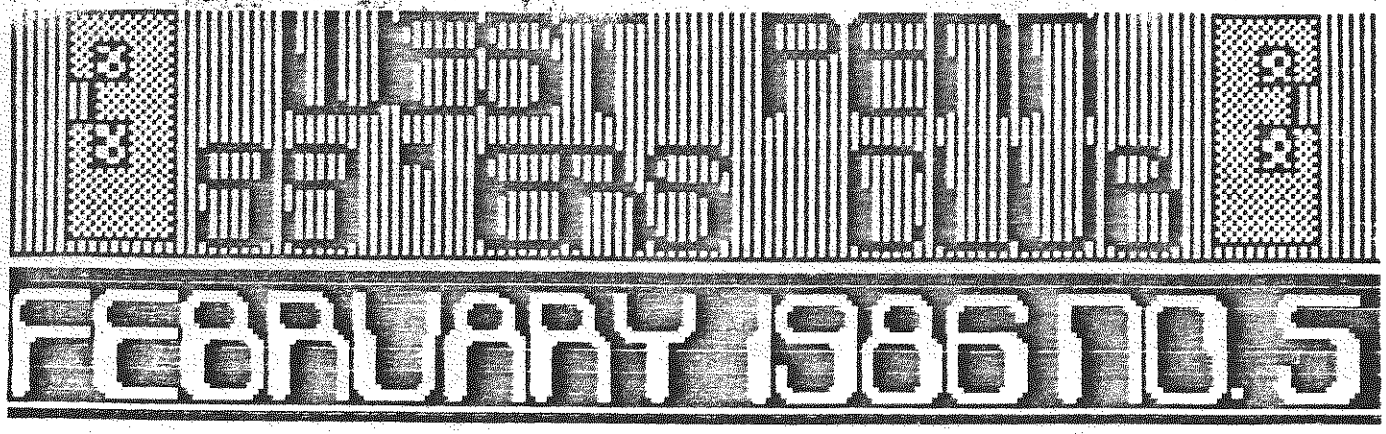


THE WEST PENN 99'ers

THE NEXT MEETING.....

We really got wiped out the last meeting, with all that heavy snow. I spent about an hour and a half in candle light calling people to let them know that they shouldn't leave their cold dark houses to go to a cold dark YMCA just to be with you and I, because you and I weren't about to go there to be with them.

We did not have the election of officers, so come expecting to vote for them. We will be having final nominations from the floor just before the vote. Those already nominated are:

PRESIDENT------SCOTT COLEMAN
and John Willforth
VICE PRESIDENT-CHUCK STRINK
SECRETARY------ED BITTNER
COR. SECRETARY-GENE KELLY
TREASURER------JAN TRAYERS
LIBRARIANS-----BOB SADUSKY
and CLYDE COLLEDGE
and ROB EKL
EDITOR---------TO BE APPOINTED

The positions indicated will be held until the end of 1986. Please come and VOTE !!!!!!!

We will have the demonstrations that were planned for the last meeting, the GRAM KRACKER, the SUPER CART, T.I. ARTIST, and if time permits STAR GUARD by Chuck Strink.

MEETING DATE: FEBRUARY 17,1986
PLACE: NORWIN YMCA (see map)
TIME: 7:00 P.M.

SPECIAL INTEREST GROUPS(BASIC, EXTENDED BASIC, AND YES !.. ASSEMBLY) will meet at about 8:15, immediately after the business meeting.

COMPUTER SHOW AT CENTURY III.....

Starting Saturday (FEB. 15), as the mall opens, and ending at the close of the mall on Sunday (FEB. 16), one of the largest home and personal computer shows will be in progress. The Pittsburg Users Group will have several tables, with many items of interest displayed. If you're looking for the latest in hardware, software, or just want to know what you can do with your machine, you really ought to get out there! If you have never been to CENTURY III MALL, it is on route 51, about 5 miles north of ELIZABETH, PA and just south of the PLEASANT HILLS cloverleaf, south of PITTSBURGH. To learn more, call Roy Carlson, Pres. of the PUG, at 412-481-5927

FOR THOSE WHO LIKE TO TRAVEL.....

The FIRST ANNUAL L.A. 99/4A EXPO, sponsored by the LOS ANGELES 99er COMPUTER GROUP. The EXPO will be MARCH 1 and 2,1986, at the SHRINE EXPOSITION HALL, 700 W. 32nd ST., LOS ANGELES, CALIFORNIA. The event is called,"99'FEST-WEST'86". If you are interested call me for more details.

RAM DISK FOR YOUR T.I.....

I've been in contact with Ron Gries and David Romer, two of the people directly responsible for the development of the NEW HORIZON COMPUTER LTD. RAM DISK project, the other is John Clulow. The card, which is designed for insertion in a PEB, is available on a limited basis from them in both kit and assembled form.

The card can be configured as a sssd or dssd disk, and doesn't interfere with the 32k of memory in either the console or externally. The RAM DISK is supported by battery, and because there is no head stepping, no rotational latency, no serial data transfer, and some things you probably would not understand, this disk really flies. Since I'm trying to put everything into a console that can be put into a console, my first thought was, why not put this low power RAM DISK into the console and load it at home, then I would have the ideal portable TI-99/4A. In the mean time for those living in today's world, if you would like to get one:

WRITE: HORIZON COMPUTER LTD.
% DAVID ROMER
BOX 554
WALBRIDGE, OH
PHONE: 419-666-6911 43365

SUPER CART, A SUPER WAY TO GO.....

I have made copies of two articles from the June and July 1985 issues of MICROpendium (with the permission of the authors), and will pass them out at the next meeting. It describes the manner in which you can build this device from an Editor Assembler Cartridge, and a game cartridge. The new cartridge will have an 8K static ram which can provide E/A module menu access to assembly language software. You can write your own 8K battery-backed command module. With a slight modification to the module you can also DUMP rom based cartridges no more than 8K to disk, and reload them into this cartridge with the right software of course. If you can't make the meeting, either call me or write. David Romer has a diskette with programs and utilities designed to support this cartridge. Some of the things on the diskette are: Sector Copy, TI WRITER, and an improved dis-assembler, as well as utilities to put the header and programs into the cartridge. If you send $6. to:

DAVID ROMER
213 EARL ST.
WALBRIDGE, OH
43465

he'll send you the disk. I would of course build the cartridge FIRST. Please talk to me about it's construction if you have any trouble. Also if you don't want to build your own, then there is another alternative, DataBioTics Inc. They offer basically the same cartridge in a kit or assembled plus a manual and a diskette with a demo program and utilities to make it easy for you to load programs into the ram space in the cartridge, and to put the cartridge header in the power up menu. Actually this is one of the most powerful devices to come down the pike for the 99/4A.

DataBioTics
P.O. BOX 1194
PALOS VERDES ESTATES, CA
90274

c99 NOW AVAILABLE AS FREEWARE.....

The language "C" is now available. I will have copies at the next meeting for any one interested, but keep in mind that this is freeware and if you do use it the author is entitled to $20. For the effort that was put into creating this c99 compiler $20. is not adequate reimbursement, especially since I find that many of the people who offer software as a freeware item, seldom receive anything for their effort, eventhough there is evidence that their software is out there and is being used. If you want a copy please call me before Monday 17,1986.

PLEASE ORDER MICROPENDIUM.....

If you order MICROpendium, then I won't have the problem of deciding what you would like in this newsletter from it's pages. To help you, I've copied the back page of the magazine with it's order blank and all information and will have it at the meeting. Again if you cannot make it to the meeting, write or call.

WRITE OR CALL.....WHO!.....

John Willforth that's who, and the phone number is 412-527-6656, or if you wish to write:

JOHN F. WILLFORTH
RD#1 BOX 73A
JEANNETTE, PA.
15644

COVER PAGE HEADER BY TI-ARTIST.....

By the way, you will note that the cover page is different than the last few months. I decided to try a little more with the TI-ARTIST. You can see a really good deal for this program in the ad placed in the back of this newsletter by the FUG, SAPPHIRE SOFTWARE. Using this tool in the newsletter, seems to be an easy way to demonstrate it. You really should get yours!

WHERE TO GET 6264LP-15 STATIC RAMS.....

A place to get the chips that I've used twice, and seem to offer PRIME CHIPS, at a LOW PRICE, and give QUICK DELIVERY, is :

MICROPROCESSORS UNLTD.,INC.
24000 S. PEORIA AV.
BEGGS, OK
74421
918-267-4961

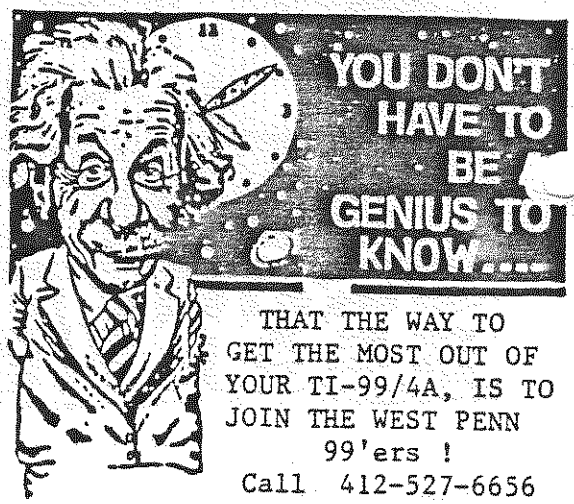
These people will take your order by phone and will ship based on a credit card number, yet will hold the charge for ten days until they receive your CHECK. Not a bad way to get the parts, without any charge card charges. Also you may want to get together with someone else for an order because the shipping and handling charge is relatively fixed at about $5. and this will amount to quite a bit less per chip if done this way.

There are many other places to get them, and many of these places can be found in a large tabloid sized magazine called the COMPUTER SHOPPER.

FOR SALE, TRADE, etc

A member who is also a teacher in a parochial school, would like to trade some game cartridges for some educational cartridges. The cartridges she has to trade are:
(1) TI INVADERS, (2) CAR WARS, (1) PARSEC,
(1) THE ATTACK, (1) ALPINER
If you do not really want any of these cartridges, but you also do not any longer need some of the educational cartridges that may be collecting dust, you may want to donate them as tax-deductible contributions. Also this member would like to talk to some other math teachers who have incorporated the TI and it's software in their classes. Please write or call Mrs. LYNDA SECORIE at:

R.D.#1 BOX 362
BOLIVAR, PA
15923
412-676-4392



THAT THE WAY TO GET THE MOST OUT OF YOUR TI-99/4A, IS TO JOIN THE WEST PENN 99'ers !
Call 412-527-6656

The following program was written by Jim Peterson of Columbus, Ohio. Many TI users know Peterson as the author of the Tips from Tigercub column that appears regularly in many user group newsletters.

The program, called DOWNCHAR, permits on-screen design of downloadable characters for Gemini printers. It is also compatible with Epson printers. The program features a direct dump to the printer for viewing the newly designed character and optional saving to disk. Peterson released the program to the public domain.

```
100 CALL CLEAR :: CALL SCREE
N(4):: CALL CHAR(128,"FF8181
81818181FF",129,RPT$("F",16)
):: CALL COLOR(13,2,16)
110 FOR R=9 TO 15 :: CALL HC
HAR(R,11,128,9):: NEXT R
120 X=1 :: FOR R=9 TO 15 ::
DISPLAY AT(R,7)SIZE(2):STR$(
X):: X=X*2 :: NEXT R :: FOR
C=9 TO 17 :: DISPLAY AT(8,C)
SIZE(1):STR$(C-8):: NEXT C
130 DISPLAY AT(2,9):"TIGERCU
B'S" :: DISPLAY AT(4,1):"GEM
INI CHARACTER DOWNLOADER" !p
rogrammed by Jim Peterson fo
r the Public Domain
140 DISPLAY AT(17,1):" Move
cursor with W,E,R,S,D,":"Z,X
 and C keys. Toggle on":"and
 off with Q key. Press":"Ent
er when finished.": : :"Pres
s any key"
150 CALL KEY(0,K,ST):: IF ST
=0 THEN 150 :: CALL HCHAR(17
,1,32,224)
```

```
160 R=  C=11 :: C=
170 CALL HCHAR(R,C,32):: CAL
 L HCHAR(R,C,CH):: FOR D=1 TO
  10 :: NEXT D :: CALL KEY(3,
K,ST):: IF ST=0 THEN 170
180 ON POS("QWERDCXZS"&CHR$(
13),CHR$(K),1)+1 GOTO 170,31
0,230,220,210,200,190,260,25
0,240,330
190 R=R+1
200 C=C+1 :: GOTO 270
210 C=C+1
220 R=R-1 :: GOTO 270
230 R=R-1
240 C=C-1 :: GOTO 270
250 C=C-1
260 R=R+1
270 R=R-(R<9)+(R>15):: C=C-(
C<11)+(C>19):: IF CH=128 THE
N 300 :: CALL GCHAR(R,C-1,GX
):: CALL GCHAR(R,C+1,GZ):: I
F (GX<>129)*(GZ<>129)THEN 30
0
280 DISPLAY AT(22,1):"You ca
n't have two in a row":"hori
zontally!" :: FOR D=1 TO 50
:: NEXT D :: DISPLAY AT(22,1
):" ":" "
290 CH=CH-1
300 CALL HCHAR(R,C,CH):: GOT
O 170
310 CH=CH+1+(CH=129)*2 :: IF
 CH=128 THEN 320 :: CALL GCH
AR(R,C-1,GX):: CALL GCHAR(R,
C+1,GZ):: IF (GX<>129)*(GZ<>
129)THEN 320 ELSE 280
320 CALL HCHAR(R,C,CH):: GOT
O 170
330 FOR C=11 TO 19 :: X=1 ::
 FOR R=9 TO 15 :: CALL GCHAR
(R,C,G)
340 IF G=129 THEN A=A+X
350 X=X*2 :: NEXT R
360 FOR J=1 TO LEN(STR$(A)):
: CALL VCHAR(15+J,C,ASC(SEG$
(STR$(A),J,1))):: NEXT J ::
M$=M$&CHR$(A):: A=0 :: NEXT
C :: A=0
370 DISPLAY AT(20,1):"Print?
 Y/N Y" :: ACCEPT AT(20,12)V
ALIDATE("YN")SIZE(-1):Q$ ::
IF Q$="N" THEN 470
380 IF F=1 THEN 390 :: F=1 :
: DISPLAY AT(20,1):"Printer
name?" :: ACCEPT AT(20,15):P
$ :: OPEN #1:P$
390 DISPLAY AT(20,1):"ASCII
to redefine?" :: ACCEPT AT(2
0,20)VALIDATE(DIGIT)SIZE(3):
CH
400 DISPLA  T(20,1):"Descen
der (0 or 1)? 0" :: ACCEPT A
T(20,21)VALIDATE("01")SIZE(-
1):D$ :: D=VAL(D$)
410 M$=CHR$(27)&CHR$(42)&CHR
$(1)&CHR$(CH)&CHR$(D)&M$
420 PRINT #1:M$ :: PRINT #1:
CHR$(27);CHR$(36);CHR$(1);
430 PRINT #1:RPT$(CHR$(CH),7
2):: PRINT #1:CHR$(14);RPT$(
CHR$(CH),36)
440 DISPLAY AT(20,1):"Save (
Y/N)? Y" :: ACCEPT AT(20,13)
VALIDATE("YN")SIZE(-1):Q$ ::
 IF Q$="N" THEN 470
450 IF F3=1 THEN 460 :: F3=1
 :: DISPLAY AT(20,1):"Filena
me? DSK" :: ACCEPT AT(20,14)
:F$ :: OPEN #2:"DSK"&F$
460 PRINT #2:M$
470 M$="" :: DISPLAY AT(20,1
):"Another (Y/N)? Y" :: ACCE
PT AT(20,16)VALIDATE("YN")SI
ZE(-1):Q$ :: IF Q$="Y" THEN
100
480 CLOSE #1 :: CLOSE #2 ::
END
```

Decimal to binary

Jose E. Palmieri, of North Miami Beach, Florida.

The program runs out of Extended BASIC and is designed for use with a Gemini printer. However, it should operate as is with most dot-matrix printers.

```
100 REM * CONVERSION OF INTE
GER DECIMAL NUMBERS TO BINAR
Y *
110 REM (VERSION: SCREEN OR
SCREEN & PRINTOUT)
120 REM BY J.E. PALMIERI
130 REM TI EXTENDED BASIC
140 CALL CLEAR
150 DIM B$(100)
160 PRINT TAB(2);"----------
----------"
170 PRINT
180 PRINT TAB(8);"CONVERSION
 OF"
190 PRINT TAB(3);"INTEGER DE
CIMAL NUMBERS"
200 PRINT TAB(6);"TO BINARY
NUMBERS"
210 PRINT
220 PRINT TAB(2);"----------
----------"
230 PRINT :: PRINT
240 PRINT TAB(2);"ENTER ""0""
 TO LEAVE PROGRAM"
250 PRINT :: PRINT
260 PRINT :: PRINT
270 PRINT "YOUR CHOICE:
                SCREEN ONLY
   - 1          SCREEN & PRINT
R - 2"
280 INPUT C
290 ON C GOTO 350,310
300 PRINT
310 CALL CLEAR
320 OPEN #1:"PIO"
330 PRINT #1:"DECIMAL";TAB(1
6);"BINARY"
340 PRINT #1
350 CALL CLEAR
360 PRINT "DECIMAL";TAB(16);
"BINARY"
370 S=1
380 DISPLAY AT(1,1):"DECIMAL
 NUMBER: "
390 ACCEPT AT(1,17)BEEP:D
400 D$=STR$(D)
410 IF D=0 THEN 690
420 PRINT TAB(5)-LEN(D$);D;
430 IF C=1 THEN GOSUB 530 EL
SE 470
440 PRINT TAB(22)-LEN(X$);X$
450 X$=""
460 GOTO 370
470 PRINT #1:TAB(5)-LEN(D$);
D;
480 GOSUB 530
490 PRINT #1:TAB(22)-LEN(X$)
;X$
500 PRINT TAB(22)-LEN(X$);X$
510 X$=""
520 GOTO 370
530 Q=D/2
540 IF Q=.5 THEN 640
550 R=(Q-INT(Q))*2
560 IF R=0 THEN 570 ELSE 590
570 B$(S)="0"
580 GOTO 600
590 B$(S)="1"
600 Q=INT(Q)
610 Q=Q/2
620 S=S+1
630 GOTO 540
640 B$(S)="1"
650 FOR L=S TO 1 STEP -1
660 X$=X$&B$(L)
670 NEXT L
680 RETURN
690 END
```

MICROpendium

LITHIUM CELLS

There is a lot a misinformation being circulated about the lithium cell in the Mini-Memory module and some of the newer third party devices. This article should help to clear the picture.

There are two types of cells and batteries: primary and secondary. [Batteries are cells (two or more) connected in series so that the cell voltages add togeth A car battery is a good example: six 2 volt cells = 6 x 2 volts = 12 volts.] inary cells and batteries are non-rechargeable. When they become weak, you throw them away; they can't be re-charged. This group includes flashlight cells (carbon-zinc, alkaline), calculator and watch cells (silver oxide, mercury oxide and lithium). Secondary cells and batteries are re-chargeable. When these cells lose their charge, you connect them to a charging device until their energy is restored. This group includes auto batteries (lead-acid, gel, manganese-lead) and electrical appliance batteries (nickel-cadmium or ni-cad).

Lithium cells are used in electronic circuits because of their high energy density (3 volts in a small package) and long life (10 year shelf life). Since they are primary cells, when they are depleted, they have to be replaced. This is the problem. The TI service centers want about $30+ to replace the cell in the Mini-Memory module. You can replace the cell yourself for about $2-5, depending on how you do it.

A lithium cell can be obtained from any Radio Shack store, Cat# 23-162, CR2032 (0.79" dia. x 0.13" thick) for $1.79. This cell is the largest of the three sizes that Radio Shack stocks. Even though this cell is smaller than the one TI put in their module, CR2430 (0.96" dia. x 0.11" thick), it will work just as well, though its life will be shorter than the original cell (about 30% shorter).

The next problem is how to attach this cell to the circuit board. The cell inside the module has two thin metal strips spot-welded to the (+) and (-) sides of the cell and the other ends of the strips are soldered to the board. Unless you can find and install a cell holder, this is the way a new cell has to be attached to the board. Trying to solder copper leads directly to the lithium cell is difficult (the cell case is stainless steel) and dangerous if you apply too much heat to the cell (excess heat can melt the seals or cause the cell to burst).

I have access to a capacitive discharge resistance welder to spot-weld 1/8" wide x 0.01" ni-chrome metal strip to a lithium cell and special flux to pre-tin the ends for soldering. Let me know if you want more information.

Sadusky, 13390 St. Clair Drive
No. Huntingdon, PA 15642

1015960-0008	GROM.PHY F	3.80	1015960-0189	GROM.RDGFU	3.80	1015960-0405	GROM.PLATO	3.60
1015960-0011	GROM.NUM.M	3.80	1015960-0190	GROM.RDGFU	3.80	1015960-0406	GROM.PLATO	3.60
1015960-0013	GROM.BEGRA	4.00	1015960-0191	GROM.RDGFU	3.80	1015960-0407	GROM.PLATO	3.60
1015960-0014	GROM.BEGRA	4.00	1015960-0192	GROM.RDGFU	3.80	1015960-0408	GROM.PLATO	3.60
1015960-0015	GROM.H BUD	3.80	1015960-0193	GROM.RDFOU	3.80	1015960-0445	GROM.FACEM	3.60
1015960-0022	GROM.CHESS	3.80	1015960-0211	GROM.INVAD	3.80	1015960-0446	GROM.FACEM	3.60
1015960-0023	GROM.CHESS	3.80	1015960-0212	GROM.ZEROZ	3.80	1015960-0447	GROM.SLYMO	3.60
1015960-0024	GROM.DEMO	4.00	1015960-0214	GROM.HANGM	3.80	1015960-0466	GROM.MOONM	3.60
1015960-0060	GROM.PER.R	3.80	1015960-0215	GROM.MINME	3.80	1015960-0467	GROM.MOONM	3.60
1015960-0061	GROM.PER.R	4.00	1015960-0216	GROM.RDROU	3.80	1015960-0468	GROM.MOONM	3.60
1015960-0062	GROM.PER.R	4.00	1015960-0217	GROM.RDROU	3.80	1015960-0469	GROM.MOONM	3.60
1015960-0063	GROM.PER.R	4.00	1015960-0218	GROM.RDROU	3.80	1015960-0470	GROM.MOONM	3.60
1015960-0064	GROM STAT	3.60	1015960-0219	GROM.RDROU	3.80	1015960-0490	GROM. STAR	3.60
1015960-0065	GROM.ST/SM	3.60	1015960-0220	GROM.RDROU	3.80	1015960-0491	GROM. STAR	3.60
1015960-0066	GROM STAT	3.60	1015960-0221	GROM.MUNCH	4.00	1015960-0496	GROM. MASH	3.60
1015960-0067	GROM STAT	3.60	1015960-0222	GROM.SPELL	3.80	1015960-0497	GROM. MASH	3.60
1015960-0068	GROM STAT	3.80	1015960-0223	GROM.SPELL	3.80	1015960-0498	GROM. MASH	3.60
1015960-0069	GROM E/REA	3.80	1015960-0224	GROM.SPELL	3.80	1015960-1001	GROM.EARLR	3.60
1015960-0070	GROM E/REA	3.80	1015960-0226	GROM.SPELL	3.80	1015960-1002	GROM.EARLR	3.60
1015960-0072	GROM E/REA	3.80	1015960-0229	GROM.T.DOO	3.60	1015960-1007	GROM.PHY F	3.80
1015960-0074	GROM.SECUR	3.80	1015960-0230	GROM.T.DOO	3.60	1015960-1012	GROM.BEGRA	3.60
1015960-0075	GROM.SECUR	3.80	1015960-0231	GROM.T.DOO	3.60	1015960-1013	GROM.BEGRA	3.60
1015960-0076	GROM.SECUR	3.80	1015960-0232	GROM.T.DOO	3.60	1015960-1014	GROM.BEGRA	3.60
1015960-0077	GROM.SECUR	3.80	1015960-0233	GROM.T.DOO	3.60	1015960-1019	GROM.VOYAP	3.80
1015960-0135	GROM.A&S I	3.80						
1015960-0136	GROM.A&S I	3.80				1015960-2010	GROM.FOOTB	3.80
1015960-0137	GROM.A&S 2	3.80	1015960-0280	GROM.M/ADD	3.80	1015960-2032	GROM.SPEEC	3.80
1015960-0138	GROM.A&S 2	3.80	1015960-0283	GROM.M/DIV	3.60	1015960-2129	GROM.T.EMU	3.80
1015960-0139	GROM.A&S 2	3.80	1015960-0284	GROM.M/LAW	3.80	1015960-3115	GROM.EXT.B	3.60
1015960-0140	GROM. MULT	3.80	1015960-0286	GROM.M/FRA	3.80	1015960-5224	GROM.STY M	3.60
1015960-0141	GROM. MULT	3.80	1015960-0287	GROM.M/FRA	3.80	1015960-5225	GROM.STY M	3.60
1015960-0142	GROM. MULT	3.80	1015960-0288	GROM.M/DEC	3.60	1015960-5227	GROM.MOONS	3.60
1015960-0153	GROM.YAHTZ	3.80	1015960-0290	GROM.M/PER	3.80	1015960-5237	GROM.SEWER	3.60
1015960-0156	GROM. 4A 2	3.60	1015960-0295	GROM.PARSE	3.80	1015960-5253	GROM.MCH.M	3.60
1015960-0157	GROM. 4A 2	3.60	1015960-0296	GROM.PARSE	3.80	1015960-5254	GROM.MCH.M	3.60
1015960-0168	GROM.TILOO	4.20	1015960-0297	GROM.PARSE	3.80	1015960-5231	GROM.TREAS	3.60
1015960-0169	GROM.TILOO	4.20	1015960-0298	GROM.ALLMI	3.80	1015960-5232	GROM.TREAS	3.60
1015960-0170	GROM.TILOO	4.20	1015960-0299	GROM.ALLMI	3.80	1015960-5283	GROM.TREAS	3.60
1015960-0171	GROM.TILOO	4.20	1015960-0303	GROM.MINUS	3.80	1015960-5234	GROM.PIRAT	3.60
1015960-0180	GROM P-COD	3.60	1015960-0304	GROM.MINUS	3.80	1015960-5287	GROM.PIRAT	3.60
1015960-0181	GROM P-COD	3.60	1015960-0305	GROM.RDRAL	3.80	1015960-5288	GROM.PIRAT	3.60
1015960-0182	GROM P-COD	3.60	1015960-0306	GROM.RDRAL	3.80	1015960-5289	GROM.PIRAT	3.60
1015960-0183	GROM P-COD	3.60	1015960-0307	GROM.RDRAL	3.60	1015960-5290	GROM.PIRAT	3.60
1015960-0184	GROM P-COD	3.60	1015960-0308	GROM.RDRAL	3.80	1015960-5296	GROM.CONGO	3.80
1015960-0185	GROM P-COD	3.60	1015960-0309	GROM.RDRAL	3.60	1015960-5297	GROM.CONGO	3.80
1015960-0186	GROM P-COD	3.60	1015960-0313	GROM-4A AR	4.20	*** COPY FROM 103 85/09/18 16:06:49		
1015960-0187	GROM P-COD	3.60	1015960-0314	GROM. READ	3.60			
1015960-0188	GROM. TOMB	3.80	1015960-0315	GROM. READ	3.60	1053555-0107	T/C BIEGE SCREW	.36
			1015760-0316	GROM. READ	3.60	1056412-0101	T/C BIEGE SNAP	.38
			1015760-0317	GROM. READ	3.60	1053554-0107	B/C BIEGE SCREW	.30
1015960-0234	GROM.DSKMG	3.60	1015960-0318	GROM. READ	3.80	1056411-0101	B/C BIEGE SNAP	.34
1015960-0235	GROM.DSKMG	3.60	1015960-0319	GROM.NUM I	3.80	1015923-0007	MODULE DOOR BIEGE	.06
1015960-0236	GROM.DIV I	3.80	1015760-0320	GROM.NUM I	3.80	1015928-0001	SPRING	.05
1015960-0237	GROM.DIV I	3.80	1015760-0321	GROM.NUM I	3.80	1015921-0004	PCB	3.60
1015960-0238	GROM.DIV I	3.80	1015760-0322	GROM.NUM I	3.80	1037200-0004	PCB	1.96
1015960-0239	GROM.DIV I	3.80	1015960-0323	GROM.NUM I	3.30	1501701-0122	CAP .1UF 50V	.14
1015960-0247	GROM.RDGFL	3.80	1015960-0324	GROM.NUM I	3.80	1500773-0033	RES.. 100 OHM	.02
1015960-0248	GROM.RDGFL	3.80	1015760-0325	GROM.NUM I	3.80	1010685-0034	SCREW	.02
1015960-0249	GROM.RDGFL	3.80	1015960-0326	IC.SNG/ELF	3.60			
1015960-0250	GROM.RDGFL	3.80	1015760-0333	GROM.ALEAD	3.60			
1015960-0251	GROM.RDGFL	3.80	1015960-0341	GROM.ALPIN	4.00			
1015960-0252	GROM. MATH	3.80	1015960-0342	GROM.ALPIN	4.00			
1015960-0253	GROM. MATH	3.80	1015960-0343	GROM.ALPIN	4.00			
1015960-0254	GROM. MATH	3.80	1015960-0344	GROM.ALPIN	3.80			
1015960-0255	GROM.LOGO1	3.60	1015960-0345	GROM.DRAGM	3.80			
1015960-0256	GROM.LOGO1	3.60	1015960-0346	GROM.DRAGM	3.80			
1015960-0257	GROM.LOGO1	3.60	1015960-0347	GROM.MET M	3.80			
1015960-0258	GROM.TCHTY	3.80	1015760-0348	GROM.MET M	3.30			
1015960-0259	GROM.TCHTY	3.80	1015960-0349	GROM.M/PLA	3.60			
1015960-0260	GROM.TCHTY	3.80	1015960-0350	GROM.M/PLA	3.60			
1015960-0261	GROM.CHISH	3.60	1015960-0351	GROM.M/PLA	3.60			
1015960-0262	GROM.MTH-G	3.80	1015960-0352	GROM.M/PLA	3.60			
1015960-0263	GROM.MTH-G	3.80	1015960-0353	GROM.M/PLA	3.60			
1015960-0278	GROM.M/COM	3.60	1015960-0368	GROM.DEC I	3.80			
1015960-0071	GROM WUMPU	3.80	1015960-1020	GROM.CHESS	3.80			
1015960-0097	GROM SOCCE	3.60	1015760-1021	GROM.CHESS	3.80			
1015960-0098	GROM SOCCE	3.60	1015960-1026	GROM. DEMO	3.60			
1015960-0101	GROM.MIND	4.00	1015960-1035	GROM.V.DAM	3.30			
1015960-0102	GROM.P.R.E	3.80	1015760-1036	GROM.V.DAM	3.60			
1015960-0103	GROM.P.R.E	3.80	1015960-1060	GROM.PER.R	3.80			
1015960-0104	GROM.P.R.E	3.80	1015760-1061	GROM.PER.R	3.80			
1015960-0105	GROM.P.R.E	3.80	1015960-1062	GROM.PER.R	3.80			
1015960-0106	GROM.MUSIC	3.80	1015960-1063	GROM.PER.R	3.60			
1015960-0107	GROM.MUSIC	3.80	1015960-1071	GROM.E/REA	3.30			
1015960-0108	GROM.MUSIC	3.80	1015760-1073	GROM.E/REA	3.30			
1015960-0111	GROM.PERRP	3.80	1015960-1092	GROM.T.I.R	3.60			
1015960-0112	GROM.PERRP	3.80	1015960-1093	GROM.T.I.R	3.60			
1015960-0115	GROM.EXT.B	4.00	1015960-1094	GROM.T.I.R	3.60			
1015960-0116	GROM.NUTRI	3.80	1015760-1095	GROM.T.I.R	3.60			
1015 0117	GROM.NUTRI	3.80	1015760-1113	GROM.EXT.B	3.60			
1015 118	GROM.NUTRI	3.80	1015760-1114	GROM.EXT.B	3.60			
1015 119	GROM.NUTRI	3.80	1015960-1120	GROM.NUTRI	3.30			
1015 121	GROM.AMAZI	3.60	1015960-1122	GROM.EXT.B	3.60			
1015 0128	GROM.BLKJA	3.80	1015960-1129	GROM T.EMU	4.00			
1015960-0130	GROM.T.EMU	3.80	1015960-1155	GROM TMC	3.80			
1015960-0131	GROM.SP/TE	3.80	1015760-1204	GROM ED/AS	3.60			

REPAIR CENTER INVOICE

TEXAS INSTRUMENTS
INCORPORATED
P.O. BOX 2500
LUBBOCK, TEXAS 79408

TI99/4A IS ALIVE & WELL
Kent A. Sheets
1673 S. North Curtice Rd.
Curtice, Ohio 43412

Thanks Kent For This List!

Basic Basics

by Charles Strink

I was going through some of my old 99er magazines the other day and I came across some call sound programs by Al Kanda that I thought you might like to play with.

DOOR CHIMES

```
10 FOR A=0 TO 30 STEP 5
20 CALL SOUND(-99,698,A,1924,A)
30 NEXT A
40 FOR A=0 TO 30 STEP 5
50 CALL SOUND(-99,554,A,1527,A)
60 NEXT A
```

SIREN

```
10 N=1
20 FOR F=700 TO 900 STEP 5
30 CALL SOUND(-99,F,0)
40 NEXT F
50 FOR F=900 TO 700 STEP -8
60 CALL SOUND(-99,F,0)
70 NEXT F
80 N=N+1
90 IF N=4 THEN 100 ELSE 20
100 END
```

ENGINE

```
10 FOR N=1 TO 8
20 CALL SOUND(60,220,8,-5,0)
30 CALL SOUND(60,220,8,-5,5)
40 NEXT N
50 CALL SOUND(80,220,8,-5,0)
60 FOR F=1000 TO 500 STEP 20
70 CALL SOUND(-99,111,30,111,
   30,F,30,-8,0)
80 NEXT F
90 FOR F=4000 TO 800 STEP -50
100 CALL SOUND(-99,111,30,111,
    30,F,30,-8,0)
110 NEXT F
120 END
```

If you like these subprograms, I have quite a few more. Some I made up and use in my space game STARGUARD. If you have come up with a short unusual call sound program and would like to share it with others, get it to me and I will pass it on in one of the future Basic Basics.

Until next time.....

.....Happy Computing

TO LIST TO FILE ON DISK:

TYPE: LIST "DSKdrive#.file-name".

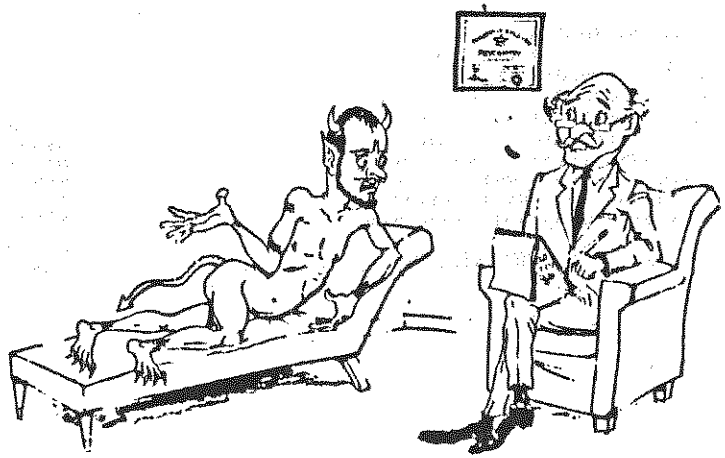
THE FILE-NAME IS WHAT NAME YOU WANT TO GIVE THE LISTING

WHEN YOU WANT TO SEE THE PROGRAM TYPE:

```
100 OPEN #1:"DSKdrive#.file-name"(INPUT)
110 INPUT #1:A$
120 IF EOF(1)THEN END ELSE PRINT A$ :: GOTO 110
```

THAT'S ALL THERE IS.

BY ROB EKL



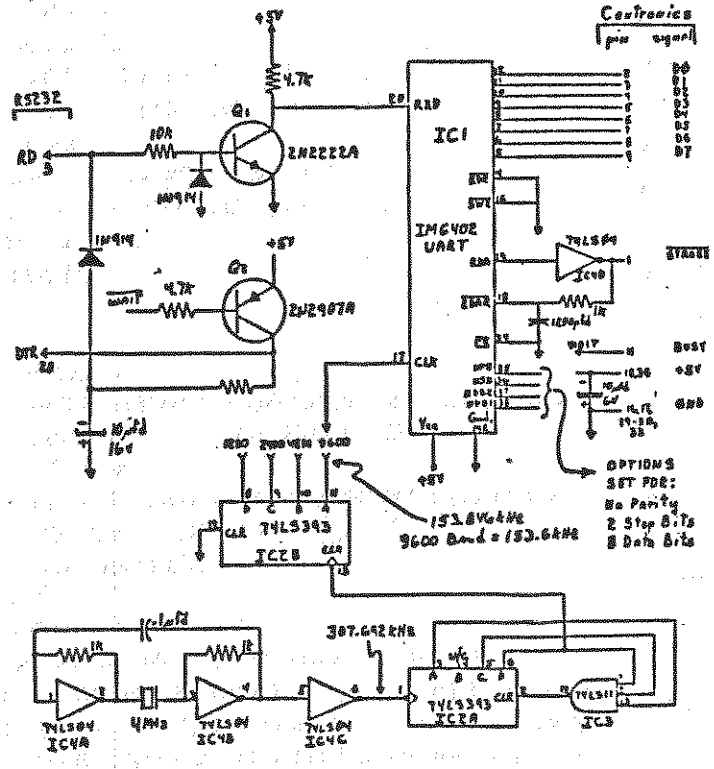
"Does he want bonus? Money? Glory? No, he wants a 1000 lines of error free code."

```
100 REM  GENERATE 6 LOTT     JERS WITH TI 99/4A
110 REM  BY R.P. SADUSKY
120 CALL CLEAR
130 INPUT "HOW MANY DOLLARS ARE YOU     GOING TO
    PLAY?--":D
140 IF D<1 THEN 130
150 G=D*2
160 FOR L=1 TO G
170 RANDOMIZE
180 FOR X=1 TO 6
190 N(X)=INT(RND*40)+1
200 FOR Y=1 TO 6
210 IF N(X)=N(Y)THEN 190
220 NEXT Y
230 PRINT N(X);
240 Y=X
250 M(Y)=N(X)
260 NEXT X
270 PRINT
280 NEXT L
```

DON'T JUST SIT THERE, HOP TO YOUR NEXT TI

USERS GROUP MEETING

Here is a nifty project for the experimenter. Do you have a lot of software that is configured for RS232 yet you have a parallel printer? Well, this little gizmo will output on the serial port making the computer think it is talking to the RS232 and then on this external circuit all the data is converted to parallel for the parallel printer requirements. This circuit produces a CENTRONICS compatible interface. Good Luck.



TUTORIAL

This short tutortrial will solve some of your PRINT USING problems as it pertains to your Printer. There are two ways to print the image away from the margin. One way is to leave the required blank spaces before the image statement. Exam.#1:

```
    250        ####.##   YTD $ ####.##
    260 PRINT #2,USING 250:230.55,299.95
```

Another way is to TAB a single blank space. Exam #2:

```
    250 IMAGE *TOTAL* $ ####.##
    260 TAB(5);" ";
270 PRINT USING 250:990.95
```

In the program below,the semicolon in line 280 allows the IMAGED Amounts to be printed after the name of the month. Also notice, that to print more than one item on a line, the items must be seperated by commas...NOT semicolons! (See line 290 and 340) Study the listing, make changes and experiment, and when you're thru, put this program in your idea book for later referance. Good luck... Chick De Marti

```
100 CALL CLEAR
110 DATA JAN,FEB,MAR
120 OPEN #2:"PIO"
130 FOR I=1 TO 3
140 READ M$(I)
150 PRINT #2:TAB(10);"<* EXPENCES *>": :
160 PRINT #2:TAB(7);"Travel    Meals       Total
170 PRINT #2:TAB(7);"------    -----       -----
180 PRINT M$(I);
190 INPUT "Travel' ":AMT1
200 INPUT "Meals  ":AMT2
210 BAL=AMT1+AMT2
220 TOT1=TOT1+AMT1
230 TOT2=TOT2+AMT2
240 TOTAL=TOTAL+BAL
250 PRINT : :M$(I);AMT1;AMT2;BAL
260 PRINT
270 IMAGE ####.##  ####.##    $ ####.##
280 PRINT #2:M$(I);"  ";
290 PRINT #2,USING 270:AMT1,AMT2,BAL
300 NEXT I
310 PRINT "YTD":TOT1;TOT2;TOTAL
320 PRINT #2:TAB(7);"------    ------    ---------": :
330 PRINT #2:"YTD  ";
340 PRINT #2,USING 270:TOT1,TOT2,TOTAL
350 CLOSE #2
360 END
```

<* EXPENCES *>

	Travel	Meals	Total
JAN	360.90	245.40	$ 606.30
FEB	380.18	260.00	$ 640.18
MAR	378.85	266.78	$ 645.63
YTD	1119.93	7[illegible]9	$ 1892.11

SOME LITTLE KNOWN FACTS ABOUT PERSONAL RECORD KEEPING

by JOHN F. WILLFORTH

A few weeks ago, parusing through some discarded software at the Computer Bug, I came across a diskette with some unusual program names typed on the diskette jacket. Since the price of the diskette was only $2., I bought it , took it home, and some time later decided to take a look at this treasure. Well the first program loaded with extended basic, but as I tried to run it, I got syntax errors, so I listed the program. Well, I thought, no wonder somebody got rid of this diskette, the person who wrote the programs must have been on something stronger "vapor ware"!

Well I can't even find that diskette now, but as I was looking through some old issues of 99'er Mag. , I came across those very same commands that baffled me then. The software was written in BASIC, but had additional commands available in the PRK module.

1. DISPLAY AT-numerical data

CALL D(R,C,L,V)

R = row number of first character of print line.
C = column number of first character of print line.
L = maximum length of print line; must be>=1
V = variable for the value of which is to be printed

example:

```
100 CALL CLEAR
110 V=1234
120 CALL D(12,10,5,V)
130 GOTO 130
```

2. DISPLAY AT-string data

(version 1) CALL D(R,C,L,S$)
(version 2) CALL D(R,C,L,"JOHN F. WILLFORTH")
(version 3) CALL D(R,C,L,CHR$(N))

The variables R,C,and L work as they do in section one above. Here especially, L can be put be used as a built-in SEG$.

example:

```
100 CALL CLEAR
110 A$="THIS IS MID-SCREEN"
120 CALL D(12,4,19,A$)
130 GOTO 130
```

3. ACCEPT AT-numerical data

The ACCEPT AT statement works similar to INPUT, but can be formatted anywhere on the screen. The input prompt can be printed in the appropriate place with the technique of section two, above. The built-in value checks are an additional feature.

CALL A(R,C,L,F,A,MN,MX)

R,C, and L are as explained in section one.

F = function variable
A = accept variable
MN = minimum value
MX = MAXIMUM VALUE

F The numerical variable in this position assumes a value 1-7, depending on certain function keys being depressed. The values connected to these functions in this way should not be confused with ASCII values of these functions that can be useful in CALL KEY statements. To help with your understanding here is a chart showing both.

FUNCTION KEY	CALL A val. (F position)	ASCII val
TI-99/4A TI-99/4		
FCTN 5 SHIFT W -BEGIN	6	14
FCTN 8 SHIFT R -REDO	4	6
FCTN 7 SHIFT A -AID	3	1
FCTN 9 SHIFT Z -BACK	7	15
FCTN 4 SHIFT C -CLEAR	2	2
FCTN 6 SHIFT V -PROC'D	5	12
E N T E R	1	13

CLEAR will not only give F a value of 2, but also clears the input printing field on the screen, and is to be used when typed input is not yet entered and should be changed. WARNING!!!: This means that if you write a program that continually loops to a CALL A statement, CLEAR cannot be used to break the program. Only QUIT or cutting the power will work then, but it will also erase your program in the process! The solution to this problem is to program your escape routine-e.g., IF F=5 THEN 10000 , enabling you to use AID to bring the program to line 10000, which reads:

```
10000 END
```

A The variable in the position of A assumes (accepts) the value you typed in much the same way as the input variable does after you depress ENTER. The F variable, of course, then gets the value 1, since you have used the function key ENTER. If pressing ENTER when the print/input field contains no information (only "space"), F will take on the value in the above chart, if one of the function keys has previously been pressed.

X The numbers or the values of the numerical variables in the positions MN and MX respectively determine the minimum and the maximum values that A will accept. A gentle beep when pressing ENTER warns you if you try to step beyond these imposed limits. The screen, of course, will accept any numerical data, provided that the length does not exceed L(e.g., if L=2 and MX=10000 you still cannot get A to become more than 99 since the screen will not accept more than two digits). Since the plus and minus signs (+ and -) as well as the letter E (scientific notation) are all considered to be numerical input, they will also be accepted. String data, however, are not accepted by the screen at all when using CALL A in this way.

If MN=MN A will only accept the MN and MX value.
If MN>MX A shouldn't accept any value at all but illogically it does accept the MN value.

example:

```
100 CALL CLEAR
110 CALL D(3,3,28,"ENTER 1,2, OR 3")
120 CALL A(10,25,1,F,B,1,3)
130 CALL CLEAR
140 FOR T=1 TO 500
150 NEXT T
160 CALL D(15,3,28,"YOUR CHOICE WAS")
170 CALL D(15,20,2,B)
180 FOT T=1 TO 500
190 NEXT T
200 GOTO 100
```

(OVER)

4. ACCEPT AT-string data
   CALL A(R,C,L,F,A$)
   R,C and L are explained in section one.
   F is explained in section three.
   A$=accept string variable

A$ The variable in the A$ position is filled with the typed string information when pressing ENTER.

example:

```
100 CALL CLEAR
110 M$="PLEASE ENTER YOUR NAME"
120 CALL D(5,3,26,M$)
130 CALL A(10,3,20,F,N$)
140 CALL CLEAR
150 FOR T=1 TO 500
160 NEXT T
170 CALL D(5,2,28,"THANKS"&N$)
180 T=1 TO 500
190 NEXT T
200 GOTO 100
```

I hope that some of you who have the PRK cartridge may now use it to write BASIC programs that make more effective and attractive screen entry and acceptance programs.

ABOUT MEMORY
by John Willforth

An article appeared in the Pittsburgh Users Group monthly newsletter about two months ago, in which it was stated that I demonstrated a 32K expansion memory that could be put inside of your TI-99/4 or 4/A. Well it is true that I have done about seven of them for myself and other individules, and I did put together an article on how to do it so that you could do it, I would like to give credit to the originators of this idea.

The authors of the idea are Bernie Elsner and Phil West of Perth, Western Austraillia. They have done this, along with many other teriffic things to the TI "orphan". If anyone has a good idea, or has created some useful peripheral or device for the machine, they would like to know about it, and I think we owe it to them to do this. Their address is, as best as I can make it out from the copy of a copy of a copy of a copy(etc), is:

SOURCE-ID:
TIO147

WESTRALIAN INSTRUMENTS
P.O.BOX 246
MT. LANLEY
WESTERN AUSTRALIA
TEL. 092718642 6050

Now I have also received instructions from the CEDAR VALLEY 99er Users Group(Cedar Rapids, IA), of a method of putting 32K of expansion memory into the speech synthesizer, or of putting both the 32k and the speech synthesizer inside the console. The have made a small circuit card (unpopulated) for this purpose. If you or your group are interested in this card and instructions, you can write:

Gary D. Bshop, Secretary
%CEDAR VALLEY 99er USER GROUP
288 WINDSOR DR., NE
CEDAR RAPIDS, IA
52402

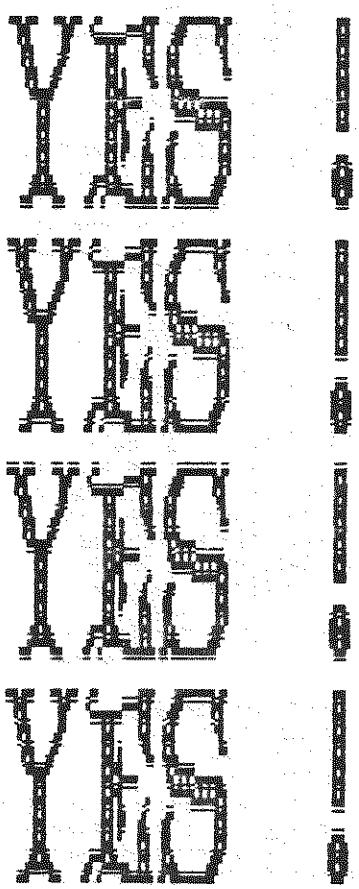
I have also been working on a printed circuit card, but it is quite different than theirs, cannot easily be installed in the speech synthesizer, but will be installed in your console, by YOU in about 30 minutes with only a phillips screw driver, a pencil soldering tool, and some resin core solder.

The unit will be 2 inches by 1 1/4 inches by 1 inch, will have only 5 wires to solder on the main board, and the board to the back side of the cartridge slot connector. If I receive enough encouragement in the next two weeks to warrent my additional time, I'll do it.I've received a estimate from a local circuit board manufacturer for the first 100 boards, and the rest of the components are already taken into consideration. The price should be around $40. I think that if someone had offered me a 32K memory expansion for $40., I would have ordered one for each of my 4 consoles and a spare for the time when I got a fifth.

FOR DISTANT MEMBERS

I realize that if you live, lets say in Austin Texas, that you will find it hard to make the meetings, so as things occur to you, as with let's say a demonstration of some software, or a piece of hardware, or maybe a person to contact who might have some special knowledge about something special (relating to TI-99/4 only), that you write these questions down and send them to me. We want you to feel more a part of the group.

IS THIS REALLY THE LAST NEWSLETTER FOR THOSE INDIVIDULES WHO HAVE HAD THE OPPORTUNITY FOR THE LAST THREE MONTHS TO JOIN, AND HAVE PUT IT OFF???



sapphire software

X-xbasic E-editor/asm M-minimemory T-ti-writer

SAPPHIRE SOFTWARE BONANZA

#	PROGRAM NAME	DESCRIPTION	CARTRIDGE	PRICE	CHECK
1)	PUG WRITER	TI-WRITER LOADER & FILES	XB	$10	
2)	UPDATES	TI-WRITER AND MULTIPLAN	T,MP	$5	
3)	TI-FORTH	LANGUAGE AND MANUAL	E,M	$15	
4)	FORTH GAMES	SEVERAL GOOD FORTH PROGRAMS	E & FORTH	$10	
5)*	TI-RUNNER	ARCADE GAME WITH 50 SCREENS	E,M	$10	
6)*	BASIC COMPILER	COMPILES XBASIC SUBROUTINES	X	$10	
7)*	TILE BREAKER	ASSEMBLY "BREAKOUT GAME"	X,E,M	$10	
	BOXER	ASMB BOXING GAME(2 PLAYERS)	X,E,M		
8)*	D-STATION	ASSEMBLY SPACE BATTLE GAME	X,E,M	$10	
	D-STATION II	CONTINUATION OF D-STATION	X,E,M		
9)*	STARGAZER I	MAPS CONSTELLATIONS	E,T	$10	
0)*	STARGAZER 1,2,3	MAPS OUT DOZENS OF STARS	E,T	$20	
1)	SCRABBLE	ASMB COLOR + 20,000 WORDS	E,T	$10	
2)	MASS COPY 1 & 2	DISK COPIERS	X,E,M	$10	
	DISKD	DISK SECTOR EDITOR	E,M		
	TE3D	TERMINAL EMULATOR	E		
3)	FAST TERM	BEST TERMINAL EMULATOR	E	$10	
	DM1000V2.0	BEST DISK MANAGER	E		
	DM1000V1.0	DISK MANAGER	X		
	VDT	TERMINAL EMULATOR	E,T		
4)	SUPER DEBUGGER	ADVANCED DISSASEMBLER	E,M	$10	
	TI-DIS-ASSM	TI's DISSASMBLER	E,M		
	MARTY's CATLGER	SEE OCT NEWSLETTER	E		
	MARTY'S DISSAM	BY MARTY KROLL JR	E		
	TICK	INTERRUPT DRIVEN CLOCK	X		
5)	MASS TRANSFER	ASSM FILE TRANSFER UTILITY	E	$10	
	DISKD2	DISK SECTOR EDITOR	E		
	COMPACTOR	COMPACTS DIS/FIX 80 FILES	E		
	UNCOMPACTOR	UNCOMPACTS DIS/FIX 80 FILES	E		
	DISSASEMBER	YET ANOTHER DISSASMBLER	E		
6)	The Disk Manager	Great DM program	E	$10	
	DM 1000V3	Best DM in town	E,X		
	Fast-Term	Good Terminal EMulator	E		
	Fast-docs	Fasterm Documentation			
	Super Disk Dup	Disk Duplicator by T. Knigt	E		
7)	Diagnostics 1	Checks Ramm/Peripherals	M	$10	
	Diagnostics 2	Checks Vdp,speech etc.	X		
	TI-Runner Edit	Change or Create TI-Run SCNs	X		
	Break out	Assembly Breakout game	E		
8)	File Transfer	Transfer Adventures C->D	E	$10	
	XB/Load	Clydes loader(see below)	X		
	Spotshot	Assembly Game	E		
	Cubitx	Assembly cubit game	X		
9)*	SPIES ADVENTURE	CIA VS KGB ADVENTURE GAME	X	$10	
	GALACTIC BATTLE	INTERSELLAR STRATEGY GAME	X		
0)*	Beyond Space	CONTINUATION OF PARSEC	E	$10	
	Face Chase	ACTION GAME BY J. PHILLIPS	E		
1)*	Great word race	WRITTEN BY JOHN PHILLIPS	E	$10	
	Star trap in 3D	EXCITING SPACE GAME IN 3D	E		
2)	Printer Disk	Prints snoopy,etc (DssD)	X & PRINTER	$10	
3)*	Micro Pinball	Assembly Pinball	X,E/A,M	$10	
4)	C-Language	New Programming Language	E/A	$10	
5)	Jet Graphics	2 disks for building sprites	E/A,X	$10	
6)*	TI-Toad	Assembly Frogger Game	X,E/A,M	$10	
7)*	AsTIroids	Assembly game	X,E/A	$5	
8)*	Arthropod	Assembly centipede game	X,E/A	$5	
9)	DOM OCT 1985	VARIOUS PROGRAMS	X	$5	
30)	DOM NOV 1985	Various Programs	X	$5	
31)	DOM DEC 1985	Various Programs	X	$5	
32)	DOM JAN 1986	Music Programs	X	$5	
33)	DOM FEB 1986	Assembly/TOD/Basic	X,E/A	$5	
34)	TI-Pilot	2-Disks ,Language	X,E/A	$5	
35)	Multiplan Tips	by Ted Anderson	MP	$5	
36)	Marty's Catagloge	All sourses and versions	E/A	$5	
37)	Marty's Dismblr	Full disk of code&docs	E/A	$5	
38)	Clydes Loader	Loads E-A #5 into xbasic	X	$5	
39)	SuperBug II	By edgar Dohman	E/A	$5	
40)	Screen Dump	by Danny Michael	E/A,X	$5	
41)	Neatlist	by Danny Michael	E/A,X	$5	
42)	Pr-Base	Database Program (D&SD)	X	$5	
43)	Teckie BBS	Set up your own BBS	X	$5	
44)	TI-Writer Ldres	Loads TI-WRiter through Minimemory,Editor/Asmbr. Includes SD command.	X,E-A,M	$10	
45)	Mystery Disk	Combo of Forth &Assembly D&SD	X	$5	
46)	TI-Artist	Call 885-1502	X,E-A,T,M	**	
47)	TI-Artist Comapnion	Call 885-1502		**	
48)	New Membership			$17	
49)	Newsletter Subscription			$7	
50)	Membership Renewal			$12	

subtotatal of ordered items----------->$ .00

free shipping and handling this month! Enclosed is $ .00<<<<<----------

Name _____

Address _____

City _____ State _____ ZIP _____ Today's date / /

Phone ( ) - Membership Expiration Date / /19__

Send Checks payable to PUG Sapphire Software

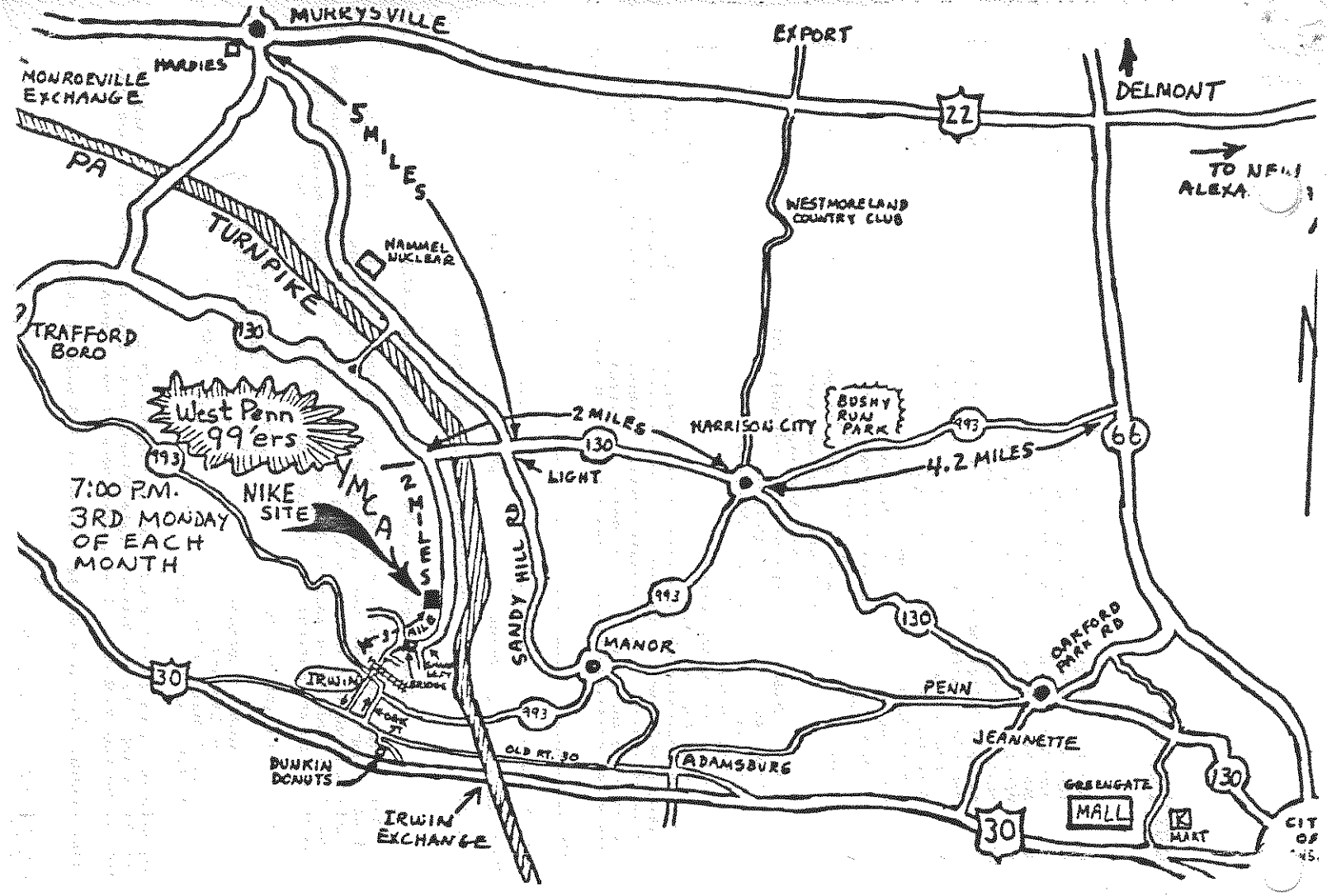
Mail This Entire outside page of newsletter to address below. I will mail it back with your order so that you will not have to destroy your newsletter. All orders processed within 48 hours (Usually same day) if Mailed to address below! Thank You and we want to know what you think about sapphire software. please tell me at meetings, I like to know what you are looking for.

MAIL ALL ORDERS TO:

PUG Sapphire Software
%Darren Leonard
1218 Michael Drive
Pittsburgh Pa 15227

Any problems with sapphire software you recieved? Call me and lets see what we can do. Do not call on Mondays. Late afternoon be time to catch me. Thank you for supporting YOUR club. I will have more SS next month.

*Items marked with an * may be ordered by PUG members only!*



JOHN F. WILLFORTH
% WEST PENN 99'ers
RD#1 BOX 73A
JEANNETTE, PA
15644