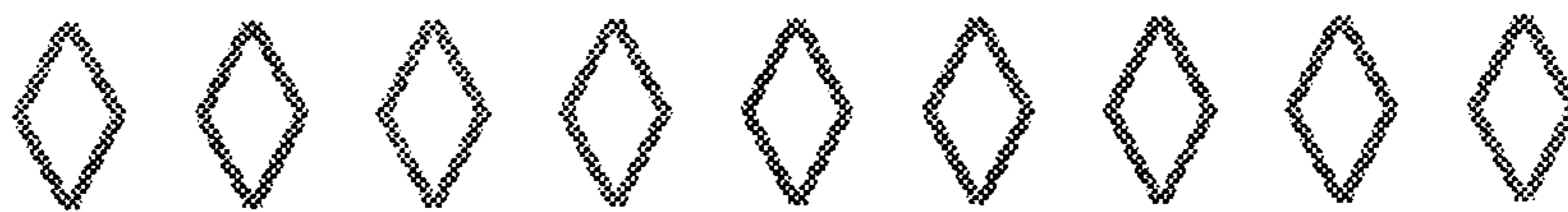


MICROpendium

Volume 12 Number 8

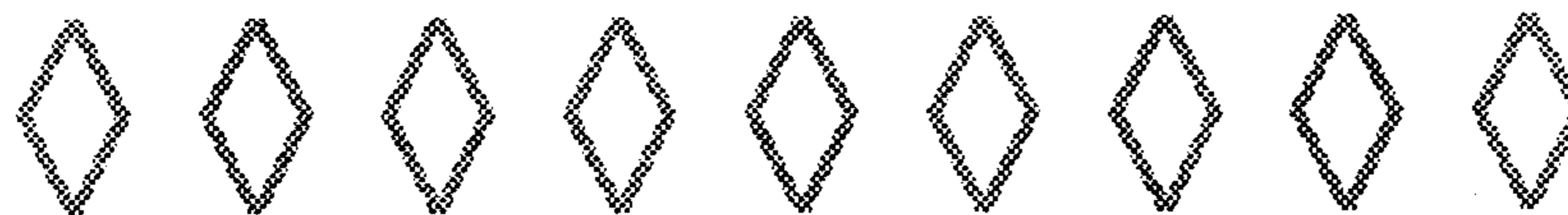
September 1995

\$3.50



Chicago Faire

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Tool Shed commands for the CorComp disk controller

A body of work in assembly language

Commodore: The company that crushed the TI99/4A

Calculate your Body Mass Index

REVIEWS

√ S&T BBS √ Hyper Copy √ AMS Copy √ TI Nopoly √
√ TIA Print √ TIA Signs √

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*READ THIS

Here are some tips to help you when entering programs from MICROpendium:

1. Most BASIC and Extended BASIC programs are run through Checksum, which places the numbers that follow exclamation points at the end of each program line. Do not enter these numbers or exclamation points. Checksum is available on disk from MICROpendium for \$4.

2. Long Extended BASIC lines are entered by inputting until the screen stops accepting characters, pressing Enter, pressing FCTN REDO, cursoring to the end of the line and continuing input.

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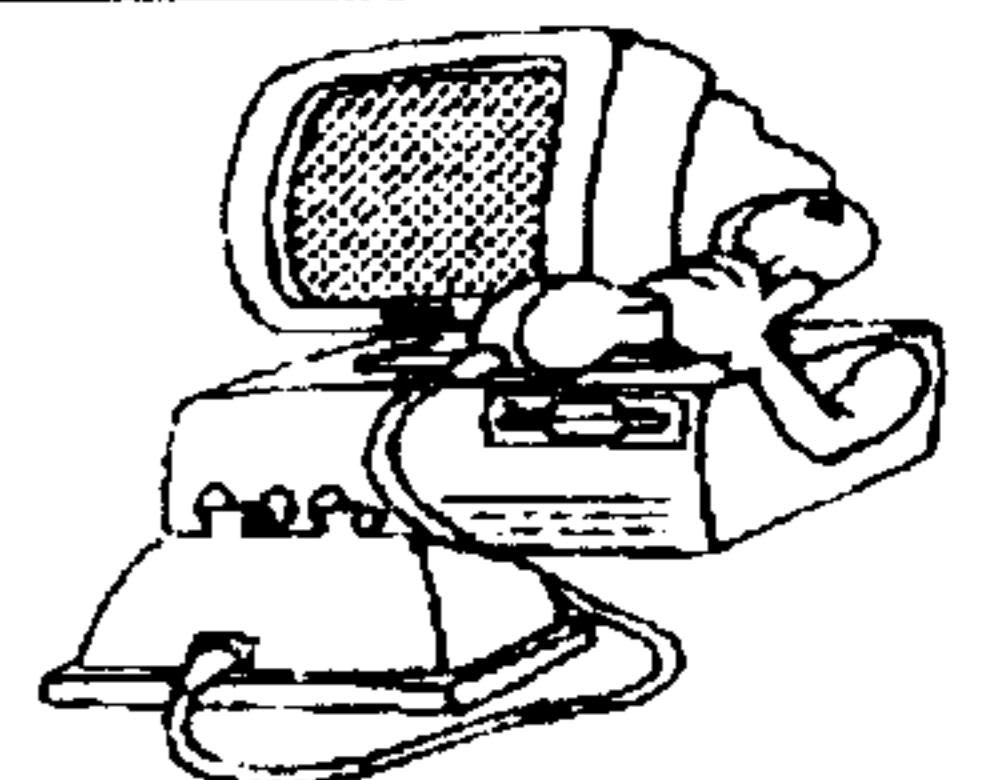
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COMMENTS

Chicago goes for 13th Faire

Things are beginning to pick up again. Jeff Brown has released a commercial version of Term 80, an 80-column terminal emulator for the TI. There's an article elsewhere in this edition outlining the specifics, but it looks like a good deal. Brown has put a lot of effort into the program.

The Chicago TI fair is coming up, October 28, in Evanston, a suburb north of Chicago. This year's event will be held at the Evanston library, rather than at a hotel. According to Hal Shanafield, the new location offers conveniently located tradeshow and seminar rooms.

Readers may think of MICROpendium as a venerable institution, but the Chicago TI Faire is even older. We weren't around for their first one, but covered the second annual installment. (This is the thirteenth year for the event.)

In 1984, we wrote in advance, "The guest speaker will be Don Bynum, former head of TI's home computer di-

vision. His topic will be 'Life After Death for the 99/4A.' The official theme of the Faire is 'Still Goin' Strong!'"

Chicago's first Faire was held two weeks after "Black Friday," the day when TI announced it was discontinuing production of the TI99/4A. The users group was astonished when the Faire attracted 1,000 persons who, according to David Wakely, "proceeded to strip vendor displays clean of TI software."

In the December 1984 MICROpendium, Wakely wrote, "... by the time of the second Faire, TI owners had been 'orphans' for a year, and the need for a display of 'TI power' seemed in order to once again demonstrate the fierce loyalty for which the TI user is known."

A highlight of the 1984 Faire was Bynum's demonstration of Texas Instruments' never-released home computer, the TI99/8.

FEEDBACK

TI Workshop praised

I would like to thank Charles Good for his review of the TI Workshop module which Tex-Comp Ltd. has been advertising. I have been using it for a week now and have found one valuable capability that I have not found in any other program and wasn't mentioned in Good's review. That is the capability of using the sector editor to read a sector from *one* drive and write that same sector to *another* drive. I was able to recover a 33-sector program that way from a disk that I had somehow zapped and couldn't access any other way. It was a 99FORTRAN loader that I had never backed up! (Other sector editors can do this reading and writing, but only by continually swapping the two disks in one drive.) Of course, I had to then construct an FDR sector to be able to access it on the new disk so I could then use a disk manager to copy to a clean disk. That gets the bitmap information logged on Sector 0 so that the file won't get overwritten if I were to write to the disk again.

TI Workshop seems faster than the Edi-

tor/Assembler module for loading E/A5 files, but for E/A3 files I prefer Funnelweb. One feature lacking is the ability to access the hard disk — except for files in the DSK and DSK1 subdirectories, but that is common with many utilities. One problem with the disk manager is that I could not initialize a floppy disk as long as I had the hard disk controller in the peripheral expansion box. I don't consider that a problem, since I always have DM-1000 V6.1 and MDM5 handy. The other disk and file manager features work fine for me.

Phil Van Nostrand
Seabrook, TX 77586

PFM now works with SCSI on 9640

In my recent review of SCSI (small computer systems interface) hard drive use for the Geneve I stated that the PFM (Programmable Flash Memory) and PFM+ devices were "useless" if you had a SCSI hard drive in your Geneve system.

This is no longer true.

The apparent incompatibility between PFM/PFM+ and SCSI was due to a software problem in MDOS V2.50S and this has now been resolved. A new version of SCSI MDOS called V4.00S is available from Cecure Electronics and various BBS systems. With V4.00S Geneve users obtain the full benefits of both a SCSI hard drive and the PFM/PFM+ boot EPROM and flashdisk. Using the software CYA and SCSI4PFM, available for purchase from Cecure, it is now possible to completely boot the Geneve and run an autoexec file using only the PFM/PFM+ flash memory chips to hold the needed software. This means that if you have a PFM and PFM+ installed on your Geneve you don't need a floppy disk or Horizon RAMdisk to boot the newest SCSI version of MDOS. Just turn on the Geneve and it all happens automatically! The only downside to MDOS V4.00S is that support for Rave RAMdisks has been removed. I recommend all Geneve users

(See Page 6)

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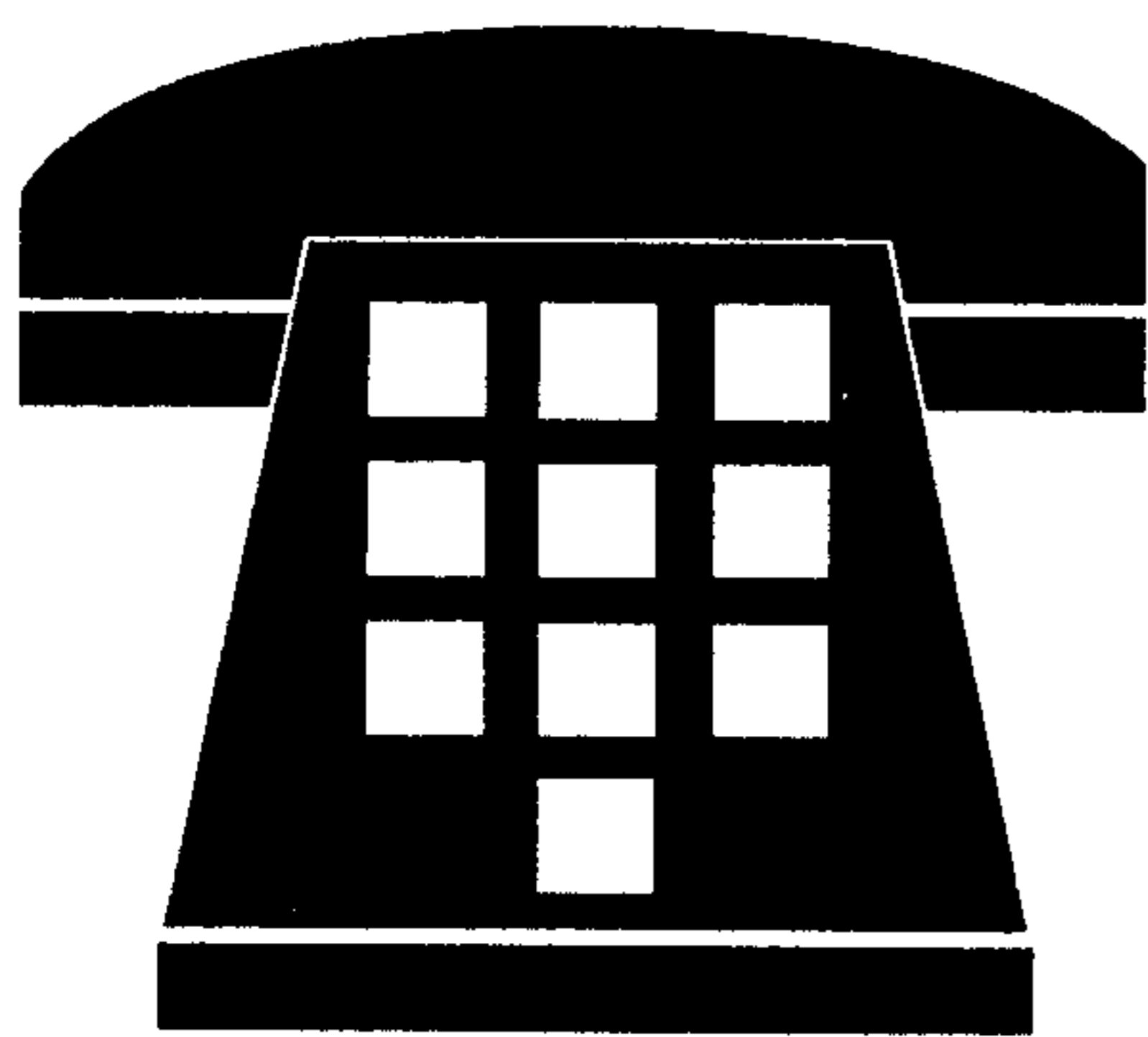
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Chicago UG outlines plans for faire

Vendor tables will be \$30 apiece for the Chicago International TI Faire, according to Hal Shanafield of the Chicago TI Users Group. Tables are free to users groups that are not selling any commercial software, he says.

Shanafield says the event will be from 9 a.m. to 4 p.m. Oct. 28 in the Evanston Public Library. Seminars will be held across the hall from the display area, he says.

He emphasizes that the fair will end promptly at 4 p.m. because the underground parking lot for the library automatically locks for overnight at 5 p.m. Ven-

dors can begin moving in their exhibits at 7 a.m. Oct. 28. Security and move-in help will be available, he says.

Eleven restaurants are in sight of the library as lunch options, he says. The banquet this year will be organized so that attendees can order off the menu and have vegetarian options, he notes.

For information, or to schedule to provide a seminar, contact Shanafield at (708) 864-8644 or write the Chicago TI Users Group, P.O. Box 7009, Evanston, IL 60204-7009.

FEEDBACK

(Continued from Page 4)

with SCSI drives (even those without PFM flashdisks) use the new MDOS V4.00S because the new MDOS seems more stable than previous versions of MDOS for SCSI. I recommend that Geneve users without a SCSI device use MDOS 2.21, which takes up less memory than V4.00S.

Charles Good
Venedocia, Ohio

(Cecure Electronics may be contacted at P.O. Box 132, Muskego, WI, 53150, or (414) 679-4343. — Ed.)

Non-Infobahn directions needed

This is a reader feedback reminder for those organizing TI Faires. *Not everyone has a modem or Internet access!* I'm really tired of seeing points of contact given only as Internet addresses. The announcement on page 11 of the August '95 issue was particularly maddening, since not one ordinary mailing address, let alone a phone number, was included among the ways to contact the CHIPS members about the '96 MUG Conference! I'm sure I'm not the only person planning to attend who doesn't have access to Internet! When the MUG was held in Lima, I could always phone Dr. Good to arrange for table space and time for a lecture. Yes, I do *plan* to at-

tend the MUG, but it sure would be nice to have a point of contact "with a pulse" at the other end of the phone line.

Other Faire organizers, namely Hal Shanafield and Jim Cox, have provided a "true voice" phone number for information. The folks in Tucson have provided only Internet and BBS phone numbers in their listing among Faires, so I can't even call to let them know I'll be missing their Faire. No, I don't have an Internet address but I can be reached almost any time "with a pulse" at (301) 277-3467. What's your number, CHIPS?

Bruce Harrison
Hyattsville, Maryland

Older is better

August issue of MICROpendium sounded a little "down in the mouth," but please don't hit the FCTN/QUIT key — and please don't use the phrase "deterioration occurs" — MICROpendium is better today than it was eight or nine years ago when I first subscribed!

And, where in the world do y'all think the "core group" came from and receive nourishment?

Jack Cunningham
San Antonio, Tex.

Send your letters and comments to *MICROpendium Feedback*, P.O. Box 1343, Round Rock, TX 78680.

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RESERVATION CODE: TI International World Faire
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Tool Shed commands worth another look for CorComp users

We're not sure who wrote the following article, but the information can be useful for those who own the CorComp disk controller. We found it on the monthly 9T9 News Disk by the TI User Group of Toronto. It covers the TI-BASIC and Extended BASIC commands supported by the controller.—Ed

Now that many TIers have gotten their hands on a CorComp's disk controller card, it's time to start sharing some information on the Tool Shed commands CorComp included in the package. These added commands give the TI-BASIC programmer a whole new set of valuable programming tools, including the ability to do "page-flipping," windowing, instant access to the VDP Write-Only Registers, as well as the PEEK and POKE commands available with Extended BASIC and Editor/Assembler, and Mini-Memory BASIC.

Below are a few programs that demonstrate the versatility of the CorComp commands. Note that all these routines are written in TI-BASIC, not Extended BASIC. It's amazing what you can do with these new commands. And keep in mind, this is only a small sample of the possibilities.

40-COLUMN DISPLAY

The first example is a short program that sets the screen to 40-column mode and prints 24 lines of text. The 40-column mode is set by adjusting the values in the VDP Write-Only Registers. This is done with the WRTRG command.

Since the BASIC statement CALL CLEAR clears only the first 768 bytes of VDP (remember, 32 columns * 24 lines = 768), a string of 240 space characters is written into the VDP screen area several times to clear the new 960-byte screen (40 columns * 24 lines = 960). This is done with the VPOKE command.

Finally, to write the lines to the screen, we must use the VPOKE command again. Notice the code in lines 260, 330, and 360. This is where the actual memory address is calculated. Unlike the TI-BASIC and Extended BASIC memory commands, you cannot do any calculations within the CorComp command. This means any address hashing must be done before invoking

One of the most valuable commands is CorComp's MOVEM. This command allows you to move whole blocks of memory from VDP to CPU, VDP to VDP, CPU to CPU and CPU to VDP.

ing the command string.

SPRITE DEMO

Because the CorComp memory commands are so fast, you can create a sprite-like effect, even in TI-BASIC. The second program in our list of demos is a good example. After setting the screen to 40 columns (just for fun), we simply poke a three character string (" ->") into consecutive screen memory locations. This makes it look as if the "arrow" is moving along the screen like a sprite!

Notice the additional memory poke in line 210. This is a poke into the CPU Pad area. Since it is not in VDP, the command to use is MPOKE. Those familiar with the CPU Pad will recognize this address as the screen refresh byte. Each time a key is pressed, this byte is checked or the graphics mode. If it was not updated for 40-column mode, as soon as you hit a key, the screen would revert to 32 columns. When you press FCTN-4 (clear breakpoint) the screen will go blank. To restore the 32-column mode type in (carefully) CALL MPOKE(33748,96,224).

BLOCK MOVE

Another one of the problems with sprites in Extended BASIC is that you can only "sprite" a small object (up to four consecutive bytes). With the CorComp commands and a little calculating, you can move a whole block of bytes in a sprite-like way. In the third example, lines 220 to 370 do all the necessary work of calculating what bytes to move where. The sub-

routine that starts in line 420 is where the real action is.

As you can see, all this subroutine does is POKE the appropriate strings (either characters or blanks) into the location in screen VDP. Notice the long list of calculations done before invoking the VPOKE command.

PAGE DEMO

One of the most valuable commands is CorComp's MOVEM (Move Expansion Memory). This command allows you to move whole blocks of memory from VDP to CPU, VDP to VDP, CPU to CPU and CPU to VDP. Our fourth demo uses this ability to move large blocks of memory to create what is called "paging."

Lines 200 to 220 write a series of long strings into the memory expansion area. Then, after clearing the screen, prompting the user, and waiting for a response (lines 230-270) the machine is ready.

Line 280 moves the entire 768 bytes from CPU (memory expansion) into VDP (the screen area). This fills the screen with A's in less than one-tenth of a second. Often video animation is achieved by employing "page-flipping." Until CorComp came along, only assembly language TIers could do this.

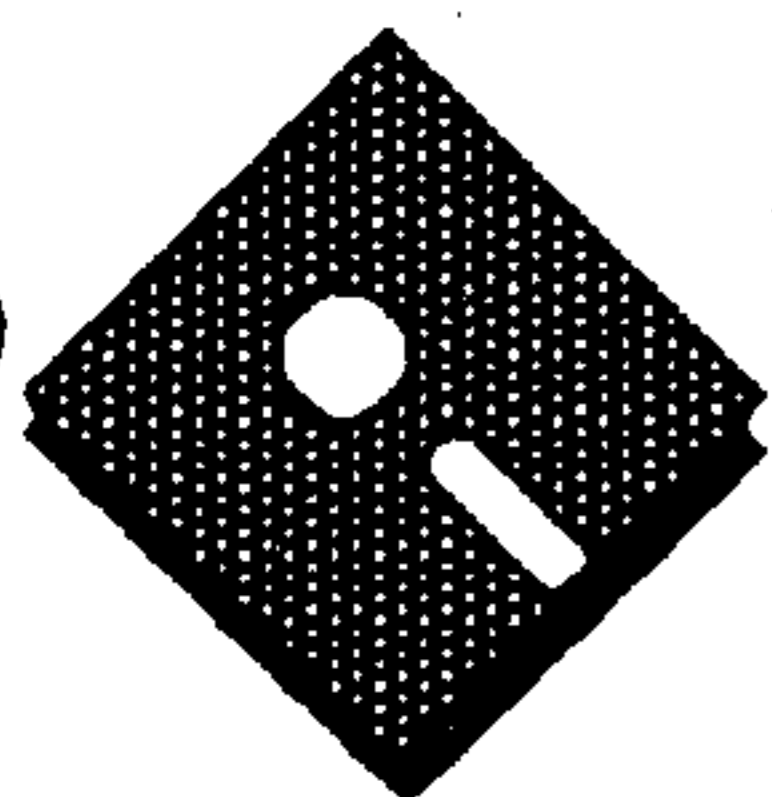
WINDOW DEMO

Another use for the MOVEM command is to "scroll" only a small portion of the screen at a time, often called "windowing." The last of our demo programs is a very simple example of how to achieve a window effect in TI-BASIC.

After taking care of the title and screen messages (lines 200-240), drawing the borders on the two window areas (lines 280-420), and filling in those boxes with letters (lines 460-540), we are ready to "scroll" each window.

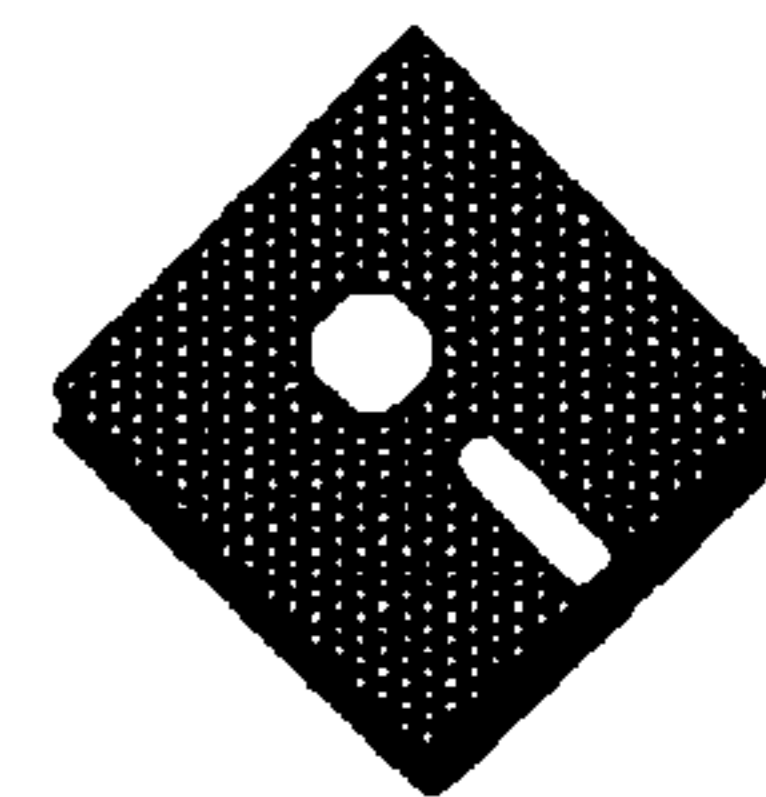
What really happens in lines 580-640 is that we "scoot" each line up one at a time, filling the bottom line with blanks and "throwing away" the top line. Since here are ten lines in the first window, we must do this ten times to clear the entire window. The same method is used to scroll the bottom window. Notice that the bot-

(See Page 10)



MICROpendium

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If you've been waiting for a sale on MICROpendium program disks, this is it! For a limited time (through Nov. 1, 1995) Series 1-8 disks are available for a special price. (Series

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TOOL SHED UTILITIES —

(Continued from Page 8)

tom window scrolls down.

PROGRAM#1

```

120 REM * 40 COL DISPLAY *
160 REM REQUIRES CORCOMP CAR
D
190 REM *SET 40 && CLEAR*
210 CL$="^^^^^^^^^^^^^^^^^^^^^^^^
^^^^^^^^^^^^^^^^^^^^^^^^^^^^" (space
s to here)
220 CL$=CL$&&CL$&&CL$
230 CALL WRTRG(7,31)
240 CALL WRTRG(1,240)
250 FOR X=0 TO 3
260 VDPA=X*240+1
270 CALL VPOKE(VDPA,96,CL$)
280 NEXT X
300 REM *PRINT LINES*
320 FOR X=0 TO 23
330 VDPA=(X*40)
340 M$=STR$(X+1)
350 CALL VPOKE(VDPA,96,M$)
360 VDPA=(X*40)+5
370 M$=".....1.....2.....
.....3.....4"
380 CALL VPOKE(VDPA,96,M$)
390 NEXT X
400 GOTO 400

```

PROGRAM#2

```

120 REM * "SPRITE" DEMO *
160 REM REQUIRES CORCOMP CAR
D
190 CALL WRTRG(7,31)
200 CALL WRTRG(1,240)
210 CALL MPOKE(33748,96,240)
220 FOR X=1 TO 957
230 CALL VPOKE(X,96," ->")
240 NEXT X
250 CALL SOUND(150,1000,0)
260 CALL KEY(0,K,S)
270 IF K=0 THEN 260
280 GOTO 220

```

PROGRAM#3

```

120 REM * BLOCK MOVE *
160 REM REQUIRES CORCOMP CAR
D
190 CALL CLEAR
200 B$="      "
210 P$=" ++++ "
220 F=1
230 T=550

```

```

240 S=33
250 GOSUB 420
260 F=X1
270 T=F-15
280 S=-1
290 GOSUB 420
300 F=X1
310 T=F-500
320 S=-33
330 GOSUB 420
340 F=X1+33
350 T=F-19
360 S=-1
370 GOSUB 420
380 GOTO 220
400 REM *BLOCK ROUTINE*
420 FOR X=F TO T STEP S
430 X1=X
440 X2=X+33
450 X3=X+66
460 X4=X+99
470 X5=X+132
480 X6=X+197
490 CALL VPOKE(X1,96,B$;X2,9
6,P$;X3,96,P$;X4,96,P$;X5,96
,P$;X6,96,B$)
500 NEXT X
510 RETURN

```

PROGRAM#4

```

120 REM * PAGE DEMO *
160 REM REQUIRES CORCOMP CAR
D
190 CALL CLEAR
200 FOR X=40960 TO 41728 STE
P 32
210 CALL MPOKE(X,96,"AAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAA")
220 NEXT X
230 CALL SOUND(150,1000,0)
240 CALL CLEAR
250 PRINT "PRESS ANY KEY!"
260 CALL KEY(0,K,S)
270 IF S=0 THEN 260
280 CALL MOVEM(3,40960,0,768
)
290 CALL SOUND(150,1000,0)
300 CALL KEY(0,K,S)
310 IF S=0 THEN 300
320 CALL CLEAR
330 GOTO 230

```

PROGRAM#5

```

120 REM * W I N D O W S *
160 CALL CLEAR
180 REM *PRINT MESSAGE*
190 PRINT TAB(16);"WINDOW EF
FECT"
220 PRINT TAB(16); "USING JU
ST" : TAB(16);
"ONE OF THE" : TAB(16); "COM
MANDS FROM"
230 PRINT TAB(16); "CORCOMP'
S NEW" : TAB(16); "DSDD CARD
."
240 PRINT ::::::::::::::
260 REM *DRAW TOP BOX*
280 CALL HCHAR(1,2,43,14)
290 FOR X=1 TO 12
300 CALL HCHAR(X+1,2,43)
310 CALL HCHAR(X+1,15,43)
320 NEXT X
330 CALL HCHAR(14,2,43,14)
350 REM *DRAW BOTTOM BOX*
370 CALL HCHAR(24,2,43,29)
380 FOR X=23 TO 17 STEP -1
390 CALL HCHAR(X,2,43)
400 CALL HCHAR(X,30,43)
410 NEXT X
420 CALL HCHAR(16,2,43,29)
440 REM *FILL TOP BOX*
460 FOR X=0 TO 9
470 CALL HCHAR(X+3,4,X+48,10
)
480 NEXT X
500 REM *FILL BOTTOM BOX*
520 FOR X=5 TO 1 STEP -1
530 CALL HCHAR(X+17,4,X+64,2
5)
540 NEXT X
560 REM *SCROLL TOP*
580 FOR Y=1 TO 10
590 FOR X=1 TO 10
600 F1=X*32+67
610 T1=(X-1)*32+67
620 CALL MOVEM(1,F1,T1,10)
630 NEXT X
640 NEXT Y
660 REM *SCROLL BOTTOM*
680 FOR Y=1 TO 5
690 FOR X=5 TO 1 STEP -1
700 F=((X+15)*32)+3
710 T=((X+16)*32)+3
720 CALL MOVEM(1,F,T,25)
730 NEXT X
740 NEXT Y
750 GOTO 460

```

THE ART OF ASSEMBLY — PART 51

A body of work

Do this kind of thing long enough
and you'll end up with a lot of programs

By **BRUCE HARRISON**
©1995 B. Harrison

This month we're taking a different tack. We thought it might be of some interest to our readers to know what all is available from the many projects we've done on our TI. Some of these have been mentioned in this column, of course, and in some cases we've put complete programs as source code in the sidebars. Still, it's been nearly 12 years that we've been pecking away at the TI, and lots of "products" have come from that work. Some of those products were produced for the commercial market under the Harrison Software label. Except for the "Assembly Music" products, which have been released to the public domain, all of that commercial stuff has been pulled from the market. The Assembly Music products were all released through Jim Peterson's TI-PD catalog. Since Jim's passing, we don't know exactly what's the status of that catalog, so we're not listing those products here.

THE PUBLIC DOMAIN PRODUCTS

Since the demise of Harrison Software as a commercial venture in the TI community, we've produced a large number of public domain disks. Most have some assembly language content, and some are complete programs, while others are just small utility routines for Extended BASIC programmers. We've made sure that all of these products are available through two sources. The primary distribution point is the Lima Users' Group. Dr. Charles Good has kept all of these in the group's public domain library, and makes them available by mail order at a nominal cost. Contact the group c/o Dr. Charles Good, P.O. Box 647, Venedocia, OH 45894. For those with modems, we've also supplied these disks to Barry Traver, who's made them available on GENie. (Disks may or may not be available there, as GENie has a time limit on disks kept on-line.) From time to time we've made updates, and have provided Dr. Good and Barry with the latest versions as appropriate.

Some of these products were inspired or suggested by our friends in the community of TI users. Others were products of our own imagination, which we hoped somebody would find useful. In most cases, we've gotten some feedback, at least from Barry or Dr. Good, to indicate that there's some need for the items. Here then is a listing and description of what's out there for use by anybody who needs it. The number after each description is the disk number for that disk in Lima's Disk Library.

EXTENDED BASIC 'UTILITIES'

Utilities Volume 1 — A collection of routines for use with Extended BASIC, includes boot tracking routines so that an XB program can find out what disk it was loaded from, and can even modify all references to DSK1 within itself. Also includes special forms of ACCEPT AT for numeric and string variables. No. 836A.

Utilities Volume 2 — A collection of Assembly routines that deal with DATA in the XB program. These can make quick work of, for example, assignment of DATA to array variables. Also includes a very fast MENU driver which works with DATA from the XB program and puts a nicely composed menu on-screen in a hurry. No. 1081B.

The Ultimate Accept AT — A special ACCEPT AT assembly routine which will provide a prompt, accept more than 28 characters into string variables, either clear the field or not, and so on. No. 834A.

Time Calculator — A purely XB program that calculates time quantities in Hours, Minutes, Seconds. No. 863B.

Short Danny — A modified version of the old Danny Michaels Screen Dump — provides a quick loading process and allows dump to be activated via Function-7 while programs are running or in Command mode. No. 801B.

Timeout — Provides a way to have ACCEPT AT, CALL KEY, or INPUT statements run for a limited time, then exit back to XB program. Timing is done by an Interrupt, so it doesn't change with speed of the computer. No. 926A.

Music Background — Provides a way to have music play "on background" while the computer is doing other things. Can be activated while programs are running or in Command mode. Demos show how to provide music during an ACCEPT AT operation. No. 934B.

The Ultimate Delay — A delay that's unaffected by speed of the processor, and can optionally be aborted by a keystroke or not. This includes a "Eur" version for 50 Hz PAL systems. No. 1079B.

Checktime — Provides a means of measuring the speed of execution for XB programs. Uses an interrupt to measure time while an XB program is running, then reports elapsed time back to XB variables in minutes and seconds. (Does not require a "real-time" clock.) This is also available in a "Eur" version for 50 Hz PAL video systems. U.S. version, No. 1079A, EUR No. 1081A.

Font Converter — This does not use Assembly routines, but makes Assembly source files which allow conversion of Jim Peterson's Screen Fonts into CHARA1-type files. No. 929.

Loader — This is a combined XB and Assembly product which can load and run almost any E/A Option 5 file from Extended BASIC. No. 922B.

Callfiles — An Assembly routine that allows an XB program to perform CALL FILES while it's running. No. 957B.

Randoms — A group of utilities to provide very fast random number generation in XB programs. Includes routines for making both integer and floating point random numbers. No. 1082B.

THE ALL-ASSEMBLY PRODUCTS

Reformat — Assembly program that takes D/V80 text files as
(See Page 12)

THE ART OF ASSEMBLY —

(Continued from Page 11)

created by TI-Writer or Funnelweb's Text Editor, and allows the user to re-format very quickly to any number of characters per line. Also performs right-justification and margin change at user's option. No. 946A.

Midi Toolbox — Tools for doing things with source files for MIDI-Master. Includes many useful items, including one which will determine in advance whether a MIDI-Master music file will fit into memory when compiled, and one which will convert the durations of notes to go from Geneve timing to TI or vice versa. No. 1080.

Metronome — A tool for the musician or the child taking music lessons. Provides a steady "tick" at a selected number of beats per minute. Range is from 15 beats per minute through 500 beats per minute. This disk also includes a "Eur" version for use with 50 Hz PAL video systems. No. 869A.

Sandwich — A utility for the frustrated E/A program owner. This will allow the user to convert an E/A Option-3 object file into the more efficient and quicker-loading Option-5 format, without having access to the original source files. It won't work in all cases, but where it will, it's worth having. No. 869B.

Extended BASIC Compiler — This is not a cure-all for every Extended BASIC program in your library, but can provide improved speed of execution for many XB programs. Not recommended for very large XB programs. No. 1013. Source code No. 1014.

Drawing Program — A poor man's way to draw bit-map pictures on your TI. Also allows use of TI-Artist Instances and Fonts. Includes printing capability. No. 928.

Video Titler — Allows use of either Harrison Drawing program pictures or TI-Artist pictures as titles for video taping. Provides for two complete pictures to be in memory, and allows smooth "wipes" from one picture to the next. No. 1011.

Font Turner — Allows user to rotate the characters in a CHARA1-type file to the left, right, or upside down. Mainly intended for use with the Drawing Program. No. 1012B.

Slideshow — A program that allows use of TI-Artist picture files for an automated "Slide show". There is also a "EUR" version for 50 Hz PAL video systems. No. 1075 (U.S. version) or 1076 (European version).

Password — A very special program for those who use Horizon RAMdisks. Provides a way to secure your TI system with a private password all your own. No. 935A.

THE 'EXTRAS' ON THE DISKS

All of the disks in this "collection" include instructions, plus an Extended BASIC program to print those instructions. Most also include the source files for their Assembly content, and the pure Assembly ones include an Extended BASIC loader so that users who have only Extended BASIC may still enjoy the Assembly

Once again, assembly language comes to the rescue. We've made a special version of the delay routine tailored for use with XB programs.

programs.

Some of the disks come in more than one version. That's mostly true of the ones that involve timing with the vertical interval, in which cases there is a second version for the "European" market which uses 1/50th second timing.

A WORD OF CAUTION

To those who have Geneve computers: Not all of these things will work correctly on the Geneve. Not having one, we can't test on that machine, so we can't guarantee that any of our products will be useful on that machine. The same goes for the owners of TI computers with various third-party hardware installed. Some won't work with 80-column cards, or with Myarc or Cor-Comp disk controllers, and so on. All are compatible with Horizon RAMdisks and

the Horizon P-GRAM.

A RAMDISK MYSTERY

Just recently, we experienced a problem with one of our Horizon RAMdisks. Sometimes, the problems in one RAMdisk will affect the whole system, and that seemed to be the case. The Horizon Config program was calling this particular card "unrecognizable." Having run into this kind of thing before, and knowing what was on that card was safely backed up on floppies, we took the ultimate step for such cases, pulling out one of the batteries from that card for a few seconds.

We put the card back into the system, turned on the card and then the system, fully expecting to have to re-initialize our drives 6 and 7. Not so! For reasons we can't fathom, the card behaved as if everything was still there! We re-loaded the ROS from a backup disk, but didn't need to do anything else. How did the card still retain all the data when its battery had been removed? We were under the impression that once a battery had been removed, the card would promptly "forget" everything it once "knew." If anybody knows, please don't tell us, so this can stay a mystery forever. Maybe we'll submit the case to "Unsolved Mysteries" and see how Robert Stack tells it.

WHAT WILL WE DO NEXT?

That, dear readers, is largely up to you. We have been known to create special programs just to solve one particular problem for just one person in the TI community. We've also taken on challenges issued by users, and developed whole products just to answer a challenge. We could keep on doing this forever, but sometimes a little inspiration helps. If you have a problem that you think we should work on, or if you just need help with one of your own projects, just drop us a line, either through MICROpendium or direct to: Bruce Harrison, 5705 40th Place, Hyattsville, MD 20781; Telephone (301) 277-3467.

We look forward to hearing from you. Perhaps your problem will be next month's column topic.

1980s Home Computer Era — Part 4

Commodore: The company that crushed the TI99/4A

By **BILL GASKILL**
©1995 B. Gaskill

Last month's article covered Atari Computer Corporation and the machines they built during the late 1970s and throughout the 1980s. This month we cover Commodore Business Machines, or Commodore International as they later became known, and their impact on the home computer market of the 1980s.

COMMODORE

Commodore Business Machines was, yes I said "was," a company founded by Jack Tramiel, (pronounced TramEL, not TramEEL, as most people think), who was a survivor of the Nazi Holocaust. Tramiel took Commodore from a tiny typewriter parts company in 1958 to a billion dollar computer corporation that he walked away from in 1984. In the between times, he would rule his empire with a thundering velvet hand, to borrow a line from one of my favorite Dan Fogelberg songs, he would gain a reputation for being absolutely ruthless in business and, because of a bitter defeat he suffered at the hands of Texas Instruments in the handheld calculator market of the 1970s, which he later avenged many times over in the home computer market, he would gain a reputation as a man you did not want to cross.

For 99ers, the demise of Commodore International on March 25, 1994 probably went unnoticed. For owners of the Commodore Amiga, which was the only real Commodore computer that was left in Commodore's line up at the time of the demise, it created as much of a stir as Oct. 28, 1983 did for owners of the 99/4A. As one Amiga owner put it, "Even though we saw it coming, the demise of Commodore has left an empty feeling in our hearts."

Commodore International, which was headquartered in the Bahamas, went on the voluntary liquidation block in order to have its assets carved up to pay off creditors. The days of Jack Tramiel, the VIC-20, C64, the C128 and the huge profits of the 1980s were obviously long gone.

As with all decaying organisms, the rot

at Commodore didn't just happen overnight. Four years earlier, in late 1990, rumors about the corporation's ailing or failing financial health appeared in the *Wall Street Journal* and elsewhere. Other rumors of a buyout by Hewlett-Packard, Sun Microsystems, and even Disney Studios were flying everywhere. By January 1991 six of the top executives at Commodore, which was still headquartered in West Chester, Pennsylvania, at the time, left in a flurry of pink slips and rolling heads. Speculation at the time said the blood-letting was over the failure of the Amiga 3000 in the marketplace.

Right about the time that heads were rolling in West Chester, the folks at Commodore were also busy trying to empty their warehouses of tons of Commodore 64s that couldn't be given away. They introduced the C64GS, which was a mutated, keyboardless Commodore 64 with a cartridge slot and joystick ports. What's that you say? You never heard of it? Well, you're not alone. The game-playing public never heard of it either and didn't buy many of them, despite the fact that Commodore was putting four games in each cartridge in an effort to push the machine.

SIGNS OF TROUBLE

Before this ill-fated attempt to generate cash flow took place, there were apparently many other signs of trouble. According to Neil Randall, writing about the 1989 World of Commodore Show in Toronto, Ontario, "The 1989 World of Commodore Show, held at the International Centre in Toronto, was just short of depressing. Gone were the multitude of booths hawking software for the 64/128; gone, even, was the multitude of booths boasting new Amiga software. And gone most significantly, was some of the crowd. If you're thinking of using the new decade as an excuse to upgrade to an Amiga, which Commodore would like all 64/128 owners to do, you might want to wait a bit. Commodore is pumping a fair amount of money into Amiga marketing, but the results aren't in yet."

It appears that Commodore, like Texas Instruments, had made a series of blunders in its quest to stay on top of the ever-changing personal computer market. These blunders attacked the loyal customer base that Commodore had built up during the Tramiel days and caused it to wane.

Examples of some of the major issues affecting customer loyalty seem to be the work that Commodore put into speeding up the C64 CPU and disk drive, only to drop the ball on adequate production of the "fixes," so the speed-up products were always on "back-order." Some third-party products like JiffyDOS finally appeared to fill in the gap left by Commodore's failure to deliver on its products and its failure to live up to its promises, but that did nothing to lessen the anger of C64 owners toward Commodore.

Another major mistake was the company's lack of commitment, or apparent lack of commitment, to the C128 line of computers and the company's inability to quell rumors of a lack of commitment if the rumors were just that, and not fact. Apparently, in their overzealous attempts to lure users to switch to the Amiga, Commodore officials decided to, or at least gave the perception that they had decided to abandon further development and/or support for the older 8-bit machine. Sheldon Leemon commented on this topic in the February 1987 issue of *Compute!*.

"Rumors persist that Commodore is going to downplay or even quietly drop the 128 after Christmas. Although the machine has sold fairly well in its first year it hasn't replaced the 64 in the hearts of the computer-buying public. More importantly, Commodore isn't making nearly as big a profit margin on the 128 as it is on the 64C," Leemon wrote.

They followed this blunder up with one of a similar nature in February 1990 that alienated existing Amiga owners.

A "trade-in" offer and grace period until March 31, 1990 was made for owners of
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COMMODORE —

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the Amiga 1000 to upgrade to the new Amiga 2000. The problem was, the trade-in was seen as an effort by Commodore to get the Amiga 1000 off the market so the 2000 could be shoved down everyone's throat. On top of this, Amiga owners were already angry at Commodore for not providing a stable DOS for the Amiga. That ought to sound familiar to Myarc Geneve 9640 owners.

Even before this, as early as 1986, Commodore was taking heat from the media for trying to push the Amiga as a business machine in a market that was clearly heading toward DOS-based systems. This rather bizarre marketing strategy apparently kept the Amiga away from buyers and software developers by the ton. But then, when Commodore did finally decide to target the home computer user, they stepped in you know what by alienating the existing customer base.

CDTV

Other signs of trouble at Commodore continued to surface. During the Consumer Electronics Show in June 1990 Commodore announced a new product called CDTV. CDTV (Commodore Dynamic Total Vision) was apparently supposed to link the Amiga 500 to a stereo and VCR. CDTV never got off the ground and by the time the C64GS disaster was taking place during the first quarter of 1991, everyone at Commodore was denying that CDTV was ever anything more than a rumor. Needless to say, corporate credibility continued to erode. Following is an excerpt from the January 10, 1991 issue of *Newsbytes Magazine*.

"Commodore International announced the CDTV player, what it calls the industry's first interactive multimedia player, at Winter CES. The CDTV player, unveiled by none other than Nolan Bushnell, founder of Atari, and now general manager of Commodore's Interactive Consumer Products Division, will be shipped in the first quarter of 1991."

"The CDTV player is a smart, easy-to-use, next generation home component which offers computing power without computing complexity," offered Bushnell. "It's the real new media of the 1990s."

"The player connects to a TV set and

Jack Tramiel literally gave him ownership in Commodore. Back when Texas Instruments beat Commodore up in the handheld calculator market Tramiel went to Gould, a Canadian financier, for capital to keep Commodore alive.

home audio system, including compact disk machines, to become an interactive entertainment, information and education center. A user controls the programs and the interactive audio/video with the use of an infrared pointing device. The heart of the CDTV player is a 1mb Amiga computer with a Motorola 68000 central processor chip. The suggested retail price will be \$999 for the player and a range of from \$30-\$100 for the CDTV titles." No titles were actually available when the product was announced on Jan. 10, 1991.

The CDTV announcement by Bushnell was actually made jointly at a news conference by Commodore CEO Irving Gould, and Bushnell. The fact that Gould was so actively involved at that level (and even lower levels of Commodore business) should have told industry observers something. My read is that Gould knew things were bad way back when and was trying to pump up business.

An interesting sidelight on Gould is that Jack Tramiel literally gave him ownership in Commodore. Back when Texas Instruments beat Commodore up in the handheld calculator market Tramiel went to Gould, a Canadian financier, for capital to keep Commodore alive. In the deal they put together Tramiel gave Gould all of Tramiel's holdings in Commodore in return for the \$2 million Tramiel needed, and if the company turned around, Gould would give Tramiel back whatever per-

centage of his former holdings that (Gould) felt was fair. As it turned out, Jack Tramiel made Commodore and Irving Gould many millions of dollars and Gould recouped his investment many times over. But for reasons we don't know, he gave Tramiel back only about eight percent of his holdings. Little wonder that Tramiel left Commodore so suddenly in 1984. He got a chance to own rival Atari (which was virtually given to him by the folks at Warner Communications) and perhaps exact revenge for the raw deal he got from Gould.

TRAMIEL RESIGNS

Perhaps it can be argued that Commodore's troubles really began on Friday, Jan. 13, 1984 when president and CEO Jack Tramiel surprised the corporation and the computer world by suddenly resigning his post with the billion dollar firm, stating that it needed a "professional executive" at the helm. While at the head of the company he founded in 1958, Tramiel forced Texas Instruments out of the home computer market and dethroned Atari from its position as the world's top selling game machine. In the profit-driven business world that sure seems to say something about Tramiel's professionalism. Without Tramiel's driven, aggressive leadership, Commodore never seemed to achieve the heights it did when he steered the ship. The *Wall Street Journal* even called him "The Heart and Soul of Commodore." There's certainly no guarantee that Commodore would have survived even with Tramiel's leadership, especially with the unprecedented force of the PC clone explosion and the impact that it has had on the home computer market since 1986. But Tramiel left Commodore and bought Atari. Atari is still in business today. That says a lot.

Former *Compute!* magazine editor-in-chief Robert Lock puts it like this: "In a surprise announcement, Commodore president and chief executive officer Jack Tramiel resigned on Friday, Jan. 13 (1984). His direct, aggressive style has been a critical factor in driving Commodore to its position of preeminence in the low-priced personal computer market."

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COMMODORE CONTRIBUTIONS

Below is a list of Commodore's contributions to the "home computer" market of the 1980s.

Amiga — A "leading edge" computer designed by Jay Miner, who was a chip engineer at Intel. He and partner David Morse sold the Amiga to Commodore for \$20 million in August 1984. Before the computer was purchased by Commodore it was known as the Lorraine, manufactured by the Amiga Corporation.

The Amiga Lorraine was based on a Motorola 68000 CPU running at 8 Mhz, which was faster than the Macintosh. There were also three custom VSLI chips in the "box" designed to handle graphics, sound and I/O. It came with 128K RAM that was expandable to 1 MB, and an internal 5.25-inch floppy drive.

"Commodore has purchased Amiga Corporation, which has developed a 68000-based microcomputer with a custom graphics coprocessor. Amiga had planned to sell the machine for less than \$1,500. Shortly before the sale was announced, Atari sued Amiga, charging that the sale to Commodore violates agreements between Atari and Amiga through which Atari would have licensed the Amiga computer technology. Earlier, Amiga had sold its joystick line to Pride Electronics, which manufactures the joysticks." (*Byte*, Oct 1984, p.9)

Amiga 500 — A low budget (under \$650) Amiga introduced in January 1987. It came with 512K RAM where the original Amiga, which was introduced in June 1985, and sold for \$2000, had only 256K RAM.

Amiga 1000 — The original Amiga. It was released in June 1985 and evolved from the original Amiga Lorraine computer that Commodore purchased from Amiga Corporation in 1984. By the time the Amiga 2000 was introduced, 1000s could be purchased for \$849, or \$1,199 with a color monitor.

Amiga 2000 — Introduced in January 1987 at a suggested retail price of just under \$1,500 for the basic machine, which had one 3.5" floppy drive, seven expansion ports, and a 200-watt power supply. A monitor was extra. The machine was

based on Motorola's 68000 chip and could support up to 8 MB of RAM and 80 MB of hard disk space, all of which were optional. A 2000 sold with a hard disk was dubbed a 2000HD.

Amiga 2500, 2500/30, and 3000 — More powerful versions of the Amiga that supported multi-tasking. All were aimed at the corporate market or the work-at-home market rather than the home market.

Commodore 64 — More than 7 million 64s and 64Cs were sold. They were still available at a street price of around \$149 in mid-1987 when the Amiga 2000 was released. In 1985 Commodore actually tried to shut down C64 production in order to concentrate on the C128 and the Amiga, but the unabated hunger for the 6510 CPU-powered machine swamped Commodore with orders, and the company was forced to restart production and rethink its strategy.

A sidelight to the introduction of the C64 is the fact that it was advertised as being CP/M compatible (via a plug-in cartridge with a Z80 coprocessor in it), but the cartridge didn't get produced by the time the machine was on retailer's shelves. I don't know if it ever got produced. So the Federal Trade Commission (FTC) took Commodore to task over it (based upon consumer complaints no doubt). In August 1984 the FTC and Commodore signed a consent agreement under which Commodore agreed not to advertise capabilities that don't yet exist.

Commodore 64C — A new-era C64 in a more pleasant looking, white, slim-line case, that also came bundled with Berkley Softwork's GEOS software as the Commodore-sponsored operating environment, and Odell Lake, an MECC educational program. Internally, the 64C was identical to the original Commodore 64. It appeared in June 1986 and carried a suggested retail price in the \$225 range. By mid-1987 it was selling for \$189 on the street.

GEOS was the product of Brian Daugherty, a Berkley, Calif., programmer who brought the Macintosh-like graphical operating environment to the C64. He introduced it at the Consumer Electronics Show in January 1986 and followed up with the add-ons geoCalc, geoDex, and

geoFile at CES 1987.

Commodore 64GS — A reworked C64 that was designed to use cartridges only, specifically for game play. According to the Aug. 13, 1990 issue of *Newsbytes Magazine*, "The unit — based on the successful C64 home computer — will come complete with a games controller and a four-game cartridge. The compact console will be launched at the Computer Entertainment Show at London's Earl's Court on Sept. 13."

The four games included on the starter cartridge were Klax, a puzzle game from Domark; Fiendish Freddy's Big Top 'o' Fun, which was a combination of six games in one, created by Mindscape; Flimbo's Quest, which was a damsel in distress game; and International Soccer. Wouldn't you have run out and grabbed a \$100 game player just to get those exciting programs?

Commodore 128 — Announced in January 1985, released in April 1985, the 128 sold for \$299.95 and was actually a Commodore 64, a 128K RAM (expandable to 512K) Commodore 128 and a Zilog 2 Mhz Z80A machine all in one computer case. It sported a 92-key keyboard, 80-column display for use in the 128 mode, BASIC 2.0 for the C64 and BASIC 7.0 for the C128. Like the Commodore 64, the C128 could display 16 colors and 8 sprites. By mid-1987 it was selling for \$259 on the street. An LCD version (Liquid Crystal Display) was promised, but I'm not sure if Commodore was ever able to deliver on that promise. Very little evidence of the C128LCD exists in the media.

Commodore 128D — The same computer as the 128, just structured in a more business-like appearance with a detached keyboard and a console that had floppy disk drive(s) built in. It was first announced at the Consumer Electronics Show in January 1987 at a retail price of \$550.

Commodore 128B — Like the Educator 64, an obscure Commodore product that I had never heard of, nor saw any of, but found in an ad in the October 1984 issue of *Byte* being liquidated by Protecto. It carried a price tag of \$995, but that included—
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COMMODORE —

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ed the computer with dual floppies, a monitor and printer, designed to make the package attractive to the small business owner, I think.

Commodore 264 — Originally shown at the Winter Consumer Electronics Show in January 1984, but never released. Eventually released as the Plus/4 in June 1984.

Commodore 364 — A deluxe version of the 264 that was dropped.

Commodore Educator 64 — Not being a Commodorian, I'd never seen nor heard of this machine until I ran across it being liquidated by a company named M.C.S. in Livonia, Mich., that had an ad in the December 1986 issue of *Compute!*. The machine looks just like a PET 8032 but the ad says that it is 100 percent C64 compatible. The Educator 64 also has a totally different keyboard than the 8032, so it's possible that Commodore created some hybrid computer for school use that was a all-in-one PET case and chassis outside, but a C64 inside. At any rate, the liquidation price was \$199.95.

Commodore HHC-4 — The HHC (Hand Held Computer)-4 was a calculator-sized computer with a chiclet-style keyboard, separate numeric keypad, a single-line 24-character liquid crystal display, 4K of RAM that was expandable to 16K, and BASIC built in. Optional peripheral "modules" attached to the left side of the HHC-4. It could be hooked to a full-sized computer like the VIC or C64 and could use their peripherals, such as the datasette recorder, dot matrix printer, display monitors, etc. At the Winter (January) 1983 Consumer Electronics Show Commodore said the HHC-4 would retail for \$199. I don't believe the computer was actually released, mainly because of the eroding profit margin that also caused TI to drop the 99/2.

Commodore LCD — A prototype 3-pound laptop with 32K RAM and an 8-line liquid crystal display. It never made it to production as far as I can determine, but it was shown at the Winter 1985 CES.

Commodore MAX — I have no information on this computer but, based upon what I have been able to uncover, it was a

'project' that never actually became a computer. Reference to it may be found in the October 1982 issue of *Compute!* magazine on page 6.

Commodore PC-10, aka Commodore Colt PC/XT — Commodore's entry-level PC clone, it was sold in places like Wal-Mart, but never caught on in the United States. The PC10 was announced at the January 1987 Consumer Electronics Show in two versions — the PC10-1, which had 512K RAM and a single disk drive, and the PC10-2 which offered 640K RAM and two disk drives. The PC10-1 retailed for \$999, while the PC10-2 sold for \$1,199.

Commodore PC-40 — An 80286-powered Commodore PC circa 1989 that came with a 12 Mhz CPU, 1 Mb of RAM, a 40 Mb hard disk and VGA graphics.

Commodore PET (Personal Electronic Transactor) — Debuted in June 1977 but not actually released for sale until August 1977. The PET was designed by MOS Technology (a subsidiary of the Commodore corporation) engineer Chuck Peddle, who also designed the 6502 chip that Apple, Atari and many other computer manufacturers used as their CPU. PET was available in 4K and 8K versions, with built-in black and white screen, a calculator style keyboard and a cassette recorder.

The first units built for display at the January 1977 Consumer Electronics Show had wood cases spray painted to look like yellow metal, black and white screens taken from new Zenith televisions that Commodore engineers bought for \$89.95 at a nearby appliance store, and Sanyo tape recorders that had been modified to fit into the wooden cases.

Commodore PLUS/4 — A 64K RAM machine that was introduced in June 1984. It came with a word processor, database, spreadsheet and graphics programs built-in, and was powered by the new 7501 CPU, which was machine language compatible with the VIC-20 and C64's 6502 chip. But the Plus/4 was not compatible with the Commodore 64 because of memory differences. This decision or oversight on Commodore's part spelled doom for the Plus/4 because it meant all new and different software would have to be pur-

chased for use on the Plus/4. Billed as their productivity machine, the Plus/4 did not have sprites in its BASIC programming language, nor did it have a sound chip. It sold for \$299 in department stores such as K-Mart, Target etc.

Commodore PLUS/16 — Billed as "The Learning Machine," the Plus/16 was an entry level machine that looked just like the Plus/4, but it had only 16K RAM and used a cassette recorder as the primary storage device. It retailed for just under \$100.

Commodore SX/64 — A transportable (luggable) version of the C64, complete with a 5-inch black and white or color monitor, one or two 170K floppy disk drives and the same internal chips as the C64. Originally billed as the SX-100, by the time it was released it was called the SX-64. It weighed in at around 30 pounds and was by no means a portable (I lifted one in a K-Mart store in Colorado Springs way back then). The black and white monitor with a single floppy drive sold for \$995. The color monitor version with two floppies was \$1,295. Decent photo and description of one can be found in the March 1983 issue of *Compute!* magazine, page 24.

Commodore VIC-20 — Introduced in June 1980 with 5K RAM, at \$299. Over 2 million of them were sold. The VIC in VIC-20 stands for Video Interface Chip. It is this computer, some of which were made in Japan, and others in Commodore's U.S. factories which brought the TI99/4A to its knees and ultimately to its death.

Commodore VIC-20 Experimental — An interesting photo of a VIC-20 with a built-in Sony Watchman TV can be found in the March 1983 edition of *Compute!* on page 28. The computer was never produced, however, the folks at Commodore said it was "only an example of what could be done, not what will be done."

MBC17NB — An 80286-based laptop that was produced for Commodore by Sanyo Information Systems in late 1990. It appears to have been released only through Commodore UK.

TI meets needs of network

Expanding the TI for RS232/5 and /6

By ROSS MUDIE

This article first appeared in TISHUG News Digest (Australia). Mudie is a member of the user group.

The Local Area Network (LAN) which I set up for the Shahzada Endurance Horse Ride event in October 1994 needed just one more terminal to meet the operational requirements of the event. The server for the LAN was a TI99/4A with 2 x RS232 cards which allowed four terminals to be connected. The original design by Texas Instruments for the TI99/4A was for four to be the maximum number of RS232 ports. To connect extra terminals on the LAN, a non-standard approach has to be adopted to obtain extra serial ports. I am planning to use the same system again at the event this year with an extra terminal and some improvements in the programs.

Three methods were considered to achieve the extra ports:

- Modify the CRU address and ROM (using an EPROM) in a TI RS232 card.
- Modify the CRU address and EPROM in an AT Multi-Function Card (AT HFC).
- A hardware logic device to share one serial port over two terminals.

The last idea was least attractive because of the amount of hardware development which would be involved. Direct connection of each terminal to the server computer allows all the control work to be done in software. My how the thinking of this once "hardware junkie" has changed!

TI RS232 cards are not easy to obtain and modification of the CRU address would probably involve a modified PAL chip. Not a very attractive option.

To use the AT MFC would require component population of the RS232 parts of the AT MFC printed circuit board which already existed in the server computer, providing the double-sided double-density disk controller. After a short discussion with Geoff Trott, the expansion of the AT MFC was decided upon. Geoff offered to burn an EPROM to include RS232/5 and RS232/6 in the device names table in place of RS232/1 and RS232/2. The information which Geoff had available showed that the CRU address for the AT MFC RS232 could easily be changed from the normal >1300 to >1B00 by the inclusion of just one inverter in address line A4 feeding to pin 4 of IC U8. This also placed the parallel port of the AT MFC at CRU address 1C00. There were already two spare gates available in a 74LS00 which was previously used to overcome a problem in the disk controller of the AT MFC. Just one of these spare gates could be used to provide the inverter.

I decided to include a parallel port and 32K memory expansion on the AT MFC since the number of spare slots in the server PE box is becoming rather limited. Percy Harrison from the club shop arranged for a kit of parts for the expansion project.

After moving the 32K memory function into the AT MFC

(which made a second PE box slot spare and provided a 32K memory card for use with another terminal), the allocated usage of slots in the server PE box is as depicted in Fig. 1.

Once the component placement and soldering was complete, it was time to test out the expanded AT MFC. Initially all appeared to work well. Using my DSR PEEKER program, I found that the serial port of the AT MFC EPROM contained the names MIDI, MIDI2, RTTY, RTTY2, VIATEL, VIATEL2, RS232, RS232/5 and RS232/6 at CRU address >1B00. At CRU >1C00, I found PIO and PRINT in the device names table. If I attempted to print on PIO, it was printed out by the PIO with the lowest card address, namely, the card with CRU address of >1300. In the multi-device environment where there are three identical device names, the device which is found first in the CRU search gets the job. To access the parallel port on the card with the CRU address of >1500 its device name has to be PIO/2, and to get to the parallel port on the AT MFC its device name has to be the alternate name of PRINT. Likewise, just specifying RS232 will give the job to the card with the >1300 CRU address and the "/number" suffix must be used to access each RS232 serial port.

Fig. 1

Slot	Card	Function	CRU Address
1	Bus expansion card		
2	TI Serial card	RS232/1 and 2 Parallel no 1 (PIO/1)	>1300
3	TI Serial card	RS232/ 3 and 4 Parallel no 2 (PIO/2)	>1500
4	RAMDISK	Data storage	>1000
5	CorComp Triple Tech	Time of day clock 64K Printer buffer	>1D00
6	Spare.		
7	AT MFC	Disk Controller 32K memory Serial ports RS232/5 & 6 Parallel No. 3 (PRINT)	>1100 >1B00 >1C00
8	Spare		

I found that the AT MFC worked just like the TI RS232 card when it came to the programming department. My program opens each file in Extended BASIC, in a FOR NEXT loop, to save memory), as follows;

```
290 FOR S=1 TO 6
300 OPEN #S:"RS232/"&STR$(S)&".BA=9600.EC.LF
",VARIABLE 255
310 NEXT S
```

This opens six files, numbered 1 to 6, RS232/1 through to RS232/6. The availability of /5 and /6 in the RS232 part of the AT MFC EPROM made the job just that little bit easier. The reading from the serial port is performed in a linked assembly routine which scans the inputs. Due to the wired handshaking between the

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1995 TI FAIRS**APRIL**

Lima Multi Users Group Conference, April 29, Reed Hall, Ohio State University at Lima. Contact Lima Users Group, P.O. Box 647, Venedocia OH 45894, or call Charles Good (evenings) at (419) 667-3131 or Internet cgood@osulima1.lima.ohio-state.edu.

SEPTEMBER

10th International TI-Meeting, Sept. 22-24, Wohlfahrtsgebäude der Wiener E-Werke (Welfare Building of the Vienna Electricity Board), Wachaustr. 28, A-1020 Vienna, Austria. For information write Kurt Radowisch, TI- and Geneve User Group Vienna, Grossbauerstr. 24, A-1210, Vienna, Austria.

TI New England Fall Faire, Sept. 30, Emanuel Lutheran Church, 200 Greenwood St., Worcester, Massachusetts. Contact Jim Cox, 905 Edgebrook Dr., Boylston, MA 01505 or (508) 869-2704.

OCTOBER

Chicago International TI Faire, Oct. 28, Evanston Public Library. Contact Chicago TI Users Group, P.O. Box 7009, Evanston, IL 60204-7009, or Hal Shanafield, (708) 864-8644.

1996 TI FAIRS**FEBRUARY**

Fest West '96, Feb. 17, Ramada Inn, 1601 Oracle Dr., Tucson, Arizona. Contact SouthWest Ninety-Niners User Group by sending e-mail to twills@primenet.com. Or call the Cactus Patch BBS at (520) 290-6277.

This TI event listing is a permanent feature of MICROpendium. User groups and others planning events for TI/Geneve users may send information for inclusion in this standing column. Send information to MICROpendium Fairs, P.O. Box 1343, Round Rock, TX 78680.

NETWORK —

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terminals and the server in the LAN, there is no problem with making any terminal wait until the server is ready to process the information. This very nicely dispenses with the need to use interrupts. The Extended BASIC program operates with CALL FILES(9) which allows nine disk files to be open simultaneously. There are nine other non-disk files which are permanently open.

The Carrier Detect (CD) and Data Terminal Ready (DTR) have not been provided for the second RS232 on the AT MFC. This was a hardware design rationalization but only in the interface to the RS232 port. The DTR and CD are both available from the TMS9902 communications controller. To provide these hardware handshaking lines so that a possible sixth terminal can be used, I will be soldering a second MC145406 on top of U24 and the necessary wiring will be provided.

You will have noticed that a data rate of 9600 baud is used between computers in the LAN, to get the maximum possible speed. This is where problems of data corruption occurred with the AT MFC due to

Once again it's quite amazing what can be done with the old TI99/4A at a reasonable cost with the support of members of the user group.

a power supply problem. An article has been prepared on this subject. The problem of data corruption was easily fixed, as will be found in the article.

Once again it's quite amazing what can be done with the old TI99/4A at a reasonable cost with the support of members of the user group. My special thanks to Geoff Trott and Percy Harrison for their assistance with setting up RS232/5 and RS232/6 for my TI99/4A LAN.

Tex-Comp gets 800 number

Tex-Comp has a new 800 number for orders. According to Carey Hoffman of Tex-Comp, persons can order merchandise from the company toll-free by calling 1-800-846-3474.

Hotline addresses carpal tunnel syndrome

Carpal tunnel syndrome — an injury to which computer keyboard users are prone — as well as sprained wrists, tennis elbow, trigger finger and other elbow wrist and hand problems will be the topics on a hotline sponsored by the American Physical Therapy Association Oct. 27-28.

The hotline, part of observances for National Physical Therapy Month will be operated 9 a.m.-8 p.m. Eastern Time at 1-800-955-7848.

Sponsors, the APTA, the Oregon Physical Therapy Association, Washington Physical Therapy Association and the Section on Orthopaedics, say the hotline is to help educate about the treatment and prevention of elbow, wrist and hand injuries, but it is not recommended as a substitute for a visit to a health care professional.

Callers may request a number of free brochures on physical therapy, including *Taking Care of Your Hand, Wrist and Elbow; What You Should Know About Carpal Tunnel Syndrome*; and *Taking Care of Your Shoulder*.

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Geneve 9640

It was just a matter of time before the clock problem was solved

By GAMBIT

This article originally appeared in the newsletter of the S.C.C.G.

When it comes to using the 9640, I am not a pro, so I try to learn as much as possible about my computer — including, doing my own repairs and upgrades. When I really started to use my computer, I noticed the clock would sometimes get screwed-up. I didn't notice it all of the time, but I became more aware of it as I found myself resetting it more often. The first thing I did, was to replace the battery. Yes, that seemed to take care of the problem. Also, I was not being prompted to set the time and date (which would happen every now and then) when I powered-up. But that was not the end of it. Sometimes I would notice the clock's time would be wrong again.

In the afternoon, or (mostly) in the evening, the clock would be displaying "early" a.m. hours. Instead of the clock reading "23:15" (11:15 p.m.) it would read, "03:15" (3:15 a.m.). This would have been a real problem, if I had not stayed on top of it. If it was in a.m. time — when it should have been p.m. time — the clock would not change over to the next day, when midnight arrived.

I started asking around for advice on my clock problem. No one had ever heard of the problem I was explaining. Don O'Neil of Western Horizon gave me a few good suggestions to try. The first was to try a different clock chip. I had tried that before

I even called him — no go.

He then suggested I try a new clock crystal. Sounded good to me. I tried three different crystals — no change.

He suggested the problem might be with the 9640 gate array. Oh, no... that would be a nightmare. I tried the gate array from a friend's 9640 — still the same. Whew... what a relief.

I went elsewhere for help — Don Walden of Cecure Electronics. If anyone would know, this guy would. I told him what had been tried and what the results were. He suggested the problem might be with the two transistors near the clock crystal, because they are designed to work with the higher voltage put out by the TI PEB. (I am using a switching power supply, with the voltage regulators on the cards jumpered.) Okay, I replaced the transistors with different ones. Still no change — the clock problem persists. He made a few more suggestions, but I could tell that he had not heard of this problem either, and was grasping at straws.

One thing that puzzled me about my computer was the fact that out of the four SIP resistor packs on it, two of them were 10K ohms, while the other two were 1K ohms. I told Walden about this, and he said that they didn't need to be that high of resistance (10K), but should be 2.2K.

Ah...could this have been the problem with the clock all along? I was excited. I finally had something that sounded like it would isolate the "dreaded" clock prob-

lem. I bought the 2.2K resistor packs and "machined" SIP sockets so I could replace the resistor packs (in case they didn't work). I removed the old resistor packs (cut them and removed them one leg at a time), soldered-in the sockets and inserted the new resistor packs. After one day, I was pleased. After two days, I was thrilled. After the third day, I could have screamed — the clock problem had returned! Why me?

I was a little despondent. Was I cursed to have a Geneve with a flaky clock for the rest of its/my life? I tried not to think about it for a while. Sometimes the clock would keep perfect time for several days. On other days it would need resetting every hour. This was driving me nuts. Then I got to take a look at a friend's 9640, while I was fixing an unrelated problem on his computer. His computer had all 1K ohm SIP resistors — and he didn't have a clock problem. I called two other friends with 9640s and both of theirs had all 1K SIP resistors, and they didn't have clock problems either. Within a few days, I picked-up four 1K SIP resistors.

That was about two months ago. Since that time, I haven't had a problem with my clock. I could have spent a lot of money on repairs, and been without my computer for weeks. As it is, I was able fix the problem, save a lot of money, and got great satisfaction out of doing it myself. If you have the tools and the talent, I can't think of a better way to learn how the computer works.

K-Town 99ers disband after more than 10 years

The K-Town 99ers, or Knoxville TI99/4A Computer Users Group, voted to disband at its August meeting.

The group was founded in January 1984 and at its peak had 112 members. Its September newsletter, the 138th published by the group, contained the announcement that it would be the last published.

However, Joe Simmons, of the associated Athens Computer Club, has announced that he will continue to publish a

newsletter.

"Initially, the newsletter will be mailed to our present K-Town members, one or two past members who have been good contributors of their knowledge and one or two other computer groups," he says. K-Town newsletter recipients who wish to receive the Athens newsletter should write Simmons at 1110 Greenway Lane, Etowah, TN 37331.

Fun with numbers

Body Mass Index lets you know if you're overweight (and who isn't?)

By HAROLD C. HOYT JR.

We like to play with numbers. Sometimes our playing results in a little controversy. We note with amusement some disagreement amongst authorities about what people should weigh. They can't even unanimously agree that most of us are too fat (which we probably are).

NASA did a lot of research in the Kennedy days about fitness related to the space program. One idea involved the amount of fat vs the amount of bone and muscle. Physics says that mass is equal to weight divided by volume. Since fat is lighter than muscle or bone, you can make a fitness index out of how dense a person is. No, no, I don't mean *that* kind of dense.

Covert Bailey, a fitness authority and author, has been using Archimedes principle to calculate the density of people. Bailey holds fitness seminars at health centers around the country. These are well attended by health professionals who don't want to be as bad off as their customers.

Archimedes principle, for those unfamiliar with it, is based on the legendary ability of Archimedes to make practical use of mathematics. This is back in a time when most people were unsure of how many toes they had.

Supposedly, the king asked Archimedes to find out if the people who made his crown for him had cheated him, pretty much standard practice in those days, but really bad form to get caught. The divine right of kings pretty much encouraged being boiled in oil, beheaded, torn apart by horses or something else equally unpleasant. Gold is

heavier than most other materials, so the denser the crown the better. Can't you picture the king gently moving the crown up and down in his hands and doing a Captain Queeg imitation, saying, "This is too light"?

Archimedes solved the problem by taking the irregular shaped crown and weighing it, supported by a string, and then weighing it again submerged in water. The crown weight scale reads less submerged by the amount of water displaced. $Weight1 - Weight2$ is the weight of the volume of water displaced. Since he knew the weight of water per unit of volume, Archimedes could calculate the volume of the crown and then its density. As usual, the king was being cheated.

Bailey has his concerned health professionals run around doing some benchmark exercises and then performs what to us irreverent types with a humorous view of the world what might be construed as a baptism into their fitness religion. Bailey

has each of his disciples sit on an oversized grocery-style scale supported by a winch over a swimming pool. Suspended weight is recorded and then the candidate is completely immersed and a second reading is taken sometime before he drowns. A completely accurate measure of the candidates' densities results.

We pilfered information from a chart published by *Life Magazine* in February 1995 discussing new research suggesting that a person's Body Mass Index calculation is an indicator of health. Is this a shortcut on the NASA technique for determining fitness? We entered the information from this chart as DATA in QBASIC, which is an improved BASIC over GW-BASIC or BASIC-A which traditionally comes with IBM DOS or Microsoft DOS. We have heard that Microsoft does not intend to make any more improvements or upgrades to newer versions of QBASIC. I guess that's okay. It really runs fine the
(See Page 21)

Ht."	-----Body Mass Index Table-----													
	19	20	21	22	23	24	25	26	27	28	29	30	35	40
58	91	95	100	105	110	115	119	124	129	134	138	143	167	191
59	94	99	104	109	114	119	124	128	133	138	143	148	173	198
60	97	102	107	112	118	123	128	133	138	143	148	153	179	204
61	100	106	111	116	121	127	132	137	143	148	153	158	185	211
62	104	109	115	120	125	131	136	142	147	153	158	164	191	218
63	107	113	118	124	130	135	141	146	152	158	163	169	197	225
64	110	116	122	128	134	140	145	151	157	163	169	174	203	233
65	114	120	126	132	138	144	150	156	162	168	174	180	210	240
66	117	124	130	136	142	148	155	161	167	173	179	185	216	247
67	121	127	134	140	147	153	159	166	172	178	185	191	223	255
68	125	131	138	144	151	158	164	171	177	184	190	197	230	263
69	128	135	142	149	155	162	169	176	182	189	196	203	237	270
70	132	139	146	153	160	167	174	181	188	195	202	209	243	278
71	136	143	150	157	165	172	179	186	193	200	207	215	250	286
72	140	147	155	162	169	177	184	191	199	206	213	221	258	294
73	144	151	159	166	174	182	189	197	204	212	219	227	265	303
74	148	155	163	171	179	187	194	202	210	218	225	233	272	311
75	152	160	168	176	184	192	200	208	216	224	232	240	279	319
76	156	164	172	180	189	197	205	213	221	230	238	246	287	328

Use the table by locating your height on the left and finding your weight on the row and reading the body mass index at the top of the chart. Within reason, the denser you are the better.

BODY MASS INDEX —

(Continued from Page 20)
 Why it is, but didn't we hear that the programming is never completely done? A rumor has it that QBASIC may even be deleted from future versions of DOS, and we feel that would be a step in the wrong direction.

We love TI X BASIC, but QBASIC has a lot of nice features, if you aren't programming sprites. X BASIC as well as GW BASIC and most other BASICs are tokenized and require an interpreter to convert DOS text or DV/80 text into programs. Not so with QBASIC which can use text as input. An 80-column format with a clone puts more pressure on us TI people to get our act together with an 80-column system, whether it be a Geneve or something else.

Back to our programming. QBASIC is so nice, we do a lot of our programming in QBASIC first and then write an X Basic version. Although we found the QBASIC version much easier to write, we won't show it for now, since this is supposed to be about the TI. Suffice it to say that identical results were obtained with both versions of BASIC.

The BMI people calculate your Body Mass Index by taking your weight (mass) and dividing it by the square of your height. We used the program to confirm that is what they are doing. All the measurements are *metric*. Your height in inches is converted to meters by dividing by 39.37 inches per meter. Your weight in pounds is converted to kilograms mass by dividing by 2.2 pounds per kilogram. There seems to be some sloppiness in this calculation. We initially did all the calculations to at least four significant figures by using 2.2054 pounds per kg and still had a one pound discrepancy in 15 of their table entries, most of which were low and one entry was two pounds high. One of us is slightly off in the arithmetic, and it appears to be slightly more than could be accounted for by a different method of roundoff.

A little humor/philosophy here. Why use the height squared in computing density? Shouldn't it be height cubed? Cubed would fit if bodies of different sizes remained of the same proportions in all directions. That is, if one person, twice as

The BMI people calculate your Body Mass Index by taking your weight (mass) and dividing it by the square of your height.

tall as another, was twice as thick. Volume goes as the cube of a dimension. For the height squared model to work, you would require that a person's average diameter would increase as the square root of the height. The taller you get, the relatively skinnier you would have to be, a really Puritan, non-Tom Jones way of looking at people. Since a basic questionable assumption was made at the very beginning, should we relabel the thing as a pseudo body mass index, or something?

Now looking at the program. Still using the Swartz Emulator and redirecting the print to a file for further manipulation by a word processor, we can edit the results to suit our newsletter. After the table was printed to file, it was edited to present the numbers that were different from the *Life Magazine* numbers in italics.

In doing all this editing, flipping back and forth from running the program, editing it and printing the results, it would be easy to mix up which version of the program was running currently from a pile of papers (Computer myth: Computers are leading us to the paperless society?). So, I added the time of day the program was current to the program ID in line 100 — 8 minutes after 5 p.m.

One really big crack in TI X BASIC is the way that it uses the IMAGE statement. I gave up after a while and customized how the table was to be printed using TAB statements. Lots of unnecessary work. No problem using IMAGE in QBASIC. In order not to print an empty line between table lines, one must force the printer not to add linefeeds with carriage returns, hence the 140 OPEN #1 : "PIO.LF". From the DIMension statement in line 150 the

independent variables HT() in inches and BMI() Body Mass Index (units of kilograms per square meter *not* per cubic meter) are used to calculate the weight that will fit in line 220. The conversion factors of 39.37 inches = 1 meter and 2.2 pour μ s (the more accurate 2.205 didn't help) per kilogram generate table entries of WT().

You use the table by locating your height on the left and finding your weight on the row and reading the body mass index at the top of the chart. Within reason, the denser you are the better.

BMI3

```

1 !SAVE DISK1.BMI3 !103
100 !Prog by H.C. Hoyt Jr. 7
695 17:08 !048
110 !Calculates Body Mass In
dex (Latest Health Measureme
nt Idea) !139
130 RT$=CHR$(10)&CHR$(13)!03
1
140 OPEN #1:"PIO.LF" !192
150 DIM HT(19),BMI(14),WT(14
,19)!207
155 DATA 19,20,21,22,23,24,2
5,26,27,28,29,30,35,40 !080
160 FOR R=1 TO 19 :: HT(R)=5
7+R :: NEXT R !201
170 FOR C=1 TO 14 :: READ BM
I(C):: NEXT C !099
180 PRINT #1:" Ht "
-----Body Mass Index Table
-----"&RT$ !183
190 FOR C=1 TO 14 :: PRINT #
1:TAB(4*C+2);STR$(BMI(C));:
NEXT C :: PRINT #1:RT$ !128
210 FOR R=1 TO 19 :: PRINT #
1:HT(R);: FOR C=1 TO 14 !06
1
220 WT(C,R)=INT(2.2*BMI(C)*(
HT(R)/39.37)*(HT(R)/39.37)+.
5):: WT$=STR$(WT(C,R))!231
230 PRINT #1:TAB(4*C+4-LEN(W
T$));WT$;!124
240 !CALL KEY(0,K,S):: IF S=
0 THEN 240 !039
250 NEXT C :: PRINT #1:RT$ !
109
260 NEXT R !232
270 CLOSE #1 !151
280 END !139

```

A look at the Super AMS card

By SHAWN BARON

This is reprinted from the July 1995 newsletter of the South-West Ninety-Niners.

Although most of this article is geared toward programming and the technical side of the AMS (Asgard Memory Systems) card, it does start out basic (read to see) and might just help you out a bit. Have fun with the AMS card. (If you have one, of course.)

To start: When Richard Baron, my dad, and I got an AMS card, the first thing I did was try to plug it in. I had already removed my 32K card, and then I tried to put it in. The first "problem" I had was which side is which. I wasn't sure how to plug it in. My dad came and somehow got it in there. The card is in there pretty tight, but it does work 100 percent fine. I put the side with the 4x2 grid of small chips (the side opposite the round blue/black thing) toward the front of the Peripheral Expansion Box. This put the "top" side (the side with all of the chips) toward the disk drives. Now it was installed. To test this, I went into BASIC (right after plugging it in), and did the size command. It came up perfectly.

NOTE: For those of you wishing to use the latest version of XBPacker, it has come to my attention that you must *first* load ABOOT, then load XBPacker. Thanks to Jack for that one.

The next day, I tried writing a program to display what pages are dumped into memory where. I had many problems. I could get paging to work out of Mini Memory by doing it manually, but I needed a program to do it. I finally figured it out

The program below shows a basic assembly program to use the AMS card:

```
M2 EQU >4004      *PagePos
M3 EQU >4006      */from Table 1
*--Setup AMS Card--*
    LI R12,>1E00  *CRU Base of AMS Card
    SBO 0         *Turn AMS on. (This IS always
done)
*Now setup "DUMB" mode for memory mapped.
    LI R0,>4000   *Start of memory(See Table 1)
    CLR R1       *Start at page >00.
LP1 MOV RA,*R0+  *Move 2 bytes (page in each) to
```

Table 1

Label	AMS Card Setup Memory Address	CRU Base >1E00 PagePos	"DUMB" Page #
—M2	>2000->2FFF	>4004	>02 —
—M3	>3000->3FFF	>4006	>03 —
—MA	>A000->AFFF	>4014	>0A —
—MB	>B000->BFFF	>4016	>0B —
—MC	>C000->CFFF	>4018	>0C —
—MD	>D000->DFFF	>401A	>0D —
—ME	>E000->EFFF	>401C	>0E —

* MemMapper, and INCT

AI R1,>0101 *Add 1(page) to both bytes.

CI R0,>4020 *All Done?

JLT LP1 *No, init more.

*Now turn memory mapper on.

SBO 1 *Turn MM(Memory Mapper)on.

*--Now we Page--*The AMS is now setup to swap pages.

LI R0,>2020 *Load page >20(32)into both bytes.

MOV R0,@M2 *Page #32 into Memory >2000->2FFF

LI R0,>2121 *Load page >21(33)into both bytes.

MOV R0,@M3 *Page #33 into Memory >3000->3FFF

NOTE: Paging is not allowed into other memory areas, although there is area in the >4000 area of MM to allow it. As far as I can tell, it just ignores it.

If you have questions about the AMS card, feel free to write to SW99ers, we will do our best to help you. Please remember, we are also learning how to program the Super AMS. We will publish anything we can find out about it. Please let us know what you find out!

Thanks to Jack for asking me the right questions to make me think.

The address for the SouthWest Ninety-Niners is P.O. Box 17831, Tucson, AZ 85731.—Ed.

Bugs & Bytes

New software on horizon?

Mickey Cendrowski is expected to release a new fairware program at the New England fair Sept. 30. The new utility package, Mouseworks, will be mouse-driven and window sensitive.

Flight of Fancy

Ann Onymous is listed as the author of "If Operating Systems Were Airplanes," originally from the Users Group of Orange County ROM. We excerpts several paragraphs:

DOS Air: Passengers walk out on the runway, grab hold of the plane, push it until it gets into the air, hop on, then hop off. When

it hits the ground they grab the plane again, push it back into the air, hop on, jump off

Windows Airlines: The terminal is neat and clean, the attendants courteous, the pilots capable. The fleet of Lear Jets the carrier operates is immense. Your jet takes off without a hitch, pushes above the clouds and, at 20,000 feet, explodes without warning.

TI99/4A Airlines: The planes are small and slow, with accommodations for only one passenger. The flight controls extend beyond what the manufacturer envisioned. Extra fuel tanks allow for even larger payloads. Loved by all who fly them, they just keep winging off into the sunset.

Orphans unite!

Computer user offers plan for non-PC users

By JEFFREY WOOD

The author has recruited members on Delphi's TI-NET. — Ed.

Hi, and welcome to Ch.A.O.S. Country. Welcome to the revolution. The Cheyenne Area Orphaned Systems, or Ch.A.O.S., is a club devoted solely for the preservation of classic non-IBM systems, such as ours, and for the defeat of Microsoft. If we wanted IBM compatibility, we would have abandoned our systems long ago. Those of us who do have IBMs, but still use our classics, only bought them out of necessity, such as for work or school.

This is not a political organization. We do not hold any specific right-wing or left-wing political views. We do believe in fair competition and Microsoft is *not* fair. We spent all that time and money on our respective systems because they performed the task or tasks we bought them for. Whether it be for gaming, education, office or whatever, our classic systems performed up to our expectations, and, in some cases, beyond the original design. Why should we abandon everything we put into our systems?

I have been working on the designs of two programs that I feel would unite all of our systems, yet retain the sovereignty or flavor of each individual system:

1. A terminal shell with game maker to allow two or more non-compatible systems to play games over the modem or in a mini-network. Of course, standard protocols will have to be set between computers to ensure game play. But, graphics between two different systems won't have to be the same because screen data won't be sent, just tiny info packets. The games would take full advantage of the graphics and sound capabilities of each individual system. The games would be played as close to real time as possible.

2. A DEVICE OPERATING SYSTEM (DOS) designed on a

bi-level format: The primary level is a whole new computer that provides cross-platform compatibility between our classic systems. The computer will be based on the Power PC. This will allow each classic system to be enhanced to that of at least a 486, without losing much compatibility with the existing systems. Full compatibility is not guaranteed because of the new enhancements to each individual operating system. But, at least you won't have to abandon your whole classic system.

The secondary level is a whole new disk operating system for the original classic. This will allow direct disk access communication between *all* systems. Yes, even IBM. Just imagine, a C64 computer operating system with 38K free RAM can now have as much as 3.75-meg free RAM on a 4-meg system. This is directly accessible without bank switching or even use as a RAMdisk. Just imagine the fresh, new applications that can be developed that retained the original C64's flavor. No, this is not limited to the C64, but to all classic systems, such as the Atari, Tandy CoCo, VIC20, Apple and the TI.

All of our classic systems have their own uniqueness, their own distinctiveness. That is why we refused to follow the industry or marketing trends. This would allow us to preserve our systems and at the same time develop a cross-platform industry standard. Who says we have to follow the Microsoft standard? Let's follow a standard, sure, but we should also be allowed to keep our systems we have devoted so much time and energy into.

For more information, write Cheyenne Area Orphaned Systems, c/o Jeffrey Wood, 813 Covered Wagon Dr., Cheyenne, WY 82007-1671.

Term 80 released in commercial form

Jeff Brown, a Canadian college student, has released version 3.0.1b of Term 80, an 80-column terminal emulation program for the TI.

Term 80 supports ANSI/VT100 and VT52 modes including ANSI color. ANSI color is the standard for transmission of formatted (colored) text on most bulletin board systems.

Term 80 uses the TMS9918A/9928's bitmap mode to create a simulated 80-column mode, however, it does no page swapping of any kind. All text is on-screen and in true 80 columns (just a bit compressed).

According to Brown, "There is, to my knowledge, only one fault in VT100 emulation. It does not support, to this date, the G2 and G3 graphics sets, so things designed using these graphics sets will not work." The G2 and G3 graphic sets are older 7-bit data transfer protocols not commonly encountered today. Most systems now use 8-bit ANSI graphics.

Term 80 has an auto dialer, macro/scripting, Xmodem/X1k and Smart Ymodem (batch) upload/download protocols, as well as ASCII text. It has a built-in screen saver, and supports extended memory. Currently only the GRAM devices, AMS, 8K

Supercart, and Mini-Memory Modules are supported.

Brown says that the next version of his program "will likely be a complete rewrite to make it more memory efficient, more flexible, faster and more powerful. I am still considering whether an AMS/SuperAMS-specific version should be put together. I am also planning to make a better user interface, possibly using a pointer/mouse, point-and-click style, with keyboard support."

"If I ever get enough documentation on the TMS9938, I will most likely do support for it as soon as possible, specifically, using the 512x256, 16-color with sprite mode, and the blitter functions (including line drawing and other primitives built into the chip).

Term 80 is available in two versions: a demo, and the full (commercial) version. To get the full version (3.0.1b), send \$15 U.S. plus \$3-4 for postage and media (\$23 Canadian) to Jeff Brown, 2111 Montreal Rd. No. 102, Ottawa, Ontario, Canada K1J 8M8. Send \$4 for the demo version. The demo lacks many of the features present in the full version. Brown can also be reached at (613)746-1013.

S&T BBS Software

Everything a sysop could want

By WILLIAM M. LUCID

S&T Software BBS by Tim Tesch is everything a sysop (bulletin board operator) could want for running a bulletin board. S&T BBS runs on a TI99/4A or Myarc 9640 Geneve computer with, 32K of memory expansion, disk controller (TI, CorComp, or Myarc), and disk drives. S&T BBS supports use of Horizon RAMdisk, Myarc Hard and Floppy Disk Controller Western Horizons SCSI (small computer systems interface) card (at present supported with the Myarc 9640 Geneve only).

The package comes with files that you copy to the system directory. These include files that actually run the S&T BBS, articles in the article area, program that creates message bases, programs for clock support (MBP, Triple Tech, and Geneve), and a program to maintain the S&T BBS from a location other than where the S&T BBS is actually located, while on-line by modem.

Before the S&T BBS can be run, you must configure path names in the various files of the S&T BBS. This is accomplished by going into TI Extended BASIC and editing all path names to your system path name. This is explained in the documentation included with the package. An advantage of using the S&T BBS is the excellent technical support you get from Tim Tesch. Do not get me wrong, Tim Tesch may not be available 24 hours/7 days a week; however, he is available via his S&T Software BBS (414) 464-1978. Tim is also co-sysop of the TI Roundtable on GENie. Tim's email address on GENie is T.TESCH1.

Configuration of the HUG S&T BBS is as follows: TI99/4A black and silver console modified with Michael Ballman's 32K memory on the 16-bit bus, Myarc HFDC, Triple Tech clock card, for time and date stamping, Horizon RAMDisk for auto-booting the BBS program in case of power outage (once power is restored), and two forty megabyte hard drives. We use the Horizon RAMdisk for auto-booting the S&T BBS. To do this we delete MENU from the Horizon RAMdisk, along with the call MENU. Hard drive one is

emulating "DSK1." We placed the S&T BBS LOAD program in the "DSK1." directory. Now when power is applied to the system, the S&T BBS runs automatically without human intervention!

Downloading options for S&T BBS include: Xmodem Checksum, Xmodem CRC, Mass Transfer Ymodem, 1K-Xmodem, TIBBS Xmodem, Telco Ymodem, Multiple Xmodem, Ymodem-batch, and Ymodem-G. In addition D/V80 and D/F128 text files can be viewed without downloading. This feature is especially useful for viewing IBM text files, without the need of first running a conversion program. S&T BBS allows for 25 file transfer directories of 126 files. Each directory can be assigned an access level of one to nine. Some directories might be available to all callers, some directories might be available for all club members, and some directories might be for special interest groups. Access levels can be changed remotely using the S&T BBS utility program ONFILEX. ONFILEX is a very useful program and one of Tim's latest additions to the S&T BBS package. For example you can create/replace file descriptions, add or modify directories, and catalog hard/floppy/RAMdisk drives. All this, can be done from a remote location, if so desired.

The S&T BBS message area allows 12 distinct message bases, all with different amounts of messages, lines per message, and access levels. Tim advises "against using over six areas - mainly to avoid slow-down problems and file maintenance." The last message base is email/softmail. Email is readable only by addressee and sysops. There is no truly private mail. Softmail permits you to "enclose" or "attach" a file to the email message. To use this feature, enter a message, then select "F" for file. You will be prompted to do the file transfer. After you finish the upload, you must select "S" to save the message and the file — you *must* do this.

When a new user calls the first time he/she can select "N" for new user. The caller will be prompted though questions regarding: first and last name, address,

city, state, phone number and then asked for a brief comment. Once this information is completed, a user will be assigned a number while on-line and given the opportunity to log on the S&T BBS. New users are assigned an access level of two by default in the program. If the sysop wants to raise an access level, he/she may do so from the REMOTE feature of the S&T BBS.

The Hoosier User's Group, Indianapolis, Indiana, operates the HUG S&T BBS at (317) 782-9942, we support up to 9600 baud, eight data bits, no parity, and one stop bit. Downloading is allowed on the first call! HUG S&T BBS has been running S&T Software BBS since the fall of 1992. HUG is very satisfied and enjoys the reliability of the S&T BBS package. The Hoosier User's Group would like to thank Tim Tesch for his outstanding contributions to the TI and Geneve communities. S&T BBS software package is available from S&T Software, c/o Tim Tesch, 380 North 75th Street, Milwaukee, WI 53216. Registration is \$35. Yearly renewal is required at \$15 and entitles you to S&T BBS software updates for a year.

COMMENTS FROM TIM TESCH:

One correction. According to one sysop, the BBS assembly will not perform file transfers properly with the TI floppy controller. I have not checked the TI card myself nor have I checked the CorComp controller. The reason I have not checked for compatibility with these cards is simple: to date, everyone is running the BBS on a Horizon RAMdisk, Myarc floppy controller, Myarc HFDC, or a SCSI (the SCSI works only with the Geneve as of Aug. 11, 1995).

Otherwise, the BBS runs at 19,200 bps on a Geneve, 9600 bps max on the TI. IBM Graphics, Color ANSI, and 40/80 columns supported. REMOTE lets you edit user data and do file maintenance from anywhere. File transfer speed with the RS232 at 19,200 and a 14.4K modem reaches 1600 cps — well above 100 percent efficiency. This is because of the built-in MNP and LAP-M of today's modems.

MICRO-REVIEWS

Hyper Copy, AMS Copy, TI Nopoly, TIA Print, TIA Signs,

By CHARLES GOOD

HYPER COPY by Mike Dodd

In the July 1988 issue of MICROpendium Mike Dodd wrote about a mysterious author working on a fast copy program for the Geneve. Mike wrote, "The author does not wish to reveal his/her name at this time; however, any comments sent to me will be forwarded." That software author turned out to be Mike Dodd.

Hyper Copy is one of the few applications that runs directly out of MDOS on a Geneve. You can't use it on a 99/4A system, even one with an 80-column card. It is the fastest disk copier anywhere for Geneve and 99/4A disks. Although Hyper Copy has been available for several years, it has not yet been reviewed in MICROpendium. I have talked to several Geneve users who didn't know of its existence. Hyper Copy is so good that all Geneve users should own it.

The first time I used Hyper Copy to copy a DSDD disk I was amazed as I watched what happened. The Geneve sucked the entire contents of the master DSDD disk into the Geneve's vast memory in just one pass and then spit it out to the unformatted target disk. The whole copy process using a CorComp disk controller took only 58 seconds! Verification is not total with this type of fast copy. Most disk errors are reported, but some go undetected. You can set verification "on" and this will completely check the target disk guaranteeing 100 percent reliable copies. However verification "on" greatly increases copy time. With verification "off," copying a DSSD disk also takes 58 seconds. A SSSD disk takes 29 seconds. These are really fast times, and all include formatting and minimal verification of the target disk.

Some comparisons, all with target disk formatting and some sort of verification using a CorComp controller:

—Rediskit (my favorite 99/4A track copi-

er, shareware by James Schroeder): DSDD 82 seconds, DSSD 75 seconds, SSSD 36 seconds.

—Track Master 1 (another 99/4A track copier, shareware by Barry Boone): DSDD 96 seconds, DSSD 91 seconds, SSSD 53 seconds.

—"Diskcopy" command directly from MDOS on a Geneve: DSDD 485 seconds, DSSD 312 seconds, SSSD 155 seconds.

—Copy QM (a one pass IBM disk copier running on my 386 DX40): time to copy a 360K disk, which is the same as a DSDD TI/Geneve disk, 60 seconds.

Yes, Hyper Copy is the fastest whole disk copier I have ever tested, as fast or faster than my best IBM disk copier. And it can do some additional tricks, not found on most other fast copiers, that make disk copying even faster. Hyper Copy will copy to and from a Horizon RAMdisk and it will copy one master to multiple drives. You can, for example, copy a disk to the Geneve's internal RAMdisk or to a Horizon RAMdisk. Then you can copy from the RAMdisk to floppy drives 1,2,3 and 4 with formatting of the copy disks. (You need a CorComp or Myarc controller to use floppy drive 4.) This makes lots of copies of one master disk really fast! Adjustments you can make within Hyper Copy for interlace and skew allow the copy disks to run at maximum loading speed on the Geneve, often faster than the original. I don't really understand these adjustments, so I just accept the suggested defaults.

When you buy HyperCopy you get on one SSSD disk versions that support the TI, CorComp, and Myarc floppy disk controller cards. There is no version of Hypercopy that is usable with floppies controlled by the Myarc HFDC, which is too bad.

If you own a Geneve and copy disks you really should own Hyper Copy. It is a commercial product now available for \$15 from 9640 News. This is a reduction in price from when Hyper Copy was offered a few years ago by Genial Computerware.

AMS COPY

by Jack Mathis

Here is a new whole disk copy program for 99/4A users. It requires the AMS (Asgard Memory Systems) memory expansion card and is distributed as public domain software to AMS purchasers. Just load it from any Editor/Assembler5 loader. It is easy to use, in part because it does not first require you to initialize the AMS card by running the AMS program ABOUT.

AMS Copy has the look and feel of the disk copying part of DM1000. In fact it is the author's stated intent to incorporate AMS Copy into a new version of DM1000 for the AMS card. You can select "Sector" or "Bit Map" copying. As many sectors as possible are sucked into the AMS before being read out to the target disk. With a 128K AMS card you can copy a SSSD disk in one pass. With a 256K AMS card you can copy a DSSD (720 sector) disk in one pass or a DSDD disk in two passes. You need a 384K AMS card for one pass copying of DSDD disks. The unusual thing about this disk copier is that the contents of the disk remain in memory. You can make multiple copies of the same master disk without spending unneeded time reading the master disk into memory again and again. Unfortunately the multiple copy feature only works with one drive. You can specify only a single output drive. To make multiple copies you remove the previous target disk from this drive, put a new target disk in the drive, and press a key.

Here are some time comparisons copying all sectors of the same DSSD master disk with formatting of the target disk. AMS Copy — first copy 330 seconds, second and subsequent copies 255 seconds. DM1000 V3.5 and DSKU V4.2 both took 333 seconds. Rediskit, my favorite 99/4A track copier, can do this job in 75 seconds. These speed comparisons are somewhat

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misleading. Rediskit always formats the target disk, even if it is already correctly formatted. Times of the other copy programs listed here will be faster if time is not taken to format the target disk. They only take the time to do a format if they sense the target disk is not already formatted to the same capacity as the master disk.

So why use AMS Copy if Rediskit is so much faster? Because of reliability, particularly in making reasonably fast multiple copies of the same master disk. Sector copy programs such as AMS Copy will never make a bad copy. You are guaranteed that your copy will contain no errors that prevent it from being read on someone else's computer. When you use fast copy programs such as Rediskit or Hyper-Copy there is increased risk of destination disk errors that will not be reported by the copy program. AMS Copy will detect and tell you about all master or target disk errors. For 100 percent safe disk copying AMS Copy is one of the fastest copy programs available.

TI NOPOLY

by Jon Dyer
and Joe Delekto

This game requires an AMS card with 128K or more memory. It is public domain and you get it as part of the software package that comes with the AMS card. TI Nopoly does an excellent job illustrating how speed and graphics of assembly games can be enhanced by having the entire game reside in the AMS bank switched memory. First you run ABOOT and then you load TI Nopoly from the "Load and Run" or "Load and Retain" options of the ABOOT menu.

Everything you need to keep track of the game is displayed on screen. The upper left shows the game board and the location of the players' pieces on the board periphery, from two to eight players. In the center of this game board is a graphic of the current player's position. These graphics have been accurately copied from the original monopoly game board. As a playing piece moves around the board each board position graphic is shown *very* rapidly until the piece reaches

So why use AMS Copy if Rediskit is so much faster? Because of reliability, particularly in making reasonably fast multiple copies of the same master disk. Sector copy programs such as AMS Copy will never make a bad copy.

its destination. These board position graphics are quite well done and make game action visually attractive.

In the upper center of the board are the dice. The middle right shows a status menu of choices. The lower screen half shows data of each player's owned properties, the information found printed on the back of property cards in the original board game. The player who has the current turn can view the information for each property one at a time by cycling through owned properties using the arrow keys. Property data displayed includes Current Rent, Mortgage Value, Improvements (number of houses built), and Cost Per House.

Before rolling the dice a player may do any of the following with properties he owns by pressing a key: (S)ell properties or houses back to the bank, (M)ortgage, (B)uild houses, or (D)eal. A player can also do these things after dice roll if he needs to raise extra cash to pay rent. If you press (D) you get these options relating to properties of other players: (T)rade, (B)uy, and (T)rade. These are all menu prompted and the computer keeps track of the results.

To roll the dice you press (R) and you see and hear the dice as they roll on screen. If you land on an unowned property you are given the opportunity to (B)uy or (C)ontinue without buying. If you land on your own property you are told so and your turn ends. If you land on someone

else's property the rent you owe is immediately deducted from your money and given to the property owner.

Other features of the original board game are all there and functional: jail and get out of jail free cards, income tax, luxury tax, community chest and chance cards, etc. If you land on Free Parking you get all the tax money collected, or \$50. If you roll doubles you get to roll again. If you are in jail you get to roll first and only if you don't roll doubles are you asked to pay to get out of jail. This slight deviation from the original rules saves you from wasting a get out of jail card or fee when you roll doubles anyway.

There are some program bugs. Sometimes the sprite of a player disappears as it travels around the playing board and reaches the current dice roll's destination. It is still there and will reappear. Sometimes the game will let you purchase houses even if you don't own all the properties in the group and sometimes (this is very annoying) the game won't let you purchase houses even though you do own the necessary properties.

I have played several TI Nopoly games with my 14- and 9-year-old children and the kids say they like the game also. I sometimes play a two-player game all by myself, making the decisions for both players. Games seem to go quite fast. Just press the (R)oll key and the current player zooms around the board. One does not normally consider speed to be important in Monopoly, but the two other Monopoly games I know of for the 99/4A are painfully slow. Even with its somewhat significant bugs I consider TI Nopoly the most enjoyable of the various 99/4A Monopoly lookalikes.

TIA PRINT

by Bruce Harrison


TIA SIGNS

source unknown

TIA Print, a simple-to-use public domain program, will print almost any TI Artist black-and-white picture using almost any 9-pin Epson-compatible printer. It uses 25-sector TIA picture files with the

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 (Continued from Page 26) file ending. The resulting output is properly proportioned (a circle looks like a circle) and fills an 8.5x11-inch sheet of paper.

TIA Print loads as either EA5 or as XB LOAD. You are asked to verify your printer name and are then asked for the drive containing the TIA pictures. Drives can be 1-9 or A-Z. The program then presents you with a list of only the “_P” 25 sector files on that drive. Move the cursor around with the arrow keys and press <enter> when the cursor is next to a picture file name you want to examine. That picture is then displayed in black and white on screen. If there is a color file for the picture (a _C file) it is ignored. If you like what you see press P and your picture is printed. Press any other key and you are back to the list of “_P” pictures so you can examine another picture on screen.

Printing takes a while, between 2 and 10 minutes. Large blank areas are recognized such and the printer will quickly line feed past these parts of the picture. This saves printing time. MAX RLE and other

TI software will print TIA pictures, but nothing does it as conveniently from a menu list of pictures and almost nothing else prints them *so big!*

I have an application that is perfect for TIA Print. I have 4 DSSD disks of full TIA signs that somebody donated to my user group's library several years ago. Each sign has a fancy border and often has a cute graphic in addition to the lettering. These signs contain cute and sometimes serious messages and are designed to fill a full sheet of paper. Now I have convenient and free software that will do this. The 112 signs on these four disks include “Things I Gotta Get Done” followed by some blank lines for you to fill in, “If you want quick answers ask the boss, If you want right answers ask the secretary,” “Ask me, I might say YES,” “It makes the day long when you get to work on time” and many others.

Send me \$1 and I will send you TIA Print on a SSSD disk. It comes with fully commented source code, a couple of original TIA pictures for you to view and print, and user friendly documentation. When you get it, give Bruce a phone call and tell

him how much you appreciate his public domain programming efforts on our behalf.

Send me an additional \$4 and I will send you the four DSSD disks full of TIA Signs.

ACCESS

Southwest 99ers. This user group manufactures and sells AMS memory expansion cards which come with the AMS Copy and TI Nopoly programs reviewed here. A 265K card costs \$100. P.O. Box 17831, Tucson, AZ 85731. Phone (520) 747-5046.

9640 News (Berry Miller, source of HyperCopy). P.O. Box 752465, Memphis, TN 38175. email bw.miller@genie.geis.com

Bruce Harrison (TIA print author). 5705 40th Pl., Hyattsville, MD 20781. Phone (301) 277-3467

Charles Good (one source of TIA print and TIA signs). P.O. Box 647, Venedocia OH 45894. Phone (419) 667-3131. email cgood@osulima1.lima.ohio-state.edu (preferred), or good.6@osu.edu

NEWSBYTES

Bruce Harrison releases programs

Bruce Harrison has released a new disk, Plotter, along with 24-pin versions of his Drawing Program and his TIAPRINT product.

Plotter has programs that run from Extended BASIC but use assembly subroutines to create plots of equations in bitmap form. Its programs include PLOTTER, used for simpler cases where Y can be stated as a function of X; XYPLOT, for more complicated situations, where both Y and X are functions of some other variable; and POLARPLOT, for cases where an angle is the independent variable and a radius is the dependent variable. POLARPLOT calculates values from the polar coordinate equation, translates them to X and Y, then plots the curve, according to

Harrison.

In all three the user has the capability to overlay one plot with a previous one by pressing O while a plot is on screen, to save the plot as a TI-Artist picture file by pressing S while a plot is on screen, recall a previous plot from disk by pressing R while a plot is on screen, or print the plot directly from the screen to a nine-pin dot matrix printer by pressing P while a plot is on screen, according to the author.

Plotter is available in a short version without source files for SS/SD drives, and a special version for 24-pin printers, Harrison says. He says he does not know whether the programs will run on a Geneye.

Harrison says that the 24-pin versions were inspired by the User Note in the July 1995 MICROpendium by Ron Warfield of the British Columbia 99ers concerning the

use of a 24-pin printer with CARDSHOP.

“Thanks also go to Harley Ryan of Whitehall, Ohio, who provided me a copy of his Panasonic 24-pin model's manual, and who also tested the 24-pin versions of Drawing and TIPRINT,” Harrison says. “They worked great on his Panasonic, and should also work on Epson 24-pin models, which his Panasonic emulates.”

All the above programs are available through the Lima Users Group, P.O. Box 647, Venedocia, OH 45894.

Pittsburgh users get new address

The Pittsburgh TI User's Group has a new mailing address. Write the group c/o Susan Harper, P.O. Box 3212, Munhall, PA 15120-1212.

USER NOTES

AID for REMIND ME!

This article was written by Jacques GrosLouis. He writes:

The following program can be used to bring up reminders for any day of a month which has been saved from REMIND ME!

If you examine the D/V80 file created by REMIND ME!, you will notice that the first character of the line saved commence with the ASCII code corresponding to the day of the month being saved. This program makes use of this feature to find the existence of a particular day on a D/V80 file. The program also makes use of two subprograms developed by Jerry Stern. Since I use this program with Funnelweb and an Horizon RAMdisk, I have programmed it in line 280 to return to either REMIND or FW. You may change this to suit your own preference. In line 110 variables have been set for month (MO\$), year (YR\$), disk (DK\$) and date (A).

At the beginning of each month I change the month variable to the number of the current month and then resave the program. I have saved this program as *AID so that it appears first in DSK5, which contains the monthly D/V80 files from REMIND ME!. The Scratchpad in REMIND ME! can be accessed by either blanking or entering "00" at the date prompt.

*AID

```
100 ! SAVE DSK5.*AID !047
110 MO$="08" :: YR$="1995" :
: DK$="DSK5" :: A=15 :: CALL
CHAR(128,"000000FF"):: LN$=
RPT$(CHR$(128),28)!205
120 DAY$="XXXXX Sun Mon
TuesWednes Thurs Fri Satu
r" !187
130 CALL CLEAR :: CALL BLUE
!228
140 DISPLAY AT(1,10)ERASE AL
L:"Remind-Aid":TAB(5);"By Ja
cques GrosLouis" :: DISPLAY
AT(3,1):LN$ !168
150 DISPLAY AT(4,16):"dd/mm/
yyyy" :: DISPLAY AT(5,3):"Se
arch Date?:";STR$(A):: B$=" "
```

```
!024
160 DISPLAY AT(5,18):"/"&MO$
&"/"&YR$: " Location REMIND D
ata:"&DK$:LN$ !185
170 ON WARNING NEXT !215
180 ACCEPT AT(5,16)VALIDATE(
DIGIT)SIZE(-2)BEEP:A :: IF A
>31 OR A<0 THEN 180 !069
190 ACCEPT AT(5,19)SIZE(-2)V
ALIDATE(DIGIT)BEEP:MO$ :: AC
CEPT AT(5,22)VALIDATE(DIGIT)
SIZE(-4)BEEP:YR$ :: ACCEPT A
T(6,23)SIZE(-4)BEEP:DK$ !194
200 DISPLAY AT(8,6):"OK To C
ontinue?:Y" :: ACCEPT AT(8,2
2)VALIDATE("YNyn")SIZE(-1)BE
EP:A$ :: IF A$="n" OR A$="N"
THEN 150 ELSE CALL CLEAR !2
35
210 MO=VAL(MO$):: YR=VAL(YR$
):: CALL DAY(MO,A,YR,X):: Z$
=SEG$(DAY$,X*6,6)&"day " !0
22
220 ON ERROR 300 :: OPEN #1:
DK$&". "&MO$&"/"&YR$ :: IF A<
>0 THEN PRINT TAB(9);" Notes
for ":TAB(5);Z$;STR$(A);"/"
;MO$;"/";YR$;LN$ !008
230 LINPUT #1:F$ :: B=ASC(F$
):: IF B<>F THEN B$=B$&STR$(
B)&"," !042
240 F=ASC(F$):: IF A=F THEN
PRINT SEG$(F$,2,38)!147
250 IF EOF(1)=0 THEN 230 ELS
E CLOSE #1 !227
260 PRINT LN$;"Dates Availab
le To Search:";B$:LN$:TAB(5)
;"Press Enter To Redo":TAB(3
);"Press 'R' To Run 'REMIND'
": " Any other key to quit"
!144
270 CALL KEY(3,K,S):: IF S=0
THEN 270 ELSE IF K=13 THEN
140 !151
280 IF K=82 THEN DELETE "LD.
5.REMIND" ELSE DELETE "FW" !
060
290 STOP !152
300 ON ERROR 310 :: CLOSE #1
!089
310 DISPLAY AT(24,4)BEEP:"Di
sk Error Press Enter" !095
320 CALL KEY(3,K,S):: IF S<1
```

```
THEN 320 ELSE RETURN 140 !
32
330 SUB BLUE !149
340 ! SWITCHES DISPLAY TO WH
ITE ON BLUE; JLS 7/88 !230
350 CALL SCREEN(5):: FOR L=0
TO 14 :: CALL COLOR(L,16,1)
:: NEXT L :: SUBEND !202
360 SUB DAY(J,K,I,N)!252
370 ! GIVEN (MONTH,DAY,YEAR,
RETURN VARIABLE) !236
380 ! DETERMINES WEEKDAY AS
#1 TO 7 !255
390 IF J>2 THEN M=J-2 :: Y=I
ELSE M=J+10 :: Y=I-1 !141
400 C=INT(Y/100):: D=Y-100*C
!183
410 N=INT((13*M-1)/5)+K+D+IN
T(D/4)+INT(C/4)-C-C+77 !136
420 N=N-7*INT(N/7)+1 !232
430 SUBEND !168
```

Battery holder solves RAMdisk problem

The following was written by John Van Weelie of the 9T9 Toronto User Group.

Well I finally found the trouble that plagued by Horizon RAMdisk for close to a year and a half. The problem I had was that the RAMdisk would be lost or corrupted on a regular basis. I would set it up and load it with the programs that I usually used and sometimes it would last a month, week, day, for few hours.

At first I thought the batteries were the problem. So I charged the batteries in the Nicad charger I had. This would only allow the RAMdisk to last about a month, sometimes two. Then presto it was wiped out.

Gary Bowser of OPA thought that it was one of the RAMdisks that would require a transistor modification. So at one 9T9 club meeting he and I did the modification. This was to no avail. New Nicads also were not much help.

I had this RAMdisk for at least 6 years, of which the first 4 years it worked flawlessly. I could not understand the problem

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since the early version RAMdisk that is also in the P-Box has operated on the same batteries for approximately 9 years.

I started checking the RAMdisk out. I inspected the solder connections closely. This troublesome RAMdisk was built by myself at a RAMdisk building party. So I sweated every solder connection as a few possibly were questionable in their condition. Again, this was to no avail in solving my problem.

So one day, out of the blue, I checked the battery holders on the board. The ones used on the troublesome RAMdisk are Radio Shack specials — plastic with a metal knob at one end and a spring at the other. I noticed a slight discoloration on the knobs. I cleaned these knobs to solve the problem for which the RAMdisk lasted longer.

Finally, I decided to try to tin the knobs with a coating of solder. This was done and, presto, this solved my problem and I did not lose my RAMdisk. So I thought that to fix the problem permanently I would have to get new battery holders. My first RAMdisk has rigid metal holders made by Keystone. These holders are not available in Canada. I have looked at several possible solutions, including a different style N-type 3.6V Nicad battery, but holders were not available for those. Every solution I looked at with parts available from many possible suppliers would cost me over \$10.

I decided that my solder solution will have to work until I get to the United States to one of the computer flea markets.

If you have encountered troubles with your RAMdisk, it could very well be a problem with the battery holders.

User group offers Funnelweb help

The most recent version of most parts of Funnelweb is v4.4. The most recent Funnelweb 40-column editor is v5.01, and you have to add the v5.01 files to your v4.4 system disk to get the editor to work. The most recent version of the Funnelweb 80-

column editor is v5.21, and you have to add the v5.21 editor files to your v4.4 system disk to get this editor to work. Some of the v4.4 system and document files are now obsolete. This can be very confusing. Which of the v4.4 files should not be used, and what is the purpose of all those Funnelweb files?

The Lima User Group has taken guesswork out of upgrading to the new Funnelweb editors by creating 40-column and 80-column Funnelweb disk sets. Each set of three DSSD disks contains all the currently valid v4.4 files and documents, along with all the files of the most recent v5.x editor. The first disk of each set has the main system files and can be run immediately from any floppy drive using Extended BASIC or EA5. The second disk of each set contains less commonly used Funnelweb system files, as well as DSKU, DM1000 and Archiver set up so they can be run from a Funnelweb central menu. The third disk of each set contains the 40- or 80-column Funnelweb docs. Also included are some published reviews of Funnelweb describing the most significant features of Disk Review and the new editors.

To obtain the 40- or 80-column Funnelweb sets, send three disks and a self-addressed, postage-paid return mailer to the Lima User Group, P.O. Box 647, Venedocia, OH 45894. For both sets, send six disks.

Right justification in Funnelweb

This comes from the PUG Peripheral, the newsletter of the Pittsburgh User Group. It was written by Tom Jacobfy.

For those who want to print out documents using the Funnelweb v5.01 editor and want them right justified (all the columns line up at the right margin), this article is for you.

Type your text as you would normally, using word-wrap mode. When you have finished, go to the first word of each paragraph and press insert (FCTN-2). Then press CTRL-R and watch what happens.

The Funnelweb editor will put in spaces and fill each line until your right margins are all justified!

You can then use PF (Print File) to print the text from the screen. You don't have to go through the editor and worry about the three lines at the top and bottom of each page. What you see on the screen will be what you get. Of course, the IBM character set will also be printed so that you can get boxes or fancy Greek symbols, or whatever.

Oh, yes, if you don't want to have the right justification on, reformat your text using CTRL-R followed by CTRL-2. Try it and see the difference.

This effect (CTRL-R) saves time because you don't have to go through the formatter to right-justify text. It also saves the anguish of having to worry if the @ and & signs will print out properly. All you need to do is reformat each paragraph with CTRL-R and save the file using PF with C DSKx.filename. "C" removes the control characters, such as linefeed and carriage returns.

Upgrading a 2400 baud modem

The following appeared in 99 Hocus Focus, the newsletter of the Milwaukee Area User Group. Readers who pursue this project do so at their own risk.

This article about upgrading your 2400 baud U.S. Robotics-compatible modem to 9600 baud. Make sure you unplug the modem from its power supply before proceeding.

First of all, you need to go to an electronics store to purchase parts. Don't go to Radio Shack because their parts won't match the following parts list. This upgrade will not work on old Hayes modems, but will work on Hayes-compatibles made by Everex, Practical Peripherals, Anchor, ATI, Intel, etc. It will work only with modems with the Intel chipset.

This technique widens the bandwidth by using a different chip that is similar to the chip already in your modem.

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Here are the parts you'll need:

- 16550 UART
- L4313545 IC
- SC11020CN IC
- L8730183 IC

Check to see if your biggest chips are soldered or socketed. If they are soldered, you'll have to de-solder them before beginning. After you get that done, replace the 8250 UART with the 16550 UART. (16550 UARTs are required for 9600+ speeds.) The other one or two chips need to be replaced with Intel L4313545 chips.

There should be a 22-pin chip on your modem with a model number of SC11005CN, or something similar. Replace it with the SC11020CN. Also replace the L8630173 with the L8730183 chip.

Again, readers should use caution when trying this upgrade. The downside is that you could ruin your modem, the upside is

that 2400 baud modems are very cheap.

Fix for Funnelweb editor bug

The following was written by Tony McGovern, of Funnelweb Farms.

A minor but patchable bug has come to light in the Funnelweb version 5 editors release for the TI99/4A, and Geneve 9640 in TI mode. This bug infests the new insert function in fixed mode (open rectangle cursor) using CTRL-2 in edit mode. In word-wrap mode (solid cursor), this triggers reformat but was without function in fixed mode. Version 5 gives this an insert function in fixed mode. As described in the documentation, CTRL-2 in fixed mode searches for the next non-blank line, trims off leading and trailing spaces, and inserts this in the current line at the cursor position (immediately reversible by oops — CTRL-1).

The bug occurs when the following is blank. The search loop is faulty and skips lines by twos. Most obviously, if the current line is followed by a blank line and then a block of lines, CTRL-2 in fixed mode will cause the contents of the second line of the block to be inserted at the cursor.

To patch, use DiskReview or other sector editor. Do a word-aligned search in the ED file for the word >1BF1 and replace this with >1BF3. This should occur in sector 8 in the 40-column version and in sector 9 in the 80-column version. Make these changes to a copy of the ED file, not the original disks.

CALL JUNCTION good for menus

The following was written by Skip Park (See Page 31)

MICROpendium disks, etc.

- | | |
|---|---|
| <input type="checkbox"/> Series 1995-1996 mailed monthly (April 1995-March 1996)..... \$40.00 | <input type="checkbox"/> 110 Subprograms (Jerry Stern's collection of 110 XB subprograms, 1 disk)\$6.00 |
| <input type="checkbox"/> Series 1994-1995 (April 1994-Mar 1994, 6 disks) \$25.00 | <input type="checkbox"/> TI-Forth (2 disks, req. 32K, E/A, no docs).....\$6.00 |
| <input type="checkbox"/> Series 1993-1994 (April 1993-Mar 1994, 6 disks)\$25.00 | <input type="checkbox"/> TI-Forth Docs (2 disks, D/V80 files)\$6.00 |
| <input type="checkbox"/> Series 1992-1993 (Apr 1992-Mar 1993, 6 disks) .. \$25.00 | <input type="checkbox"/> 1988 updates of TI-Writer, Multiplan & SBUG (2 disks)\$6.00 |
| <input type="checkbox"/> Series 1991-1992 (Apr 1991-Mar 1992, 6 disks) .. \$25.00 | <input type="checkbox"/> Disk of programs from any one issue of MICROpendium between April 1988 and present\$4.00 |
| <input type="checkbox"/> Series 1990-1991 (Apr 1990-Mar 1991, 6 disks) ..\$25.00 | <input type="checkbox"/> CHECKSUM and CHECK programs from October 1987 issue (includes docs as D/V 80 file)\$4.00 |
| <input type="checkbox"/> Series 1989-1990 (Apr 1989-Mar 1991, 6 disks) ..\$25.00 | |
| <input type="checkbox"/> Series 1988-1989 (Apr 1988-Mar 1989, 6 disks) ...\$25.00 | |

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Texas residents add 7.75% sales tax.. Credit card orders add 5%.
Check box for each item ordered and enter total amount here:

Check/MO Visa M/C
(Circle method of payment)

Credit Card # _____

Exp. Date _____

Signature _____

USER NOTES

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of the West Penn 99'ers. It was published in the group's newsletter.

CALL JUNCTION has been very useful to me. It allows the branching of a program in as many directions as desired and the choice of a direction with a single keystroke.

SUB JNC

```
100 SUB JNC (T$, K$, X) !~~~CALL
JUNCTION~~~
110 DISPLAY AT(24,1):RPT$ ("
", 14 - (LEN(T$) / 2)) & T$
120 CALL KEY(0, K, S) :: IF S=0
OR S=-1 THEN 120
130 IF K=13 THEN K=94
140 X=POS(K$, CHR$(K), 1) ::
IF X=0 THEN CALL SOUND(100, -
2, 0) :: GOTO 120
150 IF INT(X/2) <> X/2 THEN
X=X+1
160 X/2
170 SUBEND
```

CALL JUNCTION works in conjunction with an ON GOTO or an ON GOSUB, or a combination of the two. Here is an example:

```
10 CALL JNC (" (Y)es or (N)o", "
YyNn", X)
```

```
11 ON X GOTO 20, 30
20 PRINT "YES" :: GOTO 10
30 PRINT "NO" :: GOTO 10
```

PARAMETERS

The first parameter (T\$) is text to be displayed to give instructions to the user. It can be optional or changed to suit one's needs.

The second parameter (K\$) contains the pairs of characters whose corresponding keys will be active. Any key (CTRL, FCTN, shift) can be activated. Any number of keys can be activated. The characters are given in pairs, with no space or separators between them. Both characters in the pair perform the same function. This makes it easy to assign both uppercase and lowercase to the same function. If only one key is wanted for one function the same character is given both times in the pair. Since the Enter key cannot be typed and often needs to be active, the power symbol "^" is substituted for the CHR\$(13) — see line 130 — so that the power symbol activates the Enter key.

The third parameter (X) is returned to the main program to drive the ON GOTO or ON GOSUB.

Line 10 calls JNC.

Line 110 displays T\$ centered on row 24.

Line 120 calls key and idles until a key is pressed. If a key is pressed, line 130 tests for the power symbol.

Line 140 searches K\$ to match the key pressed. If no match is made, then a sound is called and back to line 120. If a match is made, X becomes equal to the position of the match.

Line 150 tests X to see if it is odd. If X is odd, one is added to X. This gives the first character in the pair the same value as the second.

Line 160 reorders the position of the pairs in one integer increments.

Line 170 subends with X. If X=1 then line 11 goes to line 20 and prints "YES," or if X=2 line 11 goes to line 30 and prints "NO," then back to line 10.

If have found that with the use of this CALL program, I can design programs that are driven by many small menus, rather than one or two big main menus. This gives the program a better flow and allows one more choices and escapes.

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