NATIONAL INTERACT COMPUTER CLUB

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

OCTOBER 1981

CORRESPOND WITH OTHER CLUB MEMBERS

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VOR 1XO

(JJim 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!
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 KLOPP, 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 1,3970. 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  \(X \text{ determines the waiting period of the train.}\)
20 SOUND 1,6770 \(\text{(the train is running now)}\)
30 FOR I = 0 TO Y: NEXT 
40 SOUND 7,40% \(\text{(the train stops)}\)
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 in 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 of 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 your fan automatically.

10 Z = POT(0)
20 IF Z < 51 THEN SOUND 1,6770 \(\text{(the fan is switched on)}\)
30 IF Z > 55 THEN SOUND 7,40% \(\text{(the fan is switched off)}\)
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 photocell (Radio Shack #27a-111), 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. Do 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$)
1002 IF S<3 THEN RETURN
1003 FOR T=2 TO S
1004 IF MID$(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$)
5010 IF F+18>SIZE GOTO 5060
5020 FOR N=F+18 TO F+2 STEP -1
5030 IF MID$(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.

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

**MUSIC AID**

contribution 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

- A,6
- CH,16
- ALS,2
- P,16

Quarter note C
Half note A sharp
Full note H,1
Eight note I,1 A sharp
Pause, full note long

After depressing the CR button without inputting any more notes, the computer will play back the tune. Then the screen will display "any changes". The tune will be repeated 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 LUTER!!

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 FOR I = 0 TO 1000: NEXT
70 CLS
80 PRINT"ENTER NOTE AND"; PRINT
90 PRINT"DURATION FOLLOWED"; PRINT
100 PRINT"BY DEPRESSING CR"; PRINT
110 FOR I = 0 TO 2000: NEXT
120 N = N + 1
130 PRINT N;
140 INPUT A$, D
150 GOSUB 350
160 A(N) = C; B(N) = D
170 A$ = "" 
180 GOTO 120
190 FOR I = ION
200 IF A(I) = 1 GOTO 710
210 TONEA(I), 5000*B(I)/A(I)
220 NEXT
230 INPUT"ANY CHANGES"; B$
240 IF B$ = "YES" GOTO 260
MUSIC AID (continued)

250 GOT0190
260 INPUT "SEQ. NO." : J
270 PRINT "DO YOU WANT" : PRINT "TO CONTINUE AT" : INPUT "SEQ. NO." : C$
280 IF C$ = "YES" THEN J : B$ = "" : GOT0130
290 INPUT ""
300 GOSUB 350
310 A(J) = C
320 B(J) = D
330 B$ = ""
340 GOT0230
350 IF A$ = "C" THEN C = 168
360 IF A$ = "D" THEN C = 148
370 IF A$ = "E" THEN C = 131
380 IF A$ = "F" THEN C = 124
390 IF A$ = "G" THEN C = 110
400 IF A$ = "A" THEN C = 97
410 IF A$ = "B" THEN C = 85
420 IF A$ = "CH" THEN C = 80
430 IF A$ = "DH" THEN C = 70
440 IF A$ = "EH" THEN C = 61
450 IF A$ = "FH" THEN C = 58
460 IF A$ = "GH" THEN C = 52
470 IF A$ = "AH" THEN C = 46
480 IF A$ = "BH" THEN C = 40
490 IF A$ = "CHH" THEN C = 37
500 IF A$ = "BL" THEN C = 180
510 IF A$ = "AL" THEN C = 205
520 IF A$ = "GL" THEN C = 234
530 IF A$ = "FL" THEN C = 267
540 IF A$ = "EL" THEN C = 280
550 IF A$ = "FS" THEN C = 116
560 IF A$ = "FHS" THEN C = 55
570 IF A$ = "CHS" THEN C = 75
580 IF A$ = "CS" THEN C = 158
590 IF A$ = "FLS" THEN C = 249
600 IF A$ = "GHS" THEN C = 49
610 IF A$ = "GS" THEN C = 104
620 IF A$ = "GLS" THEN C = 218
630 IF A$ = "DHS" THEN C = 65
640 IF A$ = "DS" THEN C = 139
650 IF A$ = "AS" THEN C = 91
660 IF A$ = "ALS" THEN C = 192
670 IF A$ = "AHS" THEN C = 43
680 IF A$ = "P" THEN C = 1
690 IF A$ = "THENN = N - 1 : GOT0190
700 RETURN
710 FOR J = 1 TO 64 * B(I) : NEXT
720 GOT0220
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 has 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=5TO15STEP5: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 O$=CHR$(38):X=50:Y=75
110 IFJOY(0)=0THEN110
115 OUTPUTD$,X,Y,0:TONE100,10
120 IFJOY(0)=1THENX=X-5
121 IFJOY(0)=2THENX=X+5
122 IFJOY(0)=4THENY=Y+5
123 IFJOY(0)=8THENY=Y-5
125 IFJOY(0)=5THENX=X-5;Y=Y+5
126 IFJOY(0)=6THENX=X+5;Y=Y+5
127 IFJOY(0)=9THENX=X-5;Y=Y-5
128 IFJOY(0)=10THENX=X+5;Y=Y-5
129 IFX<5THENX=5
130 IFY>75THENY=75
132 IFY<5THENY=5
133 OUTPUTD$,X,Y,1
134 IFPOINT(X,Y)=3THEN330
135 IFX<11ANDX=50THEN380
136 P=1
140 IFC(1)=0THEN170
CHASE (continued)

142 OUTPUTWS, A1, B1, 0
144 IFX < A1 THEN A1 = A1 - 5
146 IFX > A1 THEN A1 = A1 + 5
148 IFY < B1 THEN B1 = B1 - 5
150 IFY > B1 THEN B1 = B1 + 5
152 OUTPUTWS, A1, B1, 2
154 IFPOINT (A1, B1) = 3 THEN C(1) = 0: GOSUB 300
156 IF A1 = X AND B1 = Y THEN 330
158 IF A1 = A2 AND B1 = B2 THEN C(1) = 0: C(2) = 0: GOSUB 300
160 IF A1 = A3 AND B1 = B3 THEN C(1) = 0: C(3) = 0: GOSUB 300
162 IF A1 = A4 AND B1 = B4 THEN C(1) = 0: C(4) = 0: GOSUB 300
164 IF A1 = A5 AND B1 = B5 THEN C(1) = 0: C(5) = 0: GOSUB 300
170 IF C(2) = THEN 200
172 OUTPUTWS, A2, B2, 0
174 IFX < A2 THEN A2 = A2 - 5
176 IFX > A2 THEN A2 = A2 + 5
182 OUTPUTWS, A2, B2, 2
184 P = 2
186 IFPOINT (A2, B2) = 3 THEN C(2) = 0: GOSUB 300
188 IF A2 = X AND B2 = Y THEN 330
190 IF A2 = A1 AND B2 = B1 THEN C(2) = 0: C(1) = 0: GOSUB 300
192 IF A2 = A3 AND B2 = B3 THEN C(2) = 0: C(3) = 0: GOSUB 300
194 IF A2 = A4 AND B2 = B4 THEN C(2) = 0: C(4) = 0: GOSUB 300
196 IF A2 = A5 AND B2 = B5 THEN C(2) = 0: C(5) = 0: GOSUB 300
200 IF C(3) = THEN 230
202 OUTPUTWS, A3, B3, 0
204 IFX < A3 THEN A3 = A3 - 5
206 IFX > A3 THEN A3 = A3 + 5
208 IFY < B3 THEN B3 = B3 - 5
210 IFY > B3 THEN B3 = B3 + 5
212 OUTPUTWS, A3, B3, 2
214 P = 3
216 IFPOINT (A3, B3) = 3 THEN C(3) = 0: GOSUB 300
218 IF A3 = X AND B3 = Y THEN 330
220 IF A3 = A1 AND B3 = B1 THEN C(3) = 0: C(1) = 0: GOSUB 300
222 IF A3 = A2 AND B3 = B2 THEN C(3) = 0: C(2) = 0: GOSUB 300
224 IF A3 = A4 AND B3 = B4 THEN C(3) = 0: C(4) = 0: GOSUB 300
226 IF A3 = A5 AND B3 = B5 THEN C(3) = 0: C(5) = 0: GOSUB 300
230 IF C(4) = THEN 260
232 OUTPUTWS, A4, B4, 0
234 IFX < A4 THEN A4 = A4 - 5
236 IFX > A4 THEN A4 = A4 + 5
238 IFY < B4 THEN B4 = B4 - 5
240 IFY > B4 THEN B4 = B4 + 5
242 OUTPUTWS, A4, B4, 2
244 P = 4
246 IFPOINT (A4, B4) = 3 THEN C(4) = 0: GOSUB 300
248 IF A4 = X AND B4 = Y THEN 330
250 IF A4 = A1 AND B4 = B1 THEN C(4) = 0: C(1) = 0: GOSUB 300
252 IF A4 = A2 AND B4 = B2 THEN C(4) = 0: C(2) = 0: GOSUB 300
254 IF A4 = A3 AND B4 = B3 THEN C(4) = 0: C(3) = 0: GOSUB 300
256 IF A4 = A5 AND B4 = B5 THEN C(4) = 0: C(5) = 0: GOSUB 300
260 IF C(5) = THEN 110
CHASE (continued)

262 OUTPUTWS,A5,B5,0
264 IF X<A5 THEN A5 = A5 - 5
266 IF X>A5 THEN A5 = A5 + 5
268 IF Y<B5 THEN B5 = B5 - 5
270 IF Y>B5 THEN B5 = B5 + 5
272 OUTPUTWS,A5,B5,2
273 P=5
274 IFPOINT(A5,B5)<3 THEN C(5)=0:GOSUB300
275 IF A5=X AND B5=Y THEN 330
276 IF A5=A1 AND B5=B1 THEN C(1)=0:GOSUB300
277 IF A5=A2 AND B5=B2 THEN C(2)=0:GOSUB300
278 IF A5=A3 AND B5=B3 THEN C(3)=0:GOSUB300
279 IF A5=A4 AND B5=B4 THEN C(4)=0:GOSUB300
280 GOTO110
281 SOUND3,32:FORE=1TD200:NEXT:SOUND1,8770:FORE=1T05
282 IF P=1 THEN OUTPUT11*11,A1,B1,1:OUTPUT11*11,A1,B1,2:OUTPUT11*11,A1,B1,0
284 IF P=3 THEN OUTPUT11*11,A3,B3,1:OUTPUT11*11,A3,B3,2:OUTPUT11*11,A3,B3,0
285 IF P=4 THEN OUTPUT11*11,A4,B4,1:OUTPUT11*11,A4,B4,2:OUTPUT11*11,A4,B4,0
286 IF P=5 THEN OUTPUT11*11,A5,B5,1:OUTPUT11*11,A5,B5,2:OUTPUT11*11,A5,B5,0
287 NEXT:SOUND7,4096
288 S=S+20
289 OUTPUTDS,A,P,0:RETURN
290 OUTPUTD$,A,P,0:RETURN
291 SOUND3,48:FORE=1T0300:NEXT:SOUND1,8770:FORE=1T05
292 OUTPUT"**",X,Y,1:OUTPUT"**",X,Y,2:OUTPUT"**",X,Y,3:OUTPUT"**",X,Y,0
293 NEXT:SOUND7,4096
294 FORE=1T0100STEPS:OUTPUTD$,E,45,0:NEXT
295 OUTPUTD$,X,Y,0:OUTPUT"GOT THE HUMANOID",10,45,1
296 S=S-50:M=M+1
297 OUTPUTD$,X,Y,0:IFY<11ANDX=50THENOUTPUTD$,X,Y-1,1
298 FORE=1T035STEP5:OUTPUTD$,E,15,0:NEXT
299 OUTPUTS,10,15,1:OUTPUTD$,95,15,0:OUTPUTM,90,15,1
300 IF M=5THENFORE=1T080:TONEE,10:NEXT:GOTO391
301 FORE=1T011:PRINT:NEXT:GOTO20
302 FORE=1T0100STEP5:OUTPUTD$,E,45,0:NEXT
303 FORE=80TO1STEPF-1:TONEE,10:NEXT
304 OUTPUT"HUMANOID ESCAPED",10,45,1:S=S+100:GOTO360
305 CLS:OUTPUT"YOU HAVE BEEN DESTROYED",16,39,1
306 OUTPUTS,40,25,3
307 OUTPUT"HIGH SCORE: 7130",10,60,2
308 A$=INSTR$(1):CLEAR:GOTO15
309 END
310 PRINT"YOU ARE WITHIN":PRINT"THE WALLS OF A":PRINT"HIGH SECURITY":PRINT"PRISON.";
311 FORE=1T0400:NEXT
312 PRINT"YOU MUST ESCAPE FROM THE "PRINT"HEAT SENSITIVE":PRINT"ROBOTS.";FORE=1T0400
313 FORE=1T0400:NEXT
314 PRINT"YOU MUST ALSO":PRINT"AVOID THE HIGH":PRINT"VOLTAGE WALLS.";FORE=1T0500
315 FORE=1T0500:NEXT
316 PRINT"THE OBJECT IS TO":PRINT"GET TO THE OTHER":PRINT"END OF THE":PRINT"PRISON.";
317 FORE=1T0500:NEXT
318 PRINT"YOU MAY ONLY BE":PRINT"CAUGHT 5 TIMES":FORE=1T0200:NEXT
319 PRINT"GOOD LUCK!";FORE=1T0600:NEXT
320 RETURN
CHRISTMAS
COMPUTER EXPANSION
SALE

10-15-81 to 12-25-81

RS232 "R" INTERFACE PORT - Regular $109.50. *Add $5.00 for shipping.

80 COLUMN LINE PRINTER MX-80 EPSON - Regular $726.00 with serial board.
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*SALE $79.50
*SALE $489.00
*SALE $199.50

The EPSON MX

The MX-80, shown above, is an 80-column bidirectional printer featuring the full 96-character ASCII set with descenders for easier reading, and offers a user-defined choice of 40, 66, 80 or 132 columns.

One of the biggest breakthroughs offered by the MX-80 is the world's first disposable print head. After its 50-million-character life expectancy, you simply buy a new one for under $30 and replace it yourself in seconds.

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(over)
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 stopped 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 computing, 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 equivalent 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.

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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.

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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

California residents add 6% sales tax.

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

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

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 application. 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 positive 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 microprocessor 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, IMO 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 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.

HXFK3 (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.)

```basic
10 PRINT"00(4)" "HAMURABI"
20 PRINT: PRINT: PRINT
30 PRINT"TRY YOUR HAND AT GOVERNING ANCIENT SUMERIA"
40 PRINT"FOR A TEN YEAR TERM OF OFFICE"; PRINT
50 FOR A=1 TO 2000: NEXT
70 Y=S: A=H/Y: S=S-0: C=O
80 I=O
90 PRINT: PRINT: PRINT"HAMURABI: I BEG TO REPORT TO YOU, "; I=I
100 PRINT"IN YEAR"; I=" YEAR "; I=I; "PEOPLE STARVING"; I=" PEOPLE IN THE CITY,"
110 P=P+I
120 IF P=1 THEN GOTO 130
130 P=PRINT$(P/2)
140 PRINT"A HORRIBLE PLAGUE STRUCK, HALF THE PEOPLE DIED,"
150 PRINT"THE POPULATION IS NOW"; P
160 FOR $=1 TO 2000: NEXT
170 PRINT"THE CITY NOW OWNS"; A=" ACRES"
180 PRINT"YOU HARVESTED"; Y=" BUSHELS PER ACRE."
190 PRINT"RATE AT WHICH BUSHELS"
200 FOR A=1 TO 2000: NEXT
210 PRINT"YOU NOW HAVE"; S=" BUSHELS IN STORE."; PRINT
220 IF H=1 THEN GOTO 230
230 G=INT$(G/2) + 17
240 PRINT"LAND IS TRADING AT"; Y=" BUSHELS PER ACRE."
250 PRINT"HOW MANY ACRES DO YOU WISH TO BUY?"
260 INPUT Q: IF Q=0 THEN 350
270 IF Q"0 THEN 280
280 IF Y=0 THEN 300
290 IF Q=0 THEN 320
300 IF Q=0 THEN 340
310 A=A+Q; S=Q; Y=0; Q=0
320 G=INT$(G/2) + 17
330 PRINT"HOW MANY ACRES DO YOU WISH TO SELL?"
340 INPUT Q: IF Q=0 THEN 350
350 IF Q=0 THEN 370
360 A=A-Q; S=S-Q; Y=0; Q=0
370 PRINT
380 PRINT"HOW MANY BUSHELS GO YOU WISH TO FEED YOUR PEOPLE?"
390 INPUT Q
400 IF Q=0 THEN 410
410 PRINT"HOW MANY GRAIN MACH VS IN STOC?"
```

PAGE 6
HAMURABI (continued)
420 IF Q<= Tân THEN 430
421 GOSUB 710
422 GOTO 410
430 S=S-C:C=1:PRINT
440 PRINT"HOW MANY ACRES DO YOU WISH TO PLANT WITH SEED?"
441 INPUT P:IF P=0 THEN 511
442 IF D< Tân THEN 450
444 REM** TRYING TO PLANT MORE ACRES THAN YOU OWN?
445 IF D=8 THEN 450
446 GOSUB 720
447 GOTO 440
449 REM** ENOUGH GRAIN FOR SEED?
450 IF INT (C/2) <= Tân THEN 455
452 GOSUB 710
453 GOTO 440
454 REM** ENOUGH PEOPLE TO TEND CROPS?
455 IF D<=10* Tân THEN 460
460 PRINT"BUT YOU HAVE ONLY";P;"PEOPLE TO TEND THE FIELDS"
461 PRINT"THEY HAVE LITTLE FOOD"
462 FOR T=1 TO 30: NEXT
463 PRINT"DO YOU WANT THEM TO REBEL NOW?"
470 GOTO 440
480 S=S-INT (D/2)
490 GOSUB 800
510 Y=C:H=D;Y:E=0
520 GOSUB 800
525 E=INT (S/C)
530 G=E-D+1
531 GOSUB 800
533 REM** HAY HARVEST
535 I=INT (G*(G*G)/3)/100+1
537 REM** HOW MANY PEOPLE HAS FULL TUMMIES?
540 C=INT (D/20)
541 REM DM A 1% CHANCE OF A PLAGUE
542 Q=INT (10% (2*RND (1)-3))
550 IF Q<TAN THEN 410
551 REM** STARVED ENOUGH FOR IMPEACHMENT
552 D=-C:IF D>4 THEN 460
555 P1=(D-1)*P1+D*100/P/2
556 P=C:D=0:D=GOSUB 215
560 PRINT"YOU STARVED";P;"PEOPLE IN 1 YEAR"
561 FOR D=1 TO 300: NEXT
565 PRINT"DUE TO MISMANAGEMENT YOU HAVE NOT ONLY"
566 PRINT"BEEN IMPREASURED, AND DRAGED FROM YOUR OFFICE, BUT THEY"
567 PRINT"INTEND TO HANG YOU IN YOUR OWN WHEAT FIELD'S"
568 GOTO 50
710 PRINT "HAMURABI: YOU HAVE ONLY"
711 PRINTS: "BUSHELS OF GRAIN. NOW THEN"
712 RETURN
720 PRINT "HAMURABI: YOU HAVE ONLY";P;"ACRES. NOW THEN"
730 RETURN
300 T=INT (RND (1)*S)+1
HAMURABI (continued)

801 RETURN
850 PRINT"HAMURABI I CAN'T DO WHAT YOU WISH"
855 PRINT"GET YOURSELF ANOTHER STEWARD"
857 GOTO 990
860 PRINT"IN YOUR 10 YEAR TERM";P1;"OF THE"
861 FOR I=1 TO 2000: NEXT
862 PRINT"POPULATION STARVED PER YR ON THE AVERAGE, I.E. A TOTAL OF"
863 FOR I=1 TO 2000: NEXT
865 PRINTP1;"PEOPLE DIED";I=0/I
870 PRINT"YOU STARTED WITH 10 ACRES PER PERSON AND ENDED WITH"
875 PRINTP1;"ACRES PER PERSON";PRINT
880 IF P1>=3 THEN S=5
885 IF S=10 THEN N=40
890 IF S=9 THEN N=40
895 IF S=3 THEN N=40
900 IF S=1 THEN N=40
905 PRINT"GREAT PERFORMANCE! CHARLEMAGNE, DISRAELI AND GEFFERN COMBINED"
910 PRINT"COULDN'T HAVE DONE BETTER";GOTO 990
920 PRINT"YOUR HEAVY-HANDED PERFORMANCE MAKES YOU A CLOWN"
925 PRINT"THE REMAINING PEOPLE FIND YOU A NASTY RULER AND"
930 PRINT"HATE YOUR GUTS";GOTO 990
940 PRINT"YOUR PERFORMANCE COULD HAVE BEEN BETTER BUT"
950 PRINT"REALLY WASTEN'T TOO BAD";PRINT(1*:0*RND(1))"PEOPLE"
960 FOR I=1 TO 2000: NEXT
970 PRINT"PEOPLE LIKE TO SEE YOU ASSASSINATED BUT WE ALL HAVE OUR"
975 PRINT"TRIVIAL PROBLEMS"
980 FOR X=1 TO 4: PRINTCHR$(X): NEXT
985 PRINT"SO LONG FOR NOW";PRINT
990 PRINT"LET'S PLAY AGAIN";FOR X=1 TO 50: NEXT
1000 NEXT
1010 GOTO 10

ALPHABETIZE

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

10 REM-ADAPTED TO USE ON INTERACT BY R.E.JONES, 1981
20 REM-PROGRAM IN THE BOOK, "BASIC PROGRAMMING" BY KEMENY + KURTZ
30 GOTO 50
40 FOR K=1 TO 50: NEXT: CLS: RETURN
50 CLS
60 PRINT$(C+3);"ALPHABETIZE"
70 PRINT;PRINT;PRINT;PRINT;"FOR INSTRUCTIONS"
80 PRINT$"TYPE "I"";A$=INSTR$(1)
90 IF A$="I" THEN GOSUB 750
100 D$=100
110 CLS: INPUT"NUMBER OF WORDS TO BE LISTED"; N
120 FOR I=1 TO N
130 READ S$(1)
140 NEXT
150 DATA INTERACT, ASSEMBLER, YACHT
160 DATA UNPLUGGED, PRINT, FOOTBALL, STARTRACK, EDITOR
170 DATA BASKETBALL, BASIC, VOLLEYBALL, GRAPHICS
180 DATA DOGFIGHT, WARRANTY, KNOCKDOWN

PAGE 8
ALPHABETIZE (continued)

190 DATAJOYSTICK,MONITOR,CALCULATOR
200 DATAZAP,HANGMAN,OUTPUT,XANADU
210 DATAQUERY,LISTING,NUMBERS,REVERS
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 PRINT$=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."
420gosub40
430 PRINT"THIRD, ENTER THE"
440 PRINT"NUMBER OF WORDS"
450 PRINT"TO BE LISTED"
460 PRINT"ALPHABETICALLY"
470 PRINT"WHEN REQUESTED."
480 PRINT"(25 IN SAMPLE)";gosub40
490 PRINT"FOURTH, LIST THE"
500 PRINT"WORDS TO BE"
510 PRINT"ALPHABETIZED IN"
520 PRINT"LINES 141 TO 229.."
530 PRINT"BUT IN 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."
590gosub40
600 RETURN
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