OFFICIAL NEWLETTER OF THE
TIDEWATER 99/4 USER GROUP INC.
51 GAINSBOROUGH PL.
Newport News, VA. 23602

TI-99/4A

FEBRUARY/MARCH 1987

*A Non-Profit Virginia Corporation
dedicated to educating and
enlightening TI-99/4 users
to the full potential
of home computing.*

Dues FREE
Central Alabama 99/4A UG
351 Larkwood Drive
Montgomery AL 36109

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NEWSLETTER EDITOR (TEMPORARY) Ken Woodcock

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<u>MEETING NOTICE:</u> *The Southside Chapter meets every first and third Tuesday of each month at I.C.P.I. (Electronic Computer Programming Institute) located at 3661 East Virginia Beach Blvd. at Ingleside Ave. Educational classes start at 6:30 pm followed by the regular meeting and discussion groups at 7:30 pm. For April circle the 7th and 21st on your calendars for meeting nights. May meetings will be on the 5th and 19th.*

The Peninsula Chapter meets every second Tuesay of each month at Warwick High School, 51 Copeland Lane, Room 101. Formal meetings begin at 7:30 pm. with informal discussion before and after the meeting. Library is open to members during informal sessions. For April the regular scheduled meeting is the 14th. The May meeting will be on the 12th.

EDITOR'S NOTES

I hate to have to keep making excuses for the tardiness of this newsletter but unfortunate circumstances seem to abound . . . . maybe its a commie plot!! No.... its a scheme by the "big boys" to discourage our members so that they will abandon their TI's and buy one of THEIR computers!! Don't let it work! Keep the faith! Here's what you can do to help. . . Write something to be published in this newsletter. It doesn't have to be long. It doesn't have to be technical. Here are a few suggestions: QUESTIONS on hardware/software/programming/etc. ("Does anyone know how to ...."). ANSWERS to questions someone else has asked or to ones you might have had, TIPS-have you discovered a way to do something easier or faster?. REVIEWS of hardware or programs that you have purchased. PROGRAMS you have written, ETC. It would be nice to have too much material to put in one newsletter on hand for a change.
I had been working on trying to get one of MYARC's 9640 computers to demonstrate at one of our meetings. Several phone calls had produced assurances that they were sending demos to user groups and that my name was on their list. After hearing nothing for several weeks, I called once more and was told that they had stopped the demo program. One of the reasons given was that the user groups were not giving a good demonstration (comments I have heard from groups who did receive the demo units were that they didn't work!).

THE LIBRARIANS
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Mac and Cathy MacAllister
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We have just compiled a new catalog
and will be brought to the meeting
as a hard copy and on a disk.
There were 2625 files in the
Library in September 1986, there
are now 3142 files. There must be
something there you can use. The
nine Library sections are:

        = EDUCATION   = GAMES
        = UTILITY DISKS   = MATH
        = PROGRAMING AIDS = MUSIC
        = UTILITY PROGRAMS = GRAPHICS
        = WRITING MUSIC

    A disk copy of the South Side
Library catalog will be provided
the Penisula Chapter Librarian.
Their librarian can provide us
disks and we will make copies as
requested for inclusion in their
library. Their members can then
get copies of the programs from the
Penisula Group Library.

    I want to repeat how our
Library functions. We bring the
Library index to the meetings and
make it available to the members.
If you want a program write down
the program name and the diskname
where that program is found. Then
provide us an initialized (DS/SD or
SS/SD) disk with your name written
on the label. We (Cathy really)
will make the copy at home when we
can and bring it to the next
meeting for you. We do not miss
many meetings. We do not work by
mail nor have copy sessions in our
home. That is too disruptive of
our schedule.

    This is a free library. You do
not have to pay the club anything
for the programs you get.
Donations for library operations,
buying disks and storage boxes, are
appreciated. If you want to donate
some money give it to the Club's
treasurer. .

    We recently had a fatal
(terminal) (Cathy wore it out)
disk drive crash that messed up
some of the disks we copied. If
you got one, please accept our
apologies and bring it back for
another copy.

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    MAR 3rd... Introduction to "C" a New
language for your T.I.   Disk is
avaiable in the library..

    Mar 17th.. Introduction to "C" Part 2.

    April 7th. Beginners in Assembly. A
discussion of the basics of Assembly
Language.

    April 21th. Beginners in Assembly
Part 2.

    May 5th.. Computer Electronics. Will
cover basic electronic skills associated
with your T.I.

    May 19th.. Computer Electronics Part 2

    If you have a subject of interest you
would like to see a lesson on, tell me
at the meeting or call me at 485-5809.

                    Allen Leibrand
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GRAM KRACKER
by Ken Woodcock

My joy of having a GRAM KRACKER had
been dimmed somewhat by an annoying
problem. It seemed that the device
required a warm-up period before it was
fully functional. Any modules that I
had loaded into it (such as Extended
Basic) would perform properly but if I
tried to use the built-in functions . .
loading a new module or the memory
editor . . it would lockup or present
me with one of those colorful but
useless video displays. Though this
"quirk" was bothersome, the unit
functioned perfectly otherwise and
after 10-15 minutes of operation it was
fully functional. I learned that
another user group member and GRAM
KRACKER owner, Ken Pester, had the same
problem so I learned to live with it.
A few days ago I decided to write Craig
Miller to see if there was a simple fix
for the problem. I did not want to send
the unit out for repair for it has
become an indispensible part of my
system. I described the problem and
enclosed a stamped self-addressed
envelope. Well, yesterday I received in
the mail two replacement EPROMs along
with a note from Susan Miller explaning
that the 2nd one was for my friend who
had the same problem. I quickly
replaced the original EPROM and
verified, to my delight, that the
problem was gone!
This is the kind of service which is
all too rare in the computer industry.

NEW SPECIAL INTEREST GROUP
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ARE YOU TIRED OF INCONSISTANT AND INCORRECT WEATHER REPORTS? WOULD YOU LIKE TO HAVE YOUR OWN WEATHER MAPS? NOW YOU CAN MAKE A REASONABLE PREDICTION YOURSELF WITH THE AID OF YOUR 99 COMPUTER! THE ELECTRONIC SIGNALS FOR THE MAPS ARE AVAILABLE FROM SEVERAL SOURCES. ONE LOCALLY. THERE IS EVEN AN INFRARED SOURCE AVAILABLE.

SEVERAL GROUP MEMBERS HAVE EXPRESSED INTEREST IN USING THE COMPUTER TO DISPLAY WEATHER CHARTS OR MAPS. TWO MEETINGS HAVE BEEN HELD SO FAR WITH DISCUSSIONS CENTERED ON TWO MAJOR AREAS: 1) SOFTWARE AND 2) HARDWARE INTERFACES. THERE ARE THREE PRIMARY SOURCES OF THESE SIGNALS AS FOLLOWS:
1) LOCAL AND REMOTE MEDIUM FREQUENCY BROADCASTS. ONE OF THESE IS OPERATED BY THE U.S.NAVY IN NORFOLK. 2)ORBITING SATELLITE VHF SIGNALS. 3) AND GEOSTATIONARY SATELLITE MICROWAVE SIGNALS. EACH OF THESE WILL REQUIRE IT'S OWN SPECIAL HARDWARE. THE GROUP THEN INTENDS TO INTEGRATE THE OUTPUT OF EACH HARDWARE SYSTEM USED TO A COMMON SOFTWARE PROGRAM AND A SINGLE COMPUTER INPUT PORT.

THERE ARE TWO PORTS NOW UNDER CONSIDERATION 1) JOYSTICK AND 2) EXPANSION PARALLEL PORT.

HARDWARE CONSIDERATIONS

METEOR AND TIROS ARE POLAR ORBITING SUN SYNCHRONOUS SATELLITES AND USE THE VHF (137 MHZ BAND), AND USES A BOTTOM TO TOP SCAN.

THE GEOS SERIES OF SATELLITES ARE OPERATED BY NASA. ARE GEOSTATIONARY (FIXED TO EARTH'S ROTATION), USES THE 1600 MHZ BAND AND ALSO SCANS BOTTOM TO TOP.

THERE ARE LOCAL GOVERNMENT HIGH FREQUENCY WEATHER TRANSMITTERS FOR NAVAL OPERATIONS. AND SEVERAL IN WASHINGTON D.C., OPERATED BY NOAA, THAT CAN BE ACCESSED WHICH USE A TOP TO BOTTOM SCAN. WE PLAN TO EXPLORE EACH OF THESE SOURCES OF FREE WEATHER INFORMATION.

IN THE NEXT ISSUE WE WILL BECOME MORE TECHNICAL FOR THOSE INCLINED.

FOR MEETING DATES AND LOCATIONS SEE THE FOLLOWING MEMBERS:

MICHAEL COUTURE   480-3943 (NOFFOLK)
ALLEN LEIBRAND   485-5809 (CHESAPEAKE)
GLENN HURLEY   238-2840 (SUFFOLK)

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Last month's newsletter included a tip to prolong the life of your printer ribbons by spraying them with WD-40. Tip number 2: Most printers only use the top portion of the ribbon, which means you can simply turn the ribbon over, for a freshly inked portion.

Don Andrews
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WEFAX NEWS - UPDATE #2

IN THIS ISSUE WE WILL START WITH SOME BASIC DISCRIPTIONS OF RELATED ACRONYMS

FAX (FACSIMILE) The transmission and reception, through the medium of microwave, radio or wire, of permanent picltures, writing and other related materials.
As compared to TV, it is much slower (approx. 1/2 second per scan versus approximately 15700 scans per second for conventional television.
It is at this point that our computer becomes a visual processor to convert between the two types of displays.

WEFAX (weather map facsimile)

APT (automatic picture transmission)
The visual pictures of weather maps produced by sensors on satellites.

IR (infared)
The maps produced by infared sensors aboard satellites.

SYNC (synchronizing signal)
The name given for the electronic signal used to provide a starting place for all types of video display sweeps.

HARDWARE:
The WEATHER GROUP has decided to concentrate on writing programs and building hardware using the joystick port as the input channel. The plan is to scan the joystick port directly using the "CRU" device rather than resident basic language. On-going hardware experiments are in progress using prerecorded tapes, a borowed SSB radio and some breadboarding of an active filter.

The following is a list of publications available for those interested in WEFAX:

1) JOURNAL OF THE ENVIRONMENTAL SATELLITE AMATEUR USERS' GROUP

Tampa Fl.33607

2) THE WEATHER SATELLITE HANDBOOK (RALPH TAGGART)(green,inc. publication)

For submitting inputs or asking questions relating to WEFAX, use the following address:
GLENN HURLEY
8224 Canterbury lane
SUFFOLK, VA. 23436

Please include a SASE for all requests.

POKING AROUND IN MULTIPLAN
by TED ANDERSEN

EUREKA! After years of asking, I have finally stumbled on to a way to issue printer control codes from the TI Multiplan spreadsheet. Compared to running a little Basic program before firing up Multiplan this way seem mighty complex. With this technique, however, you can print multiple spreadsheets in a variety of fonts (even lines/cells within a single sheet) without leaving Multiplan. You no longer have to go back to Basic if your printer not reset clearing a paper jam, etc.

The key to this discovery is that slender 4 page Appendix 4 on SYLK (Symbolic Link) Files in everyone's Multiplan Manual. More accurately, the key is in SYLK; that appendix is useful only after you see SYLK in action somehow. I happened to be exercising my new Tandy 200 Lap machine, trying to get it to produce a SYLK file from its Multiplan subset which I could transfer to the TI 99. The Tandy takes extra memory to produce the SYLK file but when done, the output is readily accessible for viewing and editing on its editor and for transmitting via RS232 or modem. What I saw was exactly what our Appendix 4 describes: a long but orderly listing of short ASCII records, each identifies up front with a 1-2 letter type descriptor. You could, after seeing such an example, create your own custom file from scratch. As I'll explain, however, on the TI 99 its much easier to edit a SYLK file created from a simple Multiplan spreadsheet.

The simplicity of this approach has escaped me, and probably many others, because of a very obtruse and self-defeating implementation of SYLK files on the TI 99. For reasons I can't imagine, the straight-forward, all-ASCII character SYLK files which are easily generated from the Transfer Options menu are concealed on your disk in forbidding INT/FIX128 formatted files.

I shouldn't say formatted, because the file format is actually a much nicer DIS/FIX128 but the disk file descriptor requires access via INTERNAL. After several hours of learning what I should have already known about TI file structure, there is no way within normal BASIC or TIWriter to read such a file. Attempts to OPEN such a file for reading as anything but INT/FIX128 brings on Input Errors. Reading as a Internal file, however, loses the first byte of each record which is asumed to be the length of the first entry; because the first byte of every SYLK record is ASCII (128, data is also lost at the end of each record. Writing and INT/FIX128 file from Basic as a SYLK file is also impossible because the system insists on inserting the length of the entry (even if its only one and fills the record) as the first byte; this violates the SYLK structure and cannot be read by MULTIPLAN. But back to the solution at hand.

The easiest assault can be made with the help of software which provides direct access to disks, such as Miller's Advanced Diagnostics or Navarrone's Disk Fixer. Even with these, it may help to start out with a fresh formatted disk to avoid confusion (or destruction) with any of other files. The steps are now as simple as 1,2,3:

1.Enter Multiplan and place Alpha labels into several cells descriptive of the printer controls you wish to have available. i.e. " Compressed 17cpi", " Double Wide", " Italics", etc. Lead each entry with at least as many blanks as your printer requires codes for that mode. Select the SYLK format from TRANSFER OPTIONS and execute TRANSFER SAVE. I used the filename SYLK.

2.Fire up your disk sector editing program and find the SYLK file just saved from MULTIPLAN. Find each of your ALPHA cell entries (they'll be in " ") by using the ASCII viewing or printing mode of DIAGS or FIXER. Insert the appropriate Hex ASCII control codes in place of the blanks (hex 20) you left earlier and write the edited sector(s) back to disk.

3.Reenter MULTIPLAN, reset TRANSFER OPTIONS to SYLK and TRANSFER LOAD the edited SYLK file. Try printing the spreadsheet. You should see printer control in action. Now reset TRANSFER OPTIONS to NORMAL and save this worksheet as something like PRINTCODES. You can use this as the starting place for all spreadsheets you'll want with printer controls. Just move the cells with codes you want where you want them and either blank the rest or move them to the end of the sheet beyond your printer range specification. You can ever edit each cell to remove the descriptive printer verbiage but be careful not to wipe out that hard won control character.

Next time I'll report more on my efforts to interchange SYLK files between diverse computers. (For any who can't wait, try modifying the INT/FIX file descriptor on disk and reading/writing as DIS/FIX files from Basic). I would be happy to share my final Multiplan sheet with GEMINI (Epson) codes through the PUG Library if anyone is interested enough to call.
TED ANDERSEN 412-881-7416

EDITOR'S NOTE: After reading this article I got to wondering why I couldn't just insert the printer codes directly into the MULTIPLAN file using a sector editor instead of creating a SYLK file so I tried it and it works! You must 1st enter some "dummy characters" in the cell you want to use. Use characters that can be readily recognized when later using the sector editor and use at least as many as the quantiy of control characters you will later substitute. Now save the spreadsheet, exit MULTIPLAN & use the sector editor to substitute the control codes for the "dummy characters". The hardest part is finding the "dummy characters" because of the way MULTIPLAN saves its data. It appears that the cells are saved basically in the order in which they were entered and not in number sequence so the data which was entered last will be near the end of the file even if the cell is in the upper left corner. The operation is greatly simplified by using the "FIND STRING" function of John Birdwell's DISK UTILITIES

TIPS FROM THE TIGERCUB

#39

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156 Collingwood Ave.
Columbus, OH 43213

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Over 130 original programs in Basic and Extended Basic, available on cassette or disk, only $3.00 each plus $1.50 per order for PPM. Entertainment, education, programmer's utilities. Descriptive catalog $1.00, deductable from your first order.
Tips from The Tigercub, a full disk containing the complete contents of this newsletter Nos. 1 through 14, 50 original programs and files, just $15 postpaid.
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*                     *
* Tips from the Tigercub *
* Vol. 3 is now ready.    *
* Another 62 programs,    *
* routines, tips, tricks. *
* from Nos. 25 thru 32.   *
* Also $15 postpaid. Any  *
* two Tips disks $27 or   *
* all 3 for $35 postpaid. *
*                     *
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Nuts & Bolts (No. 1), a full disk of 100 Extended Basic utility subprograms in merge format, ready to merge into your own programs. Plus the Tigercub Menuloader, a tutorial on using subprograms,

and 5 pages of documentation with an example of the use of each subprogram. All for just $19.95 postpaid.
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Tigercub Full Disk Collections, just $12 postpaid! Each of these contains either 5 or 6 of my regular $3 catalog programs, and the remaining disk space has been filled with some of the best public domain programs of the same category. I am NOT selling public domain programs - my own programs on these disks are greatly discounted from their usual price, and the public domain is a FREE bonus!
TIGERCUB'S BEST, PROGRAM-TUTOR, PROGRAMMER'S UTILITIES, BRAIN GAMES, BRAIN TEASERS, BRAIN BUSTERS!, MANEUVERING GAMES, ACTION REFLEX AND CONCENTRATION, TWO-PLAYER GAMES, KID'S GAMES, MORE GAMES, WORD GAMES, ELEMENTARY MATH, MIDDLE/HIGH SCHOOL MATH, VOCABULARY AND READING, MUSICAL EDUCATION, KALEIDOSCOPES AND DISPLAYS

For descriptions of these send a dollar for my catalog!

Answer to last month's challenge - for the longest possible one-liner, run the following "program to write a program" -
100 OPEN #1:"DSK1.LONG",VARIABLE 163,OUTPUT
110 FOR J=1 TO 79 :: M$=M$&CHR$(149)&CHR$(130):: NEXT J :: M$=CHR$(254)&CHR$(254)&M$&CHR$(149)&CHR$(0):: PRINT #1:M$ :: PRINT #1:CHR$(255)&CHR$(255):: CLOSE #1
Then enter NEW, then MERGE DSK1.LONG, then LIST - over

34 lines long! But that one doesn't do anything, so try this -
100 OPEN #1:"DSK1.LONG",VARIABLE 163,OUTPUT
110 FOR J=1 TO 52 :: M$=M$&CHR$(162)&"X"&CHR$(130):: NEXT J :: M$=CHR$(254)&CHR$(254)&M$&CHR$(162)&"X"&CHR$(0):: PRINT #1:M$ :: PRINT #1:CHR$(255)&CHR$(255):: CLOSE #1
Again enter NEW, and MERGE DSK1.LONG, then RUN. You'll get a message BREAKPOINT IN 32510 (don't ask me why! Can anyone tell me?) but just enter RUN again. Then LIST it - over 24 lines long!

Explanation? Programs are saved in token code similar to MERGE format code. The maximum length of a record is 163 bytes - which is why MERGE files are D/V 163. The token for RANDOMIZE is ASCII 149, for the double colon is 130. Repeating that 79 times takes only 158 bytes, plus one more RANDOMIZE, the two-byte tokenized line number and the mandatory ASCII 0 to end the record, totals 162.

Here's a spooky one for Hallowe'en -
100 CALL CLEAR :: CALL MAGNIFY(4):: CALL SCREEN(2) ! The Blob by Jim Peterson
110 CALL CHAR(96,RPT$("3C7EFFFFFFFF7E3C",4)):: J=-1
120 FOR L=1 TO 28 :: CALL SPRITE(#L,96,16,L*4+20,10,0,L+8):: NEXT L
130 FOR L=1 TO 28 :: CALL MOTION(#L,0,L=J):: NEXT L
140 J=J*-1 :: GOTO 130

Wes Johnston published an unusual sprite 2-liner in the Charleston Area 99ers newsletter. It is based on a CALL LOAD which freezes all sprite motion until they are turned loose by another CALL LOAD -
100 R=PI*2/28 :: CALL CLEAR :: CALL SCREEN(2):: CALL INIT :: CALL LOAD(-31806,96):: FOR I=1 TO 28 :: CALL SPRITE(#1,46,16,96,128,COS(I*R)*10

,SIN(I*R)*10):: NEXT I
110 CALL LOAD(-31806,0):: GO TO 110

You might like to try adding my "jewels" to that -
100 FOR CH=33 TO 60 :: FOR A=1 TO 4 :: X=INT(8*RND+1):: T$=SEG$("18243C425A667E8I",X*2-1,2):: A$=A$&T$ :: B$=T$& B$ :: NEXT A :: CALL CHAR(CH,A$&B$):: A$,B$="" :: NEXT CH
110 R=PI*2/28 :: CALL CLEAR :: CALL SCREEN(2):: CALL INIT :: CALL LOAD(-31806,96):: FOR I=1 TO 28 :: CALL SPRITE(#1,32+I,INT(14*RND+3),96,128,COS(I*R)*10,SIN(I*R)*10):: NEXT I
120 CALL LOAD(-31806,0):: GO TO 120
Also try CALL MAGNIFY(2)

And, here is a companion program to the TAKE AWAY in Tips #35 -
100 CALL CLEAR :: CALL TITLE(5,"ADD & CARRY")!by Jim Peterson
110 DISPLAY AT(3,10):"COPYRIGHT":TAB(10);"TIGERCUB SOFTWARE":TAB(10);"FOR FREE":TAB(10);"DISTRIBUTION":TAB(11);"SALE PROHIBITED"
120 CALL PEEK(-28672,A0):: IF A0=0 THEN 160
130 DATA FINE,NO,GOOD,UHOH,RIGHT,TRY AGAIN,YES,THAT IS NOT RIGHT
140 FOR J=1 TO 4 :: READ RIGHT$(J),WRONG$(J):: NEXT J
150 FOR D=1 TO 1000 :: NEXT D :: CALL DELSPRITE(ALL)
160 CALL CLEAR :: CALL CHAR(95,"FFFF")):: CALL MAGNIFY(2) :: RANDOMIZE :: CALL SCREEN(14):: FOR SET=5 TO 8 :: CALL COLOR(SET,16,1):: NEXT SET
170 CALL CHAR(120,"E7004200180017E00000E700420099423CE700420099423C00E700420018003C4200")
180 CALL CHAR(124,"0E000401100718017001280000E00000")
190 DISPLAY AT(3,8):"ADD AND CARRY" :: CALL CHAMELEON
200 CALL COLOR(14,2,2):: CALL HCHAR(4,4,143,2):: CALL HCHAR(5,4,143,2):: CALL SPRITE(#25,120,11,25,25)

```
210 T=T+1 :: IF T=6 THEN T=0
 :: GOTO 250
220 Z=INT(8*RND+2):: IF Z=Z2
THEN 220 ELSE Z2=Z
230 Y=INT(Z*RND):: IF Y=Y2 T
HEN 230 ELSE Y2=Y :: X=Z-Y
240 N=1 :: GOSUB 470 :: GOTO
 210
250 T=T+1 :: IF T=11 THEN T=
0 :: GOTO 290
260 X=INT(10*RND):: IF X=X2
THEN 260 ELSE X2=X
270 Y=INT(10*RND):: IF Y=Y2
OR X+Y<10 THEN 260 ELSE Y2=Y
 :: Z=X+Y
280 N=1 :: GOSUB 470 :: GOTO
 250
290 T=T+1 :: IF T=11 THEN T=
0 :: GOTO 330
300 X=INT(90*RND+10):: IF X=
X2 THEN 300 ELSE X2=X
310 Y=INT(90*RND+10):: IF Y=
Y2 THEN 310 ELSE Y2=Y :: Z=X
+Y
320 N=2 :: GOSUB 470 :: GOTO
 290
330 X=INT(900*RND+100):: IF
X=X2 THEN 330 ELSE X2=X
340 Y=INT(900*RND+100):: IF
Y=Y2 THEN 340 ELSE Y2=Y :: Z
=X+Y
350 N=3 :: GOSUB 470 :: GOTO
 330
360 R=96 :: CC=96 :: FOR J=1
TO N :: CALL SPRITE(#J,48+A
(J),11,R,CC):: CC=CC+16 :: N
EXT J
370 R=116 :: CC=96 :: FOR J=
1 TO N :: CALL SPRITE(#4+J,4
8+B(J),11,R,CC):: CC=CC+16 :
: NEXT J
380 CALL HCHAR(18,12,95,N*3)
:: CC=CC-16 :: CALL SPRITE(#
22,43,16,R,80):: RETURN
390 R=140 :: FOR J=LEN(STR$(
Z))TO 1 STEP -1 :: CALL SPRI
TE(#20,63,11,R,CC)
400 CALL KEY(3,K,ST):: IF ST
<1 OR K<48 OR K>57 THEN CALL
 PATTERN(#20,32):: CALL PATT
ERN(#20,63):: GOTO 400
410 CALL DELSPRITE(#20):: CA
LL SPRITE(#12+J,K,11,R,CC)
420 IF K-48<>C(J)THEN GOSUB
480 :: CALL DELSPRITE(#12+J)
:: CALL SPRITE(#20,63,11,R,C
C):: GOTO 400
430 IF A(J-W)+B(J-W)>9 THEN
CALL SPRITE(#20,49,16,80,CC-
16)
```

```
440 CC=CC-16 :: NEXT J :: GO
SUB 510 :: RETURN
450 FOR J=1 TO LEN(STR$(X)):
: :: A(J)=VAL(SEG$(STR$(X),J
,1)):: NEXT J :: FOR J=1 TO
LEN(STR$(Y)):: B(J)=VAL(SEG$
(STR$(Y),J,1)):: NEXT J
460 FOR J=1 TO LEN(STR$(Z)):
: C(J)=VAL(SEG$(STR$(Z),J,1)
):: NEXT J :: W=LEN(STR$(Z))
-LEN(STR$(X)):: RETURN
470 GOSUB 450 :: GOSUB 360 :
: GOSUB 390 :: FOR D=1 TO 20
0 :: NEXT D :: CALL DELSPRIT
E(ALL):: DISPLAY AT(18,1)::
CALL CHAMELEON :: CALL SPRIT
E(#25,128,11,25,25):: RETURN
480 DATA 123,124,125,123,124
,125,123,124
490 IF A0=0 THEN 500 :: CALL
SAY(WRONG$(INT(4*RND+1)))
500 RESTORE 480 :: FOR JJ=1
TO 8 :: READ P :: CALL PATTE
RN(#25,P):: XX=2^250 :: NEXT
JJ :: RETURN
510 DATA 121,122,121,122,121
,122
520 IF A0=0 THEN 530 :: CALL
SAY(RIGHT$(INT(4*RND+1)))
530 RESTORE 510 :: FOR JJ=1
TO 6 :: READ P :: CALL PATTE
RN(#25,P):: XX=2^250 :: NEXT
JJ :: RETURN
540 SUB CHAMELEON
550 M$="1800665AC342DB667E1B
8100995AC3A5E78142BD24DB66B0
8142992407E5AC3A53C241B00FF
DB5AFF7EFF009910B100668018"
560 RANDOMIZE :: CALL CHAR(1
28,SEG$(M$,INT(43*RND+1)*2-1
,16)):: X=INT(14*RND+3)
570 Y=INT(14*RND+3):: IF Y=X
THEN 570 :: CALL COLOR(13,X
,Y)
580 CALL HCHAR(1,2,128,30)::
CALL HCHAR(24,2,128,30):: C
ALL VCHAR(1,31,128,96):: SUB
END
590 SUB CHAMWIPE
600 T=T+1+(T=2)*2 :: ON T GO
TO 610,620
610 CALL VCHAR(1,3,128,768):
: GOTO 630
620 CALL HCHAR(1,1,128,768)
630 CALL CLEAR :: SUBEND
640 SUB TITLE(S,T$)
650 CALL SCREEN(S):: L=LEN(T
$):: CALL MAGNIFY(2)
660 FOR J=1 TO L :: CALL SPR
ITE(#J,ASC(SEG$(T$,J,1)),J+1
```

```
-(J+1=5)+(J+1=5+13)+(J)14)*1
3,J*(170/L),10+J*(200/L))::
NEXT J
670 SUBEND

    A mathematical curiosity -
100 !MAGIC NINES by Jim Pete
rson
110 CALL CLEAR
120 INPUT "TYPE ANY 3-DIGIT
NUMBER OF 3 DIFFERENT DIGITS
":N :: IF N<>INT(N)OR N>999
OR N<0 THEN 120
130 N$=STR$(N):: IF N<100 TH
EN N$="0"&N$
140 IF SEG$(N$,1,1)=SEG$(N$,
2,1)OR SEG$(N$,1,1)=SEG$(N$,
3,1)OR SEG$(N$,2,1)=SEG$(N$,
3,1)THEN PRINT ">>>THREE DIF
FERENT DIGITS<<," :: GOTO 12
0
150 PRINT :: N2$="" :: FOR J
=1 TO 3 :: N2$=SEG$(N$,J,1)&
N2$ :: NEXT J :: N2=VAL(N2$)
:: D=ABS(N-N2)
160 PRINT N$;" BACKWARDS IS
";N2$; :
170 N3=ABS(N-N2):: N3$=STR$(
N3):: IF N3<100 THEN N3$="0"
&N3$
180 IF N>N2 THEN PRINT N$;"
MINUS ";N2$;" EQUALS ";N3$;
:ELSE PRINT N2$;" MINUS ";N$
;" EQUALS ";N3$; :
190 FOR J=1 TO 3 :: N4$=SEG$
(N3$,J,1)&N4$ :: NEXT J
200 PRINT N3$;" BACKWARDS IS
 ";N4$; :N3$;" PLUS ";N4$;"
IS 1089"; :"I KNEW THAT WOUL
D BE THE"; :"ANSWER!"; :"LIS
T THE PROGRAM AND SEE!"
210 !!!!!!!!!!!!!!!!!!!!!!!!!
220 !  THE ANSWER WILL BE  !
230 !         1089         !
240 !!!!!!!!!!!!!!!!!!!!!!!!!

100 DISPLAY AT(8,10)ERASE AL
L:"SHENANDOAH": : :" Across
the wide Missouri": : : :
: : : : : :"programmed by
Jim Peterson"
110 FOR D=1 TO 1000 :: NEXT
D :: CALL CLEAR :: DIM S(24)
:: RANDOMIZE :: M$="4218005A
007E9901005A24D0C31024243C5A
7EA56618003CDB66BD3CA542187E
5AC324425A18A51866B100811B7E
423CBDDBC3" :: R=1
120 FOR CH=40 TO 136 STEP 8
130 CALL CHAR(CH,SEG$(M$,INT
```

```
(43*RND+1)*2-1,16)):: CALL H
CHAR(R,1,CH,64):: R=R+2*ABS(
R<23)
140 NEXT CH :: R=0 :: FOR SE
T=2 TO 14 :: X=INT(14*RND+2)
150 Y=INT(14*RND+2):: IF Y=X
THEN 150
160 CALL COLOR(SET,X,Y)
170 NEXT SET :: CALL CLEAR :
: CALL COLOR(1,5,5):: CALL V
CHAR(1,29,1,192):: CALL SCRE
EN(16):: F=262 :: FOR N=0 TO
 23 :: S(N)=INT(F*1.05946309
4^N):: CALL SOUND(-999,S(N),
0)
180 NEXT N
190 DATA 2,1,1,1,6,1,1,1,6,2
,6,1,1,1,6,1,8,8,1,10,10,1,1
1,11,1,15,6,3,13,6,2,13,11
200 DATA 1,10,10,1,17,17,4,1
5,11,1,11,15,1,13,13,1,15,11
,1,13,13,1,10,10,3,13,10
210 DATA 2,13,13,2,13,10,1,1
5,10,1,10,15,2,15,15,1,15,10
,1,10,10,1,13,13,1,10,10
220 DATA 1,8,3,3,6,3,2,6,6,2
,8,8,4,10,1,1,10,6,1,6,6,1,1
8,10,1,15,15
230 DATA 2,13,1,2,13,5,2,13,
10
240 DATA 1,6,6,1,8,8,6,10,6,
2,3,3,2,8,5,1,8,1,3,6,1,7,6,
1
250 A=1 :: B=1 :: E=5
260 FOR J=1 TO 144 STEP 3 ::
 CALL HCHAR(A,E,32,T*4):: CA
LL HCHAR(A+1,E,32,T*4):: CAL
L HCHAR(B,E,32,T*4):: CALL H
CHAR(B+1,E,32,T*4):: READ T,
A,B :: E=17-T*2
270 CALL HCHAR(A,E,32+INT((A
+1)/2)*8,T*4):: CALL HCHAR(A
+1,E,32+INT((A+1)/2)*8,T*4):
: CALL HCHAR(B,E,32+INT((B+1
)/2)*8,T*4)
280 CALL HCHAR(B+1,E,32+INT(
(B+1)/2)*8,T*4):: FOR D=1 TO
 T :: CALL SOUND(-999,S(A),0
,S(B),7)
290 NEXT D
300 NEXT J :: LL=0 :: FOR SE
T=2 TO 14 :: X=INT(15*RND+2)
310 Y=INT(15*RND+2):: IF Y=X
THEN 310
320 CALL COLOR(SET,X,Y):: CA
LL SOUND(-999,S(6),LL,S(1),L
L):: LL=LL+2
330 NEXT SET :: RESTORE :: G
OTO 260
>>>>>>>>MEMORY FULL<<<<<<<<<<
```

TIPS FROM THE TIGERCUB

#41

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```
################################
#                              #
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# routines, tips, tricks       #
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#                              #
################################
```

```
################################
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#                              #
################################
```

This will be the last issue of the Tips from the Tigercub.

I started this newsletter over 3 years ago, as a means of promoting my software business. It has never been a success for that purpose, but I have kept it going because of the many interesting newsletters that I have received in exchange, and the many friends that I have made around the world.

I know, from the editors' comments in many of your newsletters, that many of you are finding it difficult to finance a newsletter for your shrinking membership, and even more difficult to find the time, and the material to print. For a one-man user's group pretending to be a business which is getting very little business, it has become impossible. User group members have never been good customers for anyone's software, for reasons which you all know, and those who are remaining active in the TI world are wanting more sophisticated software than I have to offer.

Some of you have offered to subscribe to my Tips, but I just don't have the time to get involved in anything like that. I have had some other projects on the back burner for too long, and it's time I got to work on them - they can hardly turn out to be less profitable than trying to sell software!

I am NOT going out of business, and I am NOT releasing my programs to the public domain. I will continue to sell them, and will continue some classified advertising.

My heartfelt thanks to the many user group editors and officers who have tried in many ways to encourage and help me. Many thanks to those who have purchased my programs.

I will greatly miss your

newsletters. I do hope to keep in contact with some of you. Perhaps now I can find time to browse in the TI sections of CompuServe or GENIE, and perhaps I will meet you there.

The answer to the challenge in the last Tips? For a clue, try -
DISPLAY AT(24,1):0 in Basic.
Still don't get it? In Basic, DISPLAY is the same as PRINT, but AT is not recognized, so the computer thinks you are telling it to print the variable AT(1,1) - which, being undefined, is 0 - and advance to the next line (the :) and print 0.

I have always wanted a pocket calculator with several memories and a window to display the contents of each one. So, since there is plenty of room for windows on a TV screen, I wrote one.
It does not require any use of the Enter key, but each CALL KEY input must be validated and processed, so don't type too fast. It will accept such inputs as M1=7= or M1=7+1= or M2=1-M1= to put a value in a memory, or 6+7= or 6+M2= to calculate and display, or 6+7M1 or M1-.M2M3 to calculate and put into memory, and will even do multiple calculations such as 1+2-3/4*5X6, subtotaling after the first two.
100 CALL CLEAR :: CALL SCREEN(5):: DEF G$(X)=SEG$(A$,X,1)&" " = " " :: CALL PEEK(8198,A):: IF A<>170 THEN CALL INIT
110 CALL LOAD(-31806,16):: ON WARNING NEXT :: GOTO 140
120 SET,M$(),K,S,A$,S$(),R,C,N,N1,N2,N1F,N2F,M1F,M,MF,DFF,VF,EF,FL,N$,F2,T,M2,MEM(),ST,N1,ZF
130 CALL COLOR :: CALL CHAR :: CALL KEY :: CALL SOUND :@P-
140 FOR SET=0 TO 4 :: CALL C

```
OLOR(SET,16,1):: NEXT SET ::
FOR SET=5 TO 8 :: CALL COLO
R(SET,5,16):: NEXT SET :: CA
LL CHAR(64,"#")
150 FOR SET=9 TO 12 :: CALL
COLOR(SET,16,1):: NEXT SET
160 DISPLAY AT(1,10):"TIGERC
UB":"  MULTIMEMORY@CALCULAT
OR": :"MEMORY #1": :"MEMORY
#2": :"MEMORY #3": :"MEMORY
#4": :"MEMORY #5"
170 M$(1)="#123456789.+-*/%=
CXM" :: M$(2)="#123456789.AS
MDPECXM" :: DISPLAY AT(20,1)
:"use ?":"(1) symbols":"(2)
alpha characters"
180 CALL KEY(0,K,S):: IF S=0
OR K<49 OR K>50 THEN 180 ::
A$=M$(K-48)
190 DISPLAY AT(20,1):S$(12);
"add";TAB(16);S$(16);"percen
t" :: DISPLAY AT(21,1):S$(13
);"subtract";TAB(16);S$(17);
"equals"
200 DISPLAY AT(22,1):S$(14);
"multiply";TAB(16);S$(18);"c
ancel" :: DISPLAY AT(23,1):S
$(15);"divide by";TAB(16);S$
(19);"clear all"
210 DISPLAY AT(24,1):"M1 to
M5 = memories #1 to #5"
220 R=15 :: C=1 :: N,N1,N2,N
1F,N2F,M1F,M,MF,DF,FF,VF,EF,
FL,ZF=0 :: N$="" :: DISPLAY
AT(18,1):""
230 CALL KEY(3,K,S):: IF S<1
THEN 230 :: CALL SOUND(50,5
00,5):: DISPLAY AT(R,C):CHR$
(K):: C=C+1
240 ON POS(A$,CHR$(K),1)+1 G
OTO 260,270,270,270,270,270,
270,270,270,270,270,280,290,
250,290,290,290,340,410,420,
430
250 IF VF=1 OR MF=1 THEN 290
:: ZF=1 :: N$="-" :: GOTO 2
30
260 DISPLAY AT(R,C-1):"?" ::
C=C-1 :: GOTO 230
270 IF MF=1 THEN 260 :: FL=0
:: VF=1 :: IF DF=0 AND ZF=0
THEN N=N*10+K-48 :: GOTO 23
0 ELSE N$=N$&CHR$(K):: GOTO
230
280 IF DF=1 THEN 260 :: DF=1
:: MF,FL=0 :: IF ZF=1 THEN
N$=N$&"." :: GOTO 230 ELSE N
$=STR$(N)&"." :: GOTO 230
290 IF C=2 OR FL=1 THEN 260
:: FL=1 :: IF FF=0 THEN 320
```

```
300 F2=POS(A$,CHR$(K),1)-11
:: IF VF=1 THEN GOSUB 480
310 GOSUB 520 :: N1=T :: DIS
PLAY AT(18,1):"SUBTOTAL":T :
: N2F,N2=0 :: FF=F2 :: GOTO
230
320 IF VF=0 THEN 330 :: VF,M
F=0 :: GOSUB 480
330 MF=0 :: FF=POS(A$,CHR$(K
),1)-11 :: GOTO 230
340 IF C=2 OR(FF=0 AND M1F=0
)OR(C=4 AND M1F=0)OR FL=1 TH
EN 260
350 IF C=4 THEN EF=1 :: M2=M
:: N1F,MF=0 :: GOTO 230
360 IF VF=1 THEN GOSUB 480
370 IF EF=0 THEN 400
380 IF N2F=0 THEN MEM(M2)=N1
:: DISPLAY AT(M2*2+2,11):N1
:: GOTO 220
390 GOSUB 520 :: MEM(M2)=T :
: DISPLAY AT(M2*2+2,11):T ::
GOTO 220
400 GOSUB 520 :: DISPLAY AT(
15,C):T :: GOTO 220
410 DISPLAY AT(R,1):"";"";""
;"" :: GOTO 220
420 MEM(1),MEM(2),MEM(3),MEM
(4),MEM(5)=0 :: FOR R=4 TO 1
2 STEP 2 :: DISPLAY AT(R,10)
:"" :: NEXT R :: GOTO 410
430 IF EF=1 AND MF=1 THEN 26
0
440 CALL KEY(3,K,ST):: IF ST
<1 OR K<49 OR K>53 THEN 430
ELSE CALL SOUND(50,500,5)::
M=K-48 :: DISPLAY AT(R,C):CH
R$(K);:: C=C+1 :: MF=1 :: FL
=0 :: IF VF=1 THEN GOSUB 480
450 IF N1F=0 THEN M1F,N1F=1
:: N1=MEM(M):: IF ZF=1 OR DF
=1 THEN N1=VAL(N$&STR$(N1)):
: DF,ZF=0 :: GOTO 230 ELSE 2
30
460 IF N2F=0 THEN N2F=1 :: N
2=MEM(M):: IF ZF=1 OR DF=1 T
HEN N2=VAL(N$&STR$(N2)):: DF
,ZF=0 :: GOTO 230 ELSE 230
470 GOSUB 520 :: MEM(M)=T ::
DISPLAY AT(M*2+2,11):T :: G
OTO 220
480 IF DF=0 AND ZF=0 THEN NX
=N ELSE NX=VAL(N$):: DF,ZF=0
490 IF N1F=0 THEN N1=NX :: N
1F=1 :: GOTO 510
500 N2=NX :: N2F=1
510 VF,N=0 :: N$="" :: RETUR
N
520 IF FF=1 THEN T=N1+N2 ELS
E IF FF=2 THEN T=N1-N2 ELSE
```

```
IF FF=3 THEN T=N1*N2 ELSE IF
FF=4 THEN T=N1/N2 ELSE T=N1
*N2/100
530 RETURN
```

I have always been annoyed
by the difficulty of hyphen-
ating with TI-Writer, when I
want to avoid the gaping
holes that wraparound and
Fill and Adjust can cause.
Manually filling and adjust-
ing with carets is slow, and
leaving a space after the
hyphen is unreliable, so I
wrote this program.

```
100 DISPLAY AT(2,10)ERASE AL
L:"TIGERCUB":" HYPHENATED F
ILL AND ADJUST"
110 DISPLAY AT(6,1):" Prepar
e text with TI-Writer":"Edit
or. Leave left TAB at 0,":"s
et right TAB at the actual"
:"value of the line length d
e-"
120 DISPLAY AT(10,1):"sired
(i.e., for a 28-char":"lin
e, set it at 28)."
130 DISPLAY AT(12,1):" Inden
t as desired. Center":"hea
dings as desired but be":"
sure to follow them with a
":"line feed (Enter). Hyphen
ate"
140 DISPLAY AT(16,1):"as de
sired and follow the":"hyp
hen immediately with a":"
line feed (Enter)."
150 ON ERROR 160 :: GOTO 170
160 ON ERROR 160 :: RETURN 1
70
170 DISPLAY AT(20,1):"INPUT
FILE? DSK" :: ACCEPT AT(20,1
6)BEEP:F$ :: OPEN #1:"DSK"&F
$,INPUT
180 DISPLAY AT(22,1):"OUTPUT
FILE? DSK" :: ACCEPT AT(22,
17)BEEP:NF$ :: OPEN #2:"DSK"
&NF$,OUTPUT
190 DISPLAY AT(24,1):"LINE L
ENGTH?" :: ACCEPT AT(24,14)V
ALIDATE(DIGIT):L
200 LF$=CHR$(13):: H$="-"&CH
R$(13)
210 ON ERROR 210 :: GOTO 220
220 ON ERROR 210 :: RETURN 3
10
230 LINPUT #1:M$ :: IF M$="
" OR M$=LF$ OR M$="" OR ASC(
```

```
M$)>127 OR(LEN(M$)=L AND POS
(M$,LF$,1)=0)OR POS(M$," ",1
)=0 THEN 310
240 IF POS(M$,LF$,1)<>0 AND
POS(M$,H$,1)=0 THEN 310
250 IF POS(M$,H$,1)<>0 THEN
M$=SEG$(M$,1,LEN(M$)-1)
260 IF LEN(M$)=L THEN 310
270 P=1
280 X=POS(M$," ",P):: IF X=P
THEN P=P+1 :: GOTO 280 ELSE
Y,P=X :: IF POS(M$," ",P)=0
OR P=L THEN 310
290 M$=SEG$(M$,1,X)&" "&SEG$
(M$,X+1,255):: IF LEN(M$)>=L
THEN 310 ELSE P=X+2
300 X=POS(M$," ",P):: IF X=0
THEN P=Y :: GOTO 300 ELSE G
OTO 290
310 PRINT #2:M$ :: IF EOF(1)
<>1 THEN 230 ELSE CLOSE #1 :
: CLOSE #2
```

Here is one for the pre-
schoolers -

```
100 CALL CLEAR :: CALL SCREE
N(14):: CALL COLOR(1,11,11,1
2,5,5):: DISPLAY AT(3,10):"S
EE-N-SAY": : :"PRESS ANY KEY
" !by Jim Peterson based on
a routine by Michael Lyons
110 DIM E$(16),PAT$(16):: CA
LL CHAR(123,RPT$("F",16))
120 DATA "  ","  "," ("," (
"," ","  ((","  (  "," ","  ( (","  ((
"," ","  (((","  (","  "("," (","  (  (
"," ","((","  ((","  ((","  ((","  (  ((
"," ","(((("
130 FOR J=0 TO 15 :: READ PA
T$(J):: NEXT J
140 CALL KEY(0,K,S):: IF S=0
THEN 140
150 CALL CHARPAT(K,CP$):: FO
R X=1 TO 16 :: Y=ASC(SEG$(CP
$,X,1)):: E$(X)=PAT$(Y+(Y>57
)*7-48):: NEXT X :: IF K>96
AND K<123 THEN K=K-32
160 CALL CLEAR :: CALL SAY(C
HR$(K)):: FOR X=2 TO 16 STEP
2 :: DISPLAY AT(8+(X/2),12)
:E$(X-1);E$(X):: NEXT X
170 CALL SAY(CHR$(K)):: GOTO
140
```

And so, one more time

MEMORY FULL

Jim Peterson