Covering the TI99/4A and the Myarc 9640

MICROpendium

Volume 10 Number 3 April 1993 $2.50

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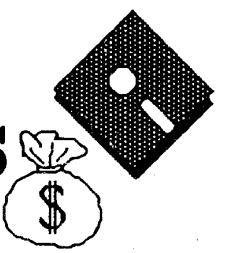

The first rule of programming is that there are no rules. The second — don't quit your day job.

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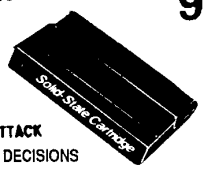

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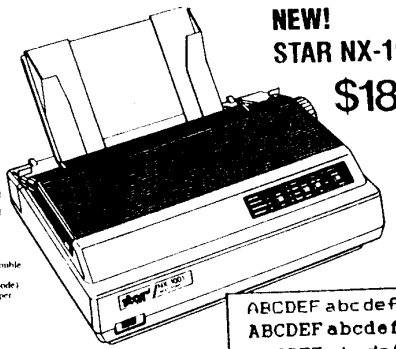

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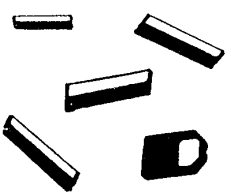

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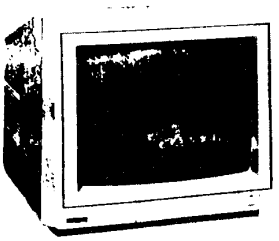

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*READ THIS

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

1. MostBASIC 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.

Comments

Cecure takes over MIDI-Master

In a move that should please TI users, Cecure Electronics has taken over distribution of Mike Maksimik's MIDI-Master, according to Don Walden of the company. Maksimik had previously announced that he would limit his distribution of MIDI-Master to TI fairs. By giving the distribution rights to Cecure, Maksimik insures that the product will be available through more accessible mail-order channels. Also on a positive note, Walden says he's observed a mini-boom among second generation TI users in the Midwest.

Cecure also plans to introduce several new products at the Lima fair in May, including a new MBP Analog and Clock Card (similar to the original but with digital outputs; the HFDC Clock back-up battery board and a PIO Digital to Analog Poly-Port, which has up to eight outlets, depending on the memory (stereo is about the best you can do on a 4A with 32K memory). According to Walden, the sound files are accessible from a running Extended BASIC program. Tim Tesch is the programmer for this new product, which will sell for under $20.

Cecure can be reached at P.O. Box 132, Muskego, WI 53150-0132. Phone is (414) 679-4343; BBS is (414)529-9659.

PRODUCT DELIVERY

Several readers have written in complaints about non-receipt of software ordered from Media Ware Software in Florida. An inquiry sent by MICROpendium to the company received no reply. Our MICRO-Reviewer Stan Krajewski is evidently having no better luck. Caveat emptor.

DRS HOLD UP SCSI CARD

Bud Mills says he "apologizes to those who are waiting" for the Horizon SCSI, but the device service routines are still pending for the device. Mills says he's "not venturing forth on any new projects" until the DSRs are completed and the SCSIs shipping.

—JK

READER TO READER

❑ Ken Gladyszewski, 6440 St. Rte. 86, Concord, OH 44077, writes:

Does anyone know how to address the extra input and output bits on the parallel port pins 13 and 14, respectively?

I have ideas for a TI-based digital integrated circuit tester, multimeter interface and console real world input/output expansion. I am willing to share these ideas with others to develop these homebrew projects.

Copies of my articles and schematics on a computer controlled robot, analog to digital conversion and limited speech recognition are still available free— just send a long self-addressed double-stamped envelope.

❑ Writing on behalf of the T.I.G.R.E.S., a users group in Buenos Aires, Argentina, Francisco T. Molina, General Pacheco 542, (1640) Martínez, BA, Argentina, asks:

Please give us some cues on people that know their onions with the Myarc WDS-100 vintage rigid discs with the personality card, information on its logical disposition, some way to get our hands on Sector One for 40 cols (its author could not be contacted by us; we only have an 80 col version!) and the way (pins schematic for the Y cable and switching of the card) to connect a pair of them with only a PEB card.

❑ Jerry Keisler, 2221 College Dr., Paris, TX 75460, writes:

Does anyone have a diagram of a circuit that converts RS232 to PIO. I would like a copy of the circuit to include in my control the world with your TI articles.

Reader to Reader is a column to put TI and Geneve users in contact with other users. Address questions to Reader to Reader, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

1993 TI FAIRS

APRIL

Northeast TI Fair, April 17, Waltham High School, Waltham, Massachusetts. Contact Ron Williams, 14 East St., Avon, MA 02322.

Canadian TI Fest, April 24, Merivale High School, Nepean, Ontario, Canada. Contact Bill Gard, 3489 Paul Anka Dr., Ottawa, Ontario, Canada K1V 9K6 or (613) 523-9396 or Fax (819) 997-2194 Attn: DMES 2.

MAY

Lima Multi User Group Conference, May 14-15, Ohio State University Lima Campus, Lima, Ohio. Contact Dave Szippl, 4191 Patterson Haplin, Sidney, OH 45365; phone (513) 498-9713 (evenings).

Fourth Annual TI Orphans Reunion, May 15, Zurich Insurance Claims Centre, 9715 Ottewell Rd., Edmonton, Alberta, Canada. Contact Ron Hohman, (403) 456-0862.

OCTOBER

Annual International TI-Faire, Oct. 8-10, Evangelisches Ferienwaldheim Weidachtal, 7000 Stuttgart 80 (Mörhingen), Weidach Gewann 8, Germany. Contact Hans Huben, Berberitzenweg 6, 7033 Herrenberg, Germany.

1994 FAIRS

FEBRUARY

Fest-West, Feb. 19-20, Santa Rita Park Inn, Tuscon, Arizona. Contact Tom Wills, Fest-West '94 Committee, Southwest 99ers Users Group, P.O. Box 17831, Tuscon, AZ 85730-7831 or (602) 886-2460; BJ Mathis, (602) 747-5046; or the Cactus Patch BBS, (602) 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.

Feedback

80-column Crazy 8s

I've discovered something interesting using Ed Donovan's Loader program for the Geneve in MY-BASIC from your January issue. I found that I could load and run Regena's TI BASIC program Crazy Eights. The program looks good in 80 columns! I tried running Crazy Eights without using the Loader program and it would load in MY-BASIC OK, but was in 40 columns and had no color. I'm using MDOS version 1.23H and ABASIC 3.00.

Ed Donovan has also written an ABASIC card file program that I like and use. It prints out file records that are 3x5-inches in size. Maybe we could get Ed to submit the program to your publication for review. Come on, Ed, the Geneve needs all the good program support it can get.

Matt G. Juppo
Bothell, Washington

TI on TV

I don't know how many of MICROpendium's readers watch the CBS News show "Sunday Morning," but on Sunday March 28 in the second half hour they did a story about an artist named "Bob."

"Bob" likes to draw money of all sizes and barter with it. The story was about the law deciding whether "Bob" was a crook or not. During one of the segments "Bob" was shown pressing a key or two on either a 99/4A or a 99/4 computer.

Hmmm! I wonder if "Bob" belongs to a user group?

Just thought I'd mention it.

Gene Downs
Danville, Kentucky

Reader learns from program

~A short note to tell you how much programs like Doodle (March 1993) are appreciated. The Missing Link has been on the back burner since shortly after I got it. I purchase most programs advertised, i.e. The Printers Apprentice (still have not figured it out), TI Artist-Plus, TI-Base, The Missing Link etc. Since I am not a programmer I watch for programs associated with what I buy. I was getting pretty discouraged when along came Doodle. Not only is the program good at what it does, that is how I learn to use the programs. So ... if authors of software expect to sell their programs, fairware or outright, then let us see more direct application of said programs in MICROpendium. Keep up the good work!

Harry Alston
Reedley, California

Wheel turns full circle, novice help needed

This letter was prompted upon receiving the March 1993 issue.

Taking into consideration that I have only been associated with the TI community for slightly over two years, I was awestruck by the realization that there was but one article in the entire issue I could relate to as a novice. Had I not mailed off my yearly renewal check the day before, I feel I may have withheld it entirely.

I really "felt bad" for many others in our user group to whom I had relentlessly suggested that they subscribe as individuals, and I did get calls from a few of them as they too looked through that same issue.

Even as new and inexperienced as I am in the TI community, I was elected to serve this year as president of VAST User Group in Phoenix, Arizona. I feel that happened because today the vast majority of our group are relatively new also.

What is happening is certainly evident, but some don't want to acknowledge it — we have come *full circle* Many of those who weathered the past 10 years and learned the hard way are now so knowledgeable that they are moving up (?) to the modern computers This fact has caused me personally, and many in our group, to try to locate the remaining "mavericks" in our community and entice them to become a part of our group, and we are successful at that.

Also serving as newsletter editor for VAST, I have *had.* to direct every issue to articles that are of interest to the newest member. And, yes, I am experiencing the same problem — there's nothing for the more experienced member. The problem is, when some other computer is "replaced" by a newer, faster, more expensive one, it is considered "dead" and no further training time is wasted on it, and rightfully so. *But,* the TI99/4A won't die — it is as new today as it was 10 years ago, and its owners *still* require training to use it! I don't envy you in this dilemma, but I do feel more emphasis *must* be given to articles that will be appreciated by the majority of *today's* TIers.

Raymond Frantz
Phoenix, Arizona

We wish you had identified the "one article" you could relate to, because looking over the issue in light of your comments we found several articles which to us did not seem overly technical. Regena's column and the MICROpendium Index from that issue require only typing in, not any particular programming skills. The same is true of Doodle, although it does require The Missing Link to work. Several user notes seemed fairly non-technical and of course the MICRO-Reviews seem this way to us. Hope we don't seem on the defensive, but we think perhaps you may be unnecessarily intimidated by some of our articles. Also, we don't want to reinvent the wheel. A great deal of beginner material is available in TI's manuals, back issues of MICROpendium, and in books which are available through a number of our advertisers — Ed.

Feedback is a reader forum. The editor may condense excessively lengthy submissions if necessary. We ask that writers limit themselves to one subject per submission. Our only requirement is that submissions be of interest to those using the TI99/4A, the Geneve 9640 or compatibles. Send items to **MICROpendium Feedback, P.O. Box 1343, Round Rock, TX 78680.**

Index correction

Elton Schooling has informed us that five lines need changing in the second half of his MICROpendium index for 1992 published in the March 1993 issue.

He says lines 80, 120, 130, 190 and 3[illegible] all contain the number 114. In all cases, the number should be changed to 111, Schooling says.

BASIC

Arizona flag

By REGENA

Fest-West "North" '93 at Salt Lake City, Utah, in February was great. Computer conventions are a good way to keep up with what is still going on with our TI computers. Of course, I also enjoy our conventions because I can renew friendships — and I think helpful friendships have kept the TI going as much as anything else.

Another fun feature of Fest-West is that the host site has changed over the past several years. Southern California started Fest-West, but Las Vegas was talked into starting the new trend of changing the site. Then San Diego, Tucson, Anaheim, Phoenix and Ogden/Salt Lake City each had the chance to be the host. Tucson will be the site for Fest-West '94.

The January 1990 issue of MICROpendium had a program for a map of Tucson with descriptions of some of the many things to see in Tucson. This month's program is the Arizona state flag and state song along with some facts about Arizona so you can get prepared to visit Fest-West next year.

After I wrote the first screen of printing, I used NUM 1000,50 to print the line numbers automatically with plenty of room to add statements. I wrote the CALL SOUND statements for the state song. Setting a value for T in Line 220, each statement uses T, 2*T or T/2 for the time a note is held. The tempo of the whole song can be changed (to be faster or slower) by simply changing the number in Line 220. I also use this method in case I need to adjust the tempo after graphics statements are added.

The next step was to add the graphic statements between the sound statements. Most of the graphic characters are defined between PRINT statements on the first screen. A subroutine in Lines 3800-3850 is used to read the character number and definition from DATA statements. Eight characters are defined at a time between the PRINT statements.

The star in the middle of the flag is supposed to be orange, but since that color is not available, I used dark yellow. Actually, the background color of the screen is dark yellow, and some of the colors are set as red or light yellow with dark yellow as the background. The black characters will automatically have black on the dark yellow background. Colors in other character sets are set to be red on light yellow.

CALL HCHAR and CALL VCHAR statements between the CALL SOUND statements draw the flag on the screen. The song is actually played through a second time because I couldn't get the flag all drawn in the first verse. After the last graphics characters are drawn, a FLAG variable is set equal to 2 and a GOTO statement starts repeating the music.

At the end of the song, FLAG will be 2, so there will be a delay. If you press any key at this time, the screen will clear and the program will end. If a key is not pressed, the program will start over at the beginning, and the variable FLAG will be set equal to 1.

With different slopes of lines in the colored rays on the flag, lots of characters needed to be defined. I did try to adjust the slopes of the lines so characters could be repeated along the lines. Repetitions do occur for one, two, three or four characters in the different lines. I tried to keep the definitions within the first 13 character sets, so this program may be typed in and run in TI Extended BASIC.

This program is nearly full memory, so be sure to use the following procedure before typing in or loading this program:

CALL FILES(1) <ENTER>
NEW <ENTER>

If you wish to save typing effort, you may have a copy of this program by sending $4 to *REGENA, 918 Cedar Knolls West, Cedar City, UT 84720.* Be sure to specify that you need "Arizona" for the TI and whether you want cassette or diskette.

ARIZONA FLAG

```
100 REM ARIZONA !238
110 REM BY REGENA !071
120 CALL CLEAR !209
130 FLAG=1 !210
140 RESTORE !148
150 CALL SCREEN(8)!153
160 CALL COLOR(2,2,1)!172
170 PRINT TAB(5);"** ARIZONA
 **": : :!166
180 CALL CHAR(121,"")!205
190 GOSUB 3810 !064
200 DATA 64,FFFFFFFFFFFFFFFF
,120,FFFFFFFFFFFFFFFF,60,FFF
EFEFCFCF8F8F,61,00000001071F
3FFF !228
210 DATA 62,000080C0F0F8FEFF
,63,FF7F7F3F3F1F1F0F,91,F0E0
E0C0C1878F3F,92,030F3F7FFFFF
FFFF !212
220 T=425 !120
230 PRINT "THE GRAND CANYON
STATE" !111
240 GOSUB 3810 !064
250 DATA 93,C0F0FCFFFFFFFFFF
,94,0F070703C3F1FCFE,96,FFFF
FEFEFCFCF8F8,97,7F7F3F3F1F1F
0F0F !144
260 DATA 98,F0F0E0E0C0C0808,
99,070703030101,104,80E0F8FC
FFFFFFFF,105,0000000000C0F0F
C !035
270 PRINT :"CAPITAL:  PHOENI
X" !188
280 GOSUB 3810 !064
290 DATA 106,0000000000030F3
F,107,00030F3FFFFFFFFF,108,0
080E0C0C0808,109,00010703030
101 !232
300 DATA 112,0000033FFFFFFFF
F,113,033FFFFFFFFFFFF,114,0
00000000000033F,115,00000000
033FFFFF !218
310 CALL COLOR(9,9,1)!186
320 CALL COLOR(10,12,1)!014
330 CALL COLOR(11,9,12)!023
340 PRINT :"STATEHOOD: FEBRU
ARY 14, 1912" !055
```

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REGENA ON BASIC—

(Continued from Page 7)

```
350 CALL COLOR(12,9,12)!024
360 CALL COLOR(13,9,12)!025
370 CALL COLOR(14,9,12)!026
380 PRINT :"     48TH STATE"
 !112
390 GOSUB 3810 !064
400 DATA 116,0000C0FCFFFFFFF
F,117,C0FCFFFFFFFFFFF,118,0
00000000000C0FC,119,00000000
C0FCFFFF !106
410 DATA 122,000103070F1F3F7
F,123,FFFFFFFFFFFCF0C,124,FF
FCF0C,125,0080C0E0F0F8FCFE !
070
420 PRINT :"STATE BIRD: CACT
US WREN" !106
430 GOSUB 3810 !064
440 DATA 126,FFFFFFFFFF3F0F0
3,127,FF3F0F03,128,F8F0E0E0C
0808,129,FFFFFFFFFEFEFCF8 !1
41
450 DATA 130,C0808,131,FEFEF
CF8F8F0E0E,132,1F0F070703010
1,133,FFFFFFFF7F7F3F1F !036
460 PRINT :"STATE FLOWER: BL
OSSOM OF THE     SAGUARO CAC
TUS" !123
470 GOSUB 3810 !064
480 DATA 134,030101,135,7F7F
3F1F1F0F0707,136,0F0F1F1F3F3
F7F7F,137,0000010103030707 !
006
490 DATA 138,F0F0F8F8FCFCFEF
E,139,00008080C0C0E0E,140,C0
C0C0C08080808,141,0303030301
010101 !242
500 PRINT :"MOTTO:  DITAT DE
US" !254
510 CALL CHAR(142,"F0F0F0F0E
0E0E0E")!091
520 PRINT TAB(9);"GOD ENRICH
ES" !217
530 CALL CHAR(143,"0F0F0F0F0
7070707")!085
540 CALL SOUND(T/2,494,2)!06
4
550 CALL SOUND(T/2,440,2)!05
5
560 CALL SOUND(T,440,2,196,7
)!073
570 CALL CHAR(40,"FCFCFCFCF8
F8F8F8")!200
580 CALL SOUND(T,392,2,294,6
,247,8)!028
590 CALL CHAR(41,"3F3F3F3F1F
1F1F1F")!109
600 CALL SOUND(T,370,2,294,7
,247,9)!026
610 CALL CHAR(47,"FFFFFFFFFE
FEFEFE")!015
620 CALL SOUND(T,392,2,294,7
,247,9)!030
630 CALL CHAR(43,"FFFFFFFF7F
7F7F7F")!211
640 CALL SOUND(T,330,2,196,8
)!072
650 CALL SOUND(T,294,2,247,8
)!078
660 CALL SOUND(T,294,2,147,8
)!077
670 CALL SOUND(T/2,247,2)!06
0
680 CALL CLEAR !209
690 CALL SOUND(T/2,262,2)!05
7
700 CALL SOUND(T,294,2,247,6
,196,8)!030
710 CALL SCREEN(11)!196
720 CALL COLOR(2,9,12)!230
730 CALL SOUND(T,330,2,247,6
,196,8)!021
740 CALL HCHAR(13,1,64,128)!
024
750 CALL SOUND(T,370,3,147,7
)!072
760 CALL HCHAR(17,1,64,128)!
028
770 CALL SOUND(T,392,3,147,7
)!076
780 CALL HCHAR(21,1,64,128)!
023
790 CALL SOUND(T,523,3,185,8
)!075
800 CALL HCHAR(9,16,96)!015
810 CALL HCHAR(9,17,97)!017
820 CALL SOUND(T,523,3,262,9
,294,9)!026
830 CALL HCHAR(10,16,98)!058
840 CALL HCHAR(10,17,99)!060
850 CALL SOUND(T,523,4,262,1
1,294,8)!068
860 CALL HCHAR(11,13,104)!09
3
870 CALL HCHAR(11,14,105)!09
5
880 CALL SOUND(T,494,3)!130
890 CALL HCHAR(11,20,107)!09
4
900 CALL HCHAR(11,19,106)!10
1
910 CALL SOUND(T,494,2,147,8
)!079
920 CALL HCHAR(12,15,108)!10
0
930 CALL HCHAR(12,18,109)!10
4
940 CALL SOUND(T,440,2,147,8
)!070
950 CALL HCHAR(13,16,61)!051
960 CALL HCHAR(13,17,62)!053
970 CALL SOUND(T,415,2,262,6
,185,8)!020
980 CALL HCHAR(13,15,32)!048
990 CALL HCHAR(13,18,32)!051
1000 CALL SOUND(T,440,2,262,
6,185,8)!018
1010 CALL HCHAR(13,14,60)!04
8
1020 CALL HCHAR(13,19,63)!05
6
1030 CALL SOUND(T,494,3,185,
6)!080
1040 CALL HCHAR(14,15,92)!05
5
1050 CALL HCHAR(14,18,93)!05
9
1060 CALL SOUND(T,440,3,294,
6,262,7)!019
1070 CALL HCHAR(14,14,91)!05
3
1080 CALL HCHAR(14,19,94)!06
1
1090 CALL SOUND(T,440,3,294,
8,262,9)!023
1100 CALL HCHAR(12,19,112)!0
99
1110 CALL HCHAR(12,20,113)!0
92
1120 CALL HCHAR(10,9,121,2)!
221
1130 CALL HCHAR(10,23,121,2)
!010
1140 CALL SOUND(T,392,4)!128
1150 CALL HCHAR(12,21,120,12
)!059
1160 CALL HCHAR(9,25,121,4)!
229
1170 CALL HCHAR(9,5,121,4)!1
78
1180 CALL SOUND(T,392,2,277
6,220,8)!020
1190 CALL HCHAR(11,21,114)!0
93
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REGENA ON BASIC—

(Continued from Page 8)

```
1200 CALL HCHAR(11,22,115)!0
95
1210 CALL HCHAR(11,23,112)!0
93
1220 CALL HCHAR(11,24,113)!0
95
1230 CALL HCHAR(11,25,120,8)
!018
1240 CALL SOUND(T,330,2,277,
6,220,8)!012
1250 CALL HCHAR(10,25,114)!0
96
1260 CALL HCHAR(10,26,115)!0
98
1270 CALL HCHAR(10,27,112)!0
96
1280 CALL HCHAR(10,28,113)!0
98
1290 CALL HCHAR(10,29,120,4)
!017
1300 CALL SOUND(T,370,3,196,
7)!076
1310 CALL HCHAR(9,29,114)!05
9
1320 CALL HCHAR(9,30,115)!05
2
1330 CALL HCHAR(9,31,112)!05
0
1340 CALL HCHAR(9,32,113)!05
2
1350 CALL SOUND(T,392,3,196,
7)!080
1360 CALL HCHAR(12,14,116)!0
98
1370 CALL HCHAR(12,13,117)!0
98
1380 CALL HCHAR(12,1,120,12)
!008
1390 CALL SOUND(T,440,3,185,
7)!072
1400 CALL HCHAR(11,12,118)!0
97
1410 CALL HCHAR(11,11,119)!0
97
1420 CALL HCHAR(11,10,116)!0
93
1430 CALL HCHAR(11,9,117)!05
3
1440 CALL HCHAR(11,1,120,8)!
119
1450 CALL SOUND(T,440,3,294,
6,262,8)!020
1460 CALL HCHAR(10,8,118)!05
2
1470 CALL HCHAR(10,7,119)!05
2
1480 CALL HCHAR(10,6,116)!04
8
1490 CALL HCHAR(10,5,117)!04
8
1500 CALL HCHAR(10,1,120,4)!
214
1510 CALL SOUND(T,440,3,294,
8,262,10)!064
1520 CALL HCHAR(9,4,118)!007
1530 CALL HCHAR(9,3,119)!007
1540 CALL HCHAR(9,2,116)!003
1550 CALL HCHAR(9,1,117)!003
1560 CALL SOUND(T/2,494,3)!0
65
1570 CALL HCHAR(8,1,121,6)!1
75
1580 CALL SOUND(T/2,440,4)!0
57
1590 CALL HCHAR(8,27,121,6)!
232
1600 CALL SOUND(T,440,2,196,
6)!072
1610 CALL VCHAR(1,16,120,8)!
238
1620 CALL VCHAR(1,17,120,8)!
239
1630 CALL HCHAR(7,1,121,4)!1
72
1640 CALL HCHAR(7,29,121,4)!
231
1650 CALL SOUND(T,392,3,294,
6,247,8)!029
1660 CALL VCHAR(6,15,141)!06
5
1670 CALL VCHAR(6,18,140)!06
7
1680 CALL VCHAR(5,15,143)!06
6
1690 CALL VCHAR(5,18,142)!06
8
1700 CALL SOUND(T,370,3,294,
8,247,9)!028
1710 CALL VCHAR(4,15,41)!013
1720 CALL VCHAR(4,18,40)!015
1730 CALL VCHAR(3,15,43)!014
1740 CALL VCHAR(3,18,47)!021
1750 CALL SOUND(T,392,3,294,
8,247,9)!032
1760 CALL VCHAR(1,15,120,2)!
231
1770 CALL VCHAR(1,18,120,2)!
234
1780 CALL VCHAR(2,14,141)!06
0
1790 CALL VCHAR(2,19,140)!06
4
1800 CALL SOUND(T,330,3,196,
7)!072
1810 CALL VCHAR(1,14,143)!06
1
1820 CALL VCHAR(1,19,142)!06
5
1830 CALL HCHAR(6,1,121,2)!1
69
1840 CALL HCHAR(6,31,121,2)!
221
1850 CALL SOUND(T,294,2,247,
7)!077
1860 CALL VCHAR(7,18,121,2)!
241
1870 CALL VCHAR(3,19,121,4)!
240
1880 CALL VCHAR(1,20,121,4)!
230
1890 CALL SOUND(T,294,2,147,
7)!076
1900 CALL VCHAR(1,21,121,2)!
229
1910 CALL SOUND(T/2,247,3)!0
61
1920 CALL SOUND(T/2,262,3)!0
58
1930 CALL SOUND(T,294,3,247,
6,196,8)!031
1940 CALL VCHAR(10,18,136)!1
16
1950 CALL VCHAR(9,18,137)!07
6
1960 CALL VCHAR(10,19,128)!1
18
1970 CALL VCHAR(9,19,129)!07
8
1980 CALL VCHAR(9,20,130)!06
2
1990 CALL SOUND(T,494,3,247,
6,196,8)!033
2000 CALL SOUND(T,523,2,147,
8)!072
2010 CALL HCHAR(8,19,136)!06
1
2020 CALL HCHAR(8,20,131)!04
8
2030 CALL HCHAR(7,19,137)!06
1
2040 CALL HCHAR(7,20,120)!04
5
2050 CALL HCHAR(7,21,128)!05
```

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REGENA ON BASIC—

(Continued from Page 9)

```
4
2060 CALL SOUND(T,494,3,147,
8)!080
2070 CALL SOUND(T,330,3,131,
8)!062
2080 CALL VCHAR(6,20,136)!06
5
2090 CALL VCHAR(6,21,129)!06
8
2100 CALL VCHAR(6,22,130)!06
1
2110 CALL VCHAR(5,20,137)!06
5
2120 CALL VCHAR(5,21,120)!05
8
2130 CALL SOUND(T,330,3,196,
6,165,7)!020
2140 CALL HCHAR(5,22,131)!04
7
2150 CALL HCHAR(4,21,136)!05
0
2160 CALL VCHAR(3,22,120,2)!
231
2170 CALL HCHAR(4,23,128)!05
3
2180 CALL HCHAR(3,21,137)!05
0
2190 CALL SOUND(T,330,3,196,
8,165,9)!024
2200 CALL HCHAR(3,23,129)!05
3
2210 CALL HCHAR(3,24,130)!04
6
2220 CALL HCHAR(2,22,136)!04
9
2230 CALL HCHAR(2,24,131)!04
6
2240 CALL VCHAR(1,23,120,2)!
230
2250 CALL SOUND(T/2,330,3)!0
54
2260 CALL VCHAR(1,24,120)!05
7
2270 CALL SOUND(T/2,311,3)!0
53
2280 CALL VCHAR(1,22,137)!06
3
2290 CALL VCHAR(1,25,128)!06
6
2300 CALL SOUND(T,294,2,147,
8)!077
2310 CALL VCHAR(7,15,121,2)!
238
2320 CALL VCHAR(3,14,121,4)!
235
2330 CALL VCHAR(1,13,121,4)!
232
2340 CALL VCHAR(1,12,121,2)!
229
2350 CALL SOUND(T,294,2,247,
6,196,8)!030
2360 CALL HCHAR(10,15,138)!1
01
2370 CALL HCHAR(10,14,132)!0
94
2380 CALL HCHAR(9,15,139)!06
1
2390 CALL HCHAR(9,14,133)!05
4
2400 CALL HCHAR(9,13,134)!05
4
2410 CALL SOUND(T,523,2,220,
6)!062
2420 CALL VCHAR(8,14,138)!07
2
2430 CALL VCHAR(8,13,135)!06
8
2440 CALL VCHAR(7,14,139)!07
2
2450 CALL VCHAR(7,13,120)!06
1
2460 CALL VCHAR(7,12,132)!06
3
2470 CALL SOUND(T,494,2,196,
6)!081
2480 CALL HCHAR(6,13,138)!05
5
2490 CALL HCHAR(6,12,133)!04
9
2500 CALL HCHAR(6,11,134)!04
9
2510 CALL HCHAR(5,13,139)!05
5
2520 CALL HCHAR(5,12,120)!04
4
2530 CALL SOUND(T,440,2,165,
6)!068
2540 CALL VCHAR(5,11,135)!06
3
2550 CALL VCHAR(4,12,138)!06
6
2560 CALL VCHAR(3,11,120,2)!
229
2570 CALL VCHAR(4,10,132)!05
8
2580 CALL SOUND(T,330,2,277,
6,220,8)!012
2590 CALL HCHAR(3,12,139)!05
2
2600 CALL HCHAR(3,10,133)!04
4
2610 CALL HCHAR(3,9,134)!004
2620 CALL HCHAR(2,11,138)!04
9
2630 CALL VCHAR(1,10,120,2)!
226
2640 CALL SOUND(T,330,2,277,
8,220,10)!056
2650 CALL VCHAR(2,9,135)!018
2660 CALL VCHAR(1,11,139)!06
3
2670 CALL VCHAR(1,9,120)!011
2680 CALL VCHAR(1,8,132)!013
2690 CALL SOUND(T/2,330,3)!0
54
2700 CALL HCHAR(8,21,121)!04
8
2710 CALL HCHAR(7,22,121)!04
8
2720 CALL SOUND(T/2,311,3)!0
53
2730 CALL VCHAR(5,23,121,2)!
235
2740 CALL VCHAR(4,24,121,2)!
235
2750 CALL SOUND(T/2,294,3,14
7,7)!012
2760 CALL VCHAR(2,25,121,3)!
235
2770 CALL SOUND(T/2,494,3,14
7,7)!014
2780 CALL VCHAR(1,26,121,3)!
235
2790 CALL SOUND(T,440,2,262,
6,185,8)!018
2800 CALL VCHAR(1,27,121,2)!
235
2810 CALL VCHAR(1,28,121)!06
2
2820 CALL HCHAR(8,12,121)!04
8
2830 CALL HCHAR(7,11,121)!04
6
2840 CALL VCHAR(5,10,121,2)!
231
2850 CALL SOUND(T,440,2,262,
8,185,9)!021
2860 CALL VCHAR(4,9,121,2)!1
89
2870 CALL VCHAR(2,8,121,3)!1
87
2880 CALL VCHAR(1,7,121,3)!1
85
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REGENA ON BASIC—

(Continued from Page 10)

```
2890 CALL VCHAR(1,6,121,2)!1
83
2900 CALL SOUND(T,392,3)!127
2910 CALL VCHAR(1,5,121)!008
2920 CALL HCHAR(10,20,122)!0
90
2930 CALL HCHAR(10,21,123)!0
92
2940 CALL HCHAR(10,22,124)!0
94
2950 CALL SOUND(T,392,1,247,
6,196,8)!028
2960 CALL HCHAR(10,13,125)!0
95
2970 CALL HCHAR(10,12,126)!0
95
2980 CALL HCHAR(10,11,127)!0
95
2990 CALL HCHAR(9,21,122)!05
0
3000 CALL SOUND(T,392,1,147,
8)!075
3010 CALL HCHAR(9,22,120)!04
9
3020 CALL HCHAR(9,23,123)!05
3030 CALL HCHAR(9,24,124)!05
5
3040 CALL HCHAR(9,12,125)!05
3
3050 CALL SOUND(2*T,392,1,19
6,10)!055
3060 CALL HCHAR(9,11,120)!04
7
3070 CALL HCHAR(9,10,126)!05
2
3080 CALL HCHAR(9,9,127)!012
3090 CALL HCHAR(8,22,122)!05
0
3100 CALL HCHAR(8,23,120,2)!
223
3110 CALL HCHAR(8,25,123)!05
4
3120 CALL HCHAR(8,26,124)!05
6
3130 CALL HCHAR(8,11,125)!05
1
3140 CALL HCHAR(8,9,120,2)!1
78
3150 CALL HCHAR(8,8,126)!009
3160 CALL HCHAR(8,7,127)!009
3170 IF FLAG=2 THEN 3750 !13
2
3180 FLAG=2 !211
3190 CALL SOUND(T/2,494,2)!0
64
3200 CALL SOUND(T/2,440,2)!0
55
3210 CALL SOUND(T,440,2,196,
7)!073
3220 CALL HCHAR(7,23,122)!05
0
3230 CALL HCHAR(7,24,120,3)!
224
3240 CALL HCHAR(7,27,123)!05
5
3250 CALL HCHAR(7,28,124)!05
7
3260 CALL SOUND(T,392,2,294,
6,247,8)!028
3270 CALL HCHAR(7,10,125)!04
9
3280 CALL HCHAR(7,7,120,3)!1
76
3290 CALL HCHAR(7,6,126)!006
3300 CALL HCHAR(7,5,127)!006
3310 CALL SOUND(T,370,2,294,
7,247,9)!026
3320 CALL VCHAR(6,24,122)!06
4
3330 CALL HCHAR(6,25,120,4)!
225
3340 CALL HCHAR(6,29,123)!05
6
3350 CALL HCHAR(6,30,124)!04
9
3360 CALL SOUND(T,392,2,294,
7,247,9)!030
3370 CALL HCHAR(6,9,125)!007
3380 CALL HCHAR(6,5,120,4)!1
74
3390 CALL HCHAR(6,4,126)!003
3400 CALL HCHAR(6,3,127)!003
3410 CALL SOUND(T,330,2,196,
8)!072
3420 CALL VCHAR(5,25,122)!06
4
3430 CALL HCHAR(5,26,120,5)!
226
3440 CALL VCHAR(5,31,123)!06
2
3450 CALL VCHAR(5,32,124)!06
4
3460 CALL SOUND(T,294,2,247,
8)!078
3470 CALL VCHAR(5,8,125)!019
3480 CALL HCHAR(5,3,120,5)!1
72
3490 CALL VCHAR(5,2,126)!014
3500 CALL VCHAR(5,1,127)!014
3510 CALL SOUND(T,294,2,147,
8)!077
3520 CALL HCHAR(4,26,122)!05
0
3530 CALL HCHAR(4,27,120,6)!
227
3540 CALL HCHAR(4,7,125)!003
3550 CALL HCHAR(4,1,120,6)!1
70
3560 CALL SOUND(T/2,247,2)!0
60
3570 CALL SOUND(T/2,262,2)!0
57
3580 CALL SOUND(T,294,2,247,
6,196,8)!030
3590 CALL HCHAR(3,27,122)!05
0
3600 CALL HCHAR(3,28,120,5)!
226
3610 CALL HCHAR(3,6,125)!001
3620 CALL HCHAR(3,1,120,5)!1
68
3630 CALL SOUND(T,330,2,247,
6,196,8)!021
3640 CALL HCHAR(2,28,122)!05
0
3650 CALL HCHAR(2,29,120,4)!
225
3660 CALL HCHAR(2,5,125)!255
3670 CALL HCHAR(2,1,120,4)!1
66
3680 CALL SOUND(T,370,3,147,
7)!072
3690 CALL HCHAR(1,29,122)!05
0
3700 CALL HCHAR(1,30,120,3)!
215
3710 CALL HCHAR(1,4,125)!253
3720 CALL HCHAR(1,1,120,3)!1
64
3730 CALL SOUND(T,392,3,147,
7)!076
3740 GOTO 790 !104
3750 FOR J=1 TO 100 !155
3760 CALL KEY(3,K,S)!190
3770 IF S=1 THEN 3860 !043
3780 NEXT J !224
3790 GOTO 120 !199
3800 REM DEFINE CHARACTERS !
133
3810 FOR G=1 TO 8 !061
3820 READ C,C$ !244
3830 CALL CHAR(C,C$)!081
3840 NEXT G !221
3850 RETURN !136
3860 CALL CLEAR !209
3870 END !139
```

THE ART OF ASSEMBLY — PART 22

The business end of programming

By BRUCE HARRISON
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From time to time in this column we've broken away from the drier aspects of Assembly Language programming. Today we thought we should devote a whole column to a topic we have never seen touched, namely the business of making a business out of this programming "hobby". Like the Assembly programming itself, this isn't easy.

THE RULES

Rule number one is that there are no rules. Each company that chooses to serve this very special market seems to take its own unique approach. Some fall by the wayside using "sound" business practices, while some succeed in spite of very bad practices. Our own practices in such areas as record keeping are shamefully lax, yet we have been known to show a profit in some years.

For us, the only real Rule number one is to serve our customers. We exist as a business to serve them, not to serve ourselves. We'll stay around and make modest profits only so long as people in the community can trust us to serve their needs. There in the last part of that sentence is the biggest single problem for any software business, since to serve the needs of TI owners, one must know what those needs are. Most of the time, this boils down to guessing what might be needed, and then keeping one's goals in perspective.

There's always someone who expresses needs like "What I need is a MacIntosh emulation program for my TI". Laugh if you like, but some of the letters in MICROpendium come pretty close to that kind of need statement. It certainly might be a big seller, but could also become a bottomless pit for the programmer.

THINK BIG

If anything can kill off a TI programming effort, this is it. Anyone remember PRESS? That, in our opinion, was a victim of the THINK BIG syndrome. We see this all over the place in the PC market, where for example a popular word processor occupies five megabytes on the hard disk, and needs somewhere around one megabyte of memory to operate. In that market, of course, such products actually succeed, because there's continuous pressure for people to upgrade to "bigger and better" machines. As the machines get bigger and faster, the programs for them get bigger and slower. Programmers for the PC have no incentive to write efficient programs.

For those of us trying to stay "within bounds" on the TI, such thinking must be studiously avoided. After some time, there is a kind of "sixth sense" we develop which keeps us from trying to make Lotus Symphony for the TI. (Somebody will probably try that soon. Write it in C, and it will all be easy.)

LUCKY GUESSES

In a lot of cases, we've done things because of our own needs, then found that there were others with that same need, and therefore a market existed. Two examples should serve to illustrate this point.

Some time ago, we had a need to move files back and forth between our PCs and our TIs. Since we have only single density disk capability on our TIs, PC Transfer was not an option. Thus we decided to create a little "utility" to transfer text files (actually source code) via a simple RS-232 connection. Once that was working, my partner Dolores suggested that I should "dress it up" a bit and release it as a commercial product. Months (maybe 12 of them?) went by, with her suggesting and my resisting, but when the "dressing up" was done, we had Smart Connect, which was one of our all-time best sellers.

Likewise our Word Processor, which was originally written to satisfy our own needs, found a good market among others who hate TI-Writer. When that product was reviewed by Stan Krajewski, who himself always disliked the TI-Writer approach, we suddenly found there were lots of people who felt the same way. Sales soared. This made us, and presumably a lot of others, happy people.

Conversely, some of our worst disasters as commercial products have been those that we imagined someone else would need, even though we didn't need such things ourselves. That's one reason our catalog has shrunk from time to time, as products we introduced were quietly discontinued.

THINK SMALL

This little bon mot was not our invention, but sound advice given us by Jim Peterson. We're told that Leopold Mozart gave similar advice to his son Wolfgang Amadeus. There are plenty of small things people with TIs need. Many of these small things have found their way into our public domain utility disks, and into Jim Peterson's catalog. A few have resulted in commercial products like Easy Data. Not all small things are good ones, of course, but when we hit upon something which fills a "niche", it's good for the whole community. Of course a small product that sells many copies is good for our bottom line as well.

SHIP THE PRODUCT

In Philadelphia, where your author grew up, there was a bakery with a little reminder to the clerk on a sign beside the cash register. The sign said "Register first, Wrap after". Today, there is a tendency among some software companies to carry that idea to extremes. Checks are deposited (Register first) months before the products are shipped (Wrap after). We don't think that's right, especially in the TI "family". Over all the years we have been selling products to TI users, we have never (knock on wood) had a customer's check bounce. We've therefore adopted the opposite policy from that espoused by the bakery. Ship the product first, then take the check to the bank.

Yes, that's a radical idea, but one we think should be common among firms serving the TI community. Customers do notice when disks arrive before their checks clear, and they'll feel much better about ordering your products when their orders get prompt service. Customers also notice little things like enclosing a letter with each product shipped, and having the company's phone number offered up for product assistance.

While we are on the subject of radical ideas, we think it's also a

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good idea in some cases to offer a full refund if the customer is unable to use the product, or misunderstood its purpose, or just plain dislikes it. It's better for your business in the long run to refund $5.00 or $10.00 to a customer than to have that customer forever feeling cheated. We have given refunds on a number of occasions, and will continue to follow that practice.

DON'T QUIT YOUR DAY JOB

Your author should be the last one to offer this advice, having "quit his day job" over a year ago. Of course that wasn't quitting, but retirement after 33 years with the Government, and there is an annuity income to keep the wolf from our door. In spite of our own status, we recommend that programmers just starting a business should make it an "evenings and weekends" operation for some time. Unlike the PC market, which is still growing, the TI market must inevitably shrink a little with each passing year, as more TIs get shoved aside by the ubiquitous PCs and Macs. It's not quite at the "buggy whips" stage yet, but there will be no new Fortune 500 companies arising from the TI Software market. Keep your day job, and get ready to spend endless hours at the machine. Say goodbye to friends and family, if you have any. The business will consume all the excess energy you've got. If your products start to sell, it gets tougher, because you'll have no time to develop new products while selling the existing ones. My partner went through a serious case of pneumonia thanks to that kind of pressure.

There are ways around this dilemma. Our friend Chris Bobbitt, for example, rarely writes any software himself, but concentrates his efforts on selling programs written by others. That has, for the most part, worked out well for him. Asgard will remain one of the "giants" in our cottage industry as long as there are some diehard TI users around.

Other companies, like Texaments, also rely mainly on what might be called "guest authorship" for the bulk of their software products. Our little operation may be among the minority in selling only what our own in-house staff of two people can create. If you're a gifted programmer, and like most, not a businessman, the idea of becoming an "author" for Asgard or Texaments may be better than forming your own company. Of course we did not follow this advice either, but maybe another adage will fit here. An old friend of ours in Philadelphia, who's a very successful businessman, gave us this sage advice: "It's good to learn from your mistakes, but it's even better to learn from other people's mistakes." We are forever grateful to Sal Roggio for that one.

PEOPLE ARE FUNNY

Here we go again with thanks, this time to Art Linkletter. For our younger readers, he didn't always sell Contour Chairs for a living, but had a radio (and later TV) show with the above title. Of course in the case of a software business, it should read "Customers are funny". There's another old saw that says "The Customer is Always

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Right". In some respects that's true, but sometimes the customer needs some educating, or just more information than he started out with.

Customers can sometimes do really funny things. Recently, one of our customers received a shipment from us and promptly returned the disks because they were SS/SD disks. That was a "first" in our experience. We offer most of our products on SS/SD disks because that's the one format that every TI system will work with. Our customer was thoughtful enough to include his phone number in the note he sent with the disks. We called. "What kind of system do you have?" "Myarc mini-system." "Did you try out the disks?" "No, my TI system isn't set up just now." He'd bought a PC, and didn't have room for both systems to be operational. It seems this fellow does everything on his TI in DS/DD format, and was unaware that the SS/SD disks could be read by his drives. We sent the disks back to him with a plea that he try using them, or copying them onto DS/DD initialized disks if he'd like. Of course we offered to send DS/DD format if his system really wouldn't read SS/SD. That will be a problem, since our company doesn't own a TI system with DS/DD capability, but we'll find a way if we must. We do have some friends in the business.

Other examples abound, but we'll only throw in one more. A customer who had bought Smart Connect called to say that he couldn't get the PRINTINST program to work, and so could not print the instructions for using the program. "What happens when you try running PRINTINST?" "We get an error message I/O error 00." A sudden chill crept through my body. "Does the disk drive light come on before this error report?" "Just a minute, I'll try it again and see." A pause while the customer walked from the phone to the TI and back again. "No, the drive light doesn't come on, and the message says I/O error 00 in 100." By now we had our own TI fired up, with a copy of Smart Connect in Drive 1 and with PRINTINST loaded under XB. Line 100 says OPEN #2:"PIO.LF",OUTPUT. We all know how PIO behaves, and this certainly isn't it. Error code 00 means BAD DEVICE NAME. Hmmmm.

After a few more minutes of discussion, we determined that his printer was connected via RS-232, and that this particular RS-232 card had no PIO port on it. We gave the customer some instructions for editing line 100 to send the instructions to his printer on the serial port, then rung off. Presumably this worked, as no more phone calls came back. We've never seen an RS-232 card for the TI which lacked a PIO port, but it appears there are such beasts around. You learn something every day.

In all fairness, that particular customer was not himself a TI owner, but had bought Smart Connect for a relative who was a TI owner with a newly acquired PC. Still, nobody thought of looking at what line 100 contained before calling, much less of editing it for RS-232 output.

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ART OF ASSEMBLY—

WHAT DO THOSE TEA LEAVES MEAN?

The success of our little Smart Connect product has got us to wondering why it's so popular. Obviously, a lot of TI owners now have PCs as well as TIs. There are two distinct schools of thought about why so many PC/TI owners want to transfer files between the two machines.

Our opinion is that this is step one of two steps, with the second being to place the TI on the auction block or the garbage heap, after transferring all "important" text files to the PC. If we're right, that means the beginning of the end for us as a business. Maybe that makes us the ultimate pessimist, but we've always said that the advantage of pessimism is that we may be surprised, but are rarely disappointed at what happens. Of course our own example is different from that dismal scenario. We have a total of three PCs which coexist with our two TIs, and your author still uses the TI for everything except those things that must be done on the PC. But we are not typical of the "average" user anyway.

Our good friend Barry Traver takes another message from the evidence we just cited, that people are looking for some kind of coexistence between the two machines. He and we agree that there are capabilities in the TI that no PC offers at any price. Maybe, he reasons, the TI is being kept for its strengths, while the text files are being transferred to the PC so it can serve for taking care of more mundane matters like correspondence.

Who's right? Who knows? This time perhaps nobody's right. At one time we would have predicted that we'd "closet" our TIs within a few months of getting our first PC, yet here we are years later, still banging these articles out on the little 99/4A keyboard. I think it was Mark Twain who said something about the reports of his death being "greatly exaggerated." Our TI seems to be saying the same thing.

WHAT TO DO

How would we know? The only way to find out whether you can become a giant of industry is to try doing it. You may be the one who comes up with the next major breakthrough, making the TI emulate the MacIntosh. You might become the "Microsoft" of the TI world. This reminds us of another little anecdote, with which we'll end today's business advice.

There is a TV commercial currently running on our local channels in which a customer approaches a hot dog stand and asks for a hot dog with mustard. The vendor is heard to reply "I got ketchup and onions." The customer, astounded, says "You sell hot dogs and you don't have mustard?" The vendor repeats, "I got ketchup and onions, ketchup and onions." The customer, resignedly, "Okay, okay. Ketchup and onions. Who knows, could be good!." Maybe your version of Lotus Symphony for the TI will be the next "Hot dog with ketchup and onions". Could be good! If that commercial can sell haircuts (yes, it's a commercial for a hair cutting salon) then anything is possible.

Next month we promise no more business advice. With a little advice from us, AT&T could be in Chapter 11. It will be back to the serious programming stuff, with a good healthy dose of source code on the side.

FestWest 'North' '93

A Utah Experience

By DAVID MISCHLER

Those who made the trek to Salt Lake City, Utah, had an enjoyable time, while those who didn't, missed out on a worthwhile weekend. Located in downtown Salt Lake City at the Howard Johnson Hotel, attendees found it easy to get around the Salt Lake Valley and the ski resorts. Hospitality started early in the week at Cedar City, Utah for those traveling north to Salt Lake City. Regena was pleased with those who stopped by her place for a brief encounter with southern Utah.

This FestWest was hosted by the Ogden TI-99/4A Users Group and the Salt Lake Valley Users Group (SLAVES). On Friday, Feb. 12, the vendors started setting up for the weekend festival. The FestWest Committee believes that even though the attendance was lower than anticipated, it was a successful Fest. While the national weather news reports were supporting our skiing,this may have discouraged a few potential visitors from trying a go at Utah in February.

After a few introductions and the unloading of several vehicles, the festival sales room started filling up with computer equipment and vendors from across the United States. Co-Chairpersons Mel Bragg and Dave DeHeer explained to the vendors some of the rules of the fest, and the FestWest Committee encouraged early vendor and visitor registration this year. The Southwest 99ers were there to help register those not pre-registering.

The hospitality room was located off the hotel main lobby. TI computers were set up for children and adults alike to use for games and pleasure. Food service was provided here also, by hostess JoAnn Bragg. This was a busy place with so many stopping by to rest and snack and visit throughout the weekend. Later Friday evening, times and subjects for the weekend seminars were determined and posted.

Only one new product was announced at this FestWest, the "Watchamacalit" developed and produced by the Ogden TI Users Group. It is an add-on product for the Myarc HFDC users whose clock does not keep accurate time. This product has battery back up, and, once set, keeps time on the HFDC for the time dating of files or programs on a hard disk. This "brainchild" of Dave DeHeer is extremely accurate and fully adjustable.

Seminars keep visitors busy

Seminars were given throughout both days of the FEST WEST. The first was by Del Wright (D. Wright Stuff) on "Practical Modifications to the PE Box." The first and easiest is to add foam strips between the cards to improve cooling air flow through

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FEST WEST—

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them. He demonstrated the tear down of the PE Box and the replacement of the power supply with a 200 watt unit. Also, since regulated power is provided to all boards, specific regulator chips on the boards must be shunted. He provides this information with his replacement power supplies. His use of a power screwdriver really speeds up the disassemble and reassembly of the PE Box. Del also presented good information on the disk drives in use with the TI.

The next Saturday seminar was by Ted Kieper (Competition Computers) on printers. He described the various types and it was obvious he really knows the printer business. He answered questions from the floor for any and all machines. He described the method of operation of all units, 9-pin, 24-pin, thermal, ink jet, and laser. The advantages and disadvantages of each were discussed, along with reliability and repairability. His talk also covered user maintenance to assure long and reliable operation.

The first after lunch seminar was by Don Shorock, demonstrating an informational program he has developed for the Boy Scout program. His use of sprites and clever screen placement of questions and answers shows not only his ability in programming educational materials, but also a love of the Scouting program. He has designed this system so that it is completely usable by any passer-by at the Scout Museum. It asks questions and the user provides answers that are accepted or corrected. He has designed it so that the TI is totally enclosed and only a joystick is required outside for the user to communicate with the system. He also gave a comprehensive briefing on the several bulletins he publishes for many organizations. He develops the art work and graphics with Picasso, TI-Artist, and Graphx, then uses Page Pro to put it all together.

The next seminar was presented by Ken Gilliland (Notung Software). His research to produce programs such as "Disk of the West," "Disk of the Ancient Ones" and "Helmets" prove him to be a frustrated archaeologist as he stated. His research has produced extremely accurate views of ancient history in the displays on these games. While his seminar was short, it was interesting and provided an insight into the extra effort it takes to produce an outstanding software product. He had many visitors at his booth as a result of this briefing.

Rich Gilbertson (CADD Electronics).spoke on the new and improved Extended BASIC he developed. He has increased line and interactive capacity. He demonstrated many areas where time requirements are greatly reduced. The only requirement that would be a hindrance to some potential users is that a GRAM device is needed to make it work. But it does show that the old TI is still more capable than any of us realize. Improved software and programs are continually being developed.

Bob Webb presented his seminar on "Easy Assembly," directed towards beginners and accomplished programmers alike. His book provides an understandable explanation of the TI TMS 9900 chip. He explained the TI approach that provides operational speeds over the IBM. He uses the E/A edit program to write in assembly and this is well explained in his book. His presentation showed the relationship betwee assembly language and BASIC.

The last seminar Saturday was by the second half of the Shorock team, Tom Shorock. This 13-year-old had been studying and using c99 for a month and demonstrated a c99 program running against an Extended BASIC program. His test routine for both was a Keno game program running a 10 Spot randomly selected card. The c99 program ran 100 game iterations while the Extended BASIC ran three. The great speed difference was unbelievable, except that we were witnesses to it. He uses the E/A cartridge for this program. He recommended reference books that had helped him in his rapid learning of the language. He pointed out that it requires learning of new coding for various statements and commands. He passed around examples of identical programs in each of the these languages; c99 is rather compact and does so much more. Demo disk were available for use at user group meetings.

SUNDAY SEMINARS

Sunday seminars started with Jac Mathis of the SW 99ers on his new DM 1000, Version 6.1. This is the update by Jack and Ralph Romans. He pointed out that he has the full support of the Ottawa Group in this effort and continually advises that group of improvements and progress. Jack gave us a comprehensive explanation of everything on the screen display. The demonstration proved the much higher speed and the extra features available. His explanation of all header information was given in great detail and they have added much more information right where users need it.

Beery Miller (9640 News) spoke on the Geneve and its supporting software. While this specialized machine is in shorter supply than the innumerable TIs about the world, the knowledge of the owners tends to be much higher. Therefore, Beery took the approach of sitting down with this advanced group of TIers and chairing a round table type of discussion. This approach was well received by the attendees. It was a most open, informal and informative d cussion.

Regena (Cheryl Whitelaw) was the first after lunch presenter. She gave a small bit

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'Return to Pirate's Island' now available on disk

"Return to Pirate's Island," the only ScottAdams adventure ever produced as a module by TI is now available on disk.

The adventure, with graphics, is available from Tex-Comp under a license from Scott Adams, according to Jerry Price of Tex-Comp. The game is a sequel to "Pirate Adventure."

According to Price, the disk features a unique loader by Ray Kazmer which is an Editor/Assembler simulator. This allows the game to load out of Extended BASIC as well as directly from Editor/Assembler.

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Word Habits – Keep reading and writing habits up with current demands.

Amulet – Search the ravenous building to find the marvelous Amulet.

Caterpillar Climb – Solve addition problems to move your caterpillar over the wall.

Financial Quiz – Check the pulse of your pocketbook.

IRR – Internal Rate of Return

Math Challenge 1 – Pit your mathematical skills against the computer or a friend.

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Health Assessment – How are your current health practices affecting your life expectancy?

The Law and You – A look at how laws affect your daily activities.

Speedreading – Train your eyes to take in more words per second.

Code Master – Discover the secret code.

Room to Move – Unscramble the letters with some moves.

NPV – Net Profit Value

Payback Period – Payback Period

Balloon Darts – Build your skills with hot darts as you aim and fire your dart.

Stateo 'N Capitalo – Can you name more capital cities than your opponent?

First Aid – Burns – How should you react in an emergency from burns?

Triangle Solutions – This makes math friendly, for your grade 4 grade alumni.

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DISK #120

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BITMAC can make "slide presentations" for group meetings (and print the graphics!) give hours of "hair drooling" pleasure, create charts for every hobby, report, printer, camera ready art (!) business ads, mail list, picture sequences (and paste them on one of two sheets), create new fonts & drawings, draw floorplans and many other uses!

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Gaining peace of mind

Replacing power supply, modifying cards lets user have internal HD and cooler operation

By AL BEARD

This article appeared in the Newsletter 9T9, the newsletter of the TI User Group of Toronto. Readers who undertake this project do so at their own risk.—Ed.

Ever notice that your Peripheral Expansion Box gets really hot?

Ever wished for a hard drive mounted in the PEB but know your PEB power supply can't handle it?

Tired of your Geneve and HFDC cards slowly turning brown around the power regulators?

I've been worried about it for a quite some time. Tony Lewis advised me a while ago that the PEB power supply wasn't really designed for all these new drives and cards being mounted in them. After losing a power supply (and sending $50 to TI to get a new one) I decided that the way to go was to replace the power supply with a new "switching" type supply.

TI designed the power supply around the technology of the time. The power supply is a "linear" supply. That means that your PEB has inside a huge power transformer, with simple regulating circuits that provide the power to the bus in the TI computer.

A switching supply avoids the huge transformer and heat problems by switching the power on and off very quickly (this has caused some interesting problems in offices that contain large amounts of PC-based equipment). Switching supplies are very cheap due to their wide applicability to PCs.

This is what the TI PEB manual says the voltages going to the PEB bus should be out of the power supply:

Brown .....+16v
Yellow .....-16v
Green.....+8v
Black.....Ground

Per the TI design, the cards you plug into the PEB must drop these voltages to something they can tolerate with their circuits:

+16v drops to +12v
-16v drops to -12v
+8v drops to +5v

This isn't too bad, but the actual voltages I measured coming out of the TI supply were even higher than listed. I measured +20v instead of +16v, etc. The drop in voltage means the cards must get rid of the excess energy somehow, and that means heat!

Also, the power going to the floppy drives is not adequate for two full-height drives, or even one 5.25-inch hard drive. I wanted to mount a 5.25 drive alongside a half-height floppy drive for a complete self-contained machine.

A NEW SUPPLY

Browsing at the Trenton Computer Fair, I found a new Highland brand power supply for $50. Not a bargain, but I didn't want to trust this project to a used supply or one without a guarantee. The supply I picked up came mounted in a metal case ready to drop into an IBM-AT compatible. Because it was mounted in a metal case, it came with a few extra goodies, including a new power connector for the back of the PEB and a low voltage (and quieter) fan.

The power supply is a 200-watt unit with enough power for my PEB and a full complement of cards.

I started this project on a Sunday evening by opening up my PEB and removing the following from the left hand power section:

a. power transformer *(remove 4 nuts)*
b. terminal strip *(remove 2 nuts)*
c. power connector *(remove 2 screws)*
d. power supply *(remove 2 screws and unsolder wires to PEB bus)*
e. fan *(remove 4 nuts)*

I have a spare, so I wasn't too worried about destroying this PEB.

I kept the wiring to the front power switch and to the fuse (new model PEBs seem to have removed the fuse on the rear of the PEB). I carefully cut the two wires from the front power switch and soldered the 120 VAC power connections to the power plug that goes to the new power supply.

Working on the new power supply, I unscrewed the low voltage fan and mounted it on the back of the PEB, after cleaning everything in the PEB — amazing how dirty it gets after six years — using the four nuts which held the previous fan. I unsoldered the 110/120 VAC switch on the power supply and soldered the wires together (to force the 110VAC) and taped the wires to prevent a short.

Deciding how to mount the new power supply took up much of my time. I finally decided to use the plastic vertical mounting unit from the old power supply, and drill a couple of holes and mount the new supply to it. The new power supply then mounted vertically in the same manner as the old supply.

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FEST WEST '94—

(Continued from Page 16)

of her TI BASIC programming history with a series of programs she had developed up through "Lazy 8s," which was published in the January MICROpendium. These were developed for her 7-year-old. As always, her presentation is so personal and direct to her many friends in attendance. Then she ran a video of her many music programs. Her discussion contained many examples of the practical use of TI BASIC to solve real problems in her family's life. One example was their need for her husband to determine the best watering plan for several fields he was to irrigate. (You don't waste water in southern Utah).

The final seminar was given by Berry Harmsen from the Netherlands, informing us of the activities and accomplishments of the TI user groups in Europe. He identified all the groups and their membership throughout Europe. Europe has many experimenters working on hardware improvements and, of course, software, such as their Compression and Decompression program for reducing the size of assembly programs. It saves one third. He demonstrated a demo disk he had brought from Holland.

POWER SUPPLY—

(Continued from Page 18)

Fortunately, the new power supply came with several disk drive connectors — four to be exact. I removed one of these cables by simply cutting it off.

The power supply also comes with connectors which are intended to plug into an IBM-PC compatible motherboard. I also cut these off and removed all the wires except for the wires which had the following voltages: +12v, -12v, +5v and Ground.

I then soldered these wires to the bus as follows:

+12v went to brown
-12v went to yellow
+5v went to green
Ground went to black

Warning: If you decide to try this yourself, make sure that the cables going to the drive connectors are long enough to run behind the cards in the PEB. Mine were a bit short but still usable.

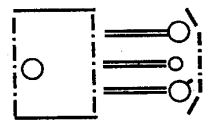
Next came the hard drive. I just mounted it and the floppy drive side by side in the PEB and ran the cables out of the box before putting the whole thing back together.

CARD MODIFICATIONS

Here is the nasty part of the power supply changeout. Every card that you plug into the PEB will require a modification and the card with the modification cannot be plugged into a standard PEB without blowing out the card. Time for a nice BIG caution sticker on the card.

Every card that you plug into the PEB will require a modification and the card with the modification cannot be plugged into a standard PEB without blowing out the card.

The modification is quite simple, and is required because the cards no longer need to do their own power regulation. The power on the bus (+2v, -12v and +5v) will have the correct voltages for the cards to run. The modification involves jumpering out all the voltage regulators on each board.



Jumper across these two terminals.

One way to do this is to remove all power regulators and then jumper across the contacts. I chose a simpler way which lets me remove the modification in the future if I so desire. Remember, also, I wasn't quite sure at this point that my project would work.

The voltage regulators have three prongs connected to a square body, and are usually located near the bottom of the card — usually one or two right next to the LED which sticks out the front.

The middle connection is ground and should be left alone. I made up small jumpers for the outer two connections, and soldered them on the PC-side of the board.

RESULTS

I modified the Geneve card, held my breath, and turned on the power. Relief fol-

(See Page 20)

D. Wright Stuff

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GRIDWORD

A word puzzle in Extended BASIC

The following article and Extended BASIC program appeared in the newsletter of the Ottawa TI99/4A User Group.—Ed.

By LUCIE DORAIS

I found this puzzle in a TV magazine: a ten-character word was hidden in a 3x10 grid; all the letters of the word were in order, but they could be in any of the three rows. The idea was to find the word hidden in the grid. If only I could move the letter sup or down until I found the right word (I have not much patience for this type of puzzle.) I solved the puzzle with the help of Tex, then I thought: Why not use the routine with random words?

Each game starts by presenting you with a grid filled with random letters, the mystery word hidden among them (its letters in order, but randomly distributed in the three rows of the grid). You move the columns of letters up or down by using the digit keys (to move them down) or the Shift+digit keys (to move them up) until the correct word is displayed in the middle row (indicated by big < > brackets). You must find the mystery word before you run out of tries; the total of tries is equal to one and one-half times the number of letters in the word. As I said, I have no patience, so there is a "give up" key. The score system is minimal: It only adds up the number of guesses you got right.

The word list is READ into the WL$ array; there are 100 words, each having between 6 and 10 letters. You may, of course, substitute your own word list in the DATA statements (lines 470-660), but you cannot use words with more than ten characters, since there are only ten digit keys. A more sophisticated version could read the words from a separate disk file — you could then have many word lists.

The other array DIMed in line 120, SUK, contains the ASCII values for the Shift+digit keys (line 170 READs the DATA in line 150. Remember, one line of DATA has to precede the prescan. Line 140 redefines the < > brackets, [and] as an up and down arrow, and the "?" (ASCII 63) will be used as an empty character to frame our grid. The CALL COLOR (black on white) affects the digits and the brackets.

Each new game starts in line 190 by choosing by random word from the list; it's length LW will be used to calculate the total number of tries you are allowed (TMOV) and, later, to fill and display a grid of the proper size. The variable MOV, which will compute the number of moves you make, is reset to zero.

The grid frame is displayed by lines 210-230: A white frame, with the numbers of the keys to press on top and bottom, with reminder arrows at the left. The game (wd) number and score (ok) are at the right. To use less memory and simpler loops, I use one long string D$, to hold the content of the grid until it is displayed; it's length will be equal to three times the length of the mystery word (LW) since the grid has three rows. Tex first fills it completely with random letters (line 240), then it pokes each letter of the mystery word W$ into one of the three rows picked at random (the position of the letter in D$ is equal to a random value of 0 to 2 times LW, plus the Xth position of the current loop letter in D$: line 250). Finally, all the letters are displayed on the screen (line 260), and the instructions follow. Screen line 20 will always tell you how many tries you have and how many you have already used (line 290). Line 300 reduces D$ to its middle portion, which contains all the letters in the middle row.

Each time you come back from a move, and D$ have been modified to contain the letter moved (line 380), Tex will check if the content of the middle row, D$, is equal to the mystery word W$ to know if you have won (line 320; it has to be done before the CALL KEY for the rare occurrence when scrambling would put W$ in the middle row). In the CALL KEY, key 71 is the "G"ive up key. If the key pressed is a normal digit, ASCII code between 48 and 57,

(See Page 21)

POWER SUPPLY—

(Continued from Page 19)

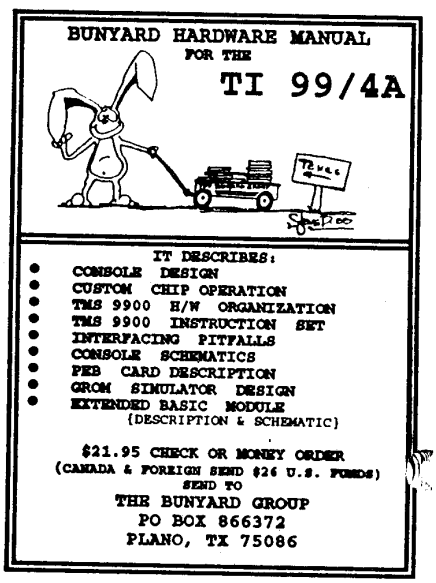
lowed as the normal Geneve swan screen appears I then modified my HFDC card and plugged in the hard drive. The system booted normally. Next, I modified my TI disk controller (it was a bit difficult to get the case apart) and plugged in the floppy drive. The floppy checked out fine. The last card I modified was a Myarc RS232. Everything was okay.

I have several more cards to modify, including Ron Walters' fabulous MEMEX 2-megabyte memory expansion card and a speech synthesizer card, somewhat useless until the next MDOS release. I'm going to check with Ron on the memory expansion card before I do anything to it.

PEACE OF MIND

Was it worth the trouble? Total project time was three evenings of about six hours total. My PEB runs cool and quiet and my cards are no longer turning brown. I have the peace of mind of a totally integrated computer within the PEB with a hard drive.

It was worth the trouble for me, and gave me a little respite from a long haul in of programming. Of course, I wouldn't try this yourself, unless you have a pretty good knowledge of computer hardware and power supplies. In any case, you are on your own.



GRIDWORD—

(Continued from Page 20)

you asked to move the column down: GOTO line 360, where the proper screen COLumn is calculated, taking into account the fact that the zero key, ASCII 48, is for the tenth column of the grid (used only when the mystery word has ten letters).

If you pressed shift with a digit key, that means an up movement: Lines 340-350 scan the SUK array to find it; if not found, you exit the loop normally and, after a beep, are sent back to the CALL KEY. Otherwise, the proper COLumn is calculated, again taking account of the zero key. Line 370 checks to see if the COL is within the grid; if not, Tex beeps, and back to the CALL KEY. But if you pressed a legitimate key, with or without the shift key, line 380 CALLs the sub MOV to move the row of letters up or down. Line 390 peeks at the new letter in the middle row for that column and inserts it into the D$ variable. If you still have tries left, you go back to line 320, where Tex checks your guess and waits for a key.

The parameters passed to the SUB MOV are a starting ROW used for the calculations, a STep value, the COLumn you want to move, and the current value of the number of MOVes you have taken — to be incremented if need be. Tex first starts by CALL GCHARing the uppermost or bottommost screen spot in the column. If there is a letter there, you cannot move further up or down — Tex beeps and you exit the sub with no harm done to your MOVes. Otherwise, the three letters in the column are moved up or down by line 690.

You may end the game in three ways: Either you gave up or you used all your tries; this brings you to line 410, with sad sounds. If you guess correctly, line 420 has more happy sounds, and your OK score is incremented. Both show you the correct word, and you are asked to play A)nother word or Q)uit.

GRIDWORD

```
100 ! *** GRIDWORD ** by L.
Dorais / Ottawa UG / Oct. 19
92 !129
110 !!131
120 DIM WL$(100),SUK(9):: CA
LL CLEAR :: RANDOMIZE !153
130 DISPLAY AT(5,10):"GRID W
ORD": : : :"  Reading the Wo
rd List..." !244
140 CALL CHAR(60,"0818387070
381808",62,"2030381C1C383020
",63,"",91,"081C3E7F1C1C1C1C
",93,"1C1C1C1C7F3E1C08"):: C
ALL COLOR(3,2,16,4,2,16)!217
150 DATA 41,33,64,35,36,37,9
4,38,42,40 !212
160 GOTO 170 :: C,COL,D$,K,L
W,MOV,MOV$,OK,S,TMOV,TW,W$,X
,Y :: CALL KEY :: CALL HCHAR
 :: CALL VCHAR :: !@P- !098
170 FOR X=0 TO 9 :: READ SUK
(X):: NEXT X ! shift+digit c
odes !186
180 FOR X=1 TO 100 :: READ W
L$(X):: NEXT X ! word list !
249
190 CALL CLEAR :: C=INT(100*
RND)+1 :: W$=WL$(C)! pick ra
ndom word !058
200 LW=LEN(W$):: TMOV=LW+INT
(LW/2+.5):: MOV=0 ! find mov
es allowed !085
210 CALL VCHAR(3,11,63,7)::
CALL VCHAR(3,12+LW,63,7):: C
ALL HCHAR(6,11,60):: CALL HC
HAR(6,12+LW,62)! grid frame
!064
220 D$=SEG$("1234567890",1,L
W):: DISPLAY AT(3,4):"[ sh+?
"&D$&"?" :: DISPLAY AT(9,4):
"]    ?"&D$&"?": : : :TAB(8)
;"SCRAMBLING..." !124
230 TW=TW+1 :: DISPLAY AT(5,
24):USING "wd###":TW :: DISP
LAY AT(7,24):USING "ok###":O
K !score !070
240 D$="" :: FOR X=1 TO 3*LW
 :: C=INT(26*RND)+65 :: D$=D
$&CHR$(C):: NEXT X ! fill pu
zzle with random letters !01
7
250 FOR X=1 TO LW :: C=INT(3
*RND)*LW+X :: D$=SEG$(D$,1,C
-1)&SEG$(W$,X,1)&SEG$(D$,C+1
,30):: NEXT X ! put word in
puzzle !167
260 FOR X=0 TO 2 :: DISPLAY
AT(X+5,10)SIZE(-LW):SEG$(D$,
X*LW+1,LW):: NEXT X ! displa
y puzzle !049
270 DISPLAY AT(13,1):"Move t
he columns of letters down (
dig) or up (SH+dig)":"until
the mystery word is" !225
280 DISPLAY AT(16,1):"in the
 middle row.": :"  * Press `
G' to give up *" !197
290 DISPLAY AT(20,1):USING "
?MOVES?> NEEDED ## USED ##":
TMOV,MOV !035
300 D$=SEG$(D$,LW+1,LW)! cur
rent word in middle row !186
310 ! ===== guess ===== !108
320 IF D$=W$ THEN 420 ! chec
k word in middle row !190
330 CALL KEY(0,K,S):: IF S=0
 THEN 330 ELSE IF K=71 THEN
410 ELSE IF K>=48 AND K<=57
THEN 360 !130
340 MOV$="U" :: FOR X=0 TO 9
 :: IF SUK(X)=K THEN COL=X+1
1-10*(X=0):: GOTO 370 ! sh+d
igit key>up !207
350 NEXT X :: CALL S(110)::
GOTO 330 ! not a sh+digit ke
y !036
360 MOV$="D" :: COL=K-37-10*
(LW=10 AND K=48)! digit key>
down !245
370 IF COL<12 OR COL>11+LW T
HEN CALL S(110 :: GOTO 330 !
 check column range !075
380 IF MOV$="U" THEN CALL MO
V(5,1,COL,MOV)ELSE CALL MOV(
7,-1,COL,MOV)! move letters
in grid !244
390 CALL GCHAR(6,COL,K):: D$
=SEG$(D$,1,COL-12)&CHR$(K)&S
EG$(D$,COL-10,10)!083
400 IF MOV<=TMOV THEN DISPLA
Y AT(20,27):USING "##":MOV :
: GOTO 320 !100
410 CALL S(600):: CALL S(400
):: CALL S(200):: DISPLAY AT
(22,1):"SORRY, word was <"&W
$&">" :: GOTO 430 ! no guess
 !034
420 CALL S(2000):: CALL S(25
00):: CALL S(3000):: DISPLAY
 AT(22,1):"CONGRATULATIONS <
```

(See Page 22)

MICROPENDIUM INDEX PART 2—

(Continued from Page 21)

```
"&W$&">" :: OK=OK+1 ! good g
uess !155
430 DISPLAY AT(24,6):"(A)not
her   (Q)uit" !229
440 CALL KEY(0,K,S):: IF S=0
 OR(K<>65 AND K<>81)THEN 440
 !219
450 IF K=65 THEN 190 ELSE EN
D !005
460 ! ===== word list =====" 
 !255
470 DATA AUTHORITY,ALGORITHM
,ALCOHOLIC,BEAUTIFUL,BEHAVIO
R !098
480 DATA CALCULATE,CELEBRITY
,CHROMOSOME,CONVICTION,CYNIC
AL !160
490 DATA DEDUCTION,DISCHARGE
,DOUGHNUT,DRAPERY,ECONOMICS
!191
500 DATA EMPHASIS,EPHEMERAL,
EXCLUSIVE,FASCINATE,FEROCIOU
S !085
510 DATA FINGERTIP,FLOATING,
FORGIVING,FRIGHTEN,FUNCTION
!213
520 DATA GATEWAY,GEOGRAPHY,G
LORIFY,GOVERNMENT,GRADUATION
 !057
530 DATA GUARANTY,HABITATION
,HEALTHIER,HOSPITAL,HOROSCOP
E !109
540 DATA HYDROGEN,IDENTICAL,
IMMEDIATE,INCOGNITO,INTERNAL
 !245
550 DATA JAPANESE,JUVENILE,K
EYBOARD,KILOGRAM,KNOWLEDGE !
096
560 DATA LABYRINTH,LEUKEMIA,
LONESOME,LUNCHEON,MAGNITUDE
!199
570 DATA MECHANIC,MISCHIEF,M
ORALIZE,NAVIGATE,NIGHTFALL !
059
580 DATA NOVELTY,OBJECTIVE,O
PTIMISM,OVERLOAD,PACKAGE !24
4
590 DATA PERCEPTIVE,PHANTOM,
PLENTIFUL,POSITIVE,PRECOCIOU
S !163
600 DATA PSYCHO,QUANTITY,QUI
NTET,RADIOLOGY,REAPPEAR !230
610 DATA RECIPROCAL,RECTIFY,
RUNAWAY,SACRIFICE,SCENERY !0
50
620 DATA SELFISH,SHAMPOO,SIL
HOUETTE,SNEEZING,SNOWPLOW !1
34
630 DATA SOMETHING,SPECIALIZ
E,SQUASH,STORAGE,SUBSYSTEM !
192
640 DATA SUNLIGHT,SWELLING,T
ANGERINE,TEENAGER,THEOLOGY !
150
650 DATA TOMBSTONE,TRANSLATE
,TURNABOUT,TYPEFACE,UNETHICA
L !142
660 DATA UNDERTAKE,VALENTINE
,VIOLENCE,WATERFALL,ZOOLOGY
!228
670 !@P+ ===== user-def subs
 ===== !248
680 SUB MOV(ROW,ST,COL,MOV):
: CALL GCHAR(ROW-ST,COL,K)::
 IF K<>32 THEN CALL S(110)::
 SUBEXIT !092
690 FOR X=ROW TO ROW+3*ST ST
EP ST :: CALL GCHAR(X,COL,K)
:: CALL HCHAR(X-ST,COL,K)!11
9
700 NEXT X :: CALL HCHAR(ROW
+3*ST,COL,32):: MOV=MOV+1 ::
 SUBEND !072
710 SUB S(SND):: CALL SOUND(
100,SND,0):: SUBEND !187
```

Carpal Tunnel Syndrome

Computer users need to use preventive care

By LAURA BURNS

Newspaper editors are taking early retirement. Secretaries are moving into new careers.

Sometimes this sort of thing happens by choice, but often today it's by doctor's orders. And though carpal tunnel syndrome is usually work-related, hobbyists are not immune to this debilitating condition.

Carpal tunnel syndrome is a condition caused by pressure on the median nerve at the wrist. The pressure, though sometimes created by illness or injury, can be caused by a repetitive motion which causes the tendons to become inflamed. Repetitive motions can cause injury in other joints of the body besides the wrists, also. (A case in point is tennis elbow.) In carpal tunnel syndrome, the inflamed tendons must pass through the tiny carpal tunnel bone in the wrist. The swollen tendons in this small passageway squeeze the nerves, causing numbness or pain in the fingers and thumb or the whole hand.

The number of persons with this syndrome, once thought to affect only women in their 40s and 50s, has shot upward in the computer age. Now, men and younger women are being diagnosed with carpal tunnel syndrome as well. Many cases are suspected to be caused or aggravated by prolonged periods at the keyboard. Typists of former years did not suffer from it as much because of the "breaks" from repetitive motion built into their tasks, such as changing paper or hitting a carriage return. According to the Occupational Health and Safety Administration, repetitive motion injuries are the fastest growing type of work-related injury.

Patients with carpal tunnel syndrome typically complain about their hands "going to sleep" or describe a painful burning or tingling in their hands which can awaken them at night. Clumsiness or a tendency to drop things begins occurring. Anyone with numbness or pain should seek medical advice right away.

For treatment of carpal tunnel syndrome, the work schedule or station is changed to reduce the pressure on the wrists. Patients wear fitted wrist splints at night to keep their wrists absolutely straight for an eight-hour period, and some patients wear wrist splints during part of their waking hours. Patients may use aspirin or an

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CARPAL TUNNEL SYNDROME—

(Continued from Page 22)

other anti-inflammatory drug to reduce pain and swelling. Sometimes physicians inject cortisone directly into the carpal tunnel. As a last resort, surgery is performed to release the ligament and remove the swollen tissue from around the nerve or tendons.

But when possible, it's better to prevent the condition from occurring. For this, you need to remember all the boring stuff your typing teacher told you about sitting properly with the proper chair and desk height. If different users of the same computer are different sizes, an adjustable chair is in order. You need to keep your wrists straight while typing. Wrist rests are advised for persons who spend prolonged periods at the keyboard. These should support the wrists at least two inches above the keyboard. You need breaks from the computer, as well, even if you are having fun with it. Get up and move around every hour. Also, some studies indicate that a deficiency in Vitamin B6 (pyridoxin) increases susceptibility to carpal tunnel syndrome. Good dietary sources for Vitamin B6 are cooked dried beans, wheat bran and whole wheat products.

Individuals may obtain practical information about living with carpal tunnel syndrome from the Arthritis Foundation. Consult your local phone directory or write 1314 Spring St., NW, Atlanta, GA 30309.

MICROpendium columnist tells of uncertainty that accompanies CTS

TI users shouldn't feel immune from Carpal Tunnel Syndrome. MICROpendium columnist Barry Traver recently was diagnosed with the condition. The result has been greatly reduced time at his TI and the frustration of not having a predictable treatment path. He says:

The CTS is "progressing," but in the wrong direction. I now am wearing a wrist splint on the other hand as well.

The all-too-common "solution" is surgery, but I've talked with lots of people who have either had the surgery or have friends or relatives who have had the surgery, and it is not always a perfect solution. For some, it seems to do the job, but it does not work out as well for others (e.g., one person who had the surgery on both wrists told me that it didn't completely remove the pain; it only made it "bearable" for her).

My own research into CTS is not so much the result of expert professional advice, i.e., talking with doctors (my own doctor seems too ready to see surgery as the proper course of action), but of talking with people who have had personal experience with CTS and of reading what I have been able to find on the subject.

There are special keyboards available that are supposed to be helpful, but although you can get one for about $200 for the Mac, the only two I've found for the IBM cost about $650, which is beyond my budget (even if it is less than what the surgery would cost). (An IBM keyboard would also work with a Geneve.—Ed.) Right now, essentially, all I've got to help out are wrist splints (worn all night and most of the day) and a foam wrist rest when I am at the computer keyboard.

One medical book I looked at described the surgery as "controversial," but it appears to be a frequently recommended "solution." That book said that there are two choices: A large incision that generally leaves an unsightly scar, or a smaller incision that doesn't leave an unsightly scar but increases the likelihood of the operation messing up.

Another variation in surgery, according to someone I talked to (although I have not been able to confirm it in a medical text) is to operate on the palm rather than the wrist, but I don't know how accurate that report is, since only one person has mentioned it to me.

In the meantime, I'm — very — frustrated, because a computer keyboard is my natural "home," because most of what I do, I do there.

Rediware releases font editing software for TI/Geneve

Rediware Software is releasing DL-EDITOR, a program for the TI and Geneve allowing the user to edit fonts and download them to an Epson or compatible printer, according to Stephan Clarke of the company.

DL-EDITOR was written to incorporate Jim Peterson's 127 screen fonts set, Clarke says. According to Clarke, DL-EDITOR lets the user load fonts from disk or memory in any one of three sizes; allows complete editing with a joystick; utilizes screen shift keys, full line enter and erase keys, character map printouts, character print test function, dual printer options, letter or draft quality option, several grid toggle functions, a function 7 (AID) help screen available in edit mode and boot drive tracking; saves edited fonts to disk; and downloads them to a printer. The program "allows you to print out text files with your WP using your own special font," Clarke says. DL-EDITOR runs in Extended BASIC with almost 250 sectors of source code written for editing routines and sells for $12.

Rediware Software has also released CHECKLOG v.3 (v.2.2 was reviewed in MICROpendium, Nov. 1992). According to Clarke, the new version, still TI compatible, is more Geneve compatible and will run from any floppy, RAM or hard drive (or combination) with Super Extended BASIC or from drive 1 and any other device without. Upgrades from registered owners are $4 and new purchases are $15. Please specify disk format on all orders.

For further information, or to order, write Stephan Clarke, 6108 Wheeler St., Philadelphia, PA 19142.

MICRO-REVIEWS

Mail-A-Gram, Check Plus, King Turambar Libraries Part I

By STAN KRAJEWSKI

I have been receiving many requests for the European Creatures disk by Media Ware Software. It seems users have sent for his disks and are not receiving the product. It has been up to six months since users sent for the disks. That is more than enough time for a vendor to respond. Though I review a product, I cannot guarantee that you will receive it. I am not affiliated with any software firm; however; I did contact the vendor on two occasions and reported the problem with those that did not receive their disks. Maybe mentioning this now will help.

Ratings for the software reviewed in this column are based on the Star system that follows.

☆ Leave it alone, back to the drawing board.
☆☆ Needs improvements, but workable.
☆☆☆ A good program, worth trying.
☆☆☆☆ Send your money and buy it.

NOTE: If the Geneve 9640 is *not* specifically mentioned in system requirements of any column I write, the program is TI99/4A compatible only.

☆☆☆☆
MAIL-A-GRAM

System requirements are Geneve 9640 or TI99/4A, 32K RAM, disk drive, Extended BASIC and an Epson compatible printer.

Mail-A-Gram is a program that continues where Return Labels by D&L Software left off. You have all of the same options that you had in that program (see Nov. 1992 MICRO-Review column), plus more. The addition that this program offers is the ability to create and maintain mailing address files with up to 450 records per file. After you have created a file or files, you may load these files and print the entire file, either as labels or as an address list. Also available is the ability to print your return address and mailing address from a previously created file, or entered information, directly to a envelope.

I will skip the label functions and graphic editor as these were covered in my previous review. I will pick up from the "OTHER" menu option with the new functions that use the mailing list and file manipulation. A mailing list file is created by using the "FILE" option. You can name this file any name, up to eight characters. Separate files can be named for personal relations, relatives, businesses, etc. You may Add, Edit, Delete, Locate, Print and Sort the information for your mailing list. In the Add Files mode, you have full cursor control, up-down-left-right. Also, when adding names, along with prompts for Last Name, First Name, etc., you may also add a title for your correspondent. It will create four lines on your label or envelope. If a title is not used it will default to three lines per label. There is also a choice of the two size envelopes that are available. Also, a nifty feature, a postal bar code is printed if a valid U.S. ZIP Code is used. This will help your Post Office get your letters where they're going faster.

Use of the program is friendly. You simply follow the menus. If you make a mistake, just press ENTER or the (M)enu prompt to get out. Error trapping is done well. Loading the program is easy using the TI Extended BASIC auto-load feature. The program disk only takes up 97 sectors leaving a lot of room for your created files. The program also ran sufficiently fast. On the TI it took 48 seconds to load, on the Geneve 15 seconds. After that there isn't any waiting for the files to load. I was able to modify the program easily to run from my hard drive. Same can be done for RAMdisk for optimum speed. I have been trying to keep mailing records on other databases. After using this program, I have found features I was looking for that other programs lacked. Telephone numbers can be printed out when using the "Forms" option of the program letting you also use this program as a database for all your needs. Foreign addresses can now be used after I contacted the vendor, by the ability to input letters and numbers in the ZIP Code area. The Title line can also be used with foreign addresses, suites or apartment numbers, or even identifying your file.

This program now makes it easy to use your computer as a telephone book without having to load all sorts of files and make a lot of keypresses to get something to print. Just load it up and go.

Mail-A-Gram is available for $12.95 plus $1 S&H, from D&L Software, 89 Little Neck Ave., Swansea, MA 02777. Registered owners of Return Labels can purchase Mail-A-Gram for $7.95 plus $1 S&H.

☆☆☆
CHECK PLUS

System requirements are Geneve 9640 or TI99/4A, 32K RAM, disk drive, Extended BASIC and a printer. It is also compatible with the Horizon RAMdisk.

Check Plus comes on a SS/SD disk. To keep your data files you must use another disk. If you have two drives this process is simplified. One of the options included allows you to set up your system defaults, then save them to disk. This includes: what drive your data disk is in, screen and text colors and your type of printer.

There are two modules to give full file diversity. Options include: Checkbook Menu — Enter transactions, Close out the month, Budget versus actual, Compare Accounts by month, Date reset, Reconcile bank statement, Summary file editor, Year to date report. Utilities Menu — Audit trail, Budget setup, Delete (global), Merge data files, Recurring Accounts , Replace (Global), Subfile creation, System file, External loader.

I found this program difficult to use. Although there are 31 pages of documentation, you need to follow the steps the documentation outlines. Using the Utility me I could set up the Budget as outlined. Bu when it came time to go back to the Checkbook module, I was unable to enter any in

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formation after the type of transaction and the date. When I went to put the account code number, it would tell me, Device/File Error. You must enter a code for each transaction for the program to balance your Budget with the checks, withdrawals and deposits you have entered. This discouraged me from continuing with the program after about two hours of working with it.

Now there are many nice features also: There are help screens in areas that require many keypresses. The program allows you to track cash as well as checks. Each file is saved on a month to month basis. There also is a disk cataloging, Find Record feature and a print out option. The print out option lists all 60 fields of your Budget and lists the Projected Income and Projected Expenses. Sure, this is a full service checkbook and budget program; however; it will take a lot of time and study of the manual to operate the program. Because of this, I am giving it a three-star rating. This is the first program I have been unable to operate. I like programs that I can get right into and start to work.

This program is available from William Gaskill, 2310 Cypress Court, Grand Junction CO 81506. The price was not made available to me, so you may write to inquire.

KING TURAMBAR LIBRARIES PART I

System requirements are TI99/4A, 32K RAM, disk drives, RAG Software Program Linker and knowledge of assembly language.

I didn't include any stars for this library as I, not being an assembly programmer, cannot rate this library. I can only let you know that this software is available and hope that, another time, an assembly programmer can write a review if the library has any value.

This library is the first of a set of routines that can be incorporated into assembly programs. This is part I and parts II and III are planned for release in the future. King Turambar swears by the RAG Software Program Linker for creating assembly programs. The programs I have seen from him do incorporate features that I haven't seen from other programs, so there must be something special about RAG Software Program Linker. Anyway, this library consists of many denoted source codes and sample routines that explain the style King Turambar uses to create routines in programs. Some of these routines are: displaying windows, writing 64 columns per row, accept text in a window, Keyboard Controlled Arrow Cursor, Bitmap Mode access, Call Files routines, Compacted Pictures, 64 column Show Directory, Compute Square Root and Evoluted Keyboard Testing.

Again, not being a assembly language programmer, I cannot see for myself how valuable these source codes are. But one thing I know is that anytime someone with this person's experience is willing to share his source codes with other programmers,

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Bettinelli succumbs to cancer

MICROpendium recently received word of the death of Norberto Bettinelli of Buenos Aires, Argentina, in 1991. Bettinelli died after a long and painful bout with cancer.

Bettinelli was active with T.I.G.R.E.S. (Texas Instruments 99/4A Grupo Recalcitrante y Empedernido de Sobrevivientes). His son Leandro Bettinelli remains active in the user group.

He was the author of a disk-based index to MICROpendium.

Francisco T. Molina of T.I.G.R.E.S. says, "We remember him and his bonhommie, and we'll keep doing so."

Fest-West goes back to Tuscon

Fest West '94 is scheduled Feb. 19-20 at the Santa Rita Park Inn in Tuscon, Arizona. Room rates for attendees will be $48, according to organizers from the SouthWest Ninety Niners User Group. When making reservations, call 1-800-437-7275 or (602) 622-4000. For group rates, mention Fest West and refer to Welcome Number TAZ 143.

Admission to Fest West is $4. Persons aged 15 and under are admitted free when accompanied by an adult.

The Fest is scheduled the same weekend as "Downtown Saturday Night" hosted by Tuscon's Downtown Arts District.

For further information, write Tom Wills, Fest-West '94 Committee, SouthWest Ninety Niners User Group, P.O. Box 17831, Tuscon, AZ 85730-7831 or call him at (602) 886-2460, BJ Mathis at (602) 747-5046 or the Cactus Patch BBS at (602) 290-6277.

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Newsbytes

c99 programs available on disk

Charles E. Kirkwood Jr., former c99 columnist for MICROpendium, says his c99 programs and functions are available to anyone who will send formatted disks, return postage and a mailing label.

"I do enjoy hearing from readers," he says.

Kirkwood says he wishes "to thank Warren Agee, Alan Beard, Elmer Clausen, Donald Mahler and others for 'setting me straight' and offering suggestions from time to time."

Write Kirkwood at Box 1241, Clemson, SC 29633.

Decatur 99ers get new box number

New address for the Decatur 99er Home Computer Users Group is P.O. Box 1361, Decatur, IL 62525-1361.

Stuttgart to host TI-Faire Oct. 8-10

Hans Huben of TI-Club Errorfree writes that that group will host the Annual International TI-Faire in Stuttgart: Evangelisches Ferienwaldheim Weidachtal, 7000 Stuttgart 80 (Moehringen), Weidach Gewann 8, Germany.

For information about the event and about Stuttgart and its hotels, write Huben at Berberitzenweg 6, 7033 Herrenberg, Germany.

Huben says the group expects visitors from the Netherlands, Belgium, England, Austria and Switzerland, and hopes to have some from the United States also.

Ogden 99ers offer 'Watchamacalit' to 'tune' clock speed

The Ogden TI99/4A Users Group has released The Watchamacalit, which provides users with a means of "tuning" clock speed on the Myarc Hard and Floppy Disk Controller so that they can have accurate time dating of files without resetting the clock on their systems, according to David Mischler of the group.

The product will also help autoboot a BBS, he says.

The Watchamacalit comes with a one-year full warranty (except the battery) and sells for $29.95.

For information or to order, write Ogden TI Users Group, 1775 22nd St., Ogden, UT 84404; or call the Salt Flats BBS, (801) 394-0064; or leave a message to Mischler on Compuserve, ID No. 72157,1344.

CaDD releases PC99 emulator

CaDD Electronics has released PC99 stage 1, according to Mark van Coppenolle of the company.

PC99 is a TI99/4A emulator which runs on the IBM PC (or compatible). According to Van Coppenolle, stage 1 includes the emulation of the TI99/4A console, 32K memory expansion, the TI RS232 card (PIO and both RS232s) and the TI floppy disk controller card (three double-sided, double-density disks).

He says all emulation is done at the chip level and will work with programs that "talk" directly to the hardware (e.g., disk sector editors, terminal emulators).

According to Van Coppenolle, PC99 stage 1 includes:

1. Extensive docs on disk in Word Perfect and ASCII format.
2. Many utilities for bringing TI modules and disk software over to the PC99 "disks." These disks are actually DOS files, which internally are identical to TI floppies.
3. Extended BASIC and Tombstone City modules in PC99 format. PC99 format is DOS files which contain the GRAM Kracker file structure. CaDD now has an agreement with Texas Instruments to distribute all TI PHM modules, as well as the 99/4A ROMs and GROMs, according to Van Coppenolle, and TI royalty is included in the price of PC99.

He says limitations of PC99 stage 1 include:

1. No sprites displayed. Programs with sprites run, but sprites are not visible. The company plans to correct this in stage 2.
2. No sound emulation. Single channel sound may be in stage 2. Stage 3 is set for Sound Blaster support.

Price for stage 0 owners to upgrade is $40. For persons who sent $1 before March 1, 1993, but do not own stage 0, the price is

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it can only lead to the optimum programs that can be created for our systems.

This library is Fairware, and all source codes can be modified for anyone's use. King Turambar just asks for a donation of what you think it's worth, and your modified code, so his work may evolve with other programmers with his experience. Not many programmers want to share their work, an attitude which can only hurt the quality of the TI's programs. Let's take advantage of this library and work together to get the best programming possible.

For a copy of King Turambar Libraries Part I, send an International Postal Money Order for what you think it's worth to: Laurent Peron, "Maine Leva" 24130 Fraisse, France. This library came to me on three SS/SD disks, Specify the format you would like when ordering.

If you need a copy of Software Macro Assembler or RAG Software Program Linker, both Fairware programs, write to: RAG Software, R.A. Green, 1032 Chantennay Dr., Gloucester, Ontario, Canada K1C 2K9.

If you would like your software or Hardware reviewed in this column, you may send it to: Stan Krajewski Route 6 Box 568-15 Live Oak, FL 32060. If you would like it returned please include postage. If you need to call me for any reason, you may reach me at (904) 364-7897 E.S.T.

Newsbytes

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$80. Price to new purchasers is $98.

For information, contact CaDD Electronics, 81 Prescott Rd., Raymond, NH 03077, (603) 895-0119.

SCCG BBS moves

The Southern California Computer Group of San Diego, California, has moved its BBS, according to O.E. Pepper, sysop. The new phone number is (619) 263-9135.

Speakers announced for Lima TI fair

Several speakers have scheduled seminars for the Lima Multi User Group Conference May 14-15 in Lima, Ohio.

Seminars scheduled so far are Tim Bodenmiller, "The Current Status of Game Programming for the TI"; Mike Wright, "The PC99 Emulator"; Mike Maksimik, "MIDI Update"; Don Walden, "New Hardware for the Geneve"; Jack Sughrue, "The Teaching TI: Our Computer as an Educational Tool"; and Bud Mills, "The SCSI Card and Other Hardware from Bud Mills Services." Other presenters are Barry Traver and S&T Software, titles to be announced.

No fee is charged for the conference either to vendors or to persons attending. For motel information or to schedule seminars or tables, phone Dave Szippl evenings at (513) 498-9713.

MIDI-Master users form group

The users' group for owners of MIDI-Master, called "The Enterprise," has mailed its first newsletter, "The Enterprise Rag," according to Bruce Harrison of the group, who says that copies of the first issue are available to individuals who write the group c/o Harrison Software, 5705 40th Place, Hyattsville, MD 20781.

Harrison Software has released a new assembly language "tool" for MIDI-Master owners, which will transpose SNF source files from key to key. The tool is called TOOL7 and is available for $1 to cover media and mailing. Complete instructions are included, and it can be run from either Editor/Assembler or Extended BASIC.

XB3 scheduled for this month

Extended BASIC III by Winfried Winkler has been released by Asgard Software. According to the manufacturer, XB3 is the only XBASIC which will run all XBASIC programs without modification up to 50 percent faster than the original TI Extended BASIC. Asgard says XB3 is 100 percent compatible with all TI XBASIC programs and add-on utilities.

Also, the manufacturer says, bugs which cause other XBASICs to crash occasionally have been eliminated.

Features of the new program listed by the manufacturer include:

- Character definitions allowed up to code 159
- GOTO and GOSUB statements allowing the user to jump to a variable
- Enhancements to the IMAGE command allowing more flexible formatting
- Extensions to the CALL MOTION command allowing user to stop and start all sprites at once
- Reversal of a RESequence with the RESTORE command
- COPY and MOVE commands for copying and moving ranges of lines
- Recognition of a wider range of utilities by the assembly LOADer, including GPL utilities for manipulating a stack and RADIX-100 math for use in assembly subroutines. The loader will also load compressed format assembly files with REFerences and adds new REFerences available for called subroutines.
- A range of new calls and functions and a range of new commands available at the command line
- Most math functions and floating-point math routines rewritten to perform faster and extensions to the RND function to allow ranges and more randomization

The manufacturer says that while many of XB3's features and all its speed enhancements are unique to it, it is compatible to some degree with Mechatronics Extended BASIC.

Extended BASIC III is available on disk for users with a Mechatronics GRAM-Karte for $39.95. The manufacturer expects to produce a 96K cartridge version requiring only a console and 32K memory expansion by June. Projected price is $74.95. Scheduled for release by April 15 is the XB3 Super Module, a 192K module containing Extended BASIC III; Terminal Emulator 2, allowing the user to perform true text-to-speech in XB3 without additional software; Editor/Assembler; TI-Writer; Remind Me!; Mass Transfer; a disk manager; and miscellaneous utilities. The cartridge sells for $99.95.

For information or to order, write Asgard Software, 1423 Flagship Dr., Woodbridge, VA 22192.

1992 available for MICROpendium II Index

Users of the MICROpendium II Index can order the index installment for 1992 for $5 from MICROpendium. The index, which is maintained and compiled by Bill Gaskill, now covers 1984 through 1992. The entire index consists of 5,924 entries.

Including MICROdex99, a collection of programs which greatly enhance use of the index, the complete MICROpendium Index II (1984-1992) costs $35. It consists of 11 SSSD disks. Helpfiles are included on disk.

The index disks are available without MICROdex for $30 for 1984-1992. Individual years are available for $5 each. MICROdex is available separately for $10.

To order, send check, money order or Visa/Mastercard number and expiration date to MICROpendium Index II, P.O. Box 1343, Round Rock, TX 78680; or call 512-255-1512.

Reach thousands of TI and Geneve users without charge. Send your product and service announcements to MICROpendium Newsbytes, P.O. Box 1343, Round Rock, TX 78680. Or E-mail them to our address on CompuServe, GEnie or Delphi. (See page 4 for E-mail addresses).

User Notes

Horizon tip

This comes from the PUG Peripheral, the newsletter of the Pittsburgh TI User Group. The author is unknown.

Here are the symptoms: Your Horizon RAMdisk locks up and won't access even the physical drives (DSKx.). The system will seem to work but the disk controller light and HRD light (LEDs) will be on. Turning the console off and on doesn't seem to work.

Here is what to do: Plug the Editor/Assembler module into the console. Turn the PEB and the console off. Then turn the console on first. That's right, first. Then turn the PEB on while holding down the shift key. Select option 5 from the E/A menu and load DSKx.CFG to configure your system.

Strangely enough, the disk access reappears. The RAMdisk directories are still intact, as well as their contents.

Next, reload the ROS you usually use. Do not throw out the existing information. Exit CFG and everything will be fine.

It may not work for everybody, but it's worth a try.

Make some noise with sound effects

The following sound programs appeared in several TI user group newsletters. Authors or sources are credited in each program.

GRANDFATHER CLOCK

```
1 REM *By Chick DeMarti, LA9
9'ers, from an idea by W. Be
rendts in the CIN-DAY NEWS
100 FOR X=1 TO 6
110 FOR C=0 TO 30 STEP 2
120 CALL SOUND(-500,110,C/4,
500,C,1250,C)
130 NEXT C
140 NEXT X
150 FOR C=0 TO 30
160 CALL SOUND(-500,110,C/4,
500,C,1250,C)
170 NEXT C
```

CHURCHBELL

```
100 ! SAVE "DSK1.CHURCHBELL"
110 DISPLAY AT(10,1)ERASE AL
L:"     CHURCH BELLS
        by Robert Davy (age
14)"
120 DISPLAY AT(14,1):" TI.S.
H.U.G.  Younger Set"
130 B,C=262 :: Z=1 :: RESTOR
E
140 READ A :: IF A=0 THEN RE
STORE 180 :: A=262 :: Z=Z+1
160 FOR J=2 TO 7 STEP 1.3 ::
 CALL SOUND(-999,A,J,B,11,C,
15):: NEXT J :: C=B :: B=A :
: IF Z>2 THEN 200 ELSE GOTO
140
165 CALL AGAIN :: GOTO 110
170 DATA 262
180 DATA 523,494,440,392,349
,330,294,262,523,494,440,392
,349,330,294,262
190 DATA 523,440,349,294,494
,392,330,262,523,440,349,294
,494,392,330,262,0
200 CALL SOUND(1,110,30):: S
TOP
5500 SUB AGAIN :: DISPLAY AT
(24,1):"Again? Press A, Else
 Any Key"
5510 CALL KEY(3,K,S):: IF S<
1 THEN 5510 ELSE IF K<>ASC("
A")THEN STOP
5520 SUBEND
```

CHURCHBELL

```
1 REM *Courtesy of TIsHug, A
ustralia
10 FOR R=1 TO 5
20 FOR X=1 TO 30
30 CALL SOUND(-1000,262,X)
40 CALL SOUND(-1000,197,X)
50 CALL SOUND(-1000,111,X)
60 NEXT X
70 NEXT R
```

Routines for The Missing Link

This comes from Jim Lesher, of Dallas, Texas. He writes:

At least in Dallas I have seen zero to none, The Missing Link programs published. Also, I am certain there are many people who have purchased this fine program, expecting it to do "something" and was disappointed to find it is a *tool* to do *something*. Outside the excellent TMLDEMO there is just not much of a library of programs to be had. So I plan to publish some very simple ones I wrote more than a year ago. I hope they will provide some pleasure and at the same time show how easily some very attractive designs can be produced. Probably the easiest shape to make is the circle.

After loading TML per instructions in your manual, just type the following and run it:

```
10 CALL LINK("CIRCLE",96,120
,90)
20 GOTO 20
```

Now what do those numbers mean in line 10? Think of your screen as a dot-matrix made up of 192 vertical lines and 240 horizontal lines — multiply them together and you get a total of 46,080 dots. The first number, or coordinate, is 96 dots down from the top, or half way down. And, of course, the second number, or coordinate, is 120 dots from the left side of the screen. These two coordinates pinpoint the center of the circle. The third number represents the number of dots for the radius, in this case 90. Experiment with these numbers, change them around and see what happens.

Next is the window, or box. This one is a little more complicated.

```
10 CALL LINK("BOX",1,180,10,
1)
20 GOTO 20
```

Again, the first number (1) is counting down from the top of the screen. The second number (180) is a point 180 dots from the left side of the screen. The third number (10) is also ten dots from the top of the screen. This coordinate sets the height of the box. The fourth number (1) is the the number of dots from the left side of screen. From this description, most of us will not be able to visualize a rectangle. So let's put the numbers in a more familiar setting. The rectangle will be 180 dots long and 10 dots wide. You can create an almost unlimited number of box sizes by changing the numbers.

Also, you may add lines such as this:

```
11 CALL LINK("BOX",11,090,22,
1)
```

In the future we may even get some more complex shapes and forms, multiple shapes and even some animation. I would like to see some of your creations appeared in this publication so we can start a library of TML programs.

(See Page 29)

User Notes

(Continued from Page 28)

Lesher sells TML. To purchase the program or if you need help using it contact him at 722 Huntley, Dallas, TX 75213, or phone him at 214-821-9274.

Lottery program error

This comes from Jerry Keisler, of Paris, Texas. He writes:

Raymond Frantz of the VAST User Group in Phoenix, Arizona, found an error in my Texas Lottery program (March 1993) that sometimes produces the same number twice under option 1. To correct this, lines 340 and 350 should read as follows:

```
340 FOR I=0 TO 4
350 FOR J=I+1 TO 5
```

Raymond says the Arizona lottery uses numbers 1 through 42. To accommodate Arizona, change the following lines to:

```
260 DEF Y=INT(RND*42)+1
560 FOR I=1 TO 42
600 FOR I=1 TO 7
```

I have also been told the changes in lines 260 and 560 for the Texas lottery do not work. The lines are correct. Just remember the letter "o" has square corners and the number zero has round corners.

Faster screen dump

This comes from Vern Jensen, of Middletown, Rhode Island. Jensen is 14 years old. He writes:

A few months ago a screen dump in Extended BASIC by John Hamilton was published here. It printed an entire screen in about 39 minutes. For each character that was printed, a time-consuming calculation had to be made. With slight modifications I have enabled the program to "memorize" the calculation of each character so that the next time the character is encountered the computer can just print it without further delay. I timed my program to print a simple screen and it took seven minutes! It starts out slow but speeds up as time goes on. Note that the time will vary from screen to screen as those with a wider variety of characters will take longer than those with just a few.

Just MERGE this program in with the program you want to dump the screen from and place a CALL SCREENDUMP at the place where you want the screen to be dumped. Make sure that the screen dump-program be RESequenced to a higher line number than the last line of the program you want to MERGE it into.

```
32000 SUB SCREENDUMP :: DIM
GR(143,8):: OPEN #7:"PIO.CR"
 :: PRINT #7:CHR$(27);CHR$(6
5);CHR$(8):: B$="0123456789A
BCDEF"
32010 FOR R=1 TO 24 :: PRINT
 #7:CHR$(10);CHR$(13);CHR$(2
7);CHR$(75);CHR$(0);CHR$(1):
: FOR C=1 TO 32 :: CALL GCHA
R(R,C,A)
32020 IF GR(A,0)=1 THEN 3207
0
32030 CALL CHARPAT(MIN(MAX(A
,32),143),H$):: FOR P=1 TO 1
5 STEP 2 :: X=POS(B$,SEG$(H$
,P,1),1)-1 :: Y=POS(B$,SEG$(
H$,P+1,1),1)-1
32040 Z=2^((15-P)/2):: GR(A,
1)=GR(A,1)+Z*SGN(X AND 8)::
GR(A,2)=GR(A,2)+Z*SGN(X AND
4):: GR(A,3)=GR(A,3)+Z*SGN(X
 AND 2)
32050 GR(A,4)=GR(A,4)+Z*SGN(
X AND 1):: GR(A,5)=GR(A,5)+Z
*SGN(Y AND 8):: GR(A,6)=GR(A
,6)+Z*SGN(Y AND 4)
32060 GR(A,7)=GR(A,7)+Z*SGN(
7 AND 2):: GR(A,8)=GR(A,8)+Z
*SGN(Y AND 1):: NEXT P :: GR
(A,0)=1
32070 PRINT #7:CHR$(GR(A,1))
;CHR$(GR(A,2));CHR$(GR(A,3))
;CHR$(GR(A,4));CHR$(GR(A,5))
;CHR$(GR(A,6));CHR$(GR(A,7))
;CHR$(GR(A,8))
32080 NEXT C :: NEXT R :: PR
INT #7:CHR$(27);CHR$(65);CHR
$(12):: CLOSE #7 :: SUBEND
```

TI-Writer Replace String tip

This item has appeared in a number of user group newsletters. We do not who the author is.

Some of you are probably familiar with the Replace String function of TI-Writer.

(See Page 30)

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User Notes

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Here are a few tips that can increase its effectiveness for you.

Before using RS, make sure to turn off the word wrap mode. Do this by pressing function zero until you get a hollow cursor. This will prevent TI-Writer from reformatting the whole document. The only time you would want this type of reformatting is when you are replacing a short string with a much longer one, such as replacing FW with Funnelweb Farm Utility Disk. If you must leave word wrap on because of this, remember that each paragraph must end in a carriage return, and any line that has special spacings or indentations should end in a carriage return as well to preserve the spacing.

Here's something you can try on something like a doc file from a fairware disk. Load in a large file, press FCTN-9 and then type RS and Enter. Now type / a / q / and press Enter. Yes, there are spaces before and after the letters "a" and "q," and both letters should be framed by slashes as shown. TI-Writer will find the first occurrence of "a" and then will ask — Yes, No, All, Stop. Typing "Y" and pressing Enter will change just this "a" to a "q" if you are in fixed mode (hollow cursor). However, if you are in word wrap mode, TI-Writer will replace the "a" and then reformat the rest of the paragraph.

Take this one step further type "A" for All and then Enter. This will change every occurrence of "a" to "q." Time this and then hit FCTN-0 and change "q" back to "a" by changing the RS string to / q / a /. You should find the fixed mode to be many times faster than the word wrap mode.

Note that RS is sensitive to columns, meaning that you do not have to have every word in the document checked if you want to change "2]" to "2)". Use this string to replace a string occurring between columns 8 and 10:

8 10 /1/)/

Remember to always back up your files and work with the backup. Doing some of these exercises can be fun, but only if there is no risk involved.

Spell-It, Telco and Horizon RAMdisk

This item was written by Bill Sheridan a member of the K-Town 99ers.

In one of my past articles I mentioned that I couldn't get Spell-It or Telco to work with my Horizon RAMdisk. Well, thanks to Art Gibson, our local guru, I've found a simple fix. Here it is:

Powerdown your system and remove the RAMdisk from the PEB. Now set the CRU address to >1000 (turn switch No. 1 on and the others off).

That is all there is to it. You don't even need to reload the RAMdisk. Just be sure that the Horizon Menu program and the LOAD program have the right path to the files you have stored on the RAMdisk. Example: DSK5.LOAD, DSK5.SPELLIT.

Speeding up XBASIC

This item is excerpted from the PUG Peripheral, the newsletter of the Pittsburgh User Group. It was written by Sue Harper.

While Extended BASIC offers faster execution speed for some applications compared to console BASIC, XBASIC can be speed up even further by disabling sprite graphics. Naturally, this works only if the program does not use sprites. You al[so] need a memory expansion. The program statement to do this is:

(See Page 31)

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User Notes

(Continued from Page 30)

```
CALL INIT:: CALL LOAD(-31878
,0)
```

For little kids

The author of this program is unknown, but Chick DeMarti of the Los Angeles 99ers modified it somewhat. He recommends that after getting the program to run properly, you should remove the exclamation marks from lines 170 and 180. If you have a speech synthesizer, you might add the following:

```
215 S=K
275 CALL SAY(CHR$(S))
```

```
10 ! SAVE DSK1.BABYTYPER
100 !********************!
110 !  dedicated to all  !
120 ! budding 1-year-old !
130 !       typists      !
140 !********************!
150 CALL CLEAR
160 CALL MAGNIFY(2)
170 ! ON BREAK NEXT
180 ! CALL INIT :: CALL LOAD
(-31806,16) ! QUIT OFF !!
190 CALL KEY(0,K,S):: IF S=0
 THEN 190
200 IF K<32 OR K>127 THEN 19
0
210 IF K>96 THEN K=K-32
220 CALL SCREEN((K AND 15)+1
)
230 X=INT(RND*160)+1
240 Y=INT(RND*224)+1
250 Z=INT(RND*13)+3
260 IF Z=(K AND 15)+1 THEN 2
50
270 K=INT((K/4)*4)
280 CALL SPRITE(#1,K,Z,X,Y,0
,0)
290 CALL SOUND(-100,110*2^((
K-31)/12),0)
300 GOTO 120
```

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