olde English, and Sans Serif. Typefaces may be mixed in a banner message to make it especially attention-getting.

In conclusion, I liked both programs. They worked well and easily. If you are a user of spreadsheets with many columns, "TWIST" will let you print these out without the problem of taping several sheets together. "SHOUT" generates nice banners for parties, announcements, or what have you. The documentation is well written, with enough information to help you quickly diagnose most problems. The authors encourage you to call them if any problems are encountered while using the programs. That kind of support is nice, even if you don't need it.

Reviewer: Glenn Warren
899 Starwick Drive
Ann Arbor, MI 48105

-----8 BITS-----

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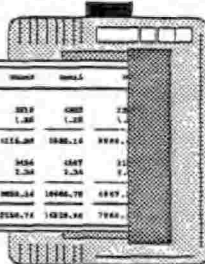
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INFOWORLD Magazine rated it's documentation GOOD and the program EXCELLENT in performance, ease-of-use and error handling. MILESTONE is available for all CP/M, MS/DOS, ZDOS & PC/DOS machines.

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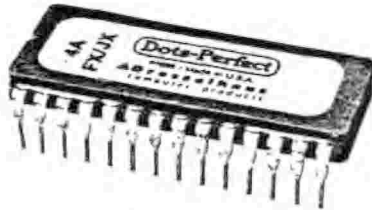
CP/M v2.2 (Zenith version, 5" Hard- or Soft-Sector, not downloadable)	\$30.
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Digital Research MAC Macro Assembler	\$40.
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"Generic" CP/M Application Software — 8" Single Sided, Single Density format, conversion to Zenith 5" formats \$25 per disk additional.

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See Review on Page 7

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g Sample of
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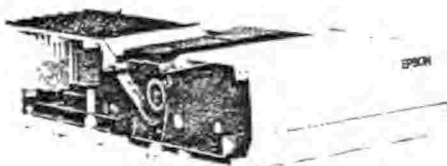


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ADDENDUM FOR "A PIP OF A PROGRAM" by Lee Hart

(See SEBHC JOURNAL, Vol. 1, No. 3)

[Although this is a "stand-alone" article we strongly advise that you read the original article in order to fully understand what the program listed here does and what you will now be able to do with PIP. -- editor]

Now you know all the fancy tricks for using PIP. But will you remember them when they're really needed? Here's an easy way to add a "help" message to PIP; every time you call PIP, you'll see the message (a kind of instant refresh-er course).

The first 256 bytes of PIP.COM are reserved for user-installed input and output routines. We can install our own program in this space and it becomes a normal part of PIP. The help is always there if we need it, but it has no affect at all on PIP's size and performance. Pretty nifty.

If you've never programmed in assembly language, here's your chance! PIPHELP is about as simple a program as they come. Before proceeding, you'll need ASM.COM and DDT.COM (from your CP/M Software Distribution discs).

Before proceeding, enter DDT PIP.COM<CR> (RETURN key). As DDT signs on, its' prompt is an underline with the blinking cursor alongside. Enter a capital L<CR>. See the first 16 lines of PIP.COM in assembly mnemonics (hexidecimal code). The instruction at address 0100 should be "JMP 04EC" (which is the value in my particular version of PIP). If yours is different, copy it down before exiting DDT with CTRL-C. If 04EC, just exit DDT.

Load your editor or processor and type in Listing 1, making sure to insert the proper code you noted down earlier in line reading "xxx equ 04ceh", replacing '04ceh', then save new text as PIPHELP.ASM. Next enter: ASM PIPHELP.AAZ-<CR>. If there're no typing errors in PIPHELP, ASM will print out this message, followed by the A) prompt:

```
CP/M ASSEMBLER - VER 2.0
0206
00H USE FACTOR
END OF ASSEMBLY
```

Check disc directory. You'll see PIPHELP.HEX, plus PIPHELP.ASM. If you omitted the above .AAZ extension, you'll also see PIPHELP.PRN; it contains PIPHELP's hex codes.

Load DDT and at its' prompt enter IPIPHelp.HEX<CR>. At next prompt, enter R<CR> to read assembled file and overlay

PIP's first 256 bytes with our PIPHELP program. Type CTRL-C --exiting DDT back to CP/M. Enter SAVE 29 NEWPIP.COM<CR> to send the modified version of PIP to disc. That's it!

To test your work, at A) prompt type NEWPIP<CR>; see your message displayed, followed by PIP's "*" prompt waiting for your command as usual. Try NEWPIP out; send PIPHELP.ASM or PIPHELP.PRN to LPT: -- it should work without a hitch. When satisfied NEWPIP is working ok, enter ERA PIP.COM<CR>, then: REN PIP.COM=NEWPIP.COM<CR>. You'll never have to again guess at PIP commands!

```
;      HELP Program for CP/M-80 PIP.COM - 20-Jan-87
;
;      Program installs in PIP.COM's 256-byte reserved space
;      If PIP is invoked without a command "tail", help menu
;      appears, describing PIP command syntax and options.
;
;      by:   Lee Hart, 366 Cloverdale, Ann Arbor MI 48105
;
bdos    equ    0005h    ; entry point for BDOS
buffer  equ    0080h    ; CCP command storage buffer
prints  equ     9       ; BDOS print-string routine
xxx     equ    04ceh    ; PIP's 1st JMP instruction
cr      equ     0dh     ; carriage return
lf      equ     0ah     ; line feed
tab     equ     09h     ; tab
;
org     0100h
jmp     piphelp ; jump to help our menu, not PIP
;
org     107h      ; top of PIP's internal resvd space
piphelp:lda    buffer ; get length of command after "PIP"
;
ora      a        ; if >0,
;
jnz      xxx      ; then enter PIP normally,
;
lxi      d,message
;
mvi      c,prints; else display our "help" message
;
call     bdos
;
jmp      xxx      ; and then enter PIP normally
message:db    'syntax: PIP dest-source[options],
;
;                                     source2[options],etc.'
;
db      cr,lf
;
db      'option: Lowercase',tab,'Delete past n',
;
;                                     tab,'Start@text`Z',tab
;
db      tab,'Pn-page@n lines',cr,lf
;
db      tab,'Uppercase',tab,'Number lines',tab,
;
;                                     'Quit@text`Z',tab
;
db      'Echo to console',cr,lf
;
db      tab,'Formfeed out',tab,'Verify copy',tab,
;
;                                     'Zero 8th bit',tab
;
db      'Tn-expand Tab-spaces',cr,lf,lf,'$'
;
end
```

Note: Four of the above 'db' lines have been "folded" to fit page layout. Type each folded line in as one long line, otherwise program will not assemble correctly.

ACE of ACES

by Lee Hart

It's 1918. You're flying your Sopwith Camel over no-man's land on a routine mission to scout enemy positions. Suddenly you hear the chatter of gunfire and the distinctive roar of a radial engine. A blood-red Fokker triplane is on your tail!

Quickly you try a loop to get over and behind him. But he's wise to that trick, and stays right behind. You weave and dodge furiously to prevent him from getting an easy shot. But bullets rip through canvas on all sides. In desperation you risk an Immelmann turn, tricky for a pilot of your experience.

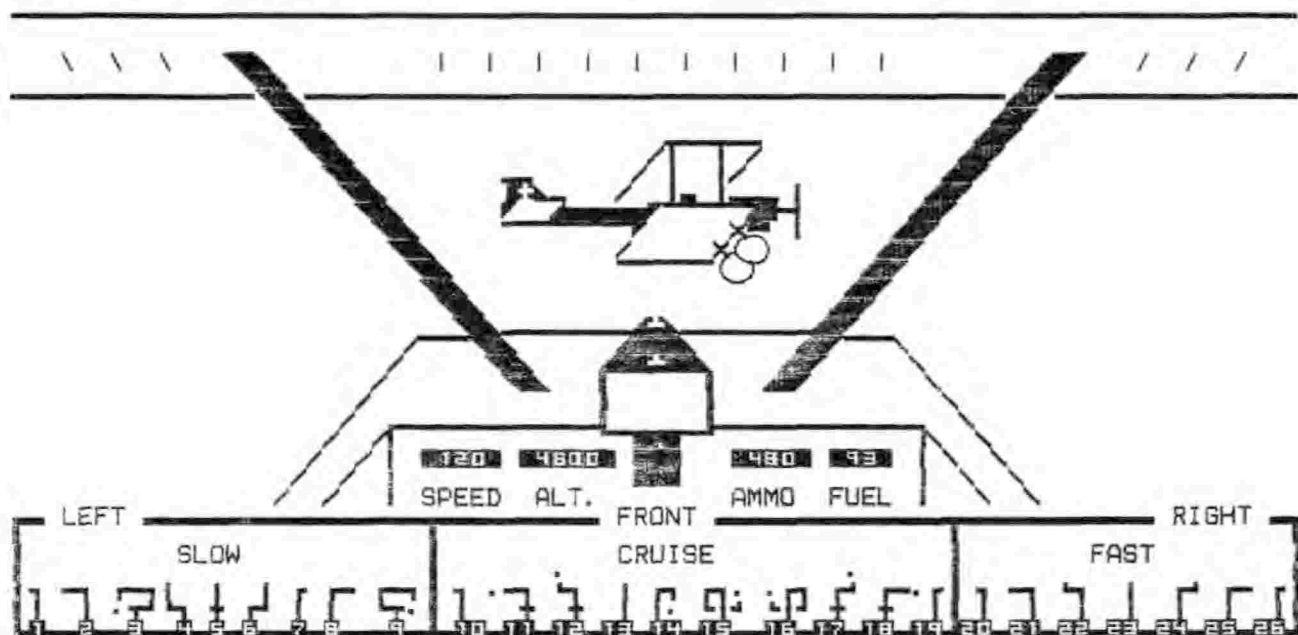
At full power you jerk the nose up, as if to make a loop. But simultaneously roll 180 degrees during the loop, and come out right side up and facing the opposite direction. It worked! With guns blazing you sweep past your assailant, peppering his fragile craft with lead.

Now the two aircraft circle warily. Each pilot knows that the next attack will be for keeps. But do you have what it takes? Will you run, or fight on to become the ACE of ACES...

MBASIC ACE is a program for the H8, H/Z89, or Z-100 to simulate the flight of a WW-I fighter plane during an aerial dogfight. It displays a pilots-eye view from the cockpit of your plane (see illustration below). In the foreground you see the front, left, right or rear view of your plane, plus instruments (such as they were in those days). And in the distance is the enemy plane, shown in perspective as it would actually appear from your cockpit.

ACES is a computerized version of the popular "Ace of Aces" books that have been around for decades. In the printed version, each player has a book with hundreds of pictures of the enemy plane as viewed from your cockpit. There is a picture for every combination of distance, your heading, and his heading.

At the bottom of each page is a movement chart that shows the maneuvers your plane can perform. You each pick your moves, and tell your opponent the corresponding number at the bottom of the page. When you flip to that page, it magically shows the new relationship between your planes.



Your command ?

Enemy damage (100 to kill): 2

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Volume 1, Number 6 Page 16

This program does much the same thing. Type RUN to begin. You'll see a view out the left side of your aircraft, with a dot off in the distance. It's the enemy plane, too far away to see clearly. At the bottom of the screen is a table of maneuvers. Table I gives more details on what each maneuver does. For instance, "1" is a slow left turn.

TABLE I - COMMANDS

- 0 - fire guns, and continue straight
- 1 - slow left turn, toward 10 o'clock
- 2 - slow hard left, toward 8 o'clock
- 3 - slow dodge right, then turn left
tricky, causes loss of altitude
- 4 - slow dodge left
- 5 - slow straight ahead
causes loss of altitude
- 6 - slow dodge right
- 7 - slow right turn, toward 2 o'clock
- 8 - slow hard right, toward 4 o'clock
- 9 - slow dodge left, then turn right
tricky, causes loss of altitude
- 10 - left turn, toward 10 o'clock
- 11 - hard left, toward 8 o'clock
tricky, causes loss of altitude
- 12 - dodge left
tricky, causes loss of altitude
- 13 - straight ahead
- 14 - Immelmann turn, toward 6 o'clock
tricky, causes loss of altitude
- 15 - loop, and dodge right
tricky maneuver
- 16 - loop, and dodge left
tricky maneuver
- 17 - dodge right
tricky, causes loss of altitude
- 18 - hard right, toward 4 o'clock
tricky, causes loss of altitude
- 19 - right turn, toward 2 o'clock
- 20 - fast left, toward 11 o'clock
- 21 - fast hard left, toward 10 o'clock
- 22 - fast straight, then turn left
- 23 - fast straight ahead
- 24 - fast straight, then turn right
- 25 - fast hard right, toward 2 o'clock
- 26 - fast right, toward 1 o'clock

The symbols at the bottom outline how the plane will respond to each move. A "dot" at the end of the path means it is a "tricky" maneuver, and may not be

successful. A horizontal bar across the line means the maneuver causes a loss of altitude. A "Slow" command move your plane about 100 meters; "cruise" about 200 meters, and "fast" about 300 meters.

All entries are made on the numeric keypad. Type "1", then "ENTER" and your plane executes the turn. Now you're still looking to the left, but the dot has moved forward to about 10 o'clock. Another slow left turn will bring the enemy dead ahead. As you move closer, the enemy gradually takes on detail. The dot gets bigger, then you can make out the wings, and tell what direction he's headed.

To fire, hit "0" and "ENTER". The AMMO counter counts down 10 rounds for each "0", and if any of your rounds hit him, it is shown on the 25th line. It takes 100 hits to shoot him down.

The program is pretty straightforward. It keeps track of the x-y coordinate of the two planes, and their headings and altitudes. When you move, it alters your planes's parameters accordingly. To display the pictures, it calculates the distance between the planes, and the bearing and orientation of the enemy plane as viewed from yours. It then picks the appropriate pictures to display.

The program was written to be a 2-player game, though I ran into the usual problem (nobody to play with). So in this version the enemy plane just ignores you and flies straight ahead. Before I can write a program that flies the enemy plane, I have to learn to fly it myself!

Contact Lenny at SEBHC for a copy on disk. If you have questions, or make any changes or improvements, I'd like to hear about it. Have fun!

Lee Hart
366 Cloverdale
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