

NATIONAL INTERACT COMPUTER CLUB

* 515 W. Shadylane, Barrington, Illinois-60010: Joe Badger-Pres. *

OCTOBER 1981

CORRESPOND WITH OTHER CLUB MEMBERS

ARTHUR WIRTH
R. R. NO. 1, ARDRY ROAD
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VOR 1X0

(remember to have mail weighed
and add extra postage.)

JIM PATERSON
BOX 567, BETHEL HILL RD.
LUCASVILLE, OH 45648

M. STEFFEN
3442 W. UNIVERSITY
FRESNO, CA 93711

ITEMS FOR SALE

Two arcade type games - Airwar and Intruders - both require Level II Basic and one joystick. (they are also fun to play, I keep losing!) They are both available from:

Ernest H. Piethe
110 Hillcrest Rd.
Pineville, LA 71360

WITH ALL THE INFORMATION COMING IN FROM MEMBERS, THE TOUGHEST PART OF WRITING THIS LETTER IS TRYING TO DECIDE WHAT INFORMATION YOU WILL WANT THE MOST. HERE'S A MIXTURE OF TECHNICAL, HELPFUL AND GAMES. HOPE YOU ENJOY IT!

TIPS FROM OTHER CLUB MEMBERS

From ERNEST H. PIETHE OF LOUISIANA.....

To help eliminate or reduce the interference often caused by the joysticks when they are plugged in, try to coil excess cable into a circle about 3-4 inches in diameter and use a tie-wrap to hold it. Leave enough on each end to allow freedom of movement.

From PETER KLOPF, CANADA.....

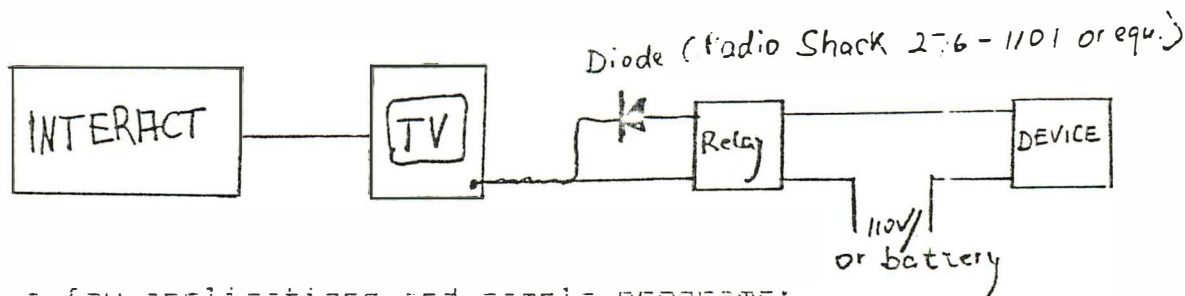
Simplest switching applications for the Interact Computer

This article has been written for those Interact Owners who wish to control household appliances such as fans, radios, lights, alarm systems, model trains, etc. but are too afraid to open up their computer.

To get digital data out of the Interact, there is indeed no other way than Alan Corey's output port; however, if all you need is switching capabilities, there is a simpler method.

Most portable TV sets have phone jacks with a switch that will mute the loudspeaker as soon as you plug in the earphone. The secret lies in the difference of energy levels between the computer in the "idle" state and sound command say sound 1, B770. Assuming no interfering hum, the idle setting will give a voltage and current reading of 0. But with the sound command on, you can easily reach 6 volts or 200 ma or current. Using a general purpose diode that is enough to drive a sensitive relay e.g. radio shack part #275-004.

Block diagram for simple switching applications for the Interact



Here are a few applications and sample programs:

This program will switch model trains on and off. The electric train may stand still for awhile, then make a few rounds and stop again. (program on next page)

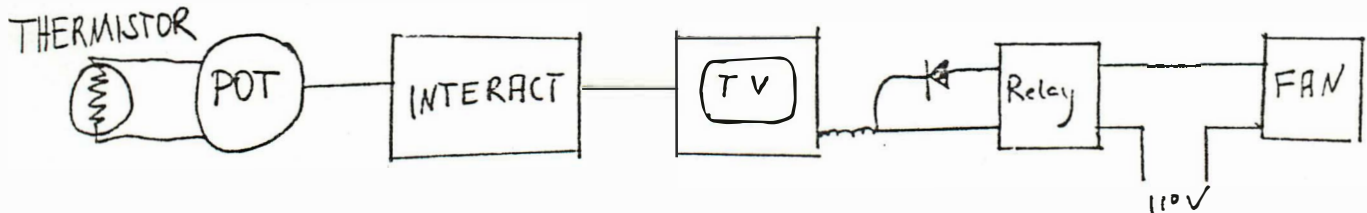
```

10 FOR I = 0 TO X:NEXT I      (X determines the waiting period of
                               the train.)
20 SOUND 1,8770                (the train is running now)
30 FOR I = 0 TO Y:NEXT I      (Y determines the running period of
                               the train)
40 SOUND 7,4096                (the train stops)
50 GOTO 10

```

For more interesting circuits you need to open your action controller. Do not be afraid, there is nothing you can wreck, just don't lose any parts, screws or springs. For any temporary experiment clamp two jumper cables on the two potentiometer contacts. Turn the pot knob as far to the right as it will go. This will maximize the resistance of the pot.

Here are two applications that are quite useful around the house. Try to obtain a thermistor from a electronic supply store. A thermistor is a resistor that changes its resistance with temperature. It is assumed that the thermistor has a negative temperature coefficient.



Suppose you would like your fan to start running at a certain temperature. The first thing you find out is the POT value that corresponds to that temperature. The program 10 PRINT POT(0) 20 GOTO 10 will continuously tell you the pot values as you approach the desired temperature. Let's assume this value is 50. Depending on the thermistor you buy this value will be different from 50, make sure that it has a resistance or less than 2000 ohms to override the value of the potentiometer. As the temperature goes up, the POT value will go down. Experiment with it and watch the numbers change on your TV set, then write and run this short program to operate you fan automatically.

```

10 Z = POT(0)
20 IF Z < 51 THEN SOUND 1,8770 (the fan is switched on)
30 IF Z > 55 THEN SOUND 7,4096 (the fan is switched off)
40 GOTO 10

```

It is hard to believe, but this is the entire program. In line 30, Z must be somewhat higher to prevent the fan from cutting in and out. If light activated controls are of interest to you, then get yourself a photoresistor (Radio Shack #278-112), and hook it up to the potentiometer of your action controller just as I have described it for the thermistor above. The program and circuit would be very similar. Just ask your Interact PRINT POT(0) and you have your values.

FROM MITCH MARKIN of Canada.....

Here are two useful subroutines for producing more attractive output. The first one rounds off a number, "Z" to a desired number of decimal places, "P". Z is returned in rounded form, and P can be 0 to round to the nearest integer. The second subroutine is for re-arranging and outputting a text string, "A\$", in substrings of words 17 characters or less. So no word is split between two lines. Note that if a character is longer than 17 characters, enter it as a hyphenated word, with a space after the hyphen.

A)

```
1000 Q$=STR$(Z)
1001 S=LEN(Q$)
1002 IF S<3 THEN RETURN
1003 FOR T=2TOS
1004 IF MID$(Q$,T,1)=". "GOTO 1006
1005 NEXT
1006 Z=VAL(LEFT$(Q$,T+P))
1007 IF T+P>S THEN RETURN
1008 IF VAL(MID$(Q$,T+P+1,1))<5 THEN RETURN
1009 Z=Z+1*10^-P:RETURN
```

B)

```
5000 F=0:SIZE=LEN(A$)
5010 IF F+18>SIZEGOTO 5060
5020 FOR N=F+18 TO F+2 STEP -1
5030 IF MID$(A$,N,1)=" "GOTO 5050
5040 NEXT
5050 PRINT MID$(A$,F+1,N-F-1):F=N:GOTO 5010
5060 PRINT MID$(A$,F+1,LEN(A$)-F):RETURN
```

MORE FROM PETER KLOPP OF CANADA.....

The Interact has many extra symbols not found on the keyboard. The miniprogram below will generate them all for your study.

```
10 CLS
20 FOR I = 0 TO 255
30 PRINT CHR$(I)
40 NEXT
```

PROGRAMS

MUSIC AID

.....contributed by P. KLOPP

This program allows you to compose music for any key up to 300 notes of copy music for your favorite programs. You do not need to hold the key to produce the correct length of a note, you just input the number that corresponds to the length of the note.

EX.	C, 4	is equal to	Quarter note C
	AS, 8	"	Half note A sharp
	CH, 16	"	Full note high C
	ALS, 2	"	Eight note low A sharp
	P, 16	"	Pause, full note long

After depressing the CR button without inputting any note notes, the computer will play back the tune. Then the screen will display "any changes". The tune will be replayed as often as you depress CR. If you wish any changes, you type in "yes". You then indicate the sequence number and make the change. If no more changes are required, simply depress CR to listen to your tune.

THANK YOU MR. KLOPP FOR ALL OF YOU CONTRIBUTIONS TO OUR LETTER!!

```
10 DIMA(300),B(300)
20 CLS
30 OUTPUT"MUSIC AID",25,50,1
40 OUTPUT"BY",36,40,1
50 OUTPUT"PETER KLOPP",24,30,1
60 FORI=0TO1000:NEXT
70 CLS
80 PRINT"ENTER NOTE AND":PRINT
90 PRINT"DURATION FOLLOWED":PRINT
100 PRINT"BY DEPRESSING CR":PRINT
110 FORI=0TO2000:NEXT
120 N=N+1
130 PRINTN;
140 INPUTA$,D
150 GOSUB350
160 A(N)=C:B(N)=D
170 A$=""
180 GOTO120
190 FORI=1TON
200 IFA(I)=1GOTO710
210 TONEA(I),6000*B(I)/A(I)
220 NEXT
230 INPUT"ANY CHANGES";B$
240 IF B$="YES"GOTO260
```

MUSIC AID (continued)

```
250 GOTO190
260 INPUT"SEQ.NO.";J
270 PRINT"DO YOU WANT":PRINT"TO CONTINUE AT":INPUT"SEQ. NO.";C$
280 IFC$="YES"THENN=J:B$="":GOTO130
290 INPUT"      ";A$,D
300 GOSUB350
310 A(J)=C
320 B(J)=D
330 B$=""
340 GOTO230
350 IFA$="C"THENC=168
360 IFA$="D"THENC=148
370 IFA$="E"THENC=131
380 IFA$="F"THENC=124
390 IFA$="G"THENC=110
400 IFA$="A"THENC=97
410 IFA$="B"THENC=85
420 IFA$="CH"THENC=80
430 IFA$="DH"THENC=70
440 IFA$="EH"THENC=61
450 IFA$="FH"THENC=58
460 IFA$="GH"THENC=52
470 IFA$="AH"THENC=46
480 IFA$="BH"THENC=40
490 IFA$="CHH"THENC=37
500 IF A$="BL"THENC=180
510 IF A$="AL"THENC=205
520 IF A$="GL"THENC=234
530 IF A$="FL"THENC=267
540 IF A$="EL"THENC=280
550 IFA$="FS"THENC=116
560 IF A$="FHS"THENC=55
570 IFA$="CHS"THENC=75
580 IFA$="CS"THENC=158
590 IF A$="FLS"THENC=249
600 IF A$="GHS"THENC=49
610 IF A$="GS"THENC=104
620 IF A$="GLS"THENC=218
630 IF A$="DHS"THENC=65
640 IF A$="DS"THENC=139
650 IF A$="AS"THENC=91
660 IF A$="ALS"THENC=192
670 IF A$="AHS"THENC=43
680 IF A$="P"THENC=1
690 IFA$=""THENN=N-1:GOTO190
700 RETURN
710 FORJ=1TO64*B(I):NEXT
720 GOTO220
```

THE FUN PART OF WRITING THIS LETTER IS THE ABILITY TO PLAY ALL OF THE GAMES, I ESPECIALLY ENJOYED THIS ONE EVEN THOUGH THE ROBOTS ALWAYS SEEMED TO DESTROY ME.

CHASE

by DENNIS SUNDE, P.O. Box 396, Medina, OH 44258

This game requires Level II Basic and the left joystick. You move one space at a time, trying to get to the other end of the screen without getting caught by the robots. To kill the robots you lead them into the red walls and blocks on the screen. You can not hit the walls either or you will blow up. You may, however, go over a space where a robot was blown up, but other robots can not. You score twenty points for each robot that blows up and one hundred points when you make it through the maze. If you get caught you lose 50 points. You may only be caught five times. Once you get used to the game, you can try some tricks such as tapping the joystick quickly to stay in the same spot, or moving the stick in such a way as to skip over a space.

```
5 COLOR0,7,4,1
10 CLS:GOSUB400
15 CLS:D$=CHR$(1)
20 FORX=5TO105STEP5:OUTPUTD$,X,75,3:OUTPUTD$,X,10,3
25 IFX=50THENOUTPUTD$,50,75,0:OUTPUTCHR$(38),50,75,1:OUTPUTD$,50,10,0
28 NEXT
30 FORY=70TO15STEP-5:OUTPUTD$,5,Y,3:OUTPUTD$,105,Y,3:NEXT
40 FORX=1TO20
50 B=RND(1):B=INT(B*18)+1:B=B*5:B=B+10
60 C=RND(1):C=INT(C*12)+1:C=C*5:C=C+10
70 OUTPUTD$,B,C,3:NEXT
80 OUTPUTD$,20,60,0:OUTPUTD$,90,60,0:OUTPUTD$,20,25,0:OUTPUTD$,90,25,0
85 W$=CHR$(22):OUTPUTD$,50,45,0:OUTPUTW$,50,45,2
90 OUTPUTW$,20,60,2:OUTPUTW$,90,60,2:OUTPUTW$,20,25,2:OUTPUTW$,90,25,2
95 FORE=1TO5:C(E)=2:NEXT
100 Q$=CHR$(38):X=50:Y=75
105 A1=20:A2=90:A3=20:A4=90:A5=50:B1=60:B2=60:B3=25:B4=25:B5=45
110 IFJOY(0)=0THEN110
115 OUTPUTQ$,X,Y,0:TONE100,10
120 IFJOY(0)=1THENX=X-5
121 IFJOY(0)=2THENX=X+5
122 IFJOY(0)=4THENY=Y+5
123 IFJOY(0)=8THENY=Y-5
125 IFJOY(0)=5THENX=X-5:Y=Y+5
126 IFJOY(0)=6THENX=X+5:Y=Y+5
127 IFJOY(0)=9THENX=X-5:Y=Y-5
128 IFJOY(0)=10THENX=X+5:Y=Y-5
129 IFX<5THENX=5
130 IFY>75THENY=75
132 IFY<5THENY=5
133 OUTPUTQ$,X,Y,1
134 IFFPOINT(X,Y)=3THEN330
135 IFY<11ANDX=50THEN380
136 P=1
140 IFC(1)=0THEN170
```

CHASE (continued)

```

142 OUTPUTW$, A1, B1, 0
144 IFX<A1THENA1=A1-5
146 IFX>A1THENA1=A1+5
148 IFY<B1THENB1=B1-5
150 IFY>B1THENB1=B1+5
152 OUTPUTW$, A1, B1, 2
154 IFPOINT (A1, B1) =3THENC (1) =0: GOSUB300
156 IFA1=XANDB1=YTHEN330
158 IFA1=A2ANDB1=B2THENC (1) =0: C (2) =0: GOSUB300
160 IFA1=A3ANDB1=B3THENC (1) =0: C (3) =0: GOSUB300
162 IFA1=A4ANDB1=B4THENC (1) =0: C (4) =0: GOSUB300
164 IFA1=A5ANDB1=B5THENC (1) =0: C (5) =0: GOSUB300
170 IFC (2) =0THEN200
172 OUTPUTW$, A2, B2, 0
174 IFX<A2THENA2=A2-5
176 IFX>A2THENA2=A2+5
178 IFY<B2THENB2=B2-5
180 IFY>B2THENB2=B2+5
182 OUTPUTW$, A2, B2, 2
184 P=2
186 IFPOINT (A2, B2) =3THENC (2) =0: GOSUB300
188 IFA2=XANDB2=YTHEN330
190 IFA2=A1ANDB2=B1THENC (2) =0: C (1) =0: GOSUB300
192 IFA2=A3ANDB2=B3THENC (2) =0: C (3) =0: GOSUB300
194 IFA2=A4ANDB2=B4THENC (2) =0: C (4) =0: GOSUB300
196 IFA2=A5ANDB2=B5THENC (2) =0: C (5) =0: GOSUB300
200 IFC (3) =0THEN230
202 OUTPUTW$, A3, B3, 0
204 IFX<A3THENA3=A3-5
206 IFX>A3THENA3=A3+5
208 IFY<B3THENB3=B3-5
210 IFY>B3THENB3=B3+5
212 OUTPUTW$, A3, B3, 2
213 P=3
214 IFPOINT (A3, B3) =3THENC (3) =0: GOSUB300
216 IFA3=XANDB3=YTHEN330
218 IFA3=A1ANDB3=B1THENC (3) =0: C (1) =0: GOSUB300
220 IFA3=A2ANDB3=B2THENC (3) =0: C (2) =0: GOSUB300
222 IFA3=A4ANDB3=B4THENC (3) =0: C (4) =0: GOSUB300
224 IFA3=A5ANDB3=B5THENC (3) =0: C (5) =0: GOSUB300
230 IFC (4) =0THEN260
232 OUTPUTW$, A4, B4, 0
234 IFX<A4THENA4=A4-5
236 IFX>A4THENA4=A4+5
238 IFY<B4THENB4=B4-5
240 IFY>B4THENB4=B4+5
242 OUTPUTW$, A4, B4, 2
243 P=4
244 IFPOINT (A4, B4) =3THENC (4) =0: GOSUB300
246 IFA4=XANDB4=YTHEN330
248 IFA4=A1ANDB4=B1THENC (4) =0: C (1) =0: GOSUB300
250 IFA4=A2ANDB4=B2THENC (4) =0: C (2) =0: GOSUB300
252 IFA4=A3ANDB4=B3THENC (4) =0: C (3) =0: GOSUB300
254 IFA4=A5ANDB4=B5THENC (4) =0: C (5) =0: GOSUB300
260 IFC (5) =0THEN110

```


CHASE (continued)

```

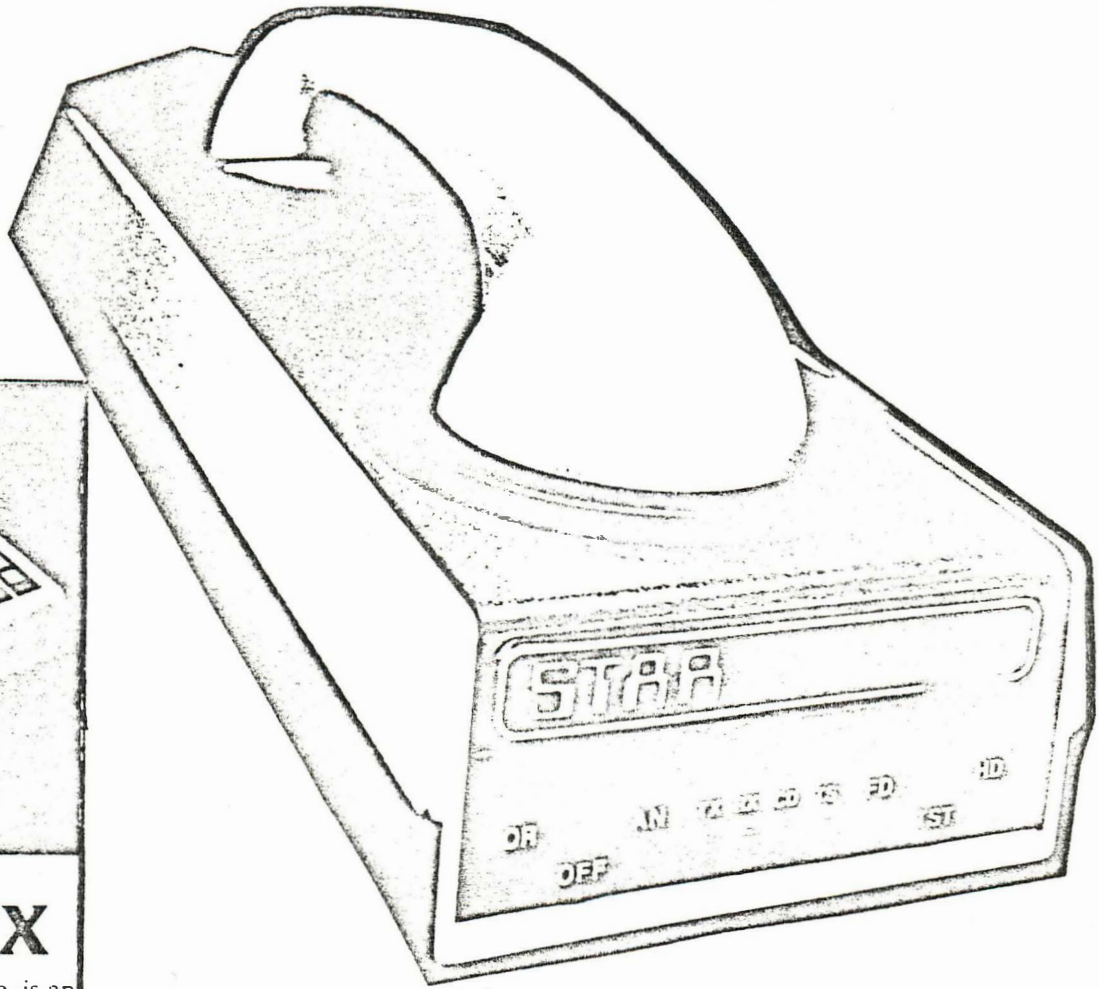
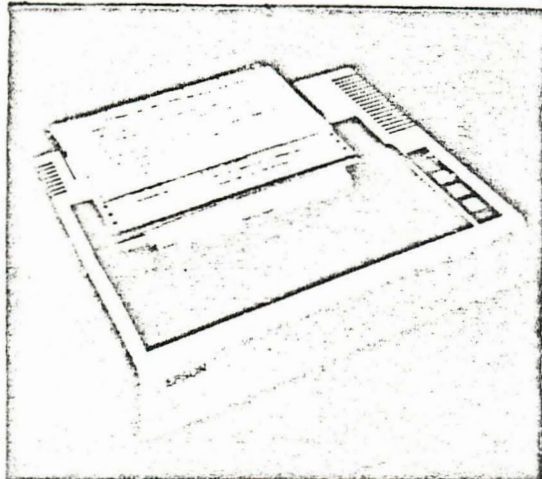
262 OUTPUTW$,A5,B5,0
264 IFX<ASTHENA5=A5-5
266 IFX>ASTHENA5=A5+5
268 IFY<B5THENB5=B5-5
270 IFY>B5THENB5=B5+5
272 OUTPUTW$,A5,B5,2
273 P=5
274 IFPOINT(A5,B5)=3THENC(5)=0:GOSUB300
276 IFA5=XANDB5=YTHEN330
278 IFA5=A1ANDB5=B1THENC(5)=0:C(1)=0:GOSUB300
280 IFA5=A2ANDB5=B2THENC(5)=0:C(2)=0:GOSUB300
282 IFA5=A3ANDB5=B3THENC(5)=0:C(3)=0:GOSUB300
284 IFA5=A4ANDB5=B4THENC(5)=0:C(4)=0:GOSUB300
290 GOTO110
300 SOUND3,32:FORE=1TO200:NEXT:SOUND1,8770:FORE=1TO5
302 IFP=1THENOUTPUT"*",A1,B1,1:OUTPUT"*",A1,B1,3:OUTPUT"*",A1,B1,0
305 IFP=2THENOUTPUT"*",A2,B2,1:OUTPUT"*",A2,B2,3:OUTPUT"*",A2,B2,0
308 IFP=3THENOUTPUT"*",A3,B3,1:OUTPUT"*",A3,B3,3:OUTPUT"*",A3,B3,0
311 IFP=4THENOUTPUT"*",A4,B4,1:OUTPUT"*",A4,B4,3:OUTPUT"*",A4,B4,0
313 IFP=5THENOUTPUT"*",A5,B5,1:OUTPUT"*",A5,B5,3:OUTPUT"*",A5,B5,0
315 NEXT:SOUND7,4096
317 S=S+20
320 OUTPUTD$,A,P,0:RETURN
330 SOUND3,48:FORE=1TO300:NEXT:SOUND1,8770:FORE=1TO5
335 OUTPUT"*",X,Y,1:OUTPUT"*",X,Y,2:OUTPUT"*",X,Y,3:OUTPUT"*",X,Y,0
345 NEXT:SOUND7,4096
348 FORE=1TO100STEP5:OUTPUTD$,E,45,0:NEXT
350 OUTPUTD$,X,Y,0:OUTPUT"GOT THE HUMANOID",10,45,1
355 S=S-50:M=M+1
360 OUTPUTQ$,X,Y,0:IFY<11ANDX=50THENOUTPUTQ$,X,Y-1,1
365 FORE=1TO35STEP5:OUTPUTD$,E,15,0:NEXT
366 OUTPUTS,10,15,1:OUTPUTD$,95,15,0:OUTPUTM,90,15,1
368 IFM=5THENFORE=1TO80:TONEE,10:NEXT:GOTO391
370 FORE=1TO11:PRINT:NEXT:GOTO20
380 FORE=1TO100STEP5:OUTPUTD$,E,45,0:NEXT
385 FORE=80TO1STEP-1:TONEE,10:NEXT
390 OUTPUT"HUMANOID ESCAPED",10,45,1:S=S+100:GOTO360
391 CLS:OUTPUT"YOU HAVE BEEN",10,45,1:OUTPUT"DESTROYED",16,39,1
392 OUTPUTS,40,25,3
393 OUTPUT"HIGH SCORE: 7130",10,60,2
394 A$=INSTR$(1):CLEAR:GOTO15
395 END
400 PRINT"YOU ARE WITHIN":PRINT"THE WALLS OF A":PRINT"HIGH SECURITY":PRINT"PRIS
ON. ";
402 FORE=1TO400:NEXT
404 PRINT"YOU MUST ESCAPE FROM THE ":PRINT"HEAT SENSITIVE":PRINT"ROBOTS.":FORE=1
TO600
405 NEXT
406 PRINT"YOU MUST ALSO":PRINT"AVOID THE HIGH":PRINT"VOLTAGE WALLS.":FORE=1TO500
:NEXT
408 PRINT"THE OBJECT IS TO":PRINT"GET TO THE OTHER":PRINT"END OF THE":PRINT"PRIS
ION."
409 FORE=1TO500:NEXT
410 PRINT"YOU MAY ONLY BE":PRINT"CAUGHT 5 TIMES":FORE=1TO200:NEXT
412 PRINT" GOOD LUCK!":FORE=1TO600:NEXT
420 RETURN

```

CHRISTMAS
**COMPUTER EXPANSION
 SALE**

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- | | |
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The EPSON MX

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NATIONAL INTERACT COMPUTER CLUB

* 515 W. Shadylane, Barrington, Illinois-60010; Joe Badger-Pres. *

DECEMBER 1981

REMINDER

If you have not yet renewed your club membership for 1982, this could be the LAST club letter you get. So, sign up before December 25 and get the \$5 early sign up bonus and your club letters will keep coming through December, 1982.

QUESTIONS

Mr. Walte Schroeder of New York asked how to save a number of programs on one master tape. This can be done by loading the first program into the Interact, then removing that tape and placing a blank tape into the recorder. You then CSAVE that program onto the tape. When it is completed, DO NOT REWIND the tape, simply remove it, place another program tape into the computer you wish to save, CLOAD that program, replace the "master tape" which is stoped after the first program and CSAVE the program currently in the computer's memory. Keep doing this and not rewinding until all programs you wish are on the tape, BE SURE TO KEEP TRACK OF WHAT ORDER THEY ARE IN. We do not recommend keeping too many programs on one tape as it can be very time consuming every time you wish to load a program that is not one of the first three.

Another question, how to get music in the background when running the program. This can be done by a combination of Poke and COLOR commands. For further details, this is explained in the "BASIC PROGRAMMING EXAMPLES BOOK" sold by Protecto Enterprises.

GENERAL ANSWER, for those of you that are new to computering, we received a question, "what is a modem" since it is not found in most dictionaries, here is a definition. A modem, such as the Star sold by Protecto, is used in conjunction with an RS232 or an equivilant interface port with the capability of transmitting to as well as receiving from another computer. The modem

connects your computer to other computers via the telephone. You hook the modem up to the Interact, load a terminal tape, if necessary, dial another computer (such as SOURCE or MICRONET) and when you hear the carrier sound from the other computer you place the handset of your telephone into the modem coupler as indicated in the instructions. At this point your computer is "talking" with another computer. This in essence, expands the capabilities of your computer, temporarily, to that of a much larger computer, or you can access information, etc.

TIPS FROM OTHER CLUBMEMBERS

FROM DAN DE LONG OF SNOHOMISH, WASHINGTON

Mr. De Long writes of a way of indenting lines in a FOR...NEXT loop while running Basic II. If you wish to indent such a loop, (Structured Programming and all that), you simply use a colon (:) as the first character of the line. For example:

```
10 FOR X = 1 TO 20
20 :   X = X + 1
30 :   PRINT X
40 :   NEXT X
50 PRINT "DONE"
```

The indenting of the lines on the FOR...NEXT loop makes reading a program quite a bit easier. If you have a nested loop (a FOR...NEXT loop within a FOR...NEXT loop) you can use two colons (::) to show the second level of nesting. This was discovered while trying to line up the Basic text in a multiple statement line.

FROM ROY L. PERSON OF CITRUS HEIGHTS, CALIFORNIA

Mr. Person has supplied us with some information regarding the smaller character. We have passed this information on previously over the telephone to a number of members through Chuck, but we feel it should also be passed on through the letter. There is/was a gentleman working on this, however as Mr. Person explains what is involved, we hope you will understand the delay and why it has not been done before.

There is no character generator chip for the Interact. All characters that are displayed on the screen are drawn by a graphics routine in the ROM chip, to a BIT MAP in the ROM. As all of the characters are hardware set to the 112x77 pixel screen format, changing the ROM would not help. Although it is

technically possible to modify the Interact for smaller characters, it would require extensive internal modification of the computer's circuitry. Mr. Person's solution: if the size of the characters are a BIG problem for you, then you can install an RS232 Port and hook it up to a regular CRT terminal. If you use a CRT terminal you will lose the graphics capabilities, and it is expensive, but it is the only way that he knows of to get smaller characters.

Also from Mr. Person

Here is an easy way to produce a sideways moving message like the ones on the Goodyear Blimp.

```
10 POKE 19215,25:REM POKE INITIALIZATION
20 CLS
30 POKE 24888,01:POKE 24864,01
40 OUTPUT "INTERACT",0,40,2
50 FOR T = 1 TO 200:PRINT:TONE 50,50
60 NEXT T
70 POKE 24888,32:POKE 24864,06
80 END
```

At poke location number 24888 a 1 creates a sideways scroll and a 32 is the normal scroll, any number between 1 and 32 will create other effects. For the poke 24864 location a 1 creates the 1 pixel print line and a number 6 is for regular scrolling.

Mr. Person also adds the following:

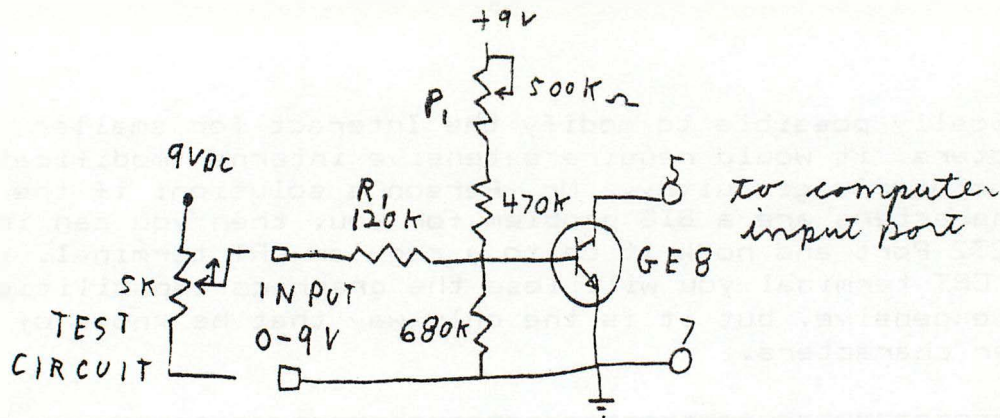
For anyone interested in really understanding the basic language and needs help in converting programs written in TRS-80, PET, or other basics should consider purchasing the book "THE BASIC HANDBOOK" by David A. Lien : CompuSoft Publishing. This can be purchased from most computer stores or send \$14.95 + 1.35 for postage to: COMPUSOFT PUBLISHING

P.O. BOX 19669-P
SAN DIEGO, CA 92119

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FROM JACK HERTEL OF LAFAYETTE, INDIANA

Here is a circuit that will allow you to put a DC analog voltage into the pot terminal of your computer pin 5 to pin 7



GE 8 transistor is a NPN germanium. P1 is adjusted when you have 0 input volts to start the computer reading to come down. Example, if your computer reading is 222, adjust P1 so it reads 220. R1 is changed to get the lower numbers if your input voltage is different than 9 volts you can calculate it by

$$\frac{120 \text{ (K)}}{\text{RV}} = \frac{\text{NEW RESISTOR (K)}}{\text{NEW VOLTAGE}}$$

for better linearity, maximum input voltage should give you a reading a little greater than 7, if reading is under 7 increase the value of R1. Computer pin 5 has +12 volts so the 9V battery is safe, but you are tying to the computer common so keep it away from high voltage circuits, 9 volt battery powered inputs are fine in this applicaton. I used this test circuit with a 10 turn pot. 10 PRINT POT (1):GOTO 10

VOLTAGE AT INPUT -

.00 1 2 3 4 5 6 7 8 8.5

NUMBER ON COMPUTER

220 198 173 146 117 89 61 35 12 6

If you want a positiv going number, use number at 0 input volts.
10 PRINT N - POT (1):GOTO 10

If you have any questions, write to Jack Hertel, 4610E 300N
Lafayette, Indiana, 47905.

Mr. Hertel also has the following request: "I need someone to do some peeking for me. When looking at the computer print sheet 5, I see IC 29 MA9708. It is a 6 channel, 8 bit micro-processor compatible analog to digital converter. In Basic I can call for the POT and get the number in the range of 0 to 255. Which is pin out V5 An,rb. I also see that FIRE (AN,RA) V6 and (AN,RC)V9, are the same type of analog inputs as the pot. But I need to know where I can peek to get out the 0-255 value. If I can get access to these numbers I will be able to have a 3 analog and 4 digital inputs per port. I would like to use the Level II Interact BASIC. this will be a help to us all."

One final tip from Mr. Hertel:

When having trouble with program tapes loading due to poor tape player head alignment. I have found it easier to leave the tape out, push play, open tape door so you can align the screw driver and adjusting screw and turn adjusting screw 1/4 turn clockwise.

CORRESPOND WITH OTHER CLUBMEMBERS.

Jack Hertel
4610E, 300 N
Lafayette, IN 47905

Terry Earhart
2718 Monterey
St. Joseph, MO 64507

ITEMS FOR SALE

SKY COMBAT - You are the pilot of an air-force bomber on a mission over an enemy city, your objective is to destroy the city before you get shot down. This game requires 8K fast graphics basic and the left game controller.

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COMPUTE-A-MAZE - Also self-explanatory, in this game you go through a maze from beginning to the end, score is judged by the length of time you require for each maze. This game requires the 8K fast graphics basic and the left game controller.

HXPB3 (MODIFICATION VII) - This program allows you to disassemble basic while operating in basic.

All of the above programs are available for \$3.00 each (postal money order from:

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PROGRAMS

HAMURABI

.....contributed by C. SCHWER (the writer of the
previously published "DETECTIVES" and
"CAMEL" programs.

```
10 PRINTTAB(4)"HAMURABI"
30 PRINT:PRINT:PRINT
80 PRINT"TRY YOUR HAND AT GOVERNING ACIENT SUMERIA"
90 PRINT"FOR A TEN YEAR TERM OF OFFICE":PRINT
91 FORA=1TO2000:NEXT
95 DI=0:P1=0
100 Z=0:P=95:S=3500:H=3000:D=H-S
110 Y=3:A=H/Y:I=5:D=1
210 D=0
215 PRINT:PRINT:PRINT"HAMURABI:I SEE TO REPORT TO YOU,":Z=Z+1
217 PRINT"IN YEAR":Z:":":D:"PEOPLE STARVED,":I:"CAME TO THE CITY,
218 P=P+I
227 IFQ>0THEN230
228 P=INT(P/2)
229 PRINT"A HORRIBLE PLAGUE STRUCK! HALF THE PEOPLE DIED."
230 PRINT"POPULATION IS NOW":P
231 FORR=1TO2000:NEXT
232 PRINT"THE CITY NOW OWNS":A:"ACRES"
235 PRINT"YOU HARVESTED":Y:"BUSHELLS PER ACRE."
250 PRINT"RATS ATE":E:"BUSHELLS"
251 FORR=1TO2000:NEXT
260 PRINT"YOU NOW HAVE":Q:"BUSHELLS IN STORE.":PRINT
270 IFZ=1THEN280
310 C=INT(C/2AND(1)):Y=C+17
312 PRINT"LAND IS TRADING AT":Y:"BUSHELLS PER ACRE."
320 PRINT"HOW MANY ACRES DO YOU WISH TO BUY":
321 INPUT Q:IF Q<0 THEN 350
322 IFY*Q<=3THEN330
323 GOSUB710
324 GOTO320
330 IFQ=0THEN340
331 A=A+Q:D=D-Y*Q:C=C+Q
334 GOTO400
340 PRINT"HOW MANY ACRES DO YOU WISH TO SELL":
341 INPUTQ:IFQ<0 THEN350
342 IFQ<0THEN350
343 GOSUB720
344 GOTO340
350 A=A-Q:S=S+Y*Q:C=C-Q
400 PRINT
410 PRINT"HOW MANY BUSHELLS DO YOU WISH TO FEED YOUR PEOPLE":
411 INPUTQ
412 IFQ<0THEN350
418 REM***TRYING TO USE MORE GRAIN THEN IS IN STORE?
```


HAMURABI (continued)

```

420 IFQ<=S THEN430
421 GOSUB710
422 GOTO410
430 S=S-Q;C=1;PRINT
440 PRINT"HOW MANY ACRES DO YOU WISH TO PLANT WITH SEED";
441 INPUTD;IFD=0 THEN511
442 IFD<0 THEN550
444 REM**TRYING TO PLANT MORE ACRES THEN YOU OWN?
445 IFD<=A THEN450
446 GOSUB720
447 GOTO440
449 REM** ENOUGH GRAIN FOR SEED?
450 IFINT(D/2)<=S THEN455
452 GOSUB 710
453 GOTO440
454 REM**ENOUGH PEOPLE TO TEND CROPS?
455 IFD<10*P THEN510
460 PRINT"BUT YOU HAVE ONLY";P;"PEOPLE TO TEND THE FIELDS"
461 PRINT"THEY HAVE LITTLE FOOD"
462 FORC=1TO2000;NEXT
463 PRINT"DO YOU WANT THEM TO REVOLT ? NOW THEN"
470 GOTO440
510 S=S-INT(D/2)
511 GOSUB800
512 REM**AGREAT HARVEST.
515 Y=C;H=D*Y;E=0
521 GOSUB800
522 IFINT(C/2)<>C/2 THEN530
523 REM**RATS ARE RUNNING WILD
525 E=INT(S/C)
530 C=C-E+H
531 GOSUB800
532 REM**LETS HAVE SOME BABIES
533 I=INT(C*(20*A+B)/P/100+1)
537 REM**HOW MANY PEOPLE HAD FULL TUMMIES?
540 C=INT(Q/20)
541 REM DAM A 15% CHANCE OF A PLAGUE
542 Q=INT(10*(2*RND(1)-.3))
550 IFP<0 THEN210
551 REM**STARVED ENOUGH FOR INPEACHMENT
552 D=P-C;IFD>.45*P THEN560
553 P1=((Z-1)*P1+D*100/P)/2
555 P=C;D1=D1+D;GOTO215
560 PRINT"YOU STARVED";D;"PEOPLE IN 1 YEAR"
561 FORC=1TO2000;NEXT
565 PRINT"DUE TO MIDMANAGEMENT YOU HAVE NOT ONLY"
566 PRINT"BEEN IMPEACHED,AND DRAGED FROM YOUR OFFICE,BUT THEY"
567 PRINT"INTEND TO HANG YOU IN YOUR OWN WHEAT FIELD'S"
568 GOTO990
710 PRINT"HAMURABI; YOU HAVE ONLY"
711 PRINTS;"BUSHELS OF GRAIN. NOW THEN"
712 RETURN
720 PRINT"HAMURABI;YOU HAVE ONLY";A;"ACRES. NOW THEN"
730 RETURN
800 C=INT(RND(1)*5)+1

```

HAMURABI (continued)

```

801 RETURN
850 PRINT"HAMURABI I CAN'T DO WHAT YOU WISH"
855 PRINT"GET YOURSELF ANOTHER STEWARD"
857 GOTO990
860 PRINT"IN YOUR 10 YEAR TERM";P1;"%OF THE"
861 FORF=1TO2000:NEXT
862 PRINT"POPULATION STARVED PER YR ON THE AVERAGE, I.E. A TOTAL OF"
863 FORF=1TO2000:NEXT
865 PRINTD1;"PEOPLE DIED";L=A/F
870 PRINT"YOU STARTED WITH 10 ACRES PER PERSON AND ENDED WITH"
875 PRINTL;"ACRES PER PERSON";PRINT
880 IF P1>33THEN865
885 IFL<7THEN865
890 IFP1>10THEN940
892 IFL<9THEN940
895 IFP1>3THEN960
896 IFL<10THEN960
900 PRINT"GREAT PERFORMANCE, CHARLEMAGNE, DISRAELI AND JEFFERSON COHRINED
905 PRINT"COULD NOT HAVE DONE BETTER";GOTO990
940 PRINT"YOUR HEAVY HANDED PERFORMANCE MAKES YOU A CLOD"
945 PRINT"THE REMAINING PEOPLE FIND YOU A NASTY RULER AND"
950 PRINT"HATE YOUR GUTS";GOTO990
960 PRINT"YOUR PERFORMANCE COULD HAVE BEEN BETTER BUT "
965 PRINT"REALLY WASNT TOO BAD";INT(P*.0#RND(1));"PEOPLE"
966 FOR H=1TO2000:NEXT
970 PRINT"PEOPLE LIKE TO SEE YOU ASSASSINATED BUT WE ALL HAVE OUR"
975 PRINT"TRIVIAL PROBLEMS"
990 FORN=1TO10:PRINTCHR$(N);:NEXTN
995 PRINT"SO LONG FOR NOW";PRINT
999 PRINT"LETS PLAY AGAIN";FORZ=1TO50:G
1000 NEXT
1001 GOTO10

```

ALPHABETIZE

.....contributed by R. E. JONES

```

10 REM-ADAPTED TOUSE ON INTERACT BY R.E.JONES,1981
20 REM-PROGRAM INTHE BOOK, "BASIC PROGRAMMING" BY KEMENY + KURTZ
30 GOTO50
40 FORK=1TO3987:NEXT:CLS:RETURN
50 CLS
60 PRINTSPC(3);"ALPHABETIZE"
70 PRINT:PRINT:PRINT:PRINT"FOR INSTRUCTIONS"
80 PRINT"TYPE *I*";A$=INSTR$(1)
90 IFA$="I" THENGOSUB350
100 DIMD$(100)
110 CLS:INPUT"NUMBER OF WORDS TO BE LISTED";N
120 FORI=1TON
130 READS$(I)
140 NEXTI
150 DATAINTERACT,ASSEMBLER,YACHT
160 DATAUNPLUGGED,PRINT,FOOTBALL,STARTRACK,EDITOR
170 DATATRAILBLAZERS,BASIC,VOLLEYBALL,GRAPHICS
180 DATADOGFIGHT,WARRANTY-KNOCKDOWN

```

ALPHABETIZE (continued)

```
190 DATAJOYSTICK, MONITOR, CALCULATOR
200 DATAZAP, HANGMAN, OUTPUT, XANADU
210 DATAQUERY, LISTING, NUMBERS, REVERSI
220 FORI=1TON-1
230 FORJ=1TON-1
240 LETX#=S$(J)
250 LETY#=S$(J+1)
260 IFX#<=Y#THEN290
270 LETS$(J)=Y#
280 LETS$(J+1)=X#
290 NEXTJ
300 NEXTI
310 FORI=1TON
320 PRINTS$(I)
330 NEXTI
340 END
350 CLS
360 PRINT"FIRST, RUN THIS"
370 PRINT"SAMPLE PROGRAM.":PRINT
380 PRINT"SECOND, LIST THIS"
390 PRINT"PROGRAM AND NOTE"
400 PRINT"THE LINES THAT"
410 PRINT"START AT 150."
420 GOSUB40
430 PRINT"THIRD, ENTER THE"
440 PRINT"NUMBER OF WORDS"
450 PRINT"TO BE LISTED"
460 PRINT"ALPHABETICALLY"
470 PRINT"WHEN REQUESTED."
480 PRINT"(26 IN SAMPLE)":GOSUB40
490 PRINT"FOURTH, LIST THE"
500 PRINT"WORDS TO BE"
510 PRINT"ALPHABETIZED IN"
520 PRINT"LINE 141 TO 229."
530 PRINT"BEGIN EACH LINE"
540 PRINT"WITH THE WORD"
550 PRINT"'DATA' AND PLACE"
560 PRINT"A COMMA AFTER"
570 PRINT"EACH WORD WITHOUT"
580 PRINT"ANY SPACES."
590 GOSUB40
600 RETURN
```

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