NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

JANUARY, 1983

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GENERAL DISCUSSION

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We would like to welcome everyone to the 1983 National Interact Computer Club. We hope it will be a very beneficial year for all of us. First we would like to begin by explaining a few things. We are in the process of organizing the mail/programs etc. that we have received. We have noticed several tapes from programs that have already been published. The ones that have names on them we will return soon. We will be offering past issues of the newsletter as soon as we have them organized, like the rest of you, the issues are a little light and we are having a little trouble making copies!! Lastly, if you sent in items for sale, except those received in November, December, and January, which have not yet been published, please let us know if the item(s) is still for sale. If you aree selling a program, we request that you send us a copy (tape), to be returned, so that we can write a review when the sale is featured. Remember, as published in the previous issue (NOV/DEC) we will publish as many for sale items for club members free each month as we have the space, this is a 1" line advertisement. Our prices for larger space will be listed in the February issue. The contest begins with this issue, so be sure to return the ballot (on page 5) to us by the date indicated.

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HELPFUL TIPS/INFORMATION

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MR. ALBERT F. HARSCH OF PENNSYLVANIA offers the following tip:

To convert 8K basic programs to Level II basic plus the fastline overlay, the extended plot command can be replaced with the fastline overlay box command as follows:

8K basic command - PLOT X,Y,C,W,H

Fastline overlay command - BOX X,Y+H,C,W,H

INTERSOFTWARE CANADA offers the following machine code program:

(Yes, we would love more machine language programs!)

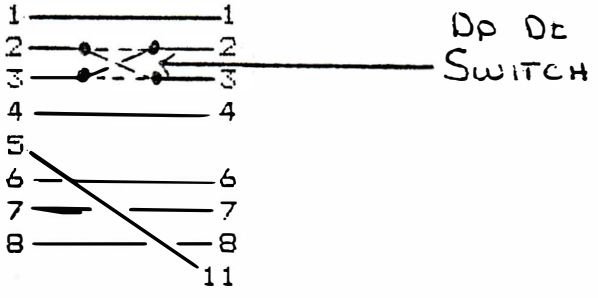
```
4C00...LXISP..8000  stack pointer set at highest address
4C03...JMP....4C06
4C06...EI.........  enables INTERRUPT after it has been disabled
4C07...CALL...07E0  AWAITS KEY INPUT; will not work uness EI
4C0A...DI
4C0B...LXIH...4C30  H-L points to 4c30 for music data
4C0E...XRAA         sets A to zero
4C0F...MOVBA        register B will not be needed and is set to
                    0
4C10...MOVCM        data in memory put into c; tone value
4C11...INXH         point to next data
4C12...MOVDM
4C13...INXH
4C14...MOVEM        we now have the length of the note in D-E
                    pair
4C15...INXH         point to next note in memory
4C16...CMPE         compare E with A, which was set to zero
4C17...JZ.....4C06  start all over if data found is equal to 0
4C1A...PUSHH        H-L pair would be destroyed by next routine
4C1B...CALL...07BF  MUSIC SUBROUTINE must be preceeded by DI
4C1E...POPH         retrieve H-L from stack
4C1F...LXIB...0200  small delay value between notes
4C22...CALL...07F6  DELAY ROUTINE
4C25...JMP....4C0E  pick up next note to be played
```

MUSIC DATA - FROZEN LOGGER TO VIEW USE Y4C30

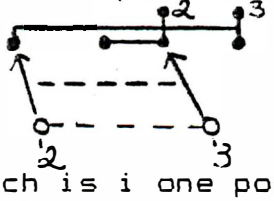
```
4C30.../A8  168D is the low C in music
4C31.../00  4C32.../77 length of note given in two bytes as 0077
4C32 etc. 61, 01, 9C, 61, 00, CE, 6E, 01, 6C, 7C, 00, A1, 83,
00, 99
4C42 etc. 6E, 02, D7, 61, 00, CE, 5B, 01, B8, 5B, 00, DC, 60,
01, F4
4C51 etc. 5B, 00, DC, 61, 04, 07, 61, 00, CE, 50, 01, F4, 50,
00, FA
4C60 etc. 5B, 01, B8, 61, 00, CE, 6E, 00, B6, 94, 02, 1D, 94,
00, 87
4C6F etc. 83, 01, 31, 5B, 00, DC, 61, 01, 9C, 6E, 00, B6, 7C,
02, 85
4C7E etc. 00, 00, 00  signals end of tune
```

BARBARA BRIDGES OF CALIFORNIA offers the following information:

For all users interested in getting a modem but short on cash, the TYM SHARE Corp. is offering a reconditioned TYM SHARE MODEM with a 30 day warranty for $39.95. (address below) She bought one and finds it works great. It has RS232 connector and if you already have the Micro Video port the same connector as is used for a printer can be used with one small change:



wire the leads of a double pole/double throw switch as follows:



so that when the switch is i one position, pin 2 goes to pin 2 and pin 3 goes to pin 3; and in the other position, pin 2 goes to pin 3 and pin 3 goes to pin 2; then in the straight position its fine for your printer and with pins 2 and 3 crossed you can use it for your modem. She doesn't know how the Slaugh port is initialized, perhaps someone else can help there?

TYM SHARE Model 900 -- 300 baud transmission - DAA compatible RS-232C Interface - Full Duplex, originate only

TYM SHARE - 20705 VALLEY GREEN DRIVE
CUPERTINO, CA 95014
TOLL FREE - U.S. - 1-800-228-2028 EXT. 558

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QUESTIONS/ANSWERS

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MR. LARRY BARAN needs a GOOD readable schematic of the INTERACT. We cannot find anyone who has this, maybe another clubmember can help here?

MR. CHARLES CARDWELL would like to connect a second cassette tape deck to the Interact (16K) so that he can read off the built in deck, process the data and write to the auxiliary deck. We feel that will all of the hardware people we've read about in previous issues, someone can let us know how this can (if it can be done.

MR. WALTER SCHROEDER has several questions:

1. How to obtain a @ on the Interact?

   This can be obtained by the statement "PRINT CHR$(64)"

2. What is the Interacts "inkeys"?

   We believe this is the INSTR$, try that, if not that does not work, can another clubmember offer further help.

3. The RND command does not function as instructed in the book.

   This is true, to use this command the following statement will work - A=INT(RND(1)*L)

   For example:
```
10  X = 40
20  A=INT(RND(1)*X)
30  PRINT A
40  GOTO 20
```

   This program produces a random number between 0 and 40 which is X. To change the limit, simply change the value of X.

4. He is also having a problem with his tape recorder, however the question is very unclear. Maybe if you try to align the heads, this might help.

MR. JERRY PREAS also has several questions:

1. We do not have the original program "MERRY OLDSMOBILE" in any of our issues back to before December, 1980. If there is/was an original, is there another Clubmember who has a copy we could publish?

2. Are there any Arcade type programs available for the Interact? (our answer is below #3.

3. Mr. Preas is having a problem with several letters on his keyboard, when he strikes them, different letters appear i.e. "B" key outputs a "Z".

   It sounds like either a problem within the ROM of your Interact, or with your keyboard. Our only suggestion for both of your questions is to write to Micro Video - they offer arcade-type games as well as replacement keyboard that is more standard with the industry (typewriter like keys) for around $80. We have always felt that the Interact keyboard left alot to be desired. We will publish, in a future issue, a review of this keyboard upgrade (ours is currently on order). You can write Micro Video at - 305 North First St., P.O. Box 7357, Ann Arbor, MI 48107.

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ITEMS FOR SALE

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To save space in this issue and future issues, below is a program code which will be used to identify all programs being sold by other clubmembers. Please save this and use it as a reference for all sales.

AI-Alien Invaders
AL-Alignment
AT-Attro Logic
BA-Bombs Away
BG-Backgammon
BI-Biorythm
BR-Breakout
CA-Calculator
CB-Checkbook
CC-Comput-a-Color
CM-Computer Maze
CN-Concentration
DF-Dog Fighttion
DI-Diagnostic
DS-Dissambler
EZ-Ezedit
F1-Fin Lib I
F2-Fin Lib II
FB-Football
KD-Knockdown
MB-Mindbender
MC-Microchess
MM-Music Maestro
MS-Message Center
MT-Morse Code Trainer
PR-Pacrat
SB-Superbowl
SP-Space Base
ST-Star Track
TB-Trail Blazers
TH-Troll Hole Adventure
VM-Video Monitor

From SUNSET COMPUTER SERVICES - Used Graftrax 80 Graphics chips with documentation for Epson MX-80 Printers (will not function with the Epson 8141 serial interface. $30.00 (address on page 1)

Order from - BARBARA BRIDGES P.O. BOX 42, BADGER, CA 93603

For $5 - CM; AT; MB; CN; AU; KD; MS. For $10 - MC; BA; MT; MM; CC; EZ; BI; DS. For $15 - AI; TH. OR all for $125.

Order from - JERRY KRYSZAN (617) 274-8551 AFTER 6PM EASTER TIME

RS-232 PORT NEW! Includes tapes, instructions and a D8080A CPU installed. best offer.

----------CONTEST BALLOT----------

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Pleasee fill in the name of the program or article you feel is the "BEST" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM _____

PTS. (1-10)

1. Documentation..... _____
2. Ease Of Use ..... _____
3. Usefulness..... _____
4. Interest/challenge..... _____
5. Educational Value ..... _____

All entries must be received by the 4th of February. (Mail to address on reverse side.) Mail only the bottom portion.

INTERSOFTWARE CANADA offers the following items for sale:

1. ARIADNE - a machine code, free standing adventure and skill game. Enter Minotaur's double labyrinth. As you reach your goal in the inner maze, you turn invisible. Only ARIADNE'S THREAD can guide you out to freedom. Variable speed with terrific sound effects imitating footsteps, outer maze randomly changes with each new game. Computer keeps score of time elapsed plus errors and much more.

2. HEXADECIMAL MINI ASSEMBLER AND DISASSEMBLER for Level II Basic lets you program in machine code and displays all memory locations (ROM, BASIC LEVEL II, and user's program) in HEX notation. The tape comes with full documentation including HEX to OP code, OP code to HEX conversion tables.

3. FOR ALL HI-LO MONITOR OWNERS - a booklet containing over 15 fully debugged, ready to run, free standing assembly language programs. The routines are fully annotated and concentrate on the use of the ROM subroutines (sound, music, color, character display, etc.). This unique publication will be of great value to the individual who purchased the HI-LO MONITOR and did not know what to do with it. One routine even shows how to make back-up copies not only of 8K commercial tapes, but also of the HI-LO MONITOR itself bypassing its own anticopy routines.

All three are $10.00 each, or save $ and order all 3 for $25.00. Add $2.00 for shipping and handling.

INTERSOFTWARE CANADA
P.O. Box 67,
FAUQUIER, B.C. CANADA
V0G 1K0

MAIL CONTEST BALLOT TO:

DENISE HALLMANN
SUNSET COMPUTER SERVICES
P.O. BOX 781-F
WHEELING, IL 60090

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PROGRAMS

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ASTEROIDS

By Tom Doerr, 3742 Mark Rd., Cambridge, OH 43725

This program is not like the acrade game of the same name, however we, nor could Tom, think of another name to call it. The game requires Level II Basic and 1 joystick. Not mentioned in the instructions in the program itself is that the laser does not blast out ahead of the ship, you just have to hold the fire button down while you are going through the asteroid. An added clue from Tom is that if the asteroids are white, they will be getting denser, if they are yellow, the asteroid belts will be spreading out again. You must key it into your computer exactly as it is printed (spaces) for the instructions to come our clearly. (We did have a little trouble trying to win this game, as a matter of fact, we never did win).

```
10 CLS:COLOR 0,7,7,3:INPUT"WOULD YOU LIKE   INSTRUCTIONS";Y$
15 IF Y$="YES" OR Y$="Y" THEN GOSUB 520
20 POKE 19215,25:A$="+":W=0:J=0:CLS:SOUND 7,4096
30 X=50:Y=65:M=7:P=1:B=1
40 FORI=5TO1STEP-1:OUTPUTI,50,45,2:FORG=1TO350:NEXT:OUTPUTI,50,45,0:N
50 SOUND4,11150:F=0
60 POKE24864,1:CLS
70 FOR A=1TOM
80 PLOT X,Y,1
90 IFW=0THEND=X
100 IF J>0GOTO 140
110 IFJOY(0)=1THENX=X-1
120 IFJOY(0)=2THENX=X+1
130 GOTO170
140 H=INT(100*RND(1)+1
150 IFH<20THENX=X+1
160 IFH>35THENX=X-1
170 PRINT:L=L+1
180 IFX=DTHENIFFIRE(0)=0THENPLOTX,Y,0
190 IFX=7THENX=105:Y=Y-4:P=P+1:M=M+B:IFM=30RM=8THENGOSUB380
200 IFY<25GOTO390
210 IFPOINT(X,Y)=3GOTO410
220 IFPOINT(X,Y)=2GOTO410
230 IFL/100=INT(L/100)THENM=M+B:IFM=30RM=8THENGOSUB380
240 NEXT
250 IFP=1GOTO270
260 FORT=1TOP
270 R=INT(100*RND(1))
280 IFB=-1THENC=2
290 IFB=1THEN=3
300 IFR=10GOTO270
310 OUTPUTA4,R,15,C
320 IFP=1GOTO70
330 NEXT:GOTO70
340 PRINT"TRY AGAIN?"
```

ASTEROIDS (continued)

```
350 IFJOY(0)=4GOTO20
360 IFFIRE(0)=0THENCLEAR:END
370 GOTO350
380 B=-(B):RETURN
390 POKE24864,6:PRINT"YOU MADE IT!!":PRINT
400 PRINT:GOTO340
410 SOUND7,4096:POKE24864,6:CLS:F=F+1:ONFGOTO420,460,500
420 PRINT"AN ASTEROID HAS  SMASHED YOUR     LASERS!!":PRINT
430 PRINT"CONTINUE ON AND  BE CAREFUL!!"
440 FORI=1TO200:NEXT
450 SOOUND4,11150:W=1:GOTO60
460 PRINT"AN ASTEROIDHAS  WIPED OUT ALL  CONTROL DEVICES":PRINT
470 SOUND6,17550:PRINT"YOU ARE NOW AT   THE MERCY OF A  MALFUNCTIONING"
480 PRINT"COMPUTER GUIDANCE SYSTEM"
490 FORI=1TO250:NEXT:J=1:GOTO 60
500 SOUND0,24844:PRINT"ABANDON SHIP!!":PRINT:PRINT
510 GOTO 340
520 CLS
530 PRINT"THE OBJECT IS TO MANEUVER YOU  SHIP THROUGH AN ASTEROID FIELD"
540 PRINT"TO THE BOTTOM OF THE SCREEN.":PRINT:FORI=1TO1000:NEXT
550 PRINT"TO DO THIS YOU  MUST MOBE YOUR SHIP ACROSS THE SCREEN THROUGH"
560 PRINT"THE ASTEROIDS FROM RIGHT TO    LEFT.":FOR I=1TO1000:NEXT
570 PRINT:PRINT"EACH TIME YOU  CROS, YOUR SHIP IS MOVED FURTHER"
580 PRINT"DOWN THE SCREEN  AND ANOTHER"
585 PRINT"ASTEROID IS ADDED TO THE FIELD"
590 FOR I=1TO1000:NEXT:PRINT:PRINT"YOUR SHIP IS":PRINT"EQUIPED WITH A"
600 PRINT"LASER THAT WILL  DISINTEGRATE":PRINT"ASTEROIDS"
610 PRINT"(CAUTION:IT ONLY WORKS WHILE YOU ARE TRAVELLING"
615 PRINT"STRAIGHT AHEAD)"
620 FORI=1TO500:NEXT:PRINT:PRINT"GOOD LUCK AND BE"
630 PRINT"CAREFUL NOT TO LET YOUR LASERS"
640 PRINT"GET SMASHED":FOR I=1TO750:NEXT:RETURN
```

THE TOWERS OF HANOI

by W. J. MOORE OF CALIFORNIA

THE TOWERS OF HANOI is a great problem with a very time consuming solution. Basically, it consists of three rods with rings of decreasing size stacked on one of the rods. (You determine the number of rings from 1 to 9). The object is to move all of the rings to rod 'C'. The rules are:

1. Only one ring may be moved at a time
2. A larger ring may not be placed on top of a smaller ring (I tried and the computer just would not let me!)

The original problem required the stack to end up on rod 'C' however, in this version, you can end up on stack 'B'.

The game requires 8K Fast Graphics and the control of the rings is done with the LEFT JOY STICK. There is a table below the rods to indicate how a move is to be made. The first letter of a pair is the FROM rod and the second letter is the TO rod. The move is made by pressing the fire button. For those of you who are impatient, after (N) rings have been entered, you can CONTROL-C (break) and enter GOTO 480. This will let you see how the computer solves the problem. (It will move the rings to rod 'B').

NOTE: THIS PROGRAM USES ALL THE MEMORY AVAILABLE SO DO NOT USE SPACES WHEN ENTERING EXCEPT THOSE WITHIN QUOTES.

```
100 REM 'TOWERS OF HANOI' (8K BASIC) BY W.J. MOORE
110 GOSUB830:GOTO260
120 FORI=1TO1000:NEXT:RETURN
130 OUTPUTP$(Z),H(Z),V(Z),3:OUTPUTP$(X),H(X),V(X),1:Z=X:RETURN
140 SOUND2,200:GOSUB120:PLOT6,6,0,114,7:GOTO270
150 IFR(1,C)=0THENOUTPUT"NO RINGS",27,11,1:GOTO140
160 GOTO380
170 IFR1>R2THENOUTPUT"RING TOO LARGE",14,11,1:GOTO140
180 GOTO430
190 M=M+1:R=0:P=0:PLOT84,11,0,36,7:OUTPUTM,80,17,1:RETURN
200 L1=R(P1,C1):L2=L1:H1=20+C1*32-L1/2:H2=20+C2*32-L2/2
210 V1=25+P1*4:V2=25+P2*4:C=POINT(H1,V1)
220 PLOTH1,V1,0,L1,2:PLOTH1+L1/2,V1,3,2,2:PLOTH2,V2,C,L2,2
230 R(P2,C2)=R(P1,C1):R(P1,C1)=0:P1=0:P2=0:RETURN
240 R=0:P=0:FORI=1TON+1:IFR(I,C)=0THENRETURN
250 R=R(I,C):P=I:NEXT
260 X=0:GOSUB130
270 SOUND0,1:IFJOY(0)=1THENX=X-1:GOTO310
280 IFJOY(0)=2THENX=X+1:GOTO320
290 IFFIRE(0)=0THEN350
300 GOTO270
310 IFX<0THENX=5:GOTO330
320 IFX>5THENX=0
330 GOSUB130
340 FORI=1TO100:NEXT:GOTO270
350 IFX=0ORX=3THENC=0:C1=0:GOTO150
360 IFX=1ORX=4THENC=1:C1=1:GOTO150
370 IFX=2ORX=5THENC=2:C1=2:GOTO150
380 GOSUB240:R1=R:P1=P:IFX=1ORX=2THENC=0:C2=0
390 IFX=0ORX=5THENC=1:C2=1
400 IFX=3ORX=4THENC=2:C2=2
410 GOSUB240:R2=R:P2=P+1:IFR2=0THEN430
420 GOTO170
430 SOUND5,71:GOSUB200:GOSUB190:T1=0:T2=0:T3=0
440 FORI=1TON:T1=T1+R(I,0):T2=T2+R(I,1):T3=T3+R(I,2):NEXT
450 IFT1=0ANDT2=0ORT1=0ANDT3=0THEN480
460 GOTO270
470 REM SOLUTION
480 CLS:SOUND3,24:X=INT(2^N)-1
490 OUTPUT"COMPUTER CAN DO  IT IN",6,59,3:OUTPUTX,42,53,2
500 OUTPUT"MOVES!",72,53,3:GOSUB120:IFT2<>0THENC=1
510 IFT3<>0THENC=2
```

THE TOWERS OF HANOI (continued)

```
520 FORI=1TON:R(I,0)=R(I,C):R(I,C)=0:NEXT:RESTORE1000:GOSUB900
530 X$(1)="A":Y$(1)="B":Z$(1)="C":L=1:N(1)=N:M=0:GOSUB560
540 OUTPUT"PLAY AGAIN (Y)",6,11,1:IFINSTR$(1)="Y"THENRUN
550 CLS:END
560 L=L+1:N(L)=N(L-1)-1:X$(L)=X$(L-1):Y$(L)=Z$(L-1):Z$(L)=Y$(L-1)
570 IFN(L)=1THENGOSUB630:GOTO590
580 GOSUB560
590 GOSUB650:X$(L)=Z$(L-1):Y$(L)=Y$(L-1):Z$(L)=X$(L-1)
600 IFN(L)=1THENGOSUB630:GOTO620
610 GOSUB560
620 L=L-1:RETURN
630 GOSUB670:C1=C:GOSUB240:R1=R:P1=P:GOSUB710:C2=C:GOSUB240
640 R2=R:P2=P+1:GOSUB200:GOSUB190:RETURN
650 GOSUB750:C1=C:GOSUB240:R1=R:P1=P:GOSUB790:C2=C:GOSUB240
660 R2=R:P2=P+1:GOSUB200:GOSUB190:RETURN
670 IFX$(L)="A"THENC=0
680 IFX$(L)="B"THENC=1
690 IFX$(L)="C"THENC=2
700 RETURN
710 IFY$(L)="A"THENC=0
720 IFY$(L)="B"THENC=1
730 IFY$(L)="C"THENC=2
740 RETURN
750 IFX$(L-1)="A"THENC=0
760 IFX$(L-1)="B"THENC=1
770 IFX$(L-1)="C"THENC=2
780 RETURN
790 IFY$(L-1)="A"THENC=0
800 IFY$(L-1)="B"THENC=1
810 IFY$(L-1)="C"THENC=2
820 RETURN
830 CLS:COLOR0,6,1,6:FORI=0TO5:V=59-I*6:READA$,B$,C$
840 OUTPUTA$,20,V,1:OUTPUTB$,52,V,2:OUTPUTC$,84,V,1:NEXT
850 GOSUB120:CLS:COLOR0,4,5,7:PLOT4,42,3,94,7
860 OUTPUT"NUMBER OF RINGS ?",6,47,1:PLOT10,16,3,87,7
870 OUTPUT"(MAX IS NINE)",12,21,1
880 A$=INSTR$(1):IFA$<"1"ORA$>"9"THEN880
890 N=VAL(A$)
900 C=1:X=0:CLS:COLOR0,3,2,7:FORI=1TON:R(I,0)=32-I*2:NEXT
910 FORI=20TO84STEP32:PLOTI,29,3,2,36:READA$:OUTPUTA$,I-1,71,1:NEXT
920 FORI=1TON:PRINTCHR$(7);:PLOT20-R(I,0)/2,25+I*4,C,R(I,0),2
930 C=C+1:IFC=4THENC=1
940 NEXT
950 FORI=0TO1:FORJ=0TO2:READA$:P$(X)=A$:H(X)=6+J*24:V(X)=23-I*6:X=X+1
960 OUTPUTA$,H(X-1),V(X-1),3:NEXTJ,I
970 OUTPUT"MOVES",78,23,2
980 RETURN
990 DATAT,,H,O,,A,W,O,N,E,F,O,R,,I,S,,
1000 DATAA,B,C,AB,BA,CA,AC,BC,CB
```

HAVE A HAPPY NEW YEAR!!

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

FEBRUARY, 1983

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GENERAL DISCUSSION

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Welcome to our second edition. Thank you to all who wrote and congratulated us on the first, we hope each issue will be a good one. Speaking of won, we would like to congratulate BARBARA BRIDGES for her article on the Tym Share article, she is our first winner of the contest. So, Barbara, you will find a check for $15 enclosed with your newsletter. So everyone remember, if you have a favorite article or program in the newsletter, please return the ballots to insure the item you desire to win does. Also, anyone who had difficulty with the program "Rings of Hanoi" it was in 8K fast graphics.

Our prices for ads larger than 1" are (for clubmembers): $25 for a full page; 12.50 for 1/2 page; 6.25 for 1/4; etc. Please be sure, if you are not paying by U.S. funds, that you add for the exchange rate.

Since our last newsletter, we have received our keyboard upgrade, so we have included our hardware review in this issue.

Also, we have 2 clubmembers who are desperately trying to locate Level II basic tapes. Mr. Friedman, we are still trying to get Protecto to return yours, we will let you know if we have any luck.

In the March issue we will let you know about old newsletter copies. AGAIN, OUR CONGRATULATIONS TO BARBARA BRIDGES.

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TIPS FROM OTHER MEMBERS

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MR. W. J. MOORE OF PITTSBURG, CALIFORNIA offers the following modifications to the 'Alphabetize' program by R. E. Jones published in the DEC 1981 newsletter. The principal change is the inclusion of Shell Sort which is many times faster than the Bubble Sort. This sort improves with larger arrays where the bubble sort progressively becomes worse.

Modifications to Alphabetize (cont)

```
30 DIML(100):GOTO50
```

(THIS WILL BE USED TO FIND MAXIMUM DATA ITEMS.)

```
62 FOR L=1TO100:READS$
64 IFS$="?"THENL=L-1:RESTORE:GOTO70
66 NEXT
```

(THIS LOOP COUNTS DATA ITEMS. IT IS TERMINATED BY DATA ITEM "?")

```
110 CLS:PRINT"NUMBER OF WORDS TO BE LISTED"
112 PRINT"(LIMIT IS:";L;")"
114 INPUTN
```

(CLARIFIES INPUT BEING REQUESTED.)

```
212 DATA?
```

THIS IS THE TERMINATOR FOR LOOP IN LINES 62-66. IT MUST BE THE LAST DATA ITEM. ADDITIONAL DATA ITEMS CAN BE ADDED, BUT MUST BE PRIOR TO TERMINATOR.

```
220 L=(2^INT(LOG(N)/LOG(2)))-1
225 L=INT(L/2)
230 IFL<1THEN310
235 FORJ=1TOL
240 FORK=J+LTONSTEPL
245 I=K
250 T$=S$(I)
255 IFS$(I-L)=<T$THEN275
260 S$(I)=S$(I-L)
265 I=I-L
270 IFI>LTHEN255
275 S$(I)-T$
280 NEXTK
285 NEXTJ
290 GOTO 225
```

(THE ABOVE IS THE 'SHELL SORT'. THE ONLY IMPORTANT FEATURE IS THAT IT REQUIRES 'N' TO BE DEFINED BEFORE IT CAN FUNCTION PROPERLY. BY CHANGING ALL STRING VARIABLES TO NUMNERICAL VARIABLES IT WILL SORT NUMBERS.)

```
300 (DELETE THIS LINE FROM THE ORIGINAL PROGRAM)
```

Mr. Moore suggests for additional information on Sorts refer to "Interface Age" August, 1981 and September 1981 issues. These articles explain in detail how eight different sort programs operate and also explain the theory.

HERE'S ANOTHER TIP FROM PETER KLOPP OF CANADA

Computer Typewriter

Here is a useful subroutine that allows you to use your Interact computer in a typewriter fashion. Since register pair D-E is needed to determine the coordinates of the character to be displayed by ROM 055C, do not forget to PUSHD if you need the register pair for something else. Using the HILO monitor, we have the following subroutine:

```
4C00  LXISP 8000   ;setting the stackpoint as is in monitor
  03  JMP   4C06   ;type this instruction last to make it a free
                     standing program
  06  CALL  0573   ;CLS
  09  LXID  0606   ;starting coordinates counting from top left
                     of the screen
  0B  MVIC  BB     ;BBH is 187D, the maximum number of char-
                     acters that fit on the screen
  0D  CALL  07E0   ;same as INPUT in BASIC, but returns ASCII
                     value in A
  10  CPI   61     ;is it a letter?
  12  JC    4C17   ;no ? bypass next instruction
  15  SUI   20     ;character adjustment
  17  CALL  055C   ;ROM subroutine to display character, DE are
                     adjusted
  1A  DCRC         ;adjust counter one character less to display
  1B  JZ    4C21   ;if screen is full, bypass next instruction
  1E  JMP   4C0D   ;pick up next character
  21  LXIB  FFFF   ;delay value
  24  CALL  07F6   ;delay routine in ROM
  27  JMP   4C06   ;start all over
```

This article should help those who wish to understand machine language programs since Mr. Klopp explains what each item does.

WANTED - 9 Interact owners to join me in purchasing "INTERWORD" word processing program at $19.50 each. supports Micro Video, and Slagh RS-232 ports, has editing commands, cursor-up, down, left and right, carriage return line feed, backspace, add a space, erase a character, add a line, delete a line, tab set and tab clear. I would love to own this program and if I can get nine more people to join me, we can get it at a very reasonable price. Please send Name, address and check to Barbara BRIDGES P.O. Box 42, Badger, CA 93603.

****

HARDWARE REVIEW

****

Professional Keyboard from Micro Video by Chuck Hallmann

(please note, this article is not eligible for the contest)

One of the things that always annoyed me was the quality of the Interact original equipment keyboard. It had no "feel", tended to either repeat by itself, or I had to press "extra hard" on some keys. The speed at which I could type was greatly slowed down because of this.

So, when I found that MICRO-VIDEO was offering a "professional keyboard", I ordered one...and was I glad I did. My keyboard was sent to me promptly. It was well packed and contained good, clear, easy to understand documentation. Even as clumsy as I am, I was able to install the new keyboard in approximately 1/2 hour. Probably the hardest part of the installation was the removal of the original equipment keyboard. The documentation fully explains how to do so, but my own inexperience caused me to break the old tinnerman nuts and one post which secured the old keyboard. I was relieved that Micro-Video supplied new tinnerman nuts for the installation of the new keyboard. By following the documentation as supplied, the new keboard went in like a charm.

When I finally sat down to test the new keyboard, I noticed changes in the layout of some characters. The number "1" key was placed to the left of the number "2" key, where it should have been in the first place. The division key, which was previously marked on the keyboard as a " " is now marked as a "/", which is what is shown on the screen and in line with programming standards. The wording for the "on off" switch and the "reset" switch is gone, but with the power light, the "on off" is not necessary and the "reset" is very familiar to anyone who has operated an Interact.

Now I can enter a program at my usual speed for typing. The acquisition of the keyboard is one hardware upgrade that will always be used.

For any of you who spend a great deal of time at your Interact and feel the way I did about the original keyboard, I would highly recommend it. The cost of the keyboard was $79.95 plus $3.00 shipping and handling. (U.S. funds - U.S. & Canada) from MICRO-VIDEO - 305 N. First St. , P.O. Box 7357, Ann Arbor Michigan 48107.

****

ITEMS FOR SALE

****

SMALL/BIG CHARACTER OVERLAY

FROM INTERSOFTWARE

INTERSOFTWARE proudly announces a breakthrough in small character generation. The overlay features what Interact owners have been dreaming about for some time:

- 25 highly readable characters per line (better than the VIC)
- Uses only 1/2 K memory.
- You can switch between small and big characters at any time either while programming or even during program execution.
- You keep the full power of Level II basic; even the backspace feature while not visible is active in the small letter mode.
- Since the small characters reside in RAM, the user can modify them with a number of appropriate POKE statements.

Enjoy the full advantage of small characters now and order your SMALL/BIG CHARACTER OVERLAY today!! Introductory offer $25. Add $2.00 for shipping and handling.....ORDER FROM

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P.O. BOX 67
FAUQUIER, B.C. CANADA
V0G 1K0

----------CONTEST BALLOT----------

FEB

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Pleasee fill in the name of the program or article you feel is the "BEST" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM _____

PTS. (1-10)

1. Documentation..... _____
2. Ease Of Use ..... _____
3. Usefulness..... _____
4. Interest/challenge..... _____
5. Educational Value ..... _____

All entries must be received by the 4th of February. (Mail to address on reverse side.) Mail only the bottom portion.

Please add the following abbreviations to your games list:
EO - Earth Outpost; GG - Goofey Golf; WI - Wing It

Interact w/new keyboard+old style keyboard wired to plug to an added connector;"Basically Speaking",many copies of two diff. newsletters,all serv.manuals & tapes - $300. Plus GG,SP,EO,AI, WI&PR FOR $7ea or $40 all - Mike Mccormick (317)787-5959 eves. 5626 Personality Ct, Indianapolis, IN 46227

ADVENTURE CLUB - six new games a year with atleast one in machine language. Regular $45, only $35 if you mention this ad. For more information or a list of other programs for sale,all under $8, write - Richard Jones, RFD 2, Box 191, Cole Camp MO 65325

SEA-DUEL - in this arcade based game, you must try to hit and sink the enemy submarines who try to destroy you with their torpedoes! only $4, send for Catalog. Send to MGH Software, Box 645, Bayfield, WI 54814.

DECODER - locate and Defuse the bomb, many thousands of possibilities. $5.00 - Matt O'Keefe, 10552 E. Seeley Chicago, IL 60643

INTEGER-BASIC - This is a re-write of Edu-Basic interpreter. Not an overlay, it is complete on one tape & loaded as a single file. Write for information to Dan DeLong, 15712 Old Snoh-Monroe Snohomish, WA 98290 - no price given, but he will send a flyer.

MAIL CONTEST BALLOT TO:

DENISE HALLMANN
P.O. BOX 781F
WHEELING, IL 60090

****

PROGRAM

****

BASEBALL

BY RICHARD BANDELIER OF FT. WAYNE, IN

This is a two player game written in Level II basic.

TO PLAY
The commentary will state "Blue's Pitch". The blue team will then pitch the ball by moving the right joystick to any of the pitch positions.(see pitching). The pitch will be delivered and the batter will have the choice of swinging (pushing the left joystick to the right) or taking the call, or stealing (see Stealing). If no ball-bat contact is made, then the commentary will be the "count standing", printed out as:

R O B O B O S O R = RUNS; O = OUTS; B = BALLS; S = STRIKES

If contact is made, then the commentary will be either "Fly" or "Line Dr." (this includes grounders, imagine wise.), or "Foul Ball". (Note, some foul balls can be caught.) This will be followed by commentary results of that particular play. The blue team fields the ball by moving the right joystick, either to the right or left, to move his fielders (see fielding).
At the end of three outs, the screen will change and give the inning with the scoring data:

RUNS HITS ERRORS BATTING PERCENTAGES

Pushing the left fire button will start the next half inning play, with players exchanging joysticks.
The commentary will then ask for "RED'S PITCH".
At the beginning of the last half of the ninth, the commentary will ask, "GAME?". A "Y" can be typed for a new game. If the game is a tie or BLUE TEAM is behind in runs, then any other key may be typed and the game will continue. (The game will continue with the same question asked after each additional half inning.)
STEALING - if a steal is to be attempted (to 2nd base only) then the left joystick may be pushed to the left at this time, and then released for the results.
PITCHOUT (defense against the steal)
If the pitcher thinks that a steal may be attempted, he may call for a pitchout by pushing his fire button at the time the pitch is asked for, and he should hold it down till he pushes the stick for the type of pitch he desires. Now! For the pitchout to be executed, the pitch must be a ball. If no pitchout was called for and the steal was on, and its a ball, then it will be a safe steal. If the pitch was a strike then the percentages are about even.
PITCHING

For	slow pitch -	push right joystick to left
	medium pitch -	push right joystick to right
	medium fast pitch -	push right joystick up
	fast pitch -	push right joystick down

To control pitch on way to plate - push stick to left or right while pitched ball is on its way to the plate, but this will only take effect when the ball is at least 3/4 of the way to the plate. (Note - the slower the pitch, the greater the control that can be used.)

FIELDING - on the "Line Dr." the 3rd, shortstop & 2nd basemen are moved by the right joystick. On the "Fly" all the outfielders are moved.
(Note - there are times that the fielders may blinkout. This is part of the fun. By moving the stick quickly, they may be re-covered.)

CONTROVERSIAL UMPIRE CALL - Once in a great while a foul ball may be ruled as a hit.

And - Oh Yes!! Try to get too tricky in pitching and you will see what else can happen.

```
5 CLS:COLOR0,1,4,7:IN=1.5
8 IF B=2THEN B=1:R=2:II=1:CC=2:GOTO14
11 B=2:R=1:II=2:CC=1
14 P=0:OT=0:J=0:K=0:L=0
17 ST=0:BL=0:P1=P:E=0:H=0:GOSUB 329
20 IFP>P1THEN PRINTCHR$(7)
23 IF H=0 THEN OT=OT+1
26 IF B=2 THEN 41
29 IF H<>9THEN BA=BA+1
32 IF H>0 AND H<5 THEN BH=BH+1
35 IF E=1 THEN RE=RE+1:BH=BH-1
38 GOTO 50
41 IF H<>9 THEN RA=RA+1
44 IF H>0 AND H<5 THEN RH=RH+1
47 IF E=1 THEN BE=BE+1:RH=RH-1
50 IF OT<3 THEN 17
53 IF B=2 THEN RS=RS+P:GOTO 59
56 BS=BS+P
59 CLS
62 OUTPUT"IN.->",30,60,3:OUTPUT IN,60,60,II
65 OUTPUT"RED",5,45,1:OUTPUT"BLUE",5,35,2
68 OUTPUT RS,25,45,1:OUTPUT RH,45,45,1:OUTPUT RE,65,45,1
71 IFRA=0THEN77
74 PE=INT(RH/RA*1000):OUTPUT PE,84,45,1
77 OUTPUT BS,25,35,2:OUTPUT BH,45,35,2:OUTPUT BE,65,35,2
80 IFBA=0THEN86
83 PE=INT(BH/BA*1000):OUTPUT PE,84,35,2
86 IF FIRE(0)=0 THEN 92
89 GOTO86
92 IFIN>9THENPRINT"GAME?";:G$=INSTR$(1):PRINT:IFG$="Y"THEN RUN
95 IN=IN+.5
98 GOTO 8
101 IF H<1 OR H>4 THEN RETURN
104 ON H GOTO 107,119,131,143,155
107 IF L=1 THEN L=0:P=P+1
110 IF K=1 THEN K=0:L=1
113 IF J=1 THEN K=1
116 J=1:RETURN
119 IF L=1 THEN L=0:P=P+1
122 IF K=1 THEN P=P+1
125 IF J=1 THEN J=0:L=1
128 K=1:RETURN
131 IF L=1 THEN P=P+1
134 IF K=1 THEN P=P+1:K=0
```

```
137 IF J=1 THEN P=P+1:J=0
140 L=1:RETURN
143 IF J=1 THEN J=0:P=P+1
146 IF K=1 THEN K=0:P=P+1
149 IF L=1 THEN L=0:P=P+1
152 P=P+1:RETURN
155 FOR I=1TO200:NEXT I
158 IF J=0 THEN J=1:RETURN
161 IF K=0 THEN K=1:RETURN
164 IF L=0 THEN L=1:RETURN
167 P=P+1:RETURN
170 PRINT"OUT";:TONE600,75:H=0:PRINT
173 IF J=0 OR OT>1 OR RND(1)<.5 THEN RETURN
176 PRINT"<DBL.PLAY>";:TONE800,100:PRINT
179 IF OT=0 THEN  185
182 OT=OT+1:RETURN
185 OT=OT+1:IFK=1 AND L=0 THEN K=0:J=1:RETURN
188 IF L=0 AND K=0 THEN J=0:RETURN
191 IF L=1 AND K=0 THEN P=P+1:J=0:L=0:RETURN
194 J=0:RETURN
197 OT=OT+1
200 IF OT>1 OR L=0 OR RND(1)<.4 THEN RETURN
203 PRINT"SAC.RUN SCORES!";:FORU=1TO500:NEXT:PRINT
206 P=P+1:L=0:H=9:RETURN
209 IF RND(1)<.5THEN269
212 PRINT"LINE DR. ";:TONE100,400
215 X=INT(RND(1)*25)*2+10
218 A=RND(1)*40+20:D=33:C=(RND(1)-.3):E=(RND(1)+2)
221 IF JOY(1)=2THEN OUTPUT"+",TH,TV,0:TH=TH+1:OUTPUT"+",SH,SV,0:SH=SH+1
224 IF JOY(1)=2THEN OUTPUT"+",UH,SV,0:UH=UH+1:GOSUB482
227 IF JOY(1)=1THEN OUTPUT"+",TH,TV,0:TH=TH-1:OUTPUT"+",SH,SV,0:SH=SH-1
230 IF JOY(1)=1THEN OUTPUT"+",UH,SV,0:UH=UH-1:GOSUB482
233 IF POINT(A,D-1)=3 THEN 170
236 PLOTA,D,0
239 A=A+C:D=D+E:PLOTA,D,3:IFD>73THEN251
242 IFA<17ORA>74THEN266
245 IFA<30ANDD<37THEN PRINT"FOUL";:FORU=1TO500:NEXT:PRINT:F=1
248 GOTO221
251 IFF=1ANDST<>2THEN441
254 IFF=1THEN329
257 IF ABS(X-A)>9THEN266
260 IFRND(1)<.5ANDABS(X+1-A)<5THENE=1:H=1:PRINT"ERROR";:TONE99,400
261 PRINT:GOTO101
263 H=2:PRINT"2BH";:TONE40,800:PRINT:GOTO101
266 H=1:PRINT"1BH";:TONE40,800:PRINT:GOTO101
269 PRINT"FLY ";:TONE20,800:Y=22:D=RND(1):IF RND(1)<.5THEN D=-D
272 PLOTX,Y,0:X=X+D:Y=Y+2:H=30:V=66
278 IFJOY(1)=2THEN OUTPUT"+",CH,CV,0:CH=CH+1:OUTPUT"+",LH,LV,0:LH=LH+1
281 IFJOY(1)=2THEN OUTPUT"+",RF,LV,0:RF=RF+1:GOSUB479
284 IFRF>104THEN RF=104
287 IFJOY(1)=1THEN OUTPUT"+",CH,CV,0:CH=CH-1:OUTPUT"+",LH,LV,0:LH=LH-1
290 IFJOY(1)=1THEN OUTPUT"+",RF,LV,0:RF=RF-1:GOSUB479
293 IFLH<3THEN LH=3
296 IFY>74ANDS>5THEN314
299 IFY>74AND(S>3AND S<5)THEN317
302 IFY>74AND(S>0AND S<2)THEN266
305 IFY>74AND(S>1AND S<3)THEN263
308 IFPOINT(X,Y)OR POINT(X,Y-1)=3THEN PRINT"OUT";:TONE600,75:PRINT:GOTO197
311 PLOTX,Y,3:GOTO272
```

```
314 H=4:PRINT"*HR";:TONE40,900:PRINT:GOTO101
317 H=3:PRINT"3BH";:TONE40,800:PRINT:GOTO101
329 CLS:WINDOW11:F=0:PO=0:SL=1
332 PLOT54,14,CC:PLOT54,57,3:PLOT30,37,3:PLOT78,37,3
335 OUTPUT"-",52,40,II
338 PLOT51,12,3:PLOT51,13,3:PLOT51,14,CC
341 TH=30:TV=43:OUTPUT"+",TH,TV,3:SH=41:SV=58:OUTPUT"+",SH,SV,3
344 F=72:OUTPUT"+",F,TV,3:UH=61:OUTPUT"+",UH,SV,3
347 CH=51:CV=74:OUTPUT"+",CH,CV,3
350 LH=16:LV=68:OUTPUT"+",LH,LV,3
353 RF=90:OUTPUT"+",RF,LV,3
356 IFJ>0THEN HH=76:VV=40:GOSUB476
359 IFK>0THEN HH=52:VV=60:GOSUB476
362 IFL>0THEN HH=28:VV=40:GOSUB476
365 PRINT"R";P;"O";OT;"B";BL;"S";ST;
368 FORU=1TO3000:NEXT
371 X=INT(RND(1)*5)+52:SW=0:Y=41
374 IFB=2THEN PRINT"    BLUE'S PITCH?";:GOTO380
377 PRINT"     RED'S PITCH?";
380 FORU=1TO400:NEXT:PRINT:OUTPUT"+",52,13,3:IFK=1THEN386
383 IF FIRE(1)=0THEN PO=3
386 S=JOY(1):IFS=0THEN386
389 S=S/.9:IFS>8THENS=5.4
392 PLOTX,Y,0
395 OUTPUT"+",52,40,II
398 IFJOY(1)=2ANDY<26THEN X=X+.3:IF X>57THEN X=57
401 IFJOY(1)=1AND Y<26THEN X=X-.3:IF X<52THEN X=52
404 Y=Y-S:IF POINT(X,Y)=3THEN 467
407 PLOTX,Y,3:Q=16
410 IF S>6THEN Q=60
413 IF S>1ANDS<7THEN Q=20
416 IFSW>0ANDY>Q THEN PLOT51,12,0:OUTPUT"!",49,17,3:GOTO440
419 IF JOY(0)=1AND J=1 AND K=0THEN SL=3:PRINT"STEAL=";
422 IFSW>0THEN OUTPUT"-",51,16,3:PLOT51,12,0:PLOT51,13,0:PLOT52,14,0
423 IFSW>0THEN SW=SW+1:GOTO428
425 IF JOY(0)=2THEN SW=1
428 IFY>15THEN392
431 IF SW<1AND(X<54ORX>55)THEN BL=BL+1:BB=1:IF PO=SL THEN485
434 IFBB=1ANDSL=3THEN443
437 IFBB=1THEN449
440 IFS>5.5THENH=9:PRINT"BAT.HIT";:TONE100,300:PRINT:GOTO155
441 ST=ST+1:F=0:IFSL=3THEN OS=RND(1):IFOS<.55THEN485
443 IF SL=3THEN OUTPUT"+",52,60,CC:K=1:OUTPUT"+",76,40,0:J=0
446 IFSL=3THEN PRINT"SAFE";:TONE40,800:PRINT
449 BB=0:IF BL=4THEN458
452 IF ST=3THEN461
455 GOTO329
458 PRINT"WALK";:TONE100,300:H=9:PRINT:GOTO155
461 PRINT"STRIKE-OUT";:TONE500,100:PRINT:RETURN
467 SOUND3,300:FORU=1TO20:NEXT:SOUND7,4096
470 PLOT54,16,3:PLOT54,16,0:PLOT54,17,3:PLOT54,17,0:GOTO209
476 OUTPUT"+",HH,VV,CC:RETURN
479 OUTPUT"+",CH,CV,3:OUTPUT"+",LH,LV,3:OUTPUT"+",RF,LV,3:RETURN
482 OUTPUT"+",TH,TV,3:OUTPUT"+",SH,SV,3:OUTPUT"+",UH,SV,3:RETURN
485 OUTPUT"+",76,40,0:PRINT"OUT";:TONE600,100:OT=OT+1:J=0
486 IFOT=3THENPRINT:RETURN
488 PRINT:GOTO449
491 END
```

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

MARCH 1983

GENERAL DISCUSSION

CONGRATULATIONS TO RICHARD BANDELIER for his game contribution BASEBALL in the February issue. He is the second winner of the Club Contest. Keep those games, reviews, tips, coming in and we will try to publish as many as possible, maybe next month you might be the winner!! Also, keep those votes coming in. Remember, this newsletter is written to keep Interact owners in contact with others, so in this issue you will find ads to trade items and want ads in addition to sale ads. Please keep your comments coming in about the newsletter; if you have a complaint, or problem, let us know.

TIPS

W. J. MOORE of California offers the following:

In reply to Mr. Schroeder's question regarding to the INKEY$, it is not available in any of the dialects of Basic used by the Interact. However, there is a way this function can be accomplished very easily. INKEY$ strobes the keyboard and returns the key being pressed. (A$=INKEY$). This is used when you don't want to cause the program to come to a halt while waiting for a keyboard entry. The Interact stores at location 24529 the ASCII value of the last key that was the missing INKEY$ command by PEEKING. Also note, the ASCII value stored is not limited to alpha/numerics or upper case only. It also stores ASCII Control keys except CONTROL-C which is to exit from a program. The following program demonstrates how a key pressed may be introduced to a running program.

```
10  CLS
20  K=PEEK(24529)
30  PRINT K
40  GOTO 20
```

CONTROL-C will cause exit from program.
CONTROL-O will cause data not to be sent to CRT-press again
CONTROL-S will cause a pause in program

Now we have the capability of running an arcade type program using the keyboard to control movement. Also, can convert some of those TRS programs to the Interact environment.

We have a little contest, no prize, but it is basically a quiz to find out what kind of programmers you are. It was also submitted by W. J. Moore of California. Listed below are numbers generated by a program. The challenge is if you can write a program to generate the same numbers. We will place a limit of 5 lines on the program. The original program (only 3 lines) will be published next month. A brief description which was also submitted by Mr. Moore, - the program uses the logical AND statement and returns the agrument. Each pair of numbers for any value of "I" should be converted to binary form then AND together. The result then converted back to decimal which will agree with the list.

1 1	26 10	51 49	76 8
2 2	27 9	52 48	77 5
3 1	28 8	53 37	78 6
4 0	29 5	54 38	79 5
5 5	30 6	55 37	80 16
6 6	31 5	56 40	81 17
7 5	32 0	57 41	82 18
8 8	33 1	58 42	83 17
9 9	34 2	59 41	84 16
10 10	35 1	60 40	85 5
11 9	36 0	61 37	86 6
12 8	37 37	62 38	87 5
13 5	38 38	63 37	88 8
14 6	39 37	64 0	89 9
15 5	40 40	65 1	90 10
16 16	41 41	66 2	91 9
17 17	42 42	67 1	92 8
18 18	43 41	68 0	93 5
19 17	44 40	69 5	94 6
20 16	45 37	70 6	95 5
21 5	46 38	71 5	96 0
22 6	47 37	72 8	97 1
23 5	48 48	73 9	98 2
24 8	49 49	74 10	99 1
25 9	50 50	75 9	100 0

DAVID STEPHEN OF MONTREAL CANADA offers the following:

"THREE OTHER COMPUTER FAILURES NOT MENTIONED IN MICRO-VIDEO'S COMPUTER DOCTOR"

Here are three computer failures that I have come across that I would like to share with you. They are not mentioned in the recent publication of the "Computer Doctor" by Micro-Video.

1. Power supply failure that gives RAM failure symptoms - if the part of the power supply that provides the A.C. to the rectifying circuit that provides the 5 v D.C. to the RAMs are dead, then you will get symptoms similiar to RAM failures. These symptoms include:
   a. The "press to load" message appears, but when you press L button, dots appear everywhere and the tape would not load. The dots may appear when the read button is pressed or when RESET-L is pressed.
   b. No "press L etc." message. A single set of lines or grid like pattern appears for about half a second and then the screen went blank.
   c. Other symptoms similar to a RAM failure symptoms.

Before you check for a RAM failure, make a quick check on the power supply. Open the computer up and check the A.C. voltage supply coming into the computer. Check the voltages : the black-white should read about 20.3 volts A.C. and the red-orange should read about 23.6 volts A.C. The blue wire is the center-tap so blue-red and blue-orange should read about 11.8 volts A.C. If the reading is incorrect or none at all, chances are either the transformer in the adaptor is out of order or more probably, the power line is disconnected or broken. The most likely place of the break is where the wire comes out from the adaptor. You can attempt to repair a break by opening up the plastic cover of the adaptor and then check to see if the wires are broken or disconnected and make repairs accordingly. If an ohmeter check indicates an open circuit in the transformer, then I guess you have to buy a new adaptor.

2. Loose or disconnected wire in the DPDT switch - on the under-side of the tape unit there is a DPDT (double pole double throw)switch. This controls the read-write process. A loose wire coming from the read head touching another wire may cause erasure or mangled data when you are trying to read. So, if no sound comes out from the TV after you pressed L or CLOAD, stop the reading process immediately. Open up the computer and check the wires connected to this switch. If there is nothing wrong there, then you proceed to check the connection at the tape reading head...etc.

3. CPU failure and/or overheat - sometimes the CPU heats up too much and gets some slight damage internally. Programs will still run, but will get garbled up after awhile. Other symptoms includes gradual failure of your basic program -

such as listing all garbled statements when a LIST is requested (usually after a run has been attempted), or the computer will reset itself to give the "Press L", "Press R" ect. statement in the middle of running a program. These are all symptoms of a failed CPU and you need a new 8080A chip. Before you change it, touch it to see if it is burning hot. I have a machine that constantly overheats the CPU after I got a 32K expansion and a RS232 port. If you have this overheat condition, your CPU chip is not going to last long. What you need is a buffer - a sort of current amplifier that takes the load off the CPU, so to speak. Micro-Video service department may be able to sell you one, or they might be able to get you in touch with someone who would sell one.

Anyone else who has encountered problems and possibly solved them write us. There is probably another member with the same problem.

****

SOFTWARE REVIEW

****

DR. S. FRANK OF TEXAS OFFERS THE FOLLOWING REVIEW:

INTERTYPE by R. P. Williams

Intertype is a line based text editing system. It is compatible with both Slagh and Micro-Video ports. Intertype is organized along the lines of a programming language, with distinct command entry and editing mode and an automatic interpretation mode. It's format is versatile and easy to use and many direct demands have been purposely made to resemble basic program statements. It is programmable to accept up to 32K ram. Additionally, intertype demonstrates differentially using black and blue type, both upper case and lower case letters respectively. Intertype also provides for a narrow (3x5) character set which allows 25 characters per line. The porting parameters are familiar to anyone who uses an RS232 equipped interact. Ten highly usable text editing features are included as well as joystick manipulation of the cursor. The merge command provides for personalized (boiler plate) printing which other more expensive word processing software does not feature. In summary, the word processing software package "Intertype" by R. P. Williams 6710 Virglian Street, New Orleans, LA 70126 ($25) appears to fill a void and allow the fuller potential of interact to be demonstrated. I highly recommend this program for both its functional features and its cost effectiveness.

TRADE/WANT ADS

In answer to the requests for Level II Basic Programs, Mr. Alan Luther of 4605 Spring Glen Rd., Jacksonville, FL 32207 has one which he will trade for tape(s) of equal value. Write him first to insure that he does not already have the tape(s), or has not already traded his Basic.

Richard Bandelier of 1626 Wells St., Ft. Wayne, IN 46808 would like to exchange copies of EDU-BASIC, Version QQEE-207 with anyone who has a different version.

Dr. H. Sanford Frank, phone (817) 599-7131 or (817) 573-8943, is seeking to buy tapes by Harry Holloway (Hi-Lo Monitor & Tape Master.)

Mario Lortie, Box 85, Debert, Col.Co., Nova Scotia, Canada B0M1G0 urgently needs schematics and installation instructions for 32K memory expansion (Micro-Video). He will gladly cover costs of reporduction and mailing charges.

So, if you have an item you would like to trade, sell or tips to give, write to us, let us know so we can pass along the information to other members. Also, if you have purchased an item of software or hardware for your interact, write us and let us know your feelings on the item, we cannot afford to purchase every item sold by the various people. We interact owners need to keep in touch, keep others informed of items we do not feel are worth the money, or those that are well worth their cost. LET US KNOW, WE WILL LET EVERYONE KNOW!!!

CONTEST BALLOT

MAR

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM

PTS 1-10

1. Documentation..... _____
2. Ease of Use..... _____
3. Usefulness..... _____
4. Interest/Challenge..... _____
5. Educational Value..... _____

Mail bottom half only, by April 4, to the address on reverse side

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FOR SALE

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NITE CRAWLER

NEW NITE CRAWLER- TRY TO HOLD OFF THE HUGE NITE CRAWLER WHO COMES DOWN YOUR GARDEN! KILL HIM AND ANOTHER COMES DOWN FASTER! 30 SKILL LEVELS FOR PEOPLE OF ALL AGES. REQUIRES 8K GRAPHICS BASIC. ONLY $4. WRITE FOR FREE CATALOG.

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Printing service for hard copy of your basic program is available from Skyhawk Printing Service. Enclose Interact basic tape, which will be returned $3.00 for 1st, $2.00 2nd & $1.00 any more. Skyhawk Enterprises, 11705 S. Payson Cyn., Payson, UT 84651

MAIL CONTEST BALLOT TO

DENISE HALLMANN
372 SUNSET LANE
WHEELING, IL 60090

****

PROGRAM

****

MINE SWEEP

By MARIO LORTIE OF NOVA SCOTIA CANADA

This program is adapted from a version of a program "Find The Spot written for the TRS-80. It is a game of skill in which you are required to navigate your ship (flashing dot) through a mined area and aiming to pickup as many mines within the time allotted at the beginning of the game (Time Left) and without getting your ship destroyed (5 hits your out!!) This game uses the left action controller. Pickups are made only from the left or right of the mine...approaching from the top,bottom or diagonal will detonate the mine and cause your ship to return to the starting point for repairs (remember only 5 hits). Time limit is allotted at the beginning of each game and is displayed on the screen as time left, it will also display every time ship motion is interrupted for pickups, out-of-range, or hits. The mission completed will greet you only if you pick-up all mines in allotted time, otherwise the # of mines left will be displayed at the end of the game.

IMPORTANT - MEMORY IS VERY SCARCE IN THIS PROGRAM, SO BE VERY CAREFUL HOW YOU KEY IT IN. TRY TO FOLLOW PRINTOUT EXACTLY.

```
10 PRINT "MINES":CLS
20 POKE 19215,25
30 COLOR 4,7,7.7
40 OUTPUT"MINE SWEEPER",20,55,1
50 OUTPUT "GAME",40,35,1
70 OUTPUT "(USE LEFT )",20,17,1
80 OUTPUT"(CONTROLLER)",20,10,1
90 FOR N=1 TO 20:NEXT N
110 A$="OUT OF RANGE!"
120 M$="TOTAL MINES= "
130 N$="** MINE SWEEP **"
140 T$="TIME LEFT: "
150 P$="PICKUP!"
160 CLS:DIMX(112),Y(77)
170 N=INT(RND(1)*35):IFN<20 THEN N=30:REM *AMOUNT OF MINES*
180 V=144:R=129:S=149
190 TL=INT(RND(1)*N)+400
200 X=16802
210 POKE X,S
220 POKE X+24,S
230 X=X+32
240 IF X>19361 GOTO 260
250 GOTO 210
260 FOR X=16770 TO 16794
270 POKE X,V:NEXT X
```

(CONTINUED)

```
280 FOR X=18338 TO 18361
290 POKE X,R:NEXT X
300 M=0:L=0:HT=0:TS=0:TP=0:PT=0
310 X=INT(RND(1)*102):IF X<13 GOTO 310
320 Y=INT(RND(1)*63):IF Y<18 GOTO 320
330 PLOT X,Y,2:X(M)=X:Y(L)=Y
340 M=M+1:L=L+1
350 IF M<> N GOTO 310
360 X=13:Y=63:K=0
370 OUTPUT M$,10,75,2
380 OUTPUT M,77,75,3
390 SOUND 5,10704:FOR W=1 TO 200:NEXT W:SOUND7,4096:FOR W=1TO 800:NEXT W
400 OUTPUTM$,10,75,0:OUTPUTM,77,75,0
410 SOUND6,17859:OUTPUTN$,10,75,1:FORW=1TO200:NEXTW:OUTPUTN$,10,75,0
420 FOR LL=1 TO 500:NEXT LL
430 OUTPUTT$,10,10,2:OUTPUTTL,73,10,1
440 FOR LL=1 TO 500:NEXT LL
450 PLOT X,Y,0
460 OUTPUTTL,73,10,0:TL=TL-1:IFTL<=0THENTL=0:GOTO1080
470 SOUND 5,17402
480 PLOTX,Y,1:IF(X=>102ANDY=>18)GOTO1000
490 IF POINT (X+1,Y)=2 THEN GOSUB 730
500 IFPOINT(X-1,Y)=2THENGOSUB820
510 IFPOINT(X,Y-1)=2GOTO1160
520 IFPOINT(X+1,Y+1)=2GOTO1160
530 IF POINT (X+1,Y-1)=2 GOTO 1160
540 IF POINT (X,Y+1)=2 GOTO 1160
550 IF POINT (X-1,Y+1)=2 GOTO1160
560 IFPOINT(X-1,Y-1)=2GOTO1160
570 Q=JOY(0)
580 ONQGOTO640,660,580,620,610,630,580,600,650,670
590 X=X:Y=Y:GOTO 450
600 Y=Y-1:PLOT X,Y+1,0:GOTO 680
610 Y=Y+1:X=X-1:PLOT X+1,Y-1,0:GOTO 680
620 Y=Y+1:PLOT X,Y-1,0:GOTO 680
630 Y=Y+1:X=X+1:PLOT X-1,Y-1,0:GOTO 680
640 X=X-1:PLOT X+1,Y,0:GOTO 680
650 Y=Y-1:X=X-1:PLOT X+1,Y+1,0:GOTO 680
660 X=X+1:PLOT X-1,Y,0:GOTO 680
670 X=X+1:Y=Y-1:PLOT X-1,Y+1,0
680 PLOTX,Y,1
690 IF(X=102ANDY=18)GOTO1000
700 IF(X<13ORX>102)THEN SOUND3,16916:GOSUB890
710 IF(Y<18ORY>63)THENSOUND3,16916:GOSUB940
720 GOTO450
730 SOUND3,1113:OUTPUTTL,73,10,1
740 FORW=0TO105STEP5:OUTPUTCHR$(1),W,75,0:NEXTW
750 OUTPUTP$,10,75,1:FORW=1TO50:NEXTW
760 SOUND5,17402
770 OUTPUTP$,10,75,0
780 X(HT)=0:Y(HT)=0:X=X+1:Y=Y:PLOTX-1,Y,0:PLOTX,Y,1
790 HT=HT+1
800 FORW=0TO105STEP5:OUTPUTCHR$(1),W,70,0:NEXTW
810 OUTPUTTL,73,10,0:TL=TL-1:RETURN
```

(CONTINUED)

```
820 SOUND3,1113:OUTPUTTL,73,10,1
830 FORW=0TO105STEP5:OUTPUTCHR$(1),W,75,0:NEXTW
840 OUTPUTP$,10,75,1:FORW=1TO50:NEXTW
850 SOUND5,17402:OUTPUTP$,10,75,0
860 X(HT)=0:Y(HT)=0:HT=HT+1:PLOTX,Y,0:X=X-1:Y=Y:PLOTX-1,Y,0:PLOTX,Y,1
870 FORW=0TO105STEP5:OUTPUTCHR$(1),W,70,0:NEXTW
880 OUTPUTTL,73,10,0:TL=TL-1:RETURN
890 OUTPUTTL,73,10,1:FORW=0TO110STEP5:OUTPUTCHR$(1),W,75,0:NEXTW
900 SOUND3,16916:OUTPUTR$,10,75,1:FORW=1TO50:NEXTW
910 OUTPUTR$,10,75,0:SOUND7,4096:PLOTX,Y,0
920 IFX<20THENPLOTX-1,Y-1,2
930 X=13:OUTPUTTL,73,10,0:TL=TL-1:RETURN
940 OUTPUTTL,73,10,1:FORW=0TO110STEP5:OUTPUTCHR$(1),W,75,0:NEXTW
950 SOUND3,16916:OUTPUTR$,10,75,1:FORW=1TO50:NEXTW
960 OUTPUTR$,10,75,0:SOUND7,4096:PLOTX,X,0
970 IFY<17THENY=18:PLOTX,Y-1,0
980 IFY>=64THENY=63:PLOTX,Y+1,0
990 OUTPUTTL,73,10,0:TL=TL-1:RETURN
1000 X=X:Y=Y
1010 SOUND7,4096
1020 PLOTX,Y,0
1030 OUTPUT"END OF FIELD!",10,75,2
1040 FORW=0TO110STEP5:OUTPUTCHR$(1),W,10,0:NEXTW
1050 OUTPUT"TOTAL PICKUPS= ",1,10,3
1060 OUTPUTHT,85,10,1
1070 GOTO1260
1080 Z=1
1090 FORW=0TO110STEP3:OUTPUTCHR$(1),W,10,0:NEXTW
1100 OUTPUT"OUT OF TIME...",10,10,1
1110 FORW=1TO50:NEXTW
1120 OUTPUT"OUT OF TIME...",10,10,0
1130 Z=Z+1
1140 IFZ<>15GOTO1100
1150 GOTO1000
1160 TS=TS+1
1170 OUTPUTTL,73,10,1
1180 IFTS=5GOTO1360
1190 PLOTX,Y,0
1200 X=13:Y=63
1210 OUTPUT"SIDE SHIP HIT!",5,75,1
1220 SOUND3,27160:FORLL=1TO200:NEXTLL
1230 OUTPUT"SIDE SHIP HIT!",5,75,0
1240 OUTPUTTL,73,10,0:TL=TL-1
1250 GOTO 490
1260 FORI=0TOM
1270 IF(X(I)<>0ANDY(I)<>0)THENPT=PT+1:NEXTI:GOTO1320
1280 TP=TP+1:NEXTI:IFTP-1<MGOTO1320
1290 OUTPUT"  MISSION",10,55,1
1300 OUTPUT"  COMPLETED!",10,40,1
1310 FORLL=1TO500:NEXTLL:GOTO1480
1320 OUTPUT"  YOU MISSED",10,55,1
1330 OUTPUTPT,30,40,1
1340 OUTPUT" MINES",45,40,1
1350 GOTO1310
```

(CONTINUED)

```
1360 SOUND7,4096
1370 PLOTX,Y,0
1380 KL=0
1390 PLOTX-1,Y,1:PLOTX,Y,1:PLOTX+1,Y,1
1400 FORLL=1TO25:NEXTLL
1410 PLOTX-1,Y,0:PLOTX,Y,0:PLOTX+1,Y,0
1420 OUTPUT" SHIP DESTROYED!",10,75,1
1430 SOUND3,10925
1440 KL=KL+1
1450 IFKL<>15GOTO1390
1460 SOUND7,4096
1470 CLS
1480 CLS:WINDOW77
1490 PRINT" ARE YOU READY":PRINT" TO TRY ANOTHER":PRINT" FIELD?":PRINT
1500 PRINT"(YES/NO)":PRINT
1510 INPUT"    ";D$
1520 IF(D$="YES"ORD$="Y")GOTO1550
1530 IF(D$="NO"ORD$="N")GOTO1560
1540 CLS:PRINT"TRY A LOGICAL":PRINT"ANSWER":PRINT:PRINT:FORW=1TO50:NEXTW
1541 GOTO1480
1550 CLEAR:CLS:GOTO100
1560 PRINT"TRY A REAL":PRINT:PRINT"MINE FIELD,":PRINT
1561 PRINT"CHICKEN!!":PRINT:PRINT
```

****

MISC-

****

Mr. CHARLES CANAMAR informs us that he has been exchanging tapes with a Charles Wayman whose programs he enjoys and finds very interesting. Mr. Canamar states that Mr. Wayman's programs are very professional and very well written. He has received programs on tape with documentation, as well as some machine language overlays. We know there are many members interested in machine language and would like to ask Mr. Wayman if we can publish his address for other members to contact him. Please, let us know.

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

APRIL, 1983

GENERAL DISCUSSION

CONGRATULATIONS TO MARIO LORTIE for his game contribution MINE SWEEP in the March issue. Mario is our third winner. Keep those votes coming in.

Now, for the little contest, how many wrote a program that would run those numbers as listed? Well, L. E. Becker did and submitted it exactly as the one we ran. Here it is, compare it to the one you wrote.

```
10  FOR I = 1 TO 100
20  PRINT I;I AND 100-I
30  NEXT I
```

TIPS

C. J. HERTEL of Indiana offers the following:

Mr. Hertel and a friend both had some tape loading problems. They both found the tape motor dragging. A small drop of oil on the pulley side of the motor fixed the problem.

DAN DELONG of Washington offers the following explanation of how the Interact loads files from tape. It is not tutorial, and it is helpful to know a little 8080 Assembler, but it should help you understand the Interact better. Also, there are some tips for those who do their own machine language programming.

<u>USING THE LOAD ROUTINE STRAIGHT FROM THE ROM.</u>
Name - CLOAD
Address - 021C (hex)
Action - Loads a tape file into memory. Uses the address' on the tape for loading.
Entry - Registers B - 00 if error found, then stop
01 if error found, then load next file continue until a good load is accomplished.

Registers C - 00 no sound
01 pass the sound through the TV
D - 00 after the file is loaded, stop tape
01 after the file is loaded, leave the tape running.

EXIT - Registers A and address 5FD3
00 - good load
Not 0 - bad load

Notes: If D is = 01 the tape is left running. I gues this is to allow music or instructions to be played through the TV. If you do this, C must be = 01, otherwise there is no sound at all.
You can over-ride the tape load addresses as follows.
Put the Load Address you want into 5FDD.
Put the number of bytes to load into 5FDF.
call the CLOAD routine.
If you do this, you MUST know the exact number of bytes to load. If you specify too few, then only the number you put into 5FDF will be loaded. If you specify too many, the CLOAD routine will search until it finally finds that many to load (this may be forever, or until you hit the RESET button).

AN EXPLANATION OF HOW CLOAD WORKS

An introduction to the file structure of the Interact.

The tape header - The first two bytes are the Load address
The next two bytes are the number of bytes to load. (The total number of bytes on the tape file).
The final byte is the file code
FD is End of File
FE is a Fill Block
FF is a Data Block
The Fill Block is followed by:
01 - the number of bytes in the record
One byte which is the character used to fill memory.
The Data Block is composed of one or more records. Each record is preceeded with a byte which tells how many bytes there is in the record (normally 256). The final record is preceeded by the byte which tells how many bytes are in the record, this is any amount (1 to 255).
At this point, following the entire block, you can have another tape header, or an end of file marker (FD).

WHAT THE CLOAD ROUTINE MUST DO:

1) Load the tape header. It now knows the address to load at, the TOTAL number of bytes to be loaded and what kind of block it is.
2) If it is a fill block, it gets the fill character and fills memory.

3) If it is a data block, things get sticky. It gets the bytes in the record (1 to 255). The record is loaded and number loaded is subtracted from the total number to load This continues until all the records are loaded. If ther is not enough bytes to load, or there are too many, then we have an error. Looks simple here (not too sticky) wait till you see the code needed to do this.

PSUEDO CODE FOR THE CLOAD ROUTINE

The code is similar to BASIC, except for the code --> , this means the value in the memory address is effected in some manner.

```
Address     Code
-------     ----
021C        A=0
            0 --> 5FD3 (This is the error flag)
            Call SNDPSS (02CA)
            Call TAPEON (02DD)
            BC=001D (1D is the time to delay)
            Call DELAY (07F6)
            BC=0164
            E=0 (do not call SNDPSS)
            Call SKPLDR (skip leader until the first character
              is found) (03B1)

0238        BC-0005  (the number of bytes to load. This is the
              number of bytes in the file header)
            DE=5FD4  (where to load the 5 bytes)
            Call LDRCD (031A...loads a tape record)
            If A ≠ 0 then (error)
               A --> 5FD3
            If B ≠ 0 goto 0238 (load next file)
024F        If D ≠ 0 leave tape on,
            If D = 0 stop the tape
            5FD3--> A
            Return
025D        (Entry-5FD4 is the load address)
            (      -5FD6 is the total number to load)
            (      -5FD8 is the block code)
            (      -5FDD is the over-ride address, 0000 if none)
            (      -5FDF is the over-ride number of bytes, 0000
                     if none)
            If over-ride address then 5FDD--> 5FD4
                                      5FDF--> 5FD6
                                      5FD8--> A
            If A = FD then (end of file)
                       Goto 024F (check D and return)
            If A = FE then (fill block)
              HL = 5FD9     (load address)
              BC = 0001     (number to load)
              CALL LDRCD    (031A)
```

```
(fill block continued)
              If A = 0 then        (ok load)
                  5FD4--> HL       (start address)
                  5FD6--> DE       (# bytes to load)
                  5FD8--> A        (fill code)
                  Fill memory will fill code
                  GOTO 0238        (get the next block)
              If A ≠ 0 then        (error in loading)
                  A--> 5FD3        (error flag)
                  GOTO 024F        (check D and return)
02AE      (A must be FF--a file block)
          5FD4--> DE (Load addr)
          5FD6--> HL (# bytes to load)
          BC=HL      (BC also holds # to load)
          Call LDBLK (0300)
          If A = 0 then (good load)
             GOTO 0238  (get the next block)
          If A ≠ 0 then (bad load)
             A --> 5FD3  (error flag)
             If B ≠ 0 then GOTO 0238 (get next block)
             If B = 0 then GOTO 024F (check D and return)
```

SUBROUTINES USED BY CLOAD

LDBLK

Address	Code
0300	Call TAPEON (don't ask me why) A = 0 0 --> 5FD3 (error flag)
0308	Call LDRCD (031A) (loads a record) A -->5FD3 (error flag) If BC ≠ Goto 0308 (load another record) 5FD3 --> A Return

LDRCD

Address	Code
031A	Call RECNUM (034F--Gets the number of bytes in the record). H=A (H now holds the number of bytes in this record) If not carry GOTO 0336 (this is what we want)
0324	Do a bunch of crazy stuff Return
0336	Call 039A (GETCHR--gets one character from tape and returns it in A) If carry then (error) GOTO 0324 Store A to memory address pointed to by DE. DE = DE+1 (Up address pointer by 1) BC = BC-1 (Drop the TOTAL number to load by 1) H = H-1 (Drop the number in this record by 1) If H = 0 then (all loaded from this record) A = 0 Return

LDRCD (Continued)

Address	Code
	If BC ≠ 0 then (total number not loaded)
	GOTO 0336 (go get another)
	(If we got this far, it means there is still bytes to load from the tape record, but we have run out of TOTAL bytes to load from the block)
	A = 4
	Return

TIP -- Loading a tape file into an address that it wasn't supposed to load at.

Example - I want a file to load at 7000 HEX, instead of 6000 HEX where the tape label says it should.

```
Call TAPEON
BC=001D
Call DELAY
BC=0164
E=    (0 if no sound, 1 if sound)
Call SKPLDR
BC = 0005
DE = 5FD4
Call LDRCD
HL = Address you want the tape file to load at.
HL -- 5FD4
BC = 0000
DE = 0000
Call 02AE (if DATA block)
Call 0280 (if FILL block)
```

Note - This will only work on a single block at a time. If other blocks follow this one you are working on, they will load normally.

----------CONTEST BALLOT----------

APR

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM _____

		PTS 1-10
1.	Documentation.....	_____
2.	Ease of Use.....	_____
3.	Usefulness.....	_____
4.	Interest/Challenge.....	_____
5.	Educational Value.....	_____

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FOR SALE

****

NEW SPACE LASER- A NEW GAME FOR YOUR INTERACT THAT YOU WILL PLAY TIME, AFTER TIME! SPACE LASER HAS 4 DIFFERENT SCREENS.

1-LAND ON THE CAVES BOTTOM.
2-DESTROY THE BOMBS THAT THE ENEMY DROPS.
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4-DOCK ON THE HUGE MOTHER SHIP.

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SEND ALL ORDERS TO: MGH SOFTWARE, BOX 645, BAYFIELD, WI 54814

Please add the following codes to your Interact tapes list - AE-add-em-up;BJ-black jack;BT-breakthrough;EB-edu-basic;HM-hangman; HT-hot rocks;LB-level II basic;MY-mysterious mansion;RG-regatta; RV-reversi;SD-showdown;SU-shape up;TD-touchdown;VB-volleyball; VC-video chess;VF-viscious fishes; 8M-8080 monitor.

New style Atari joysticks wired with plug--ready to use on the Interact-R (no pot control) $25 each will ship UPS Collect or send M/O. Also wants to buy another Interact - Dr. H. Frank 817-500-7131 - 904 S. Main, Weatherford, TX 76086

MAIL TO:

DENISE HALLMANN
SUNSET COMPUTER SERVICES
P.O. BOX 781F
WHEELING, IL 60090

NEW PROGRAMS FOR YOUR INTERACT

MACHINE LANGUAGE PROGRAMS
ORIGINAL MEMO FILE - Store, display, add and delete 8K of "memos" Each memo (up to 102 characters) is stored under a keyword (up to 7 characters). Longer memos can be stored on consecutive "pages" using the same keyword. Great to use as an appointment book, address book, inventory or index. You can list the key words (in case you have forgotten them) and save the program, keywords and memos on tape. - $7

SUPER MEMO FILE - Similar to the original, but with more commands and a special character set (25 characters per line). Each keyword may be 17 characters long, and each memo up to 150 characters . Cursor allows full screen editing, including insertion and deletion. Memos may be modified without retyping and the original may be deleted or kept intact. - $10

CHICKEN - Your task is to get your chickens across an 8 lane highway. You get 3 chickens. How many crossings can you make before all 3 are crushed? 2 levels of traffic and 3 speeds. Need

1 joystick. - $5
5-IN-A-ROW - Tic-Tac-Toe on a checkerboard. Play against the computer or an opponent. The computer plays an excellent game, but can be beaten. 2 joysticks - $5

MISSILE DEFENSE - Defend 5 cities against incoming missiles. Missiles come in at 45 degrees and wrap around the screen.
1 joystick - $5

STAR WAR - My first machine language game. A free bonus with any order of $10 or more. 1 joystick - not for sale.

BASIC PROGRAMS (run in Level II or 8K)
BLACKJACK - Up to 3 players against the house. Las Vegas rules. Bonus program, Blackjack Tutor. You and the computer play identical hands against the house. Can you do as well as the computer? - $5

4-IN-A-ROW - This is a variant of the game "Connect Four". Play against the computer. $4

THE RABBIT AND THE ROBOTS - Move the rabbit thru the maze eating as many carrots as possible. A different maze each time. Not at arcade speed, but plenty of room for strategy. 1 joystick - $4

PINBALL - A free bonus if you purchase all 3 basic tapes (in addition to Star War). 1 joystick - not for sale

I reserve the right to put 2 programs on a tape (1 on each side of a C-10 cassette). Add $1 per order to defray the cost of postage. Order from: Sol Steinberg, Apt. 09, Hyde Park Apts., Bellmawr, NJ 08031

* * * * * * FOR SALE * * * * * *

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DRAW POKER: Your computer is a clever opponent...
FISH: New adaptation of popular card game.
FRUSTRATION: 4-different versions for one or two players or play against the computer, or computer vs. computer
MINE SWEEPER: Defuse all underwater mines within allotted time...
And...DOG RACES, RUSSIAN ROULETTE, GUESS the NUMBER, INTERSTATE, SKEEDOODLE, MIND BOGGLER and MOON LANDING.

Only: $ 25.00 + $ 5.00 (Postage/Handling)

10 EDUCATIONAL Package: For All Ages...

ASTRONOMY Quizz: Learn about the Constellations ...
ROMAN Numerals: conversion program...
GRAVITY: Find out how much you weigh on other planets...
NAMES: Pick a name for a newborn...
MULTIPLICATION Quizz: Kids learn at their own rate...
LIFEX: Your Life Expectancy...(Scientific formula)
SOBER?: Estimates your Blood/Alcohol levels...
And...COIN FLIPPER, SENTENCE MAKER, FUEL SAVER.

Tape Only: $16.95 + $3.00 (Postage/Handling)
(Cash or Postal Money Order ; No C.O.D. Accepted)

Order from: Mario Lortie
P.O. Box 85
DEBERT, N.S. CANADA
B0M 1G0

Milton E. Hollingsworth, PSC-4, Box 273, APO NY 09294 offers the following for sale - VB,RG,BG,AE,TB,FB,SD,TD,BI,RV,ST,MC,VC,BJ,CN CM,HM,DF,CC,EB,MM,EZ,8M,F1,F2,MS,CA,CB for $5 each as well as his Interact computer with LB,AL,DI FOR $115 OR all listed for $250.

Waynea Chen, 7485 Hillview Dr., Reno, NV 89506 would like to trade tapes, he has the following. AI,AT,BJ,BT,CM,CC,DF,EO,GB,HM, HR,MY,PR,RG,SU,ST,TD,TD,TH,VF

****

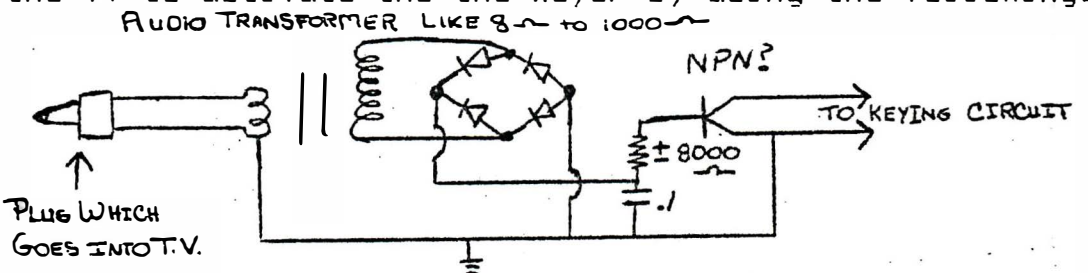
PROGRAMS

****

MORSE CODE TRANSMIT

G. F. SHARP 2206 S. Baylor, Roswell, NM 88201 (505)624-0250 offers the following program for ham radio enthusiasts.

Here is a Morse Code Transmit Program which he uses for automatically sending messages on the Ham Bands. He uses the sound from the TV to activate the the keyer by using the following:



His transmitter has about 50 volts across the keying circuit. This is across the transistor which acts as a switch to short the 50 volts across the keying circuit and keys the transmitter. A 9 volt battery and a relay would key other circuits. This was made from junk box parts...he doesn't even know if the transistor is PNP or NPN..its unmarked. Many other circuits will do the same thing. The program uses ; for a space. There are a few REM statements because of memory space (?FRE(0)=90). He'll be glad to send a tape if anyone wants to send him a blank or an exchange program. If code speed is set at less than 8 wpm this program sends letters at 8 wpm and slows speed by increasing the time between letters. In using the program, if you can't answer the questions, just press CR. Because of lack of memory, he couldn't add more.

```
10 CLS:PRINT"    MORSE CODE     TRANSMIT PROGRAM":PRINT:PRINT
20 CLEAR600:DIMX(47,6)
30 PRINT:INPUT"SPEED(WPM):":S:PRINT:PRINT
31 IFS=>8THENQ=S
32 IFS<8THENQ=S-3:S=8
40 INPUT"WEATHER";W$:V$=";;WX;;":WX$=V$+W$
50 FORI=1TO47:FORJ=1TO6:READX(I,J):NEXTJ,I:REM-READ IN MORSE CODE ARRAY
60 CQ$="CQCQCQ;CQCQCQ":MC$=";DE;KC5MU;KC5MU;"
70 K$=";K;K":KN$=";KN;KN":BT$=";=;=;":CP$=";HOW;COPY?;":RR$=";;R;R;"
80 TK$=";;TKS;FOR;THE;CALL;;MY;NAME;IS;GEORGE;;GEORGE;;UR;SIG;RST;"
90 MN$=";;MY;NAME;IS;GEORGE;;GEORGE;;UR;SIG;;"
```

```
100 QT$=";;QTH;ROSWELL;;NEW;MEXICO;;ROSWELL;;NEW;MEXICO"
110 CO$=";;COMPUTER;PROGRAM;IS;SENDING;;I;COPY;BY;EAR;;IS;CODE;OK?"
120 AD$=";;ADDRESS;IS;;2206;SOUTH;BAYLOR;;ROSWELL;NEW;MEXICO"
130 RG$=";;RIG;IS;KENWOOD;TS520SE;;TS520SE"
140 AT$=";;ANT;IS;BUTTERNUT;VERTICAL;;BUTTERNUT;VERTICAL;ON;ROOF"
145 QS$=";TKS;FOR;FINE;QSO;":HP$="HOPE;TO;MEET;U;SOON;AGAIN;;73;FOR;NOW;"
150 IFHC$=""THENINPUT"HIS CALL";HC$
151 IFRS$=""THENINPUT"RST?";RS$
152 IFNA$=""THENINPUT"HIS NAME?";NA$
155 CLS:PRINT"TRANSMIT "
160 PRINT"1=KEYBOARD":PRINT"2=CALL CQ":PRINT"3=REPLY IF CQ ANS"
170 PRINT"4=REPLY TO A CQ":PRINT"5=MSG 1":PRINT"6=MSG 2":PRINT"7=MSG 3"
175 PRINT"8=MSG 4":PRINT"9=MSG 5"
180 INPUTB:ONBGOTO190,230,240,270,300,330,350,355,360
190 CLS:PRINT"KEYBOARD ACTIVE  TYPE % TO LEAVE":POKE24626,15
200 X$=INSTR$(1)
210 IFX$="%"THENPOKE24626,16:GOTO150:REM-LEAVE KEYBOARD
220 I=ASC(X$)-43:GOSUB520:PRINTX$;:GOTO200
230 T$=CQ$+MC$+K$:GOTO480
240 T$=HC$+HC$+MC$+BT$+TK$+RS$+QT$+CP$+BT$+HC$+MC$+KN$:GOTO480
270 T$=HC$+HC$+MC$+MC$+KN$:GOTO480
300 T$=HC$+MC$+BT$+QT$+MN$+RS$+RS$+BT$+CP$+NA$+BT$+HC$+MC$+KN$:GOTO480
330 T$=HC$+MC$+RR$+RG$+AT$+BT$+WX$+BT$+HC$+MC$+KN$:GOTO480
350 T$=HC$+MC$+BT$+CO$+HC$+MC$+KN$:GOTO480
355 T$=HC$+MC$+BT$+AD$+BT$+HC$+MC$+KN$:GOTO480
360 T$=HC$+MC$+BT$+QS$+NA$+HP$+BT$+HC$+MC$+K$:GOTO480
380 DATA3,3,1,1,3,3,1,3,1,3,1,0,1,3,1,3,1,3,3,1,1,3,1,0,3,3,3,3,3,0
390 DATA1,3,3,3,3,0,1,1,3,3,3,0,1,1,1,3,3,0,1,1,1,1,3,0,1,1,1,1,1,0
400 DATA3,1,1,1,1,0,3,3,1,1,1,0,3,3,3,1,1,0,3,3,3,3,1,0,3,3,3,1,1,1
410 DATA7,0,0,0,0,0,1,3,1,1,1,0,3,1,1,1,3,0,1,1,1,3,1,3,1,1,3,3,1,1
420 DATA0,0,0,0,0,0,1,3,0,0,0,0,3,1,1,1,0,0,3,1,3,1,0,0,3,1,1,0,0,0
430 DATA1,0,0,0,0,0,1,1,3,1,0,0,3,3,1,0,0,0,1,1,1,1,0,0,1,1,0,0,0,0
440 DATA1,3,3,3,0,0,3,1,3,0,0,0,1,3,1,1,0,0,3,3,0,0,0,0,3,1,0,0,0,0
450 DATA3,3,3,0,0,0,1,3,3,1,0,0,3,3,1,3,0,0,1,3,1,0,0,0,1,1,1,0,0,0
460 DATA3,0,0,0,0,0,1,1,3,0,0,0,1,1,1,3,0,0,1,3,3,0,0,0,3,1,1,3,0,0
470 DATA3,1,3,3,0,0,3,3,1,1,0,0
480 N=1
490 A$=MID$(T$,N,1):IFA$=""GOTO150
500 I=ASC(A$)-43:GOSUB520:N=N+1:GOTO490
520 FORJ=1TO6
530 IFX(I,J)=1THENTONE75,500/S:REM-DOTS
540 IFX(I,J)=3THENTONE75,1800/S:REM-DASHES
550 IFX(I,J)=7THENFORP=1TO500/Q:NEXT:GOTO570
560 NEXTJ
570 FORP=1TO1000/Q:NEXT:RETURN
```

Note: We have not tested the preceding program, if anyone does, please give us feedback.

MAKING CHANGE

FROM -- W. J. MOORE OF PITTSBURG, CA

This is a program for youngsters. It displays how change should be made. Given the cost of an item, the program will ask for how much you are paying, then displays the total change and also the quantities of each denomination required to make change. This program runs on 8K FAST GRAPHICS BASIC.

```
5 REM 8K BASIC ONLY
10 REM MAKING CHANGE BY W.J. MOORE
20 CLS
30 COLOR0,2,3,7
40 FORI=1TO6
50 TONE5+I*3,10
60 READA$,B$
70 OUTPUTA$,I*6,65-I,2
80 OUTPUTB$,I*6+48,65-I,2
90 NEXT
100 DATAM,C,A,H,K,A,I,N,N,G,G,E,,
110 RESTORE160
120 FORI=1TO7
130 READA,B,C,D
140 PLOTA,B,1,C,D
150 NEXT
160 DATA48,47,6,6,36,41,30,6,36,35,6,6,36,29,30,6
170 DATA60,23,6,6,36,17,30,6,48,11,6,6
180 FORI=1TO1000:NEXT
200 CLEAR
210 GOSUB610
220 GOSUB660
230 GOSUB250
240 GOTO860
250 R=B-C
260 R=R+.001
270 Y=INT(R/10)
280 IFY=0THEN320
290 T=Y
300 A=A+T*10
310 R=R-10*Y
320 Y=INT(R/5)
330 IFY=0THEN370
340 F=Y
350 A=A+F*5
360 R=R-5
370 Y=INT(R)
380 IFY=0THEN420
390 O=Y
400 A=A+O
410 R=R-Y
420 Y=INT(4*R)
430 IFY=0THEN470
440 Q=Y
```

NOTICE - 450 IS HERE

```
450 A=A+Q*.25
460 R=R-.25*Y
470 Y=INT(10*R)
480 IFY=0THEN520
490 D=Y
500 A=A+D*.1
505 R=R-.1*Y
510 Y=INT(20*R)
520 IFY=0THEN560
530 N=Y
540 A=A+N*.05
550 R=R-.05
560 Y=INT(100*R)
570 IFY=0THENRETURN
580 P=Y
590 A=A+P*.01
600 RETURN
610 CLS
620 OUTPUT"PLEASE TYPE IN",6,53,1
630 OUTPUT"COST OF THE ITEM",6,41,1
640 INPUTC
650 RETURN
660 CLS
```

```
670 OUTPUT"COST IS",12,65,3
680 OUTPUTC,60,65,3
690 OUTPUT"PLEASE TYPE IN",6,53,2
700 OUTPUT"HOW MUCH YOU",6,41,2
710 OUTPUT"ARE PAYING",6,29,2
720 INPUTB
730 IFB=CTHEN860
740 IFC>BTHEN760
750 RETURN
760 CLS
770 OUTPUT"OOPS! THERE SEEMS",6,59,2
780 OUTPUT"TO BE A MISTAKE!",6,53,2
790 B$="$"+STR$(B)
800 TONE1000,20
810 TONE2000,8
820 OUTPUTB$,24,41,1
830 OUTPUT"NOT ENOUGH MONEY!",6,35,2
840 FORI=1TO1000:NEXT
850 GOTO220
860 CLS
870 OUTPUT"CHANGE IS",6,71,3
880 OUTPUTA,66,71,3
890 OUTPUTT,18,59,1
900 OUTPUT"TENS",60,59,1
910 GOSUB1230
920 OUTPUTF,18,53,1
930 OUTPUT"FIVES",60,53,1
940 GOSUB1230
950 OUTPUTO,18,47,1
960 OUTPUT"ONES",60,47,1
970 GOSUB1230
980 OUTPUTQ,18,41,2
990 OUTPUT"QUARTERS",60,41,2
1000 GOSUB1230
1010 OUTPUTD,18,35,2
1020 OUTPUT"DIMES",60,35,2
1030 GOSUB1230
1040 OUTPUTN,18,29,2
1050 OUTPUT"NICKELS",60,29,2
1060 GOSUB1230
1070 OUTPUTP,18,23,2
1080 OUTPUT"PENNIES",60,23,2
1090 GOSUB1230
1100 OUTPUT"CONTINUE (Y-N)",12,11,3
1110 IFINSTR$(1)="Y"THEN200
1120 CLS
1130 OUTPUT"THANK YOU FOR",6,59,2
1140 OUTPUT"SHOPPING HERE",6,53,2
1150 FORI=1TO1000:NEXT
1160 OUTPUT"HAVE A NICE DAY",6,35,1
1170 FORI=1TO500
1180 COLOR0,1,5,7
1190 COLOR0,2,6,7
1200 NEXT
1210 CLS
1220 END
1230 TONE3,100
1240 TONE3,1
1250 RETURN
```

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

MAY, 1983

****

GENERAL DISCUSSION

****

CONGRATULATIONS TO DAN DELONG for his tip contribution, Using the Load Routine Straight From The Rom. Dan is our fourth contest winner. Keep those votes, programs & tips coming in, you may be next.

****

TIPS/QUESTIONS

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JERRY KRYSZAN offers the following:

Mr. Kryszan offers the following information concerning the article previously published by David Stephen. All 8080s are not created equal. The P8080A in the Interact is the cheapest made and has about the highest PD (Power Dissapation). Other 8080As (ie D8080A and MC8080A) handle higher temperature easily and consume less power. The key here is to look at the specs. With a CPU that uses less power it handles extra loads better, so no current amplifier may be needed.

Mr. Kryszan also has the following questions:

1. Has anyone tried increasing the speed of the CPU in the Interact? He has replaced the P8080A with a 9080A that is identical to the 8080A except it will run upto 4 MHZ. Also, He replaced all memory chips with 160ns access units and is working in the clock section to change it from 1.77 MHZ to 3.58 MHZ. Has anyone done more? Are there other problems to overcome? His unit is a 32K model, will that make a difference?

2. His next question is about the Level II Basic. He has two overlays that give him some fantastic graphic capabilities, but the Level II only gives him 5K working space even in the 32K machine. He would like to know the memory locations that tell the Level II the first word of available memory (FWAM) and the last word of available memory (LWAM). If he can find these, the he can instruct Level II to use the extra 16K.

A message from Barbara Bridges to all Interword purchasers. She has received 4 checks and one commitment from people regarding purchasing the Interword. She needs only 4 more people (19.50 each).

A tip from us, we have received several letters regarding copies of items. The only assistance we can give is to refer you to authorized sellers of these products. One that we are aware of is Micro-Video, PO Box 7357, Ann Arbor, MI 48107. You may get further help from a list offered by a clubmember below.

Also, our Interact is only 16K and we do not have all of the additions/tapes that are sold for it as some members do. We will publish programs/tips/information that are sent in that require more than we have (i.e. programs written for 32K machines) if the programs are directly off a printer, however these will be untested and we will advise you which ones these are. But we feel that there are members that could benefit from these.

Mario Lortie offers the following additions/changes to the game Asteroids. Also, please note that we have republished this game with several additions/changes by the original programmer.

```
 70 Y=Y-.075
 75 FOR A=1 TO M
290 IFB=1THEN C=3
310 OUTPUT A$,R,15,C
340 FOR I=1TO2000:NEXT:PRINT"<<DO YOU WANT>>"
342 PRINT"<<TO TRY AGAIN?>>"
344 PRINT:PRINT"...MOVE JOYSTICK"
346 PRINT"TO RE-START,":PRINT
348 PRINT"PUSH FIRE-BUTTON":PRINT" TO END GAME..."
350 IF JOY(0)>0GOTO20
390 POKE24864,6
392 FORI=1TO10
394 OUTPUT"YOU MADE IT!!",20,35,7
395 FORZ=1TO50:NEXT
396 COLOR0,0,0,0
397 OUTPUT"YOU MADE IT!!",20,35,0
398 FORZ=1TO25:NEXT:COLOR0,7,7,3
399 NEXT
```

David Stephen, 5250 Coronation Avenue, Montreal, Quebec, Canada H4V 2E3 offers the following, (we feel this is more of a tip than a for sale item):

A 9 page summary of names, addresses and product description of hardware and software suppliers (other than Micro-Video) - send $2.00 US or Canadian) to cover copying, mailing and handling to David Stephen at the above address.

This should help many clubmembers in their search for more for their Interact.

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REVIEW

****

Mr. Jerry Kryszan sent us the following review/message about Intersoftware Canada and their small character overlay.

A few months ago he received an advertisement from Intersoftware of Canada for their small character overlay. He wrote them a letter asking if the overlay would work with his 32K interpreter. Instead of answering his question, they sent him a copy to try for himself. After trying it, he has come good news and some bad. The good news is that the small characters can give a professional look to any program. The number of characters per line vary, depending on what characters they are. The average is about 25 per line. The bad news is that the overlay uses about 1/2K of user memory. Intersoftware recommends that you limit your programs to 4K to avoid erasing the character that start at 5KE0h/24032d. Next, the overlay won't work with the 8K fast graphics or the 32K interpreter (at least he couldn't get it to, if anyone could let us know). Lastly, since the characters reside in the user area, they can be modified by POKE statements and you can switch back and forth between large and small letters in a program run. You can call up the small characters in the direct mode and go from there. If you are into "Level II" programming the overlay is exciting. He would like to thank Intersoftware, especially Mr. Klopp for letting him try this program.

We would like to add that we have heard nothing but good comments regarding Mr. Klopp and Intersoftware. They are very knowledgeable about the Interact (as you can see by previous tips sent in by them). Their address is Intersoftware of Canada, P.O. Box 67, Fauquier, B.C. Canada V0G 1K0.

----------CONTEST BALLOT----------

MAY

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM

PTS 1-10

1. Documentation.....
2. Ease of Use.....
3. Usefulness.....
4. Interest/Challenge.....
5. Educational Value.....

Mail bottom half only, by [redacted] 6, to the address on reverse side

June

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FOR SALE

****

Glenn Jordan, Electronic Tech, Rt 5, Box 217, Conway, SC 29526 offers to repair interact computers for club members, the charge will be $25 per unit plus parts. Please call before sending the unit - (803) 347-4387.

Jerry Kryszan, 75 Ent Road, Bedford, MA 01730 has a Protecto RS232 port for sale, he has already installed a D8080A chip and is asking $50.

J.D. Caldwell, 4826 S. 8th St., Arlington, VA 22204 offers a keyboard kit to convert flat grey keys to raised black keys. ($10.00) Music Maestro with overlay and manual ($10.00).

Name List - This list of 85 Interact owners is great for pen pals or mailing lists. This list does not come on tape. $3 per copy. write for new catalog. MGH Software, Box 645, Bayfield Wi 54814.

Decoder-your job is to locate and defuse man's ultimate weapon. You are tried through 4 stages of play. Spectacular graphic combine with sound and music to product truely exciting game plan. Runs with Leonardo Graphics &1 joystick $10 Matt O'Keefe 10552 S. Seeley, Chicago, IL 60643

. -oftware for the Interace. Please write for information and enclose a self-addressed stamped envelope for reply. N.I.S.E 4540 Vista Drive NW, Canal Winchester, OH 43110.

REMEMBER - if you have a complaint, question, item(s) for sale, etc. let us know, we will pass it along if we can.

MAIL TO

DENISE HALLMANN
SUNSET COMPUTER SERVICES
P.O. BOX 781F
WHEELING, IL 60090

THE INTERTYPE TEXT EDITING SYSTEM

A Truly Unique Text Processor
For the Interact

How well does your word processor use your printer's special features? Does it let you easily review what you have written? Does it work with both Slagh and Micro-Video printer ports? Does it make you remember a lot of complicated control codes instead of some easily remembered commands? Does it destroy your file for a simple mistake?

If you are unhappy at the answers to any of these questions, InterType is for you.

InterType is a text editor for the Interact. Each feature has been tested for versatility, importance, and ease of use. InterType is compatible with any memory expansion up to 48K. It is also compatible with any printer, and will send complex control commands with a remarkably easy to use system. You will be able to make up to 255 copies at once, with a single print command. And InterType uses simple commands from BASIC and monitors instead of strange, difficult to remember control codes.

InterType's unique tape format and commands are simply the best available.

InterType is not a word processor. It is a line-based text editor with an internal storage system similar to that of BASIC. It supports capitals and lowercase simultaneously onscreen, with a 3x5 character set (which, unlike some has been designed to be read, not just to meet the minimum requirement of each character being unique). Different colors indicate upper and lowercase, a system remarkably easy to get used to.

In short, InterType is designed to meet all of your text processing needs. Only InterType puts as many characters onscreen at once with upper and lowercase. Only InterType has such an easy-to-use line editor, you must see it to believe it. Only InterType can both merge and append files. Only InterType offers all these features while leaving a full 8K free in a 16K machine for text. Only InterType allows you to decrease its memory allocation to make room for other programs at the top of memory. Only InterType is directly compatible with the Edu-BASIC Overlay.

InterType has a set of twenty-two control characters. Each of these can be defined to send any ASCII code (or even any sequence of up to 30 ASCII codes) to the printer.

InterType will send any width left margin you desire, and can even be made to change the width in the middle of a file.

InterType allows you to disable its provisions for lowercase if you wish--for example, to edit a BASIC program.

InterType can send CRLF or just LF line terminators.

In short, InterType is designed not to force you to do anything, to give you as much freedom as possible when processing text.

STILL AVAILABLE

The Edu-BASIc Overlay

This popular program extends the old Edu-BASIC interpreter to accept a variety of complex commands including PEEK, POKE, USR, printer access, and many others (Please specify Slagh or Micro-Video printer functions). Get the advantages of 8K program memory and unique integer variable storage. Do not accept substitutes--this is the original Edu-BASIC Overlay with full documentation, very popular DPEEK, DPOKE, and CALL commands, and fast linefeeds with text starting at the top of the screen. No other has all these features.

TO ORDER:

Prices are $25.00 for InterType and $15.00 for the Edu-BASIC Overlay. These include tape and documentation. For Edu-BASIC please specify Slagh or Micro-Video printer port. Please send personal check or money order. Please, no C.O.D. orders.

Send order to:

R.P. Williams
6710 Virgilian St.
New Orleans, LA 70126

(This ad was written with InterType.)

INTERACT EXPANSION PRODUCTS

Features:

Does not require major surgery to the Interact - no soldering of wires to the printed circuit board or cutting of circuit traces - The Interact can be quickly restored to original condition
Expansion not restricted by space inside the Interact
Allows for memory expansion up to nearly **155K**
32K RAM card (one such card brings total Interact memory to 48K)
has totally hidden refresh - no wait states as the case for the resident 16K or other internal expansions - this means that programs written to this block execute faster
Expansion frees memory space wasted because of the original Interact design

Supports up to four 5 1/4 inch floppy disc drives

Supports conversion to S-100

The expansion consists of an expansion interface board (IE) which buffers and brings out from the Interact enclosure the necessary signals on a 40 conductor ribbon cable. The ribbon cable is in turn plugged into a motherboard (IMB-2) which is housed inside an enclosure external to the Interact. Expansion products such as the IMEM-1 32K RAM card are then plugged into the motherboard.

Prices of bare boards for products available now:

IE Expansion Interface Board	$25.50
IMB-2 Motherboard	$24.50
IMEM-1 32K Memory Board	$44.50
IEN-1 Enclosure	$19.95

The above products are also available in complete kit and assembled forms. See below for address to send for literature.

The floppy disc and S-100 hardware are presently in existence in prototype form. If you are already on our mailing list, you will be notified when the finished product is available. Otherwise send a business-sized self addressed stamped envelope to:

Walter H. Jopke Jr. 5016 West 99th St. Bloomington, Minn. 55437

Also available INTERWORD Word Processing Software

1-$59.50, 2-$49.50 each, 3-$39.50 each, 4-$30.50 each,
5-9 $25.50 each, 10 or more - $19.50 each

To take advantage of the quantity price advantage for Interword, you must supply the names and addresses for all persons involved.

****

PROGRAMS

****

TAPE VERIFY

.....from GERALD L. MEYER

The following is a short program that writes a pattern on tape checks it, this will verify that the tape does not have any bad spots in it. Don't be alarmed by the tape stopping, just follow the prompts. He runs on a black and white TV so you may want to change the colors. Do atleast 2 iterations, if errors show up in the same heading 2 or more times, the tape has a bad spot; if the errors show up randomly, the deck probably needs cleaning. The tape should be erased before writing a program on it.

This program was not tested. We believe it runs on Level II basic.

```
 5 REM  TAPE VERIFY
 10 GOTO30
 20 TONE20,1000:TONE10,1000:TONE30,1000
 21 RETURN
 25 PRINTBL$;BL$
 26 RETURN
 30 R$=" HIT 'R' WHEN READY"
 32 RE$=" PRESS REWIND"
 34 H$=" HIT ANY KEY WHEN DONE"
 50 DIMT(500)
 60 DATA170
 70 X=20:Y=64
 79 REM 32 BLANK SPACES
 80 BL$="                                "
 90 FORI=0TO500
 100 READT(I):RESTORE
 110 NEXT
 120 CLS:WINDOW30
 130 OUTPUT"A",20,70,2:OUTPUT"B",38,70,2
 131 OUTPUT"C",56,70,2:OUTPUT"D",74,70,2
 132 OUTPUT"E",92,70,2
 140 PRINT"INSERT TAPE";RE$;H$
 150 REWIND
 160 GOSUB25
 170 PRINT"PRESS WRITE/READ";R$
 180 A$=INSTR$(1)
 190 GOSUB25
 200 PRINT"RECORDING BLOCKS"
 210 FORI=1TO5
 220 CSAVE*T
 230 NEXT
 240 GOSUB20
 250 GOSUB25
 260 PRINTRE$;R$;RIGHT$(H$,18)
```

TAPE VERIFY (continued)

```
265 A$=INSTR$(1)
270 REWIND
280 GOSUB25
290 PRINT"PRESS READ";R$
300 A$=INSTR$(1)
310 GOSUB25
320 PRINT"READING BLOCKS"
330 FORI=1TO5
340 E=0
350 CLOAD*T
360 FORJ=0TO500
370 IFT(J)<>170THENE=E+1
380 NEXTJ
390 OUTPUTE,X,Y,2:X=X+18
400 NEXTI
410 Y=Y-6:X=20
420 GOTO220
430 GOSUB25
440 PRINT"PRESS 'R' FOR ITERATION"
450 A$=INSTR$(1):IFA$="R"GOTO250
460 STOP
```

****

REPEATING DIAMON

.....from R. C. THOMPSON

The following programs runs on 32K Basic. We tried to run it on Level II (as written) without any success due to statements in lines 90-120.

```
1 REM*************************************************************
2 REM REPEATING DIAMON WITH DRAMATIC COLORFUL ENDING
3 REM BY RICHARD C. THOMPSON-2/28/83- SANTA ANA,CA.
4 REM FOR 32K BASIC
5 REM*************************************************************
10 CLS
20 COLOR0,1,3,7
22 XW=68
23 YW=68
30 XL=118-XW/2
40 XH=0+XW/2
50 XL=77-YW/2
60 YH=35+YW/2
70 C=1
80 FORN=1TO200
90 LINEXL,35,57,YH,C
100 LINE57,YH,XH,35,C
110 LINEXH,35,57,YL,C
120 LINE57,YL,XL,35,C
130 C=C+1
140 IFC=4THENC=1
150 XL=XL+1
```

REPEATING DIAMON (continued)

```
160 XH=XH-1
170 YL=YL+1
180 YH=YH-1
181 IFXL=118THENXL=XL-1
182 IFXL=0THENXL=XL+1
183 IFXH=118THENXH=XH-1
184 IFXH=0THENXH=XH+1
185 IFYL=77THENYL=YL-1
186 IFYL=0THENYL=YL+1
187 IFYH=77THENYH=YH-1
188 IFYH=0THENYH=YH+1
190 NEXT
200 FORA=0TO255
202 FORA=0TO255:FORB=0TO7:FORC=0TO7:FORD=0TO7:COLORA,B,C,D
204 NEXT:NEXT:NEXT:NEXT
1000 RUN
```

****

JOYSTICK ART

.....from Glenn Jordan

The following program is written in Level II basic. To draw on the screen move the joystick in any direction. Pressing the fire button will cause nothing to draw, but the "pencil" is still moving in that direction, release the fire button and the "pencil" will again begin to write from that point on. To change the color or to end the program, turn the control knob.

```
5 CLS
10 PRINT"<<<<<<<<<<<<<<<<<":PRINT"GLENN JORDAN"
15 PRINT"RT.5 BOX217":PRINT"CONWAY S.C.29526":PRINT"803-347-4387"
20 PRINT">>>>>>>>>>>>>>>>>"
21 PRINT:PRINT:PRINT:PRINT
22 FORI=1TO1000
23 NEXTI:CLS
25 PRINT"******************":PRINT"  JOYSTICK ART":PRINT"******************"
26 PRINT:PRINT:PRINT:PRINT
27 FORI=1TO500
28 NEXTI
29 CLS
30 PRINT">>>>>>>>>>>>>>>>>>":PRINT"USE LEFT JOYSTICK":PRINT">>>>>>>>>>>>>>>>>>"
32 PRINT:PRINT:PRINT:PRINT
35 FORI=1TO500:NEXT I
50 CLS
55 WINDOW12
60 X=60:Y=70
70 IFFIRE(0)=0THENF=0
80 IFFIRE(0)=1THENF=C
90 PLOTX,Y,F
100 IFJOY(0)=1THENX=X-1
110 IFJOY(0)=2THENX=X+1
120 IFJOY(0)=4THENY=Y+1
130 IFJOY(0)=8THENY=Y-1
140 IFX<0THENX=112
```

JOYSTICK ART (continued)

```
150 IFX>112THENX=0
160 IFY<1THENY=77
180 IFY>77THENY=0
190 L=POT(0)
200 IFL=3THENPRINT"PRESS FIRE TO END"
210 IFL=3THENGOTO305
220 IFL<250THENC=3
230 IFL<130THENC=2
240 IFL<100THENC=1
250 PLOTX,Y,2
255 PLOTX,Y,3
276 OUTPUT"COLOR",45,8,C
300 GOTO70
305 REM
310 IFFIRE(0)=1THENGOTO70
320 WINDOW77
330 END
```

****

ASTEROIDS II

.....from TOM DOERR

This is a repeat of this game that was published in our January issue. It includes several corrections, and additions including REM statements.

```
10 CLS:COLOR0,7,7,3:INPUT"WOULD YOU LIKE   INSTRUCTIONS";Y$
20 IF Y$="Y"ORY$="YES"THENGOSUB510
30 CLS:POKE19215,25:A$="+":W=0:J=0:SOUND7,4096
40 X=50:Y=65:M=7:P=2:B=1:F=0
45 REM**COUNTDOWN
50 FORI=5TO1STEP-1:OUTPUTI,50,45,2:FORG=1TO300:NEXT:OUTPUTI,50,45,0:NEXT
60 SOUND4,11150
65 REM**SET SCREEN SCROLL
70 POKE24864,1:CLS
75 REM**MAIN LOOP
80 FORA=1TOM
90 PLOTX,Y,1
100 IFW=0THEND=X
110 IFJ=1GOTO150
115 REM**MANUAL CONTROL
120 IFJOY(0)=1THENX=X-1
130 IFJOY(0)=2THENX=X+1
140 GOTO 180
145 REM**RANDOM COMPUTER CONTROL
150 H=INT(100*RND(1)+1)
160 IFH<20THENX=X+1
170 IFH>35THENX=X-1
180 PRINT:L=L+1
185 REM**LASER
190 IFX=0THENIFFIRE(0)=0THEN PLOTX,Y,0
195 REM**CROSSED SCREEN
200 IFX=7THENX=105:Y=Y-4:P=P+1:M=M+8:IFM=30RM=8THENGOSUB390
210 IF Y<25ANDX<10GOTO400
```

ASTEROIDS II (continued)

```
215 REM**HIT AN ASTEROID
220 IFPOINT(X,Y)=3GOTO410
230 IFPOINT(X,Y)=2GOTO410
240 IFL/45=INT(L/45)THENM=M+B:IFM=3ORM=8THENGOSUB390
250 NEXT
260 REM**ASTEROID LOOP (+)
270 FORT=1TOP
280 R=INT(90*RND(1)+10)
290 IFB=-1THENC=2
310 IFB=1THENC=3
320 OUTPUTA$,R,15,C
330 NEXT:GOTO80
350 INPUT"TRY AGAIN (Y-N)";Y$
360 IFY$="Y"GOTO30
370 CLEAR:PRINT:PRINT:END
390 B=-B:RETURN
400 POKE24854,6:PRINT"YOU MADE IT!!":PRINT:PRINT:GOTO650
410 SOUND7,4096:POKE24864,6:CLS:F=F+1:ONFGOTO420,450,490
420 PRINT"AN ASTEROID HAS  SMASHED YOU      LASERS!!":PRINT
430 PRINT"CONTINUE ON AND  BE CAREFUL!!"
440 FORI=1TO300:NEXT:W=1:GOTO60
450 PRINT"AS ASTEROID HAS  WIPED OUT ALL    CONTROL DEVICES!":PRINT
460 SOUND6,17550:PRINT"YOU ARE NOW AT   THE MERCY OF A   MALFUNCTIONING"
470 PRINT"COMPUTER GUIDANCE SYSTEM
480 FORI=1TO1000:NEXT:J=1:GOTO70
490 SOUND0,24844:PRINT"ABANDON SHIP!!":PRINT:PRINT:FORI=1TO500:NEXT
500 SOUND7,4096:GOTO350
510 CLS:PRINT"THE OBJECT IS TO MANEUVER YOUR    SHIP THROUGH AN"
515 PRINT"ASTEROID"
520 PRINT"FIELD TO THE     BOTTOM OF THE    SCREEN."
525 PRINT:FORI=1TO1000:NEXT
530 PRINT"TO DO THIS, YOU  MUST MOVE YOUR   SHIP ACROSS THE"
535 PRINT"SCREEN THROUGH"
540 PRINT"THE ASTEROIDS    FROM RIGHT TO    LEFT.":FORI=1TO1000
545 NEXT:PRINT
550 PRINT"EACH TIME YOU    CROSS, YOUR SHIP IS MOVED FURTHER"
560 PRINT"DOWN THE SCREEN  AND ANOTHER"
565 PRINT"ASTEROID IS ADDED TO THE FIELD.":PRINT
570 FOR I=1TO1000:NEXT:PRINT"YOUR SHIP IS     EQUIPED WITH A"
580 PRINT"LASER THAT WILL  DISINTEGRATE     ASTEROIDS, BUT...":PRINT
590 PRINT"(CAUTION: IT ONLY WORKS WHILE YOU  ARE TRAVELLING   STRAIGHT)"
600 FORI=1TO2000:NEXT:PRINT:PRINT"GOOD LUCK AND BE CAREFUL NOT TO"
610 PRINT"LET YOUR LASERS  GET SMASHED!":FOR I=1TO1000:NEXT:RETURN
640 REM**STARSHIP
650 CLEAR:PRINT"YOU ARE NOW":PRINT"LICENSED TO"
655 PRINT"COMMAND THIS":PRINT"STARSHIP...":PRINT:PRINT
660 POKE19473,0:POKE19474,93
670 POKE23808,1:POKE23809,6:POKE23810,93:POKE23811,195
680 POKE23812,151:POKE23813,4
```

ASTEROIDS II (continued)

```
690 POKE23814,13:POKE23815,93
700 POKE23816,40:POKE23817,24
710 POKE23818,2
720 POKE23819,20:POKE23820,44
730 FORK=23821TO23940
740 READN
750 POKEK,N
760 NEXT
765 CLS
770 F=USR(0)
780 DATA0,48,0,0,120,0,0,252,0,1,254,0,3,255,0,7,255,128
790 DATA15,255,192,31,255,224,63,255,240,48,252,48
800 DATA32,252,16,0,252,0,0,252,0,16,252,32,56,252,112
810 DATA124,180,248,254,181,252,56,180,112
820 DATA56,180,112,56,132,112,63,255,240,63,255,240
830 DATA63,135,240,56,188,112,56,132,112,124,244,248
840 DATA254,133,252,40,252,80,0,252,0,0,132,0
850 DATA1,182,0,3,135,0,7,183,128,15,183,192
860 DATA31,255,224,63,255,240,127,255,248
870 DATA254,253,252,252,120,252,248,48,124
900 I$=INSTR$(1):RESTORE:PRINT CHR$(8):GOTO350
```

****

We need your help. If you are submitting a program to be included in the newsletter, please be sure that the program runs as submitted. If you are typing the program, please be sure there are no typos. We have encountered several programs that we cannot get to run, even after several hours of revising. We also have received typed programs where the lines as typed do not fit into the allowable space per line on the Interact and have had to create new lines. To make this a speedier task and to insure that your program gets printed, please review it, you can handwrite any corrections where needed, or even handwrite the entire program. Just, PLEASE be sure it runs as submitted.

THANK YOU!!!! HOPE YOU SPRING/SUMMER IS A TAD WARMER THAN OURS IS PROVING TO BE.

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

JUNE, 1983

GENERAL DISCUSSION

CONGRATULATIONS to TOM DOERR for his program "ASTEROIDS II". Tom is our fifth winner. You may be our next winner. This month you have 3 choices, 2 programs and 1 tip, so send in those votes. Remember, you vote counts...

We apologize to our Canadian members, as we stated in those club letters you received late, the U.S. postal service did not like our way of mailing them, without envelopes, plus they took their time in returning them to us. Hope you felt it was worth waiting for.

After we read our newsletter, once printed, we noticed a few of you may have difficulty with a couple lines of the asteroids program due to blanks in the printing:

```
400 POKE24864,6:PRINT"YOU MADE IT":PRINT:PRINT:GOTO650
410 SOUND7,4096:POKE24864,6:CLS:F-F+1:ONFGOTO420,450,490
535 PRINT "SCREEN THROUGH"
```

We would like to retract a sale item we published in the February issue. We advertised an Interger Basic for sale from Dan DeLong. This item is no longer for sale.

To answer a question asked, no we do not offer a tape of the programs listed in the newsletter. Maybe one of our clubmembers would like to.

TIPS

Dan DeLong of Washington would like to make the following clarifications of the explanation of the CLOAD routine in ROM which was published in the April issue.

1. At address 0238, the BC-0005 should be BC=0005
2. In the routine starting at 024F - should read:
   if D≠0 leave the tape on
   if D=0 stop the tape and
   5FD3 --> A and Return
   If D is not 0 then he program falls through to the rest of the program at 025D.

3. The proper way to load a tape file into an address that it wasn't supposed to load is as follows:

```
     DI   (disable interrupts)
     C  = (00 for no sound)
          (01 for sound)
     CALL SNDPAS    (02CA)
     CALL TAPEON    (02DD)
     BC = 016D
     CALL SKPLDR    (03B1)

LOOP BC = 0005   (number of bytes to load)
     DE = 5FD4   (address to load the header at)
     CALL LDRCD  (031A...load the header of the file)
     5FD8 --> A  (get the file code into A)

     If A = "FD" GOTO ENDER   (FD is the end of file marker)
     DE   = the address you wish the file to start loading
     5FD6 --> HL
     BC   = HL
     CALL LDBLK  (0300)
     GOTO LOOP

ENDER CALL TAPOFF  (02E3)
     EI     (enable the interrupts)

     (DE will point to the final byte filled by the file).
```

FROM WALTER JOPKE, JR.

The following is a procedure that Mr. Jopke has used to "tap" the Interact video signal (composite video) for use with a video monitor. By bypassing the RF modulation system, one can obtain a picture which is significantly higher in quality compared to the picture we normally get from the Interact on a standard TV. This procedure takes a bit of tinkering inside the Interact and probably should not be tackled by electronic novices.

To be able to obtain the composite video signal from the Interact for use with an external monitor, proceed with the following instructions.

CAUTION: THE FOLLOWING PROCEDURE WILL PROBABLY INVALIDATE ANY WARRANTIES YOU MAY HAVE ON YOUR INTERACT COMPUTER.

1) Turn off and unplug the Interact.

2) Loosen the four screws at the bottom of the Interact until you are able to separate the two halves of the plastic housing. Do the separation carefully as there are wires inside still connecting the two halves together.

3) Carefully reach inside and unplug the three connectors (keyboard, power transformer, and cassette recorder). Set the top half of the Interact aside in a safe place.

4) You will see a metal enclosure with a metal top plate held to the enclosure by four screws in the corners. In the middle of the top plate is a printed circuit board which has the male halves of the three connectors you dealt with in #3. This printed circuit board is held to the top plate by 6 screws. Remove these six screws as well as the four which hold the top plate to the enclosure.

5) Be careful as you proceed with this step, as the printed circuit board is wired from the bottom side to the main Interact board and these wires, especially the keyboard wires are easily broken. The object of this step is to pass the top plate over the small printed circuit board and out of the way. To do this you need to twist the top plate at an angle such that the lower right corner of the printed circuit board is passed through first and then the top right corner. The top plate can then be moved in a direction to the left and twisted until it is free of the printed circuit board. very carefully pry the power cable loose from the "glue" which holds it to the top plate and then move the top plate along the power cable until it is well clear of the Interact.

6) The RF modulation circuitry is contained within the small metal enclosure in the upper right corner of the Interact printed circuit board. It is here that we obtain the composit video signal. The first thing that has to be done is to remove the lid on this enclosure. It probably will be spot soldered at each end. To remove it, you will have to melt the solder spots one at a time with a soldering iron while providing gentle upward pressure on the lid with pliers. Note that anytime you are soldering or performing other functions around solid state electronic devices, you should take precautions to minimize static electricity. Some of these precautions are such as using a soldering iron with a grounded tip and making sure that your body discharges to something else other than the Interact computer.

7) You will now need to build the circuitry shown in Figure 1A. I used a small piece of double sided printed circuit board which after completing the wiring of the circuitry point to point between components, I solder tacked to the back surface of the RF enclosure. This automatically provided the ground connection. The added circuitry consists solely of an emitter follower transistor. This configuration provides buffering so as not to disrupt normal Interact operation, i.e., you can still use the normal TV hookup, and provides enough drive capability so that you can use a few feet of coasial cable to connect to your monitor.

8) Within the RF enclosure there is a small dual inline integrated circuit. This IC is the LM1889 RF modulator chip; The composit video signal shown in Figure 1A is available at pin 12 of the LM1889 and the +12 volt power is available at pin 16. Figure 1B shows shows the pinouts for the LM1889; pin 1 will be distinguished by a notch at the end of the IC or a dot on the top surface. Directly to pin 12 and pin 16, in turn, carefully solder a wire shich is long enough to reach to the added emitter follower circuitry. Use only

enough heat and solder to make the connection; you have to be particularly careful not to bridge between adjacent pins on IC or drop solder droplets down to the printed circuit board.

9) Solder the wire from pin 12 of the IC to bhe base of the emitter follower transistor through the capacitor as shown on Figure 1. Make sure that you follow the polarity as shown.

10) Solder the wire from pin 16 of the IC to the collector of the emitter follower transistor.

11) The -5 volt power needs to be obtained from a point outside the RF enclosure. I soldered a wire directly to the -5 volt regulator. The Interact voltage regulators are found in the upper left corner of the main printed circuit board. The point at which to solder a wire to obtain -5 volts is shown in Figure 1C. I then "threaded" this wire through the hole in the cover of the RF enclosure and soldered it to the emitter resistor of the transistor as shown in Figure 1.

12) Connect the emitter of the transistor through the coupling capacitor to the inner conductor of 75 ohm coaxial cable. The other end of the cable should have a connector compatible with your monitor. The length should be kept to within five feet or so. Connect the outer shield of the cable to the ground foil of you small printed circuit board or solder it directly to the RF enclosure, itself.

13) Route the cable through the same opening as the normal TV cable.

14) This completes the installation of the added circuitry to use composit video for a monitor. Repeat steps 1-6 in reverse to put the Interact back into functional condition. You should now be able to view the Interact video on both a TV in the usual fashion and on a monitor using the new circuitry. It is possible that the video from the Interact has too high an amplitude for optimum viewing. If your monitor does not have its own gain control, then insert the circuitry shown in Figure 1D in the coaxial line as close as is practical to the monitor. Adjust for the best picture on the screen. You should see a significant improvement in picture quality comparing the monitor to the normal TV screen.

FIGURE 1A

BUFFER/DRIVER FOR COMPOSITE VIDEO

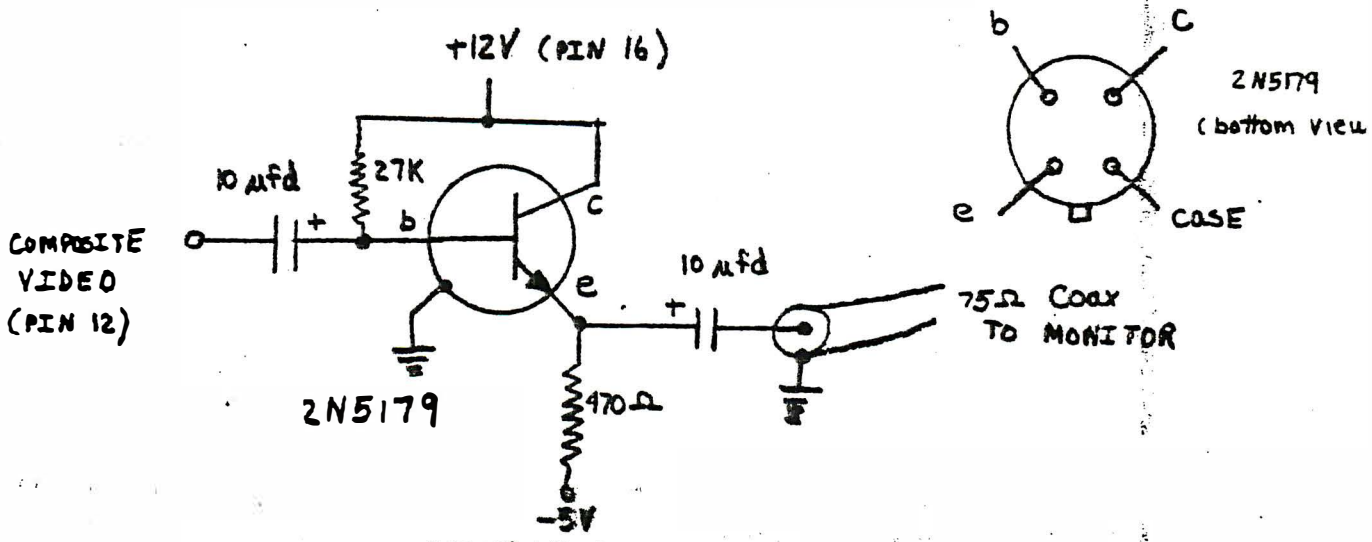


FIGURE 1B

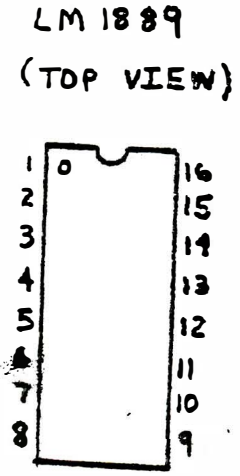


FIGURE 1C

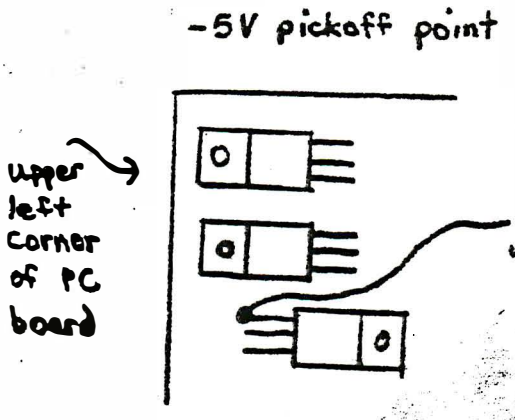
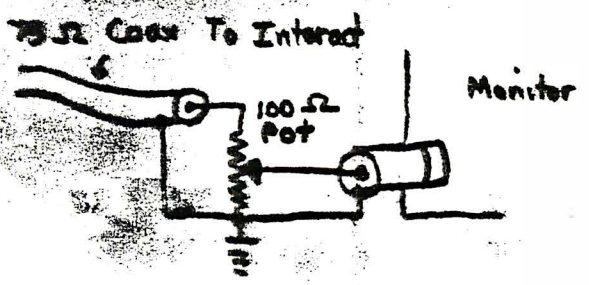


FIGURE 1D

GAIN CONTROL



----------CONTEST BALLOT----------

Eligible for the monthly prize is any program or article submitted by a clubmember published in this newsletter. Please fill in the name of the program/article you feel is "best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

Item _____

PTS 1-10

1. Documentation ..... _____
2. Ease of Use ..... _____
3. Usefullness ..... _____
4. Interest/Challenge ..... _____
5. Educational Value ..... _____

Mail bottom half only, by July 10, to the address on reverse.

****

FOR SALE

****

Tom Doerr, 3742 Mark Road, Cambridge, Ohio 43725 offers 2 program tapes - 16k Diagnostic tape $10 & Fastline Basic $5 (both or best offer. He also is looking for anyone with "Basically Speaking," "Guide to ROM subroutines, or a Microsoft 8K basic tape for sale/trade.

PRINTER SUPPLIES

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****

PROGRAMS

****

RACES

.....from TOM DOERR OF OHIO

Note - A "mile" is a randomly chosen unit between 5 and 11 pixel spaces long. Each "mile" may be a different length within one race. He did this to add variety to the program, but if a programmer wants a uniform "mile" length, he can give the variable "E" a constant value in line 90. DO NOT, however, change variable "B" because it controls whether the track is moving right, left, or straight down the screen. Another nice quality of the game is its multiple skill levels, depending on the length of a race and percentage of potholes.
Requires Level II Basic + 1 controller

```
90 E=INT(RND(1)*7)+5:B=INT(RND(1)*4)+1
100 FOR F=1TOE
110 IFB=1THENA=A-1
120 IFB=3THENA=A+1
130 IFA<5THENA=5
140 IFA>85THENA=85
150 REM**PRINT TRACK**
160 A1=A+1:A2=A1+20:A3=A2+1
170 PLOTA,15,3:PLOTA1,15,3:PLOTA2,15,3:PLOTA3,15,3
180 REM**MOVE CAR**
190 OUTPUTC$,G,50,0:PRINT
200 IFJOY(0)=1THENG=G-1
210 IFJOY(0)=2THENG=G+1
220 REM**HIT POTHOLE OR EDGE OF TRACK**
230 REM**(CHECK TIRES)**
240 IFPOINT(G+1,49)=3ORPOINT(G+1,47)=3GOTO320
250 IFPOINT(G+3,49)=3ORPOINT(G+3,47)=3GOTO320
260 OUTPUTC$,G,50,2
265 REM**POTHOLE??**
270 IFINT(RND(1)*100)+1<PTHENGOSUB390
280 NEXTF
290 IFE=32GOTO480
300 NEXTR
310 GOTO450
320 REM**CRASH**
330 SOUND1,550:Q=Q:SOUND1,551:POKE24864,6
340 FORI=1TO10:C$=CHR$(43):COLOR0,1,1,3:OUTPUTC$,G,50,2
350 FORJ=1TO100:NEXTJ:OUTPUTC$,G,50,0:C$=CHR$(30):COLOR0,1,7,3
360 OUTPUTC$,G,50,2:FORJ=1TO75:NEXTJ:OUTPUTC$,G,50,0:NEXTI
370 OUTPUTCHR$(43),G,50,1
380 PRINT:PRINT"YOU CRASHED!!":GOTO500
390 REM**POTHOLES**
400 N=INT(RND(1)*18)+A+2:PLOTN,15,3:PLOTN+1,15,3:RETURN
410 INPUT"HOW MANY MILES   OF TRACK";M
420 PRINT
430 PRINT"WHAT PERCENT      CHANCE OF":INPUT"POTHOLES";P
440 POKE24864,1:RETURN
450 REM**END LINE**
460 FORT=ATOA3:PLOTT,15,1:NEXT
470 E=32:B=2:GOTO100
480 POKE24864,6:PRINT"YOU WON!!"
490 SOUND7,4096
500 PRINT:PRINT"ANOTHER RACE?":Y$=INSTR$(1):IFY$="Y"GOTO40
510 COLOR4,3,0,7:CLS:CLEAR:END
```

****

GRAPH-LIST SAVER

.....from RICHARD BANDELIER OF INDIANA

Requires Basic Level II. The program produces and saves a bar graph, its title, beginning label code, and the actual figures on a data tape for future reference. Maximum # of bars is ten. Once you have keyed in a new chart, it will state BASE = ####### this is equal to the last # keyed in. You are able to change this number to give a different set of figures. Once you have said yes or no here, the computer will pause slightly, then your graph will appear. When you have studied you graph, you can press any key to return to the main menu. If you notice that you have made an error in one or more of your figures, you can enter #5 (list figures) and press "CR" until you are at the incorrect figure, then type in the change, and continue on reviewing the remainder of your figures. The bottom labels take the last digit of the periods (ex.73 would be 3) and so on, in numerical order. If you are graphing something that isn't in succession, then use the period entry 1 to 10, as a labeling code. The base # is actually the highest number of your figures, which is used as a basis of 100 percent. The program won't accept a base number lower than the original base number.

```
20 CLEAR 150
30 DIM F(3),NP(11),WA(18),N$(1)
50 CLS:PRINT"GRAPH-LIST SAVER"
55 GOTO 320
60 PRINT"  CHART TITLE:":INPUT C$
62 IF C$=""THEN 60
63 IFLEN(C$)>17THENTONE400,99:CLS:PRINT"TOO MANY LETTERS!":PRINT:GOTO60
64 PRINT
65 INPUT"ENTER PERIOD     FROM:";F
70 PRINT SPC(6)"-TO":PRINT SPC(5);:INPUT Y
71 IF Y=<F THEN PRINT "RE-ENTER!":GOTO 65
72 PRINT:IFABS(Y-F)>10THENTONE300,100:PRINT"  MAX.10 UNITS":PRINT:GOTO6
75 FF=F:FY=F:CLS:GOTO600
80 REM
81 CLS:F=FY:F$=STR$(F):F$=RIGHT$(F$,1)
85 FORX=0TO127:PLOTX,4,2:PLOTX,5,2:PLOTX,3,2:PLOTX,75,1:PLOTX,76,1
86 NEXT
110 A=0
120 OUTPUT VAL(F$),A,16,1
130 A=A+10:F=F+1:F$=STR$(F):F$=RIGHT$(F$,1)
135 IF A=100 THEN A=96
140 IF F<Y+1THEN120
160 P=100:Q=56:PP=133
170 OUTPUT C$,56-LEN(C$)/2*6,70,3
175 OUTPUT"BASE:",28,64,2:OUTPUTDD,54,64,1
176 OUTPUT"-:",46,58,2:M=DD/10:OUTPUTM,54,58,3
185 IFFL=1THENFORI=0TO(Y-FY):YP(I)=(YP(I)*D)/100:NEXT I
190 P=P-10:Q=Q-3
194 ZZ=0
195 FORZ=1TO11:C=2
196 IF Q=38THENC=1
200 OUTPUT"-",ZZ,Q,C
205 ZZ=ZZ+10:NEXTZ
210 IFP><0THEN190
240 B=22:L=4:R=9:I=0
250 REM
255 IF PY(I)=0THEN290
260 FORX=L TO R:PLOTX,B,3:NEXT
270 B=B+1
```

```
280 IFB><PY(I)THEN260
290 L=L+10:R=R+10:B=22:I=I+1
300 IFR><119 THEN 250
310 A$=INSTR$(1):CLS
320 PRINT:PRINT"     MENU:"
321 F=FY
325 PRINT"1.MAKE CHART"
330 PRINT"2.SAVE CHART"
335 PRINT"3.LOAD CHART"
340 PRINT"4.TO SEE CHART"
345 PRINT"5.LIST FIGURES"
348 PRINT"6.RESET>NEW CHART"
350 PRINT
370 INPUT"CHOICE NO.";S:CLS
375 IFS>6ORS<1THEN 320
380 ON S GOTO 60,400,470,1280,1250,1300
400 REM SAVE ON TAPE
410 PRINT"PRESS READ/WRITE"
415 PRINT
420 PRINT:PRINT"-PRESS ANY KEY"
430 A$=INSTR$(1):CLS:PRINT"    RECORDING":PRINT:PRINT:PRINT
440 F(1)=FY:F(2)=Y:F(3)=D
441 C$(1)=C$
445 CSAVE*F:CSAVE*NP
450 FORI=1TO1
455 GOSUB 1090
460 CSAVE*WA
465 NEXT I
468 GOTO 320
470 FL=1
475 PRINT"PRESS READ"
476 PRINT
477 PRINT:PRINT"-PRESS ANY KEY"
478 A$=INSTR$(1):CLS:PRINT"     LOADING":PRINT:PRINT:PRINT
479 CLOAD*F:CLOAD*NP
480 FORI=1TO1
481 CLOAD*WA
482 GOSUB1160
485 NEXTI
488 FY=F(1):Y=F(2):D=F(3)
489 F=FY
494 C$=C$(1)
500 GOTO 320
600 FL=1:FF=F:IFFF=0THENFF=9
601 D=PN(0)
602 FORI=0TO(Y-F):FF=FF+1:PRINTCHR$(35)"FOR"FF-1;:INPUTPN(I):NP(I)=PN(I)
603 IFPN(I)<=D THEN 605
604 D=PN(I)
605 NEXT I
606 PRINT:PRINT"BASE=";D:PRINT"CHANGE BASE(Y?N)?"
610 A$=INSTR$(1):IFA$="Y"THEN615
611 GOTO 619
615 INPUT"NEW BASE:";D
619 DD=D
620 FOR I=0 TO (Y-F)
630 YP(I)=NP(I)
642 YP(I)=(YP(I)/D)*100
```

```
645 IFYP(I)>100 THEN TONE 400,100:PRINT"   RE-ENTER":GOTO 615
660 FF=FF+1:NEXT
670 I=0
671 IF YP(I)=0 THEN PY(I)=0:GOTO 780
675 IF(YP(I)>0ANDYP(I)<5)THENPY(I)=23:GOTO780
676 IF(YP(I)>4 ANDYP(I)<9)THENPY(I)=24:GOTO 780
680 IF(YP(I)>8ANDYP(I)<11)THENPY(I)=25:GOTO780
685 IF(YP(I)>10 AND YP(I)<15)THENPY(I)=26:GOTO780
686 IF(YP(I)>14ANDYP(I)<19)THENPY(I)=27:GOTO780
690 IF (YP(I)>18 AND YP(I)<21)THEN PY(I)=28:GOTO 780
695 IF(YP(I)>20 AND YP(I)<25)THEN PY(I)=29:GOTO 780
696 IF (YP(I)>24 AND YP(I)<29)THENPY(I)=30:GOTO780
698 IF(YP(I)>28 AND YP(I)<31)THENPY(I)=31:GOTO 780
700 IF(YP(I)>30 ANDYP(I)<35)THEN PY(I)=32:GOTO 780
705 IF(YP(I)>34 ANDYP(I)<39)THENPY(I)=33:GOTO780
706 IF (YP(I)>38 ANDYP(I)<41)THENPY(I)=34:GOTO 780
710 IF(YP(I)>40 AND YP(I)<45)THEN PY(I)=35:GOTO 780
715 IF(YP(I)>44 AND YP(I)<49)THENPY(I)=36:GOTO780
716 IF(YP(I)>48 AND YP(I)<51)THENPY(I)=37:GOTO 780
720 IF(YP(I)>50 AND YP(I)<55)THENPY(I)=38:GOTO 780
725 IF(YP(I)>54 AND YP(I)<59)THENPY(I)=39:GOTO 780
726 IF(YP(I)>58 AND YP(I)<61)THEN PY(I)=40:GOTO 780
730 IF(YP(I)>60 AND YP(I)<65)THEN PY(I)=41:GOTO 780
735 IF (YP(I)>64 AND YP(I)<69)THEN PY(I)=42:GOTO 780
736 IF(YP(I)>68 AND YP(I)<71)THEN PY(I)=43):GOTO780
740 IF(YP(I)>70ANDYP(I)<75)THENPY(I)=44:GOTO780
745 IF(YP(I)>74ANDYP(I)<79)THENPY(I)=45:GOTO780
746 IF(YP(I)>78ANDYP(I)<81)THENPY(I)=46:GOTO780
750 IF(YP(I)>80 AND YP(I)<85)THEN PY(I)=47:GOTO 780
755 IF(YP(I)>84 AND YP(I)<89) THEN PY(I)=48:GOTO 780
756 IF(YP(I)>88 AND YP(I)<91)THENPY(I)=49:GOTO 780
760 IF(YP(I)>90 ANDYP(I)<95)THENPY(I)=50:GOTO 780
765 IF(YP(I)>94ANDYP(I)<99)THENPY(I)=51:GOTO780
766 IF(YP(I)>98 AND YP(I)<101)THENPY(I)=52
780 I=I+1:IFI><11THEN671
800 IF C$=""THEN320
840 GOTO 80
1090 WA(1)=LEN(C$(I))+1
1100 IF WA(1)=1THEN RETURN
1110 FOR J=2 TO WA(1)
1120 L$=MID$(C$(I),J-1,J)
1130 WA(J)=ASC(L$)
1140 NEXT J
1150 RETURN
1160 C$(I)=""
1170 IF WA(1)=1 THEN RETURN
1180 FOR J=2 TO WA(1)
1190 C$(1)=C$(I)+CHR$(WA(J))
1200 NEXT J
1210 RETURN
1250 PRINT"PERIOD:  FIG.:"
1251 F=FY:FF=F
1253 FORI=0 TO (Y-FY)
1256 PRINT SPC(3)FF;:PRINT SPC(2)NP(I)
1260 FF=FF+1:NEXT:GOTO310
1280 IF C$="" THEN 320
1282 FL=0:GOTO 606
1300 PRINT CHR$(7):RUN
```

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

AUGUST

****

GENERAL DISCUSSION

****

CONGRATULATIONS TO PETER KLOPP for his tip contribution of Character Display. Mr. Klopp is our 7th contest winner.

Keep those letters coming in. We appreciate your comments, tips, programs. Also, we apologize for any letters you have not reeived. We will send them to you upon request. The majority of our members appear to be receiving theirs. If you did not get an issue, please let us know. We will gladly send you one.

****

TIPS

****

PETER KLOPP OF CANADA offers the following:

SCREEN SCROLL

```
4C00...LXISP...8000   Since we begin to save some variables onto
4C03...JMP.....4C06   the stack, we include LXISP 8000 from now
4C06...MVIA....06     on. MVIA 06 will let 6 pixels scroll up,
4C08...LXID....4020   which is the amount used in BASIC.  You
4C0B...LXIH....4000   can change this variable to any amount.
4C0E...PUSHP          The difference between H-L and D-E is 20H,
4C0F...MVIC....4C     which is equal to one line on the screen;
4C11...MVIB....20     4C refers to the width of the screen.
4C13...LDAXD          lxaxd Loads RAM value of 4020 (then 4021,
4C14...MOVMA          4022, etc.) with MOVMA into 4000 (then
4C15...INXH           4001, 4002, etc.).  Since we are dealing
4C16...INXD           with video RAM, this is a transfer of
4C17...DCRB           pixels to the next higher line (scroll).
4C18...JNZ.....4C13   If one complete line has been done, pro-
4C1B...DCRC           ceed to 4C1B.
4C1C...JNZ.....4C11   If the entire width (vertical) of the
4C1F...POPPS          screen has been done, retrieve A from the
4C20...DCRA           stack and scroll another line, until all
4C21...JNZ.....4C08   6 have been scrolled up.
4C24...CALL....07E0   AWAITS HITTING ANY KEY
4C27...JMP.....4C06   starts all over
```

This is an extremely useful routine, as there is no ROM subroutine that handles any direct LINEFEED command on the INTERACT.

****

DAN DELONG OF WASHINGTON offers the following tip regarding a routine in the monitor.

PUTCHR

Outputs a character to the screen.

Entry: C = the character to be displayed.
DE = the position that the character is to be displayed.
D = column
06 is the first column
67 is the last column
E = row
06 is the first row
42 is the last row
(the numbers above are in pixels)

Exit: A = the column that the next character will be displayed.
C = the character that was displayed.
DE = the position the next character will be displayed.
Carry Flag = 1 if the display was successful
0 if the display was NOT successful

Action: Moves C to A.
Calls PUTC+i.
Sets column (D) to the next print position. If D exceeds 67 hex then D is set to 05 he, and the row (E) is incremented to the next row position.

Caution: The row (E) is not checked to see if the final row has been exceeded. If the final row has been exceeded, and you don't check it for yourself) the display routine just keeps displaying characters in memory past the display memory. This will eventually overwrite all memory.

Address: 055B hex.

****

REVIEW

****

WING IT sold by Micro-Video
.....review by Dan DeLong

The object of the game is to get the butterflies from the right side of the screen to the peninsulas on the left side.

You must move your butterflies through four lanes of traffic and onto the median strip. The median strip is mowed at times, so you cannot stay there too long. From the median strip you move

across lily pads, rafts and such. Finally you make it to the peninsula. The faster you move across the screen, the more points you get. You also get points for landing on the honey box (rafts) and flowers (on peninsulas). The longer you play, the faster the cars go, and the fewer the rafts and lily pads.

The game is quite a bit of fun. My wife and child play it so much that I have a hard time getting other things done. Another thing I like is that the game is basically non-violent. You don't get points for killing things, you DO get points for keeping the butterflies alive, this I like.

****

FOR SALE

****

INTERACT OWNERS-We have a new catalog that is full of software for your computerr new catalog has over 20 different programs that will run on your computer. Write for this new catalogt-alog is free. Sample MGH Software newsletter & sub infor $1.00. MGH SOFTWARE DEPT 1, BOX 645, BAYFIELD, WI 54814

BUSTOUT - Bustout is a basic game of breakout. It has very smooth graphics and is surprisingly fast. It requires Level II or Microsoft 8K Basic and left joystick. Complete listing and instructions are $2.00 from SOFTWARE, 7441 MADEIRA, FT. WORTH, TX 76112.

How many clubmembers would be interested in obtaining instructions on how to upgrade to 32K yourself? Let us know, we have a clubmember who has done this and would like to sell his knowledge.

----------CONTEST BALLOT----------

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM PTS 1-10

1. Documentation.....
2. Ease of Use.....
3. Usefulness.....
4. Interest/Challenge.....
5. Educational Value.....

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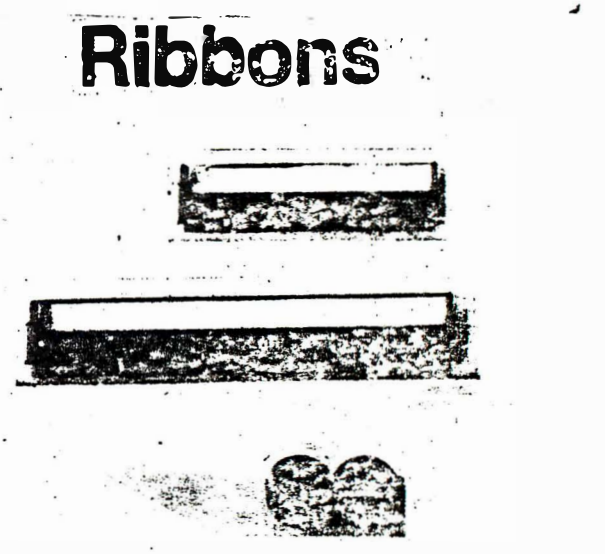

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****

QUESTIONS

****

Dan Delong, 15712 Old Snoh-Monroe Rd., Snohomish, WA 98290, wonders if anyone has a Slaugh RS-232 interface that they would like to sell. Write him at the above address.

Mr. Steven Sandelier of California owns an Interact with 32K basic, which as RS232 access features. He also has a serial port with a parallel printer. He needs to know the address of the RS232 port. Does anyone out there know it??? Let us know and we will publish it for all to learn.

****

PROGRAMS

****

LUNAR LANDER

.....from MIKE GOINS

Requires Level II Basic

```
10 CLS:PRINT"LUNAR":FOR D=1TO1500:NEXTD
20 PRINT:PRINT"THIS EMULATES THELANDING OF THE   APOLLO MOON CRAFT"
30 PRINT:PRINT:PRINT"THE NAVIGATIONAL COMPUTER ON BOARDHAS CHECKSTOPPED"
35 FOR D=1TO 700:NEXTD
40 PRINT"SO YOU WILL HAVE TO LAND IT ALL BYYOURSELF"
45 FOR D=1TO700:NEXTD
50 PRINT"SET BURN RATE OF RETRO ROCKETS"
60 PRINT"BETWEEN 0 AND 200POUNDS PER SECOND"
70 PRINT"SET NEW BURN RATEEVERY 10 SECONDS":PRINT
80 PRINT"CAPSULE WEIGHT IS32500 POUNDS":PRINT
90 PRINT"FUEL WEIGHT IS   16500 POUNDS"
100 FORD=0TO600:NEXTD
110 PRINT:PRINT"GOODLUCK"
150 L=0
160 A=120:V=1:M=33000:N=16500
165 G=0.001:Z=1.8
170 GOSUB 600
180 IFM-N<0.001THEN 350
190 IFT<0.001THEN 170
250 S=T:IFM>N+S*KTHEN310
300 S=(M-N)/K
310 GOSUB570:IFI<=0THEN490
320 IF V<0THEN340
330 IFJ<0THEN520
340 GOSUB480:GOTO180
350 CLS:PRINT"OUT OF FUEL AT":PRINTL"SECONDS"
351 S=(-V+SQR(V*V+2*A*G))/G
360 V=V+G*S:L=L+S
370 FORD=1TO2000:NEXT
380 CLS:W=3600*V:PRINT"ON MOON AT";L:PRINT"SECONDS; VELOCITY"
381 PRINT"AT IMPACT WAS":PRINTW;"MPH"
390 IF W<1.2 THENPRINT"PERFECT LANDING":GOTO590
```

LUNAR LANDER (continued)

```
400 IF W<10THENPRINT"GOOD LANDING,BUT COULD BE BETTER":GOTO590
410 IFW>60 THEN 450
420 PRINT"CRAFT DAMAGED YOUARE STRANDED HEREUNTIL A RESCUE*
430 PRINT"PARTY ARRIVES;I  HOPE THAT THERE*SENOUGH OXYGEN"
440 GOTO590
450 PRINT"YOU BLEW IT":PRINT
451 PRINT"THERE WERE NO":PRINT"SURVIVORS!"
460 PRINT"IN FACT, YOU HAVECREATED A NEW    LUNAR CRATER"
461 PRINTW*.277;"FEET DEEP"
470 GOTO590
480 L=L+S:T=T-S:M=M-S*K:A=I:V=J:RETURN
490 IFS<5E-03THEN380
500 D=V+SQR(V*V+2*A*(G-Z*K/M)):S=2*A/D
510 GOSUB570:GOSUB480:GOTO490
520 W=(1-M*G/(Z*K))/2:S=M*V/(Z*K*(W+SQR(W*W+V/Z)))+.05:GOSUB570
530 IFI<OTHEN 490
540 GOSUB480:IFJ>OTHEN180
550 IFV>OTHEN 520
560 GOTO180
570 Q=S*K/M:J=V+G*S+Z*(-Q-Q*Q/2-Q^3/3-Q^4/4-Q^5/5)
580 I=A-G*S*S/2-V*S+Z*S*(Q/2+Q^2/6+Q^3/12+Q^4/20+Q^5/30):RETURN
590 FOR D=1TO2500:NEXTD:PRINT:PRINT"TRY AGAIN?"
591 Z$=INSTR$(1)
592 IFZ$="Y"GOTO50
599 CLS:END
600 CLS:PRINT"TIME=";L;SEC"
610 PRINT:PRINT"THE ALTITUDE IS  ";INT(A);"MILES +"
620 PRINT INT(5280*(A-INT(A)));"FEET"
630 PRINT:PRINT"THE VELOCITY IS":PRINT3600*V;"MPH"
640 FOR BB=0TO500:NEXT
650 PRINT:PRINT"FUEL REMAINING=":PRINTM-N;"LBS"
660 FORBB=1TO600:NEXT
670 PRINT"ENTER BURN RATE":INPUTK
680 T=10
700 RETURN
```

****

DEMO CLOAD*, CSAVE*, & RUN

.....from W. J. MOORE

This is a demonstration program that will explain a more efficient way to save data to tape (less time), using CSAVE*N and CLOAD*N within a program. To use either CSAVE*N or CLOAD*N within a program, the array must be previously dimensioned. When CLOAD*N is used, the array may be dimensioned equal to or smaller than data contained on tape, BUT NEVER LARGER. The other restriction is that only numerical data may be transferred to or from tape with these commands.

If N() array (or any other a(), x(), etc) is DIM N(100), then 100 cells will be transferred to or from tape. Also, if each of ten names are converted to numbers and stored in 10 arrays then there

will be a long tone leader prior to transferring each array to or from tape. Now this is where we shift into high gear. Lets put all ten names with a sapce between each name into ONE ARRAY and then transfer the whole array at one time. Yep, we eliminated eight of the tone leaders. We can also imbed codes into array for control purposes, such as a 1 instead of 32 (ASCII 32 is a space) and test for these codes within a program. You might want a 1 to signal a carriage return and line feed or maybe to mark end of data block to be moved to screen.

For best results, try to avoid using CSAVE*A or CLOAD*A within a FOR-NEXT loop. Be sure you dimension an array large enough to contain all of the data, if memory permits. Remember you can re-use this array and when not being used to transfer data, it could be used as a scratch pad during program execution. Please follow REM notes with the action to understand what is happening.

There is a subroutine included at LINE 660 to be used for those of you that are using tapes with leaders. This program will not work with tapes using leaders because CSAVE* will try to record on the leader. Make the following changes for these type tapes:

```
120  GOSUB940:GOSUB660:CSAVE*N
240  GOSUB970:GOSUB660:CLAOD*N
470  GOSUB940:GOSUB660:CSAVE*N
550  GOSUB970:GOSUB660:CLOAD*N
```

RUN command can take an argument and is equivalent to GOTO and CLEAR. One word of caution, RUN will clear ALL variables including single variables and also string variables, both single and arrays. Hope this has been helpful.

```
10 REM (DEMO CLOAD*, CSAVE*, RUN)
20 REM (BY W.J. MOORE)
30 :
40 REM LOAD N() ARRAY WITH NUMBERS
50 DIM N(200)
60 FORI=1TO200
70 N(I)=I
80 NEXT
90 :
100 REM SAVE N() ARRAY TO TAPE
110 GOSUB900:REWIND
120 GOSUB940:CSAVE*N
130 RUN 150
140 :
150 REM ARRAY N() CLEARED BY LINE-130
160 DIM N(150):CLS
170 WINDOW23
180 FORI=1TO150
190 PRINTN(I);
200 NEXT
210 :
220 REM LOAD N() ARRAY FROM TAPE
230 GOSUB900:REWIND
240 GOSUB970:CLOAD*N
```

DEMO (continued)

```
250 :
260 REM PROOVE TAPE LOADED N()
270 FORI=1TO150
280 PRINTN(I);
290 NEXT
300 WINDOW77
310 RUN 330
320 :
330 REM ARRAY N() CLEARED AGAIN BY LINE-310
340 CLEAR300: REM CLEAR SPACE FOR STRING
350 A$="MY GOODNESS THIS IS MUCH FASTER  THAN SAMPLE IN  EXAMPLE BOOK!"
360 A$=A$+"    THESE WORDS  ARE MORE THAN EQUIVA-LENT TO JUST TEN NAMES!"
370 L=LEN(A$)
380 DIM N(L)
390 :
400 REM CONVERT STRING TO ASCII NUMBERS FOR N() ARRAY
410 FORI=1TOL
420 N(I)=ASC(MID$(A$,I,1))
430 NEXT
440 :
450 REM SAVE N() TO TAPE
460 GOSUB900:REWIND
470 GOSUB940:CSAVE*N
480 :
490 REM CLEAR A$
500 A$=""
510 PRINTA$
520 :
530 REM LOAD N() ARRAY FROM TAPE
540 GOSUB900:REWIND
550 GOSUB970:CLOAD*N
560 :
570 REM CONVERT N() ARRAY BACK TO STRING
580 CLS
590 A$=""
600 FORI=1TOL
610 A$=A$+CHR$(N(I))
620 NEXT
630 PRINTA$
640 END
650 :
660 REM TAPE POSITIONER SUBROUTINE IF NEEDED
680 POKE4096,64
690 FORI=1TO4000:NEXT
700 POKE4096,0
710 RETURN
720 :
900 CLS:OUTPUT"PRESS REWIND",15,50,1
910 OUTPUT"HIT ANY KEY",15,40,1
920 A$=INSTR$(1)
930 RETURN
940 CLS:OUTPUT"PRESS READ/WRITE",5,50,1
950 GOSUB910
960 RETURN
970 CLS:OUTPUT"PRESS READ",15,50,1
980 GOSUB910
990 RETURN
```

****

CHEAP WORDPROCSSOR

.....from THOMAS BOYD

Mr. Boyd has a Interact 32K running a Gemini printer. This program works well with 32K basic and should run on RS232 Basic.

(Mr. Boyd, we need to know where you obtained the article you submitted before we can publish it.)

```
 1 REM-CHEAP WORD PROCESSOR
 2 REM- MODIFIED BY T.R. BOYD
 3 REM- PO BOX 31, AYR, ONT., N0B 1E0
 5 L=70:REM LINE LENGTH
 6 CLS:LL=L
 8 PRINT"PRINTING":GOTO9980
 10 REM FAST SCROLL
 15 POKE24881,192:POKE24857,1
 20 FORM=25408TO25428
 30 READP:POKEM,P:NEXT
 40 DATA33,32,73,62,2,245,62,143,54,0,35,61
 50 DATA194,72,99,241,61,194,69,99,201
 60 FORM=24844TO24855
 70 READP:POKEM,P:NEXT
 80 DATA205,64,99,0,0,0,0,0,0,0,0,0
 89 STOP
 90 DATA"^"
 95 DATA"/C/+
 100 DATA"/W/DCHARACTER /DFUNCTIONS/Y
 105 DATA"/Y/Y
 110 DATA"A--FORM FEED/B3N--PRO SET OFF/Y
 120 DATA"B(N)--TAB/B3O--MID WIDTH ON/Y
 130 DATA"C--CLEAR ALL/B3P--MID WIDTH OFF/Y
 140 DATA"D--CAPITAL/B3Q--QUOTATION MARK/Y
 150 DATA"E--EMPHASIZE ON/B3R--SUPERSCRIPT ON/Y
 160 DATA"F--EMPHASIZE OFF/B3S--SUBSCRIPT ON/Y
 170 DATA"G--DOUBLE STRIKE ON/B3T--S-SCRIPT OFF/Y
 180 DATA"H--DOUBLE STRIKE OFF/B3U--UNDERLINE ON/Y
 190 DATA"I--ITALICS ON/B3V--UNDERLINE OFF/Y
 200 DATA"J--ITALICS OFF/B3W--DOUBLE WIDTH ON/Y
 210 DATA"K--COMPRESSED ON/B3X--DOUBLE WIDTH OFF/Y
 220 DATA"L--COMPRESSED OFF/B3Y--CARRIAGE RETURN/Y
 230 DATA"M--PRO SET ON/B3Z--RING BUZZER/Y
 240 DATA"+--CAPITALS ON/B3- -CAPITALS OFF/Y/Z
 250 DATA"*--CENTRE LINE
9970 DATA
9980 READA$:IFA$<>"^"THEN9980
10000 READA$
10010 IFA$=""THENLPRINTCHR$(10):END
10020 FORN=1TOLEN(A$)
```

```
10030 G=ASC(MID$(A$,N,1))
10045 IFG=94THENG=164:GOTO10080
10052 IFG=47THENGOTO11000
10055 IFP=1THE GOTO10080
10060 IF(G>64ANDG<91)THENG=G+32
10080 CT=CT+1:IFCT<LL-8THEN10100
10090 IFG=32THENLPRINT:CT=0:GOTO10110
10100 IFPP<>0THEN12060
10105 LPRINTCHR$(G);
10110 NEXT:IFPP<>0THEN12070
10120 GOTO10000
11000 N=N+1
11005 G=0
11010 G$=MID$(A$,N,1)
11020 IFG$="A"THENLPRINTCHR$(12);:GOTO10110
11030 IFG$="B"THENGOSUB12020:GOTO10110
11040 IFG$="C"THENLPRINTCHR$(27)CHR$( 4);:GOTO10110
11045 IFG$="D"THENN=N+1:LPRINTMID$(A$,N,1);:GOTO10110
11050 IFG$="E"THENLPRINTCHR$(27)"E";:GOTO10110
11060 IFG$="F"THENLPRINTCHR$(27)"F";:GOTO10110
11070 IFG$="G"THENLPRINTCHR$(27)"G";:GOTO10110
11080 IFG$="I"THENLPRINTCHR$(27)"4";:GOTO10110
11090 IFG$="J"THENLPRINTCHR$(27)"5";:GOTO10110
11100 IFG$="K"THENLPRINTCHR$(15);:LL=LL*1.7:GOTO10110
11110 IFG$="L"THENLPRINTCHR$(18);:LL=LL/1.7:GOTO10110
11115 IFG$="M"THENLPRINTCHR$(27)"Z"CHR$(2);:GOTO10110
11118 IFG$="N"THENLPRINTCHR$(27)"Z"CHR$(0);:GOTO10110
11120 IFG$="O"THENLPRINTCHR$(27)"B"CHR$(2);:LL=LL*1.2:GOTO10110
11130 IFG$="P"THENLPRINTCHR$(27)"B"CHR$(1);:LL=LL/1.2:GOTO10110
11140 IFG$="Q"THENLPRINTCHR$(34);:GOTO10110
11150 IFG$="R"THENLPRINTCHR$(27)"S"CHR$(0)CHR$(15);:GOTO10110
11160 IFG$="S"THENLPRINTCHR$(27)"S"CHR$(1)CHR$(15);:GOTO10110
11170 IFG$="T"THENLPRINTCHR$(27)"T"CHR$(18)CHR$(27)"H";:GOTO10110
11180 IFG$="U"THENLPRINTCHR$(27)"-"CHR$(1);:GOTO10110
11190 IFG$="V"THENLPRINTCHR$(27)"-"CHR$(0);:GOTO10110
11200 IFG$="W"THENLPRINTCHR$(14);:LL=LL/2:GOTO10110
11210 IFG$="X"THENLPRINTCHR$(20);:LL=LL*2:GOTO10110
11220 IFG$="Y"THENLPRINT:CT=0:LL=L:GOTO10100
11230 IFG$="Z"THENLPRINTCHR$(7);:GOTO10110
11240 IFG$="+"THENP=1:GOTO10110
11250 IFG$="-"THENP=0:GOTO10110
11260 IFG$="*"THENPP=2:GOTO10110
12000 END
12020 IFVAL(MID$(A$,N+1,1))=0THENRETURN
12030 N=N+1
12050 LPRINTTAB(VAL(MID$(A$,N,1))*10);:CT=CT+VAL(MID$(A$,N,1))*10:RETURN
12060 B$=B$+CHR$(G):GOTO10110
12070 LPRINTTAB((LL-LEN(B$))/2)B$
12080 B$="":PP=0:GOTO10000
```

NATIONAL INTERACT COMPUTER CLUB

D. HALLMANN, SUNSET COMPUTER SERVICES, P.O. BOX 781-F, WHEELING, IL 60090

SEPTEMBER

****

GENERAL DISCUSSION

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CONGRATULATIONS TO MIKE GOINS for his tip contribution of Lunar Lander. Mr. Goins is our 8th contest winner.

****

REVIEW

****

AL Language sold by Micro-Video

.....review by Dan DeLong

The AL language tape is being sold by Micro-Video as an Editor/ Assembler/Monitor for the 8080 Assembly language.

After using the Edit-x/Assembler-x, I was more than willing to replace it with something different.

With AL you can go from editing to assembling to the monitor without loading tapes back and forth. All of the programs are on one tape and all are in memory at the same time. AL uses 4k of memory. It uses from 4C00H to 4CBBH and from 6000H to 6FFFH. In my 16k system, the symbol table is set up at 5B80H to 5F80H, my text area is from 7000H to 7FFFH. For those of you who can subtrace in hex, this gives you only 4k of text area, with somewhat over 4k down at 4D00H and up which is empty. (More on that later.)

You can expand the symbol table, or relocate it if you want. You can do the same with the text area.

The editor portion of AL gives you all the functions that Edit-x had, plus quite a few new things. You now can move your text around as you want, you can start your List from a name in the text, you can also use the FREE command and find out how much memory you have left.

The assembler part is fantastic. You can use hexidecimal, octal, base4 or binary in your program. The BRK statement will return to the monitor so you can check out all the registers, this is great for debugging. You The DB operator has been cahnged so that you can define an entire string at a time, such as INVCOM DB

'INVALID COMMAND',00H. did you see the comma and the 00H following? You can put a whole bunch of things on the same line with the DB operator and have it all assembled correctly.

This is later. As I said before, you only have a 4k text area. I didn't really expect so little, expecially since AL only uses 4k. I expected to be able to use somewhere around 8k for my text. When I found this, I started doing some looking at what my source actually looked like. I found that as you type in your source, the editor converts it to some type of code. When you list your source, the editor converts the code back to mnemonics so you really don't see what has happened. What all this does is save a whole lot of memory. I figure that it saves at least half of your source in code. This means that you end up with about 8k (equivalent) for your text area. This is NOT BAD.

In all good things there has to be a couple bad things:

1) The FREE command returns how much memory is left in your text area in HEX. This gets old real fast

2) The converting of your source to code by the editor sometimes messes up. I typed in KEYIN DB 07E7H. The editor converted this to KEY IN DB 07E7H. Then the assembler gave me an error for having a space between KEY and IN.. I fixed this by changing KEYIN to INKEY.

3) The monitor lets you write your assembled code to tape only when you specify the beginning and ending of the code. The only problem with is that nothing tells you where your code has ended at. I fixed this by putting a DONE DB 00H at the end of my code. Now I find the DONE in the symbol table, and I now know where my assembled code ends at.

4) This last thing is just good old fashioned personal preference. I don't like errors to be printed in some code number. I would rather have the errors printed so that I could understand them without having to look them up in the manual.

Finally, in spite of the four things I have listed above, AL is fantastic. It is flexible, fast and all on one tape. If you program in assembler, you will get your money's worth in AL. I love it, in spite of a few quirks.

Also, even though I downgraded Edit-x/Assemble-x at the start of this review, I still have alot of respect for the person who wrote it. The person wrote it, which is something I don't think I could do. The person also wrote it without the benefit of an assembler, that I think deserves alot of credit.

****

FOR SALE

****

INTERSOFTWARE CANADA wishes to announce sale of entire software business to any clubmember with the following qualifications:

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INTERSOFTWARE CANADA, we're sorry to see you change hands, though we're sure the new owners will be good. We know, from Protecto about alot of what you have done in Canada, both for the advancement of education and support for the Interact. We wish you alot of success in you future. Good Luck

----------CONTEST BALLOT----------

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM

PTS 1-10

1. Documentation.....
2. Ease of Use.....
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5. Educational Value.....

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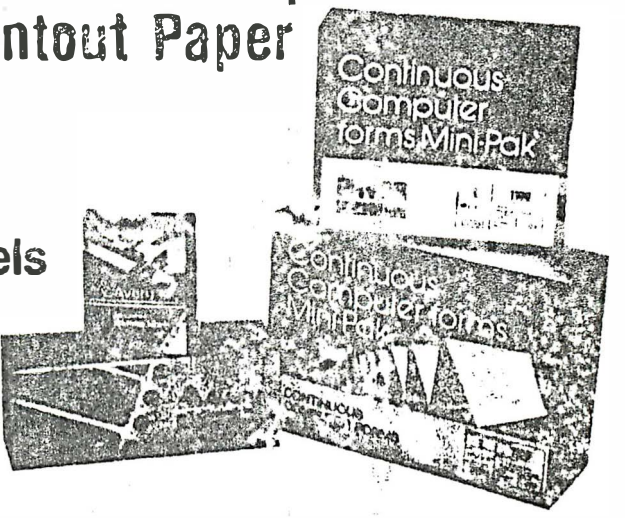

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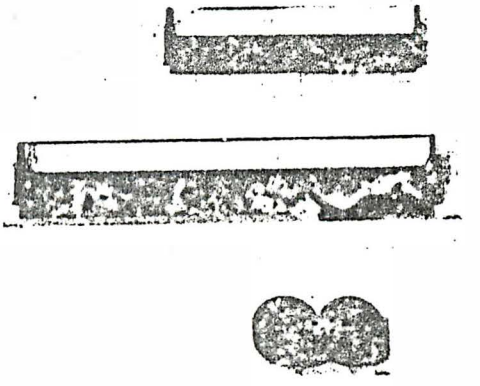

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QUESTIONS

****

To SS, we haven't yet received an answer to your question regarding parallel/serial, but we have received numerous requests for how to upgrade to 32K basic. So, let us know if we can publish your name, address & price, or send an ad (1" free) and it'll get into the next issue.

****

PROGRAMS

****

UTILITY ANALYSIS

.....from MARVIN VOGT

This program will assist in monitoring energy usage. Mr. Vogt voiced one problem. In California, they have a three tier rate system. Residential users are given a "Lifeline" allowance at the lowest rate. This is currently set at 260 Kwh per month. From May through October, in the hotter areas, this amount is doubled for those with air conditioning or evaporative coolers. After the lifeline allowance has been used, the rate goes to the second tier for the next 260 Kwh. After that, usage is at the highest rate until the meter is read by the utility. Mr. Vogt states that he doesn't know enough about programming to incorporate these three rates into the program. He also stated that he was getting into the third tier in August (boy that was a HOT month even here). Could one of our expert programmers see if they can incorporate this into the following program. Send us the updates and we will publish them for Mr. Vogt and our other California members. (Really, all members could probably use this program, energy is so costly everywhere.) As it stands, it will calculate energy usage for one cost. You can also see the days someone is off, due to the higher rate for that day. It tells you the daily rate, the total rates, as well as the average.

```
10 CLS:OUTPUT"UTILITY ANALYSIS",8,72,1
20 OUTPUT"PROGRAM",35,66,1
30 LINE1,60,112,60,2
40 WINDOW 58
50 REM***DATA INITIALIZATION***
60 M=1000
70 REM***PROCESSING ARE***
80 READ C
90 READ D,S
100 PRINT"INITIAL READING  WAS:";S
110 PRINT"ON DAY";D
120 PRINT"LIFELINE RATE IS:"C
130 TONE168,150:TONE110,229:TONE131,192
140 A$=INSTR$(1)
150 T2=S
160 D2=D
170 FOR I=1 TO M
```

```
180 N=1
190 READ D
200 IF D=0 THEN 360
210 IF D<D2 THEN 230
220 N=D-D2
230 D2=D
240 READ R
250 T0=R-T2
260 T1=INT(100*(T0*C)+.5)/100
270 PRINT"DAY";D:PRINT"READING";R:PRINT"USED";T0:PRINT"COST";T1
280 IF N=1 THEN 300
290 PRINT"***(";N;" DAYS)"
300 T2=R
310 T3=T3+T1
320 N1=N1+N
330 TONE168,150:TONE131,192
340 A$=INSTR$(1)
350 NEXT I
360 REM***PROGRAM TERMINATION POINT***
370 T4=R-S:PRINT
380 PRINT"TOTALS ARE"
390 PRINT"KWH USED";T4
400 PRINT"COST: $";INT(100*T3+.5)/100
410 PRINT"FOR ";N1;" DAYS"
420 PRINT"AVERAGE DAILY USE WAS:";INT(T4/N1);" KWH"
430 PRINT"AVERAGE DAILY    COST WAS: $";INT(100*(T3/N1)+.5)/100
440 TONE168,150:TONE131,192
450 A$=INSTR$(1)
460 CLS:WINDOW 77
470 OUTPUT"DO YOU WANT A",17,46,1
480 OUTPUT"PRINTOUT?",29,38,1
490 OUTPUT"Y OR N",38,30,1
500 A$=INSTR$(1)
510 IF A$="Y" THEN 540
520 CLS:OUTPUT"THANK YOU!",26,40,1
530 END
540 CLS:OUTPUT"PREPARE PRINTER",11,40,1
550 OUTPUT"WHEN READY",26,32,1
560 OUTPUT"PRESS ANY KEY",17,24,1
565 A$=INSTR$(1)
570 CLS:OUTPUT"PRINTING",32,40,1
580 LPRINT CHR$(14)"UTILITY ANALYSIS PROGRAM"
590 LPRINT:LPRINT"ELECTRICAL ENERGY":LPRINT
600 CLEAR:RESTORE
610 M=1000
620 READ C
630 READ D,S
640 LPRINT"INITIAL READING WAS:";S;" ON DAY";D
650 LPRINT"LIFELINE RATE IS:"C
660 LPRINT:LPRINT
670 LPRINT"DATE";TAB(40)"USE COST"
680 LPRINT"READ";TAB(10)"READ";TAB(20)"USED";TAB(40)"THIS DAY"
690 LPRINT"----";TAB(10)"----";TAB(20)"----";TAB(40)"--------"
700 T2=S
```

UTILITY ANALYSIS (continued)

```
710 D2=D
720 FOR I=1 TO M
730 N=1
740 READ D
750 IF D=0 THEN 900
760 IF D<D2 THEN 780
770 N=D-D2
780 D2=D
790 READ R
800 T0=R-T2
810 T1=INT(100*(T0*C)+.5)/100
820 LPRINTD;TAB(10)R;TAB(20)T0;TAB(40)T1;
830 IF N=1 THEN 850
840 LPRINT"***(";N;" DAYS)"
850 T2=R
860 T3=T3+T1
870 N1=N1+N
880 LPRINT
890 NEXT I
900 T4=R-S
910 LPRINT TAB(20)"------";TAB(40)"--------"
920 LPRINT"TOTALS ARE";TAB(20)T4;TAB(40)T3
930 LPRINT
940 LPRINT"FOR";N1;" DAYS"
950 LPRINT"AVERAGE DAILY USE WAS:";INT(T4/N1);" KWH"
960 LPRINT"AVERAGE DAILY COST WAS: $";INT(100*(T3/N1)+.5)/100
970 GOTO 520
1000 DATA.05127
1010 DATA29,89017
1030 DATA30,89039
1040 DATA31,89060
1050 DATA1,89079
1060 DATA2,89119
1070 DATA3,89151
1080 DATA5,89201
1090 DATA6,89218
1100 DATA7,89235
1110 DATA8,89284
1120 DATA9,89323
1130 DATA10,89341
1140 DATA11,89359
1150 DATA12,89394
1160 DATA13,89428
1170 DATA14,89466
1180 DATA0
```

****

FINANCE

.....from WILLIAM MOORE

This program reUires Level II Basic. Finance is a package of 15 selected financial formulas. While some formulas result in a few cents off due to Interact's single precision math routines, the results are still satisfactory. The program is menu driven. One selection at a time will be displayed until all have been displayed, then menue starts over again. Any key except "Y" will change selection. After a selection has been made, user answers all prompts. The answer will be displayed followed by "ANOTHER (Y)?". if you desire to try one or more new values in same function, press "Y", then enter new values for applicable prompts. Press "CR" key if no change. When you return to the menu, it will be restarted at the beginning. I will not attempt to define what each function is used for here. That can be looked up in many books or some friends can tell you.

The selections available are:

Future value of an investment
Future value of regular deposits (annuity)
Regular deposits
Regular withdrawals from an investment
Initial investment
Minimum investment for withdrawals
Nominal interest rate on investments
Effective interest rate on investments
Depreciation rate
Depreciation amount
Salvage value
Discount commercial paper
Principal on a loan
Regular payment on a loan
Term of a loan

While the caluclations for the above are interesting, the programming techniques might be just as interesting. First of all, the calculations are contained in 'User Defined Functions' rather than in GOSUB routines. This means less lines of basic that have to be moved to a buffer and analyzed by the interpreter. Next, all text was stored in a LIBRARY (9000-9060), then moved to string array D$() for fast reference. Most of these words are used many times in menu selections and prompts. By referring to each word with no more than a 2 digit number, lots of memory can be saved. 9100-9130 contain the complete menu as printed above. Line 200 displays menu. 9500-9640 contain the prompts for each menu selection. 210-320 decode and convert data to string format and displays string. 500-660 handles all selecting functions i.e. display and calculations. Last feature is practical application of the RESTOREnnn command. I hope some of these techniques will help squeezing that program down to a size that would not fit before. As for me, I have 32K. One

final thought, the use of OUTPUT for string data may be a little harder to control, but it sure will speed up execution of a program by eliminating the time it takes to scroll.

```
1 REM FINANCE BY W.J. MOORE, 8-1-83
2 REM LEVEL-II BASIC
10 CLEAR500:DIMD$(50):FORI=1TO50:READD$(I):NEXT
15 DEF FNX(X)=INT(X*100+.5)*.01
20 DEF FNDA(X)=A*(1+B/100/C)^(C*D)
25 DEF FNDB(X)=A*100*((1+B/100/C)^(C*D)-1)/(B/C)
30 DEF FNDC(X)=A*((B/100/C)/((1+B/100/C)^(C*D)-1))
35 DEF FNDD(X)=A*((B/100/C)/((1+B/100/C)^(C*D)-1)+B/100/C)
40 DEF FNDE(X)=A/((1+D/100/B)^(B*C))
45 DEF FNDF(X)=A*C/B*100*(1-(1/((1+B/100/C)^(C*D))))
50 DEF FNDG(X)=D*((B/A)^(1/(D*C))-1)*100
55 DEF FNDH(X)=((B/A)^(1/C)-1)*100
60 DEF FNDI(X)=(1-(B/A)^(1/C))*100
65 DEF FNDJ(X)=A*B/100*((1-B/100)^(C-1))
70 DEF FNDK(X)=A*(1-B/100)^C
75 DEF FNDL(X)=A*B/100*C/360
80 DEF FNDM(X)=A-FNDL(X)
85 DEF FNDN(X)=A*100*D/C*(1-1/(1+C/100/D)^(D*B))
90 DEF FNDO(X)=(C/100*B/D)/(1-(C/100/D+1)^(-D*A))
95 DEF FNDP(X)=-(LOG(1-B*C/100/(D*A))/LOG(1+C/100/D)/D)
200 RESTORE9100:F=1:X=15:GOSUB220:GOTO200:REM MAIN MENU HERE
210 F=0
220 FORI=1TOX:N=1:IFF=1THENCLS
230 FORJ=1TO7:IFN=0THEN250
240 READN:D$=D$+D$(N)+" "
250 NEXTJ
255 IFF=1THENOUTPUTD$,6,47,3:D$=""
260 IFF<>1THENPRINTD$:D$=""
270 IFF=0THENINPUTA(I):GOTO300
280 IFF=1THENOUTPUT"(Y)?",30,23,3:IFINSTR$(1)="Y"THENK=I:GOTO500
290 IFF=2THENRETURN
300 NEXTI
310 IFF=0THENA=A(1):B=A(2):C=A(3):D=A(4)
320 RETURN
400 X=4:GOTO420
410 X=3
420 GOSUB220:X=1:F=2:GOSUB220
430 RETURN
500 CLS:F=0
510 ONIGOTO520,530,540,550,560,570,580,590,600,610,620,630,640,650,660
520 RESTORE9500:GOSUB400:X=FNDA(X):GOTO900
530 RESTORE9510:GOSUB400:X=FNDB(X):GOTO900
540 RESTORE9520:GOSUB400:X=FNDC(X):GOTO900
550 RESTORE9530:GOSUB400:X=FNDD(X):GOTO900
560 RESTORE9540:GOSUB400:X=FNDE(X):GOTO900
570 RESTORE9550:GOSUB400:X=FNDF(X):GOTO900
580 RESTORE9560:GOSUB400:X=FNDG(X):GOTO900
590 RESTORE9570:GOSUB410:X=FNDH(X):GOTO900
```

FINANCE (continued)

```
600 RESTORE9580:GOSUB410:X=FNDI(X):GOTO900
610 RESTORE9590:GOSUB410:X=FNDJ(X):GOTO900
620 RESTORE9600:GOSUB410:X=FNDK(X):GOTO900
630 RESTORE9610:GOSUB410:PRINTINT(FNDL(X)*100)*.01:GOSUB220:X=FNDM(X):GOTO900
640 RESTORE9620:GOSUB400:X=FNDN(X):GOTO900
650 RESTORE9630:GOSUB400:X=FNDO(X):GOTO900
660 RESTORE9640:GOSUB400:X=FNDP(X):GOTO900
900 PRINTFNX(X):PRINT:PRINT"ANOTHER (Y)?":IFINSTR$(1)="Y"THENI=K:GOTO500
910 GOTO200
9000 DATA A LOAN,AFTER X,AMOUNT,AN,ANNUAL,(ANNUITY),COMMERCIAL

9010 DATA COMPOUNDING,COST,DAYS,DEPOSITS,DEPRECIATION,DISCOUNT,EACH
9020 DATA EFFECTIVE,FOR,FROM,FUTURE,IN,INITIAL,INTEREST,INVESTMENT
9030 DATA INVESTMENTS,MATURITY,MINIMUM,NOMINAL,NUMBER,OF,ON,ORIGINAL
9040 DATA PAPER,PAYMENT,PAYMENTS,PER,PERIODS,PRICE,PRINCIPAL,RATE,REGULAR
9050 DATA RESALE,SALVAGE,TERM,TO,TOTAL,VALUE,WITHDRAWAL,WITHDRAWALS,YEAR
9060 DATA YEARS,=
9100 DATA18,45,28,4,22,0,18,45,28,39,11,6,0,39,11,0,39,47,17,4,22,0
9110 DATA20,22,0,25,22,16,47,0,26,21,38,29,23,0,15,21,38,29,23,0
9120 DATA12,38,0,12,3,0,41,45,0,13,7,31,0,37,29,1,0,39,32,29,1,0
9130 DATA42,28,1,0
9500 DATA20,22,0,26,21,38,0,27,28,8,35,34,48,0,27,28,49,0,18,45,50,0
9510 DATA3,28,39,11,0,26,21,38,0,27,28,11,34,48,0,27,28,49,0,18,45,50,0
9520 DATA44,45,2,49,0,26,21,38,0,27,28,11,34,48,0,27,28,49,0,39,11,50,0
9530 DATA20,22,0,26,21,38,0,27,28,47,34,48,0,27,28,49,0,3,28,14,46,50,0
9540 DATA44,45,2,49,0,27,28,8,35,34,48,0,27,28,49,0,26,21,38,0,20,22,50,0
9550 DATA3,28,47,0,26,21,38,0,27,28,47,34,48,0,27,28,49,0,25,22,50,0
9560 DATA37,0,44,45,0,27,28,49,0,27,28,8,35,34,48,0,26,21,38,50,0
9570 DATA20,22,0,44,45,2,49,0,27,28,49,0,5,21,38,50,0
9580 DATA30,36,0,40,36,0,49,0,12,38,50,0
9590 DATA30,36,0,12,38,0,48,0,12,50,0
9600 DATA30,36,0,12,38,0,49,0,45,50,0
9610 DATA18,45,0,13,38,0,10,43,24,0,13,50,0,9,50,0
9620 DATA39,32,0,42,19,49,0,5,21,38,0,27,28,33,34,48,0,37,50,0
9630 DATA42,19,49,0,37,0,5,21,38,0,27,28,33,34,48,0,39,32,50,0
9640 DATA39,32,0,37,0,5,21,38,0,27,28,33,34,48,0,42,50,0
```

NOTE: PROGRAM SCREEN GRAPHICS CALCULATOR, CORRECT LINE 630 TO:

```
630 IFA$="D"THENH=0:V=V-1:GOSUB300:GOSUB310
```

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OCTOBER

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GENERAL DISCUSSION

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The winner of the September contribution is Marvin Vogt for Utility Analysis. CONGRATULATIONS Mr. Vogt.

Sunset Computer Services is announcing the sale of the National Interact Computer Club. Also for sale is our computer and all of our software. We would prefer to sell everything together for $600. The club includes the names and addresses of all current clubmembers as well as a copy of all previous newsletters back to December, 1980 as well as 2 newsletters previous to that that are undated. We believe these are all of the newsletters that were printed under "National Interact Computer Club". Those interested, write for more details. (We have too many programs and such that will be sold with the computer that it would waste too much space to print it all in the letter.) If anyone is interested without more details, money order/cashier check preferred. The reason we are selling is because the company is expanding and we don't feel we will be able to devote as much time as we feel the clubmembers deserve. We will publish the new owner in a newsletter or if it is not sold we will let everyone know. Also, anyone who wishes to continue receiving Sunset Computer Services's advertising, write us.

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REVIEW

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GEMINI 10 PRINTER

.....review by George Sylvain

I needed a printer to use with my Interact computer, for my Kennel Business. The printer had to be: reliable, moderately fast, accept 10" wide paper, print quality had to be good enough for commercial purposes, have graphic capabilities, and be reasonable priced.

The Gemini 10 Printer exceeded my criteria:

1) The reliability factor of the printer is 500 millions lines MCBF (excluding print head). The print head reliability is

100 millions characters, and can be removed easily for replacement.

2) The print speed is 100 characters per seconds
3) The printer will accept: 1 original and 2 carbonless copies of fanfolded paper 3" to 10" wide; roll paper 8.5 inches wide; single sheet of paper up to 10 inches wide.
4) The print quality is excellent because of the double strike and emphasis feature. A variety of sizes are available.
5) The printer has high and low resolution graphics.
6) Now the price. The printer is available at most computer stores for a retail price around $300. The printer serial interface is around $80 extra. I paid $302 for the printer and $79 for the interface at Texas Computer (#800-433-5184).

There are hundereds of characters available, including: Foreign language characters; monetary communications; scientific and math notation; and, plotting symbols etc.

There are special features such as: self test; continuous underline; perforation skip; and, the printer comes with a 2k buffer. A 6k buffer is also available as an option. This is a very brief description.

Interfacing the Gemini:

The interconnection cable between the printer and the Interact is available from Micro Video (313-996-0626). Tell them you want the same custom cable they sell for the Epson MX80. After connecting the printer to the Interact, set switch 1 and 2 located on the serial interface card as follows: 1) at switch 1, place position 5 on; 2) at switch 2, place positions 1,2,4, and 6 on. 3) at the 4 positions dip switch located at the rear left of the printer, place all the positions off, if you are using RS232 or 32k basic, poke 25097,10. You are now ready to print. The program following this review is a short command level program. It will permit you to select quickly, the desired margin, characters, feedlines, etc. While the program does not encompass the full capabilities of the GEMINI, it contains the most often used commands.

The program - Line 5 supresses linefeed, this prevents the paper from moving while at the command level. Line 5 also initializes the printer. Line 443 restores feedline.

Below is listed the interface cable connections. These are for the Micro Video RS232 interface only. The printer serial interface compatible with the Interact is called a STAR SBI1-2048 serial interface. Make sure you specify it, or you might get a VIC 20 serial interface. At page 5 and 5 of the Port Monitor Access information which Micro Video supply with their port, you will find a program which will permit you to use the printer in typewriter fashion. To use the program, change the 3E 83 at location 4D03, with 3E8B.

If you make your interconnecting cable, make it as short as possible, or use shielded wire to prevent television interference

INTERFACE .....PRINTER

PIN 1	SIGNAL GROUND	PIN 1
PIN 2	REVEIVED DATA	PIN 2
PIN 3	TRANSMITTED DATA	PIN 3
PIN 5	CLEAR TO SEND	PIN 11
PIN 6	DATA SET READY	PIN 6
PIN 7	GROUND RETURN	PIN 7
PIN 8	RECEIVED LINE DETECTOR	PIN 8
PIN 20	DATA TERMINAL READY	PIN 20
PIN 24	TRANSMIT SIGNAL(TIMING)	PIN 24

PRINTER PROGRAM

```
5 CLS:POKE25097,00:LPRINTCHR$(27);CHR$(64)
10 PRINT"DO YOU WANT TO":PRINT"SET LEFT MARGIN":PRINT"TYPE Y FOR YES"
12 INPUT"TYPE N FOR NO";A$
13 CLS
14 IFA$="Y"THENGOSUB418
16 PRINT"DO YOU WANT TO":PRINT"SET RIGHT MARGIN":PRINT"Y FOR YES":INPUT"N FOR NO";B
$
17 CLS
18 IFB$="Y"THENGOSUB422
20 PRINT"SELECT CHARACTER":PRINT"1 FOR STANDARD":INPUT"2 FOR ITALIC";H:CLS
22 ON H GOSUB408,410
24 PRINT"1 FOR DOUBLE":PRINT"STRIKE":PRINT"2 FOR EMPHASIS"
26 PRINT"3 FOR DOUBLE":PRINT"  STRIKE AND":PRINT"  EMPHASIS"
27 INPUT"4 NO SELECTION";K:CLS
28 ON 6 GOSUB402,406,404
32 PRINT"SET PITCH":PRINT"1 FOR 17 CPI":PRINT"2 FOR 12 CPI":PRINT"3 FOR 10 CPI"
34 PRINT"4 FOR 0[illegible]":INPUT"5 NO SELECTION";D
36 ON D GOSUB426,428,430,432
38 CLS:PRINT"1 FOR UNDERLINE":PRINT"2 FOR SLASHED":PRINT"ZEROES"
39 PRINT"3 FOR SUBSCRIPT":INPUT"4 NO SELECTION";K
40 CLS:ON K GOSUB412,414,416
41 PRINT"SELECT FEEDLINE"
42 PRINT"1 FOR 1/8 IN.":INPUT"2 FOR 1/6 IN.";F:CLS
44 ON F GOSUB438
46 PRINT"LOWER CASE":PRINT"Y FOR YES":INPUT"N FOR NO";J$
47 CLS
48 IFJ$="Y"THENGOSUB440
50 GOTO442
400 LPRINTCHR$(27);CHR$(71):RETURN
402 LPRINTCHR$(27);CHR$(72):RETURN
404 LPRINTCHR$(27);CHR$(69):RETURN
406 LPRINTCHR$(27);CHR$(70):RETURN
408 LPRINTCHR$(27);CHR$(56):RETURN
410 LPRINTCHR$(27);CHR$(55):RETURN
```

```
412 LPRINTCHR$(27);CHR$(45);CHR$(1):RETURN
414 LPRINTCHR$(27);CHR$(86);CHR$(1):RETURN
416 LPRINTCHR$(27);CHR$(83);CHR$(0):RETURN
418 CLS:PRINT"SET LEFT MARGIN":INPUT"1 TO 255";A:CLS
420 LPRINTCHR$(27);CHR$(77);CHR$(A):RETURN
422 PRINT"SET RIGHT MARGIN":INPUT"1 TO 255";B:CLS
424 LPRINTCHR$(27);CHR$(81);CHR$(B):RETURN
426 LPRINTCHR$(27);CHR$(66);CHR$(3):RETURN
428 LPRINTCHR$(27);CHR$(66);CHR$(2):RETURN
430 LPRINTCHR$(27);CHR$(66);CHR$(1):RETURN
432 LPRINTCHR$(15):RETURN
438 LPRINTCHR$(27);CHR$(0):RETURN
440 POKE24651,201:RETURN
442 PRINT"START COMPOSING":PRINT"AT LINE 450
443 POKE25097,10
444 FORX=1TO200:NEXT:END
```

We were unable to test the previous information. The progarm is being published as it was submitted.

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TIPS

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From PATRIC KUSHKO of Ontario, Canada

Mr. Kushko states that the pin configuration from the June tip on tapping a Video signal by Walter Jopke, Jr. should look as follows:

1	18	
2	17	
3	16	12 volt pin 16 joins with
4	15	14 and 17
5	14	
6	13	
7	12	12 pin is video composite
8	11	
9	10	

He states that is works great and you can have a small monitor running at the same time as a T.V. He's mounted a Hitachi Video Camera monitor on the Interace console (screen size is about 1 1/2" x 1 1/4", but it has a magnifier). Its great for program updates or preloading. It also makes the Interact semi-portable Portability is desirable if you want to use it in various locations. Plus it gives it a Hi-Tech look.

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FOR SALE

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Now you can CALL for a FREE MGH Software Product Catalog. Sketch Pad-Cube Master-8080 Dis. in basic.All require either the 8K graphic or Level II basic. $7.00 each or all 3 for only $20 for a limited time. No phone orders are accepted. Call saturdays from 8:00 to 10:00pm, central time, or write to MGH Software, Box 645, Bayfield, WI 54814. 1-715-779-5600.

16K Interact w/RS232 port,joysticks,service manual, diagnostic manual,schematic,SD,DF,RG,VB,BT,FB,BJ,MC,DG,CM,RP,AI,BA,MY,HT,ST, MM,LB,EZ,tapemaster,fastline overlay,P801 printer overlay,T801 terminal overlay,Hi-Lo monitor, microvideo monitor,diagnostic tape,alignment tape, atlantic, schase, mazes&monsters,one armed bandit,deathstar, nuclear reactor, lunar excursion module,missle attach - $350-call (412)863-5760 or write A.F. HARSCH, 13667 Loretta Ct, North Huntingdon, PA 15642

16K Interact w/pro keys & old keys for terminal, 8080 programming book, 2 joys/extended, cover, assemblex/editex, level II basic, microsoft 8K basic, leonardo graphics, hi/lo monitor, MV monitor, vector graphics, RS232 interface port, diagnostic & alignment tapes, pause & rewind switches, many game tapes, service manuals, many sources of reference, "basically speaking", documentation, and many poast issues of different newsletters. - $500 or best offer - anyone interested call (219) 462-0388) or write at 155 155 Institute Street, Valparaiso, IN 46383 - Peter Zierz.

----------CONTEST BALLOT----------

Eligible for the monthly prize is any program or article submitted by a clubmember in this newsletter. Please fill in the name of the program/article you feel is "Best" and rate each category from 1 to 10 (10 being best). In the event of a tie, the best item will be determined by point value.

ITEM PTS 1-10

1. Documentation.....
2. Ease of Use.....
3. Usefulness.....
4. Interest/Challenge.....
5. Educational Value.....

Mail bottom half only, by Nov. 10 to the following address.

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P.O. BOX 781-F
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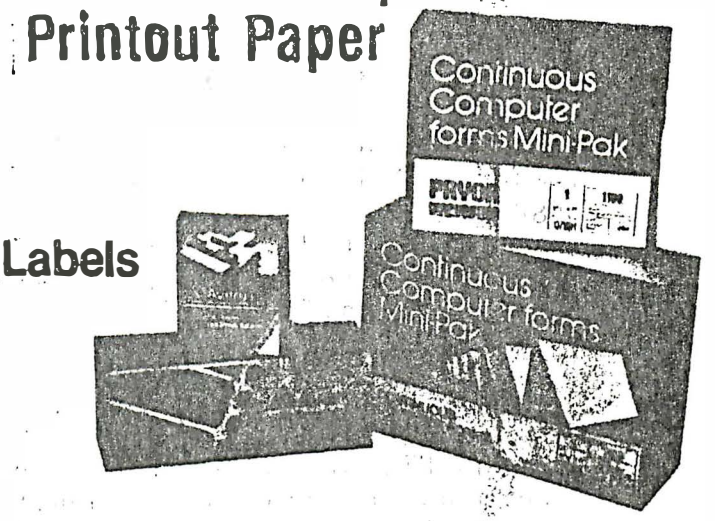

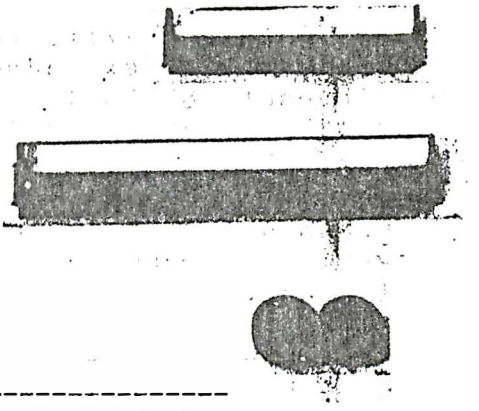

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	LABELS - 1000 box	4.95 + 1.50 s&h	
	LABELS - 5000 box	12.95 + 2.50 s&h	
	RIBBON - MX-100	10.95 + .75 s&h	
	MX-80	5.95 + .75 s&h	
	C.ITOH	5.95 + .50 s&h	
	OKIDATA	1.95 + .50 s&h	

SUBTOTAL
Illinois residents sales tax 6%
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Mail order to: SUNSET COMPUTER SERVICES
P.O. BOX 781-F
WHEELING, IL 60090

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PROGRAMS

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MASTER MIND

.....ANONOUMOUS

The object of the game is to guess a 4 digit number computed by the compoter. The computed number will not contain any dup numbers. You are allowed only 7 tries to guess the number. After each guess the computer will give clues as to your guess. The clues are X= and O= on the screen. The X clue tells you how many numbers you have in the right place (but not which ones are right). The O clue tells you how many numbers you have right but are not in the right place (again, it doesn't tell which ones. The computer will display all guesses and clues to help you to solve the mysterious number. Guesses are entered in this format 1,2,3,4. Also, I learned by experience that the X does tell you how many are in the right place and the O does tell you how many are right but not in the right place, however, don't get confused by the fact that if you have 2X's and 2O's, that you only have 2 numbers right. You really have all 4 numbers right, just 2 are not in the right place, the other 2 are.(It took me 4 tries to realize this).

```
20 DIM A(3),G(3)
30 X=0:O=0:B=72
31 CLS
40 GOSUB 900
50 GOSUB 1000
51 FOR I = 1 TO 7
52 WINDOW 30
60 PRINT "GUESS";CHR$(035);I
61 INPUT G(0),G(1),G(2),G(3)
70 GOSUB 800
90 IF X = 4 THEN 200
100 GOSUB 700
101 OUTPUT CHR$(035),2,B,3
102 OUTPUT I,5,B,3
103 OUTPUT G(0),18,B,3
104 OUTPUT G(1),23,B,3
105 OUTPUT G(2),30,B,3
106 OUTPUT G(3),37,B,3
107 OUTPUT "X=",55,B,3
108 OUTPUT X,62,B,3
109 OUTPUT "O=",80,B,3
110 OUTPUT O,87,B,3
```

```
140 B=B-6
141 IF I=7 THEN PRINT "TOO BAD TURKEY"
142 IF I=7 THEN PRINT "NUMBER WAS!!"
143 IF I=7 THEN PRINT A(0);A(1);A(2);A(3)
144 IF I=7 THEN 210
150 NEXT I
200 PRINT "GOOD GUESS"
210 INPUT "PLAY AGAIN Y=YES";B$
220 IF B$="Y" THEN 30
230 PRINT "CHICKEN":END
700 REM CHECK FOR RIGHT NUMBER IN WRONG PLACE
710 O=0
720 IF G(0)=A(1)ORG(0)=A(2)ORG(0)=A(3)THEN O=O+1
730 IF G(1)=A(0)ORG(1)=A(2)ORG(1)=A(3)THEN O=O+1
740 IF G(2)=A(0)ORG(2)=A(1)ORG(2)=A(3)THEN O=O+1
750 IFG(3)=A(0)ORG(3)=A(1)ORG(3)=A(2)THEN O=O+1
760 RETURN
800 REM CHECK FOR NUMBERS IN RIGHT PLACE
810 X=0
815 IF G(0)=A(0)THEN X=X+1
820 IF G(1)=A(1)THEN X=X+1
830 IF G(2)=A(2) THEN X=X+1
840 IF G(3)=A(3) THEN X=X+1
850 RETURN
900 REM COMPUTE NUMBER
910 A(0)=INT(RND(1)*10)
920 A(1)=INT(RND(1)*10)
930 A(2)=INT(RND(1)*10)
940 A(3)=INT(RND(1)*10)
950 RETURN
1000 REM CHECK NUMBER FOR DUPS
1010 REM THE NUMBER CANNOT HAVE DUPS
1015 A$=" "
1020 IF A(0)=A(1)THEN A$="X"
1025 IFA(0)=A(1)THEN A(0)=A(0)+1
1030 IFA(0)=A(2)THEN A$="X"
1035 IF A(0)=A(2) THEN A(0)=A(0)+1
1040 IFA(0)=A(3)THEN A$="X"
1045 IFA(0)=A(3) THEN A(0)=A(0)+1
1050 IF A(1)=A(2) THEN A$="X"
1055 IF A(1)=A(2) THEN A(1)=A(1)+1
1060 IF A(1)=A(3) THEN A$="X"
1065 IF A(1) =A(3) THEN A(1)=A(1)+1
1070 IFA(2)=A(3) THEN A$="X"
1075 IF A(2)=A(3) THEN A(2)=A(2)+1
1090 IF A(0)>9 THEN A(0)=0 AND A$="X"
1100 IF A(1)>9 THEN A(1)=0 AND A$="X"
1110 IF A(2)>9 THEN A(2)=0 AND A$="X"
1120 IFA(3)>9 THEN A(3)=0 AND A$="X"
1130 IF A$="X" GOTO 1015
1140 RETURN
```

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TTO

.....from PATRICK KUSKHO

Mr. Kuskho uses the following program to help choose his Loto 649 (Mr. Kuskho lives in Canada). The program can be easily adapted to any 6 number combination. This program picks six different random numbers from 1 to 49. Line 110 instructs how to change the perimeter. Program requires Level II Basic.

```
10 REM-RANDOM NUMBERS FOR LOTTO 649
20 CLS
30 WINDOW 24
40 OUTPUT"RANDOM",37,66,1
50 OUTPUT "NUMBER",39,60,1
60 OUTPUT "GENERATOR",30,54,1
70 B=10
80 X=6
85 DIM C(49)
87 FOR I = 1 TO 49:C(I)=1:NEXT
100 FOR I = 1 TO 6
105 C=C+1
110 REM-TO CHANGE PERIMETER REPLACE 49
120 R=INT(RND(1)*49)+1
123 IF C(R)=0 THEN 120
125 C(R)=0
130 A=40
140 TONE 200,10
150 OUTPUT R,B,A,1
160 LET B=B+15
170 COLOR 0,3,4,0
180 NEXT I
200 PRINT "SIX MORE NUMBERS?"
210 PRINT "--PRESS ANY KEY"
220 TONE 15,100
230 COLOR 0,3,4,7
240 A$=INSTR$(1)
250 COLOR 0,3,4,0
260 RUN
```

****

BUBBLE SORT FOR ALPHABETIC ORDER

.....from GARY RUSSELL

Program requires Level II Basic. This program will sort strings of any length depending on the number of bytes cleared. When Level II is loaded, there are only 50 bytes allotted to string space. If more room is needed for long lists you can clear space in the direct mode before running the program. There is a pause statement to slow down the listing to aid in copying for those without a printer. For those with, just remove line 75. Lines 85 and 90 were included to list again in case you want another list or didn't get it all copied.

```
5 CLS:COLOR7,1,2,0
10 PRINT"HOW MANY":INPUT"ITEMS";N
15 DIM K$(N)
20 PRINT "ENTER LIST:"
25 FOR I = 1 TO N:INPUTK$(I):NEXT I
30 CLS:OUTPUT "SORT IN PROGRESS",10,45,2
35 FOR I = 1 TO N-1
40 FOR J = I+1TON
45 IF K$(J)>=K$(I) GOTO 55
50 A$=K$(I):K$(I)=K$(J):K$(J)=A$
55 NEXT J
60 NEXT I
65 PRINT "ORDERED LIST:":PRINT
70 FOR I = 1 TO N:PRINT K$(I)
75 FOR P = 1 TO.500:NEXT P
80 NEXT I
85 PRINT "(Y OR N)":INPUT "LIST AGAIN";B$
90 IF B$="Y" GOTO 65
105 END
```

****

ETCH-A-SKETCH

.....from DAVID EISENHOWER

Program requires Level II Basic & 1 joystick. Illegal function results from driving off the screen.

```
10 CLS
20 X=30:Y=50
30 IF JOY(0)=1THEN X=X+1
40 IF JOY(0)=2 THEN X=X-1
50 IF JOY(0)=4 THEN Y=Y-1
60 IF JOY(0)=8 THEN Y=Y+1
70 IF JOY(0)=5 THEN X=X+1:Y=Y-1
80 IF JOY(0)=6 THEN X=X-1:Y=Y-1
90 IF JOY(0)=9 THEN X=X+1:Y=Y+1
100 IF JOY(0)=10 THEN X=X-1:Y=Y+1
110 COLOR POT(0)/32,0,POT(0)/32,0
120 PLOT X,Y,1
130 IF FIRE(0)=1 THEN FOR I=1TO10:NEXT:PLOT X,Y,2
140 GOTO 30
```