

Covering the TI99/4A and the Myarc 9640

# MICROpendium

Volume 9 Number 5

June 1992

\$2.50



## SINK-IT



See page 22



\*\*\*\*\*  
**Plus:**

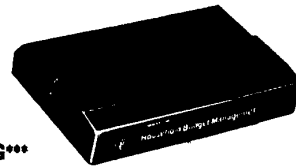
Wisconsin company poised for Myarc repairs  
Reviews of games for the Geneve

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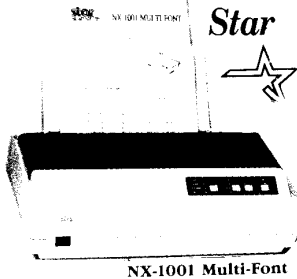
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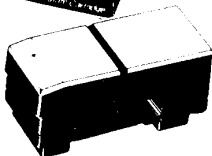
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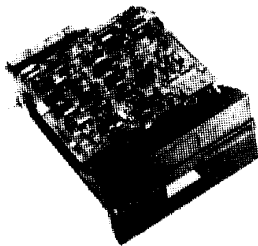
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# Contents

## MICROpendium

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## Regena on BASIC

English usage and grammar..... Page 7

## Extended BASIC (plus)

TI and IBM: Some BASIC comparisons..... Page 10

## The Art of Assembly

Randomly speaking..... Page 12

## MY-BASIC

Video XOP and MY-BASIC..... Page 20

## Myarc developments

Wisconsin company poised to do Myarc repairs, produce products soon..... Page 18

Myarc continuing current repairs, though said to be "out of business"..... Page 21

## Newsbytes

Contributions sought to a book on assembly, a list for bugs users find in MDOS and a tape from Lima..... Page 18

## Sink-it

A Battleship-like game pits your fleet against the computer in mock naval conflict..... Page 22

## Reviews

Time Guardian, Jungle Terror, Traffic Frenzy..... Page 25

MICRO-Reviews: Kwikdump, Graphic Grabber Print Module, European Creatures for Page Pro 99, Calandar, Artist Conversion..... Page 26

## User Notes

A new trick for XBASIC with assembly, solving the Geneve heat problem, and a TI-Writer tip..... Page 28

**Classified..... Page 31**

### \*READ THIS

Here are some tips to help you when entering programs from MICROpendium:  
1. All BASIC and Extended BASIC programs are run through Checksum, the numbers that follow exclamation points at the end of each program line. Do not enter these numbers or exclamation points. Checksum was published in the October 1987 edition.  
2. Long XBASIC 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

# Myarc out of business?

Is Myarc out of business? According to a consumer affairs officer in New Jersey, it is. If you're interested in the details, see the article on page 21.

Personally, it's a shame. Myarc was a long-time TI vendor and innovator. Unfortunately, it fell down on customer service and tended to promise more than it could deliver. Yet even those who have been waiting for months for repairs of their Myarc products still support the company. Loyalty like that is hard to come by. It's not a crime for Myarc to go out of business, but it is a tragedy.

The good news is that Cecure Electronics is negotiating to take over the Myarc repair business and possibly produce Myarc products. The word we've had from readers who have sent their Geneves to Cecure is that the company does good work at a fair price and in a timely fashion. (See the User Note item in this issue.) You can't expect more than that.

### MDOS BUYOUT UPDATE

Beery Miller recently reported on a Delphi conference that donations for the proposed MDOS buyout are about 65 percent complete. Miller is coordinating an effort to buy the rights to the program from Lou Phillips and programmer Paul Charlton.

Contributors should send a check, along with a self-addressed stamped envelope, to Beery Miller/9640 News, P.O.

Box 752465, Memphis, TN 38175-2465. For further details, see the April 1992 MICROpendium.

Don Walden of Cecure Electronics has said that he will deal with Myarc hardware only, and that Miller will coordinate future software efforts.

### LIMA FAIR

We hope to do a more extensive report on the Lima Fair next issue. See Newsbytes for a list of presentations; also, we hear that the committee on proposed hardware standards came up with some thoughts.

Ken Gladeszewski's demonstration of a computer controlled robot as an analog to digital conversion project for the TI attracted a good deal of attention at this event, according to all reports.

### TEX-COMP HAS OS/99

Tex-Comp has begun selling OS/99, which we reviewed last month, as one of its freeware offerings. Jerry Price of Tex-Comp says the company ordinarily shies away from software requiring extra support (OS/99 requires a GRAM device), but there was a great deal of interest in this program, which the company is offering with the permission of its author, Guy Neubert.

—JK

## BUGS & BYTES

### IWD Plus update

Joseph Syzdek (whose name was unfortunately garbled last issue) says information on his IWD Plus program printed last issue is "somewhat outdated."

The current version (3.1) sells for \$19.95 plus \$1.50 shipping and handling. Syzdek says the program provides some basic image-processing capabilities and can save images in ImageWise, MY-Art or TI-Artist format. His address is 99 Highland Ave., West Springfield, MA 01089-1017.

Price is different also for the ImageWise Display Routine (\$5.95 plus \$1.50 S&H). This and several other software items for use with the Imagewise System and the TI99/4A are available from RFW Enterprises, 111 Oakridge St., Chicopee MA 01020.

### ESD not at Lima

Electronic Systems Design was absent from the Lima Multi-User Group Conference in May. Although its hard disk controller was scheduled for release in April, scuttlebutt is that Barry Boone will not be able to complete the DSRs (Device Service Routines) for it until over the summer.

### 10,000th caller to BBS

The Cactus Patch BBS in Tuscon, Arizona, got its 10,000th caller May 20. Brad Snyder of Palmerton, Pennsylvania, was awarded an "I Love My TI99/4A" cap as a prize. The board's number is (602) 290-6277.

### TI longevity

Our MICRO-Reviewer Stan Krajewski is another person who has found the TI to be one of the most reliable products around (see Comments, May 1992, MICROpendium). He says he bought a TI console in October 1984 and ran a 24-hour BBS on it for three years.

### TTC products due

We haven't seen specifics, but Chris Taylor of the Taylor Company (ttc) says he is getting ready to release several products in the near future, including a cordless mouse. We'll keep you posted.

Address for the company is 1233 N. Mesa Dr. #2118, Mesa AZ 85201.

# Feedback

## Microsoft didn't write TI's BASIC language

I believe Barry Traver knows TI BASIC inside out. I believe he is qualified to write about it. However, I do *not* believe Microsoft wrote TI BASIC. I had a roommate who worked for TI. He said TI wrote their own BASIC. If Microsoft had written TI BASIC, a ? would sub for PRINT. And it would have Left\$, Mid\$ and Right\$.

**John Bohenek**  
Abilene, Texas

## Top of the hop

For those of you who would like to know, what happens after level 10 in Hopper (the last level, the invisible level) is it goes back to level five. I have passed level 10 three times so far; the first time I got 47,140 points and went from level 1 to 10 and 5 to 8, the second time I got 48,100 points and went from level 1 to 10 and 5 to 7, the third time (just today) I got 47,750 points and went from level 1 to 10 and 5 to 8.

**Sam Carey**  
Portland, Oregon

## Another disassembler

The Extended BASIC disassembler in the May 1992 issue was very nice, albeit slow, as the author mentioned. I would like to point out that DiskAssembler is still available both for the 4A and an enhanced version for the 9640. It has many bells and whistles and, most importantly, does DISK files, so any assembly file can be disassembled without being in memory. And it's fast! Please write me at 515 Alma Real Dr., Pacific Palisades, CA 90272.

**Tom Freeman**  
T and J Software  
Pacific Palisades, California

## Dump different ways

This memo is prompted because there seems to be some interest about dumping cartridges to disk. Since I have stuff on at least four schemes I felt that a brief summary may be useful.

1. DUMPIT. I have no examples of material from this system at hand. However, other local members of our 99er user

group have used it successfully.

2. A system by Barry Boone, subhead by S. Gary, Ontario, Canada. This one uses disk modules which look like Editor/Assembler Option 5 code, with the first module = 33 sectors. After loading, the program starts running immediately.

3. Another system by Barry Boone, looking quite similar to No. 2, but the first module = 13 sectors; also, after loading, the program does *not* start running. Rather, there is a reset to the TI Main Menu and the chosen program appears on the TI Main Menu at position 3; then, you must press 3 to start running.

4. This system uses a utility named "YLOAD" to load the program code. The first module = 13 sections. As per No. 3 above, after loading the program does *not* start, but resets to the TI Main Menu and appears as position 3 and you must press 3 to start running.

Note that I *do not* have any data about No. 2, No. 3 or No. 4 above about how the cartridges were dumped to disk. I got the stuff on some disks with a system I bought. Perhaps contacting Barry Boone about No. 2 or No. 3 might get you some information. There are no references in the No. 4 system to lead to a source of information.

**Merle Vogt**  
Von Ormy, Texas

*Boone programs for Texaments, 53 Center St., Patchogue, NY 11772 — Ed.*

## Funnelweb source

With reference to Phil Martin's "Tips on Using Funnelweb 4.40" letter on page 28 of the May 1992 issue of MICROpendium, we can supply copies of the Funnelweb V4.40 with full documentation. Our library has this edition archived on four SSSD disks as follows: A) All 40-column documentation, B) All TI-Writer-side (Plain Jane) programs, C) All 80-column documentation, D) All 80-column and Editor/Assembler-side programs plus five foreign language fonts. Each disk de-archives to less than 360 sectors. The cost is \$3 per disk prepaid or \$10 for all four. No, we don't do windows and we don't make flippies.

Funnelweb documentation is not easy reading and definitely not for the beginner.

It is all there, but is a disquisition more for the programmer than an aid for the casual user.

In passing, thanks to Bill Gaskill for his review of LinEditor in the same issue. Band documentation — and Asgard's has usually been top-drawer — is a particular bane of mine. I would have bought the program had it not been for his comments. I'll wait for V2.

**Harry Ledyard**  
Assistant Librarian  
Rocky Mountain 99ers Users Group  
P.O. Box 31846  
Aurora, CO 80041

## TI keeps on going

MICROpendium is the publication that we look forward to, more than any other. An assortment of magazines and papers arrive regularly, but when the MICROpendium "comes on the scene," we stop all activities and begin scanning it.

Your editorial at the top of the Comments page in the May issue really caught our attention; it expresses our sentiments exactly. The TI99/4A really is a remarkable machine. It is reliable: I've been using it since 1985 and have had very few things that needed to be done to it to keep it "up and running."

I am strictly a user, not being able to program at all, so the Micro-Reviews section is the area that gets my attention initially.

Keep up the good work; TI may review their feelings about us in the future. Anybody can get a clone, but it takes a special kind of individual to get involved in the TI99/4A environment.

**Jack Lyons**  
Hearne, Texas

*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.*

## BASIC

## English usage and grammar

By REGENA

I have a daughter who is a high school senior (a graduate by the time you read this, I hope), so we have been thinking a lot about the ACT test required for college entrance. She and her friends were a little worried because the classes they are taking this year are not the subjects on standardized tests.

My program this month reviews some of the basic English usage and grammar that might be found on achievement tests. The computer will generate sentences from random selections of words, and the user will then choose the correct sentence. Some sections offer four possible solutions, and some sections offer only two possible solutions.

There is still room in this program for you to add more grammar and usage examples. Move Lines 2900-2960 to the end of your new program and start adding questions with Line 2900. As you read through the program you should be able to get the idea of how to do your own programming for other grammatical situations, punctuation, capitalization and spelling. You may also adapt this idea for any other topic.

Lines 180-250 use DATA statements to read in five possible NAMES, PRONouns, Verbs, ANIMAls, ARTicles, ADVerbs, OBJects, PHrases and Doing phrases. These are used to create sentences from random words. Line 130 defines the function R5 to be a random number from 1 to 5 to choose these words.

Lines 270-400 are the subroutine used to receive the user's answer if the choice is A, B, C or D, where ANSS\$ is the correct answer.

Lines 440-890 present five sentences using infinitives. Notice that the subroutines for the different types of sentences are chosen randomly, so the order in which sentences are presented will be

different (and you will not necessarily get all types). The user needs to remember that a verb form starting with "to" should not be split by an adverb. "To drive carefully" is more acceptable than "to carefully drive."

Lines 900-980 are the subroutine used to receive the user's answer if there are only two sentences given. ANS is the correct answer, 1 or 2.

Lines 990-1580 test the use of **lie**, **lay**, **lying** and **laying**. **Lie** and **lying** refer to reclining; **lay** and **laying** refer to placing an object.

Lines 1590-2110 test the use of **I** and **me**. In our family we refer to "Meand" when we correct improper usage of the pronoun **me**. I wrote a program specifically for "Meand" in the June 1987 issue of MICROpendium. The other person is always mentioned first, followed by **and me** in the objective case or **and I** in the subjective case.

Lines 2120-2540 test subject-verb agreement for pronouns. **Were** is used for third-person singular pronouns (**he**, **she**) if something is not a fact. For example, "if he were" and "I wish she were" are acceptable usages.

Lines 2550-2890 test the use of **to** instead of **and** with **come** and **go**.

Lines 2900-2960 offer the option of trying the program again or ending the program.

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. Please specify that you need "Grammar" for the TI and whether you need cassette or diskette.

## GRAMMAR

```

100 REM GRAMMAR !225
110 REM BY REGENA !071
120 CALL CLEAR !209
130 DEF R5=INT(5*RND+1)!093
140 PRINT "ENGLISH USAGE AND
GRAMMAR": : : :!009
150 PRINT "SELECT THE CORREC
T USE" !121
160 PRINT : "OF WORDS OR PUNC
TUATION." !221
170 A$="A NO CHANGE" !218
180 FOR J=1 TO 5 !061
190 READ NAME$(J), PRO$(J), V$(
J), ANIM$(J), ART$(J), ADV$(J)
, OBJ$(J), PH$(J), D$(J) !232
200 NEXT J !224
210 DATA RICK, HE, MOVE, FOX, A,
JOYFULLY, BOOK, IN THE FOREST.
, TO THE MOVIE. !087
220 DATA CINDY, SHE, DRIVE, GER
BIL, A, RAPIDLY, BOX, ON THE GRA
SS., FOR A RIDE. !084
230 DATA BOB, WE, CLIMB, DOG, TH
E, RECKLESSLY, ROCK, IN ITS HOM
E., TO A CONCERT. !169
240 DATA RANDY, THEY, JUMP, CAT
, ONE, SWIFTLY, TOY, IN THE DIRT
., TO A DANCE. !009
250 DATA BRETT, YOU, RUN, RABBI
T, THE, QUICKLY, PAN, IN OUR YAR
D., TO THE GAME. !169
260 GOTO 410 !234
270 CALL KEY(3, K, S) !190
280 IF S<1 THEN 270 !024
290 IF (K>64)+(K<69)=-2 THEN
320 !214
300 IF (K>96)+(K<101)<>-2 TH
EN 270 !142
310 K=K-32 !069
320 PRINT : CHR$(K) : : !073
330 IF ANS$=CHR$(K) THEN 360
!184
340 PRINT "THE CORRECT RESPO
NSE IS "; ANS$; "." !093
350 GOTO 370 !194
360 PRINT "CORRECT." !171
370 PRINT : : "PRESS ANY KEY
TO CONTINUE." ; !175
380 CALL KEY(3, K, S) !190
390 IF K<1 THEN 380 !126
400 RETURN !136
410 PRINT : : : : "PRESS ANY
KEY TO START." !139
420 CALL KEY(3, K, S) !190
430 IF K<1 THEN 420 !166
(See Page 8)

```

## REGENA ON BASIC —

(Continued from Page 7)

```

440 FOR J=1 TO 5 !061
450 CALL CLEAR !209
460 RANDOMIZE !149
470 CH=INT(3*RND)+1 !214
480 IF CH=CH1 THEN 470 !217
490 CH1=CH !005
500 ON CH GOSUB 530,660,780
!039
510 NEXT J !224
520 GOTO 990 !048
530 S$=NAME$(R5)!110
540 T$=ADV$(R5)!041
550 IF T$=T1$ THEN 540 !250
560 T1$=T$ !223
570 U$=V$(R5)!165
580 PRINT S$;" LIKES TO ";T$
;" ";U$;" AHEAD." !043
590 PRINT : :A$ !107
600 PRINT : "B ";S$;" LIKES
TO ";U$;TAB(4);" AHEAD; ";T$
;"." !054
610 PRINT : "C ";S$;" LIKES
TO ";T$;TAB(4);"BE ";U$;"ING
AHEAD." !101
620 PRINT : "D ";S$;" LIKES
TO ";U$;TAB(4);T$;" AHEAD."
!096
630 ANS$="D" !208
640 GOSUB 270 !095
650 RETURN !136
660 U$=V$(R5)!165
670 T$=ADV$(R5)!041
680 IF T$=T1$ THEN 670 !124
690 T1$=T$ !223
700 PRINT "TO ";T$;" ";U$;"A
ROUND IS THE PLAN." !171
710 PRINT : :A$ !107
720 PRINT : "B ";T$;" "; TO ";
U$;TAB(4);"AROUND IS THE PLA
N." !059
730 PRINT : "C TO ";U$;" ARO
UND";TAB(4);T$;" IS THE PLAN
." !000
740 PRINT : "D TO ";U$;" ARO
UND IS";TAB(4);"THE PLAN ";T
$;"." !124
750 ANS$="C" !207
760 GOSUB 270 !095
770 RETURN !136
780 P$=PRO$(INT(2*RND)+1)!06
4
790 U$=V$(R5)!165
800 IF U$=U1$ THEN 790 !247
810 U1$=U$ !225
820 PRINT P$;" KNOWS NOT TO
";U$;" CARELESSLY." !056
830 PRINT : :A$ !107
840 PRINT : "B ";P$;" KNOWS
TO NOT";TAB(4);U$;" CARELESS
LY." !230
850 PRINT : "C ";P$;" KNOWS
TO NOT";TAB(4);"CARELESSLY "
;U$;"." !098
860 PRINT : "D ";P$;" SHOULD
NOT";TAB(4);U$;"." !062
870 ANS$="A" !205
880 GOSUB 270 !095
890 RETURN !136
900 CALL KEY(3,K,S)!190
910 IF (K<49)+(K>50)THEN 900
!154
920 PRINT : :CHR$(K)!148
930 IF K=ANS+48 THEN 960 !16
2
940 PRINT : : "THE CORRECT AN
SWER IS ";CHR$(ANS+48);"." !
060
950 GOTO 970 !028
960 PRINT : : "CORRECT." !021
970 GOSUB 370 !195
980 RETURN !136
990 L$(1)="LIE" !057
1000 L$(2)="LAY" !070
1010 LL$(1)="LYING" !048
1020 LL$(2)="LAYING" !115
1030 FOR J=1 TO 5 !061
1040 CALL CLEAR !209
1050 PRINT "WHICH IS CORRECT
?": : "CHOOSE 1 OR 2." !166
1060 PRINT : : : :!112
1070 ANS=1 !154
1080 RANDOMIZE !149
1090 T=INT(2*RND)+1 !158
1100 T2=1-SGN(T-2)!079
1110 CH=INT(4*RND)+1 !215
1120 IF CH=CH1 THEN 1110 !09
2
1130 CH1=CH !005
1140 ON CH GOSUB 1180,1270,1
390,1470 !186
1150 GOSUB 900 !215
1160 NEXT J !224
1170 GOTO 1590 !139
1180 B$=OBJ$(R5)!023
1190 IF B$=B1$ THEN 1180 !08
8
1200 B1$=B$ !187
1210 C$=" "&ART$(R5)&" " !10
0
1220 PRINT "1 PLEASE ";L$(T
);C$;B$;TAB(4);"DOWN HERE."
!027
1230 PRINT : : "2 PLEASE ";L
$(T2);C$;B$;TAB(4);"DOWN HER
E." !184
1240 IF T=2 THEN 1260 !250
1250 ANS=2 !155
1260 RETURN !136
1270 Z$=ANIM$(R5)!121
1280 IF Z$=Z1$ THEN 1270 !22
6
1290 Z1$=Z$ !235
1300 P$=PH$(R5)!226
1310 IF P$=P1$ THEN 1300 !23
7
1320 P1$=P$ !215
1330 C$=ART$(R5)&" " !196
1340 PRINT "1 ";C$;Z$;" WAN
TS TO";TAB(4);L$(T);" ";P$ !
219
1350 PRINT : : "2 ";C$;Z$;"
WANTS TO";TAB(4);L$(T2);" ";
P$ !120
1360 IF T=1 THEN 1380 !114
1370 ANS=2 !155
1380 RETURN !136
1390 PR$=PRO$(R5)!141
1400 IF PR$=PR1$ THEN 1390 !
235
1410 PR1$=PR$ !123
1420 PRINT "1 ";PR$;" SHOUL
D BE ";LL$(T);TAB(4);"DOWN T
O REST." !231
1430 PRINT : : "2 ";PR$;" SH
OULD BE ";LL$(T2);TAB(4);"DO
WN TO REST." !132
1440 IF T=1 THEN 1460 !194
1450 ANS=2 !155
1460 RETURN !136
1470 N$=NAME$(R5)!105
1480 IF N$=N1$ THEN 1470 !14
7
1490 N1$=N$ !211
1500 Z$=OBJ$(R5)!047
1510 IF Z$=Z1$ THEN 1500 !20
1
1520 Z1$=Z$ !235
1530 C$=" "&ART$(R5)!196
1540 PRINT "1 ";N$;" WILL B
E ";LL$(T);C$;TAB(4);Z$;" DO
WN SOON." !163
1550 PRINT : : "2 ";N$;" WIL

```

(See Page 9)



## REGENA ON BASIC—

(Continued from Page 8)

```

L BE ";LL$(T2);C$;TAB(4);Z$;
" DOWN SOON." !064
1560 IF T=2 THEN 1580 !060
1570 ANS=2 !155
1580 RETURN !136
1590 M1$="ME AND " !211
1600 M2$="I AND " !138
1610 M3$=" AND ME" !213
1620 M4$=" AND I" !140
1630 FOR J=1 TO 5 !061
1640 CALL CLEAR !209
1650 PRINT "CHOOSE THE BEST
SENTENCE.": : : :!003
1660 RANDOMIZE !149
1670 N$=NAME$(R5)!105
1680 IF N$=N1$ THEN 1670 !09
2
1690 N1$=N$ !211
1700 P$=D$(R5)!142
1710 IF P$=P1$ THEN 1700 !12
6
1720 P1$=P$ !215
1730 CH=INT(4*RND)+1 !215
1740 IF CH=CH1 THEN 1730 !20
2
1750 CH1=CH !005
1760 ON CH GOSUB 1800,1860,1
960,2020 !222
1770 GOSUB 270 !095
1780 NEXT J !224
1790 GOTO 2120 !159
1800 PRINT "A ";M1$;N$;" LI
KE TO GO";TAB(4);P$ !233
1810 PRINT : "B ";M2$;N$;" L
IKE TO GO";TAB(4);P$ !160
1820 PRINT : "C ";N$;M3$;" L
IKE TO GO";TAB(4);P$ !162
1830 PRINT : "D ";N$;M4$;" L
IKE TO GO";TAB(4);P$ !164
1840 ANS$="D" !208
1850 RETURN !136
1860 Z$=ANIM$(R5)!121
1870 IF Z$=Z1$ THEN 1860 !05
1
1880 Z1$=Z$ !235
1890 C$=ART$(R5)&" " !196
1900 PRINT "A ";C$;Z$;" BEL
ONGS TO";TAB(4);M1$;N$;". " !
231
1910 PRINT : "B ";C$;Z$;" BE
LONGS TO";TAB(4);M2$;N$;". "
!158
1920 PRINT : "C ";C$;Z$;" BE
LONGS TO";TAB(4);N$;M3$;". "
!162
1930 PRINT : "D ";C$;Z$;" BE
LONGS TO";TAB(4);N$;M4$;". "
!162
1940 ANS$="C" !207
1950 RETURN !136
1960 PRINT "A I THINK ";M1$
;N$;TAB(4);"SHOULD GO ";P$ !
222
1970 PRINT : "B I THINK ";M2
$;N$;TAB(4);"SHOULD GO ";P$
!149
1980 PRINT : "C I THINK ";N$
;M3$;TAB(4);"SHOULD GO ";P$
!151
1990 PRINT : "D I THINK ";N$
;M4$;TAB(4);"SHOULD GO ";P$
!153
2000 ANS$="D" !208
2010 RETURN !136
2020 X$=OBJ$(R5)!045
2030 IF X$=X1$ THEN 2020 !20
7
2040 X1$=X$ !231
2050 C$=" "&ART$(R5)&" " !10
0
2060 PRINT "A GIVE";C$;X$;"
TO";TAB(4);M1$;N$;". " !226
2070 PRINT : "B GIVE";C$;X$;
" TO";TAB(4);M2$;N$;". " !153
2080 PRINT : "C GIVE";C$;X$;
" TO";TAB(4);N$;M3$;". " !155
2090 PRINT : "D GIVE";C$;X$;
" TO";TAB(4);N$;M4$;". " !157
2100 ANS$="C" !207
2110 RETURN !136
2120 FOR J=1 TO 5 !061
2130 CALL CLEAR !209
2140 RANDOMIZE !149
2150 T=R5 !153
2160 T1=T !151
2170 ANS=1 !154
2180 IF T<3 THEN 2200 !172
2190 ANS=2 !155
2200 X$=D$(R5)!150
2210 IF X$=X1$ THEN 2200 !13
2
2220 X1$=X$ !231
2230 PRINT "CHOOSE THE CORRE
CT SENTENCE.": : : :!159
2240 CH=R5 !208
2250 IF CH=CH1 THEN 2240 !20
2
2260 CH1=CH !005
2270 ON CH GOSUB 2310,2340,2
380,2410,2470 !025
2280 GOSUB 900 !215
2290 NEXT J !224
2300 GOTO 2550 !078
2310 PRINT "1 ";PRO$(T);" W
AS GOING";TAB(4);X$ !207
2320 PRINT : "2 ";PRO$(T);"
WERE GOING";TAB(4);X$ !206
2330 RETURN !136
2340 PRINT "1 I WISH ";PRO$(
T);" WAS GOING";TAB(4);X$ !
154
2350 PRINT : "2 I WISH ";PRO
$(T);" WERE GOING";TAB(4);X$
!153
2360 ANS=2 !155
2370 RETURN !136
2380 PRINT "1 ";PRO$(T);" D
OESN'T WANT TO GO";TAB(4);X$
!032
2390 PRINT : "2 ";PRO$(T);"
DON'T WANT TO GO";TAB(4);X$
!060
2400 RETURN !136
2410 B$=ANIM$(R5)!097
2420 IF B$=B1$ THEN 2410 !04
3
2430 B1$=B$ !187
2440 PRINT "1 WASN'T ";PRO$(
T);" GOING TO";TAB(4);"GET
A ";B$;"?" !232
2450 PRINT : "2 WEREN'T ";PR
O$(T);" GOING TO";TAB(4);"GE
T A ";B$;"?" !231
2460 RETURN !136
2470 Y$=V$(R5)!169
2480 IF Y$=Y1$ THEN 2470 !14
9
2490 Y1$=Y$ !233
2500 T=INT(2*RND)+1 !158
2510 PRINT "1 IF ";PRO$(T);
" WAS NOT TIRED,";TAB(4);PRO
$(T);" WOULD ";Y$;". " !073
2520 PRINT : "2 IF ";PRO$(T)
;" WERE NOT TIRED,";TAB(4);P
RO$(T);" WOULD ";Y$;". " !072
2530 ANS=2 !155
2540 RETURN !136
2550 FOR J=1 TO 4 !060
2560 CALL CLEAR !209
2570 N$=NAME$(R5)!105
2580 IF N$=N1$ THEN 2570 !22
8

```

(See Page 10)

## REGENA ON BASIC—

(Continued from Page 9)

```

2590 N1$=N$ !211
2600 Y$=PRO$(R5)!068
2610 IF Y$=Y1$ THEN 2600 !02
4
2620 Y1$=Y$ !233
2630 X$=D$(R5)!150
2640 IF X$=X1$ THEN 2630 !05
2
2650 X1$=X$ !231
2660 PRINT "CHOOSE THE CORRE
CT SENTENCE.": : : : !159
2670 CH=INT(4*RND)+1 !215
2680 IF CH=CH1 THEN 2670 !12
2
2690 CH1=CH !005
2700 ON CH GOSUB 2740,2780,2
820,2860 !212
2710 GOSUB 900 !215
2720 NEXT J !224
2730 GOTO 2900 !174

2740 PRINT "1 ";N$;" WILL T
RY TO";TAB(4);"COME HOME." !
248
2750 PRINT : "2 ";N$;" WILL
TRY AND";TAB(4);"COME HOME."
!223
2760 ANS=1 !154
2770 RETURN !136
2780 PRINT "1 ";N$;" AND ";
Y$;" PLAN ON";TAB(4);"GOING
";X$ !171
2790 PRINT : "2 ";N$;" AND "
;Y$;" PLAN TO";TAB(4);"GO ";
X$ !134
2800 ANS=2 !155
2810 RETURN !136
2820 PRINT "1 TRY AND COME
WITH";TAB(4);N$;" AND ME." !
016
2830 PRINT : "2 TRY TO COME
WITH";TAB(4);N$;" AND ME." !
149
2840 ANS=2 !155
2850 RETURN !136
2860 PRINT "1 ";N$;" PLANS
TO GO";TAB(4);X$ !229
2870 PRINT : "2 ";N$;" PLANS
ON GOING";TAB(4);X$ !118
2880 ANS=1 !154
2890 RETURN !136
2900 CALL CLEAR !209
2910 PRINT : "WANT TO TRY A
GAIN? (Y/N)" !040
2920 CALL KEY(3,K,S)!190
2930 IF (K=89)+(K=121)THEN 4
40 !253
2940 IF (K<>78)+(K<>110)=-2
THEN 2920 !176
2950 CALL CLEAR !209
2960 END !139

```

## EXTENDED BASIC (plus)

# The TI and the IBM

## Some BASIC comparisons

By BARRY A. TRAVER

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This article is the last in a series of three, comparing the TI-99/4A and the IBM, with an emphasis upon programming in BASIC on the two machines. The previous installments were published in the March and April editions of MICROpendium.

The first article was an introduction to some of the similarities and differences between the two. There we noted that sometimes the differences in the BASICs are related to differences in hardware. For example, there is no CALL SPRITE in QuickBASIC, because genuine sprites as we know them on the TI are not supported on the IBM. Likewise, there is no CALL SAY in QuickBASIC and the CALL SOUND in QuickBASIC does not support three-voice harmony, since most IBMs do not support speech or multi-voice music, whereas the typical TI system is capable of both. (If you want those capabilities on an IBM, you have to purchase a special card, such as the

SoundBlaster or AdLib card, and people who own such are in the minority.)

If, however, you stay away from full-color fancy graphics with animation, speech, and complex music, it is possible to bring many BASIC programs from one machine to the other without much difficulty. The second article suggested some hints for converting TI Extended BASIC programs to run in QuickBASIC. One useful device is to write QuickBASIC functions and subprograms that emulate TI XB statements that do not have a present exact counterpart in QuickBASIC. (I myself have written QuickBASIC emulations for many TI XB statements, including ACCEPT AT, DISPLAY AT, CALL GCHAR, CALL HCHAR, LINPUT, MAX, MIN, SEG\$, RPT\$, CALL VCHAR, and more. Simplified versions of some of these were included in the second article; for more information on the full package, write to Barry Traver, 835 Green Valley Drive, Philadelphia, PA

19128, enclosing a SASE.)

In this third article, we turn our attention to going in the opposite direction, i.e., converting QuickBASIC programs (as well as GW-BASIC or BASICA programs) to run in TI Extended BASIC. Important: many of the observations in the previous article have application here (e.g., that TI XB LINPUT is equivalent to QuickBASIC LINE INPUT), so I will not be repeating all that I have said before. That is, this article is dependent upon the preceding one, so do not presume that this article is sufficient by itself. It isn't! (Perhaps I should also mention that even when you put the three articles together, you still have only an introduction to these topics. I do not pretend to be exhaustive in my treatment; my intention is to provide enough specific suggestions to get you on your way.)

Okay. Here's the outline of the rest of this article:

1. Some general comments and remarks (See Page 11)

## EXTENDED BASIC PLUS—

(Continued from Page 10)

about TI BASIC, GW-BASIC (or BASICA), TI Extended BASIC, and QuickBASIC (and QBASIC);

2. Some advice on physically getting a BASIC program from the TI to the IBM;

3. A few thoughts on specific differences in the languages with an eye toward finding TI XB equivalents of statements in an IBM BASIC;

4. Some miscellaneous final comments.

### GENERAL COMMENTS

1. Essentially, GW-BASIC (or BASICA; for our purposes the two can be considered to be equivalent) is to QuickBASIC what TI BASIC is to TI Extended BASIC. GW-BASIC is much more limited than QuickBASIC and TI Extended BASIC. One of the great strengths of TI XB (though often not effectively utilized by TI XB programmers) is the ability of having genuine user-defined subprograms with local variables and passed parameters. That feature is lacking from both GW-BASIC and TI BASIC, but is present in both QuickBASIC and TI Extended BASIC.

One thing that this means is that your BASIC vocabulary is "extensible," i.e., you can add new words to TI XB and QuickBASIC, such as CALL DELAY(X). In addition to subprograms, QuickBASIC also allows user-defined functions. (True, with the DEF statement, TI XB also allows this, but in a much more limited way.) That TI XB does not support multi-variable, multi-statement user-defined functions isn't really a large handicap, because (even though it is slightly more awkward) whatever can be done by calling a function can also be done by calling a subprogram as long as you add one appropriate additional parameter.

Suppose, for example, that you want to define a function RAND which provides a random integer from A to B. Here's a simple program that shows how it might be done in QuickBASIC:

```
INPUT A
INPUT B
CHOICE = RAND(A, B)
PRINT CHOICE
STOP
```

```
FUNCTION RAND (A, B)
RAND = INT(RND * (B - A + 1)) + A
```

### END FUNCTION

Since TI XB does not support multi-variable user-defined functions but does support multi-variable user-defined subprograms, here's how you might accomplish the same thing in TI XB:

```
100 INPUT A
110 INPUT B
120 CALL RAND(A, B, CHOICE)
130 PRINT CHOICE
140 STOP
150 SUB RAND (A, B, C)
160 C = INT(RND * (B - A + 1)) + A
170 SUBEND
```

Incidentally, for our purposes, we have not made any distinction between QBASIC and QuickBASIC, but perhaps I should mention that the two are not exactly the same. QBASIC is included with DOS 5.0 for the IBM; QuickBASIC is a separate package. 98 percent of the commands are identical, so don't worry about the differences. QuickBASIC, however, does have some advantages over QBASIC: QuickBASIC includes a compiler, more sophisticated debugging tools, and half a dozen commands (e.g., CALL INTERRUPT) not supported in QBASIC. If you're going from QB to TI XB, the differences are almost never important; if you're going from TI XB to QB, then (in my opinion) QuickBASIC (at \$60-\$70) is a very worthwhile purchase.

### ADVICE ON TRANSFERS

2. Physically getting the BASIC program between the IBM and the TI was covered in detail in the April installment. What I want to emphasize here is that what you want to transfer is normal ASCII text, not the tokenized BASIC code as it exists in memory for a running (or a runnable) program.

Example: some of you may know that CHR\$(156) in TI XB is the "token" (or "shorthand") for "PRINT." But that CHR\$(156) on the TI will mean nothing to an IBM. Thus we do not want to transfer to the IBM the actual TI XB program (with its shorthand tokens) but a text LISTING that is more understandable for the IBM. Likewise, IBM BASIC programs exist in two different formats. The "binary" or "fast load" format corresponds to our regular (tokenized) TI XB programs. That format isn't very understandable to a TI.

What you need to transfer over to the TI is the IBM BASIC program in (ASCII) text format.

If the IBM BASIC program is in the wrong format, here's how to get it into the right format before transferring it. If you're using GW-BASIC, load in the program and re-save it in ASCII format. Here's the appropriate syntax: SAVE "MYPROG.BAS",A (the "A" at the end is the key). If you're using QuickBASIC, likewise load in the program and re-save it in ASCII format (just designate "Text" rather than "Fast Load" on the menu). Then use any of the procedures mentioned in the preceding article to transfer the text file between the machines.

Once it has reached the TI, you can edit it using the TI-Writer editor (or some reasonable equivalent, such as Funnelweb). (Just be sure to use "PF" rather than "SF" when saving it to disk.) You will, of course, need a utility to convert the text (D/V80) file to a TI XB MERGE (D/V163) file, but many such utilities exist, such as 80MERG, TEXTTOPROG, XLATE, or TEXTLOADER (the last, by Curtis Provance, is a favorite of many). Finally, when you've converted it to a MERGE file, you need to MERGE it into memory (syntax: MERG DSK1.MYPROG) and then to save it as a normal TI XB program.

### LANGUAGE DIFFERENCES

3. In April you saw that there is a lot of overlap between TI XB and QB. Both in

(See Page 12)

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## EXTENDED BASIC PLUS—

(Continued from Page 11)

clude ABS, ASC, ATN, CALL, CHR\$, CLOSE, COS, DATA, DIM, END, EOF, ERR, EXP, FOR...NEXT, GOSUB, GOTO, IF...THEN...ELSE, INPUT, INT, LEN, LET, LOG, ON ERROR, ON...GOSUB, ON...GOTO, OPEN, OPTION BASE, PRINT USING, RANDOMIZE, READ, REM, RESTORE, RETURN, RUN, SGN, SIN, SOUND, SQR, STOP, STR\$, TAN, and VAL. Sometimes there are subtle differences (e.g., STR\$ in QB puts a blank space in front of a positive number, and RANDOMIZE in QB needs a "seed" as in RANDOMIZE TIMER), but TI XB and QB have much in common.

Occasionally different words are used for the same function; for instance, INSTR in QB corresponds to POS in TI XB and LOCATE(ROW,COL): PRINT MESSAGE\$ in QB corresponds to DISPLAY AT(ROW,COL):MESSAGE in TI XB, but we also spoke about that last time. What remains to be done is to find TI XB counterparts for words that are unique to QB. Although I don't have enough room remaining here in this final article to do justice to this subject, I do expect to return to the topic in my regular Extended BASIC column as I add these QB features to TI XB

as new TI XB subprograms.

For now, however, I'll just describe a few more of the commands, and leave it to you to write equivalents. Many are nice features that may be of value to any TI XB programmer. For instance, LTRIM\$ and RTRIM\$ trim off leading and trailing blanks from a string, and LEFT\$ and RIGHT\$ make it easy to extract a substring at the left or right of a string.

One nice thing about QB is the presence of DO...LOOPs, WHILE...WEND statements, and SELECT CASE options, which make it simpler to write structured programs in BASIC. If you analyze the logic involved, however, any of these can also be performed by using IF...THEN...ELSE variations. (Again, I hope to explain more about that later, when I talk about structured programming in my Extended BASIC column, D.V.)

### WORKING WITH 80 COLUMNS

4. Well, once again I'm "out of time and space," but I do hope that I've at least gotten you started in getting the TI and the IBM to be on speaking terms with one another, especially in the area of BASIC programs. One of the biggest problems that you may have in converting from QB to TI is that many IBM programs take advantage

of an 80-column screen. Doing the same thing in normal graphics mode on a TI (with only 28 or 32 columns to work with) can be quite a challenge. (Maybe enough so to get you to save up for an appropriate 80-column card for your TI, such as a "TINY T-I-M" from OPA?) On the other hand, working with numbers on a TI is much easier than on an IBM. (There you have to be concerned about four types — integers and long integers as well as single- and double-precision decimals — whereas on the TI everything is done with double-precision accuracy, in a more friendly way than is true on the IBM.)

"The proof of the pudding is in the eating." I know that it is possible to convert programs between TI Extended BASIC and QuickBASIC for the IBM because I've done it, both ways. If you have access to both computers and are interested in programming, I challenge you to give it a try as well. And I suspect that in the process you'll come to appreciate your TI all the more, as you recognize that each machine has (and continues to have) advantages that the other does not have. Keep on computing!

## THE ART OF ASSEMBLY — PART 13

# Randomly speaking

By BRUCE HARRISON  
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There's nothing so rare as a good sequence of random numbers. Today we'll explore random number sequences on the computer and discuss some of the pitfalls waiting for you when you do random number sequences on your friendly little TI.

First, a word about terminology. In the pure sense, nothing we do in today's article will produce true random numbers. If you're going to throw dice, there's no substitute for real ones. What we can do on the computer is generate sequences of numbers that appear to be randomly selected, in the sense that knowing what the most recent number was gives no hint at what the next one will be, unless one knows both the algorithm used and the seed number in use. What we'll create, from a mathematical point of view, is a sequence of pseudo-random numbers. Each such sequence is really mathematically deterministic, given a particular starting number or "seed." The method we'll show can create 65,536 dif-

ferent sequences, and unless one were willing to do a lot of arithmetic by pencil and paper, one will have no way of predicting what number will arise next from the sequence. In this article, we'll use the term "random number" to mean a member of such a pseudo-random sequence.

The keys to making good random numbers are two: First, one must have an algorithm for determining what the next number in sequence will be; Second, one must have a high quality means of getting the seed, or starting number for the sequence. Let's put this second thing first, since this must be done first in any practical application.

As you probably know, there is a memory location in the TI called Random Number Seed (> 83C0). Under the simplest conditions on the TI, this location in memory will be loaded with a word that's unpredictable. There are, however, exceptions to this rule. If, for example, one selects Extended BASIC and that finds a

(See Page 13)

## THE ART OF ASSEMBLY—

(Continued from Page 12)

LOAD program on DSK1, the seed will always be left with the same number, and thus RANDOMIZE will be ineffective. If one has a Horizon RAMdisk, and the computer boots up to the menu provided by that device, then the random number seed will always contain the number >02B0. This too will render the seed useless.

Fortunately for us, there are numbers in the TI's memory that change as a function of time, and can be captured conveniently to provide a seed number. One memory location is >8379, and it's only one byte, but under the right conditions it will provide a number in the range of >00 through >FF, and there's no way of predicting its contents before reading it. Even this has caveats attached.

For reasons unknown to us, the Editor/Assembler module, while it's in control, limits the range of this number to >00 through >14. The probable reason for this is that the counter is being used to time the blinking of the cursor, and gets cleared every time it reaches >14. That gives us only 21 possible states for the number. What do we do about that? We'll get to that in a moment.

The second counter that keeps changing is the Screen Timeout counter at >83D6. This number keeps incrementing by two on each VDP interrupt, until it blanks the screen, or until a key is struck on the keyboard. The fact that this counts by two is important to the discussion that follows.

This month's sidebar source code is a fragment from our game program SCUD BUSTERS. This code puts a message on the screen (UNDO ALPHA LOCK, < ENTER >) and then grabs the state of the VDP Interrupt counter into R10. Since we may have entered from Editor/Assembler, and thus the counter might be limited in its range of numbers, we use only its lowest order bit at this point. That's accomplished by the ANDI R10, >0001 instruction.

Now before scanning the keyboard, we grab the screen timeout counter's state from >83D6 into R5. This must be done before KSCAN, because this number gets cleared when a key is struck. The way we've constructed this loop, we will have the value before the keystroke in R5 after the key has been struck. Now it becomes important to know that this number counts by twos, so the number in R5 after the keystroke is always even. (Its least significant bit is always a 0.) The LIM1 2 and LIM1 0 instructions in the key loop are there so that the timers will keep advancing while we await the keystroke input.

We then take this number from R5 and place it at the seed location, >83C0. Now we grab the byte at >8379 and place that in

```
* SOURCE CODE FRAGMENT FROM SCUD BUSTERS
* ILLUSTRATES RANDOM NUMBER PROCESS
*
* FIRST SECTION PLACES A MESSAGE ON-SCREEN
* AND BEEPS TO ALERT USER
    LI R0,32*22+3    POINT AT ROW 23, COLUMN 4
    LI R1,UNALP     MESSAGE "UNDO ALPHA LOCK, <ENTER>"
    LI R2,24        24 CHARACTERS
    BLWP @VMBW      WRITE MESSAGE TO SCREEN
    BLWP @GPLLNK    USE GPLLNK
    DATA >34       TO PRODUCE "BEEP" TONE
* NEXT SECTION PLACES AN UNPREDICTABLE NUMBER IN THE SEED LOCATION
* BASED ON THE STATES OF THE VDP INTERRUPT COUNTER AND SCREEN TIMEOUT COUNTER
SEED MOV @>8378,R10  GET THE VDP INTERRUPT TIMER INTO R10
    ANDI R10,>0001  USE ONLY THE LOWEST ORDER BIT
    MOV @>83D6,R5   GET SCREEN TIMEOUT COUNTER IN R5
    CLR @STATUS     CLEAR GPL STATUS
    BLWP @KSCAN     SCAN THE KEYBOARD
    LIM1 2          ALLOW INTERRUPTS
    LIM1 0          STOP INTERRUPTS
    CB @ANYKEY,@STATUS HAS A KEY BEEN STRUCK?
    JNE SEED       IF NOT, REPEAT LOOP
    CB @KEYVAL,@ENTERV WAS THAT <ENTER> KEY
    JNE SEED       IF NOT, REPEAT LOOP
    MOV R5,@>83C0   PLACE LAST STATE OF TIMEOUT AT >83C0 (SEED)
    MOV @>8379,@>83C0 PUT VDP INTERRUPT BYTE INTO HIGH BYTE OF SEED
    XOR @>83C0,R10  XOR SO LOW BIT OF PRIOR INTERRUPT COUNT IS USED
    MOV R10,@>83C0 MOVE RESULTING WORD FROM R10 TO SEED
* THIS SECTION USES SUBROUTINE RANDNO TO PLACE 26 STARS IN THE SKY
* AT RANDOMLY SELECTED POSITIONS
    LI R9,26       COUNT OF STARS TO MAKE
    CLR R1         CHARACTER 0 IS THE STAR
RNDSTR LI R3,32*19  R3 DETERMINES RANGE OF NUMBER DESIRED
    BL @RANDNO     FROM RANDNO
    MOV R5,R0      MOVE RANDOM NUMBER FROM R5 TO R0
    AI R0,64       ADD TWO ROWS "BOTTOM" OF RANGE
    BLWP @VSEW     WRITE ONE STAR TO SCREEN
    DEC R9         DECREMENT COUNTER
    JNE RNDSTR    IF NOT ZERO, GET ANOTHER NUMBER
* SUBROUTINE RANDNO MAKES RANDOM NUMBER
* ON ENTRY, R3 CONTAINS DESIRED RANGE
* ON EXIT, R5 CONTAINS A NUMBER 0 THRU NUMBER GIVEN IN R3
RANDNO
    LI R4,28645    PLACE A LARGE NUMBER IN R4
    MPY @>83C0,R4  MULTIPLY BY THE SEED NUMBER
    AI R5,31417    ADD A LARGE NUMBER TO RESULT IN R5
    MOV R5,@>83C0 MOVE THAT RESULT BACK TO SEED
    CLR R4         CLEAR R4 SO NUMBER IS RIGHT JUSTIFIED IN R4-R5
    INC R3         INCREMENT SO R3 IS ONE MORE THAN DESIRED RANGE
    DIV R3,R4      DIVIDE BY DESIRED RANGE
    RT            RETURN TO CALLING PROGRAM
```

the high-order byte at >83C0. At this point >83C0 contains two bytes of unpredictable content, but it will always be an even number because the low byte was derived from a counter that's counting by twos. Now to be sure that we give our seed the full possible range, we take that one bit that was stashed in R10 and XOR the word at >83C0 with it. All but the lowest bit of R10 will always be zero at this point, but the state of that one bit will determine whether our seed number is odd or even. Moving R10 back to >83C0 completes the seeding operation. The number thus placed at >83C0 will have been selected based on the relationship between the states of the two counters and the time at which Enter was actually pressed.

(See Page 14)

## THE ART OF ASSEMBLY—

(Continued from Page 13)

By doing this, we've established a number unknown to the user that may take on any value from 0 through 65,535. That's 65,536 possible numbers for the seed used in our random number process.

Once we have this number established, the sequence of numbers to be produced by our random generation algorithm is actually determined. Given that same starting number, the algorithm will produce exactly the same sequence of numbers every time. What makes it useful is of course that the user won't know which of those 65,536 sequences is being produced, and so the numbers will appear to be quite random.

The algorithm shown in the sidebar (subroutine RANDNO) was adapted from one used in TI's Tombstone City game. It's very simple but effective, and produces very good random sequences at blazing speed. On each pass, it takes a large number into R4, multiplies by whatever happens to be at the random number seed location (> 83C0), adds a large number to the low-order word of the result (in R5), and places that new number in location > 83C0. The number then in R5 is our "new" random number, 16 bits in length.

In most cases we won't actually want a number in the range > 0000 through > FFFF, but will want a more manageable range of numbers, like perhaps 0 through 255, 1 through 100, or something like that. To get that number tailored to a range we want, we use a trick borrowed from a book on PC Assembly language. Take a number one more than the range desired. Clear register 4 so the word in R5 is treated as a double-length word in R4-R5, then divide R4 by the number that's one more than our desired range. When we do this division, the number in R4 will be the quotient, which we ignore, and the number in R5 will be the remainder. This will always be a number between 0 and one less than the number we divided by. Voila! That's the desired result.

To make this easier for our game, which uses random numbers for many purposes, we preload R3 with the desired range before calling the subroutine, then let the subroutine perform the divide operation, so that when we return from the subroutine R5 always contains an integer in the range we want.

In the sidebar we've shown just one example of this, the little loop we use to randomly scatter 26 "stars" in the night sky. We preload R3 with the value 32\*19, so the stars will be scattered over 19 rows of the screen, then we add 64 after return from the subroutine, so the stars will begin at Row 3 of the screen and extend through row 22.

Before the reader mail comes in, we'll answer one "Why Don'tcha" question, to wit: "Why don't we just take the word from > 83D6, add that bit from R10 to make it odd or even, then

move it to > 83C0?" Answer: In many cases (in this program too) there will have been a recent keystroke before we entered the key loop, and therefore the high order byte of the Timeout Counter would be zero most of the times we took our seed value. Thus we use the byte from > 8379, which advances much more rapidly (60 times per second) as the high order part of the seed.

Now before we get deluged with questions other than that one, let's state for the record that your author is not an expert on random numbers per se. The quality of randomness can be tested, I'm told, by algorithms designed for that purpose. There are people who work near my home at a place called the National Security Agency (NSA) who could probably run tests on my "random number" process and shoot it full of holes. I'm not even sure how often a sequence of full-word numbers generated my way would repeat itself. Is it once every 32,767 numbers, once every 65,535 numbers, or once every 10,000?

Before we did this game program, we ran tests galore to make sure we got the most "random" possible performance from our algorithm. We never found a sequence repeating in our tests. In fact, once one does that divide operation to tailor the number to a specific range, there appears to be no way of predicting what comes next in the sequence. That's so because there are many different raw "whole word" numbers that will produce the same output "ranged" number, and a different number will follow that each time, so far as we could tell.

What seemed important was that the apparent degree of randomness would be more than enough to keep the user guessing as to where and when the next SCUD would enter the screen, and in what direction and at what horizontal speed it would be moving. With 65,536 possible sequences of numbers, we felt this would be good enough for us, even if it weren't good enough for the folks at NSA. After all, the security of the nation's codes and ciphers does not depend on my random numbers. (That's probably fortunate for us.)

As a by-product of all that testing we did before producing SCUD BUSTERS, we made some subroutines for use with Extended BASIC to provide seeding and to make very fast random numbers for XB programmers. One of those, for example, will fill an array of dimension 500 with tailored random integers in about one second. Making 500 tailored (ranged) random numbers with RND in BASIC or XB takes a very long time indeed. (Use a calendar instead of a stopwatch.)

These utilities have been released to public domain, and made available through user groups and other means of "free" distribution. Tigercub (156 Collingwood Ave. Whitehall, OH, 43213) has them available as part of its TI-PD offerings. If you'd like a collection of these assembly subroutines with demo programs, and can't find it through other sources, I'll send one (SS/SD disk) if you'll send a check or money order for \$2 to Harrison Software, 5705 40th Place, Hyattsville MD 20781. Ask for the "Random XB Utilities" disk. Please try getting it from Tigercub, your user group or BBS first. Also, please don't mail me a blank disk. Disks cost me less than you'll pay to mail me a blank one.

We're not sure just now what our topic for next month will be, so let's just leave that as a "surprise" in your next MICROpendium.

## S&T Software changes address

New address for S&T Software is c/o Tim Tesch, 3804 N. 75th St., Milwaukee WI 53216. According to Tesch, anyone interested in the S&T BBS should send his registration fee (\$30 for one year of support and updates) to the new address. Other programs such as ANSI-Tools and games for the BBS should also be requested at this address, Tesch says.

## READER TO READER

□ Bill Gaskill, 2310 Cypress Court, Grand Junction, CO 81506, writes:

I would like to know the RX numbers for all the Atarisoft modules produced for the 99/4A. These are the Atari product numbers for the games Centipede, Defender, Dig Dug, Donkey Kong, Joust, Jungle Hunt, Moon Patrol, Ms. Pac-Man, Pac-Man, Picnic Paranoia, Pole Position, Protector, Robotron: 2084, Shamus, Stargate and Superstorm.

The RX numbers at Atari are similar to the PHM numbers that TI assigned to modules for the 99/4A.

□ Bernard N. Smith, 309 S. Carroll St., Albany, GA 31705, writes:

I have a Modle 350 Printmate, made by Micro Peripherals, Inc. Could anyone help me find some information such as an operating manual, or the current address of the manufacturer.

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

I am writing to request your help in reaching fellow Tiers who stopped by the Cleveland Area User Group table at the Lima Multi User Group (MUG) Faire in May after I had left for the day.

I gave a demonstration of three projects: computer controlled robot, analog to digital conversion and limited voice recognition. Unfortunately the response to my presentation was apparently delayed by people attending other demonstrations and I left early.

Anyone desiring copies of the schematics presented and related newsletter articles should write me noting which project(s) they find interesting and include a large self addressed envelope with two postage stamps.

□ Zonrae Russell, P.O. Box 211, Weatherford, TX, writes:

I am having a problem with my TI99/4A or its component parts. When using programs such as Funnelweb or Print Shop I get a lot of on-screen interference, garbling on screen and color changes. I have no idea where it is coming from. It is either from Extended BASIC cartridge, power supply, computer, disk drive or external power source. I have taken steps to correct the

### Harrison Software releases KWIKDUMP

KWIKDUMP has been released by Harrison Software. According to Bruce Harrison of the company, the program has the ability to load in an assembly routine and to activate that routine as a user defined interrupt, so that the pressing of Function 7 at any time causes the screen contents to be dumped to the printer.

He says the program is designed for use with Extended BASIC both in the command mode and in programs. The dump includes all normally printable characters (32 through 127) present on the screen, printed in expanded type. The interrupt can be turned on and off by the user or by an XB program, so that the programmer can control the times it is active.

The disk contains instructions, the source code for the assembly routine, the object file, a demo program, XB programs to print out the instructions and source file and short programs for loading, activating and de-activating the interrupt routine.

KWIKDUMP sells for \$5 including shipping and handling, and is available from Harrison Software, 5705 40th Place, Hyattsville, MD 20781.

external power source by having the electrical company change or add a power amp or whatever they call it. There were too many air conditioners in my area for just one, so they added one. The problem just started up without notice.

I have cleaned the disk drive heads with a disk cleaner. It had no effect on the problem. I cleaned the Extended BASIC contacts and the computer contacts to the cable. I don't know how to clean the female plugs on the cable or in the cartridge slot of the computer. I don't know what else I can do to solve the problem. I hope that some out there will have the answer to my problem. I will appreciate any help I may get.

□ Stan Krajewski of Route 6, Box 568-15, Live Oak, FL 32060, states:

I am starting to take advantage of MDOS batch files for my AUTOEXEC file. I would like to know if there are any loaders for the WDS1 root directory to load programs besides MWG for MY-Word, MDMV for Myarc Disk Manager, XB and E/A. I would like to autoloading programs such as Telco, DSKU and others from my MDOS menu. Also, is there any way to change the default GPL speed from 5 in MDOS 1.14 to 1 or 2 in an AUTOEXEC file.

**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.**

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# Wisconsin company near agreement to produce Myarc products

A Wisconsin firm, Cecure Electronics, expects to become an authorized Myarc repair center by the end of June or the first part of July.

Company spokesman Don Walden says he has been unofficially making repairs to Myarc hardware for approximately two years. He says he can currently do repairs which do not require the gate array, PAL chips or circuit boards, which are proprietary, but he has been in contact with Lou Phillips of Myarc in order to be able to provide service with the proprietary chips and schematics also.

Walden says the company has manufacturing capability, and he is looking to make available Myarc parts and kits to individuals, as well as producing complete boards for Myarc distributors, depending on the type of agreement he reaches with Phillips.

Walden says Phillips has been "overwhelmed." Walden notes, "I have a staff. It's not a business of one person. I look at it as a triple win. Myarc wins because its

name is not going to be maligned. People who have the products win and I win. It's a nice situation all the way around."

Walden says his company has a "niche" in contract manufacturing for research and development products whereby he is able to produce short runs of 10-25 boards.

"I've even done one or two boards for companies. Most larger houses don't want to deal with you unless you want to manufacture thousands of boards," he says.

Walden says he would deal with the hardware portion of the business and Beery Miller (See April 1992 MICROpendium) with the software portion "instead of one person trying to do it all."

He notes, "The demand for Geneves and Lou's products is great. There's a waiting list."

He says he is capable of adding a 32K memory upgrade and a 64K video upgrade to the Geneve and converting a 512 card for use as a Geneve 512K card, and has done these for a number of individuals.

Walden says voltage problems have caused symptoms of "whiteout" or lockup on a number of Geneves sent to him for repair.

He says a lot of the earlier TI PEBs have a higher voltage on the buffer which can cause a Geneve to malfunction. He has found pushbutton PEBs with as high as 15 or 16 volts and rocker type PEBs as high as 12 to 14 volts. He says the extra voltage creates heat, causing the computer to shut down and stop working because it gets too hot.

He says some individuals have pulled out or put cards in with the PEB on, and this usually damages the PAL.

Walden is president of the Milwaukee Users Group and the Wisconsin Council of TI Users Groups and vice president of the Chicago TI Users Group.

For further information, write Cecure Electronics, 7759 So. Scepter Dr. 7, Franklin, WI 53132-2201 or call (414) 529-2173.

## 1992 TI FAIRS

### APRIL

Northeast Computer Fair, April 4, Waltham High School, Waltham, Massachusetts, sponsored by TI99/4A User Group of the Boston Computer Society. Contact Ron Williams, 14 East St., Avon, MA 02322.

Dutch Annual TI-Fair, April 25, Utrecht, The Netherlands, sponsored by Dutch TI-Usergroup. Contact Drs. Erik C. van Wette, Hanninkhoek 39, 7546 AD Enschede, The Netherlands, phone: 31-53-778723.

Ottawa TI Fest, 10 a.m.-4 p.m., April 25, Merivale High School, Nepean, Ontario. Contact Ottawa Users Group c/o Bill Gard, 3489 Paul Anka Dr., Ottawa, Ontario, Canada K1V 9K6; (613) 523-9396 (home); (819) 994-8856 (work); (819) 994-8873 (work, attn. DSE 2).

### MAY

TI Orphan Reunion, 10 a.m.-5 p.m. May 9, Innisfail Lions' Hall, Innisfail, Alberta, Canada. Contact Fred Kessler, Box 20, Sundre, Alberta, Canada, T0M 1X0, (403) 638-3916.

TI99/4A Users Group, UK, Annual Meeting, May 16, Princess Anne Training Centre, 10 Trinity St., Derby (Derbyshire, England). Contact Stephen Shaw, 10 Alstone Rd., Stockport, Cheshire England SK4 5H.

Multi User Group Conference, May 15-16, Ohio State University Lima Campus. Contact Lima 99/4A Users Group, P.O. Box 647, Venedocia, OH 45894 or phone Dave Szippel (419) 228-7109 or Charles Good (419) 667-3131 evenings.

### SEPTEMBER

State of Washington TI Convention, Sept. 19, Tacoma, Washington. Contact Jim Tomkins, (206) 756-0934.

### OCTOBER

Chicago International World Faire, Oct. 30-31, Elk Grove Holiday Inn, Elk Grove, Illinois. Contact Chicago Users Group, 2515 Marcy, Evanston, IL 60201-1111.

### NOVEMBER

TI-Faire, Nov. 28-29, Ashfield Boys High School Hall (next to Western Suburbs Leagues Club), Liverpool Road, Ashfield, NSW, Australia. Contact TIshUG (Australia) Limited, P.O. Box 1089, Strawberry Hills, NSW 2012, Australia.

## 1993 TI FAIRS

### FEBRUARY

Fest West "North" 93, Feb. 13-14, Howard Johnson Hotel, Salt Lake City, Utah. Contact Fest West "North" 93 Committee, 1396 Lincoln Apt. B, Ogden, UT 84404 or Salt Flats BBS, (308) 394-0064.

*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.*

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## M Y - B A S I C

## Video XOP6 and MY-BASIC

By JIM UZZELL

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The following article is the third and final installment of a three-part series on XOP6.—Ed.

This month's demo program of SCROLLWIN ends the three-part series dealing with the use of XOP6 in MY-BASIC. I hope the articles have been enlightening to both MY-BASIC and assembly programmers, as well as non-programmer readers.

The SCROLLWIN demo follows the format of parts 1 and 2 and should not be too hard to follow.

I am sure some who have followed these articles and carefully noted what each routine is actually doing have realized that there are commands in MY-BASIC that will do the same thing, which demonstrates just how powerful MY-BASIC is, and in turn what MDOS can allow you to do even though we do not have a "final" DOS.

```
1 !XOP6-SCROLLWIN
100 CALL GRAPHICS(3,3)
110 CALL INIT :: CALL LOAD("
DSK.XOP6DEMO.DDIXOP")
120 CLS
130 CALL LINK("START",0,8,0,
0,0,0,0,0,6)
140 GOSUB 370
150 CALL LINK("START",37,1,1,
,11,30,0,0,0,6)
160 CALL TCOLOR(11,2)
170 FOR X=1 TO 9
180 DISPLAY AT(X,1):"~~~~~
DDISOFTWARE ~~~~~";
190 NEXT X
200 CALL TCOLOR(16,6)
210 FOR Y=1 TO 800 :: NEXT Y
220 CALL LINK("START",9,30,1
```

```
,1,9,65,32,6,6)
230 FOR Y=1 TO 800 :: NEXT Y
:: GOTO 300
240 FOR Y=1 TO 600 :: NEXT Y
:: CALL TCOLOR(7,7)
241 FOR X=1 TO 9
242 DISPLAY AT(X,1):"
";
243 NEXT X
245 CALL TCOLOR(4,14) :: CAL
L MARGINS(1,80,1,24)
250 DISPLAY AT(24,6):" To se
e again--Press any Key--Type
RUN 120";
260 DISPLAY AT(11,27):" DDI
";
270 CALL KEY(0,K,S) :: IF S=
0 THEN 270
280 CALL MARGINS(1,80,1,24)
290 CALL TCOLOR(16,6) :: END
300 FOR Y=1 TO 800 :: NEXT Y
310 CALL LINK("START",7,10,1
,31,19,55,32,11,6)
320 FOR Y=1 TO 800 :: NEXT Y
330 CALL LINK("START",8,30,1
1,1,19,55,32,3,6)
340 FOR Y=1 TO 800 :: NEXT Y
350 CALL LINK("START",6,10,1
,1,19,25,32,14,6)
360 GOTO 240
370 CALL TCOLOR(16,13)
380 CALL MARGINS(1,80,1,24)
390 DISPLAY AT(22,10):" Scro
llWin Right Down Left U
p ";
400 CALL TCOLOR(16,6)
410 RETURN
```

This routine has nothing to do with the XOP6 articles. This routine does the same

thing as a CALL FILES statement does. You could use it to select only certain type of files to be displayed by changing program to do a match of the value of variable G(D). The numbers displayed following the file name are the file types. By adding some code you could make this into a database of your files then you could pick and choose by file name or file type or date, or you could just use the routine to display a directory in graphics MODE 1 and 2 with the same information that is supplied by doing a CALL FILES in MODE 3.

```
100 CALL GRAPHICS(2,2)
110 DIM A$(127),B(127),C(127
),D1(127),E(127),H(127),I(12
7),J(127),G(127),Y(127),K(12
7),L(127),M(127),N(127),O(12
7)
120 DISPLAY AT(3,1):"CATALOG
WHICH DRIVE i.e. DSK1. "
130 ACCEPT AT(4,26):F$
140 OPEN #1:F$,INPUT,RELATI
VE,INTERNAL :: D=0
150 INPUT #1:A$(D),G(D),X,Y(
D),B(D),C(D),D1(D),E(D),H(D)
,I(D),J(D),K(D),L(D),M(D),N(
D),O(D)
160 PRINT A$(D);G(D);X;Y(D);
B(D);C(D);D1(D);E(D);H(D);I(
D);J(D);K(D);L(D);M(D);N(D);
O(D)
170 D=D+1
180 INPUT #1:A$(D),G(D),X,Y(
D),B(D),C(D),D1(D),E(D),H(D)
,I(D),J(D),K(D),L(D),M(D),N(
D),O(D)
190 IF A$(D)=" THEN 230
200 CRE$=STR$(D1(D))&" "&STR
$(C(D))&" "&STR$(B(D))&" "&S
TR$(H(D))&" "&STR$(E(D))&" "&
STR$(I(D))&" "
210 UPD$=STR$(L(D))&" "&STR$(
K(D))&" "&STR$(J(D))&" "&ST
R$(N(D))&" "&STR$(M(D))&" "&
STR$(O(D))
220 PRINT A$(D);TAB(12);G(D)
;X;Y(D);RIGHT$(CRE$,LEN(CRE
$));LEFT$(UPD$,LEN(UPD$)) :
: GOTO 170
230 CLOSE #1 :: END
```

## 1993 Fest West set

Fest West "North" 93 is scheduled for Feb. 13-14 at the Howard Johnson Hotel, 122 West South Temple, Salt Lake City, Utah. The fair's hours are 9 a.m. to 5 p.m. Saturday and 9 a.m. to 3 p.m. Sunday.

Hosts for the event, held in a different western United States location each year are the Ogden TI Users Group and the TI SLaVes (Salt Lake and Valley Users Group).

Phone numbers for the hotel are (801) 521-8138 or 1-800-366-3684; fax (801) 322-5857. For information, contact the Fest West North Committee, 1396 Lincoln Apt. B, Ogden, UT 84404, or call the Salt Flats BBS, which operates 24 hours at 300, 1200 or 2400 baud, at (801) 394-0064.

# Myarc out of business, New Jersey official says

By LAURA BURNS

Myarc, the company which developed the Geneve 9640 and the Myarc Hard and Floppy Disk Controller, is no longer in business, according to officials of the Somerset County, New Jersey, Consumer Affairs Division.

According to Marianne Mattei, director of the division, Lou Phillips of the company has continued repairing products, but is "not really obligated to" do so.

Georgette Rooney, investigator for the division, says she has received 10 customer complaints since an article appeared in the April 1992 MICROpendium dealing with complaints to the office, including one from Australia. She says attempts are being made to resolve the complaints.

She says Phillips is not selling or advertising his products but is "trying to resolve some problems." Myarc's last advertisement in MICROpendium was published in March 1991.

She says Myarc's post office box has now been closed. In the April interview,

she said the postmaster had told her the box was still open but the mail not being picked up. As of June 6, Myarc's Customer Service Line still carried a message giving the post office box as an address for questions for Myarc, and stating "We are currently shipping all products." Rooney said she planned to discuss this with Phillips. When MICROpendium called the Myarc line June 11, the answer was a tone and recorded message from the phone company stating that the number is "temporarily disconnected."

Rooney says Don Walden of Secure Electronics had contacted her regarding repairs and production of Myarc products (see related story, page 18) and she suggested Phillips call him. After Walden called her again, not having talked to Phillips, she obtained permission from Phillips to give Walden Phillips' work number.

Rooney notes, "People may have orders, but you can have orders forever as long as consumers have not paid for some-

thing and not received it. We are able to help if someone paid and didn't get it, or if they sent it for repairs. We cannot force him to make repairs. If he sends everybody back the Hard and Floppy Disk Controller unrepaired, our involvement would be over. The consumer is not out money and not out merchandise."

An analogy, she notes would be an extended warranty on a car, if the warranty company goes out of business. "A warranty is only as good as the business itself."

Mattei notes, "A business is allowed to go out of business."

She adds, "He had a very good product. I don't know what happened."

Rooney suggests that consumers having problems with any business contact their own state's consumer affairs office as a start. In many states, though not in all, this office operates through the state attorney general's office.

Phillips has not responded to any messages from MICROpendium.

## Newsbytes

### Krych to compile book on TI99/4A assembly

Jim Krych is seeking submissions for a book he is attempting to compile on TI99/4A's assembly language.

He writes "For a long time, many small books and many tutorials have been written on the TI99/4A assembly language. However, as you and I all know, no single book exists that has all aspects of the language."

He is proposing to put together "a collection of the work of as many of the creative assembly programmers as possible," to be titled *On Assembly*. Krych says he will take no credit "other than putting the information down. The credit belongs to the assembler programmers."

Krych asks for submissions from as-

sembly programmers for the book. He says the first chapter will be an extensive introduction to assembly for the beginner. The other chapters will be non-incrementing, "meaning to learn graphics go to the graphics chapter and so on."

Proposed chapter titles are 2. Graphics; 3. Sound/Speech; 4. I/O: Keyboard/Joy-stick; 5. Sprites; 6. External I/O: RS232, Modems, Etc.; 7. Files; 8. DSRs; 9. Routines, XMLNK, GPLLNK; 10. Advanced: Loaders, Linking to Other Languages, Etc.

Krych says he needs as much information as possible on the chapter topics. On graphics, he notes, he needs many documented examples on how to use the 9938/9958 VDPs as well as the half-bitmap mode of the 9918A.

He says he cannot begin writing the book until November or later, because of

marriage plans and because of a project he is doing for Asgard. However, he would like information sent to him now so he can arrange material for writing.

His preferred medium for submissions is printed material. "I will also take disks with examples. Also, tell me which category you are sending me information for."

Contact Jim W. Krych, USCGC MALLET (WLIC-75304), P.O. Box 2647, Corpus Christi, TX 78403-2647, (512) 888-3268.

### ATICC disbands

The Adelaide TI Computer Club (ATICC) in Australia has disbanded, according to Fred Cugley of the group. The group had supported TI99/4A members for more than nine years.

(See Page 29)

# Sink-It

*Battleship-like game pits your fleet against computer*

By WALTER CHMARA

You are a computer genius working for the navy. Your goal has been to develop a robotic peacekeeping fleet using state-of-the-art weaponry and artificial intelligence. Four decommissioned vessels: two destroyers, a cruiser, and a carrier; have been handed over to you and your team so that they may be modified to your specifications.

After months of diligent work, you have refitted these ships with your patented "obscurity generators," which can render them invisible in all ways to an enemy. Trouble is, these generators give off certain telltale signs which can help enemy computers to narrow down a search zone to a small square area.

"Oh, well," you say to yourself. "Only I know this. By the time these things hit mass production, I will have *that* little problem licked."

Each ship is also outfitted with a terrifying new weapon: fuse wave guns. The source of a fuse wave cannot be detected, but when focused on a specific target, the results are devastating.

Crowning your achievements is the TI-9000 on-board computer, which can control all the ships from inside one of them. (All the ships have high-tech operations slave units which are much more efficient than human sailors. You've toyed with the idea of calling them "ro-boats.") No one needs to risk life and limb at sea anymore, you think.

Boy, were you wrong!

Who could have foreseen that the TI-9000 was so clever that it faked the appearance of being turned off one night, and waited for everyone to go home from the lab before it ordered some slave units to carry it off to its chosen flagship and steal the whole fleet?

The admiral was not pleased, and wanted to go after them with a conventional fleet. You explained that that would be suicidal. Only a similar fleet could even hope of winning against them.

Emergency crews were mobilized to work around the clock to modify four sister ships to the same specs, except for

the flagship computer. (It would take too long to build another, besides, you're still not sure what went wrong with the first. Why risk doubling the problem?) You intend to take the second fleet out, yourself.

The opening animation sets the mood. This is followed by a screen full of text explaining the game and asking you to choose your flagship (For more fun, you might want to swap the generic names for the ships with names of your own choice when you enter the program. Example: "S.S. Battle" instead of "Destroyer A"). Type in a number from 1 to 4 and play begins.

Your fleet is automatically deployed on the "Us" screen, while the enemy invisibly takes position under "Them." You are kept abreast of what's going on by the messages that appear at the bottom. Luck determines who gets the first shot. You get one shot for every unsunken ship you command. When the enemy salvo you, however, you learn to your horror that the enemy gets *six* shots at you! Nobody ever said life is fair.

You direct your targeting system with the arrow keys. There's no need to hold the FCTN key and it doesn't matter whether the Alpha Lock is up or down. Press Enter when you want to fire. Play continues until someone's flagship is sunk.

This is a good rainy day game. You may have already played something similar to this as a youngster. I've learned that when exchanging fire with the TI-9000, applying a specific pattern of firing may seem like a sound idea, except that before your plan works you may find yourself at the bottom of the sea. You must rely on your human advantages to beat the mad machine.

---

## SINK-IT

---

```
100 ! SINK IT! !182
110 ! (C)1992 WALTER CHMARA
!199
120 ! EXTENDED BASIC !118
130 ! TITLE SCREEN !005
140 CALL CHAR(97,"0000003844
7C4444")!245
150 CALL CLEAR :: CALL SCREE
N(6):: CALL COLOR(9,2,5,11,1
```

```
6,6):: CALL CHAR(96,"0"):: C
ALL CHAR(112,"3860C0C0C0C060
388")!248
160 CALL CHAR(100,"00080403F
F7F3F1F00000000000000000282
8FFFFFFFFF0"):: CALL CHAR(1
04,"001010D7FFFFFFFF00000000
0000000000E4E8FCFFFEFCF80")!
030
170 CALL CHAR(108,RPT$("F",6
4)):: CALL SPRITE(#1,108,5,8
9,62,#2,108,5,89,94):: CALL
SPRITE(#5,36,6,20,10,0,25)!1
09
180 FOR A=12 TO 24 :: CALL H
CHAR(A,1,96,32):: NEXT A ::
CALL HCHAR(1,9,112):: CALL H
CHAR(6,5,113):: CALL HCHAR(7
,10,113)!031
190 CALL HCHAR(4,15,113):: C
ALL HCHAR(6,25,113):: CALL H
CHAR(5,30,113)!149
200 CALL MAGNIFY(4):: CALL S
PRITE(#3,100,2,73,191,#4,104
,2,73,222)!049
210 CALL MOTION(#3,0,-4,#4,0
,-4)!144
220 FOR DELAY=1 TO 1230 :: N
EXT DELAY :: CALL MOTION(#3,
0,0,#4,0,0)!003
230 DISPLAY AT(11,7):"SINK I
T!" :: CALL COLOR(#3,11,#4,1
1)!177
240 FOR X=1 TO 15 STEP 2 ::
CALL SOUND(10,-7,X):: NEXT X
:: CALL COLOR(#3,2,#4,2)::
CALL MOTION(#3,1,0,#4,1,0)!1
37
250 CALL DELAY :: CALL THEME
(300):: CALL DELSPRITE(ALL):
: CALL CLEAR !075
260 ! YOUR ORDERS !225
270 CALL CHARSET :: CALL CHA
R(108,"000000404040407C00000
0446C5444440000004464544C440
000007C4444447C"):: CALL CHA
R(112,"0000007844784040")!12
9
280 CALL CHAR(100,"000000782
42424780000007C4078407C00000
(See Page 23)
```

## SINK-IT—

(Continued from Page 22)

```

07C407840400000003C405C4438"
) !255
290 CALL CHAR(104,"000000444
47C4444000000381010103800000
008080848300000002428302824"
) !171
300 DISPLAY AT(1,1):"4 of yo
ur cloaked robot ships h
ave been stolen by the mad
TI-9000 computer." !028
310 DISPLAY AT(4,1):"You mus
t go after them with a simil
ar fleet to stop its evil pl
ans. While you can't detect
each other's ships," !254
320 DISPLAY AT(8,1):"you can
fire upon the gene- ral are
a and hope. A hit re-veals p
osition and type of ship. 5
hits sink a carrier," !063
330 DISPLAY AT(12,1):"3 a cr
uiser, 2 a destroyer. Loss o
f a ship decreases your f
irepower. Sink the TI-9000 f
lagship-you win. If it" !055
340 DISPLAY AT(16,1):"sinks
yours, you die. Directthe cr
osshairs with the ar- row ke
ys. ENTER=FIRE. You get as
many shots each turn" !087
350 DISPLAY AT(20,1):"as you
have unsunken ships. Before
you shove off, you must c
hoose your flagship:" !097
360 CALL THEME(300)!168
370 DISPLAY AT(23,1):"1.DEST
ROYER A 2.DESTROYER B 3. CRU
ISER 4.CARRIER" !086
380 ACCEPT AT(24,26)VALIDATE
("1234")SIZE(1):OFSS !041
390 HIT$="DIRECT HIT ON US;
SKIPPER!" :: LOSS$="OUR FIRE
POWER IS DOWN BY ONE" !169
400 RANDOMIZE :: EFS=INT(RND
*3)+1 :: ECAR=0 :: ECRU=0 ::
EDA=0 :: EDB=0 :: OCAR=0 ::
OCRU=0 :: ODA=0 :: ODB=0 !2
38
410 CALL CLEAR :: CALL CHARS
ET :: CALL COLOR(2,5,2):: CA
LL CHAR(40,RPT$("F",16)&"E78
18100008181E7"):: CALL CHAR(
59,"0000000000301020")!187
420 CALL COLOR(9,7,16):: CAL
L CHAR(96,RPT$("0",16)&"1192
5438DF285492"):: CALL COLOR(
10,2,5):: CALL CHAR(104,RPT$
("F",64))!161
430 CALL CHAR(108,RPT$("0",6
4)):: ESH=4 :: OSH=4 !124
440 DISPLAY AT(8,7):"US
THEM" :: DISPLAY AT(1
,11):"SINK IT!" !136
450 CALL SCREEN(11):: FOR C=
3 TO 15 :: CALL VCHAR(9,C,40
,13):: CALL VCHAR(9,C+15,40,
13):: NEXT C !010
460 DISPLAY AT(24,1):"ENEMY
DETECTED; BOSS" !222
470 ! ENEMY CARRIER !073
480 E=18 :: V=26 :: L=5 :: Q
=108 !125
490 GOSUB 1150 !210
500 ! ENEMY CRUISER !094
510 L=3 :: Q=109 :: GOSUB 11
50 !080
520 ! ENEMY DESTROYER A !099
530 L=2 :: Q=110 :: GOSUB 11
50 !071
540 ! ENEMY DESTROYER B !100
550 L=2 :: Q=111 :: GOSUB 11
50 !072
560 DISPLAY AT(24,1):"TARGET
AREA ON RIGHT SCREEN" !174
570 ! OUR CARRIER !193
580 E=3 :: V=11 :: L=5 :: Q=
104 !060
590 GOSUB 1150 !210
600 ! OUR CRUISER !214
610 L=3 :: Q=105 :: GOSUB 11
50 !076
620 ! OUR DESTROYER A !219
630 L=2 :: Q=106 :: GOSUB 11
50 !076
640 ! OUR DESTROYER B !220
650 L=2 :: Q=107 :: GOSUB 11
50 !077
660 CALL DELAY !217
670 DISPLAY AT(24,1):"OUR FL
EET IS POSITIONED;BOSS" !070
680 CALL DELAY !217
690 ! WHO STARTED IT? !196
700 RANDOMIZE !149
710 CALL MAGNIFY(1):: Z=INT(
RND*2)+1 :: ON Z GOTO 720,10
00 !003
720 DISPLAY AT(24,1):"RECOMM
END WE FIRE; BOSS!" !191
730 XR=113 :: XC=185 !012
740 FOR OSAL=1 TO OSH !014
750 CALL SPRITE(#1,43,6,XR,X
C):: CALL KEY(0,K,S):: IF S=
0 THEN 760 :: GOTO 770 !125
760 CALL PATTERN(#1,41):: CA
LL KEY(0,K,S):: IF S=0 THEN
750 !134
770 IF K=69 OR K=101 THEN XR
=XR-8 :: IF XR<65 THEN XR=16
1 !138
780 IF K=68 OR K=100 THEN XC
=XC+8 :: IF XC>233 THEN XC=1
37 !125
790 IF K=88 OR K=120 THEN XR
=XR+8 :: IF XR>161 THEN XR=6
5 !140
800 IF K=83 OR K=115 THEN XC
=XC-8 :: IF XC<137 THEN XC=2
33 !128
810 IF K=13 THEN 820 ELSE 75
0 !165
820 CALL GCHAR(XR/8+1,XC/8+1
,SPOT):: IF SPOT=40 THEN CAL
L SPLASH :: CALL HCHAR(XR/8+
1,XC/8+1,96)!238
830 IF ECAR=5 THEN 870 !061
840 IF SPOT=108 THEN CALL BO
OM :: CALL HCHAR(XR/8+1,XC/8
+1,97):: ECAR=ECAR+1 :: WHAT
$="CARRIER" :: GOSUB 1290 !0
86
850 IF ECAR=5 AND EFS<4 THEN
GOSUB 1310 !211
860 IF ECAR=5 AND EFS=4 THEN
1300 !065
870 IF ECRU=3 THEN 910 !119
880 IF SPOT=109 THEN CALL BO
OM :: CALL HCHAR(XR/8+1,XC/8
+1,97):: ECRU=ECRU+1 :: WHAT
$="CRUISER" :: GOSUB 1290 !1
48
890 IF ECRU=3 AND EFS<>3 THE
N GOSUB 1310 !164
900 IF ECRU=3 AND EFS=3 THEN
1300 !082
910 IF EDA=2 THEN 950 !057
920 IF SPOT=110 THEN CALL BO
OM :: CALL HCHAR(XR/8+1,XC/8
+1,97):: EDA=EDA+1 :: WHAT$=
"DESTROYER A" :: GOSUB 1290
!203
930 IF EDA=2 AND EFS>1 THEN
GOSUB 1310 !125

```

(See Page 24)

## SINK-IT—

(Continued from Page 23)

```

940 IF EDA=2 AND EFS=1 THEN
1300 !234
950 IF EDB=2 THEN 990 !098
960 IF SPOT=111 THEN CALL BO
OM :: CALL HCHAR(XR/8+1,XC/8
+1,97):: EDB=EDB+1 :: WHAT$=
"DESTROYER B" :: GOSUB 1290
!207
970 IF EDB=2 AND EFS<>2 THEN
GOSUB 1310 !062
980 IF EDB=2 AND EFS=2 THEN
1300 !236
990 NEXT OSAL !197
1000 DISPLAY AT(24,1):"INCOM
ING FIRE; SKIPPER!!" !197
1010 ESAL=ESH+2 !127
1020 FOR SHOT=1 TO ESAL !088
1030 RANDOMIZE !149
1040 G=INT(RND*13)+3 :: H=IN
T(RND*13)+9 !021
1050 CALL GCHAR(H,G,SH)!204
1060 IF SH=96 OR SH=97 THEN
G=G+1 :: GOTO 1070 :: ELSE 1
090 !047
1070 IF G>15 THEN G=9 AND H=
H+1 :: IF H>21 THEN H=9 !041
1080 IF G=0 THEN 1030 ELSE 1
050 !109
1090 IF SH=40 THEN CALL SPLA
SH :: CALL HCHAR(H,G,96):: G
OTO 1110 !009
1100 ON SH-103 GOSUB 1330,13
90,1450,1510 !095
1110 NEXT SHOT !212
1120 GOTO 720 !033
1130 DISPLAY AT(24,1):"PLAY
SOME MORE? Y" :: ACCEPT AT(2
4,17)SIZE(-1)VALIDATE("YN"):
P$ :: IF P$="Y" THEN RUN ELS
E END !108
1140 ! PLACEMENT !060
1150 RANDOMIZE !149
1160 C=INT(RND*13)+E :: R=IN
T(RND*13)+9 :: Z=INT(RND*2)+
1 !138
1170 IF (R>17)AND(C>V)THEN 1
150 !177
1180 IF (R>17)AND(C<(V+1))TH
EN 1210 !020
1190 IF (R<18)AND(C>V)THEN 1
250 !021
1200 ON Z GOTO 1210,1250 !10
0
1210 FOR S=1 TO L :: CALL GC
HAR(R,C-1+S,A)!094
1220 IF A=40 THEN 1230 ELSE
1150 !200
1230 NEXT S !233
1240 CALL HCHAR(R,C,Q,L):: R
ETURN !146
1250 FOR S=1 TO L :: CALL GC
HAR(R-1+S,C,A)!094
1260 IF A=40 THEN 1270 ELSE
1150 !240
1270 NEXT S !233
1280 CALL VCHAR(R,C,Q,L):: R
ETURN !160
1290 DISPLAY AT(24,1):"WE HI
T THEIR ";WHAT$;"! " :: CALL
DELAY :: RETURN !208
1300 ESH=ESH-1 :: DISPLAY AT
(24,1):"WE GOT THE MAD COMPU
TER!!" :: CALL THEME(100)::
CALL THEME(200):: GOTO 1130
!039
1310 ESH=ESH-1 :: DISPLAY AT
(24,1):"YAY; BOSS! SINK IT!!
" :: CALL THEME(200):: CALL
DELAY :: RETURN !176
1320 RETURN !136
1330 IF OCAR=5 THEN 1380 !07
1
1340 CALL HIT(G,H,97):: OCAR
=OCAR+1 :: IF OCAR=5 AND VAL
(OFS$)=4 THEN CALL DEATH ::
GOTO 1130 !157
1350 IF OCAR<5 AND VAL(OFS$)
=4 THEN DISPLAY AT(24,1):HIT
$ :: CALL DELAY !212
1360 IF OCAR<5 AND VAL(OFS$)
<4 THEN DISPLAY AT(24,1):"OU
CH! A HIT ON OUR CARRIER!" :
: CALL DELAY !128
1370 IF OCAR=5 THEN OSH=OSH-
1 :: DISPLAY AT(24,1):LOSS$
:: CALL DELAY !054
1380 RETURN !136
1390 IF OCRU=3 THEN 1440 !14
9
1400 CALL HIT(G,H,97):: OCRU
=OCRU+1 :: IF OCRU=3 AND VAL
(OFS$)=3 THEN CALL DEATH ::
GOTO 1130 !214
1410 IF OCRU<3 AND VAL(OFS$)
=3 THEN DISPLAY AT(24,1):HIT
$ :: CALL DELAY !229
1420 IF OCRU<3 AND VAL(OFS$)
<>3 THEN DISPLAY AT(24,1):"O
UCH! A HIT ON OUR CRUISER!"
:: CALL DELAY !102
1430 IF OCRU=3 THEN OSH=OSH-
1 :: DISPLAY AT(24,1):LOSS$
:: CALL DELAY !072
1440 RETURN !136
1450 IF ODA=2 THEN 1500 !107
1460 CALL HIT(G,H,97):: ODA=
ODA+1 :: IF ODA=2 AND VAL(OFS$)=1 THEN CALL DEATH :: GOT
O 1130 !164
1470 IF ODA<2 AND VAL(OFS$)=
1 THEN DISPLAY AT(24,1):HIT$
:: CALL DELAY !125
1480 IF ODA<2 AND VAL(OFS$)>
1 THEN DISPLAY AT(24,1):"OUC
H! A HIT ON DESTROYER A!" ::
CALL DELAY !046
1490 IF ODA=2 THEN OSH=OSH-1
:: DISPLAY AT(24,1):LOSS$ :
: CALL DELAY !226
1500 RETURN !136
1510 IF ODB=2 THEN 1560 !169
1520 CALL HIT(G,H,97):: ODB=
ODB+1 :: IF ODB=2 AND VAL(OFS$)=2 THEN CALL DEATH :: GOT
O 1130 !168
1530 IF ODB<2 AND VAL(OFS$)=
2 THEN DISPLAY AT(24,1):HIT$
:: CALL DELAY !127
1540 IF ODB<2 AND VAL(OFS$)<
>2 THEN DISPLAY AT(24,1):"OU
CH! A HIT ON DESTROYER B!" :
: CALL DELAY !240
1550 IF ODB=2 THEN OSH=OSH-1
:: DISPLAY AT(24,1):LOSS$ :
: CALL DELAY !227
1560 RETURN !136
1570 SUB DELAY !221
1580 FOR X=1 TO 1000 :: NEXT
X !074
1590 SUBEND !168
1600 SUB SPLASH !058
1610 FOR X=1 TO 15 STEP 2 ::
CALL SOUND(10,-5,X):: NEXT
X !037
1620 SUBEND !168
1630 SUB HIT(G,H,W)!010
1640 CALL BOOM !150
1650 CALL HCHAR(H,G,W)!137
1660 SUBEND !168
1670 SUB BOOM !154
1680 FOR X=1 TO 15 STEP 2 ::
CALL SOUND(10,-7,X):: NEXT
X !037

```

(See Page 25)



Time Guardian, Jungle Terror and Traffic Frenzy

# Three games from Tomy Tutor

By JOHN KOLOEN

I've been planning to review these three games for the Geneve since they came out last fall. But several things intervened, not the least of which was the loss of my color monitor with its speaker. And since these games are very colorful, I didn't think it fair to judge them on the basis of a monochrome screen without sound.

Now that I've gotten things under control again, we'll look at Jungle Terror, Time Guardian and Traffic Frenzy. All three were ported over from the Tomy Tutor computer by Barry Boone and distributed by Texaments. Other titles available in this series of programs ported from Tomy Tutor include Space Champions, Cave Explorer, Train Twister, Islander & Car Race, Submarine Revenge and Sea Terror. They are priced at \$22.95 for two, three for \$35.95, four for \$48.95 and all nine for \$79.95.

All three of the programs reviewed here load from the MDOS prompt and require a joystick. A color monitor with sound is definitely recommended. All three offer play for one or two players, as well as

## SINK-IT—

(Continued from Page 24)

```
X !039
1690 SUBEND !168
1700 SUB DEATH !212
1710 CALL CLEAR :: DISPLAY A
T(12,7):"YOU'RE DEAD" :: CAL
L THEME(400)!205
1720 SUBEND !168
1730 SUB THEME(X)!166
1740 FOR T=1 TO 9 !075
1750 READ F,G !215
1760 CALL SOUND(X,F,3,G,7)!0
13
1770 DATA 188,1900,285,227,1
88,1900,285,227,188,1900,136
,1900,162,1900,188,1900,4000
0,40000 !149
1780 NEXT T !234
1790 RESTORE !148
1800 SUBEND !168
```

"Amateur" and "Professional" skill levels. Documentation consists of a four-page manual. I'm using the 4-star system of grading as used in MICRO-Reviews.

★ ★ ½

### JUNGLE TERROR

Jungle Terror is a maze game in which you maneuver a white worm and try to destroy two other red worms controlled by the computer. In order to score a hit, you have to get behind the targeted worm and fire. When you hit the worm's tail for the first time, it loses one segment and changes color from red to yellow. Hit a yellow worm and it loses a segment and turns green. Yellow and green worms can be destroyed by shooting at their heads or by colliding with them head-on. However, if you collide with a red worm your worm is destroyed.

Making the game more difficult, if an enemy worm shoots and hits your worm, it will turn into a "stronger" color. If it turns red again, you'll have to start over. After destroying ten worms, you advance to a higher, faster level. Points are scored by scoring hits and by capturing randomly appearing strawberries.

I found this game to be more of a challenge that I was prepared for. Of the three games, I found Jungle Terror to be the second best. It's fast and as a result you don't have time to apply any strategy. Keeping up with the two enemy worms was a difficult task and I found myself wishing that my worm would shoot faster than it does.

★ ★

### TIME GUARDIAN

Time Guardian is a space game in which object is to destroy alien ships in a tunnel. On the other hand, if your ship is hit by an alien laser blast it is destroyed. The game uses only two screens, one of which appears only after you are destroyed.

I know of numerous TI space games that are more fun to play and more challenging. I found this game to be tiresome and virtually pointless. Everytime I destroyed a ship another appeared. You are supposed to advance to a higher level by destroying

50 ships but I didn't come close. There is relatively little room to maneuver and it is difficult to aim your laser. From the looks of it, this game was designed for use on a 40-column screen, which would explain why there is so little room to maneuver. (All three games are based on 40-column screens, but this becomes a limitation only in Time Guardian.) All you can do, basically, is rotate around the screen shooting enemy ships as they appear in the center.

Documentation for this game is also incomplete. There are things that appear on the screen as you play that are not mentioned in the skimpy documentation.

★ ★ ★ ½

### TRAFFIC FRENZY

Traffic Frenzy is by far my favorite of the three games reviewed here. This maze game is easy to understand and not so fast moving that you can't develop a winning strategy.

The object of Traffic Frenzy is to change the color of all the maze's city streets blue by driving everywhere on the map. Bonus points are earned by driving over the letters B-O-N-U-S and by picking up gas cans and by colliding with other traffic when your protection shield is flashing (activated by the fire button). When your shield is not working (you can use it only twice during at any one level), you must avoid the traffic, which consists of three cars that are trying to collide with you. An unprotected collision results in destruction of your vehicle — you get four of them. Other obstructions you want to avoid include a steamroller and road-blocks.

After covering the streets with blue, the game advances to a second level in which the screen is divided in two and separated by a river. A single bridge links the two sides, but the bridge is constantly moving. The strategy here is to isolate the three enemy cars on one side and paint the other side blue. When you've finished this level, you return to the first screen where you must repeat the process. And so forth.

This game was more satisfying because

See Page 26)

## MICRO-REVIEWS

# Kwikdump, Graphic Grabber Print Module, European Creatures for Page Pro 99, Calendar, Artist Conversions

By STAN KRAJEWSKI

The Broward Computer Group does exist! On a trip to South Florida I had to see the president of a user group that another user group thought didn't exist any more (MICROpendium March 1992, p. 7). Not only do they meet every Wednesday, but have their own newsletter and disk of the month. The president, also an advanced Extended BASIC programmer, entrusted several programs to me for review. I was most impressed seeing his color printer in action. It supports seven colors and costs under \$200. The programs that this programmer develops will support colors for those of us with color printers. This group had mentioned that they would like to have a fair in Florida. I hope they will, because no fairs are held in the Southeast even though many Tiers live here. Anyone in the Southeast U.S. who would like to see this happen should write the group to show interest. If you would like to receive the newsletters and disks, mention it in your correspondence to the group. Write in care of Mark Wacholtz at the address given below.

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.

## GENEVE GAMES—

(Continued from Page 25)

I was able figure out a way to win without having to become a joystick jockey. Anyone with moderate hand-to-eye coordination ought to be able to enjoy this game.

To order, contact Texaments at 53 Center St., Patchogue, NY 11772; or call 516-475-3480.

### ★★★ KWIKDUMP

The people at Harrison Software just never get tired. Or so it seems. They've cranked out another useful disk of programs! This SS/SD disk has things for users ranging from the most inexperienced to the most advanced Extended BASIC user.

System requirements are TI99/4A, Extended BASIC, 32K RAM, disk drive and PIO ported printer. Although this program will not work on the Geneve 9640, it will work with the CorComp 9900 Micro Expansion system.

Though a few other dump programs exist, they don't operate quite as easily as this one, or, as a matter of fact, quite as fast. A demo is also included on disk for ease of learning the operation of Kwikdump. The demo starts by showing a full screen (24 lines) of "ready to dump" phrase on the screen. Pressing FCTN 7 dumps the screen to the printer. The print will appear in expanded mode. This makes the printout easier to read and mimics the print of the screen. The screen dumping happens as an interrupt. This causes the computer to stop what it's doing as FCTN 7 is pressed. After the screen dumps it will continue what it was doing.

Not only can you dump a screen listing from Extended BASIC in the COMMAND MODE, but actually imbed a program called "SHORTY" into a running Extended BASIC program. Once again, this will cause the program to stop as you dump the screen by pressing FCTN 7. This was easy to do. I saved the Extended BASIC program that I wanted to have the application of dumping added to, as SAVE DSK1.XMERGE.MERGE. XMERGE in this case would be your program named whatever you want. Then insert the program disk and type OLD DSK1.SHORTY. This loads the dump routine. Now reinsert

your program disk and type MERGE DSK1.XMERGE. Your program is now ready to run with the dump routine imbedded in the program. The dump routine "SHORTY" uses just one line. What happens is, a line 1 is added to your existing program and hides until needed. Most programs do not start with a line 1 so it will not affect the program. As always with Harrison Software, well-documented instructions are included on disk if you do run into a program that has a line 1. At times you may not want the dump in the program to be active. It may be turned on and off at times while the program is running by typing CALL LINK("ACT") or CALL LINK("DEACT") at the proper places in the program. This will toggle on and off as needed. You may also deactivate it in command mode.

OK, what are these other programs I said were on the disk? For more advanced programmers, included on disk are ALLOADM, ALSAVE, DUMP/O, DUMP/S and DUMPOFF. These include the ALSAVE object file, the object file for the screen dump and the file to turn off the dump from memory. These files are compatible and can be used with other Harrison Software utilities such as TRACK and MENDRV.

The only problem I encountered is that Kwikdump will not dump the graphics of sprites. It dumped the ASCII code instead of the graphics. Other than this the program works flawlessly and is useful for anyone wishing he had copies of his program screens.

Kwikdump is available from Harrison Software, 5705 40th Place, Hyattsville, MD 20781. Price is just \$5 including S&H.

### ★★★ GRAPHIC GRABBER PRINT MODULE

This label maker program has a differ  
(See Page 27)

## MICRO-REVIEWS—

(Continued from Page 26)

ent approach for making labels. You can use this one even though you may have another label maker.

System requirements are Geneve 9640 or TI99/4A, 32K expansion, Extended BASIC, disk drive, printer and TI-Artist.

A few pre-made labels are included with this program on SS/SD disk, but its main function is to print labels that you create. The process is easy. You start by loading TI-Artist and load the Template picture file from the Graphic Grabber Print Module, which from here on in will be called GGPM. After you create your picture you save it in TI-Artist format. You then load the GRAB2 program from the GGPM disk. GRAB2, created by Bud Wright, included with GGPM, will then change the format from TI-Artist format to GGPM format. You then are ready to use the Auto-load feature on the GGPM disk to load up the label maker program.

GGPM's menu has a Color selection for those with color printers, six colors plus black. DIR- will list the disk's contents, which also has a "E" option to exit the directory without having to view all the files. Label- asks what type of printer port, filename to print, number of labels (1 to 999), how many across (1 or 2), what density (half label or full across), and how many passes (to make as dark as you need). When using the density option, it will fit two labels side by side, which you can cut to make two labels out of one. Another option in this program is the Sleeve command. This program will create disk sleeves also, to match your label. It also allows you to add three lines for comments.

Graphic Grabber Print Module is available from its author Mark Wacholtz, Media Ware Software, 2141 NW 64th Ave., Ste. 15, Sunrise, FL 33313-3950. It is priced at \$6 plus \$2.50 S&H.

★ ★ ★ ★

### EUROPEAN CREATURES FOR PAGE PRO 99

Now you can display and print quality pictures which were originally in Mac-Paint format. These pictures were downloaded, converted, cleaned up and resaved in Page Pro format for us to enjoy.

System requirements are Geneve 9640

or TI99/4A, 32K RAM, disk drive, Extended BASIC, Page Pro 99 and printer. I received 13 sets in double sided double density format. You should specify what format you are using.

To catalog and print out this set of two disks is no easy chore. I spent almost nine hours at it, but it was well worth it. Every picture was so different I didn't know what to expect to see next. There are 13 sets, totaling 68 pictures. The best way to describe them would be as European mythological looking. There are animal heads with snake's heads on half human bodies, and other animal heads looking like demons matched on wrong bodies — mutations that might have turned into what they should have been if they had more height or had less hair on them. Some are insects that mutated along with other animals. Others are men that are half reptilian or what might be a gross Sphinx, along with unicorns and dragons. There are moons that turned into beings instead of the lifeless form as we know it. OK, snap out of it, Stan, don't fall under their spell. Whew.

Anyway, along with the disks is a Size Reference Chart to aid you in gauging sizes of the pictures. It lists how many columns and rows it occupies in the Page Pro program. Some are as small as eight sectors representing 1 inch by 1 inch on paper, up to 110 sectors representing 8 1/2 by 6 inches. Take my word, there is a picture you can use on any document you create with all 13 sets.

The Disks of European Creatures are available from Media Ware Software, 2141 NW 64th Ave., Ste. 15, Sunrise, FL 33313-3950, priced at \$13 for all 13 sets. The disks are also available at \$1 per set, minimum five sets, add \$2.50 S&H.

★ ★ ★

### CALENDAR

From the author of Casino Games, D&L Software brings you CALENDAR. Who would ever think of leaving the TI community when new software companies are popping up all around us? I am happy to see dedicated programmers like Dennis Rebello who not only continue to program in Extended BASIC but make a commitment to us by creating software compa-

nies. The commitment is to keep up with our demand and continue to come up with new and updated software.

System requirements are Geneve 9640 or TI99/4A, 32K memory, disk drive and a printer. It is hard to come up with a program that centers around the printer and be compatible with all of our configurations. Incompatibilities vary widely with the different brands of printers. When I first received this program my Epson compatible printer's codes didn't work the same as the author's. I wrote D&L Software to tell him of a bug I had seen and my printer's incompatibility. (See, I not only review 'em but Beta test 'em.) Dennis called me and spent quite a bit of time trying to get my printer, and others with so-called "Epson compatibility," to work the same as his did. It was not that easy. If he wanted this program to work for the majority of us, he had to come up with a new approach. He did, the Menu Driver which allows use of a variety of printers, and allows anyone to enter printer codes from a manual. You do not need to add anything to the program lines, as the driver is menu driven and incorporated into the program. You should use it only if your program does not print the calendar properly.

Sure, there are other calendar programs, but this one prints out a personalized calendar with the special events or occasions that you enter. You may add up to three lines with 16 characters per line. Once you enter the information, birthdays, anniversaries, etc., the computer will store the information permanently as separate monthly files. (These are called memos throughout the program) This prevents you from having to re-enter this information each time you want to print a calendar. If you have another memo to add to a month already saved, simply load the data file, enter the month and Add A Memo. An Edit File prompt allows you to edit a day already on file. Another prompt lets you Delete A Memo as easily as you create one.

You can also use the program as a monthly planner. You enter the info the same way as with the calendar. Instead of saving your monthly events to disk, you return to the Main Menu and print the calendar.

(See Page 28)

## MICRO-REVIEWS—

(Continued from Page 27)

endar. This will print your planner with what you entered into memory without accessing the disk for special events.

Another fine feature is the Recurring Memo prompt. This allows you to enter a special event that occurs the same day each month. You will have use of the same options as before, except now it will ask what day (let's say Monday) and 1st, 2nd, 3rd, 4th or last (Monday) of the month.

Besides printing out the monthly page calendar, you can print a yearly calendar on one page. Of course, this one will not have the special occasions displayed.

Calendar is user friendly, is useful to anyone (especially those who do not remember people's birthdays), and can be purchased for \$10.95 plus \$1 S&H. Send to D & I. Software, 89 Little Neck Ave., Swansea, MA 02777, telephone (508) 675-0768.

★ ★ ★

## ARTIST CONVERSIONS

This disk contains several utilities, CSGD graphics to TI-Artist Instances, Extended BASIC to TI-Artist\_\_F and a disk directory.

System requirements are Geneve 9640 or TI99/4A with 32K, Extended BASIC, disk drive and TI-Artist to see your finished product. This SS/SD disk has a Load program and autoloads to a colorful main

menu. The Menu looks like this:

- 1) For CSGD to TI Artist\_\_I
- 2) For Extended BASIC to TI-Artist\_\_F
- 3) For Disk Directory
- 4) For a Note of Thanks
- 5) To Enter Extended BASIC
- 6) To Exit to Title Screen

For those who don't know, CSGD stands for Character Set Graphic Design. They are graphics created in the Extended BASIC environment for display in label programs. The first option of the menu does a nifty job in a little over a minute (quicker on the Geneve) creating a TI-Artist Instance out of a /GR format. A square box in the center of the screen houses the CSGD graphic when loaded. You are then prompted to convert to an Instance. As the program begins to convert the CSGD, you are aware of the progress as you see a little black square move one position at a time through 25 positions as it completes its job. When it finishes, it prompts you to convert another. The disk directory comes in handy, as you must load each graphic one at a time. It can be a slow process with a disk of 50 or more graphics. But once it is done you have more Instances for your Artist program.

The second option creates fonts for TI-Artist out of Extended BASIC "special" characters. The program will ask you if you have merged in your subroutine. If you press no, the program will break and give an example of how to type it in. I had fun

using a few already merged subroutines and converting them to Artist \_\_F format. The original type on the screen will turn into the type character you are converting. You will then watch the progress as the cursor moves from character to character (about four lines of 40 characters) as it does the converting. I was amused by the upside-down text as it first turned the original screen text upside down. Sure enough, as a TI-Artist Font, it was upside down. Conversion took around four minutes on the TI and two minutes on the Geneve.

The Disk Directory has a few outstanding features created for this program. It is available in both CSGD to Instance and Extended BASIC to Font programs. Also, in both programs, press "D" and the directory will appear. It shows a count of files so you don't go over the 127-file limit and pressing the "E" will take you to the "Press Space Bar To Exit" prompt.

Artist Conversions was well thought out and gives you 16 new CSGD Graphics, four Fonts and two utilities for \$6 plus \$2.50 S&H. Make checks payable to Mark Wacholtz, 2141 NW 64th Ave., Ste. 15, Sunrise, FL 33313-3950.

*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.*

## User Notes

## A new trick

This comes from MICROpendium columnist Bruce Harrison. He writes:

A new trick for those who use Extended BASIC programs in combination with assembly routines. You can add new assembly routines to an XB program that already contains some assembly routines that were embedded using ALSAVE without losing the existing assembly routines. Here is a method that we have tested, so we know this works. Follow the steps carefully, and use a backup copy of the original program to do this, lest a mistake cost you the original.

Step 1 — Load in the XB program with the OLD command.

Step 2 — Save the program in merge format under a new name. (e.g. SAVE DSK1.TFILE.MERGE)

Step 3 — Run the program, then stop or exit it. At this point the existing assembly routines will be safely stashed in low memory, with their entry points all identified in the DEF table.

Step 4 — Type in NEW <Enter>

Step 5 — Put the disk containing the new object file in drive 1. Type in CALL LOAD("DSK1.name of object file") <Enter>. When that finishes, put a disk containing ALSAVE in drive 1, then type in

CALL LOAD("DSK1.ALSAVE") <Enter>.

Step 6 — Type in CALL LINK("SAVE") <Enter>.

Step 7 — Put back the disk used in step 2, and type in MERGE followed by the name you used to save the original program in merge format. (e.g. MERGE DSK1.TFILE) <Enter>.

Step 8 — Edit the program to insert the appropriate CALL LINKS for the features of the newly added assembly routine(s).

Step 9 — Save the program under whatever name you like, without the MERGE option. You now have a version of the pro

(See Page 29)

## User Notes

(Continued from Page 28)

gram with the new capability added to whatever assembly routines it had before.

We have used this technique to add new assembly routines to a number of Extended BASIC programs, and it works every time. It was first used when we wanted to add KWIKDUMP capability to one of our own programs that already had embedded assembly routines.

### Solving the Geneve heat problem

This comes from Ben Ciscel of Round Rock, Texas. He writes:

Like many of your readers, I bought a Geneve in July 1987, struggled with it until we got decent software in February 1988,

and enjoyed it after that. I used it for word processing, taxes and accounting. Then, about three months ago, it started crashing on me. At first it was once a week, then once a day, and finally the 9640 just went totally dead.

I panicked. There I was with about 150 floppies full of records that most other computers can't read, facing the purchase of a new computer. I wrote to Myarc, with no response. At the suggestion of Laura Burns, I called Don Walden of Ceure Electronics. He told me that the TI PEB, when running just a few cards, had a slightly high bus voltage. This causes the voltage regulators on the 9640 card to run quite hot, and eventually fail.

Several times after having problems I had noticed that the 9640 board was very hot, but did not know why. Walden said

there were two solutions to the over-heating. One, a transformer from Radio Shack to reduce the PEB input voltage by 10 percent. This will only help if the board is still working. In my case, he replaced the dead voltage regulators, and added heat sinks to help withstand the bus voltage.

Anyone having intermittent troubles with their Geneve should forget Myarc and discuss the symptoms with Don Walden at 414-529-2173. I found him to be knowledgeable, courteous, speedy and economical. The repair and return postage totaled \$40.

### TI-Writer tip

This item is by Wesley Richardson. It appeared in the newsletter of the North-coast 99ers in Cleveland.

(See Page 30)

## Newsbytes

(Continued from Page 21)

Cugley cited dwindling membership and lack of input and interest by the members as the reasons for disbanding, as well as the lower cost and prevalence of PCs.

Cugley expressed thanks to TI user groups for newsletter and software exchanges.

### MDOS 'BUG list' set up

The MDOS development group on Delphi's TI-NET has set up a "bug list." This allows users to report bugs in the current versions of MDOS to Beery Miller and other members of the development group. (See April 1992 MICROpendium.)

Forms for reporting the bugs are available in TI-NET's Customer Service area. This area also provides forms for new and renewal subscriptions to MICROpendium via credit card online.

### Lima users provide conference on tape

Three videotapes covering 17 hours of the May 16 Lima Multi Users Group Conference are available to any users group, dealer or paid member of the Lima Users Group for \$15 or for three blank tapes and

\$3.75, according to Charles W. Good of the group.

The tapes are available from the group c/o Charles W. Good, Box 647, Venedocia, OH 45894.

Good notes that 158 persons signed the registration book for the event, and he estimates that approximately 200 attended.

Speakers on the tapes include:

Jim Peterson, a programmable calculator written in Extended BASIC; Don O'Neil, a 4A SCSI interface card, Digiport compared to Sound FX and the Accelerator; Barry Traver, porting MS-DOS software over for use by the TI.

Also, Lee Bendick, a demo of TI's never-released 99/8 computer; Ken Gilliland, Notung Software products, including demos of Disk of the Old West and TI Casino; Bruce Harrison, new products from Harrison Software, including demos of Kwik Sort and Kwik Dump; Mike Maksimik, MIDI Master 99 and MIDI music from Crystal Software; the MUG Conference of users group officers, discussing the Newsletter Article Clearing House BBS and other topics.

Also, Charles Good, preview of the Funnelweb v.5 text editor; Joe Ross, applications for c-Shell 99; Bud Mills, Horizon products, including the Horizon

mouse, and some commonly encountered problems; Gary Bowser, products of Oasis Pensive Abucators, including the Pop Cart and TIM; Ken Gladeszewski, analog to digital conversion projects for the TI, including demos of a computer controlled robot and a temperature sensing device; Mickey Schmitt, MS Express software products, including adventure and other games; Eunice Spooner and Meaghan Good, teaching Logo to a first grade student.

Also, Beery Miller, Geneve products from 9640 News and the current status of the MDOS buyout project; Dolores Werths, how a musician uses MIDI, including MIDI Master for the TI and Cake Walk for MS-DOS; demos of Rich XB-GK and the Gramulator; and Mel Nomina, videos of exhibits, short interviews with vendors and personalities.

MICROpendium expects to publish a more extensive report on the conference next month. — Ed.

### Downeast 99ers get new mailing address

New mailing address for the Downeast 99ers is P.O. Box 496, Ocean Park, ME 04063.

# User Notes

(Continued from Page 29)

If you are using two different files and combining information, when you do a LoadFile (LF) or SaveFile (SF) you can put both filenames on the command line simultaneously and TI-Writer will use only

the first name.

For example: DSK1.FILE1 DSK-1.FILE2. By doing this you don't need to remember the second filename or retype it when you are finished with FILE1. To make the second filename active simply

delete the first filename.

## Dial tones

This comes from Sam Carey, of Port-  
(See Page 31)

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*MICROdex99 by Bill Gaskill is anew product designed for use with MICROpendium Index II. The program allows users of MP Index II to modify their index entries as well as add entries. MICROdex99 supports many other functions, including file merging, deletion of purged records, record counting and file browsing.*

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# User Notes

(Continued from Page 30)

land, Oregon. He writes:

The telephone company uses two frequencies simultaneously to produce a dial tone. They are 350 Hz and 440 Hz. If you were to type CALL SOUND(1000,350,2,440,2) in XB you would hear a dial tone through your speaker.

The frequencies for a ringback signal is 440 Hz and 480 Hz, and there's time involved in this one. It's on for 1 or 2 seconds, and it's off for 3 or 4 seconds, depending on the type of ringback (PBX or normal). So, if you type in the following in XB, your speaker will "ring" five times.  
100 FOR X=1 TO 5  
110 CALL SOUND(1000,440,2,280,2)  
120 CALL SOUND(3000,110,30)  
130 NEXT X

Keeping the above information in mind, let's write a program that will simulate picking up the receiver, and dialing 555-1234, then hanging up after the fifth ring.

```
100 CALL CLEAR
110 DISPLAY "EXAMPLE OF SOME
ONE PICKING UP THE PHONE AN
D DIALING 555-1234." : : :
120 CALL SOUND(1000,350,4,44
0,4)
130 FOR A=1 TO 3
140 CALL SOUND(150,770,2,133
6,2)
150 CALL SOUND(50,110,30)
160 NEXT A
170 CALL SOUND(180,697,2,120
9,2)
180 CALL SOUND(50,110,30)
190 CALL SOUND(180,697,2,133
6,2)
200 CALL SOUND(50,110,30)
210 CALL SOUND(180,697,2,147
7,2)
220 CALL SOUND(50,110,30)
230 CALL SOUND(180,770,2,120
9,2)
240 CALL SOUND(50,110,30)
250 FOR B=1 TO 5
260 CALL SOUND(1000,440,4,48
0,4)
270 CALL SOUND(3000,110,30)
280 NEXT B
290 DISPLAY "THEN HUNG UP!"
300 END
```

The CALL SOUND(50,110,30) is for silent pauses between digits. Volume 30 on the TI is silent.

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