

JANUARY 1985

EDITOR DAN FESSLING

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 A 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 PROFESSIONAL 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 ADDL 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 Professional, 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.

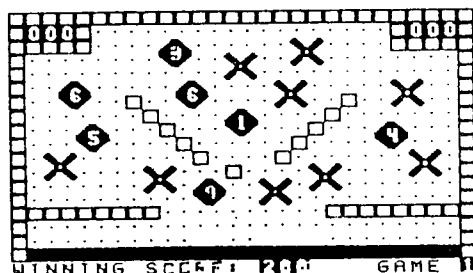
I have a model I level II which I use at the Industrial Engineering College of Chicago (316 N. Michigan Ave., Chicago) to teach computer science. As most K-TUG members have COCOs, I would say the TI99/4A has more in common with your equipment than does Keith, Dick or a few others TRS 80 Models I thru 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 Community 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



WHAT'S NEW WITH TI?

By Al Johnson, former TI Representative

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 failures!

Marilyn Breshard, 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 TIBB/4A users group, P.O. box 578341, Chicago, 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 profit), 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).

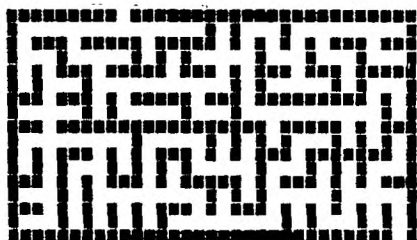
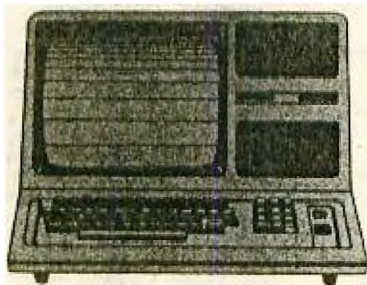
For those of us who are Chicago Group members or are interested in coming to meetings, Triton has pre-empted certain days, so that

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 , , ,



The following program allows you to waste less paper by turning back the paper in your printer and printing the second catalog on the right side of your paper.

```

100 REM *****
110 REM * DUAL CATALOG *
120 REM * BY: *
130 REM * DAN HESSLING *
140 REM * VERSION 111584B *
150 REM *****
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 *SUB 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 ID
310 IF ID<>1 THEN 340
320 OPEN #2:"PI0"
330 ID=2
340 OPEN #1:"DSK1.".INPUT ,RELATIVE,INTERNAL
350 INPUT #1:A$.J.J.K
360 PRINT #ID:TAB(7):"DISK= ":A$:"AVAILABLE=":K$:" USED=":J-K
370 PRINT #ID:"FILENAME SIZE TYPE P": "-----";
380 INPUT #1:A$.I.J.K
390 PRINT #ID
400 IF LEN(A$)=0 THEN 480
410 PRINT #ID:A$:TAB(12):J:TAB(17):TYPE$(ABS(I)):
420 IF ABS(I)=5 THEN 450
430 B$=" "&STR$(K)
440 PRINT #ID:SEG$(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$="Y" THEN 540
530 IF CAT$="V" 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$(5)="PROGRAM"
620 PRINT TAB(12):"Catalog": : : : : : : : :
630 PRINT "SELECT: ";TAB(5):"0=SCREEN":TAB(5):"1=PRINTER"
640 INPUT IO
650 IF IO<>1 THEN 860
660 OPEN #2:"PIU"
670 IO=2
680 OPEN #1:"DSK1.".INPUT ,RELATIVE,INTERNAL
690 INPUT #1:A$,J,J,K
700 PRINT #IO:TAB(47):"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 860
840 CLOSE #2
850 CALL CLEAR
860 INPUT "DO YOU WANT ANOTHER SET?":CAT$
870 IF CAT$="Y" THEN 170
880 IF CAT$="V" 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



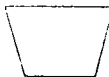
Offline storage of either
paper, cards, magnetic or
perforated tape.

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.








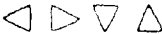
PUNCHED CARD




COMMUNICATION
LINK

The automatic transmission
of information from one loca-
tion 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 which determines 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.
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FLOW ◀ ▶ ▼ ▲ The direction of processing or data flow.



TEXAS INSTRUMENTS INCORPORATED

POST OFFICE BOX 53 • LUBBOCK, TEXAS 79406

Consumer Relations

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 11-28-84

I/O PORT PIN ASSIGNMENTS GROM PORT



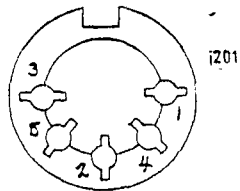
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET	2	GND (SYSTEM)
2	CRU CLK	4	CRU CLK
5	CRU IN	6	CRU IN
7	A15/CRU OUT	8	A15/CRU OUT
9	A13	10	A13
11	A12	12	A12
13	A11	14	A11
15	A10	16	A10
17	A9	18	A9
19	A8	20	A8
21	A7	22	A7
23	A6	24	A6
25	A5	26	A5
27	A4	28	A4
29	WE	30	WE
31	ROM G	32	ROM G
33	GND (SYSTEM)	34	GND (SYSTEM)
35		36	

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	A10	6	A10
7	A11	8	A11
9	A3	10	A3
11	READY/HOLD	12	READY/HOLD
13	A8	14	A8
15	A14	16	A14
17	A9	18	A9
19	A2	20	A2
21	CRU CLK	22	CRU CLK
23	Ø 3	24	Ø 3
25	WE	26	WE
27	MBE	28	MBE
29	A1	30	A1
31	MEMEN	32	MEMEN
33	Ø 7	34	Ø 7
35	Ø 6	36	Ø 6
37	Ø 5	38	Ø 5
39	Ø 1	40	Ø 1
41	Ø 3	42	Ø 3
43	SPEECH	44	SPEECH

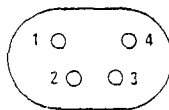
I/O PORT PIN ASSIGNMENTS

VIDEO JACK



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)



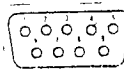
FRONT VIEW
MALE PLUG CONSOLE

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

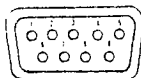
MALE PLUG FRONT VIEW

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 :: 60SUB 200 :: NEXT B :: NEXT A :: FO
R A=109 TO 4 STEP -5 :: FOR B=7 TO 1 STEP -1 :: 60SUB 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 PR*
120 REM* BY DAN HESLING *
130 REM* VERSION 111484B *
140 REM*****
150 INPUT "NAME? ":NA$
160 INPUT "ADDRESS? ":AD$
170 INPUT "CITY/ST/ZIP? ":CS$
180 INPUT "PHONE? ":PH$
190 PH$="Ph. "&PH$
200 INPUT "NUMBER OF SETS? ":NS
210 OPEN #1:"PI0"
220 PRINT #1:CHR$(15):
230 REM YOU MAY LEAVE OUT
240 REM THIS TEST PATTERN.
250 PRINT #1:"1vvvvvvvvppppppppppppppqqqqqqqqqqqqjjjjjjjjjjjjggggg"
260 PRINT #1:"2yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy"
270 PRINT #1:"3pppppppppppppppppppppppppppppppppppppppppppppppppp"
280 PRINT #1:"4ggggggggggggggggggggggggggggggggggggggggggggggggg"
290 PRINT #1: : :
300 FOR L=1 TO NS
310 PRINT #1:TAB(2);NA$;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

```



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 enable 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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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 powerful 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 by 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, asvnc 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 opinion fantastic! Short commands to do whatever you like for instance to copy a full disk one option 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 are nice (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 powerful 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.

LEHIGH 99'ER COMPUTER GROUP

XBASIC: starring the field

This program might be just the thing when the folks show up over the holidays -- what do they do? Serious students will find here within a nice set of circular calculating routines along about lines 150 to 290. (notes watch line numbering)

```

90 REM 1984 FOR LEHIGH 99'ER
S BY JACK SCHREIBER, LV99CB
100 CALL CLEAR :: FOR CX=3 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 deductible into your first order. It contains over 100 programs in Basic and extended Basic at only \$6.00 each (plus \$1.50 per order for cassette, packing and postage, or \$3.00 for cassette, P&H).

The entire contents of Tapes from the Tascam 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.

...that's right, 106") Xbasic 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 loading routines, 9 wipes, 8 pauses, 5 music, 2 protection, etc., etc., all for just \$19.95 postpaid!

And if you send an order before
1: December 1964 and mention your
user group, you may take a 10%
discount.

My 26-Column Converter, published in TOS #15, has a bug which causes a line to disappear in the wrap-around causes it to begin with a period and you are using the incrementer option. Here is the fix:

Change line 300 to read: 300 FOR

Change line 260 to read:
260 DATA 5,(1,2,3,4,5,6) In other words, your DATA items will be the "at" sign above the 3, the left

brace on the front of the f key, the ampersand on the 7 key, the right brace on the front of the 6, the carat sign above the 5, the tilde on the front of the w, the asterisk above the 3, the whatsit? on the front of the A, the period, and the backslash on the front of the /.

A couple of other changes will automatically turn off the automatic fill and adjust, and turn it back on. At the end of line 189, add: `PRINT #2:".NF"` and change line 270 to `IF .J.::PRINT #2:".F:OFF"`.

Now, as long as the text strings in your program don't contain those oddball characters, all should be well. However, the program has the more bug which is common to all Perlman converter programs, and for which I can find no really good fix. If a program line is exactly *n* 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 us know!

A challenge in *Tips 14* was to write a 1-line BASIC 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 8*, 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(255):: RANDOM
2 IZ :: CALL SEEK(-31806.6)::
3 IF B=0 OR A(B)=B THEN 1 ELSE
4 E C(B)=B :: A(B)=B :: D=D+1
5 :: 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 Byteaster Computer Services, 171 Mustang Street, Sulphur LA 70663.

Also be sure to get the National

Ninety-Miner from the 99ers Users Group Association (3535 So. H St., #1, Watersfield CA 93304), also only \$12 a year. Their roster of writers is beginning to look like the Who's Who of the IT world.

Danny Michael has written an assembly language program which will dump a graphics screen to a dot matrix printer (Epson or Seami, and probably others) in less than 50 seconds - and he's giving it away. Just send him an initialized disk in a disquette snail with an address label back to you and enough return postage. His address is Route 9, Box 149, Clarence NJ 07003.

Please, can ANYONE tell me where I can buy diskette mailers at a decent price? The cheapest I have found are 10.25 each for an 11" x 9" piece of cardboard!

Somebody said they liked my Alphabet Song in the last files, 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 tie the alphabet without a mistake, you get in honore.

```

100 GOTO CLEAR
110 PRINT "      ALPHABET S
DNG"
120 FOR J=1 TO 20
130 PRINT
140 NEXT J
150 PRINT "      by J
Peterson": "Wait, please"
:
160 GOTO #1:"S=ECH",OUTPUT
170 IF T(26,2)
180 DIM T(26,2)
190 FOR J=1 TO 26
200 READ X
210 T(J,1)=STR$(X)*"
STR$(1/10*2)
220 T(J,2)=CHR$(J+64)
230 NEXT J
240 T(23,2)="DOUBLE"?"*?"
"b"y"
250 GOTO CLEAR
260 PRINT "READY - TYPE THE

```

```

ALPHABET*
270 T=0
280 K2=64
290 CALL XE(3,1,51)
300 IF (51<1)+(K2<64)+(K<90) THEN
  310 K=K2+1 THEN 300
  320 T=T+1
  330 PRINT #1:19(K-64,1):19(K
    -64,2)
  340 CALL HUNAM(12,17,K)
  350 K2=K
  360 IF K<90 THEN 290
  370 IF T=6 THEN 390
  380 GOTO 270
  390 FOR K=5 TO 90
  400 CALL HUNAM(12,17,K)
  410 PRINT #1:19(K-64,1):19(K
    -64,2)
  420 NEXT K
  430 PRINT #1:19(1,1):"NOW IV
    E":19(3,1):"SAID MY":19(5,1)
    : "A E":19(3,1):"SEL"
  440 PRINT #1:19(3,1):"WUNT Y
    OU":19(10,1):"COME AND":19(1
    2,1):"PLAY W/H":19(1,1):"ME
    "
  450 GOTO 270

```

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

```

100 IDCARD NUMBER OF THE P
  1000000
110 INPUT A$: A$=UCASE$(A$)
  CALL CHAR$(A$,A$): FOR J=1
  TO 16 STEP 2 :: M$=SEB$(A$,
  J,2):: CALL HEX DEC(M$,J):
  T=T+1 :: H(T)=J :: NEXT J ::
  120 CALL INIT :: CALL LOAD(18
  196,63,246)
  130 CALL LOAD(1165767,67,65,62
  ,63,79,82,46,61)
  140 CALL LOAD(12286,H(1),H(2)
  ,H(3),H(4),H(5),H(6),H(7),H
  (8))
  150 CALL LOAD(112296,2,0,5,24
  0,2,1,48,0,2,2,0,8,4,12,72,3
  6,4,51)
  160 CALL LINK("CURSOR") THEN
  KS TO TERRY WILKINSON
  170 SUB HEX DEC(H$,J):: M$=
  :: DEC=0

```

```

180 FOR J=1 TO LEN(H$):: AS=
  SEB$(H$,LEN(H$)-J+1,1):: IF
  ASC(AS)>58 THEN HT=ASC(AS)-5
  5 ELSE HT=VAL(AS)
  190 DEC=DEC+HT*10 :: M$=M$+
  :: NEXT J
  200 IF DEC<32768 THEN D=DEC
  ELSE D=165536-DEC)
  210 SUBEND

```

And of course you can always color the cursor with CALL COLOR(10,5,11) 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):: X=X+1 :: A
  $(1)=M$ :: PRINT X :: GOTO 1
  10

```

Now HUN that. On my console, I get MEMORY FULL when X=43 although the SIZE command shows I have 24359 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 X 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 SOK, 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 A$(100),B$(100):: F
  OR X=1 TO 3000 :: M$=M$+
  :: PRINT X :: NEXT X
  110 Y=Y+1 :: A$(Y)=S$(1+Y)
  :: PRINT Y :: GOTO 110

```

When you get MEMORY FULL, type SIZE.

Dave Hakenberger 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 game is performed at football stadiums when the cheerleaders get the fans to stand and cheer, one seating section at a time, across the stadium - and these crunks on the roof are usually out of sequence.

```

90 DIM WAVE BY BASIC NAME
  DERIVED/ACCUMULATED BY THE RECO
  RDER
  100 CALL CLEAR :: CALL CLEAR
  A(4)
  110 WAVELINE WAVE(1)
  120 DISPLAY A$(4,10-LEN(WAVE)
  2)+WAVE
  130 P$=PRESS any key to stop
  140 DISPLAY A$(4,10-LEN(WAVE)
  2)+WAVE
  150 BEEP(10,100,100,100)
  160 A$=WAVELINE BEEP(10,100,100,100)
  170 FOR L=1 TO 10 :: CALL
  CHAR(L,WAVE: M$=M$+CHR$(L)
  180 NEXT L :: FOR F=1 TO 10
  :: DISPLAY A$(10,F): M$=
  M$+F
  190 FOR I=1 TO 1000000
  2000000
  2100000
  2200000
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MEMORY FULL

MEMORY FULL

MEMORY FULL

the form of BASIC

one of the handiest chapters in the FORTH manual is the second, which lays out the fundamental word groups. What follows isn't a duplication but uses that idea 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	OPEN #	CLOSE # (DELETE)	
DATA					
	Operations				
Inside	<----->		outside		
pgm	console-screen		files: cassette, disks, etc.		
READ	INPUT		INPUT #	REC	special cases
RESTORE			RESTORE #		SEQUENTIAL
			DELETE #		VARIABLE
	DISPLAY				INTERNAL
	PRINT		PRINT #		DISPLAY
	formatting				FIXED
	tab ; ; ,				RELATIVE
					DA, BA, PA

PROGRAM STRUCTURING		SYSTEM OPERATION			
		overall <----->		program manipulation	
END	STOP	NEW		BREAK	UNBREAK
FOR TO (STEP) ... NEXT		OLD	RUN	TRACE	UNTRACE
GOTO	ON GOTO	SAVE	EDIT		
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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