JANUARY 1985
EDITOR   DAN HESSLING

HELLO AGAIN FELLOW MEMBERS OF THE K#3 COMPUTER USERS' GROUP. DEPENDING
UPON WHEN YOU RECEIVE THIS NEWSLETTER. I HOPE YOU HAVE, OR HAVE HAD A
VERY HAPPY HOLIDAY SEASON.
    THIS INTRO TO THE NEWSLETTER IS BEING WRITTEN ON AN IBM 4341
MAINFRAME SYSTEM. (I'M WRITING IT ON BREAK AT WORK). SINCE THIS IS NOT
BEING DONE ON A WORD PROCESSOR IT MAY TURN OUT A LITTLE STRANGE. THE
REASON I'M DOING IT THIS WAY IS BECAUSE I'M CRAMPED FOR TIME TO GET THIS
NEWSLETTER OUT ONLY 1 WEEK AFTER THE DECEMBER NEWSLETTER.
    THE NEXT MEETING WILL BE HELD AT THE BOURBONNAIS MUNICIPAL CENTER
ONCE AGAIN. THE TIME IS FROM 1 TILL 4 PM. ON THE 3RD SAT. OF JANUARY
WHICH IS JAN. 19, 1985. WE PLAN TO HAVE THE TEXAS PROFESIONAL COMPUTER
AT THE MEETING TO BE DEMONSTRATED BY AL JOHNSON. OTHER FEATURES ARE A
LITTLE SCETCHY AT THIS TIME, BUT IT WILL BE A GREAT MEETING. WE INVITE
ANYONE TO ATTEND OUR MEETING (YOU DON'T NEED TO BE A PAID MEMBER TO
COME TO OUR MEETINGS. MEMBERSHIP DOES HOWEVER ENTITLE YOU TO MANY ADDED
BENEFITS (LIBRARY, NEWSLETTER, GROUP PURCHASES, ETC.). THE JANUARY
MEETING WILL MARK THE 2ND ANNIVERSARY OF THE GROUP.

WHAT'S NEW WITH RADIO SHACK?
By Al Johnson, former member of the board of K-TUG

This is the first time I have written a column to welcome any of
our former K-TUG members to our combined Kankakee Computer Users
Group. I have been in touch with our President, Dick Bayham and he
will try to be present at our December 15th meeting. Meanwhile I
have been permitted by Dick to ask Lorraine Creek, our Secretary, to
either mail these newsletters to you or allow the Kankakee Computer
Users Group to do so.
The reason for this action is that although the Kankakee
Computer Users group originally was for TI99/4A home computer users,
the cessation of production of the 99/4A and the fact that many
members are upgrading to IBM,Apple,TI Professioal,etc. machines but
were still interested in software, programming techniques, modem
communication,bulk purchase of paper and diskettes, etc. persuaded
the board to broaden the charter to any computer-interested person.
So far, TIers are preponderant; however, show up and change all that!
As far as membership goes, all of you who are current paid-up
members of K-TUG are welcome as my guests at any function of the
Kankakee Users Group and when your K-TUG membership expires,
hopefully you will renew with our merged group.
I would invite all present and former officers to join our board
meetings: Dick has been invited to two already but was unable to
come. Give me a call at 815 467 5432 for details.
I have a model I level II which I use at the Industrial
Engineering College of Chicago (316 N. Michigan Ave.,Chicago) to
teach computer science. As most K-TUG members have COCOs,I would say
the TI99/4A has more in common with your equipment than does
Keith,Dick or a few others TRS 80 Models I thru IV; however, 80 Micro
and other magazines give all the machines good support. The
indispensable Jackie Mooks is now the manager of the Bourbonnais
Computer Store, I hear, and I hope she can join us at our functions.
Radio Shack User Groups exist in Chicago, and I was in one in
Joliet which no longer exists;I was involved in an effort to start
one in Lockport, but there are too few TRSs of one model to get a
"critical mass" so to speak except in a large city. I think we can
profit by joining an umbrella organization; the change in meeting
time is a problem but at least we have a forum and location.
I hope to be able to welcome a number of you whom I have met at
Kankakee Communiy College last year and feel that a joint meeting,
newsletter and purchasing format will strengthen us regardless of the
computer brand.

Welcome to the Kankakee Computer Users Group!

■■■■■■ARROW ZAP■■■■■

WINNING SCORE: ■·■·■   GAME ■

_1_
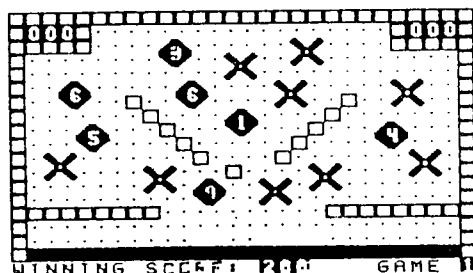
This is the second time I write this as my first draft wasn't saved when I hit the table causing the system to momentarily lose power. After checking carefully, as I have lost several programs recently. I discovered my expansion box power cable wasn't fully seated in the box. Moral: if you have computer problems, unplug and replug everything before concluding you have equipment failues!

Marilyn Bresherd, Roger Helms, Mark Harms and I attended the Dec. 1st meeting of the Chicago TI users group at Triton College and heard Sam Pincus, a TI home computer pioneer, conduct a question and answer session. The CorComp double sided double density disk controller card took a lot of hits due to crashing, trouble getting replacements from CorComp and trouble with the replacements. Mark has the card and it has operated perfectly; the bugs are probably being worked out; hopefully CorComp will survive; no other vendor of such a capability exists. Another popular subject was bulletin boards (BBS). There are three in the Chicago area: the Chicago users group board (312 966 2342), TI West (312 766 2797) and TI South (312 757 3135). All these sysops were at the meeting; on Saturday evening Mark Harms accessed TI South and talked to Bob Lee, the sysop, downloaded several programs, etc. TI South had a notice that yet another Chicago area board called S.T.I.B.B.S. (312 894 8362). P.J. Holly, sysop, exists. One board leads to another, etc. Last year the Chicago group's board was suspended to make changes as electronic vandals were leaving offensive messages. The ICC will take action against boards permitting illegal or affronting public access messages; hence it is now required that you present your password before being allowed to leave a message. In the case of the Chicago users group board, you must send a self-addressed envelope to Chicago Area TI88/4A users group. P.O. box 578341, Ch9cago, Ill. 60657 and a dollar to get a password. Just call the others, and answer the questions.

The entire subject of bulletin boards is not only interesting but represents the practical home use of a computer which will grow steadily. My son will use the Source to research a school paper vice getting an inter-library loan, a process which can take months. The programs which Mark downloaded in one case included a statement by the author that if he liked the program, to send him $10; otherwise erase it. I proposed to your board of directors at our monthly meeting on 2 Dec. that the library be available to modem owners and that we download to members for rent copywrited material, such as the hundreds of International TI Users Group programs we have purchased at $3 each and rent at meetings for $1 on cassette tape after obtaining a promise to not copy such material but return it or re-rent it. However, in view of the legal considerations and the fact that many people do not obey the copywrite laws either because they are greedy or because they are not in sympathy with copywrite philosophy or do not understand the longer term economic considerations (i.e., lack of software in the future if authors can't recover their investment and make a proft), your board vetoed this proposal. Hopefully we can devise some way to do this and avoid copywrite infringement risk; anyone with any proposals as to how or what to do should contact me or other board members (my new phone as of Aug.'84 is 815 467 5432).
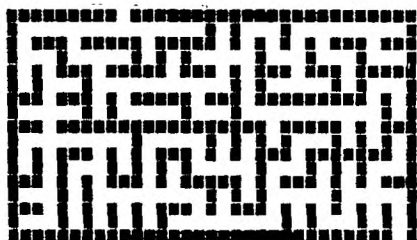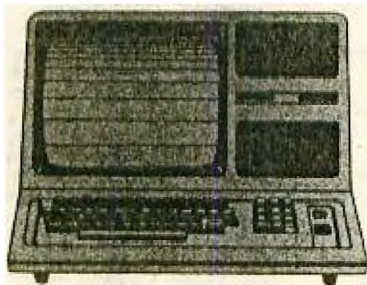
For those of us who are Chicago Group members or are interested in coming to meetings, Triton has pre-empted certain days, so that

the Chicago group will no longer be meeting on the 2nd Saturday every month. The schedule thru June is : Dec.; no meeting;Jan 12,Feb. 9,Mar 9,Apr:6,May 11 and June 1st,
Tips on the TI Writer;if you want to print in condensed font,with 1/8" line spacing instead of 1/6th inch and as wide a width as possible on 8 1/2" by 11" paper, use transliterate commands to embed the following gemini 10 commands: 27,48 (1/8" line spacing),27,66,3 (selects 17 characters/inch) and use the formater command ,PL 131 (not 132, the maximum, because commas and other punctuation confuses the printer and the last letter of the line is printed on the next line (this thanks to Brian Mackie, who has at least recovered mentally if not physically from his terrible auto accident last month!). Another comment;relative indent:if you forget the plus sign, you have gone to direct indenting and relative indenting from then on is relative to that previous setting.
A final point.Some months ago I thought I would be able to get inexpensive used Xerox disk drives which the club could modify for use in the TI. Unfortunately, my informant was as naive as I and we ended up with one drive the club sold for $50 (single sided Shugart drive, but required a stand-alone power supply etc.; at the Chicago TI Faire I saw a Shugart 35 track in box drive for $75; hence the club got a good value for the drive)and two Xerox mother boards. Anyone know what we could do with the motherboards? If so, contact Mark Harms!

See you at the next meeting , , .

```
100 REM XXXXXXXXXXXXXXXXXXXX
110 REM X DUAL CATALOG      X
120 REM X       BY:         X
130 REM X DAN HESSLING      X
140 REM X VERSION 111584B X
150 REM XXXXXXXXXXXXXXXXXXXX
160 CALL CLEAR
170 CALL SCREEN(5)
180 FOR C=1 TO 14
190 CALL COLOR(C,16,1)
200 NEXT C
210 PRINT TAB(12):"Catalog": : : : : : : : : : :
220 REM XSUB TO CATALOG DISK
230 DIM TYPE$(5)
240 TYPE$(1)="DIS/FIX"
250 TYPE$(2)="DIS/VAR"
260 TYPE$(3)="INT/FIX"
270 TYPE$(4)="INT/VAR"
280 TYPE$(5)="PROGRAM"
290 PRINT "SELECT:":TAB(5):"0=SCREEN":TAB(5):"1=PRINTER"
300 INPUT IO
310 IF IO<>1 THEN 340
320 OPEN #2:"PIO"
330 IO=2
340 OPEN #1:"DSK1.",INPUT,RELATIVE,INTERNAL
350 INPUT #1:A$,J,J,K
360 PRINT #IO:TAB(7):"DISK= ":A$:"AVAILABLE=":K:" USED=":J-K
370 PRINT #IO:"FILENAME    SIZE    TYPE    P":"----------------- ---------- -";
380 INPUT #1:A$,I,J,K
390 PRINT #IO
400 IF LEN(A$)=0 THEN 480
410 PRINT #IO:A$:TAB(12):J:TAB(17):TYPE$(ABS(I)):
420 IF ABS(I)=5 THEN 450
430 B$=" "&STR$(K)
440 PRINT #IO:SEG$(B$,LEN(B$)-2,3):
450 IF I>0 THEN 380
460 PRINT #2:TAB(28):"Y":
```

```
470 GOTO 380
480 CLOSE #1
490 IF IO=2 THEN 500 ELSE 510
500 CLOSE #2
510 INPUT "WANT ANOTHER CATALOG":CAT$
520 IF CAT$="Y" THEN 540
530 IF CAT$="y" THEN 540 ELSE 860
540 REM $SUB TO CATALOG DISK
550 INPUT "O.K. TURN PRINTER BACK THEN HIT ENTER":CAT$
560 CALL CLEAR
570 TYPE$(1)="DIS/FIX"
580 TYPE$(2)="DIS/VAR"
590 TYPE$(3)="INT/FIX"
600 TYPE$(4)="INT/VAR"
610 TYPE$(5)="PROGRAM"
620 PRINT TAB(12):"Catalog": : : : : : : : : : :
630 PRINT "SELECT:":TAB(5):"0=SCREEN":TAB(5):"1=PRINTER"
640 INPUT IO
650 IF IO<>1 THEN 680
660 OPEN #2:"PIO"
670 IO=2
680 OPEN #1:"DSK1.".INPUT .RELATIVE.INTERNAL
690 INPUT #1:A$,J,J,K
700 PRINT #IO:TAB(4?):"DISK= ";A$:TAB(40):"AVAILABLE=":K:" USED=":J-K
710 PRINT #IO:TAB(40):"FILENAME    SIZE    TYPE    P":TAB(40):"----------- --- - --
--------- -":
720 INPUT #1:A$,I,J,K
730 PRINT #IO
740 IF LEN(A$)=0 THEN 820
750 PRINT #IO:TAB(40):A$:TAB(52):J:TAB(57):TYPE$(ABS(I)):
760 IF ABS(I)=5 THEN 790
770 B$="   "&STR$(K)
780 PRINT #IO:SEG$(B$.LEN(B$)-2.3):
790 IF I>0 THEN 720
800 PRINT #2:TAB(68):"Y":
810 GOTO 720
820 CLOSE #1
830 IF IO=2 THEN 840 ELSE 850
840 CLOSE #2
850 CALL CLEAR
860 INPUT "DO YOU WANT ANOTHER SET?":CAT$
870 IF CAT$="Y" THEN 170
880 IF CAT$="y" THEN 170 ELSE 890
890 END
```

SYSTEM FLOWCHART SYMBOLS

PROCESSING

A major processing function.

INPUT/ OUTPUT

Any type of medium or data.

KEYBOARD

Manual entry

TRANSMITTAL TAPE

A proof or adding machine tape or similar batch-control information.

DOCUMENT

Paper documents and reports of all varieties.

DISK, DRUM/ RANDOM ACCESS

On line storage.

MAGNETIC TAPE

DISPLAY

Information displayed by plotters or video devices.

OFFLINE STORAGE

Offline storage of either paper, cards, magnetic or perforated tape.

SORTING, COLLATING

An operation on sorting or collating equipment.

MANUAL OR CLERICAL OPERATION
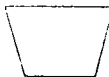
A manual offline operation not requiring mechanical aid.

AUXILIARY OPERATION

A machine operation supple-menting the main processing function.
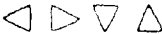
PUNCHED CARD

COMMUNICATION LINK

The automatic transmission of information from one loc-ation to another via commun-ication lines.

PROGRAM FLOWCHART SYMBOLS

SYMBOL	REPRESENTS
	PROCESSING A group of program instructions which perform a processing function of the program.
	INPUT/OUTPUT Any function of an input/output device (making information available for processing, recording processing information, tape positioning, etc.)
	DECISION The decision function used to document points in the program where a branch to alternate paths is possible based upon variable conditions.
	PREDEFINED PROCESS OR PREPARATION A group of operations not detailed in the particular set of flowcharts
	TERMINAL The beginning, end, or a point of interruption in a program.
	CONNECTOR An entry from, or an exit to, another part of the program flowchart.
	OFFPAGE CONNECTOR A connector used instead of the connector symbol to designate entry to or exit from a page.
◁ ▷ ▽ △	**FLOW DIRECTION** The direction of processing or data flow.

SUPPLEMENTARY SYMBOL FOR SYSTEM AND PROGRAM FLOWCHARTS

	ANNOTATION The addition of descriptive comments or explanatory notes as clarification.
FLOW ◁ ▷ ▽ △	The direction of processing or data flow.

TEXAS INSTRUMENTS
INCORPORATED

Dear Consumer:

Enclosed are the pin assignments for the Texas Instruments 99/4 Home Computer.

The TI-99/4 Home Computer is a high volume, consumer product. From time to time, design modifications are made to improve manufacturability and reduce costs. These modifications can affect the I/O and software interface.

The information regarding the pin assignments furnished herein is to the best of our knowledge complete and accurate. However, Texas Instruments makes no warranty or representation as to the completeness and accuracy of the information which is provided on an "as is" basis.

Use and reliance on the information is solely at your own risk.

I hope this information will help you to better utilize your equipment.

Sincerely,

Software Communications

/df

I/O PORT PIN ASSIGNMENTS
GROM PORT

PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET	2	GND (SYSTEM)
2	D7	4	CRU CLK
5	D6	6	CRU IN
7	D5	3	A15/CRU OUT
9	D4	10	A13
11	D3	12	A12
13	D2	14	A11
15	D1	16	A10
17	D0	18	A9
19	+5 VOLT	20	A8
21	GS (GROM SELECT)	22	A7
23	M0/A14	24	A3
25	MI (DBIN)	26	A6
27	GROM CLOCK	28	A5
29	-5 VOLT	30	A4
31	GR (GROM READY)	32	WE
33	GND (GROM)	34	ROM G
35	GND (SYSTEM)	36	GND (SYSTEM)

I/O PORT PIN ASSIGNMENT
PERIPHERAL I/O port

PIN	DESCRIPTION	PIN	DESCRIPTION
1	+5 VOLT	2	SBE (SPEECH SELECT)
3	RESET	4	EXT INT
5	A5	6	A10
7	A4	8	A11
9	DBIN	10	A3
11	A12	12	READY/HOLD
13	LOAD	14	A8
15	A13	16	A14
17	A7	18	A9
19	A15	20	A2
21	GND	22	CRU CLK
23	GND	24	Ø 3
25	GND	26	WE
27	GND	28	MBE
29	A6	30	A1
31	A0	32	MEMEN
33	D0	34	D7
35	D4	36	D6
37	D0	38	D5
39	D2	40	D1
41	+5 VOLT/A0	42	D3
43		44	SPEECH

I/O PORT PIN ASSIGNMENTS

VIDEO JACK

i201
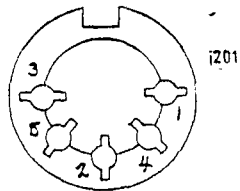
PIN	DESCRIPTION
1	+12 VOLT SUPPLY FOR EXTERNAL UNITS SUCH AS MODULATOR
2	SHIELDING CONNECTION
3	SOUND OUTPUT
4	COMPOSITE VIDEO OUTPUT
5	GROUND CONNECTION

I/O PIN ASSIGNMENT

POWER RECEPTACLE (USA)
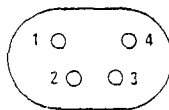
FRONT VIEW
MALE PLUG CONSOLE

PIN	DESCRIPTION
1	NOT USED
2	16 VOLT AC
3	COMMON
4	8 VOLT AC

I/O PORT PIN ASSIGNMENTS
REMOTE WIRED HANDHOLD CONTROLS I/O PORT

MALE PLUG FRONT VIEW

PIN	DESCRIPTION
1	NOT CONNECTED
2	JOYSTICK B
3	KEY(0 (UP)
4	KEY 4 (PUSH BUTTON)
5	KEY 3 (LEFT)
6	NOT CONNECTED
7	JOYSTICK A
8	KEY 1 (DOWN)
9	KEY 2 (RIGHT)
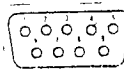
I/O PORT PIN ASSIGNMENTS

CASSETTE I/O PORT
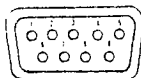
MALE PLUG
FRONT VIEW

PIN	DESCRIPTION
1	CS1 MOTOR CONTROL (POS)
2	CS1 MOTOR CONTROL (NEG)
3	GND (SYSTEM)
4	UNUSED
5	RECORD OUTPUT
6	CS2 MOTOR CONTROL (POS)
7	CS2 MOTOR CONTROL (NEG)
8	AUDIO IN
9	AUDIO GROUND

```
100 ! *************************
110 ! SPRITEPEDE
120 ! BY:
130 ! GARY CHRISTENSEN
140 ! OF TI B.U.G.
150 ! *************************
160 CALL CLEAR :: CALL SCREEN(16):: CALL COLOR(2.5.5):: CALL HCHAR(24.1.42.64)::
CALL VCHAR(1.31.42.96)
170 DISPLAY AT(1.9)SIZE(12):"SPRITEPEDE"
180 FOR A=4 TO 109 STEP 5 :: FOR B=1 TO 7 :: GOSUB 200 :: NEXT B :: NEXT A :: FO
R A=109 TO 4 STEP -5 :: FOR B=7 TO 1 STEP -1 :: GOSUB 200
190 NEXT B :: NEXT A :: GOTO 180
200 CALL SPRITE(#B.42.2.B*3+A.128.#B+7.42.2.B*3+A+16.128.#B+14.42.2.B*3+A+32.128
.#B+21.42.2.B*3+A+48.128):: RETURN
```

```
100 REM*************************
110 REM*CONDENSE LABEL PRT*
120 REM*  BY DAN HESLING   *
130 REM* VERSION 111484B   *
140 REM*************************
150 INPUT "NAME? ":NA$
160 INPUT "ADDRESS? ":AD$
170 INPUT "CITY/ST/ZP? ":CS$
180 INPUT "PHONE? ":PH$
190 PH$="Ph. "&PH$
200 INPUT "NUMBER OF SETS? ":NS
210 OPEN #1:"PIO"
220 PRINT #1:CHR$(15):
230 REM YOU MAY LEAVE OUT
240 REM THIS TEST PATTERN.
250 PRINT #1:"1vvvvvvvvvypppppppppppppqqqqqqqqqqqqqqqqjjjjjjjjjjjggggg"
260 PRINT #1:"2yyyyvvyyyyyyyyyyyyvvyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyv"
270 PRINT #1:"3pppppppppppppppppppppppppppppppppppppppppppppppppppppppppppp"
280 PRINT #1:"4gggggggggggggggggggggggggggggggggggggggggggggggggggggggggggg"
290 PRINT #1: : :
300 FOR L=1 TO NS
310 PRINT #1:TAB(2):NA$;TAB(28):NA$:TAB(2):AD$;TAB(28):AD$
320 PRINT #1:TAB(2):CS$;TAB(28);CS$:TAB(2);PH$;TAB(28):PH$
330 PRINT #1: : :
340 NEXT L
350 CLOSE #1
```


/ 2

IMPROVED 80 COLUMN CARD
From: Will County UG

Foundation. who recently announced that they were offering an 80 column card for the T.I. recently stopped all shipments of the card. According to Micropendium. Foundation had a lot of negative response to the first cards sent out and are now working on improving them. Improvements should inable the use of the card with a wider variety of software.

LAWS OF COMPUTER PROGRAMMING:

1. Any given program, when running, is obsolete.
2. Any given program costs more and takes longer.
3. If a program is useful, it will have to be changed.
4. If a program is useless, it will have to be documented.
5. Any given program will expand to fill all available memory.
6. The value of a program is proportional to the weight of its output.
7. Program complexity grows until it exceeds the capability of the programmer who must maintain it.

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The articles in this newsletter do not necessarily represent the opinions of the KI3 Computer users' Group. and or anyone affiliated with said group.

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REVIEW OF IBM/PC
By: Dan Hessling

I recently upgraded to an IBM/PC. I've only used it a short time, but
I like to give a 'novice review'. The IBM is of course a very powerfull
system. With 256k. expandable (so far) to 640K. It is a bit above the
average 'home computer' market. But, I think that as time goes buy the
"PC's" of all Manufactures will be lowered into the home computer market.
There are five models of the IBM/PC right now: PC/Jr.. PC. PC/PORTABLE.
PC-XT, and PC/AT. THE PC/Jr. is a home computer, the rest are powerful
enough to be business computers.Lets take my configuration: DOS 2.00. 256K.
(2) 360K disk drives, mono/printer card, color graphics card, async card,
mono monitor. color tv. printer. The mono screen is super for text (and
some graphics) the color tv is fuzzy on text but nice for graphics. (the
color monitor would surely be a lot better for both.) the disk drives are
very fast (a full diskette will copy in two passes (w/256k)) and its very
nice to have two! The Disk Operating System is in my opiosnion fantastic!
Short commands to do whatever you like for instance to copy a full disk one
action is to key in "diskcopy" and "a: b:" to go from drive a to be
(diskcopy a: b:). thats it the computer takes it from there. To get into
the top level of Basic key in "basica" and your there! there are a lot of
little things that arenice (like using capitals or lowercase letters for
everything!). You may use both monitor at once if you like (text on one,
graphics on the other). There is more to learn if you want to really get
into the system. For instance you may run things straight from DOS. Some
of these "programs" are called exe's, com's, and so forth. Another big
plus is the availability of software, (especially free software). The only
'boughten software I'm using is what IBM supplied with the system, (and a
some other packages I bought for tutorial type purposes.) My wordprocessor,
spell checker, file program and others are semi-public domain software.
(you may copy and if you find the program(s) of use are ASKED to send a
'donation' to the author). I could hardly believe it! From what I've seen
of the wordprocessor it seems to be at least as powerfull as TI-Writer! The
one disadvantage would of course be cost. But if you consider that the
prices are dropping and the free software its a pretty good buy.

To close out this column I'd like to say that I still really like the
TI as well. The IBM/PC should in any case be compared only against the
TI/PC. and other computers in its own class, not the 99/4A. I still think
the 99/4A is the best computer in its class. In my opinion far ahead of
Commodore and the others.

15

XBASIC: **starring the field**

This program might be just the thing when the folks show up over the holidays — whazit do?
Serious students will find herewithin a nice set of circular calcucating routines along about lines 150 to 290. (note: watch line numbering)

```
90 REM 1984 FOR LEHIGH 99'ER
S BY JACK SCHREIBER, LV99CG
100 CALL CLEAR :: FOR CX=5 T
O 8 :: CALL COLOR(CX,16,13):
: NEXT CX :: CALL SCREEN(13)
110 DISPLAY AT(7,8):"WISHING
YOU" :: DISPLAY AT(9,13):"A"
:: FOR DEL=1 TO 200 :: NEXT
DEL :: J=1
120 FOR AA=7 TO 21 :: READ A
$ :: DISPLAY AT(11,AA):A$ ::
FOR DEL=1 TO 50 :: NEXT DEL
::NEXT AA
130 DATA M,E,R,R,Y,,C,H,R,I,
S,T,M,A,S
135 RESTORE :: J=J+1 :: IF J
=5 THEN 135 :: IF J>6 THEN J
=2
140 FOR DELAY=1 TO 400 :: NE
XT DELAY :: CALL CLEAR :: CA
LL SCREEN(5):: CALL COLOR(2,
16,1):: FOR N=1 TO 12
150 R=12-(08*SIN(N/J*PI))
160 C=16-(08*COS(N/J*PI))
170 CALL HCHAR(R,C,42)
190 NEXT N
210 FOR N=13 TO 25
220 R=12-(10*SIN(N/J*PI))
230 C=16-(10*COS(N/J*PI))
240 CALL HCHAR(R,C,42)
260 NEXT N
270 A=6 :: B=6 :: FOR N=25 T
O 37
280 R=12-(A*SIN(N/J*PI))
290 C=16-(B*COS(N/J*PI))
300 CALL HCHAR(R,C,42)
310 IF N=37 THEN GOSUB 340
320 IF A<1 THEN GOTO 350
330 NEXT N
340 A=A-2 :: B=B-2 :: N=25 :
: RETURN
350 CALL SCREEN(7):: FOR I=1
TO 600 :: NEXT I :: CALL SCR
EEN(13):: FOR K=1 TO 60 0 ::
NEXT K :: GOTO 120
    >Jack Shreiber
```

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My new catalog #5 is now available for $1.00, which is deductable from your first order. It contains over 130 programs in Basic and extended Basic at only $3.00 each (plus $1.50 per order for casette, packing and postage, or $3.00 for disette, PP&M).

The entire contents of Tips from the Tigercub Nos. 1 through 14, with more added, are now available as a full disk of 50 programs, routines and files for only $15.00 postpaid.

Nuts & Bolts is a diskfull of 100 (that's right, 100!) utility subprograms in MERGE format, ready for you to merge into your own programs. Contents include 13 type fonts, 14 text display routines, 12 sorts and shuffles, 9 data saving and reading routines, 9 wipes, 8 pauses, 5 music, 2 protection, etc., etc., all for just $19.95 postpaid!

And if you send an order before 31 December 1984 and mention your user group, you may take a 10% discount.

My 28-Column Converter, published in Tips #15, has a bug which causes a line to disappear if the wrap-around causes it to begin with a period and you are using the reformatter option. Here is the fix -

Change line 300 to read: 300 FOR W=1 TO 5 :: READ CR$,R$

Change line 260 to read:
260 DATA #,(,&,),^,*,$,:,.,\ In other words, your DATA items will be the "at" sign above the 2, the left

brace on the front of the F key, the ampersand on the 7 key, the right brace on the front of the G, the carat sign above the 6, the tilde on the front of the W, the asterisk above the 3, the whatsit? on the front of the 4, the period, and the backslash on the front of the Z.

A couple of other changes will automatically turn off the automatic fill and adjust, and turn it back on. At the end of line 180, add :: PRINT #2:"CHF" and change line 270 to del. J :: PRINT #2:".FI:AU;"

:: CLOSE #2 :: CLOSE #1 :: END

Now, as long as the text strings in your program don't contain those oddball characters, all should be well. However, the program has one more bug which is common to all reformatter converter programs, and for which I can find no really good fix. If a program line is exactly, or characters long, the next program line will follow immediately after it instead of starting on the next line. So, load the file in the Editor mode and scan it before you print it. If any of you whiz kids (or whiz grandpas) can figure out a way to program around that problem, please let me know!

A challenge in Tips #9 was to write a 1-line XBasic program which would take only 70 seconds to scramble the numbers from 1 to 255 into a completely random sequence without duplication. Richard Mitchell, the editor of Super 99 Monthly, came up with an algorithm which is shorter than mine and runs about 10 seconds faster - but it sure does chew up a lot of memory!

1 DIM A(255),C(254):: RANDOM
IZE :: CALL PEEK(-31606,B)::
IF B=0 OR A(B)=B THEN 1 ELS
E C(D)=B :: A(B)=B :: D=D+1
:: IF D=255 THEN END ELSE 1

And if you're not subscribing to Super 99 Monthly, you should be! It's only $12 a year, and full of very useful programs, routines and tips. The address is Bytemaster Computer Services, 171 Mustang Street, Sulphur LA 70663.

Also be sure to get the National

Ninety-Niner from the 99ers Users Group Association (3535 So. H St. #41, Bakersfield CA 93304), also only $12 a year. Their roster of writers is beginning to look like the Who's Who of the TI world.

Danny Michael has written an assembly language program which will dump a graphics screen to a dot matrix printer (Epson or Gemini, and probably others) in less than 50 seconds - and he's giving it away. Just send him an initialized disk in a diskette mailer with an address label back to you and enough return postage. His address is Route 9, Box 460, Florence AL 35630.

Please, can ANYONE tell me where I can buy diskette mailers at a decent price? The cheapest I have found are $0.65 each for an 11" x 9" piece of cardboard!

Somebody said they liked my Alphabet Song in the last Tips, and somebody else wanted some more routines for the speech synthesizer, so I put it all together and here's what I came up with. If you can type the alphabet without a mistake, you get an encore.

```
100 CALL CLEAR
110 PRINT "      ALPHABET S
ONG"
120 FOR J=1 TO 20
130 PRINT
140 NEXT J
150 PRINT "        by Ji
m Peterson": :"Wait, please"
:
160 OPEN #1:"SPEECH",OUTPUT
170 DIM T$(26,2)
180 DATA 12,12,4,4,1,1,4,7,7
,8,8,10,10,15,10,12,4,4,7,8,
6,10,4,8,8,10
190 FOR J=1 TO 26
200 READ X
210 T$(J,1)="//"&STR$(X)&" "
&STR$(X/10&32)
220 T$(J,2)=CHR$(J+64)
230 NEXT J
240 T$(23,2)="DOUBLE"&"*"&"&"*"
"&"U"
250 CALL CLEAR
260 PRINT "READY - TYPE THE
```

ALPHABET*
270 I=0
280 K2=64
290 CALL J:E:(3,K,ST)
300 IF (S(K(I)+(K<5I+(K>90)T
HEN 290
310 IF K<>K2+1 THEN 330
320 I=I+1
330 PRINT #1:I$(K-64,I):I$(K
-64,2)
340 CALL HCHAR(12,17,K)
350 K2=K
360 IF K<>90 THEN 290
370 IF I=2c THEN 390
380 GOTO 270
390 FOR K=5 TO 90
400 CALL HCHAR(12,17,K)
410 PRINT #1:I$(K-64,1):I$(K
-64,2)
420 NEXT K
430 PRINT #1:I$(1,1):"NOW IV
E":I$(3,1):"SAID MY":I$(5,1)
:"A B":I$(3,1):"SEE:"
440 PRINT #1:I$(3,1):"WONT Y
OU":I$(10,1):"COME AND":I$(1
2,1):"PLAY WITH":I$(1,1):"ME
▲

450 GOTO 270

Terry Atkinson's routine to
redefine the cursor has aroused some
interest, so I tiddled around and
came up with this version to change
the cursor automatically to whatever
character, normal or redefined, that
you input.

100 !CURSOR CHANGER by Jim P
eterson
110 INPUT A$ :: A=ASC(A$)::
CALL CHAR(A$,A,H$):: FOR J=1
TO 16 STEP 2 :: H$=SEG$(A$,
J,2):: CALL HEX_DEC(H$,D)::
T=T+1 :: H(T)=D :: NEXT J ::
120 CALL INIT :: CALL LOAD(8
196,63,248)   ◄
130 CALL LOAD(16376,67,65,82
,63,79,5.,46,8)
140 CALL LOAD(12288,H(1),H(2
),H(3),H(4),H(5),H(6),H(7),H
(8))
150 CALL LOAD(12296,2,0,3,24
0,2,1,48,0,2,2,0,8,4,20,70,3
6,4,91)
160 CALL LINK("CURSOR")!THAN
KS TO TERRY ATKINSON
170 SUB HEX_DEC(H$,D):: N=1
:: DEC=0

180 FOR J=1 TO LEN(H$):: A$=
SEG$(H$,LEN(H$)-J+1,1):: IF
ASC(A$)>58 THEN HT=ASC(A$)-5
5 ELSE HT=VAL(A$)
190 DEC=DEC+N*HT :: N=N*16 :
: NEXT J
200 IF DEC>32768 THEN D=DEC
ELSE D=-(65536-DEC)
210 SUBEND

And of course you can always
color the cursor with CALL
COLDR(0,5,11) or whatever colors you
like.

Most folks don't seem to know,
and some folks refuse to believe,
that the Memory Expansion can't store
strings. If you are one of the
disbelievers, plug in your Memory
Expansion and try this -

100 FOR J=1 TO 255 :: M$=M$&
CHR$(J): NEXT J
110 DIM A$(100):: I=I+1 :: A
$(I)=M$ :: PRINT I :: GOTO 1
10

Now RUN that. On my console, I
get MEMORY FULL when I=43 although
the SIZE command shows I have 24399
bytes of program space free (in the
Expansion) - but only 204 bytes of
free stack (in the console). Without
the Memory Expansion I can get I up
to 51, and in Basic to 53.

This can be a serious handicap
if you are running a program which
reads in a large number of strings
from DATA statements, or generates
strings while running.

Of course, when the Memory
Expansion is attached, the program
and the numeric variables are stored
in the Expansion, leaving all the
console memory available for strings
- but if you do not generate strings,
the console memory remains unused,
because numeric data cannot overflow
into it!

If your program generates more
numeric variables than the Memory
Expansion can hold, you can however
store them in the console by
converting them to strings, using
STR$, and convert them back to
numbers with VAL. This will allow
you store an additional 700 to 900 or
more numbers. Try this -

100 DIM H(50-0),A$(10000):: I
DR J=1 TO 3000 :: I=I+1 ::
PRINT I :: NEXT X
110 Y=Y+1 :: A$(Y)=S(R$($Y9)
:: PRINT Y :: GOTO 110

When you get MEMORY FULL, type
SIZE.

Dave Hankenberger sent me a neat
little routine, and I played around
with it a bit. For you who are not
football fans, I'd better explain
that the wave is performed in
football stadiums when the
cheerleaders get the fans to stand
and cheer, one seating section at a
time, across the stadium in and those
trunks on the roof are usually set in
sequence.

90 !The Wave by David Henke
berger/modified by Jim Peter
son
100 CALL CLEAR :: CALL CLEAR
N(4)
110 A$="The Wave!!"
120 DISPLAY AT(4,10-LEN(A$)/
2):A$
130 E$="Press any key to sto
p"
140 DISPLAY AT(12,14-LEN(E$/
/2)):E$
150 E$="Q............"
160 A$="OW0101010 01....."
170 FOR I=1 TO 118 :: CALL
CHAR(CH,A$):: M$=M$&SEG$(LH
):: NEXT L= :: FOR I=1 TO ::
:: DISPLAY AT 4,I):: CA
LL :
175 FOR T=1 TO 25 STEP :::
DISPLAY AT(4,I):SEG$(M$,I,1
):: NEXT T
180 FOR I=1 TO 255 :: CALL
CHAR(CH,25):: CALL CHAR(CH=
5,A$):: CALL SOUND(10--9,-3,5
TAND):: CALL KEY(0,K,S):: I
- 9.00 THEN STOP
190 KEY LM :: GOTO 18

Network FULL

Happy Hacking

Jim Peterson

the form of BASIC

ne of the handiest chapters in the FORTH manual is the second, which lays out
ne fundamental word groups. What follows isn't a duplication but uses that
dea as a springboard. Sort of reminds one of a Flatland map, doesn't it?
>Frederick Hawkins

~~~~~~

BASIC RULES OF THUMB:

1. VARIABLES and FILES are explicitly declared, at the first instance of
   use and remain in effect until you either Edit or otherwise change the
   environment: OLD, NEW, BYE, RUN, CLOSE.
2. OPERATIONS are performed on numbers and strings.
3. All INPUT and OUTPUT is through Files and the console-screen.
4. There are four MODES of use: RUNning, immediate, LISTing and EDITing.
5. A program is ordered into LINES, each having a unique number (which
   can't be manipulated by the program).
6. The PROGRAM executes a lower numbered line first.

~~~~~~

VARIABLES   Declarations
        DIM   OPTION BASE
    (LET) =   DEF

                   Operations
   String   <-------------------> Numeric
    functions   conversions   functions   operators   special cases
      SEG$ ABS   LOG   +   RND
              CHR$ ASC   ATN   SGN   -   EOF
    operator STR$ LEN   EXP   SIN   *   <   <=
        &   POS   COS   SQR   /   >   >=
                          VAL   INT   TAN   ^   =   <>

INPUT/OUTPUT   Declarations
   DATA   OPEN #   CLOSE # (DELETE)
                      Operations
   Inside   <------------------->   outside
   pgm   console-screen   files: cassette, disks, etc.
                                                            special cases
   READ   INPUT   INPUT #   REC   SEQUENTIAL
   RESTORE   RESTORE #   VARIABLE
                                      DELETE #   INTERNAL
              DISPLAY   DISPLAY
              PRINT   PRINT #   FIXED
                     formatting   RELATIVE
                     tab ; : ,   DA, BA, PA

 PROGRAM STRUCTURING   :   SYSTEM OPERATION
                                  :   overall <-----------> program manipulation
   END   STOP   : NEW
   FOR TO (STEP) ... NEXT   : OLD   RUN   BREAK   UNBREAK
   GOTO   ON GOTO   : SAVE   EDIT   TRACE   UNTRACE
   GOSUB ... RETURN   : BYE   LIST   NUM
   ON GOSUB ... RETURN   :   CON   RES
   IF THEN ELSE   :   RANDOMIZE
   REM   :

 Extensions to BASIC, IE, CALLs
CHAR   CLEAR   COLOR   GCHAR   HCHAR   JOYST   KEY   SCREEN   SOUND   VCHAR

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