ORIC USER MONTHLY

with Oric Enthusiasts

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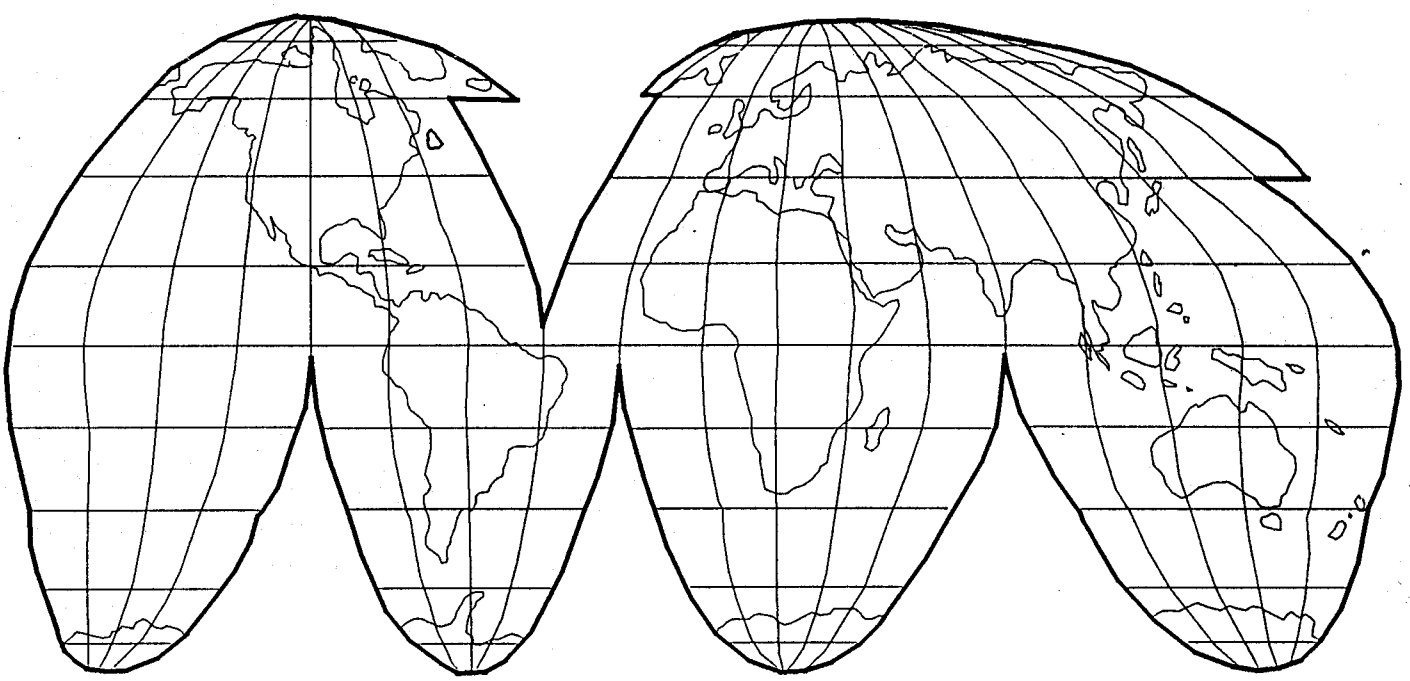

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THE EDITORIAL

HELLO AND WELCOME,

to issue 54,which is bigger and hopefully better than ever.

I will start with a moan,to get it out of the way.

All readers are given 3 reminders to re-subscribe. One with each of their last 2 issues in their current subscription and a letter after that (invariably with an unpaid issue). In a small club like ours it is not cost effective to keep on sending out reminders. What 'gets up my goat' are the odd few who take the extra free copy and don't bother to write back. It is BLOODY IGNORANT. All that I ask is that if you no longer wish to subscribe,then just drop me a line. If you've sold up then we can take you off the mailing list. If you are in financial difficulty,then drop me a line. It will be treated in confidence and we may be able to help in some way.

==========

As I type this editorial (again using EASYTEXT - I promise Dr.Ray that I'll try WORDSPEED next time), the issue is not quite finished. I want to get this page to bed and therefore a summary index only. Of course as it's January 27th,all material should be with me. Allan's is on it's way and I do know that is 5 pages long. Jon's is bound to be in the post.

Come on guys,deadlines are deadlines.

Therefore repeat after me: " I WILL SEND MY ARTICLES TO DIDDY DAVE ON TIME OR ELSE WILL HAVE MY TELESTRAT/ARCHIMEDES impounded for 3 months".

In line with the French leisure publications, it is intended to NOT go to print in August. As,when the Tories get into power,we will all be away on holiday with our tax savings. The September issue will be a double one and numbered 60/61.

This of course means that I expect double articles from our writers.

Now for latest times for articles for forthcoming issues - stick in your filofaxes,on your laptops or wherever you normally stick it.

MARCH - issue 55 - by FEB.25th
APRIL - issue 56 - by MAR.23rd.
MAY - issue 57 - by APR.23rd
JUNE - issue 58 - by MAY 24th.

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THIS ISSUE

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WINNERS

John Mckay and Brian Kidd have both introduced new members recently and recieve TETRIX. Don't worry Andre- the club will pay you the rights,so that's a few more Deutchmarks on their way.

==========

RABBIT

CEO members may of had trouble loading RABBIT on cassette.

Ignore Jon's header program. Wind the tape past it. Type in CLOAD"" and start tape. When 'Errors found',type in CALL1281 and press'RETURN'. No need for the hash sign before 1281.

Machine Code for the Oric Atmos (Part 12)

Peter N. Bragg

The Story so far

We have looked at the basic requirements for machine code programming on the Oric and now have a small table (subset) of sixteen useful instructions. In the last issue we looked at a very short routine which made use of Oric's own built-in routines to read a key press from the keyboard.

Each of the keys on the keyboard has a specific code (ASCII code). The program that we used, was started by CALL#1010. This made the Oric stop and wait for a key press. When a key was pressed, its code was put into the Accumulator. We also included an extra instruction which would put a copy of that code into location 1001 as well, to preserve it. The Accumulator gets used for many things and this ensures that we do not lose the input key code, if we go on to do something else with the Accumulator before using the input code.

So far so good, but how can we use this ? Well, irrespective of what we are going to use the Oric for, one thing is certain, we will probably use the keyboard to control the operation. We have seen that we can get a different code value for each of the keys (well most of them anyway), but how can we make individual keys select different operations ? How do we link each key to it's own particular action ? That is what we are going to look at next.

The best way to show how to do this, is to write a simple program which uses three different keys to call up three different actions. The action that each key calls up, is not important at this stage, so to save time, we can make use of three routines from the Oric's Operating System ROM instead of having to write our own. Probably the three easiest ROM routines to use, are ZAP, SHOOT and EXPLODE, each of which can be called up, using a simple "JSR" instruction. We met the "JSR" instruction in the small 6502 Instruction Subset in Part 10 of the series. It is being used here to simplify our programming.

The program can be split up into two main parts (routines). This makes it easier to produce, as each part can be written and tested separately. The first routine fetches a key (command) input from the keyboard. The second routine sorts the input and produces the action required for each key.

The first routine, which fetches the key input, should be easy as we have already dealt with part of that operation in the last issue and we only need to extend that routine slightly to make use of it here.

That routine was limited because it only fetched one key and then made an exit back to Basic. Most software needs far more in the way of commands from the keyboard than a single key press, hence the need for a small extension.

To obtain full control, we will want the routine to deal with each key press and then loop back to read the keyboard again for another key press. This is easy enough to arrange, but it does raise a question. How do we escape from the program, when we eventually need to do so ? The answer is that we were going to use three keys for our commands anyway, so we might as well add a fourth key to provide the program with a proper escape route, back to Basic.

Of course you can just use the RESET button to make your exit, but there are times when this is not convenient or practical. While most keys could be used to make an exit, obviously some are more appropriate than others. For example, we could use "X" for Exit, or "Q" for Quit, but my own preference is to use the "ESC" Key for Escape. However, once you have seen how the operation works, you will be able to make your own choice of keys. Now, lets look at the program.

```
[ CALL#1010 ]-------[ Fetch Item from Keyboard ]------------------------------
                                                     Notes
   -        ---storage---                            -----
   :                     ---Parameter 1001          Storage for copy of
1001:  (00)   :            :  "none yet"          ASCII code of key pressed.
   -

   -        ----start----
                         ---Read Keyboard---
1010:20 78 EB : JSR  EB78: Call "GTORKB" to test Keyboard for key pressed.
   :          :          :
1013:10 FB    : BPL  1010: If key NOT pressed, back to 1010 again. (Neg Flag 0)
   :          :          : If key IS  pressed, do next instruct.   (Neg Flag 1)

                         ---Save Key Press Input---
1015:8D 01 10 : STA  1001: Copy Accu into Param 1001 to preserve the input.
   :          :          :       (Input is ASCII code of the key pressed)

                         ---Continue or Stop ?---
1018:C9 1B    : CMP "ESC": Test - Was Key "ESC" pressed ? (Code for "ESC" is 1B
   :          :          :
101A:F0 06    : BEQ  1022: If "Yes" skip to Finish (at instruct 1022).
   :          :          : If "No" continue on to test and use input.
   :          :          :  (Zero Flag at "1" for "Yes" or "0" for "No")

                         ---Test and use input---
101C:20 2D 10 : JSR  102D: Go and test input for Command Keys
   :          :          :    and take any action that may be required,
101F:4C 10 10 : JMP  1010:  then jump back to 1010 to get another key press.

                         ---Finish---
1022:60       : RTS      :  Exit, back to Basic

   -        -----end-----
```

Loading the Program in
---------------------- The program can be entered as usual using an assembler, or if you are using Hexload II from Part 7 of the series, you can use the brief listings below as they are the same thing. Dont forget to save it, too !!

```
Address 1010:20 78 EB 10 FB 8D 01 10 C9 1B F0 06 20 2D 10 4C 10 10 60 .
```

The line above is for routine (1) and the four short lines on the right are the listing for routine (2), which is listed in more detail, below.

```
Address 102D:AD 01 10
Address 1030:C9 5A D0 04 20 E1 FA 60
Address 1038:C9 53 D0 04 20 B5 FA 60
Address 1040:C9 45 D0 03 20 CB FA 60
```

Oric-1 Users
------------ Your ROM is slightly different, so change the addresses of the four instructions in the listing that call on the Operating System.

```
These are -  GTORKB  at  E905   so change instruction   1010:  20 05 E9
             ZAP     at  FAC7       ..          ..      1034:  20 C7 FA
             SHOOT   at  FA9B       ..          ..      103C:  20 9B FA
             EXPLODE at  FAB1       ..          ..      1044:  20 B1 FA
```

```
[ JSR 102D ]--------[ Sort & Use Command Keys ]---------------------------------
                                                                  Notes
    -          ----start----                          -           -----
    :                        ---Input copy to Accumulator---
102D:AD 01 10 : LDA  1001: Fetch copy of input code produced by key press
    :                    :   (from Params 1001 into Accumulator).


                        ---Test Input for "Zap" key---
1030:C9 5A    : CMP  "Z" : Test - Was Key "Z" pressed ?  (Code for "Z" is 5A)

1032:D0 04    : BNE  1038: If "No"  Skip to next test at instruct 1038.
    :         :          : If "Yes" do next instruction  (Zero Flag 0=No 1=Yes)
                                         which is
1034:20 E1 FA : JSR  FAE1: go to Oric's "Zap" routine    (at addr FAE1)
                                   and then after that
1037:60       : RTS      : return for another Key press  (via instruct 101F).


                        ---Test Input for "Shoot" key---
1038:C9 53    : CMP  "S" : Test - Was Key "S" pressed ?  (Code for "S" is 53)

103A:D0 04    : BNE  1040: If "No"  Skip to next test at instruct 1040.
    :         :          : If "Yes" do next instruction
                                         which is
103C:20 B5 FA : JSR  FAB5: go to Oric's "Shoot" routine  (at addr FAB5)
                                   and then after that
103F:60       : RTS      : return for another Key press  (via instruct 101F).


                        ---Test Input for "Explode" key---
1040:C9 45    : CMP  "E" : Test - Was Key "E" pressed ?  (Code for "E" is 45)

1042:D0 03    : BNE  1047: If "No"  Input not recognized so return for another.
    :         :          : If "Yes" do next instruction
                                         which is
1044:20 CB FA : JSR  FACB: go to Oric's "Explode routine (at addr FACB)
                                   and then after that
1047:60       : RTS      : return for another Key press  (via instruct 101F).

-              -----end-----                          -                        -
```

It's a Racket !!

---------------- Place the Oric by an open window, CALL#1010 and then press keys "Z", "S" or "E". The result should shift the squirrels off the bird table. A little more amplification will tell you, which of your neighbours are at home

The program is intended to show how the keyboard can be used to control software, using a few simple instructions. It also shows that you can make use of the Oric's built-in software for your own machine code programs.

Space is running out, so we will continue on this theme next time. In the meantime, note that "PING" is at FA9F (Oric-1 at FA85). How could it be added to the program ? If you do have a try at that, note the "booby trap" in 1043.

Thats it for this month's keyboard accident.....More machinespeak next month !!

RAMBLING IN THE ROM - 35

Club Europe Oric

Thankyou to those who have all promptly renewed their subs – it does make life a lot easier if I don't have to send out reminders! My apologies to the unfortunate few who received corrupted discs recently – the sheer volume of duplicating three issues in as many months meant I didn't check them individually as I normally do. Hopefully it won't happen again.

With this issue should be a C.E.O. price list – of interest to all, since the club and commercial software is now available to all at what used to be members only prices. Please note that back issues of the magazine and Club discs (JEO's) are available to members only.

If you have sent me an order which has not arrived, please do write or call with a reminder – rather that than a disgruntled customer!

And so to the Saga...

We continue to move through the interpreter, and have now reached the part where familiar Basic commands are appearing. In particular this month sees the LPRINT and LLIST routines reached; they are very different for the two ROMs.

C7FD	STY B8	C7D6	STY B8	Save the line index
C7FF	LDY #00	C7D8	LDY #00	and initialise the keyword index
C801	LDA #E9	C7DA	LDA #E9	
C803	STA 18	C7DC	STA 18	
C805	LDA #C0	C7DE	LDA #C0	as the address of the
C807	STA 19	C7E0	STA 19	keyword table
C809	DEX	C7E2	DEX	Pass to the next keyword
C80A	BEQ C819	C7E3	BEQ C7F2	if it matches, display it
C80C	INC 18	C7E5	INC 18	increment the keywords
C80E	BNE C812	C7E7	BNE C7EB	
C810	INC 19	C7E9	INC 19	pointer
C812	LDA (18),Y	C7EB	LDA (18),Y	and take a character
C814	BPL C80C	C7ED	BPL C7E5	if b7=0, continue
C816	JMP $C809	C7EF	JMP $C7E2	Go to the next keyword
C819	INY	C7F2	INY	index the first character
C81A	LDA (18),Y	C7F3	LDA (18),Y	take the keyword character
C81C	BMI C7CB	C7F5	BMI C7A4	b7=1: last character, so return
C81E	JSR $CC12	C7F7	JSR $CCD9	not the last, so display it
C821	JMP $C819	C7FA	JMP $C7F2	and continue

'LLIST' (COMMAND)

Remark: The printer is left off line by the LIST routine itself where you don't leave with an RTS.

C824	LDA #80	.....	.....	Set printer flag
C826	STA 02F1	.....	.....	(SEC:ROR would be better)
C829	LSR 02F2	.....	.....	indicate no return by RTS
C82C	JSR $00E8	.....	.....	replace the indicators
C82F	JMP $C773	.....	.....	and do a LIST
.....	.....	C7FD	JSR $C816	Set the printer on-line
.....	.....	C800	LSR 02F2	indicate no return by RTS
.....	.....	C803	JSR $00E8	replace the indicators

```
..... .....          C806  JMP $C748      and do a LIST
```

'LPRINT' (COMMAND)

```
C832  LDA #80        ..... .....
C834  STA 02F1       ..... .....          Set printer flag
C837  JSR $00E8      ..... .....          replace the indicators
C83A  JSR $CB61      ..... .....          do a PRINT
C83D  LSR 02F1       ..... .....          and set the printer off-line
C840  RTS            ..... .....
..... .....          C809  JSR $C816      Set printer on-line
..... .....          C80C  JSR $00E8      replace the indicators
..... .....          C80F  JSR $CBAB      do a PRINT
..... .....          C812  JSR C82F       and set the printer off-line
..... .....          C815  RTS            JMP $C82F would have done
```

SET PRINTER ON-LINE

```
..... .....          C816  BIT 02F1       if already on, exit
..... .....          C819  BMI C854
..... .....          C81B  LDA 30         save screen cursor position
..... .....          C81D  STA 0259
..... .....          C820  LDA 0258       and recover the position
..... .....          C823  STA 30         for the printer
..... .....          C825  SEC
..... .....          C826  ROR 02F1
..... .....          C829  LDA 0256       take length of a print line
..... .....          C82C  JMP #C844      and end
```

SET PRINTER OFF-LINE

```
..... .....          C82F  BIT 02F1       if already off-line, exit
..... .....          C832  BPL C854
..... .....          C834  LDA 30         save printer cursor position
..... .....          C836  STA 0258
..... .....          C839  LDA 0259       and recover position
..... .....          C83C  STA 30         of screen cursor
..... .....          C83E  LSR 02F1       Place indicator
..... .....          C841  LDA 0257       Take length of screen line
..... .....          C844  STA 31         and save as current length
..... .....          C846  SEC            Calculate value of length
..... .....          C847  SBC #08        modulo 8 between #F8 & #FF
..... .....          C849  BCS C846
..... .....          C84B  EOR #FF        Bring to 0-7 (2's compl.)
..... .....          C84D  SBC #06        +subtract 7 (C=0):#F9 to #00
..... .....          C84F  CLC            + finally adjust to the
..... .....          C850  ADC 31         total permitted length
..... .....          C852  STA 32         getting the max tab position
..... .....          C854  RTS
```

Jon Haworth

V I S I O R I C

The listing for VISIORIC is reproduced from an old THE'ORIC magazine. Luckily I already had it on disc and thus saved on the finger tapping. I doubt if all will be listed in this issue - the rest next time.
About the game - it is a nice little 'Matching Pairs' effort played on a 6x4 grid. Utilise the cursor keys to move around and the 'SPACE BAR' to validate. ORIC 1 users will have to modify the the PRINT @ and PLOT commands. Lines 1840 onwards are a joystick routine.
Sedoric Dos users should use the !QUIT command prior to running. I have left the program in French as it doesn't need much working out.

- DAVE DICK

```
20 GOSUB1780:GOSUB720:GOSUB1830
30 DIMP(33,17),V%(24),C1$(12):C=1:D=1
40 FORX=3TO33STEP6:PX(C)=X:C=C+1:NEXT
50 FORY=3TO17STEP4:PY(D)=Y:D=D+1:NEXT
70 C1$(1)=CHR$(138)+CHR$(130)+CHR$(91)+CHR$(92)
80 C1$(2)=CHR$(138)+CHR$(132)+CHR$(93)+CHR$(94)
90 C1$(3)=CHR$(138)+CHR$(133)+CHR$(95)+CHR$(96)
100 C1$(4)=CHR$(138)+CHR$(135)+CHR$(36)+CHR$(37)
110 C1$(5)=CHR$(138)+CHR$(131)+CHR$(39)+CHR$(38)
120 C1$(6)=CHR$(138)+CHR$(130)+CHR$(40)+CHR$(41)
130 C1$(7)=CHR$(138)+CHR$(129)+CHR$(42)+CHR$(43)
140 C1$(8)=CHR$(138)+CHR$(134)+CHR$(35)+CHR$(88)
150 C1$(9)=CHR$(138)+CHR$(133)+CHR$(47)+CHR$(60)
160 C1$(10)=CHR$(138)+CHR$(131)+CHR$(62)+CHR$(124)
170 C1$(11)=CHR$(138)+CHR$(132)+CHR$(64)+CHR$(123)
180 C1$(12)=CHR$(138)+CHR$(129)+CHR$(125)+CHR$(89)
190 C2$=CHR$(138)+CHR$(134)+CHR$(87)+CHR$(75)
200 C3$=CHR$(140)+CHR$(129)+CHR$(107)+CHR$(119)
220 C4$(1)=CHR$(128)+"Je me fais vieux !"
230 C4$(2)=CHR$(129)+"Il se fait tard .."
240 C4$(3)=CHR$(129)+"Le temps passe !"
250 C4$(4)=CHR$(132)+"Je commence a dormir.."
260 C4$(5)=CHR$(133)+"Vous etes toujours la ?"
270 C4$(6)=CHR$(129)+"Ne me laissez pas seul !"
280 C4$(7)=CHR$(132)+"Mais que faites vous ?"
290 C4$(8)=CHR$(133)+"Depechez-vous !"
300 C4$(9)=CHR$(128)+"Vous allez perdre !"
310 C4$(10)=CHR$(128)+"Tapez sur mes touches !"
320 REM
330 GOSUB620:HC=3:V1=5:DE=1:NB=0:CP=0:CO=0
340 CLS:PING:PRINT@14,7;CHR$(142)+"TEMPS IMPARTI:"
360 PRINT@8,10;CHR$(131)+"Votre niveau entre 0 et 5 ?"
370 GETN$:IFVAL(NV$)>5THEN370
380 NI=360-60*VAL(NV$):CLS:GOSUB670
390 FORX=48002TO48039:POKEX,18:NEXT
400 FORX=48042TO48120STEP40:POKEX,18:NEXT
410 FORX=48802TO49120STEP40:POKEX,21:NEXT
420 PRINT@5,20;CHR$(130)+"IL RESTE 12 COUPLES A TROUVER."
430 PRINT@6,22;CHR$(132)+"TEMPS RESTANT:"
440 DOKE#276,0:U=1E5
450 PRINT@9,24;CHR$(128)+"NOMBRE DE COUPS :  0"
470 I=DEEK(#276):PRINT@HC,V1;C3$
480 J=DEEK(#276):PC=PEEK(#208):PJ=PEEK(#400):IFPC<>56THENU=DEEK(#276):GOTO530
490 IFPJ<>191THENU=DEEK(#276):GOTO530
500 IFI-J>800THENS%=RND(1)*10+1:FORX=48043TO48080:POKEX,2:NEXT
510 IFI-J>800THENPRINT@8,0;C4$(S%):GOTO470
520 GOSUB1420:GOTO480
530 FORX=48043TO48080:POKEX,2:NEXT
540 PRINTCHR$(11)+CHR$(14)
550 IFPC=172ORPJ=190THENHC=HC-6:IFHC<3THENHC=3
560 IFPC=188ORPJ=189THENHC=HC+6:IFHC>33THENHC=33
570 IFPC=180ORPJ=183THENV1=V1+4:IFV1>17THENV1=17
580 IFPC=156ORPJ=175THENV1=V1-4:IFV1<5THENV1=5
590 HR=HC+2:V2=V1-2
600 IF(PC=132ORPJ=159)ANDSCRN(HR,V2)=87THENCO=CO+1:GOSUB1300
610 GOTO470
620 REM
630 Q=1:CALL#E76A:FORX=1TO6:FORY=1TO4
640 V%(Q)=RND(1)*12+1:P(PX(X),PY(Y))=V%(Q):U=0
650 FORT=1TOQ:IFV%(Q)=V%(T)THENU=U+1:IFU>2THEN640
660 NEXT:Q=Q+1:NEXTY,X:CALL#E93D:RETURN
670 REM TERRAIN
680 FORX=3TO33STEP6:A=3:FORY=ATO17STEP4
690 IFDE=0THENPRINT@X,Y;C1$(P(X,Y))ELSEPRINT@X,Y;C2$
700 IFDE=0THENPRINT@X,Y+1;C1$(P(X,Y))ELSEPRINT@X,Y+1;C2$
710 NEXTY,X:RETURN
720 REM REDEFINITION
730 FORX=46808TO46815:READDT:POKEX,DT:NEXT
740 FORX=46816TO46823:READDT:POKEX,DT:NEXT
750 FORX=46824TO46831:READDT:POKEX,DT:NEXT
760 FORX=46832TO46839:READDT:POKEX,DT:NEXT
770 FORX=46840TO46847:READDT:POKEX,DT:NEXT
780 FORX=46848TO46855:READDT:POKEX,DT:NEXT
790 FORX=46368TO46375:READDT:POKEX,DT:NEXT
800 FORX=46376TO46383:READDT:POKEX,DT:NEXT
810 FORX=46392TO46399:READDT:POKEX,DT:NEXT
820 FORX=46384TO46391:READDT:POKEX,DT:NEXT
830 FORX=46400TO46407:READDT:POKEX,DT:NEXT
840 FORX=46408TO46415:READDT:POKEX,DT:NEXT
850 FORX=46416TO46423:READDT:POKEX,DT:NEXT
860 FORX=46424TO46431:READDT:POKEX,DT:NEXT
870 FORX=46360TO46367:READDT:POKEX,DT:NEXT
880 FORX=46784TO46791:READDT:POKEX,DT:NEXT
890 FORX=46456TO46463:READDT:POKEX,DT:NEXT
900 FORX=46560TO46567:READDT:POKEX,DT:NEXT
910 FORX=46576TO46583:READDT:POKEX,DT:NEXT
920 FORX=47072TO47079:READDT:POKEX,DT:NEXT
930 FORX=46592TO46599:READDT:POKEX,DT:NEXT
940 FORX=47064TO47071:READDT:POKEX,DT:NEXT
950 FORX=47080TO47087:READDT:POKEX,DT:NEXT
960 FORX=46792TO46799:READDT:POKEX,DT:NEXT
970 FORX=46776TO46783:READDT:POKEX,DT:NEXT
980 FORX=46680TO46687:READDT:POKEX,DT:NEXT
990 FORX=46936TO46943:READDT:POKEX,DT:NEXT
1000 FORX=47032TO47039:READDT:POKEX,DT:NEXT
```

O.U.M

1st.

for

tappers

HUMIDITY


```
55 GOSUB 325
65 PRINT CHR$(17)
75 CLS:PAPER 0:INK 6
85 PRINT:PRINT"Asspirated Rh% at elevated Temp:"
95 PRINT:PRINT
105 G=7.5:H=237.3:I=.78571:A=.0006666:N=100
115 PRINT:INPUT"Dry bulb Temp: ";T2
125 E2=10^((G*T2)/(H+T2)+I)
135 PRINT:INPUT"Wet bulb Temp: ";T1
145 E1=10^((G*T1)/(H+T1)+I)
155 PRINT:PRINT"INPUT Barometric Pressure Mbars."
160 PRINT:PRINT"Enter 1000 if not known.";:INPUT P
165 P1=P/68.9476
175 CLS:PRINT:PRINT
185 D=T2-T1:PRINT:PRINT"Depression =";D;"Deg.C."
195 PRINT:PRINT"Sat:Vap:Pressure DRY BULB.";E2;" Mbars"
205 PRINT:PRINT"Sat:Vap:Pressure WET BULB.";E1;" Mbars"
215 E=E1-(A*P*(T2-T1)):E3=E/68.9476
225 PRINT:PRINT"Actual Vap:Pressure       ";E;" Mbars"
235 T=H/(G/(LOG(E)-I)-1)
245 PRINT:PRINT"Dew Point Temp. Deg.C     ";T
255 R=0.622*E3/(P1-E3)
260 PRINT:PRINT"Water Content Lb/Lb      ";R
265 Z=R*7000
270 PRINT:PRINT"or in Grains per Lb       ";Z
275 B=(E/E2)*N:B1=INT(B*N+.5)/N
285 PRINT:PRINT"Rh% = ";B1
295 PRINT:PRINT"Do you wish to Compute again [y/n] ";
305 GET A$:IF A$<>"N"THEN CLS:GOTO 85
315 END
325 CLS:PAPER0:INK5
335 PRINT:PRINTSPC(10)"Rh% Aspirated Values."
345 PRINT:PRINT"This program will determine the Vapour"
355 PRINT"Pressure,Relative Humidity,Dewpoint,"
365 PRINT"and Water Content from readings of a"
375 PRINT"Dry and Wet bulb Psychrometer."
385 PRINT:PRINT"The Vapour Pressure is determined from"
395 PRINT"the Dry and Wet bulb readings by"
405 PRINT"substution,in an equation of the form"
415 PRINT" E=E1-A*p*(T-T1)"
425 PRINT:PRINT"In this program the value of'A'="
435 PRINT"6.666*10 to minus 4 when the Wet Bulb"
445 PRINT"is equal to or above 0'CENTI,and (p)"
455 PRINT"is in millibars. "
465 PRINT"But is not suitable when or if the Wet"
475 PRINT"Bulb is Ice covered below 0'CENTI."
485 PRINT:PRINT"This program is suitable for all area"
495 PRINT"below 3000Ft for determining Rh% value"
505 PRINT"using a figure of 1000mb as the Baro:"
515 PRINT"But for Dew Point or Water Content the"
525 PRINT"correct Millibar reading for the area"
535 PRINT"must be used."
545 PRINTSPC(10)"Press any key"
555 GET A$:RETURN
```

THE ABOVE LISTING WAS SENT IN BY JOHN HURLEY,WHO IN HIS CAPACITY AS CLIMATIC TESTER FOR PART OF THE WESTLAND HELICOPTER GROUP,HAS TO MEASURE AND RECORD THE DAILY TEMPERATURE AND HUMIDITY,AND SOMETIMES THE WATER CONTENT OF THE AIR. THIS INVOLVES THE USE OF TABLES OR GRAPHS AND IS VERY TIME WASTING AND NOT VERY PRECISE. JOHN DREW UP THIS PROGRAM FROM AVAILABLE DATA TO SIMPLIFY THE TASK,AND MAY BE OF USE TO THOSE WHO WISH TO KNOW THE HUMIDITY OF THE AIR.

NO I'M NOT ADAM, I'M DAVE YOUR EDITOR.
FOLLOWING ARTICLES IN RECENT ISSUES OF O.U.M, NEW SUBSCRIBER ADAM JAMES FROM SHEFFIELD,LIFTS THE LID OFF HIS WORLD OF 'ORIC'.
==========

HI - I'M ADAM --- firstly,permit me a ramble if you will.
My first encounter with any computer was about 8 years ago,when at the tender age of 11;I was at the house of my dad's friend. He kept taking this little box off a shelf and sticking wires everywhere,with the result being that my sister and I,but mainly my dad,could play games by looking at the huge colour television he had. It will warm your heart to know that this weird box was in fact the ORIC 1,complete with 'calculator' keys. I seem to remember that the games we played were 3D MAZE,BREAKOUT,HUNCHBACK, CANDYFLOSS,XENON I,and wait for it - ZORGONS REVENGE. What class!
In fact it was probably the latter game that persuaded my dad to by the self-same model less than a year later (although I wouldn't dare suggest this to him, a keen intellectual with a past career in science and all that !). Then came the Oric Atmos and the Television commercial for the same (I still can't think why a computer's ability to change the screen colour without having to clear the screen should be given as it's major selling point. Still , at least the wire profile of a talking head was quite impressive - but did they actually use an Atmos to animate it? Hmmmm...), which resulted in my dad paying 60 pounds for an upgrade, and him giving the spanking new machine to me for Christmas (since by then he had his eyes set on a more business-like machine. Traitor!). Ahhh,yes,that's when it all started for me. I feel a song coming on. Ahem,anyway... A computer all to myself. And what a cutie! My sexuality was called into question still further as my eyes caressed the contours of the sleek black instruction manual. Still,that's a side of my personality which I like to keep to myself. The games built up,I became proficient at BASIC, I began to dabble with machine code,and I had actually found someone else with an Oric,and someone managed to persuade me that the noise at the start of 'Trouble In Store' was in fact the word "Harridges" or something. My computer could talk! Could this be the start of a new relationship? Alas,it was not to be. Those Oric people went bust. I was too young to move to France.What could I do? Well,I continued my enthusiasm for the Oric until I began to feel rather alone,and perhaps more importantly,a friend could get me a complete Spectrum 48K for 10 pounds. Well,with a lump in my throat I moved onto the Speccy. Great for games,but this 'word-per-key' business made it a nightmare for BASIC programming. I fell into the trap,and ended up just playing games on the Speccy and my programming ceased. From a keen programmer to a games playing moron. Never underestimate the power of the Dark Side,and all that kind of stuff. I bought 'Hisoft' DEVPAC for it,but just couldn't find any decent machine code books for it.With only a few operative cells left in my brain,I became desperate. Was I to become separated from the computer world? Was I going to have to become normal and blend in with society? Show me a sign,anything,please! Well,somewhere along the line I had developed an interest in music. Somewhere along the line my parents had managed to get their bank accounts out of the red. Somewhere along the line my attention had been drawn to the Atari ST's MIDI ports,and I had a keyboard with the same. Yes,I now have an Atari 520ST fm and a healthy supply of Basic programming languages (and maybe one or two games as well). Back on the rails! But,being a sentimental type of person, I never part with a computer. Every now and then,when I feel the urge, I dig into the cupboard and get out the Atmos. The attraction is still there. The games are still fun . What memories come flooding back...can you remember the smell of the Atmos or Oric 1 whwn freshly unboxed? AND then what goes and happens? Just as things seem to be become more settled; I get a letter from a club which supports the Oric. It's 1992! You mean there are people out there? Others? After all this time? As I read Brian's letter I become quite emotional. The Oric lives on. The 6502 is still doing it's job. A small,cosy group is out there,and now I can become part of it. Dave,I want to be the father of your children. (And as far as I'm concerned,rambles don't need paragraphs,so stop complaining.)

WAKE UP , I'VE FINISHED - Adam James

R E A D E R ' s L E T T E R S

QUITE A MIXED POSTBAG FOR THIS ISSUE. DON'T FORGET TO LET US KNOW IF YOU CAN HELP WITH ANY QUERIES.

DEAR DAVE,

on reading the last issue of O.U.M, I noticed Allan Whitaker's problems with his TEAC disc drive. In fact I had the same problems when I first got my disc controller,because my 5.25" drive failed to boot. I spent a lot of time examining DOS,the controller, learned programming the WD1793 chip and found out that only a few bytes made my drive un-rematable. Then I altered my DOS's and this is how:

ORIC DOS Vx :

```
!Load "System.DOS",D,N
Poke #7693,#1D
Poke #7782,#09
Poke #86C4,#09
Poke #A022,#60
!Save "System.DOS",A#7400,E#A030,T#A000
```

SEDORIC DOS : To change it you need a disc monitor.

Track	Sector	rel.addr.	Value
0	2	B0+1	59
0	17	42+1	19
5	4	B0+1	0A
5	9	B9+1	0A

To boot with a slow drive,you have to re-burn the controller EPROM;

relative address (0000=0.yia)	Value
02D3	1D
03B6	09
0CD9	09

If anyone has any more questions about the instruction set of the WD1793, then I would be pleased for them to contact me.

Another query I read was about reading IBM discs. Principally,the WD1793 and the DOS routines are able to read every MFM DD format. The sector length is initilised automatically by reading a sector,so you can read sector sizes up to 1K. Oric Dos comes with the SYS program which contains a nice machine code program to read and write sectors. I've written a small program around it and now I use it as Diskmon and needed it to alter IBM discs or examine the structure of alien foramts. Another machine code program allows to format one single track - but only Oric DOS. I needed it in times when my computer scratched a disc and made exactly one track unreadable.

Bernhard Grone

BERNHARD,

thank you for the explanations. I am sure that you have cleared up quite a few reader's problems.

Anyone wishing to get in touch with Bernhard may write to him,and you can see he writes very good English,at:

Am Judenhubel 15, W-6751 Trippstadt, GERMANY.

==========

Dear Dave,

I noticed in the last issue that a full set of the French magazines were in your hands. Would it be possible that some of the printed programs could be included in future issues of O.U.M for the benefit of compulsive finger tapping idiots like me who are not as clever as the learned gentlemen who explore the hidden depths of ORIC's bowels!

JOHN HURLEY (Yeovil)

JOHN, your wish is my command. Our resident finger tapper, Monsieur Ron Evans from Wood Green has been beavering away for weeks now. One of the programs he typed in and in fact translated,was a very nice graphical quiz on Olympic flags. Ron and I have been trying to de-bug the program. It will either be re-produced in this mag. or will go to PD. Meanwhile I have plucked a few gems from these old classics (THE'ORIC et MICRO'ORIC) and you will see them in this issue.

==========

DAVE,

I hope that both the CEO-MAG and OUM will still live for many years and will get more and more readers.

- Alain Weber (Club Europe Oric - Paris)

Alain,

thanks for the new year's card and for the wishes. Next time how about a full letter for OUM or even an article. How about telling us how the French scene is at present?

==========

DAVE,

I couldn't see much humour in the December issue! (only kidding). May I suggest that you discuss with David Wilkin his definition of 'crumpet',as you seem to have been at cross-purposes when you talked to each other at the show. Perhaps he was thinking of pancakes?

- Adam James

ADAM,

well would you 'adam and eve' it. What sort of name is that to give a youngster. I bet your mother was an Adam Faith fan. Go on ask her if she remembers 'What do you want?' and 'Lonely Pup'.

==========

DAVE,

As you know I am unable to use Sedoric with my Opelco system at the moment. Occasionally it will boot in,and often I get an I/O error relating to Track 14, Sector 2.

I'v checked the power supply to the Atmos from the Opelco and also from the PSU supplied to the Atmos. The power out from the Opelco reads 10.5 volts,but from the oroginal PSU is 12 volts. Is my problem loss of power at the Atmos to transfer data from the drive?

Another clue may be that on checking all power leads with NO mains connected,the original PSU shows a reading of 8 to 11.5 v retained;I think by a capacitor which holds for a very long time. The one in the Opelco fades very quickly to less than 2 V. This may account for why I get a computer lock out sometimes whwn my good lady switches ON or OFF heavy electrical equipment in the home.

If these details can assist in someone solving my problem, I would be most grateful as I am looking forward to using Sedoric and Wordspeed.

I am writing to you on my new SEIKOSHA sp 1900+ printer,which I would thoroughly recommend to anyone.

- John Hurley

JOHN,

I and many others have had the problem with that track/sector and in most cases it seems to right itself, however your problem is more involved. I would suggest checking all wiring, checking the capacitor. Try what I did with a Microdisc ,which wouldn't power both Atmos and drive and that is to run the Atmos from it's original PSU,just leaving the drive power supply to deal with the drive. This is only a temporary measure and perhaps Steve Hopps of Opelco can throw more light on the subject. David Wilkin has promised to delve into the problem and I will pass on any information that readers may have on the subject. Let us hope that somewhere we as a group can solve the problem as I know how frustrating it is to be without a fully operational system. COME ON READERS - LET's SORT IT OUT!!!

As for your printer, I'm glad you found it to your liking and I believe onlly 99 pounds from the Silica Shop. The only difference between your model and the SP2000 as used at OUM is the buffer size.

- DAVE

S O F T W A R E C H A R T S

IT IS AUGUST SINCE WE LAST PUBLISHED A FULL CHART, AND SO WE GO WITH A GUIDE TO WHAT'S HOT AND WHAT'S NOT. SALES ARE BASED ON THE PERIOD FROM 1st AUG.1991 UNTIL JAN 21st 1992. AS PREDICTED,THE RE-AVAILABILTY OF THE IJK TITLES HAS TURNED THE CHARTS UPSIDE DOWN.

HERE WE GO WITH THE LAST CHART POSITION IN PARENTHESIS.

ARCADE

1 (-) XENON III 2 (1) TETRIX jt.3 (2) GRENDEL and (10) GRAND PRIX jt.5 (-) FOOTBALL and (-) DAMSEL IN DISTRESS 7 (-) DPTLQ 8 (11) IJK INVADERS 9 (8) ESCAPE 10 (-) PLAYGROUND 21

Commemt: XENON III IS A CLEAR LEADER, IJK HAVE 8 IN THE TOP 20,AND ALISTAIR WAY HAS 4 IN THE TOP 10.
BUBBLING UNDER THE TEN ARE: ZORGON,ZEBBIE,A.O.T.C,ZOOLYMPICS and SPOOKY MANSION

STRATEGY/SIMULATION/BOARD GAMES

1 (-) IJK CHESS 2 (-) DAMBUSTERS 3(-) FRIGATE COMMANDER 4 (5) GOLDMINE 5 (9) SPECIAL OPS.
Comment: IJK TAKE THE TOP 3

ADVENTURES

1 (-) ZODIAC jt.2 (3) THE LAST WARRIOR jt.2 (6) KRYSTAL WORLDS jt. 2 (-) A VIEW TO A KILL 5 (1) HELLS TEMPLE
Comment: ABSOLUTELY UNBELIEVABLE,BUT THE OLD TANSOFT TITLE SHOOTS TO THE TOP. ROBERT COOK'S 'KRYSTAL' MAKES A WELCOME MOVE.

UTILITIES

1 (-) CHARED/OBED 2(1) ORION 3 (-) PICTURE DESIGNER
Comment: THE NEWIE FROM Mr. BRISTOW ROCKETS STRAIGHT IN AT THE TOP.

WORD PROCESSORS

1 (2) WORDWORTH 2 (1) AUTHOR
Comment: THEY SWAP PLACES.

EDUCATIONAL

jt.1 (1) FRENCH LINKWORD jt.1 (-) ITALIAN LINKWORD 3 (-) 4 GAMES FOR CHILDREN.
Comment: COMING SOON - NORWEGIAN LINKWORD FROM ARNT ISAKSEN !!

==========

R A D I O C R A C K E R

OVER THE CHRISTMAS PERIOD A RADIO STATION CALLING ITSELF RADIO CRACKER WAS SET UP HERE IN AYLESBURY. IT WAS MANY OF SUCH STATIONS THROUGHOUT THE COUNTRY SET UP TO RAISE MONEY FOR CHILDREN'S AID IN THIRD WORLD COUNTRIES. IN A RETURN FOR AN ADVERT ON THE STATION, O.U.M WAS PLEASED TO MAKE A SMALL DONATION AND HOPES THAT THIS MET WITH READERS APPROVAL.

==========

C O N T A C T L I S T

LAST YEAR WE PRINTED A CONTACT LIST. AS WE HAVE SO MANY NEW READERS SINCE THEN,IT IS PLANNED TO UPDATE AND RE-PRINT IT. THOSE WHO DID NOT BOTHER LAST TIME AND THOSE WHO MAY HAVE UPGRADED THEIR EQUIPMENT SHOULD LET US KNOW SO THAT OUR RECORDS ARE CORRECT. IT IS YOU WHO BENEFIT. IT MAKES LIFE A LOT EASIER WHEN WE GET A SPECIFIC PROBLEM TO SOLVE.
INFORMATION REQUIRED IS A) YOUR SET-UP, B) YOUR INTERESTS AND C) ANYTHING ELSE YOU THINK RELEVANT OR WORTHWHILE.

B A C K I S S U E S

THERE HAS BEEN A LOT OF INTEREST LATELY SHOWN IN GETTING HOLD OF BACK ISSUES RECENTLY AND IN MANY CASES CERTAIN PARTS OF THEM. I THOUGHT IT ABOUT TIME WE CATALOGUED OUR LITTLE MAGAZINE. THUS WE START AND FILL A PAGE A MONTH UNTIL WE ARE UP TO DATE. THOSE REQUIRING BACK ISSUES OR CERTAIN PAGES SHOULD WRITE IN THE FIRST INSTANCE FOR A PRICE QUOTE. PRICES ARE DEPENDANT ON WHETHER WE A) HAVE SPARE COPIES, B) HAVE PAGES ON DISC OR C) HAVE TO PHOTOCOPY ORIGINALS.

ISSUE 1 (SEPT'87) - 5 pages virtually all game reviews..... ISSUE 2 - 5 pages - reviews,charts (XENON III was top) and pokes..... ISSUE 3 - 5 pages reviews,charts and tips.....ISSUE 4 - 5 pages - reviews , charts and tips..... ISSUe 5 - 5 pages - reviews,pokes,tips,charts, VIEW to a KILL (part 1) map..... ISSUE 6 - 5 pages - reviews of ZOOLYMPICS and CHOPPER, and WIZARD OF AKRYZ,tips,charts,Game computing part one - the basic structure..... ISSUE 7 - 5 pages - reviews of French motor racing games,tips,charts,Hi-res listing..... ISSUE 8 - 5 pages - reviews of TRIATHLON and FLY FOR YOUR LIFE,hints and tips, charts,review of GRAIL..... ISSUE 9 - 5 pages - reviews of PLAYGROUND 21 and CLASSIC RACING, charts,hints and tips,questionaire results..... ISSUE 10 - 5 pages - reviews of WORDSEARCH and DAMBUSTERS,charts, help for the ZODIAC adventurer..... ISSUE 11 - 7 pages - reviews of CHESS II,POLE POSITION,ZEBBIE and TALISMAN,charts,hints and tips,articles on coin-ops and quick loading..... ISSUE 12 - 7 pages - reviews of FRELON,LORDS OF TIME and THEM,Oldies Pursuit looks at old arcade favs., a look at LORICIELS (French software house) andthe charts..... ISSUE 13 - 7 pages - lots of news,a look at NO MANS LAND titles,reviews of SNAKE VENOM and JUMPFOX, charts ,Football games and a map of CAPTAINS LOG..... ISSUE 14 - 7 pages - news,reviews of SKRAMBLE,BATTLE FLIGHT and THE GOLDEN BATON,charts, a look at IJK titles,hints,listing for finding any day..... ISSUE 15 - 7 pages ....solution to WIZARD OF AKRYZ,charts,book review,hints/tips,reviews of DAMSEL IN DISTRESS,JET ATTACK (now on PD), and CIRCUS..... ISSUE 16 - 7 pages - news, results of software vote,hints and tips,more WIZARD solution,charts,book review and a look at TANSOFT..... ISSUE 17 - 7 pages - the beginning of the end as Dave Dick joins the magazine, ,news, alook at COBRASOFT,review of THE LAST WARRIOR,charts,hints and tips..... ISSUE 18 - 7 pages plus the first front cover from JON, (it is by now FEB'89),news,reviews of GOLDMINE and LIGHT CYCLE , map to level 1 of TYRANN,charts,letter puzzle listing.....ISSUE 19 - 8 pages + cover - news,reviews,charts, readers helpline,French Leave Finale - Jon Haworth finishes off where he was when YOUR ORIC magazine vanished and he was known as ARCHIMEDES., map of VIEW TO A KILL..... ISSUE 20 - 9 pages- news,reviews of INDIANA SMITH AND STARWIND,charts,hints and tips ,RAMbling in the ROM - Jon looks in depth at the spurious 'Errors found ' message on the ATMOS. ,readers helpline.....

WELL THAT IS THE FIRST TWENTY. NEXT TIME AROUND WE WILL HAVE A LOOK AT ANOTHER BATCH. I MUST ADMIT IT HAS BROUGHT BACK FOND MEMORIES GLANCING THROUGH THE BACK PAGES.

==========

O U M F U N D S

AS THIS IS GOING TO BE AN ENORMOUS AND THEREFORE EXPENSIVE ISSUE TO RE-PRODUCE I THOUGHT IT BEST TO WAIT UNTIL NEXT MONTH TO REVEAL WHAT IS LEFT IN THE KITTY.

==========

BACC

The current fee to re-join the British Association of Computer Clubs is now 34 pounds per year. I don't believe that the club can justify this outlay for what it recieves in return. No significant increase to membership was due to being on their database. Most of our new members came by way of mailshots and small ads. in the computer press. If you disagree,then please let me know. This of course also means that club insurance no longer applies.

==========

ALL FORMATS COMPUTER FAIRS

Admission to all these shows is 4 pounds. One pound off voucchers can be obtained from the organiser, Bruce Everiss on 0926 613047.
All fairs are open from 10.00 a.m til 4.p.m.

Details are:
February 8th. - Northumbria Centre,Washington (A194 M)
February 23rd. - National Motorcycle Museum, W.Mids. (Junct.6 - M42)
March 8th - City Hall,Candleriggs,Glasgow
March 14th. - Horticultural Hall,Greycoat st.,Westminster
March 15th - Brunal Centre,Temple Meads,Bristol
March 21st - Donington Park,East Mids. (J23A,M1)
March 22nd. - University Sports Centre,Calverley St.LEEDS.

==========

MUSED

Jonathan Bristow's MUSED 91 is almost ready for release. Jonathan has finally explained the correct way to load the very nice Demo pieces, something which should of been covered correctly in his manual. The manual is now being updated.

RELEASE DATE: - MARCH 5th.

MUSED is a full two thousand note sequencer. This multiplied by the 3 channels,gives a total of 6000 notes. It is fully menu driven.

==========

O U M T O C L O S E

Due to the gigantic backlog of Oric matters,caused by tape duplication problems and queries raised by members; drastic measures have to be taken.

I MUST clear up back orders and queries that you have written or telephoned me with.

It is oh so easy to sort out a couple of small queries and leave the more time consuming til later. Unfortunately later becomes later and later.

WITH IMMEDIATE EFFECT, NO ORIC RELATED PHONE CALLS WILL BE TAKEN UNTIL ANNOUNCED OTHERWISE. THE ONLY EXCEPTIONS ARE THE 'GANG OF 4' - Jon Haworth,Alan Whitaker,Steve Hopps, and David Wilkins.

I would also ask that you keep written queries to a minimum for a while.

Articles for inclusion in OUM,are of course most welcome. The more the better,as this frees up my time to clear the backlog. It is nice to increase the membership and put new software etc. onto the market,but as Alan and Jon have also found out - it can take up your whole life if you are not careful.

When writing to OUM and requiring a written reply, please send a stamp. Also please date your letters as this saves me a bit of time doing it for you!

I don't like to make rules and I promise the phone ban is only temporary (whilst Liverpool are still in the F.A CUP and SLEEZE is still on Satellite T.V). I don't want to become unapproachable. Do you remember the old I.O.U.G where you could only ring between 6.40 and 7.30 p.m. or whatever?

==========

IJK REVERSE

Anyone who has bought REVERSE from IJK from Alan or myself on Sedoric Gameinit format may of experienced a slight problem - the program crashes. OOPS!
Although in most cases GAMEINIT allows one to play a game,whereas a Master disc will not without the !QUIT command, this title appears to be the exception to the rule. To get around this problem, just boot in a master SEDORIC disc and load the games disc with !REVERS

HI - SCORES

Just to prove that there is still some dexterity left in those old fingers of hers,ANN (the wife) set about beating young Louise's score at STYX as published in the last issue. And with great success - the new HI-SCORE is now 62,650.
COME ON gamesters,see if you can top that, nad don't forget to send in your other hi-scores.
To know what a respectable type of score is,we now publish some that were printed in the very first issue of 'THE'ORIC' mag. circa April 1984

GALAXIANS - 69,600
XENON I - 9,790
HOPPER - 2,480
ZORGON - 49,860
PAINTER - 40,200
HARRIER ATTACK - 18,933
MUSHROOM MANIA - 68,721

Come on David Utting, you are into MUSHROOM - what's your best?

DASHED

Coming soon from the pen of Jonathan Bristow , and destined for Public Domain is 'DASHED'. What is it ? It's a BOULDERDASH designer.

KRYSTAL WORLDS

On KRYSTAL 4 - Collect bow and arrow,then fire at target for message and ruby - hold mirror before facing MEDUSA. By chasm,rub lamp.

ZAP THINGS UP !!!

A couple of little routines:

```
CALL #FAC5:CALL #FAC4:PLAY0,0,0,0      - produces a shot with ricochets.
CALL #FACB:WAIT10:PLAY0,0,0,0  - a rifle shot
CALL #FAAA:WAIT500:EXPLODE  -  danger approaching!!
```

SOFTWARE CORNER

KRILLYS from Orpheus - Pilot your Krillys (an advanced form of battle-craft) through 5 sections of the defence system and destroy the alien base. The ship is equipped with laser cannons and bombs. Only 2 bombs and 4 laser bolts can be on the screen at the same time.

WARLORD - the game is set in the KAMAKURA period in Japan in th yaer 1201. You are the ruler of a small coastal village which supports itself by slave labour and upon the fruits of raids against other villages. Your force comprises troops from your village,Samurai and mercenaries. Your objective is to rule as long as possible.

TROUBLE IN STORE

from Orpheus - a fast action game with superb graphics - it takes place in a department store called Harridges,and you as manager,must on each floor,find the key to the till and open it. Over 30 screens to cover.

ORIC Enthusiasts (OUM 54)

INTRODUCTION

Right, now that the holidays are behind me, lets get down down to some serious article writing. This month you will find the continuation of the series on Geoff Phillips' book and how to access disc files from BASIC. I intend to provide 2 pages on each topic each month so that you can really get to grips with these subjects. I would think that the machine code programs coming up in Geoff's book will complement the fine articles by Peter Bragg. So stand by your assemblers/disassemblers.

WORDWORTH

I have decided to remove WORDWORTH from my shareware list of disc software. In future, this program will be marketed solely by Dave Dick, on cassette and disc. I have known for some time that copies of WORDWORTH, its manual (as files on disc) and an English version of the SEDORIC manual (again, as WORDWORTH files on disc) were being circulated freely around. I was hoping that this practice would stop by offering the program on my shareware scheme. Unfortunately, this appears not to be the case, therefore there is little point in my continuing to offer this program.

It is a sad fact of life that software is often copied in this way, and I don't really want to go over the same old story in this month's article. Running the shareware scheme, especially with a smallish group of users, does provide some means of monitoring for software piracy so I really do hope that this is the last time that I have to write on such matters. It is unfair to remove from those ORIC users, who have bought the program on cassette, the opportunity to upgrade to the disc version so from now on Dave will be distributing WORDWORTH.

BOOKS

A part of my price list that is not referred to often is the book list. Most of these books have titles involving the ORIC-1 which could put the potential ATMOS user off, so I thought that each month I could provide a little more information on a book. (N.B. The 6502 Reference Guide is now out of stock.)

This month I will start at the top of the list and cover the book by R A Penfold entitled "An Introduction to Programming the ORIC-1". Anyone who dabbles in the electronics world and frequents the Maplin catalogue will recognise the name of a prolific writer and a recognised scholar in the field of electronics and to some extent computers. This book was first published in 1983 and like a lot of books of that time, was brought out because of the poor manual that ORIC Computers Limited issued with the ORIC-1.

The book contains 92 pages with 10 chapters which deal with VARIABLES & CODES; INS & OUTS; ANIMATION & LOOPS; ATTRIBUTES, CHARACTERS AND TIME; USING THE SOUND GENERATOR; DECISIONS; STRUCTURED PROGRAMMING, DATA FILING IDEAS; INTERFACING and ODDS AT THE END.

Apart from the fact that the book does not cover those enhancements in the V1.1 ROM and it makes specific mention to some of the bugs in the V1.0 ROM (see the exerts from Geoff Phillip's book), it is equally applicable to the ATMOS. This is an unpretentious book designed to assist the ORIC user. Its chapters on STRUCTURED PROGRAMMING and INTERFACING are good introductions to these particular subjects. There a number of listings, mainly games, which serve to demonstrate the use of BASIC commands. When using these programs on the ATMOS, remember to add 1 to the 'x' position in the PLOT command so that the PAPER attributes are not overwritten unintentionally.

It lacks the reference section that appeared in the ATMOS manual but it was aimed at the user who had bought a computer for the first time. With this is mind, I would say that it tackles computing and programming in a helpful way; generally achieving its objective of assisting the new user understand the principles involved in programming the ORIC. At 75p (original price was £1.95), inclusive of postage and packaging, I think that this book is a worthwhile item to add to your ORIC collection, particularly if you have just entered the world of ORIC programming.

ORIC ATMOS and ORIC-1 GRAPHICS & MACHINE CODE TECHNIQUES

Chapter 2 - BASIC (continued)

2.16 Bugs in BASIC. Continuing with the known bugs in the ORIC-1 (V1.0) BASIC ROM.

13 The alternate character set is exactly one bit out of place! The purpose of the alternate character set, when not modified for a special use, is to provide a 'chunky' graphics capability. The format of such characters is identical to that used in the BBC's CEEFAX system, allowing a resolution of 80 chunks across by 84 chunks down. Each character cell contains six such chunks, which means that 64 graphic definitions are required to allow for all possibilities. The ORIC's character set has in fact been set up for this. Characters between 32 and 95 contain all variations between a totally blank cell and a filled cell. However, V1.0 the entire character set must first be divided by 2 (and therefore shifted to the right) before it can be used. This can be done either with a simple BASIC loop :

```
FOR I=#B900 TO #BAFF:POKE I,PEEK(I)/2:NEXT I
```

or by using a short machine code routine :

```
        LDY #00
LOOP    LSR B900,Y
        LSR BA00,Y
        DEY
        BNE LOOP
        RTS
```

14 When loading in a machine code program, be warned that the 'end of BASIC' pointer at #9C,D is altered to reflect the end address of the machine code. To overcome this you could either reset the value at #9C/D after the load or make it a rule to always load the machine code routines first.

15 In the instruction POKE N,#8, the hexadecimal sign upsets BASIC, and zero will be POKEd. Always use a decimal value or a variable instead. This fault is the reason why you will often see decimal numbers mixed with hexadecimal numbers in this book. The DOKE command does not suffer from this fault.

16 One interesting bug is that POINT will work in TEXT mode!

17 Although potentially useful, it is still a fault that makes the screen scroll down when the cursor is moved too high.

The known bugs in the ATMOS (V1.1) BASIC ROM are as follows :-

1 ELSE fails to work should the colon character occur in quotes after the ELSE. For example, IF A=1 THEN PRINT ELSE PRINT"HELLO:". (**N.B.** The essence of this fault is that any colon after ELSE is treated as a statement delimiter and the computer will try to execute the code after it. Multiple statements can be used after ELSE if the statement after THEN directs the program to another line. E.g. the following line of code will work. IF N=2 THEN GOTO 190 ELSE PRINT"NOT 2":PING:PRINT N

2 One very obscure problem arises when:

(a) the cursor has been turned off.
(b) a character is placed at the very spot where the cursor would have been.
(c) that character is 'inverse' - between 128 and 255.

When this happens, and providing interrupts are running, that character is forced back to 'normal' mode - losing the top bit of the character byte. One solution for this problem is to force the current cursor position to a place on the screen (or even off the screen!) where it can do no harm. This is done by poking locations #268 and #269 as described earlier.

3 One very minor bug is that going into HIRES when in Ctrl-S mode results in BASIC writing to the wrong part of the screen. Make sure that you have enabled the screen

before using the HIRES command, **if you use Ctrl-S in your programs.**

Chapter 3 - USING MACHINE CODE

3.1 Advantages of machine code BASIC, though easy to use, hard to misuse, and ideal for simple, has two serious drawbacks:

1 It is very slow to run.
2 It can often (but not always) use up a large amount of memory space.

One alternative language, FORTH, although faster than BASIC, is quite difficult to use. It is unlikely that you would ever see a program on the market which used FORTH, for the simple reason that the FORTH language would have to be sold as well.

Machine code, on the other hand, can be loaded and executed on all ORIC machines. Indeed, in many cases, a machine code program will be easier to convert to a different machine than its BASIC equivalent. The speed of a computer like the ORIC is not always appreciated. A simple machine code instruction takes two microseconds to complete, whereas any single BASIC command will take at least 2 milliseconds. If you intend using machine code you will quite definitely need two things, in addition to this book:

1 A book on the programming of the 6502.
2 An assembler/disassembler program. The one used in the preparation of this book was ORICMON from Tansoft Ltd. Without such a program, you will have to work out the machine code instructions by hand. An assembler allows you to enter just a three character mnemonic - such as LDA - and it works out the actual machine code values - e.g. LDA# is #A9.

A full discussion of machine code is beyond the scope of this book, but at the end of this chapter you will find some advice on the more difficult aspects of this subject. The book "6502 Software Design" by Leo Scanlon is particularly recommended as both a tutorial and a reference guide.

3.2 Storing machine code A programmer has no choice where a program written in BASIC resides - he or she is stuck with the area #501 upwards. (**N.B.** This is not absolutely correct as it is possible to locate BASIC programs elsewhere by the judicial manipulation of the pointers in page 2, but the advantage of doing this is very limited.) A machine code programmer has the whole of the machine available, at least in theory. If a machine code program will never return to BASIC, or use a sub-routine in the ROM, then that program can be located anywhere between #400 and #B4FF, and can use the area #00 to #2FF as a scratchpad area (not forgetting to allow a certain amount of room for the stack). **Note:** This has been written with no reference to the use of a disc drive system. When one is used, particularly SEDORIC, it must be recognised that locations in page 0 and the area #400 to #4FF will be used by the disc drive system.

The programs and sub-routines in this book are of the kind that always return to BASIC, so it is important not to upset BASIC too much. This means not overwriting certain RAM areas in pages 0 and 2, and allowing BASIC to create variables and strings. You can use HIMEM to limit BASIC's memory, and can thereafter use the remaining memory for your own needs. Chapter 5 explains which areas of page 0 and page 2 RAM are used by BASIC. If you are writing an add-on machine code program in order to manipulate a BASIC program, then you really want to put your program in a place which is unused. The most common of these are:

1 The stack area - from #110 upwards - can be used by short programs. Providing that you do not do many GOSUB, FOR or REPEAT commands, you will be able to use up to about #1C0. The stack area is never cleared by BASIC, except during normal use.
2 From #400 to #4FF, 256 bytes are available. Be warned, however, that the ORIC disc system makes use of this area.
3 The first 256 bytes of each character set are unused, so programs can be put at #B400 to #B4FF and #B800 to #B8FF or, in HIRES mode, at #9800 to #98FF and #9C00 to #9CFF. Although the Reset button on the ORIC causes the character set to be generated these areas are not affected.

Next month -- Continuing Chapter 3 and the completion of 3.2

DISC FILE HANDLING TECHNIQUES USING BASIC

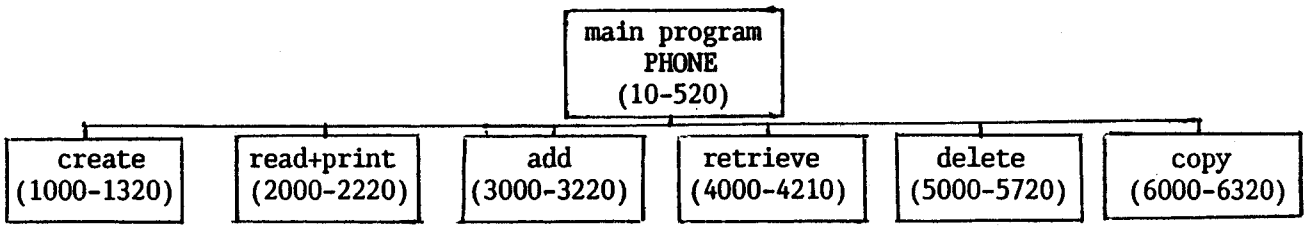
Last time we had looked at rudimentary access using sequential files, leading to a simple program to store a few phone numbers. Now I want to develop the idea of that type of file which is known as an UNSORTED SEQUENTIAL FILE.

UNSORTED SEQUENTIAL FILES

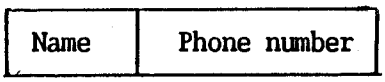
Developing the phone number program, I shall add a menu which allows you to :-

1 create a file
2 read and print a file
3 append new records to the end of the file
4 write a record
5 delete a record
6 copy a file

A good idea before starting the actual writing of a program involving more than 50 lines is to consider the program design in terms of its functionality and its data structure. The diagram below illustrates the functions of the PHONE program. The numbers in each box represent the line numbers of the main program and its sub-routines.



The data structures are very simple. Each record consists of two fields.



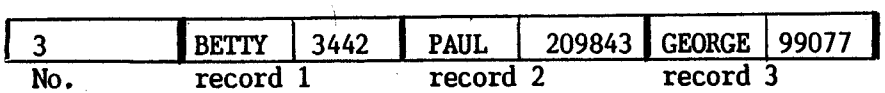
All records go to make up the data file which I shall call PFILE. Now there are several possible ways of organising the file. Let's look at three of these more closely.

1 The number of records is saved at the beginning of the file.
2 Unique marking at the end of the file.
3 Use of the file system function EOF (End Of File)

Storing the number of records. The figure below shows a sample file of three records. The number of records is saved at the beginning, and this has the advantage of letting you know exactly how many records are contained in the file. (This is similar to the way BASIC stores it string variables.) You can read the number and use a FOR..NEXT loop to read the records, as in the following example.

```
TAKE1,N
FOR I=1 TO N
: TAKE1,N$,P$:   REM read name & phone number
NEXT
```

The disadvantage with this method is that you have to update the number at the beginning of the file every time you add or delete a record.



Unique marking. This method avoids the disadvantage of method 1. In this case you can choose a special and unique record for the very last one, such as that below, which can be read using the accompanying lines of BASIC.

*	0

```
100 TAKE1,N$,P$
110 IF N$="*" THEN CLOSE1
      .
      . process data
      .
200 GOTO 100
```

Unfortunately, this method, too, has a serious drawback. If you want to append new records to this file (i.e. add them to the end), the last record is in the way. It must be removed and appended to the "new" file.

BETTY	3442	PAUL	209843	GEORGE	99077	*	0
record 1		record 2		record 3		last record	

Use of the file system function EOF (End Of File) Many BASIC systems contain the command EOF (end of file). The DOS marks the end of a file with an EOF label, which can be checked for by using the EOF function. The following lines illustrate the point.

MICROSOFT

```
100 IF EOF(1) THEN CLOSE
110 INPUT#1,N$,P$
      .
      . process data
      .
200 GOTO 100
```

This method avoids the disadvantage of the first two. There is no need to keep count of the records or to use a special end marker. Appending new records presents no problem; just access the end of the file and append your record. (I will show how later).

Unfortunately RANDOS doesn't have an EOF function so you have to simulate it using the DOS error bytes at locations #4FE and #4FF. So line 100 appears as :

RANDOS

```
100 IF (PEEK(#4FF)) AND (PEEK(#4FE) =29) THEN CLOSE
```

SEDORIC DOS does have an end of file function but it is not named EOF. Instead it uses the &() function extension command supplied by ORIC BASIC, in the form &(n), where n is the logical file number. However, it is quite easy to create a construct, if you so wish, that appears to look like the EOF by using a variable named EOF.
So it appears as : EOF = -&(1). (The SEDORIC manual tells you why -&(1) is used.) So line 100 is :

SEDORIC DOS

```
100 EOF=-&(1):IF EOF THEN CLOSE
```

When creating your own file, you must decide on one of these methods. Your decision depends the way you want to process your records. If, for instance, you don't want to append new records to the file, the second method will do nicely. I will use the third method in the remaining examples in this series.

BETTY	3442	PAUL	209843	GEORGE	99077	EOF
record 1		record 2		record 3		end of file

The program PHONE, which we will develop, is of modular construction, so first of all the main program will be composed. Then we will introduce and test each individual sub-routine one by one. Don't think of the program as a finished product, capable of all kinds of things, but rather as a basic framework which demonstrates principles of file processing using Unsorted Sequential Files.

Next month - We make a start on the program menu.

L A T E N E W S

Club Europe Oric held their A.G.M on Saturday Jan. 25th . A good meet was had by all.
C.E.O members will know that a raffle was planned. The numbers were drawn by using Laurent Chiaccerini's TELESTRAT. British members bought 43% of the tickets and won 45% of the prizes.
O.U.M donated a prize of software which was won by Jean Marie Hoy of Metz in France.
A full list of winners will be sent out to C.E.O members A.S.A.P

==========

NEXT BRITISH ORIC MEET

Unless scores of you write in to tell me that the date is inconvenient, then the next Aylesbury Oric meet will be on Saturday July 18th.
Another option is Saturday May 20th. COME ON PEOPLE - let me know your preference, but QUICKLY.

==========

THE LAST FRONT COVER

Steve Hopps asked where Jon got the picture for the January cover of O.U.M.
Well Steve, it is a piece of Clipart from WORDPERFECT.

==========

ACCORDION

The following 6 liner puts your ORIC into accordion mode.

```
20 PLAY 3,0,0,0:FORI=0TO12
30 READ N,W
40 SOUND 1,N,10:SOUND2,N*1.01,8
50 WAIT W*7:NEXT:PLAY0,0,0,0
60 DATA189,8,178,4,159,8,142,4,159,8,178,4,189,12,238,4,212,4,238,4
70 DATA 284,8,238,4,318,16
```

==========

JUST FOR PETER

A little program follows especially for the intrepid Peter Thornburn who is off to Paris for an Oric Meet in June.
In case you get lost Peter;here is a map of France.

```
10 HIRES:CURSET115,5,1:FORI=1TO54:READX,Y:DRAWX,Y,1:NEXT
20 RETURN
30 DATA5,8,21,15,5,-6,4,8,17,2,12,4,17,4,-7,31,-16,18,-3,13,9,-4,6,8,3,29
40 DATA8,5,2,8,-19,15,-11,-3,-4,-4,-5,4,-9,-3,-14,10,2,11
50DATA-17,5,-15,-8,-17,2,-22,-12,8,-43,8,9,-8,-16,-2,-9,-8,-4,-5,-14,5,2
60DATA-10,-8,-11,-7,-17,-2,-3,-5,5,-2,-4,-2,4,-2,-5,-2,5,-5,17,-3
70DATA8,4,15,-3,-4,-13,-2,-10,9,0,0,6,22,-2,-3,-5,15,-8,0,-16,10,-2
```

LOOKING THROUGH THE LISTING, which I have not run, it appears that the second to last data number on line 60 may in fact be -17 and not 17. You'll have to check it out!
The program is for the ORIC 1 and ATMOS.

==========

YES INDEEDY FOLKS,

23 pages in this riproaring issue and something for everyone. Well almost! You may of read of a story in the national press of a couple of guys who were arrested for passing on obscene software. With this in mind,we will not be publishing details of 'BUMSIE' and 'CLASSEX' which are on the ORIC scene.

Instead a nice piece of humour from the Bulletin Board of an English Polytechnic follows.

Micro was a real-time operator and dedicated multi-user. His broad-band protocol made it easy for him to interface with numerous input/output devices concurrently,even if it meant time-sharing.

One morning he arrived home just as the sun was crashing,and had parked his Motorola 68000 in the main drive (he had missed the 5100 bus that morning),when he noticed an elegant piece of liveware admiring the daisy wheels in his garden. He thought to himself,"she looks user friendly - I'll see if she wants an update tonight".

Mini was her name,and she was delightfully engineered with eyes like cobol, and a prime mainframe architecture that set micro's peripherals networking all over the place.

He browsed over to her casually,admiring the power of her twin 32-bit floating point processors and enquired "How are you doing,Honeywell?"

"Yes I am well",she responded,batting her optical fibres engagingly and smoothing her console over her curvilinear functions.

Micro settled for a straight line approximation. "I'm going to stand-alone tonight",he said,"How about computing a vector to my base address? I'll output a byte to eat,and maybe we could get an offset later on".

Mini ran apriority process for 2.67 milliseconds then transmitted 8K,"I've been dumped myself recently,and a new page is just what I need to refresh my disks. I'll park my machine cycle in your backyard and meet you inside". She walked off,leaving Micro admiring her solenoids and thinking,"What a global variable,I wonder if she would like my firmware.....

THIS IS WHERE OUR RESIDENT CENSOR STEPS IN AND THEREFORE YOU WILL HAVE TO GUESS THE OUTCOME!!!

==========

DELETE

Bored with having to delete one line at a time in a progam. Well here is a little routine which will delete a block of program in multiples of 10.

```
63980 INPUT"DELETE DE";D:INPUT "A";F
63982 A=0:DOKE0,1281
63984 REPEAT:A=DEEK(A):UNTIL DEEK (A+2)=D
63986 E=DEEK(A+2):IFE>F THEN END
63988 PRINT"TAPER:"E"PUIS RETURN"
63990 B=DEEK(A):IFDEEK(B+2)>F THEN END
63992 REPEAT:C=DEEK(B):POKEB-1,32
63994 DOKEB,8250:DOKEB+2,8250
63996 B=C:UNTIL DEEK(C+2)>F
63998 DOKE A,C
```

You will have to merge it into your program and type RUN 63980.
Just a little bit of French for you to cope with . It's all good practice.
Why not BUY French Linkword direct from our mail order list???

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WELL THAT'S YER LOT, except to say that with this issue you will find a CEO price list and 'HOPPSY' holiday offer. Steve assures me that the villas are actually built! OUM members get 10% reductions. How about an OUM meeting in Spain!!

NEXT ISSUE - more news,more listings, an adventure is solved, more Ramrom, a few reviews and whatever else can be crammed in.

Well I am quite pleased with this issue,and so I think I'll go and have a pint.