WINNIPEG Newsletter

WINNIPEG 99/4A USER GROUP

JANUARY 1989
FEBRUARY 1989

The Winnipeg 99/4A User Group is a non-profit organization formed by computer hobbyists for users of the Texas Instruments 99/4A Home Computer and compatibles. The content of this publication does not necessarily represent the view of the Winnipeg 99/4A user Group.

Next General Meeting -- Date : March 26, 1989
                        Time : 2:00 P.M.
                       Place : 1334 Aikins St.

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Letter from the Editor.
by Ralph Mills

The final meeting of 1988 was held on Nov. 27th, and didn't compete very well with the Grey Cup game. About half of the usual turnout showed - an unfortunate choice of dates. Our meeting date, the last Sunday of each month predicates this as an annual problem in November. Perhaps a week earlier would be better for that month.

We had one or two issues returned by Canada Post "after they had cancelled the postage" demanding they be put in envelopes. Other clubs, I've noted have had their newsletters rejected also.

The newsletters we've received the last two months in some cases have come two or three together, and/or have been smaller than before. Perhaps the latter is due to competition from Xmas. Other groups are possibly considering the increased cost of producing their newsletters, I think.

Commentary
by Rick Lumsden

How'd everybody survive the holiday season? Hope you all have recovered from hangovers and belly aches from over-indulging! To start off my articles for 1989, I thought I would start with something a little lighter and perhaps alot more important.

As you all are aware, it has been almost 5 1/2 years since TI stopped production of our beloved 4A's. Numerous programs over the years have stretched the little machine to it's virtual limits and the interest in it is starting to wane a wee bit. Articles from other clubs newsletters seem to indicate the same pinch we are feeling, that of a declining membership that makes it all the more difficult to do the things we die-hards would really like to do. Namely, continue with our newsletter trading. We have tried

raising the membership dues, but you can only expect to pay so much before the dues become a factor in attracting any new members. There continues to be a fair number of very good commercial and Fairware programs being written for the 4A, especially as of late from our friends in Ottawa, but on the whole I think we all must admit that there are fewer people using and programming them. Please do not take these comments as negative. I still have and use my 4A but it is becoming dated.

What options as computer users do we have open to us. Let's see if we can lay out a few for you with the benefits and pitfalls of each.

1. We can sell off the TI and go to one of the newer computers that we all have seen in the local computer shops. I think this is perhaps the least desirable of all the options. Firstly, you then must re-learn a new operating system and perhaps some of the programming languages. The TI has probably become quite familiar to we who still use them and with the many mods and programs we have collected over the years, it would be most intimidating to start over again. Then there is the cost invloved. When many of us bought our machines, they were nowhere near the price they presently sell for. It would be a big loss to sell off all that equipment and then shell out a pile more for bright shiny new stuff.

2. We could stay with the 9900 series of processors and go with the Gen'eve. This is one of the better options, I think. Although the intial price perhaps seems a little steep, it is a very powerful machine that is very competitive performance-wise to the shiny new ones and it has the added benefit of being extremely compatible with existing equipment and software. The biggest drawback is the lack of software available at the present. Try to remember what you had for your 4A back in '81 or '82 and I am sure you can see that once the true power of the

Gen'eve is exploited, it will really shine. Remember that Myarc is not a giant company like TI and does not have near the finacial resources either, so hardware and software may be a little longer in materializing.

3. We could continue on with our 4A's. A better alternative than the first perhaps, but maybe not as attractive as the second. The reason it may not be as attractive is because of the points I made at the begining. If your present computer is doing the job you want, you have all the software you will need and you are not interested in the new flashy models, then this IS the best alternative for you. The problem arises if and when you need your machine to do something that requires a completely new piece of software and it is not available. In that case, you will have to start programming it yourself, which is not a bad thing by any means, but it may be forboding to some. Just remember that support for the 4A is definitely on the decline but I am reasonably sure that in the 1990's if I still have this computer, there will still be others using it as well.

While on the subject of the Gen'eve, I hope I can make a few comments about it here. I have seen and tried the computer as we all have at Darrell's, and I am sure that you like myself have come away impressed. I believe though that it is in part responsible for the some of the decline in interest for the 4A. The reason for this is that alot of the TI oldtimers held out until the Gen'eve appeared and then for various reasons, decided that the new computer was not for them. They then decided to go with one of the other brands or kept on with the 4A. The ones that went on to the others are busily learning about their new machines and in all likelyhood are very happy with them. They are probably lost to the various clubs as far as using a 4A goes, but I am sure the friendships made will linger for years to come. For the others who

For the others who kept old reliable, the advent of the new Gen'eves in the club posed no problem and they are quite happy to watch and see it develope much like they nutured their own computers in the earlier days. However there are a few that have taken a deep resentment to the new machine because they see it as a threat to the clubs in general. I think they beleive that all the "Knowledgable" users will go that route and leave them hanging in limbo with a machine that they are not yet comfortable with. This kind of attitude has no place in a computer club because the clubs were formed to help each other out, not to critisize another because he has decided to buy a new machine. We as TI users have never really had anything but 4A's in our clubs so this is all new to us. However, it is old hat in the Commodore and Atari camps. Both these manufacturers have a multitude of various machines and their clubs have had very little problem dealing with it. What's the problem in the TI community? Fiercly loyal to one brand is fine but not to the point where it jeopardizes the future of a club.

For all the Winnipeg users, please note that this article has not been directed at you. Although we do have a Gen'eve amongst us, these problems do not seem to be present with us at the moment. The reason I wrote this article was to express my opinions about what is going on in some other clubs with which we trade newsletters. There have been many scathing articles about the Gen'eve and I do not believe it deserves that kind of abuse. It is a very powerful computer with a great deal of yet untapped potential. It is also THE only way to upgrade and still stay within the 9900 community at the present. Don't kill it off becasue of a few disgruntled users. Who knows?? Maybe someday you yourself may decide it is time to move up and the transition is much smoother on something at least a little bit famaliar to you.

An ASSEMBLY LANGUAGE TUTORIAL
by Sheldon Itscovich.

(this installment part 4, is two pages long. About half is here. The remainder will follow next issue. editor)

SPRITES.

IN ASSEMBLY LANGUAGE YOU ARE ALLOWED UP TO 32 SPRITES. THERE IS A MULTICOLOR MODE. THAT MEANS A SPRITE CAN BE MADE UP OF SEVERAL COLORS. MULI COLOR IS A MESSY PROCESS. WE WILL GO INTO THESE.

NOW LETS LOOK AT THE 3 TABLES THAT MUST BE SUPPLIED WITH DATA IN ORDER TO DO SPRITES IN ASSEMBLY.

1). SPRITE ATTRIBUTE TABLE
   a) Sprite Position
   b) Sprite Color

2). SPRITE DESCRIPTOR TABLE
   a) Sprite Pattern identifier
   b) Specify Magnified or
      Double-sized

3). SPRITE MOTION TABLE
   a) Define X and Y Velocitites

BEFORE WE DISCUSS THE 3 TABLES LETS LOOK AT THE WAY COMPUTER DEFINES THE SCREEN FOR SPRITES. IT'S A LITTLE UNUSUAL BUT HERE GOES.....

THE SCREEN IS DIVIDED INTO ROWS COLMS. THE COLUMNS ARE NUMBERED STARTING FROM THE TOP LEFT,THE FIRST ROW IS NUM 256 OR >100, FOLLOWED BY THE NUMBERS 0 THRU 255 >00 TO >FF. EACH LOCATION IS ONE PIXEL. IN THE NEXT SCREEN I WILL SHOW YOU HOW IT LOOKS.

```
---------------------------------------
|         PIXEL COLUMN
|   >00>01>02>03>04.............>FE>FF
|  ------------------------------------
| >100|
|P >00|
|I >01|
|X >02|
|E >03|
|L >04|
|   . |
|   . |
|R  . |
|O  . |
|W  . |
|   . |
|   . |
|   . |
|   . |
|   . |
|   . |
|  >BB|
|  >BD|
|  >BE|
```

SOME FORMULAS TO CONVERT GRAPHIC ROWS COLUMNS TO PIXEL ROWS AND COLUMNS.

GRAPHIC ROW=GR   GRAPHIC COL=GC
PIXEL ROW=PR   PIXEL COL=PG

GRAPHIC ROW TO PIXEL ROW   GR*8-7=PR
GRAPHIC COLUMN TO PIXEL COL   GC*8-7=PC

OK NOW THAT WE ALL HAVE THAT DOWN PAT LETS LOOK AT THE THE SPRITE ATTRIBUTE TABLE.....

THE SPRITE ATTB. TABLE STARTS AT >300 THIS TABLE HOLD THE SCREEN POSITIONS OF EACH SPRITE AND ITS COLOR. AS A SPRITES MOVES ON THE SCREEN THE COMPUTER KEEPS CHANGING THE VALUES IN THE TABLE.SPRITES ARE NUMBERED 0 THRU 31.EACH SPRITE TAKES UP 4 BYTES. THEY CONTAIN THE FOLLOWING INFORMATION....

THE FIRST BYTE IS *THE ROW OR Y POSITION*

continued from page 2

THE SECOND BYTE IS THE COL OR X POSITION

THE THIRD BYTE REFS THE PATTERN OF THE SPRITE AS TO WHERE IT IS LOCATED IN THE SPRITE DESCRIPTOR TABLE.IT CAN HAVE ANY VALUE FROM >00 TO >FF.

THE FOURTH BYTE IS THE EARLY CLOCK ATTRIBUTE AND ALSO THE COLOR VALUE.

1st >300,>301,>302,>303
2nd >304,>305,>306,>307
3rd >308,>309,>30A,>30B

TO DECREASE THE COMPUTERS EXICUTION TIME AND INCREASE PROG. EFFEICIENCY YOU CAN PLACE A VALUE OF >D0 AS THE Y LOCATION OF THE LOWEST NUMBERED NON-MOVING SPRITE THIS TELLS THE COMPUTER THAT ALL THE REST ARE UNDEFINED.

EG: IF YOU HAVE 10 SPRITES IN MOTION YOU WOULD PLACE >D0 AT >0328

THE THIRD BYTE REFS A PATTERN IN THE PATTERN DESCRIPTOR TABLE. THE NUMBER CAN BE FROM >00 TO >FF. IT CORRESPONDS TO A CHAR DEFINRD IN THE SPRITE DESCRIPTOR TABLE THAT WE WILL GET TO NEXT.

EG: IF THIS BYTE WAS >80 IT WOULD BE THE FIRST CHAR IN THE TABLE.

THE FOURTH CONTROLS THE EARLY CLOCK OF THE SPRITE AND ITS COLOR. THERE IS NO EQUAL TO THIS CLOCK IN EXT.B. THE FIRST FOUR BITS CONTOL THE CLOCK AND THE LAST 4 BITS THE COLOR. IF THE LAST BIT IS SET TO 0 THE EARLY CLOCK IS OFF AND THE LOC. OF THE SPRITE IS SAID TO BE IT'S UPPER LEFT HAND CORNER. THIS MEANS THAT THE SPRITE WILL FADE IN AND OUT ON THE RIGHT HAND SIDE OF THE SCREEN. IF IT IS 1 THE CLOCK IS ON ON THE SPRITE LOC.IS SHIFTED 32 PIXELS TO THE LEFT. THE SPRITE CAN FADE IN AND OUT ON THE LEFT SIDE OF THE SCREEN.

THE LAST 4 BITS OF THE FOURTH BYTE HOLD THE COLOR. THESE ARE AS IN THE COLOR TABLE WE DISCUSSED IN PART ONE OF ASSM. PROGRAMING AND MAY BE >0 TO >F.

NOW LETS LOOK AT THE SPRITE DESCRIPTOR TABLE

BUT BEFORE WE DO ARE THERE ANY QUESTIONS UP TO THIS POINT.

THE SPRITE DESCRIPTOR TABLE HOLDS THE PATTERNS CODES FOR EACH SPRITE.IT STARTS AT LOCATION >400 IN MEMORY. EACH SPRITE USES 8 BYTES.

EG: SPRITES#1 STARTS AT >400 AND IT'S CHAR NUMBER IS >80. IT USES THE LOCS. >400 TO >407 INCLUSIVE.

SPRITE #2 STARTS AT >408 AND IT'S CHAR NUMBER IS >81. IT USES THE LOCS. >408 TO >40F

THIS CONTINUES TO LOCATION >077F

THAT SHOULD BE AS CLEAR AS MUD... RIGHT GUYS????

A ". TIFLAN Income Tax Template.
by iom Cairns

(This template is for 1987 tax year and is not likely applicable for the 1988 Tax year, however it should be a useful guide. In addition, I've had to put MP columns 3 and 4 below because of our 40 column format in the newsletter. Note in lines 21 and 22 below, the "x" in the bracketed expressions means "*". editor)

		1	2
1	1987 DEMO	(TAXFOT7R2)	(MP16)
2	---------(22)-------------(12)-		
3	114 CFP --INCOME--		$5000.00
4	115 Pensions(PI)		$17000.00
5	120 Txbl Dividends(P1)		$0.00
6	121 Interest (P1)		$2000.00
7	130 Other Income(P1)		$1000.00
8	150 TtlIncom(Add 3:7)		$25000.00
9	223 Dductns f Ttl Ncom		$5000.00
10	224 Net Income(8-9)		$20000.00
11	235 PersExemptions(P2)		$7920.00
12	238 IntDivIncDed(Sch4)		$1000.00
13	240 Pension Inc Ded		$1000.00
14	243 Charitable Donatns		$1000.00
15	251 DedTrfSpouse(Sch2)		$0.00
16	253 CapLosses(72to86)		$2000.00
17	400 TxbIncom(10-11:17)		$7000.00
18	501 FedTx *calc*		$1063.18
19	502 DivTaxCr(Sch11)		$0.00
20	505 Basic FedTx(18-19)		$1063.18
21	T1C MBTx(20x54%+1%x18)		$774.12
22	T1C MBTxRed5%x11-1%x18		$196.00
23	423 MBTx Payabl(21-22)		$578.12
24	410,509 Credits-Surtax		$43.64
25	435 TtlPbl(20+23-24)		$1597.66
26	440 TtlTxDductd(P4)		$1390.06
27	448 MBTaxCredit(T1C)		$207.60
28	463 Ttl Cr(Add 26+27)		$1597.66
29	465 BALNC DUE(25-28) *		$0.00

3   4

-----(12)-------(10)---
Federal Tax Rates

Under$1320	6%*
** $1320--	$79+16%*
$2639--	$290+17%*
$5279--	$739+18%*
$7918--	$1214+19%*
$13197-	$2217+20%*
$18476-	$3273+23%*
$23755-	$4487+25%*
$36952-	$7786+30%*
$63347-	$15705+34%

Txblncom-	$7000.00
Fr FTR	$5279.00
Row(16-17)	$1801.00

Fr FTR	$739.00
%of Row 18	$324.18
To R18C2	$1063.18

TxblDiv	$0.00
8 DivTxCr	$0.00

GENEVE [˙]
by Darrell Wyatt

The holiday season is over and we are into another new year full of new surprises(hopefully for the Gen'eve.

To start the new year off right, I have picked up the latest Mdos ver 1.14 and have ordered two new Gen'eve specific programs called Picture Transfer and Hypercopy. I also have ordered a new program called Batch It that works for the Gen'eve and the TI.

I also think I will be getting my hard disk controller soon or at least I hope so as I ordered it in October.

The one program that I can tell you about though is the Macflix program. This is again a program that is for both the TI and the Gen'eve, but it really shines on the Myarc. Basically it is a program that will read in graphics pictures from the Apple Macintosh and save them out to either a TI Artist format or a Myart format. In the case of the Myart format the graphics are high resolution and very impressive. Due to the fact that the Macintosh pics are a full 8 1/2 by 11 you can save only 1/2 a pic at a time but this is still a very good and well written program and works flawlessly on my Gen'eve.

To start the year off right, we should have some resolutions (other than graphics) and here are my goals for the Gen'eve for 1989:

1. Hard disk drive with 20 megs of memory.

2. Addition of my Myarc 512K card to the Gev'eve(as soon as the fix comes out for it).

3. The addition of the extra 32k 0 wait state ram mod by Paul Charlton to slightly speed things up even more.

4. The addition of a new multisync monitor(the Amiga with only 200 vertical lines of resolution is not totally satisfactory). 5. Get as many Mdos compatible Gen'eve specific programs as I can possibly find.

6. Build a graphics library that is second to none.

With all the computers available today in all sizes shapes and colors, it is still very difficult to know exactly what to do. I feel that there is no such thing as the ultimate choice. It is my intention to build a computer system that is comfortable for me and is unique in that it is custom tailored to fit my needs. It will be interesting to see what 1989 brings, not only to the world of Gen'eve and TI but to the entire computer industry. Above all though, I hope that everyone keeps on TI'ing and with that, we will see you all next month.

A Calculator with Memories Program.

While perusing some old newsletters the other day, I came across this calculator program. It interested me because of its memories. It came from "Tips from Tigercub #41", via Ryte-Date November/86. No other calculator program I've seen has one memory, let alone five.

The program requires XBASIC, and is a bit slower because all operations are CALL KEY, hence don't type too fast, and don't use ENTER. Acceptable inputs are: 21+35= or 85/21= do calculations. M1=7= or M1=7+2= or M2=1-M2= puts a value in memory. Experiment to learn to use the program. Note that it disables the FCTN = key. Screen colors can be changed to suit in lines 100, 140 and 150. (editor)

```
100 CALL CLEAR :: CALL SCREEN(5):: DEF S
$(X)=SEG$(A$,X,1)&" = " :: CALL PEEK(81
98,A):: IF A<>170 THEN CALL INIT
110 CALL LOAD(-31806,16):: ON WARNING NE
XT :: GOTO 140
120 SET,M$(),K,S,A$,S$(),R,C,N,N1,N2,N1F
,N2F,M1F,M,MF,DF,FF,VF,EF,FL,N$,F2,T,M2,
MEM(),ST,NX,ZF
130 CALL COLOR :: CALL CHAR :: CALL KEY
:: CALL SOUND !€P-
140 FOR SET=0 TO 4 :: CALL COLOR(SET,16,
1):: NEXT SET :: FOR SET=5 TO 8 :: CALL
COLOR(SET,5,16):: NEXT SET :: CALL CHAR
64,"0")
150 FOR SET=9 TO 12 :: CALL COLOR(SET,16
,1:: NEXT SET
160 DISPLAY AT(1,10):"TIGERCUB :'   MULT
IMEMORY&CALCULATOR": :"MEMORY #1": :"MEM
ORY #2": :"MEMORY #3": :"MEMORY #4": :"M
EMORY #5"
170 M$(1)="0123456789.+-*/%=CXM" :: M$(2
)="0123456789.ASMDFEDXM" :: DISPLAY AT(2
0,1):"use ?":"(1) symbols":"(2) alpha ch
aracters"
180 CALL KEY(0,K,S):: IF S=0 OR K<49 OR
K>50 THEN 180 :: A$=M$(K-48)
190 DISPLAY AT(20,1):S$(12):"add";TAB(16
);S$(16);"percent" :: DISPLAY AT(21,1):S
$(13);"subtract";TAB(16);S$(17);"equals"
200 DISPLAY AT(22,1):S$(14);"multiply";T
AB(16);S$(18);"cancel" :: DISPLAY AT(23,
1):S$(15);"divide by";TAB(16);S$(19);"cl
ear all"
210 DISPLAY AT(24,1):"M1 to M5 = memorie
s #1 to #5"
220 R=15 :: C=1 :: N,N1,N2,N1F,N2F,M1F,M
,MF,DF,FF,VF,EF,FL,ZF=0 :: N$="" :: DISP
LAY AT(18,1):""
230 CALL KEY(3,K,S):: IF S<1 THEN 230 ::
 CALL SOUND(50,500,5):: DISPLAY AT(R,C):
CHR$(K):: C=C+1
240 ON POS(A$,CHR$(K),1)+1 GOTO 260,270,
,270,270,270,270,270,270,270,270,270,280
,290,250,290,290,290,340,410,420,430
250 IF VF=1 OR MF=1 THEN 290 :: ZF=1 ::
N$="-" :: GOTO 230
260 DISPLAY AT(R,C-1):"?" :: C=C-1 :: GO
TO 230
270 IF MF=1 THEN 260 :: FL=0 :: VF=1 ::
IF DF=0 AND ZF=0 THEN N=N*10+K-48 :: GOT
O 230 ELSE N$=N$&CHR$(K):: GOTO 230
280 IF DF=1 THEN 260 :: DF=1 :: MF,FL=0
:: IF ZF=1 THEN N$=N$&"." :: GOTO 230 E
LSE N$=STR$(N)&"." :: GOTO 230
290 IF C=2 OR FL=1 THEN 260 :: FL=1 :: I
F FF=0 THEN 320
300 F2=POS(A$,CHR$(K),1)-11 :: IF VF=1 T
HEN GOSUB 480
310 GOSUB 520 :: N1=T :: DISPLAY AT(18,1
):"SUBTOTAL";T :: N2F,N2=0 :: FF=F2 :: G
```

```
OTO 230
320 IF VF=0 THEN 330 :: VF,MF=0 :: GOSUB
 480
330 MF=0 :: FF=POS(A$,CHR$(K),1)-11 :: G
OTO 230
340 IF C2 OR(FF AND M1F=0)OR(C=4 AND M1F
=0)OR FL=1 THEN 260
350 IF C=4 THEN EF=1 :: M2=M :: N1F,MF=0
 :: GOTO 230
360 IF VF=1 THEN GOSUB 480
370 IF EF=0 THEN 400
380 IF N2F=0 THEN MEM(M2)=N1 :: DISPLAY
AT(M2*2+2,11):N1 :: GOTO 220
390 GOSUB 520 :: MEM(M2)=T :: DISPLAY AT
(M2*2+2,11):T :: GOTO 220
400 GOSUB 520 :: DISPLAY AT(15,C):T :: G
OTO 220
410 DISPLAY AT(R,1):"":"":"":"" :: GOTO
220
420 MEM(1),MEM(2),MEM(3),MEM(4),MEM(5)=0
 :: FOR R=4 TO 12 STEP 2 :: DISPLAY AT(R
,10):"" :: NEXT R :: GOTO 410
430 IF EF=1 AND MF=1 THEN 260
440 CALL KEY(3,K,ST):: IF ST<1 OR K<49 O
R K>53 THEN 430 ELSE CALL SOUND(50,500,5
):: M=K-48 :: DISPLAY AT(R,C):CHR$(K);::
 C=C+1 :: MF=1
445 FL=0 :: IF VF=1 THEN GOSUB 480
450 IF N1F=0 THEN M1F,N1F=1 :: N1=MEM(M)
 :: IF ZF=1 OR DF=1 THEN N1=VAL(N$&STR$(
N1)):: DF,ZF=0 :: GOTO 230 ELSE 230
460 IF N2F=0 THEN N2F=1 :: N2=MEM(M):: I
F ZF=1 OR DF=1 THEN N2=VAL(N$&STR$(N2))
:: DF,ZF=0 :: GOTO 230 ELSE 230
470 GOSUB 520 :: MEM(M)=T :: DISPLAY AT(
M*2+2,11):T :: GOTO 220
480 IF DF=0 AND ZF=0 THEN NX=N ELSE NX=V
AL(N$):: DF,ZF=0
490 IF N1F=0 THEN N1=NX :: N1F=1 :: GOTO
 510
500 N2=NX :: N2F=1
510 VF,N=0 :: N$="" :: RETURN
520 IF FF=1 THEN T=N1+N2 ELSE IF FF=2 TH
EN T=N1-N2 ELSE IF FF=3 THEN T=N1*N2 ELS
E IF FF=4 THEN T=N1/N2 ELSE T=N1*N2/100
530 RETURN
```

TI-CHAT
by Ralph Mills

Console/PEB Cable.

In the hope than no one else will try this, I'm reporting an experience I had in early January. After wanting to shorten the PEB umbilical cable for some time, I did, reducing it to about 10 inches length. (I also have a homemade cable from the console to the flexcable connector. The connector and cable are located behind the PEB in the cabinet, - it's crowded.) When the system was all hooked up again, none of my peripherals worked !!

After a couple of days of agonizing, checking for bad or shorted connections and other faults, I noticed that the TI Console Technical Data manual talked about I/O bus loading and load capacity. Hence the remaining four feet of cable was re-installed between the connector and the PEB card.

What a relief, everything worked again.'! The only difference seems to be that the VERMENU appearance after startup is slightly slower. My fault search indicated that the RDBENA (remote data bus enable) line was high. This line is "Active LOW" and is generated within each peripheral from address and logic signals. Since this wasn't happening, I assume the loss of the stray capacity contributed by the shielded cable and the line resistors upset the timing of the signals.

The New Ninety Niner UG (B.C.) issues have articles on modems, etc. "Bulletin Boards and Modems", and "Modeming Made Easy" (Oct/88); and "Purchasing a Modem" (Nov/88).

The Ottawa TI99/4A UG has a "My-Word Tutorial" by Jane Laflamme that would be interesting to users of that program.

The Myarc HFDC has been reviewed in the Ottawa NL(Oct/88) by Charles Earl; and the 919 UG(Toronto,Aug/88) by Steve Mickelson. Both are impressed with the card. Mickelson describes it in more detail.

The Computer Shopper(Dec/88) reviews a program - PrEditor by Tom Bentley that is useful for writing programs in assembly, c99, Fortran 99, Pascal, etc. It's available from Asgard Software (PO Box 10306, Rockville, MD 20852).

TI-BASE is reviewed in MICROpendium (Nov/88) by Bill Gaskill. The data base program is available from Inscebot Software, PO Box 291610, Fort Orange, FL 32027, for $24.95 +$1.50 S&H. It requires one SS drive and XBASIC, E/A or Mini-Memory module.

The P-GRAM Card is reviewed in the Dec/88 issue of MICROpendium by Harry Brashear. It puts the contents of a cartridge on a disk. It's highly rated by the reviewer, and is expensive - $150 for Base Kit + $20 for Clock, $200 complete with clock from Bud Mills Services, 166 Dartmouth Dr., Toledo OH, 43614.

Has anyone experienced difficulty getting TI-Writer (Funnelweb) formatter to handle "%"s with numbers after them properly ? My experience has been that everything after the "%" is deleted.

WINNIPEG

contributors.

Letter from the Editor
by Ralph Mills

The Jan. 29th meeting was attended
by 16 or 17 members. The matter of the
increasing cost of producing the monthly
newsletter was raised, and an informal
and fairly lively discussion followed.

The result of the discussion was
the decision to provide the newsletter
on disk to the members at the meetings
as before, making a few paper copies
available to members without disk
drives. In addition, we would
discontinue the distribution of our
newsletter to other clubs on an exchange
basis. We would attempt to "subscribe"
to several of the larger groups'
newsletters, and offer our newsletter to
others on disk, like a membership. Each
disk, with two or three months
newsletters would be mailed to these
"members".

The club meets on the last Sunday
of each month, missing July, August, and
December during the year. A newsletter
has been printed for members to get at
each meeting.

For the "new" or disk newsletter,
each article will be a complete and
separate DV/80 file. Each will be
formatted forty columns wide, to avoid
windowing. Each issue will be date
coded, this month, Feb. will be 0289,
for example. A title page including the
date for the next meeting and any other
necessary information etc., and a README
file identifying the contents of each
issue will be included.

The system outlined above is not
cast in stone, and suggestions from
members that will improve it are
welcome. The paper copies will
essentially be the same as before.

In the future, the number of
newsletters we receive as a club will
drop, making information available for
our newsletter more dependent on our
membership. There must be some things
of interest to each of you that you
would be willing to share. At present,
three or four members only are regular

HELPFUL HINTS.
by Rick Lumsden.

February already and I bet the
majority of us are longing for summer
now, especially after that last cold
snap. There are a few amongst us that
have enjoyed the Las Vegas sun and I
would bet that this weather is not
bothering Darrell in the least now that
he has a new Myarc Hard/Floppy
controller to keep him warm during the
long cold nights.

I have been pretty busy of late and
this article may reflect that but I
wanted to get something in for Ralph.
It is a thankless job being newsletter
editor, and any and all donations to it
would be greatly appreciated.

It has been quite awhile since I
built any joystick adaptors to adapt an
Atari or Commodore joystick to a TI but
I had occasion to build a few and modify
another of my own recently. Since it
has been some time since anything
regarding these adaptors in our
newsletter, I'll start with that today.

The TI uses the same kind of stick
as the two others mentioned except it
has only one joystick port and the
actual wiring of the DB-9 joystick port
is slightly different. The method TI
chose can cause some headaches if you do
not use a few diodes in line to block
signals from one stick interfering with
the other.

The pinout of the joystick port in
the console is:
    1-N.C.
    2-Joystick 2 Ground
    3-Up
    4-Fire button
    5-Left
    6-N.C.
    7-Joystick 1 Ground
    8-Down
    9-Right

Note-N.C.=No Connection

Looking into the port on the
console, the #1 pin is the upper left
with the #2-#5 numbered sequentially
going to the right. The #6 pin is the
bottom left and again numbered
sequentially to #9 in the bottom right
corner.

The wiring on a typical Atari style
stick is as follows.
    1-Up
    2-Down
    3-Left
    4-Right
    5-N.C.
    6-Fire Button
    7-N.C.
    8-Ground
    9-N.C.

To use one stick on your 4A, just
rewire the joystick DB-9 end as follows:

TI Computer Atari Joystick

    3------------1
    4------------6
    5------------3
    7------------8
    8------------2
    9------------4

This wiring will give you one stick
that works, but a number of programs
require two sticks to operate. Here it
becomes a little trickier. TI decided
to wire both sticks into one port. The
wiring for the directions and fire
button are common to both while the
ground is seperate for either stick. If
while playing a game where two sticks
are being used, and they are moved in
opposite directions, the computer sees
two of the lines closed and the action
on screen will halt. It is like pulling
the sprite in opposite directions. To
overcome this you must install a diode
to block the signal from one stick
interfering with the other. Here's how
it is done:
    TI Atari Joystick

(continued from page 1)...

TI Atari Joystick

2-------------#8 Stick #2

3-\-->/------#1 Stick #1

    \->/-----#1 Stick #2

4--\-->/------#6 Stick #1

    \->/-----#6 Stick #2

5-\-->/-------#3 Stick #1

    \->/------#3 Stick #2

7-------------#8 Stick #1

8--\-->/------#2 Stick #1

    \->/-----#2 Stick #2

9--\-->/------#4 Stick #1

    \->/-----#4 Stick #2

The >/ signifies a 1N914 diode with the banded end toward the joystick side. As you can see, all th lines require the diodes except the ground lines. The diodes are very cheap and can be found at any electronics supply house. Hope that clears up a few questions.

While going through some old newsletters, I cam across a short program that I had used and always thought was a nifty bit of programming. It came from the Ohio 99/4A club originally and I thought it would be fun to try it again. What it does is change your cursor into whatever design you please and it wll remain that way until the computer is powered down or QUIT. I have seen a cursor redefined as logo that TI uses, that being the little state of Texas.

```
1 CALL CLEAR :: CALL INIT
2 CALL LOAD(8196,63,248)
```

```
3 CALL LOAD(16376,67,85,82,
   83,79,82,48,8)
4 CALL LOAD(12288,48,48,63,
   255,254,124,24,12)
5 CALL LOAD(12296,2,0,3,240,
   2,1,48,0,2,2,0,8,4,32,32,
   36,4,91)
6 CALL LINK("CURSOR")
```

Line 4 carries the redifinition and a CALL LOAD(12288,0,0,0,0,0,0,0,252) will result in a flat line cursor. The program requires a 32K memory expansion and XB to run. Try a few yourself. If you never liked the block cursor, you can pretty well design your own to what you please. Also looks great in one of your own programs and makes it unique.

That's about all for this month but I promise to try and glean some more interesting hacks and fixes from my old magazines etc. for next month. In the meantime, keep warm.

An ASSEMBLY LANGUAGE TUTORIAL
by Sheldon Itscovich.

(this is the second part of install-ment 4. The first part was in the Jan. /89 newsletter. editor)

SPRITES.(part 2)

OK NOW TO MAGNIFIED SPRITES.

YOU CAN MAKE SPRITES MAGNIFIED DOUBLE SIZED OR BOTH BY WRTING A VALUE TO THE 2 LEAST SIGNIFICANT BITS OF VDP REG. 1 HERE IA A LIST OF THESE VALUES.

00 IS STANDARD SIZE EACH SPRITE IS 8 BY 8 PIXELS.
10 IS DOUBLE SIZED EACH SPRITE IS 16 BY 16 PIXELS. EACH SPRITE IS DEF'D BY 4 CONSECUTIVE PATTERNS FROM THE SPRITE DESCRIPTOR TABLE.

EG: IF THE LAST 2 BITS ARE 01 THEN THE

CHAR >80 IS REF'D THE SPRITE WILL BE >81,>82,>AND >83. THE >80 CHAR MAKES UP THE UPPER LEFT CORNER,>81 MAKES UP THE LOWER LEFT CORNER,>82 MAKES UP THE UPPER RIGHT CRNER AND >83 MAKES UP THE LOWWER RIGHT CORNER.
11 IS DOUBLED SIZED AND MAGNIFIED AND EACH IS 32 BY 32 PIXELS IT IS DEF'D THE SAME WAY AS A DOUBLE SIZED SPRITE EXCEPT THAT EACH OF THE 4 CHARS IS 4 STANDARD CHARS IN SIZE.

THE SPRITE MOTION TABLE STARTS AT LOC. >780. BEFORE A SPRITE CAN BE PUT INTON MOTION, SEVERAL CONDITIONS MUST BE MET.

1st. INTERUPTS MUST BE INITIATED THE LIMI 2 OPERATION IS USED. FOLLWED BY A LIMI 0 OPERATION SO THAT VDP REGS. ARE NOT ALTERED.

2nd. YOU MUST INDICATE IN YOUR PROG. HOW MANY SPRITES WILL BE IN MOTION. THIS IS DONE BY PLACING A VALUE AT ADDRESS >837A OF CPU MEMORY.

EG: IF SPRITES 0 THRU 8 ARE IN USE THEN >837A MUST CONTAIN THE VALUE 9

A DESCRIPTION OF THE MOTION OF EACH SPRITE MUST BE PUT IN THE TABLE AS WELL. EACH SPRITE TAKES UP 4 BYTES IN THE TAB.

THE 1st. BYTE CONTAINS THE Y VELOCITY. THE 2nd. BYTE CONTAINS THE X VELOCITY. THE 3rd and 4th ARE USED BY THE INTERUPT ROUTINE SO ALL YOU HAVE TO DO IS LEAVE SPACE FOR THEM IN THE TABLE.

THE X AND Y VELS ARE EXPRESSED AS BELOW:

>00 TO >7F   Y DOWN   POS. VELS. DOWN OR
0 TO 127   X RIGHT RIGHT MOTION

>FF TO >80   Y UP   NEGATIVE VELS. UP
-1 TO -128   X LEFT   OR LEFT MOTION

(continued from page 2)

A VALUE OF 1 (>01) WILL CAUSE THE SPRITE
TO MOVE 1 PIXEL EVERY 16 VDP INTERRUPTS.
THIS IS APPROXIMATELY ONCE EVERY 16/60th
OF A SECOND.

LETS LOOK AT A SAMPLE PROGRAM.....

```
         DEF  SAMPLE
         REF  VMBW,VWTR
QUANT EQU >837A   NUM OF SPRITES LOC.

*****************************
* DESCRIPTION OF THE BALL *
*****************************
BALL   DATA >3C7E,>FFFF,>FEFF,>733C

*********************************************
*   SPRITE ATTRIBUTE TABLE       *
*   70=Y POSITION,D0=X POSITION  *
*   80= CHAR NUMBER,0=CLOCK OFF   *
*   8=SPRITE COLOR                *
*   D0=Y POS OF SPRITE 1 SO THE COMP*
*   KNOWS ONLY 1 SPRITE EXISTS    *
*********************************************
SDATA  DATA >70D0
       DATA >8008
       DATA >D000

*********************************************
*   SPRITE MOTION TABLE           *
*   05=Y VELOCITY, 05=X VELOCITY  *
*   0000= SPACE RESERVED FOR INTERRUPT *
*********************************************
SPEED  DATA >0505,>0000

MWS    BSS 32  SAVE MINUMUM 32 BYTES

SAMPLE LWPI MWS    GO TO MY WORK AREA

       LI  R0,>780 LOAD BALL SHAPE IN
       LI  R1,BALL PATTERN TABLE AT LOC
       LI  R2,8   >780 THERE ARE 8
       BLWP @VMBW  BYTES TO MOVE

       LI  R0,>300 LOAD BALL LOCATION
       LI  R1,SDATA IN SPRITE ATTRIBUTE
       LI  R2,8    TABLE AT LOC. >300
       BLWP @VMBW   8 BYTES TO MOVE.

       LI  R0,>780 LOAD BALL SPEED IN
```

```
       LI  R1,SPEED SPRITE MOTION TABLE
       LI  R2,4    AT LOC.>780 THERE
       BLWP @VMBW   ARE 4 BYTES TO MOVE

       LI  R1,1    PUT 1 INTO VDP REG1
       SLA R1,8    SHIFT IT OVER 8 BITS
       MOVB R1,@QUANT  TO MAKE IT A WORD
                        THERE IS 1 SPRITE

MOVE   LIMI 2     DISABLE INTERRUPTS
       LIMI 0     ENABLE INTERRUPTS

       JMP MOVE   CONTINUE TO MOVE THE
                        THE SPRITE

       END SAMPLE START THIS PROGRAM
                        AUTOMATICLLY
```

TI-CHAT
by Ralph Mills

Recent issues of the QB MONITOR
have included extensive articles:
"Powering That Second (3rd) Drive" by Ed
Machonis, and "Replacing the Power
Supply, a case history" by Maurice E.T.
Swinnen, (Dec/88). The Jan/89 issue
seems almost devoted to disk drives —
"Adding Disk Drives" by Ken Chandler,
and "A Tale of Three Drives" by Ed
Machonis. All are informative articles.

The Kawartha Kronicle vol.6,no 9,
has a warning about re-inking ribbons
with WD-40. Originally by Ed Machonis
with a quote from Epson. They say in
part:

"Warning: Some Epson owners feel
the life of their ribbons can be
extended through the liberal application
of the lubricant WD-40. This could be
the most costly mistake you can make
with an Epson printer. Although the
lubricant consistency of WD-40 is ideal
for large gears, it is not suitable for
close-tolerance pin movement. Your
choice as an Epson owner is between
buying a new ribbon or paying for a new

printhead later."

Ed Machonis "knows of one person
who regularly uses WD-40 on his ribbons,
and of one person who had to replace his
printhead - the same person."

The above newsletter also included
a program for a lapsed time clock
displayed in the upper right corner of
the screen. Originally from the S.F.V.
User Group newsletter (Nov/88), "it
stays there counting through many
extended basic programs".

The Jan/89 MICROpendium has a
review of FirstBase V1.0 by Warren Agee
and marketed by Genial Computerware,
P.O. Box 183, Grafton, MA 01519. for
$59.95 US. It is described as a "c99
coded monster, consisting of three SS/SD
disks with 126 pages of documentation.
XBASIC, E/A or TI-Writer module is
required to load. Minimum system
requirement is 32K memory and one drive.

The reviewer, Bill Gaskill, likes
the software "for its ability to handle
large record sizes and massive data
files". It is "capable of 720-byte
fields, 75 fields per record, 3,000
character long records and 32,767
records per file", and allows some math.
The review is four pages plus in length
and is quite comprehensive.

The same issue also has a review of
a useful adjunct for the TI-ARTIST user,
"Picture_It. The program "takes
TI-ARTIST Instances and converts them t
o hex code and even writes a program to
run them in merge format". It is
available from Rodger Merritt, 1949
Evergreen Ave. Fullerton, CA 92635 for
$13. The reviewer, Ken Gilliland gives
it an A average report.

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Winnipeg_TI-99/4A_NEWSLETTER

Dear TI-99/4A 'er,

    You will have read in our recent newsletters (and of other TI-99/4A clubs) increasing frustrations in compiling, reproducing, and mailing out newsletters, perhaps for the same three main reasons we have found:

    First: Lack of new copy; we have always felt hesitant to just repeat other clubs articles, and our in-house author's are not always able to have a new article each month.

    Second: The hassle of reproduction, timely mailing, and now Canada Post requiring enveloped newsletters; have all increased our costs more than we can comfortably afford.

    Third: Reduction in new members, with long time hard-core members still regularly attending - some have other label computers also. We enjoy our monthly meetings still.

    With these, and other considerations, we reluctantly and regrettably decided to reduce the broad mailing of our newsletter; and do the following instead:

    1.. 1988 membership fee rolled-over into 1989 with no fee for 1989. New members joining in 1989 may be asked for a fee at their second meeting.

    2.. Our monthly newsletter will now be available on-disc in a DV/80 file for those attending the meeting, with only a few hard-copies available for those without disc drives. Disc distribution has the advantage in that new free-ware and fair-ware can be included also.

    3.. Out-of-Winnipeg paid-up 1988/89 members shall now receive a mailed newsletter in the form of a SS/SD disc every three months.

    4.. Regretably we also had to decide to discontinue newsletter exchange mailing with other clubs, unless they are a paid-up member. Our membership fee is $20.oo year.

    5.. We shall now obtain other club's newsletters by a direct subscription only.

    Should you have any concerns, please feel free to contact us. May you have long and enjoyable TI adventures in the years to come.

    Yours very sincerely,

Winnipeg_TI-99/4A_User_Group.