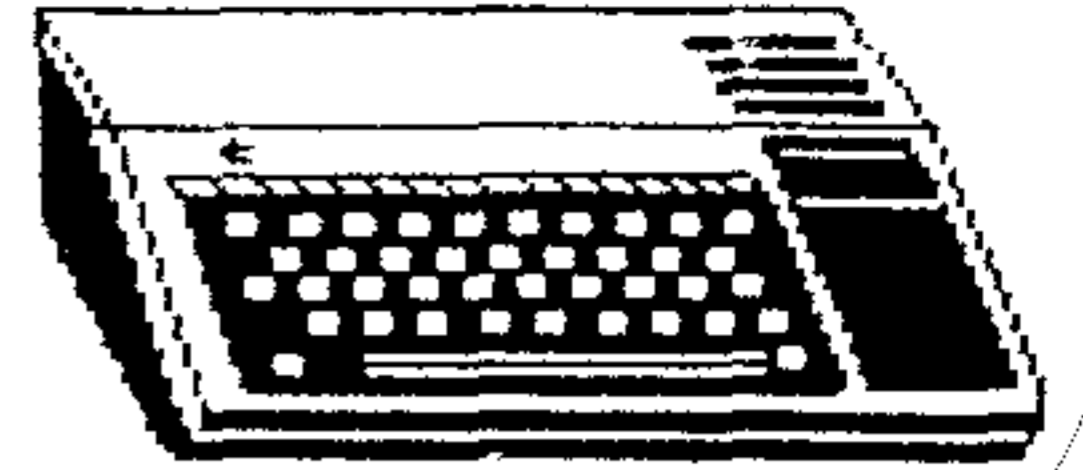


CENTRAL OHIO

# Spirit of 99

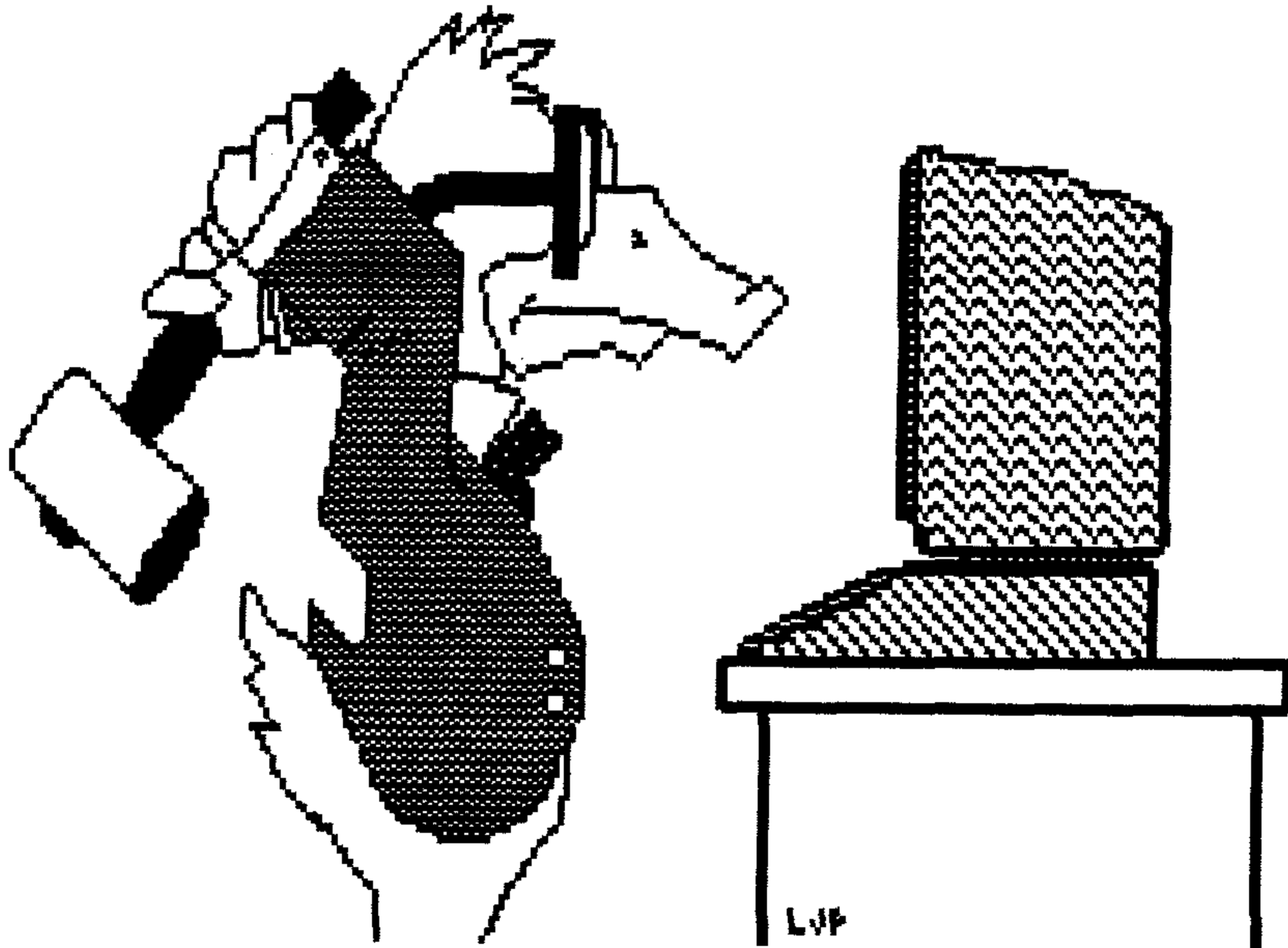


NINETY-NINERS INC.

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

PUBLISHED MONTHLY IN COLUMBUS OHIO

"HIT ANY KEY TO CONTINUE"



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Central Ohio Ninety Niners Inc. is a non-profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related products and have paid a yearly membership fee of \$30 and whose

main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held the 3rd Saturday of each month at Chemical Abstract, 2540 Olentangy River Road Columbus, OH. Meeting time is 8:30 AM til 2:30PM, Meetings are open to the public. Membership dues (\$30.00) are payable yearly to C.O.N.N.I. and cover the immediate family of the member. Please send check to our membership registrar and join C.O.N.N.I.

Please address it to:  
 Harley Ryan J.  
 4178 Chandler Drive  
 Whitehall, OH 43213

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-NEW DOM MEMBERS-  
 HARRY HOFFMAN  
 HOMER KIPLING

**DUES ANNOUNCEMENT**

Dues are usually paid at or before the March meeting, and are \$30 per year for full membership, library and voting privileges, plus the newsletter. You may also pay your dues in two installments if desired: \$15 in March and \$17 in September. If only the newsletter is desired, then payment is \$17 per year. Those who join during other months of the year pay a lesser, pro-rated amount:

MAR-30.00 APR-27.50 MAY-25.00 JUN-22.50 JUL-20.00 AUG-17.50 SEP-15.00 OCT-12.50 NOV-10.00 DEC-7.50 JAN-5.00 FEB-2.50

**A DEAL  
 YOU CAN'T  
 PASS UP!  
 SUBSCRIBE TO BOTH!**

Now you can have the best of both worlds-- Keep up to date on the latest news from the TI-99/4A world with a subscription to the Spirit of 99 Newsletter AND get an up-to-date collection of new public domain and shareware programs with the Disk of the Month--Both brought to you by the Central Ohio Ninety-Niners, Inc.-- No newsletter published in August.-- January newsletter is an index of all articles published during the previous year.-- 10-SSSD "flippy" DOM's published annually.-- At times, two diskettes depending on the availability of new material.--the NL is mailed 1st of the month-- DOM is mailed about the middle of the month.

**SUBSCRIPTION RATES**

-----  
 Newsletter only----\$17/yr. (Continental U.S.)  
                                   \$27/yr. (Outside Continental U.S.)  
 Newsletter PLUS----\$35/yr. (Continental U.S. EXCEPT Delaware, Franklin, Licking, Madison,  
 DISK of the MONTH           Piqua, and Union Counties, Ohio)  
                                   \$45/yr. (Outside Continental U.S.)  
 CONNI Club \$30/yr (see above information)  
 membership

**CONTACT**

HARLEY RYAN, Membership  
 Central Ohio Ninety-Niners, Inc  
 4178 Chandler Dr, Whitehall, OH 43213  
 (614) 231-1497

C.O.N.N.I. CALENDAR

JUNE 1992

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
FLAG DAY	15	16	17	18	19	CONNI MEETING 1st DAY OF SUMMER
FATHER'S DAY	22	23	CONNI MEETING	25	26	27
28	29	30				

SATURDAY MEETING 20 JUN 1992  
Chemical Abstracts Building -- Columbus

8:30AM Setup, coffee, and doughnuts

9:00AM Disk of Month,  
MICROpendium,  
Beginners help,  
Libraries open

10:30AM Business  
Meeting

11:15AM Demos:  
RAWLOOK  
Digitized  
pictures  
demonstration  
by Bud Wright

9:30AM Question and  
Answer Period

1:30PM Tear down  
and go home

WEDNESDAY MEETING -- 24 JUN 1992  
McDONALD'S -- Cleveland and Main -- Westerville

7:30PM MEETING TIME



The Annual Lima TI Conference  
Sunday May 16, 1992

It was a beautiful day for our annual gathering at Lima, Ohio. Sunny and 80's and no rain was ordered for the festivity by Dr. Charles Good and his group for the occasion and not a soul was disappointed. At the end of the day I don't believe that they had a total account of the attendance, but, it was a large one. The eight participating members from C.O.N.N.I. were as follows: Dick Beery, Bob DeVilbiss, Irwin Hott, Ken Marshall, John Parkins, Jim Peterson, Everett Wade and Bud Wright. I wish to thank all of them for their continued efforts and support. Jim had his own Tigercub Software table and was kept very busy.

There was a good representation of TI'ers from all around, including Unice Spooner from the State of Maine. I understand she gave a wonderful demonstration on how she teaches her students in class to use the computer. Her student for the demo was none other than Megan, the daughter of Dr. Charles Good. I was very sorry to have missed the session, but I will be able to see the entire conference at a later date when the video tapes I ordered arrive.

Cameras in both conference rooms recorded the entire structure simultaneously from 8:00 am to 6:00 pm. For any persons unable to attend, this would be an excellent opportunity to see what they missed and make arrangements to go next year. These tapes, a set of three, can be ordered from Lima for only \$15.00 and will be well worth it.

The User Group Officer's Meeting was attended by quite a number of officials expressing their concern about being unable to gain access to the Clearing House BBS. They explained that their problems were primarily due to either a lack of knowledge by some in using a modem, or difficulty in their attempts to gain access to the board after they were signed on. Irwin Hott gave quite an extensive and very informative talk about their problems and the reasons for them. He will make adjustments to the board to solve them. Some indicated their reluctance in calling the board with long distance charges being incurred in the process, and not knowing how to accomplish their goals. Others wished that they had a demonstration type of tape that would instruct them on what to do. Irwin told them it would be too much of a problem to try to cover it, simply because there are so many different types of terminal programs that one could use. He did suggest that they try using their modem with a local person until they get adept with it before calling the BBS. I fully understand their frustrations and anxieties from my early days of using a modem. They surely have my sympathy.

Available at our display table were a small sampling of disks from our disk library and some earlier newsletters available for purchase. A demonstration about the Clearing House written by Ken Mareshall was running on one console while Bud Wright was running a slide show that he created on his 9640 Geneve showing digitized pictures of members taken at our last meeting. He had used a digitized camera containing a disk that would hold 50 snapshots. It would show the person photographed, display their name on screen, then speak their name in the old familiar TI sounds. It sure attracted quite a bit of attention from those walking by. Bud's talents were proudly presented once again. Thanks go to Bud for all the effort that went into this fine piece of work. By the way, he has agreed to hold Editor Assembler classes again for those wishing to learn the program. He is definitely a compassionate person, and a highly qualified instructor for the job. Interested members may contact John Parkins at 614-891-4965 for this.

No. 69

Tigercub Software  
156 Collingwood Ave.  
Columbus, OH 43213  
\*\*\*\*\*

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to \$5.00 each. I am out of printed documentation so it will be supplied on disk.

My TI-PD library now has almost 600 disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename, Basic programs converted to XBasic, etc. The price is just \$1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog #5 and the latest supplement is available for \$1 which is deductible from the first order.

In Tips #68 I published my solution to Dr. Ecker's challenge to alternately assign X the value of A and B without using IF...THEN or any outside help. Computer Monthly has arrived again and his solution is better than mine. Try it with any two numbers -

```
100 A=2.765 :: B=-10
110 X=A+B-X :: PRINT X :: GO
TD 110
```

There has been controversy for years as to whether the TI's psuedorandom number generator is truly random. Dr. Ecker's "Computer Fun & Learning" column in Computer Monthly had a question - if you randomly generate numbers between 0 and 9, how often will you get the same number twice in succession? Three times in succession?

And etc. Since there are 10 numbers to choose from, it seems to me you would get 2 in a row 10% of the time, 3 in a row 1% of the time, 4 in a row .1%...etc. I wrote this to prove it -

```
100 RANDOMIZE
110 C=C+1 :: X=INT(RND*10)::
PRINT X:: IF X=F THEN FL=F
L+1 :: CL(FL)=CL(FL)+1 :: PR
INT "":FL;"":CL(FL):"C=";C:
"%=";CL(FL)/C :: GOTO 110 EL
SE FL=0 :: F=X :: GOTO 110
```

After 10,000 tries, I had 2 in a row 8.75% of the time and 3 in a row .83% and 4 in a row .07%. Does that prove anything? I don't know.

(Dr. Ecker points out that those percentages could not ever quite add up to 100%!) Here is another of my XBasic programs to write assembly source code -

```
100 DISPLAY AT(2,1)ERASE ALL
:"ASSEMBLY HELP SCREEN WRITE
R":": This program will wr
ite the:"source code for an
assembly:"routine which ca
n be linked"
```

```
110 DISPLAY AT(7,1):"from Ex
tended Basic to dis-:"play
any one of several help:"sc
reens at any designated:"ke
y press or input at any:"po
int in a program."
```

```
120 DISPLAY AT(12,1):"The o
riginal source code,":"autho
r unknown, was improved":"by
Karl Romstedt and further":
"modified by Bruce Harrison.
"
```

```
130 DISPLAY AT(20,1):"How ma
ny help screens?" :: ACCEPT
AT(20,24)SIZE(1)VALIDATE(DIG
IT)BEEP:N
```

```
140 FOR J=1 TO N :: H%=H%&"H
ELP"&STR$(J)&"," :: NEXT J :
: H%=" DEF "&SEG$(H%,
1,LEN(H%)-1)
```

```
150 DATA VMBW EQU >2024,V
MBR EQU >202C,KSCAN EQU
>201C,STATUS EQU >837C
160 OPEN #1:"DSK1.HELP/S",OU
TPUT :: PRINT #1:H% :: FOR J
=1 TO 4 :: READ M% :: PRINT
```

```
#1:M% :: NEXT J
170 FOR J=1 TO N :: H%="HELP
"&STR$(J):: PRINT #1:H%&" L
NPI WS": LI R13,HEL
PS"&STR$(J)
180 IF J<N THEN PRINT #1:"
JMP SAVSCR"
190 NEXT J :: H%=RPT$(" ",7)
200 PRINT #1:"SAVSCR CLR RO
":H%&"LI R1,SAVIT":H%&"LI
R2,768":H%&"BLWP @VMBR":H%
&"LI R9,NEWSCR":H%&"MOV R
9,R1":H%&"MOV R2,R4"
210 PRINT #1:H%&"LI R3,>60
00":ADDOFF MOVW #R13+,#R9":
H%&"AB R3,#R9+":H%&"DEC R
4":H%&"JNE ADDOFF":H%&"BLWP
@VMBW"
220 PRINT #1:"KEYLOD BLWP @K
SCAN":H%&"BLWP @KSCAN":H%&"C
B @ANYKEY,@STATUS":H%&"JNE
KEYLOD"
230 PRINT #1:"REPL LI R1
,SAVIT":H%&"BLWP @VMBW":RET
N LWPI >83E0":H%&"B @>6
A"
240 PRINT #1:"WS BSS 32
":SAVIT BSS 768":NEWSCR
BSS 768":ANYKEY BYTE >20":
H%&"EVEN"
250 DISPLAY AT(3,1)ERASE ALL
:" Enter data just as you":
want it to appear, in 24":1
ines. Press Enter for blank
:"lines."
260 FOR J=1 TO N :: DISPLAY
AT(12,1):"Ready for screen #
"&STR$(J):": "Press any key"
270 CALL KEY(0,K,S):: IF S=0
THEN 270 ELSE CALL CLEAR
280 ACCEPT AT(1,0):M% :: PRI
NT #1:"HELPS"&STR$(J)&" TEXT
' "&M%&RPT$(" ",30-LEN(M%))
&" "'
290 FOR K=2 TO 24 :: ACCEPT
AT(K,0):M% :: PRINT #1:H%&"T
EXT ' "&M%&RPT$(" ",30-LEN(M
%))&" "'
300 NEXT K :: NEXT J :: PRIN
T #1:H%&"END"
310 DISPLAY AT(3,1)ERASE ALL
:" Source code has been writ
-":"ten to DSK1 as HELP/S. T
o":"assemble, insert Editor/
":"Assembler module."
320 DISPLAY AT(7,1):"Insert
Assembler disk in drive 1
.":"Select 2 ASSEMBLER":"Loa
d Assembler? Y":"Source file
name DSK2.HELP/S"
```

```
330 DISPLAY AT(12,1):"Object
file name? DSK2.HELP/O":"Li
st file name? Press Enter":
Options? R"
340 DISPLAY AT(15,1):"Load t
he resulting object":"file i
nto your program by":"CALL I
NIT ::":"CALL LOAD("DSK1.HE
LP/O") or,"
350 DISPLAY AT(19,1):"much b
etter, imbed it with":"ALSAV
E or SYSTEX."
360 DISPLAY AT(21,1):"Access
the screens in your progra
m by":" CALL LINK("HELPI")
":"CALL LINK("HELPI2"), etc
."
370 CALL KEY(0,K,S):: IF S=0
THEN 370 ELSE CALL CLEAR
```

For instance, at any point in a program where keyboard input is required and user may not know what to do - ACCEPT AT(24,1):M% :: IF M%="HELP" THEN CALL LINK("HELPI") and the first help screen will pop up to give instructions. Press any key and the previous screen reappears.

This time I am borrowing heavily from the TI#MES news letter of England, which has also borrowed from the REC newsletter.

This one is useless, but is a remarkable example of compact complex programming. It shows that there is an algorithm for everything. See if you can figure out how it works -

```
100 CALL CLEAR :: FOR A=1 TO
2 :: FOR B=1 TO 4 :: X=2-AB
S(SGN(B-3)): FOR C=1 TO X :
: PRINT CHR$(84-7#A+5#B-8#X)
::: NEXT C :: NEXT B :: PRIN
T CHR$(A+31):: NEXT A
```

Another useless one that is easier to figure out -

```
100 DISPLAY AT(1,1)ERASE ALL
:"NUMBER OF MONTH(1-12)"
110 ACCEPT AT(2,12)SIZE(2)VA
LIDATE(DIGIT):A :: IF A<1 OR
A>12 THEN 110
120 DISPLAY AT(3,1):A;"x 4="
```

NEXT PAGE



```

;A*4 :: A=A*4
130 DISPLAY AT(4,1):A;" +13="
;A+13 :: A=A+13
140 DISPLAY AT(5,1):A;" x 25="
;A*25 :: A=A*25
150 DISPLAY AT(6,1):A;" -200="
;A-200 :: A=A-200
160 DISPLAY AT(8,1):"Input d
ate (1-31):" :: ACCEPT AT(8,
19)SIZE(2)VALIDATE(DIGIT):B
:: IF B<1 OR B>31 THEN 160
170 DISPLAY AT(10,1):A;" +";B
;"=";A+B :: A=A+B
180 DISPLAY AT(11,1):A;" x 2="
;A*2 :: A=A*2
190 DISPLAY AT(12,1):A;" -40="
;A-40 :: A=A-40
200 DISPLAY AT(13,1):A;" x 50="
;A*50 :: A=A*50
210 DISPLAY AT(15,1):"Input
last two digits of year e
g 91:"
220 ACCEPT AT(16,16)SIZE(2)V
ALIDATE(DIGIT):B
230 DISPLAY AT(18,1):A;" +";B
;"=";A+B :: A=A+B
240 DISPLAY AT(19,1):A;" -105
00=";A-10500 :: A=A-10500
250 DISPLAY AT(24,1):"ANY KE
Y FOR ANOTHER"
260 CALL KEY(5,A,B)
270 IF B<1 THEN 260
280 RUN
290 END

```

One for the little ones - change the string to anything you want.

```

1 REM SILLY PROG BY S SHAW
MARCH 1991
2 ! did you see COMPUTER WAR
S-the film? It is said that
the star, who was required t
o type fast into a computer
3 ! could not type, so a pro
gram just like this one was
used to give a good effect!
4 ! now adjust it how you wi
sh and show your friends how
fast you can type
5 ! at end of text string pr
ogram will just stop with th
is listing but can be modifi
ed to do anything you wish!
6 !
100 A$="This is how a non-ty
pist can produce information
on screen quickly,witho

```

```

ut "
110 A$=A$&"having to look at
what keys are being bashed!
Just bash keys and watch ho
w perfect text appears no m
atter what you press."
120 CALL CLEAR :: PRINT A$:
: : : :
130 CALL KEY(5,A,B):: IF B<1
THEN 130
140 C=C+1 :: PRINT SEG$(A$,C
,1):: IF C=LEN(A$)THEN 160
150 GOTO 130
160 GOTO 160

```

And a very fast routine to find prime numbers -

```

100 ! FIRST 100 PRIMES
-QUICKLY-
110 ! Dr H B Phillips
from THE REC NEWSLETTER
March 1988 Vol 3 #2
120 DIM P(300),X(12)
130 A=0 :: B=1 :: D=0.5 :: E
=180
140 M=100 :: L=3 :: F=0
150 ! increase M for more- a
lso increase DIMs.
160 PRINT 2;:: C=B :: IF M=B
THEN END
170 L=INT((M/C)*L+F):: N=L+L
+B
180 FOR I=B TO INT((SQR(N)-B
)*D):: PP=P(I)
190 IF PP=B THEN 230
200 IF PP=A THEN PP=I+I+B ::
PRINT PP;:: P(I)=PP :: C=C+
B :: IF C=M THEN END
210 IF X(I)=A THEN X(I)=(PP*
PP-B)*D
220 FOR J=X(I)TO L STEP PP :
: P(J)=B :: NEXT J :: X(I)=J
230 NEXT I :: IF F=0 THEN S=
I
240 FOR I=S TO L
250 IF P(I)=A THEN PP=I+I+B
:: PRINT PP;:: P(I)=PP :: C=
C+B :: IF C=M THEN END
260 NEXT I :: F=(M-C)*L/E ::
S=L+B
270 GOTO 170

```

And a demonstration of how the INTERRUPT routine works independently of whatever else the computer is doing -

```

100 REM interrupt demo

```

```

110 REM
120 REM MACHINE LANGUAGE
130 REM ROUTINE LOADED AT
140 REM >2600 XB OR E/A WITH
32K
150 REM >7200 MINI MEM NO 32
K
160 REM
170 CALL INIT
180 XM=9728
190 MM=29184
200 LAD=XM
210 REM TEST XB OR MM?
220 CALL LOAD(XM,170)
230 CALL PEEK(XM,X)
240 IF X=170 THEN 270
250 REM NO 32K MUST BE MM
260 LAD=MM
270 A=LAD
280 REM LOAD M/C
290 CALL CLEAR
300 FOR D=540 TO 630 STEP 10
310 CHECK=0
320 FOR N=1 TO 10
330 READ X
340 CALL LOAD(A,X)
350 CHECK=CHECK+X
360 A=A+1
370 NEXT N
380 READ X
390 IF CHECK<>X THEN 490
400 NEXT D
410 REM POKE INTERRUPT
420 REM ROUTINE ADDRESS
430 REM INTO >83C4
440 CALL LOAD(-31804,LAD/256
)
450 REM JUST IDLE AWAY TIME
460 FOR N=1 TO 9940
470 NEXT N
480 STOP
490 PRINT "ERROR IN DATA STA
TEMENT ";D
500 STOP
510 REM EACH DATA STATEMENT
520 REM HAS 10 DATA BYTES
530 REM PLUS A CHECK SUM
540 DATA 192,236,000,092,004
,194,005,131,002,131,987
550 DATA 000,060,026,003,004
,195,006,236,000,094,624
560 DATA 203,003,000,092,060
,172,000,090,006,002,628
570 DATA 017,015,019,010,006
,002,019,004,002,000,94
580 DATA 002,039,010,083,016
,002,002,000,002,086,242
590 DATA 096,003,016,007,002
,000,000,119,010,083,336

```

```

600 DATA 016,002,002,000,000
,072,160,003,002,096,353
610 DATA 064,000,006,192,215
,192,006,192,215,192,1274
620 DATA 016,000,216,044,000
,094,140,000,004,091,605
630 DATA 000,015,000,000,138
,128,000,000,000,000,281
640 END

```

Run that, then press FCTN 4. Enter LIST. Enter NEW. To stop it, enter BYE.

This is an oldie, but well worth repeating. You can use it to turn your cassette recorder on and off, to add speech or music from tape to a running program. With the proper hardware, you could write a program to control almost anything from the cassette port. If it doesn't work, reverse the polarity of the remote. Ed Hall wrote this -

```

100 CALL INIT
110 CALL LOAD(16368,79,70,70
,32,32,32,36,252)
120 CALL LOAD(16376,79,78,32
,32,32,32,36,244)
130 CALL LOAD(8194,37,4,63,2
40)
140 CALL LOAD(9460,2,12,0,45
,29,0,4,91,2,12,0,45,30,0,4
,91,203,78)
150 PRINT "PRESS": " P Play":
"S Stop"
160 CALL KEY(3,A,B)
170 IF B<1 THEN 160
180 ON POS("PS",CHR$(A),1)+1
GOTO 160,190,200)
190 CALL LINK("ON"):: GOTO 1
60
200 CALL LINK("OFF"):: GOTO
160

```

And that is just about -

MEMORY FULL!

Jim Peterson

A number of years ago, I wrote the opening article for a book called the ORPHAN SURVIVAL HANDBOOK (a follow-up to Ron Albright's book THE ORPHAN CHRONICLES). In that article, I expressed optimism that our orphan TI/994A community could continue to survive and even thrive after being "abandoned" by Texas Instruments, and I believe the events of recent years have shown that my optimism was not misplaced.

Now that it is 1990, it may be appropriate for us to do some new reflecting on our situation. True, we may have more quality hardware and quality software available than at any previous time in history, but there are some signs that our continued survival will not be automatic (for example, some of our user groups have reported a decline in membership). It is my opinion that we CAN still do it, but that we need as a community to work together to that end in a number of specific ways.

First, I still believe in the survival tactics I set forth in the form of a mnemonic in that article I wrote some years ago: we CAN do it if we take full advantage of (1) Cottageing, (2) Archiving and (3) Networking.

By "Cottageing", I mean that we need to keep in mind that we don't need the support of big companies like Texas Instruments to survive. A huge factory isn't needed for what we require; a "cottage" operation may in fact produce superior results. DPA (Gary Bowser), LGMA (Al Beard), Asgard (Chris Bobbitt), and many other small-scale operations are continuing to offer us new exciting hardware and software. What we need to do as an orphan community is to support the "cottage" industries by purchasing those products. (Needless to say, any user group that tolerates software piracy is following a policy that is not only morally wrong but also in our circumstances clearly self-destructive.

By "Archiving," I mean something more than the use of an ARCHIVER program to combine disk files! I have in mind the gathering and collecting of useful information and software (again avoiding piracy, however). One good example of the kind of thing I have in view is Jim Peterson's 400-disk TI-PD library that he has been making available by mail to all interested TIers at the minimal charge of \$1.50 a disk. I would like to see other people involved in similar efforts. (For example, why not have more collections of newsletter articles similar to the original ORPHAN SURVIVAL HANDBOOK or to the collection of hardware articles put together by the Chicago User Group?)

By "Networking," I mean nothing more complicated than an organized effort to work together and share. Telecommunication networks - like CompuServe, GENIE, and Delphi - are natural places where this can take place, but local TI BBSs can play their part as well. User Groups are also important here, and I would like to see more and more working together of user groups (e.g., in sharing software libraries?).

In a way, magazines that support the TI (MICROpendium, REFLECTIONS, VULCAN'S COMPUTER MONTHLY) are themselves important aids to our "Networking," so I hope that readers of this column will subscribe to as many such publications as they can.

Yes, the first thing to remember is that we CAN do it, if we continue to implement the principles of Cottageing, Archiving, and Networking (and do so in increasingly full measure).

Second, to be kept in view (particularly by user groups) is that we need to replenish those members that any kind of group loses by attrition. This phenomenon is not unique to our situation.

My son is a "paper boy" and he may from time to time lose customers, for example, as a result of their moving away. What he needs to remember is that for every family that moves away, another moves in. Likewise, for a family that may decide to discontinue

getting the paper another may decide that they want to start delivery. A newspaper carrier who does nothing to go after new customers will usually find that he has fewer and fewer customers on his route, but the new customers are there if you go after them! (He's doing very well on his route, by the way.)

Likewise, new members for our user groups do not usually come along without some definite effort on our part, but they are out there if we look for them. Here's an important fact that may provide some encouragement to you: for every person who sells his TI, there is another person who buys one. (Think about it: it's true by definition!). We need to go out there and find some new members or (equally useful) let them find us by making sure that we are visible (e.g., by demo tables at shopping malls, ads in local papers, notices posted on supermarket bulletin boards, user group "business cards" placed in computer stores etc.)

Third (and this also applies especially to user groups, but it has implications as well for network SIG's, BBSs, etc.), we need to make sure that we're remembering to support the novices, tyros, beginners, whatever you want to call them, and to support the people who may not be new TIers but who may have fairly minimal configurations (maybe even cassette storage systems!). Many of us older-TIers have upgraded to disk controllers, disk drives, etc., and have added ramdisks, hard drives, whatever to create what may be fairly sophisticated systems; quite a few have moved to Myrac 9640 Geneve; in both situations, it may be easy for us to forget those who have not yet "progressed" to the same state of development.

Novices do progress to more sophistication (all of us were novices at one point, remember?), and even if that were not true, they are important human beings in themselves. Thus we need to make sure that we're doing two things: (1) helping them where they are, and (2) helping them progress when they're ready. As far as I know, everyone who presently owns a Geneve

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started out on a TI, which means that Geneve owners who help TI-99/4A owners may be helping future Geneve owners (and thus the Geneve community itself to survive). Similarly, many of us who now have expanded disk systems started out with cassette storage (including myself).

In my mind, the important thing, anyway, is having fun with our computers, and I've had that from the beginning days. Here's a challenge to user groups: what is your user group doing at the present time to support cassette users? My own conviction is that such support is important to the survival of the TI community in general, and that is why I am glad to see individuals like Jack Sughrue and user groups like MANNERS of the Washington D C area giving some attention to making available software on cassette for cassette users. I hope that their example will encourage others in the same direction.

Fourth, I know few things more encouraging or more beneficial than the "Fair Phenomenon." I hope that such events will continue to be supported by user groups, vendors, attendees, because I believe that as much as any other factor, such occasions have kept our machine alive and well. I know some Faires have reported recent decline in attendance, but I don't think that such a decline is necessary; the Lima MUG (Multi-User Group) convention disproves it, in fact, for here we have a small user group that has shown its ability to get speakers, vendors, and visitors motivated to attend with enthusiasm. If you can attend such an event (check out the schedule in <MICROpendium>), I urge you to do so.

Fifth, we need to be creative in discovering new ways to survive. Let me use the Lima Group as an example. They have more than anyone I know developed the "computer/VCR connection," and to very good effect. It's good to see user groups developing

libraries -disk, cassette, newsletter - for the benefit of their numbers, in and out-of-area, but TI-oriented videotapes (at a time when according to one survey, as much as 90% of American homes may contain VCR's) is a new idea whose time has certainly come. I expect that other good ideas will come as we are open to them. Do some brainstorming, and share the results with others!

Yes, I continue to be optimistic about the survival of our TI orphan community, if we put into practice the "five points" of survival strategy I have mentioned here. If we have "the will to survive" and back it up with our actions and activities, I believe that we will indeed survive and thrive!

(This article is from Asgard's REFLECTIONS-VOL2, NO 4. This was copied from CPU6 Newsletter April 1992)

END

## ABOUT THE DOM - - -

### ABOUT THE APRIL '92 D.O.M.:

As ever, you will need to use Archiver 3.03 or 3.036 to unpack each of the five offerings for this month. Have a supply of formatted disks ready and unpack your treasures! By the way, the words "formatted" and "initialized" are used interchangeably.

Use Funnelweb or TI-Writer to print the documentation, which the label indicates is to be found on side B.

The GIFVIENR^ sounds exciting. Haven't tried it yet, but I use Barry Boone's GIF-MANIA often, and will enjoy comparing the two. I wonder, does it permit changing GIF's to TI-Artist format, as does Boone's program? Will try to comment on this in a later column. GIF's are pictures. The acronym stands for Graphics Interchange Format. It is a format that can be accessed by many different computer types including

IBM, Macintosh, Amiga, T.I., etc. Try the sample files if you have never seen GIF pictures. GIFS's can be downloaded from many BBSes and are often obtainable from your local user group.

Even if you don't have school-age children, prepare to enjoy Don Shorrock's MISC/ED05 set. Unpack it to its own disk, which must be named MISCEUC05. His programs are extremely well crafted from both an educational and an entertainment viewpoint.

The next set, MORE70'S, is unfortunately unworkable. Look for this excellent collection of music from the 1970's on a future D.O.M. The corrected version is now available on the SPIRIT OF '99/CLEARINGHOUSE BBS (614-263-3412) for those who can't wait to get at it. Since I mentioned BBSes, Bud Wright's TIABS is now a local call for Columbus residents and is still accessible via PC-Pursuit or Starlink, as well as

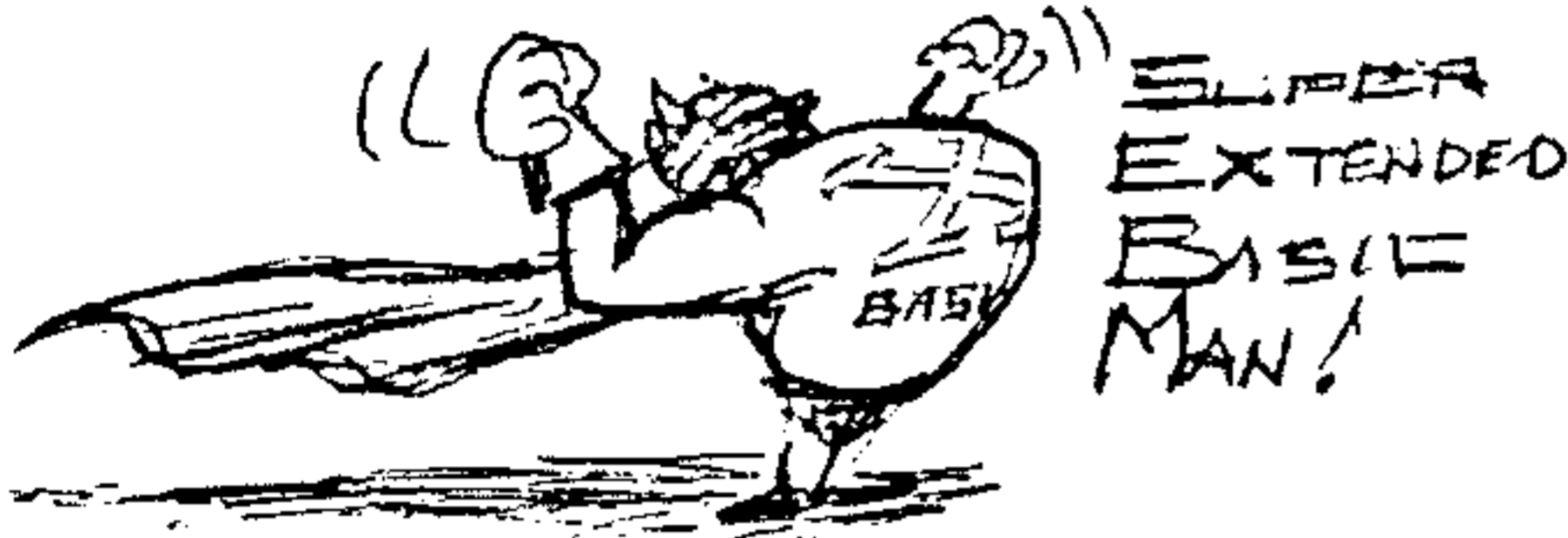
direct long-distance calling for those outside the Columbus dialing area. The new number is (614) 851-0708. A LATIN set and a utility set from Jim Peterson fill side B (00 free sectors!). Haven't tried the former yet; the latter includes among other excellent programs the programmable calculator that Jim demonstrated at the Lima fair this month. If you want to see the demo, write to Charles Good at Lima for ordering information. In any case, you are going to be WOWed by the calculator, as well as by the other utilities Jim has included.

That's it for this month. Haven't heard from anyone yet regarding problems or comments about the D.O.M. Send them in and I'll answer them publicly without identifying the sender, so that all may benefit. Send to C.O.N.N.I., 181 Heischman Ave. Worthington OH 43085.

END



Howdy doo! This will be the last formal lesson on memory mapping. Next month we will use all that we have learned about the insides of our computer and examine the 9900 CPU! If you have any questions, or want to enlighten me on any points, please write. If you include a self addressed, stamped envelope I will try to write back in a prompt manner. Write to:  
BOB WEBB  
P.O. BOX 3023 ARCADIA, CA. 91007



### LESSON NUMBER THREE

How can we look at the data stored in the Mail Boxes and on the signs? We could write an assembly program that does that. But we do not know how to write one. So, we must use a language that we know.

Extended Basic has two commands, CALL PEEK and CALL LOAD that can access the data along the Old Country Road. CALL PEEK allows us to look at all of the data from address >0000 to >FFFF. These are the hexadecimal numbers that represent address 0 to address 65,535 in decimal form. Remember that the greater than symbol ">" means that the number is in HEX format. CALL LOAD allows us to write data to those Mail Boxes along the old country road. We can only access the data on the private road on GROM RANCH if we communicate with TEX through his four Mail Boxes. If you want to experiment with CALL PEEK or CALL LOAD remember that you can do no harm to the chips inside your console.

You can do real damage to disks that are left in a drive if you accidentally write to them.

You may want to remove any from the drives when you begin experimenting. After the disks are removed you can play around inside your computer all day.

The easiest and safest thing to do first is to read the data that is there. To do this you use the CALL PEEK command.

The most important thing to remember is that to access any address larger than 32,767 you must subtract 65,536 from it.

Lets say that I want to read the data stored in ROM at address ZERO, I would write this line into my Extended Basic Program:

```
100 CALL PEEK(0000,X)  
110 PRINT X
```

Lest say that I want to place a value of 60 in address 41,215. This address is larger than 32,767 so we do this:

$$41215 - 65536 = -24321$$

Our program would then look like this:

```
100 CALL LDAD(-24321,60).
```

Armed with this information and our Memory Map we can find out what area of memory we are changing when we use all of those

useful call loads.



This is a good time to talk about the GROM port. The GROM port also has a direct link to our country road. From Address >6000 to Address >7FFF is an area set aside for assembly language programs. Modules from Companies other than Texas Instruments use this area for their programs. Some modules have no GROM chips in them. I wrote about that last month. This is the area set aside for those programs. The older consoles will run a program in a module that is strictly assembly. The version 2.2 Consoles will only run a program in this area if the module also has a GROM chip as well as the program ROM chip. When no module is in the GROM port this area is all zero's. No chip is there, so you can not read or write to anything in this space.

Most of the time a module has only ROM. However, the MINIMEMORY module has RAM and ROM. With this module in the port you can write assembly language programs that reside between address >7000 and >7FFF. This 7k byte RAM area is called MEDIUM MEMORY. Why is that you asked? Well, because there are other RAM area's when you have your 32k card installed. These 2 RAM area's are called HIGH MEMORY and LOW MEMORY. Most Assembly programs are written for the HIGH MEMORY area and the EDITOR ASSEMBLER MODULE. The HIGH MEMORY area is between address's >A000 and >FFFF. You can write assembly programs for the MINIMEMORY module that reside in this HIGH MEMORY area. The LOW MEMORY RAM area is used for programs and something called the REF\DEF TABLE. This is where an assembly language program is named and an entry point for the program is stored.

All assembly programs must have an Entry Point stored in a directory so that the CPU can find it and then start executing the first commands. The MINIMEMORY module has its own REF\DEF TABLE located at the bottom of the RAM area. With the Line By Line Editor installed you will find 3 entries in the last few bytes of RAM. You will find the ASCII equivalent of the words LINES, OLD and NEW.

Between these program Entry Point names will be a WORD of data. This WORD is the Entry Point Address to the program listed in the TABLE.

When you write an assembly language program for the MINIMEMORY module you must install the Name and Entry Point to your program.



The MINIMEMORY manual is not clear on this point and I hope this will help you.

Speaking of help, 2 books have helped me the most. The first is called:

Fundamentals of TI-99/4A Assembly Language

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by, M.S. Morley and published by TAB books inc.

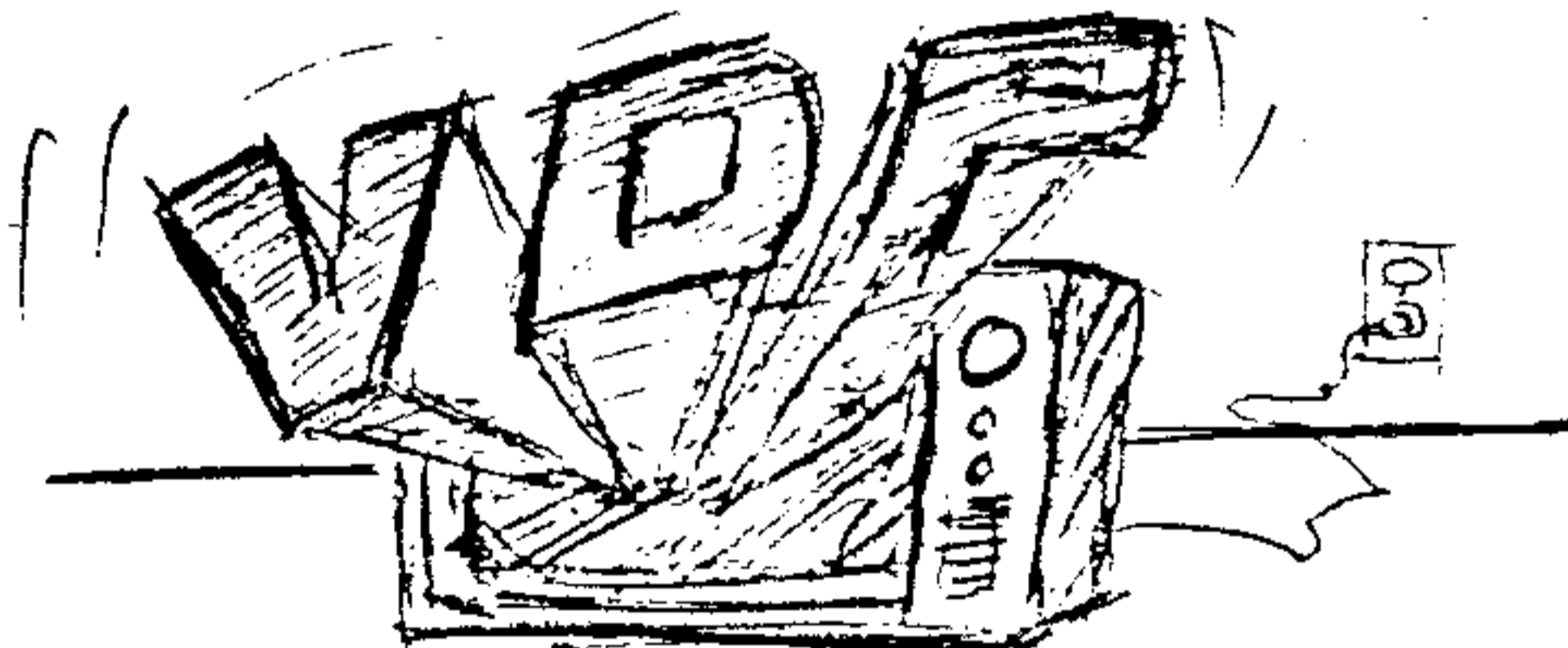
The second is called:

Introduction to Assembly Language for The TI Home Computer by, Ralph Molesworth ;published by Steve Davis publishing. These two books helped me a great deal. They both offer a good set of lessons but they both lack a little something. Together they form a good beginning.

The EDITOR ASSEMBLER manual is mandatory if you want to get serious about the subject. I actually like reading the manual now that I understand what everything is.

With the small amount that you have learned here you too can probably enjoy it as well.

The sound chip write address is >8400. The Memory Map on the other page shows that the sound chip write address goes from address >8400 to address >87FF. Only >8400 is actually used. The rest of the area is not used. It has not been Decoded. Texas Instruments, for reasons only it knows, wasted the rest of this space. Other areas in memory are the same way. The Speech Module Read Write addresses are also not decoded fully. 768 BYTES are wasted between address >8000 to >82FF. This area contains 3 identical copies of the SCRATCH PAD RAM that is used by the CPU as its personal workspace. Nothing can be done with it. Programs can not be written here. Pages 404 through 406 in the Editor Assembler Manual describes the Scratch Pad area.



The last and most interesting part of our Computers, as far as I am concerned, is the area along the old country road called the VIDE DISPLAY PROCESSOR. It is very similar to the GROM RANCH. But we write to this area all of the time. The VDP RAM area is located along the road and is accessed just like the GROM area. There are 4 Mail Boxes identical to the GROM RANCHES.

CPU ADDRESS WHERE MAIL BOX IS LOCATED.	VDP RAM FUNCTIONS ASSOCIATED WITH THE MAIL BOX AT THAT LOCATION.
>8C02	VDP READ/WRITE ADDRESS
>8C00	VDP WRITE DATA ADDRESS
>8B02	VDP STATUS (MSB)
>8B00	VDP READ DATA ADDRESS

The VDP RAM area is like another road going off at a 90 degree angle from our country road. Once again we have to communicate with the RAM area through these Mail Boxes. The STATUS Mail Box

is new to us. But its name gives us a clue to its function. The VDP is actually another CPU. Its use is dedicated to creating and presenting images to the Television or Monitor Screen. The VDP RAM road starts at address >0000 and goes to address >3FFF. The addresses from >0000 to 02FF is the actual image on the screen. If you change a byte in here you will automatically change a spot on the screen. The rest of the area is for your character shapes, Basic program, color of the characters, and other CPU and disk drive housekeeping. Study the Memory Map and next month we will look at the CPU BRAIN!

### MEMORY MAP

Address	Description	PE BOX. & PORT
>0000 >1FFF	CONSOLE ROM	
>2000 >3FFF	LOW MEMORY RAM 1/2 OF 32K CARD 8K BYTES	
>4000 >5FFF	PERIPHERAL EXPANSION ROM AREA.	
>6000 >7FFF	MODULE PORT ROM/RAM AREA	
>8000 >82FF >8300 >83FF	3 COPIES OF SCRATCH PAD RAM (wasted space) SCRATCH PAD RAM AREA SCRATCH PAD RAM AREA	
>8400 >87FF	SOUND CHIP WRITE ADDRESS	
>8B00 >8B02 >8BFF >8C00 >8C02 >8FFF	VDP READ DATA ADDRESS VDP STATUS (MSB) VDP WRITE DATA ADDRESS VDP READ/WRITE ADDRESS	
>9000 >93FF >9400 >97FF	SPEECH MODULE READ ADDRESS SPEECH MODULE WRITE ADDRESS	
>9800 >9802 >9BFF >9C00 >9C02 >9FFF	GROM/GRAM READ DATA ADDRESS GROM/GRAM READ ADDRESS ADDRESS GROM/GRAM WRITE DATA ADDRESS GROM/GRAM WRITE ADDRESS ADDRESS	
>A000 >FFFF	HIGH MEMORY RAM 1/2 OF 32K CARD 24K BYTES	

END



Speech (Part 2)

TURBO SPEECH

(or How to Speed up the spoken word)

by Stephen Shaw

(Excerpted from the TI99/4A Exchange TIMES of Great Britain, issue #6.84 via HOCUS 99 newsletter Dec 1991)

Now on to something really juicy. SPEECH. Old hat huh? Well, this information will give you speech in TI Basic with the Mini Memory, or if you have XBASIC with 32K RAM, will give you speech just a bit faster than using CALL SAY which slows programs down to no end.

For this information I am indebted to Neil Lawson who has been delving. Speech requires either:

XBASIC with 32K memory or Mini-Memory and the Speech Synthesizer.

Program framework (For timing purposes):

```
20 CALL INIT
30 S=27648
100 FOR I=1 TO 1000 :: NEXT I
110 PRINT "START....."
120 FOR X=1 TO 20
130 REM TEST ROUTINE HERE
140 FOR T=1 TO 30
150 PRINT ">";
160 NEXT T
170 NEXT X
180 PRINT "END....."
```

This standard routine sets up a framework to test our new routine in, and gives a basic time reference.

(NB: Times quoted are for my system: yours may be different, but the ratios should be similar.)

Running the above program, with the loops in line 140 running 30 times as shown, takes 18.7 seconds from "START" to "END". Change line 140 to loop just 20 times and the timing is 12.7 seconds.

Now we can insert our two possibilities:

The first is available only in XBASIC: 130 CALL SAY("THAT IS INCORRECT")

Run this program again: If line 140 is looped 20 times, the time is 44 seconds. If line 140 is looped 30 times, the time is 50 seconds.

The time for the speech is constant, it adds about 21 seconds to the program.

Now for something different, (also works with Mini-Memory): 130 CALL LOAD(S,70,"",S,65",S,72,"",S,70,"",S,64,"S,80)

If, you now run the program, it says the same thing as many times, but look at the timing:

If line 140 loops 20 times: 26.3 seconds.

If line 140 loops 30 times: 26.5 seconds.

We know that looping line 140 an extra 10 times adds 6 seconds...so where have those 6 seconds gone?

The CALL SAY routine holds everything up until it has finished speaking. But using the CALL LOAD equivalent, while the computer is speaking, it gets on with the next chore too. The "dead time" is used and soaks up these 6 seconds.

Thus using the CALL LOAD equivalent, the computer speaks faster, and also permits your program to run more quickly if there is work for it to do between speech outputs.

That's the clever demonstration! (Impressed?) Now for the theory.

References: Editor/Assembler Manual, pages 351, 355, 422-427. Reference in para 1, page 355, should be the Section 22.1.4 not as printed in the manual.

Address -27648 is the SPEECH WRITE address. We keep feeding it with bytes, and in due course the computer speaks. The bytes to feed to that address are

found out as follows:

First, decide what you want to say from the standard vocabulary. Then look in the table (pp. 422-427) for the address of that word or phrase. "THAT IS CORRECT" is given as 6816. That is Hexadecimal not a Decimal number. The four numbers are reversed, and become 6168.

Now we offset them by Hex 40 and feed them in. As we are dealing with decimals with our CALL LOAD, that means we add decimal 64 to each digit in turn:

(6+64) (1+64) (6+64)
70 65 72 70

If the numbers were Hex A-F these have a decimal value as follows:

A=10 B=11 C=12 D=13 E=14 F=15

Now we must indicate end of word by loading a zero, again offset, thus 0+64=64. Finally, instruct the computer to speak by loading Hex 50, Decimal 80.

Thus we have loaded, in order:

Check back to the listing. Note the way CALL LOAD has been used: a simple command to load the same address with several different values.

To assist your experimentation, here are some Hex addresses from the manual. Remember to [reverse] them, translate to decimal and offset.

TEXAS INSTRUMENTS...6696 THAT IS RIGHT....68FE
WHAT WAS THAT.....77E9 READY TO START....56B3
YOU WIN.....70DB
AGAIN....17A5..
ANSWER.....1913 CHECK...10B2
CHOICE.....1DA2 COMMAND.1F1A
ELSE.....28B6 GOODBYE.314B
HELP.....3571 HURRY...3757

END

LIMA FAIR  
by Dick Beery

The Texas Instruments computer Multi User Group Conference, held on Saturday May 16, 1992, was, as always, a warm and wonderful experience. One friend felt that the Lima fair is one where "you meet old friends and make new ones". Some vendors apparently did not make the expected quantity of sales, while others seemed to do moderately well.

It appeared that more vendor and user-group space was available this year than was the case formerly. The large lecture room immediately adjacent to the selling area was turned into booth area for user groups. This should have provided a bonus in isolating the two classrooms used for the lectures from the general noise and hubbub. Those purchasing tapes from this year's fair will probably find the distracting background noises that plagued many of last year's tapes missing.

Our contingent from C.O.N.N.I., while not as large as in some years, was enthusiastic and seemed to have a good time. Everett Wade and I went up on Friday and took advantage of the Lima club's generous offer to let other users' groups copy as many as desired of Lima's acquisitions since the last fair. It was the first time that either of us had seen the fair being set up, and it was very interesting.

I did not get to hear as many of the speakers as in past years, but enjoyed those I did hear. Mike Maksimik explained the FOUR versions that will appear as version 3.0 of his popular MidiMaster99. Version 3.0B, written in assembly, will be for the 4A with expanded system (32K, drives, RS232, etc.) He recommends the use of double-sided drives. This will probably be the last version for the 24K system.

Version 3.0E, also written in Assembly, is the 4A Memex (Rambo, etc.) version. It needs 128K plus 32K. Can load Cakewalk modules all into memory at once. Has more storage space and greater efficiency. (If you have a Horizon Raddisk, you can add Rambo to it!). Version 3.0EX, in Assembly, is the "graphic model". 128K + 32K. Mouse optional. Should have TIM, the Mechatronics card or the Digi card.

Provides screen graphics such as programs for some of the larger computers do. Version 3.0B is the Geneve version. You must have the Geneve system and a mouse (Geneve mouse or Horizon mouse only). Written in "c". 640K required. Must have at least 128K of free memory. Can use Rambo or a 4A Memex. A hard drive or 3.5 in. drive with 1.44K recommended. Each of these versions may be selected as either "master" or "slave", i.e., can run the music itself or accept same from another system. The new SNF-2 files are NOT compatible with the old SNF files, so some music currently available will have to be re-entered. The advantages of SNF-2 appear to be many: patch libraries that can store custom designed voices; looping, goto's, branching and subroutines. Those who purchased version 2.23 MUST SEND A POSTCARD TO MIKE TO REGISTER the number on the disk, and of course, your name and address. Your free version of 3.0 will not be forthcoming without your having done this.

I also attended with pleasure the talk given by Deloras Werths, who had been augmenting the MIDI music at the Harrison stand with expertly-performed solos on a variety of recorders. The group was small and informal, and discussed many topics, such as getting the right sound for the instrument depicted, dealing with the difficulties of creating a guitar-strum effect, etc. It was surprising to learn that at least one of the many music packages offered by Harrison Software took six months to complete, with others only slightly less. It is this dedication to perfection that makes the music Deloras produces such wonderful listening experiences.

Ken Marshall related a buyout in progress of the Myarc OS for the 9640. Beery Miller described this in his presentation, saying that it was three fourths complete, fundwise. I think the hope is that the people in Miller's group will expand and develop the 9640. Ken also reports a new program for the 9640 that offers a way to back up the hard disk for the Geneve. It reportedly compresses the data for backup to floppy. At another session Ken heard of a minor upgrade to C-Shell99. This uses ikons, in the manner of the Macintosh. Reportedly a new disk-based speech facility will not be released soon

because of patent or copyright problems. It appears that Texas Instruments is closely guarding those rights as it reportedly is planning to use the speech capabilities in other projects now under way or projected. While at the fair, Ken bought a Horizon mouse and expects daily to get a package of disks and documentation through the mail. He says it will contain an XB section permitting programmers not skilled in using Assembly to include mouse options in their XB programs. He also bought a Digi-Port which, unlike the F/X routines now available which sometimes produce distorted sound, clearly reproduces any digitized sound files from other computers. VOC's are entered directly, which contributes to clarity. Can be used with either the 4A or Geneve.

Irwin Hott attended Bud Mills' session as well as the officers' meeting. In the former, a new SCSI interface for the 4A was announced. If it succeeds, it could reportedly allow the use of any SCSI-compatible hard or floppy drive. This could offer exciting possibilities for our "orphan".

Ken, Everett and I all enjoyed Ken Gladyszewski's presentation on digital to analog conversion on the T.I. His heat-sensor-controlled demo of displaying fluctuating room temperatures and his walking-talking robot were especially effective. He had prepared large, easily-visible graphics which complemented the demonstrations and which he thoughtfully had the cameramen zoom in to at the end, so that viewers of the video should have an exceptionally-clear view of these graphics.

I regret not having been able to attend more of the many worthwhile sessions, including those offered by Ken Gilliland, Charlie Good, Joe Ross, Bruce Harrison, Bill Nelson, Eunice Spooner, Mike Sealy and Mickey Schmitt, Barry Traver and our locals Lee Bendick and Jim Peterson, although I have already seen similar demonstrations of the latter two at C.O.N.N.I. meetings. I look forward to spending time with the videos when they arrive. Hope you have access to them also.



The Following information comes from TOPICS - LA 99ers

Files that can be loaded directly into the computer and RUN:

PROGRAMS  
DIS/VAR 80  
DIS/VAR 163  
DIS/FIX 80  
DIS/FIX 128  
INT/FIX 128  
INT/VAR 254

Let's take each file one at a time.

#### 1. PROGRAMS (PR)

There are several options for running these most common used files.

A. TI EXTENDED BASIC will load and run automatically when you select XB (providing there is a load program included) and the disk is in DRIVE #1, or can be run by typing OLD DSKx.LOAD then RUN or typing RUN "DSKx.FILENAME". If program loads correctly but you get a BAD VALUE error when it runs you need to load the program into TI BASIC (no CHARS above 143 is allowed in EXTENDED BASIC). If the program file is more than 45 sectors and won't load you have to open up memory in the computer. You do this by typing the following:

```
CALL FILES(1) (enter)
NEW (enter)
OLD DSK1.FILENAME (enter)
RUN (enter)
```

B. TI BASIC programs need to be loaded by typing OLD DSKn.FILENAME and then RUN. Most TI BASIC programs will load and run in EXTENDED BASIC but not visa versa. If you get a FOR-NEXT ERROR in line xxxx and when you edit the line and get a lot of nonsense then the program is written in EXTENDED BASIC. The same is true if the sectors are greater than 45. Then more space is needed in the computer. See CALL FILES above. If you still get a memory full and tried XB then most likely it can only be run on tape (OLD CS1) WITHOUT THE "P" box turned on.

C. EDITOR/ASSEMBLER. If a program file will not load and run in BASIC or EXTENDED BASIC and gives an I/O ERROR 50 it is likely to be an assembly language program and needs the EDITOR/ASSEMBLER module to run. Such programs as Funlwriter or TI-WRITER can also be used. To run, load the EDITOR/ASSEMBLER. Press #2 for EDITOR/ASSEMBLER then #5 for RUN PROGRAM FILE. Type DSKn. FILENAME (enter). The program should load and run. For Programs listed in consecutive order such as MASS, MAST, or UTIL1, UTIL2, UTIL3, try E/A OPTION #5, enter the first file name of the sequence then (enter). The rest will automatically run. Program files of 33 sectors are most likely an Assembly Language Program.

D. OTHER PROGRAM FILES. Some specialized program files can only be loaded from special modules such as ADVENTURE (54

sectors), PERSONAL RECORD KEEPING, STATISTIC and TUNNEL OF DOOM (52 sectors).

2. DIS/VAR 80 FILES (DV 80). These are text or documentation files. Whenever you have these files (DOCS, READ-ME, ETC) on the disk it is a good idea to print them out on a printer by using TI-Writer. The instruction on how to use the program etc are in these files. These files can be read from the screen, edited, and printed. Funlwriter, E/A option #1, (TD EDIT), DM 1000 among others can read these files.

3. DIS/VAR 163 FILES (DV 163). This type of file is an EXTENDED BASIC subroutine in MERG format. They can be merged into a program already in the computer memory. Type MERGE DSKn. FILENAME (enter). You must do this even if no program is in the computer memory. Do not use OLD WITH FILES SUCH AS THESE. To save a file in MERGE format type SAVE DSKn.FILENAME, MERGE in EXTENDED BASIC only. BASIC cannot be used.

4. DIS/FIX 80 FILES (D/F 80). These files are ASSEMBLY LANGUAGE programs and can be loaded and run in several ways.

A. You will need the EDITOR ASSEMBLY MODULE or any similar program such as FUNLWRITER. Use LOAD AND RUN OPTION #3. Enter the disk drive # and the filename (DSKn.FILENAME), (enter). When it asks for a second filename just press enter again with no entry. If the program does not run from that point, it will ask for a program name. If you do not know the program name try some of these: START, BEGIN, SAME, LOAD, RUN FIRST, ETC. If you still cannot find the program name search the last few sectors of the file with a sector editor, such as DISKO, and try a name that seems likely or read the documentation. Sometimes the start up name is given.

B. If there are consecutive DIS/FIX 80 files on the disk such as FILE, FILE1, FILE2, FILE3, FILE4, ETC. Load them into E/A OPTION #3. Load them in sequence. When all are loaded press ENTER to get them running.

#### 5. DIS/FIX 128 (D/F 128).

INT/FIX 128 (I/F 128). These are usually ARCHIVED files. They must be DE/ARCHIVED before you can identify the kind of files they contain. Use a new disk for every DIS/FIX 128 file you intend to UNPACK. This will make sure there are no two files on the disk with the same name.

6. INT/VAR 254 FILES (I/V 254). These files usually have more than 45 sectors and are EXTENDED BASIC programs requiring MEMORY EXPANSION. They do not require CALL FILES(1) to load and run. TI BASIC cannot be used. The same commands are used such as RUN or LOAD DSKn.FILENAME. The programs are usually so long that they cannot be saved to TAPE (SAVE CS1).

7. DATA FILES. Files such as INT/FIX 108, INT/VAR 128 and INT/VAR 64, are usually DATA files that are used by a program on the disk. They will not RUN and should be left on the disk with the other programs.

END

BUD MILLS SERVICES

From: Woody To: ALL

Bud Mills called me today about an order I made and during the chat he surprised me by saying he was planning on marketing a complete Motherboard for the 99/4A to include 80 Column and other capabilities by using newer chips. He is also coming out with a super mouse. He says he may have to stick with the TI operating system if he can't cut a deal with TI to use a new one. If not, all you'd have to do is pull the 4 RDM chips and plug them in the new Motherboard. He also said they (Bud and Don D'Neil) are weighing the pros and cons of incorporating the accelerator in the new board. Said he might pull his ad off OPA's TIM. He surprised me with some other plans but I'll get to them later.

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BUD MILLS SERVICES

From: Don D'Neil To: Woody (NR)

Woody, and All,

Since Bud leaked the info, I'll clarify the tentative plans. The plans are for a 9995 based console Motherboard replacement, with a 9938 w/192k, composite video output, up to 1 MB on board RAM (as much as you can fit in your P-Box, 25 MB is tops with 1 P-Box), regular keyboard interface, built in mouse port, new single cassette port using 1/8 inch jacks, and two internal expansion slots, one of which can hold a cage for plugging your P-Box "Hose" in the rear of the console sliding it inside up to the leg of the box. The Motherboard will use the standard TI Grom's and sound chip which you would pull from your console you are upgrading (we cannot duplicate TI's copyrighted code, but since you will already own a copy, you can put it in the new Motherboard) and it will have the standard cartridge port. The internal RAM will be 4A Memex style which offers RAMBO compatibility as well as all the new features on a 4A Memex. There are no current plans on what to put in the second internal slot, but some ideas are a combo disk controller/RS232 card, video co-processor card for the v9990 or other VDP, IO card (digital in/out, A to D conversion, etc...) But I have no

plans currently for that slot. A Disk/RS232 would be nice and would make the unit stand alone with no need for the P-Box. PLEASE REMEMBER, these are tentative plans, and not a formal announcement. ABSOLUTELY no work has been done on this product yet. However, progress is steadily moving forward on the 4A Memex, and unfortunately because of a dis-continuation of a TI chip on that card, more work is needed to be done to replace that portion of the card. I still see a March/April ship date though. The Accelerator is STILL ON HOLD, I am trying to finish the 4A Memex first, mainly because there are software developers out there waiting to get their hands on one, so it is important at this time. Digi-port should be shipping in a few weeks. The software is nearly complete and a board design is being done. Once those are complete, shipping will commence. New for the Digi-port is a MDOS player by Beery Miller, this will be included in the standard package. If you have any questions, feel free to ask. DON.

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This article was taken from the Tacoma Informer April 1992)

END

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TI WORLD NEWS MAY 1992

Compiled by Jim Peterson

Barry Traver informs me that Vulcan's Computer Monthly is discontinuing its Classic Computer section, and his column will no longer appear. MICROpendium is now the only national publication supporting the TI - and if we do not support MICROpendium, we will have nothing!

FEST WEST "NORTH" 93 will be sponsored by the Ogden TI User Group and the Salt Lake and Valley Group, and is scheduled for February 13 1993 9 AM to 5 PM and February 14 9 AM to 3 PM, at the Howard Johnson Motel, 122 West Smith Temple, Salt Lake City Utah 84181.

The Hoosier US newsletter contains an ad for a new TI vendor. Del & Darla Wright, 185 N. Post Rd, Indianapolis IN

46219, (317) 895-1765 are offering various hardware at attractive prices, with free shipping in the U.S.

GEN-TRI Version 1.02 for the Geneve is now available. It contains a spellchecker with a dictionary of thirty thousand words which can be expanded to three times that size. The program is available for \$49.95 from Jerry Coffey, 9119 Tetterton Ave., Vienna VA 22182. To upgrade from version 1.0, send your original disk and \$1 for postage.

Beery Miller is soliciting support to buy the rights to the Geneve's uncompleted MDOS source code from Lou Phillips and Paul Charlton, in order to have it completed by another programmer. If you want to help, write to Beery Miller/9640 News, P.O. Box 752465, Memphis TN 38175-2465.

Bill Nelson, 11682 Puryear Lane, Garden Grove CA 82640, (714) 750-6425 is

offering the Panda Expansion Box with rom for 2 half-height floppy drives, 2 half-height 3.5" drives and a hidden 3.5" hard disk drive, for \$238 with your old P-box or \$278 without it.

H.T. Orr Computer Supplies, 249 Juanita Way, Placentia CA 92670 (714) 528-9822 has a wide variety of printer ribbons available, including generic ribbons for the Star NX1020 (\$8 each) which have been unobtainable. Their shipping and handling charge of \$2 per order is extremely reasonable.

Bud Wright's TIABS bulletin board has a new number, (614) 851-0708. This is one of the fastest BBS's you will ever call, operating mostly in assembly, from hard drives, at 2400 baud B-N-I, and has 80 meg of files for the TI-99/4A and Geneve, plus many other features. Give it a call!

END



# DEFRAGMENTER

REVIEW BY

Deanna Sheridan  
Northcoast 99ers

Defragmenter is an assembly language program to defragment all the files on a disk and arrange them physically in alphabetical order. This allows the disk controller to find and load a file or program faster. If the diskette cover is removed, a diskette looks very similar to an 45 rpm record. When the first program is placed on this diskette, the data is written in contiguous sectors. As additions are made to files (especially word processing or data files), the next writing of data will have to skip over other files that have been written to the disk to find free sectors to place the data. Imagine how your record player would sound, if the needle had to jump over grooves to find the next verse of a song. This, in effect, is what happens to data on a diskette.

As the computer has to search through more data and skip around to retrieve or save it, it causes the computer to loose efficiency and cause additional wear and tear on the drive heads.

Prior to Defragmenter, the only way to clean up a disk would be to file copy, one by one to a new diskette. Anytime a disk catalog is called up through Punnelweb, files with an "\*" are fragmented. This is as close as you will get of a "picture" of how badly files are scattered on the diskette.

Using Defragmenter is very easy, and rather speedy. It should NOT be used on double-sided QUAD density diskettes, or on a hard drive. It will handle everything from 1440 sectors on down. The program loads from E/A3 and asks which drive you wish to defragment. It will then give a catalog of the disk which shows:

	Free	578	Used	142
Filename	Size	Type/No	7	P
1 ARTICLE	35	DIS/VAR	80	2
2 ARTICLE_1	29	DIS/VAR	80	5

3 LASER	1	DIS/FIX	80	2
4 LASER2	15	DIS/FIX	128	4
5 LASER_1	19	DIS/VAR	80	5
6 NEWS	11	DIS/VAR	80	6
7 SESSION	30	DIS/VAR	80	7

Each line of the disk catalog consists of, from left to right, the file number, file name, size in sectors, file type, and PDR sector number. The last one is the disk sector on which the file information resides. Its presence tells how close the disk is to being in alphabetical order. If it's already in alphabetical order, the numbers will be in numerical order down the catalog. For fastest access, they would start with 2 and increment by ones. As you can see from the above, this disk is not in the best of order. After defragmenting, the numbers will be in order.

If defragmenting a diskette that has a file that will be written to often, the first time data is added, the files are again fragmented. Thus, the program gives the option of choosing a file that will most likely be added to and a file that will most likely shrink, and additional space is reserved so that the diskette will not lose its order quickly.

If you plan to add files at a later time, free space can be allocated in the FAT (file allocation table), so that the new PDRs will be placed near the beginning of the diskette and not slow down disk searches. All of us have had diskettes with a bad sector "0" and were unable to read or recover the data on the diskettes. Defragmentor doesn't care and can optimize the disk.

This is another utility the TI world has needed for a long time, and we owe our gratitude (and \$\$\$) to Mark Schafer, 539 Whitaker St., Morehead, KY 40351. Mark is asking \$6 for use of the program and \$7 if you need for him to supply the disk and mailer.



<- FROM THIS <-> THIS ->



**MEETING DATES  
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1992**

**C.O.N.N.I. BOARD MEMBERS**

**3RD SATURDAY**  
20 JUN 1992  
18 JUL 1992  
15 AUG 1992  
19 SEP 1992  
17 OCT 1992  
21 NOV 1992  
19 DEC 1992

**4TH WEDNESDAY**  
24 JUN 1992  
22 JUL 1992  
26 AUG 1992  
23 SEP 1992  
28 OCT 1992  
24 NOV 1992  
22 DEC 1992

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