ORIC USER MONTHLY

with Oric Enthusiasts

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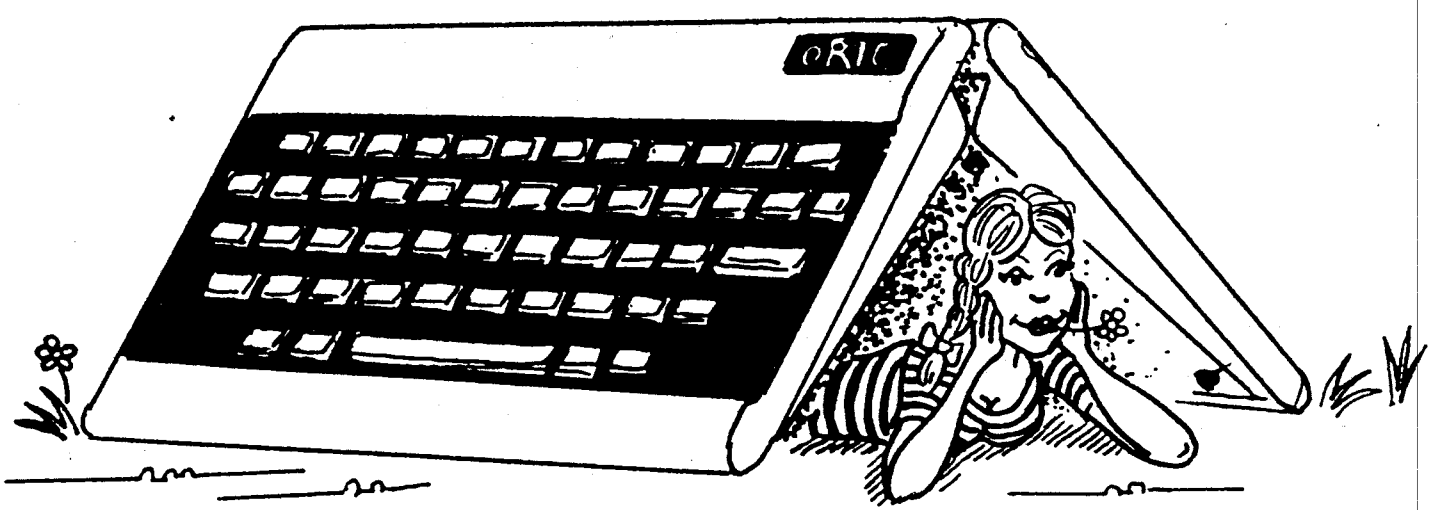

Edited and Distributed by Dave Dick, 65 Barnard Crescent, Aylesbury, Bucks HP21 9PW

HELLO AGAIN, and welcome to issue 49.

Next month we reach our half century. It is a pity that Graeme Hick cannot do the same for England. August was a great month for topping up the suntan,but too hot for sitting at the Oric keyboard. After yet a few more games of MAXIT; I finally got my act together and I hope you are pleased with the latest 24 page edition. If you are not,then just drop me a line. Like Princ Charles; I am all ears!! The only venue offered so far for an autumn Oric meet is Newport in Gwent, which is about as central as Newport on the Isle of Wight. Do you want Newport or have you somewhere else ?

INDEX

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ALL ARTICLES FOR THE OCTOBER ISSUE SHOULD REACH ME BY SEPTEMBER 24 th.

P.S

JUST HAD A CALL FROM TIM PHOENIX OF CLEVELAND. HE IS AFTER A PRINTER TO GO WITH HIS ATMOS. IF YOU HAVE ONE TO SELL,PLEASE CONTACT TIM

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COMPETITION

NO WINNERS TO THE LAST COMPETITION. ANSWER WAS ANTHONY QUINN. PERHAPS THE QUESTION WAS TOO HARD. WE WILL SET ANOTHER POSER SOON.

HATS AND T-SHIRTS

TO GET CHEAPER PRICES ON ORIC T-SHIRTS AND BASEBALL HATS;I NEED TO ORDER AT LEAST 12. IF YOU WANT TO PURCHASE JUST DROP ME A LINE AND IF ENOUGH RESPOND, I WILL INVOICE YOU WITH YOUR GOODS.

T - SHIRTS WILL BE 6.50 + postage
HATS WILL BE 5.50 + postage

QUOTES OF THE MONTH

NO.1 - I recently asked Jean Boileau if a 'C' compiler was available for the TELESTRAT. Apparently the boss at Oric France had been asked the same question and he replied: "NO PROBLEM. YOU WRITE IT AND WE WILL MARKET IT"

NO.2 - From a reader who shall remain anonymous (in case Alistair Way doesn't see the funny side of it). - "PLEASE SEND SOMETHING COMICAL WITH MY NEXT SOFTWARE ORDER,LIKE 'GRAND PRIX' - GREAT!"

O R I C U S E R M O N T H L Y

TELL YOUR FRIENDS ABOUT IT

I N T R O D U C E A NEW MEMBER AND WIN A P R I Z E ! ! !

IJK SOFTWARE

For many months now,we have been unable to obtain many of the IJK software titles. This has now been remedied. Many of their classic titles,including XENON III will be available from the middle of September.
WATCH THIS SPACE for further details.

NEW PD TITLES

I have recently passed some more titles onto Jon for inclusion in the Public Domain library.
Included are a menu driven database from Judy Simms for storing the like of NAMES,BIRTHDAYS,CASSETTES and COMPACT DISCS etc.
From Brian Kidd are a Magic Matrix,an Encoder/Decoder and updates to 2 of his previous program. HSC version 2.1 has a bug removed and slightly improved graphics, whilst CAD version V1.25 has the additional facility to Pattern to alter section so that the user can see the new value. The program has also been renumbered.

WD 40 - the saga continues

After the manufacturers recommended via New Computer Express that WD40 would lengthen the life of printer ribbons;a recent write-up in Micro Mart suggests that in fact the product can damage your printer head. YOU have been warned. Whilst on the subject of MICRO MART, the publication is to weekly from mid-September.

NEW RELEASE .....NEW RELEASE.....NEW RELEASE.....

From the pen of Jonathan Bristow, CHARED and OBED are now available for your ORIC. With the character editor and object editor you get SQWEEK, which is a game that shows what can be done with the editors. Both editors come with comprehensive instructions. Prices are as follows:

CASSETTE - 5.50
3" disc - 7.00
3.5" " - 6.50
5.25" " - 6.00

DIXONS

I was very surprised recently when I went into DIXONS and not only recieved courtesy,but also what I was looking for. After a change of supplier they now sell AMSOFT CF2 3" discs for 19.99 per box of ten. They do not sell single discs.

"ONE STOP ELECTRONIC SHOP"

You may remember in a previous issue that the above company were selling colour monitors. Recently the intrepid John Mckay payed them a visit. They have access to all sorts of bankrupt stock (not nicked was it JOHN). The staff are really helpful. Jon picked up an NEC printer for 60 pounds and they supplied him with an ORIC printer lead for 9.95.
The shop is at 106 TRINITY ST. GAINSBOROUGH,LINCS. TEL:0427 614999

ZOOLOMPYICS

The super animal sports simulation from NO MANS LAND was best remembered for not loading on cassette. It will be shortly be available on disc.

DAVE,
I am looking for help with the graphic adventure "L'Aigle d'Or" from LORICIELS. I think that i have nearly finished it and therefore could also offer help to others.

- Tony Parkes
65 Lloyd Crescent
COVENTRY CV2 5NY

TONY,
In issue 6 of 'YOUR ORIC',dated April 1987,the Adventure Spot consisted of a 3 page look at this great French piece of software. The article was written by ARCHIMEDES (Jon Haworth) and included:a translation into English of objects,messages and verbs. Also included was a map showing all but 3 of the exits. Jon may well of found these by now or perhaps someone else has. For a photocopy of the map,just send 2 x 22p stamps.

- The EDITOR

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DAVE,
do you know of anyone who could make a cable to connect my ATMOS to a COMMODORE 1084 Monitor?

- Allan Moore
3 Lundwood Close
Owlthorpe
Sheffield S19 6SP

ALLAN,
I always thought a COMMODORE was someone naval - perhaps it is as most Commodore products have SUNK without trace.
As a new subscriber I hope you like the wit. If you don't,then I won't answer your query. It's a hard life!!
I am sending you the the addresses of 4 users (David Wilkin,Rob Kimberley< Peter Bragg & Chris Hearn) who may well have the answer. You may even find 'ONE STOP ELECTRONICS' of help - see article in this issue.

- The EDITOR

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DAVE,
I have recently purchased a NEC printer from 'ONE STOP ELECTRONICS'. Unfortunately it had no manual. Is there anyone out there who could help me out. It really would be appreciated.

- John McKay
21 Holme Drive
Sudbrooke, Lincoln LN2 2QL

JOHN,
I am certain that we have at least one user who has an NEC printer, but for some reason it does not appear on my contact list. If anyone can help John;please write to him direct.

- The EDITOR

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DAVE,
Can anyone put me on the track of getting reasonably simulated speech on the ORIC that could be used for Language teaching? - Frank Bolton, 35 Market Place,Mountsorrel,Leics LE12 7BA - TEL:0533 376180
FRANK, I have a couple of ideas and will write - ANYONE ELSE OUT THERE!!!

BITS AND BOBS

65SC802

In the June issue of O.U.M, Hans Krauss from Vienna asked if anyone had used the 65SC802 instead of the good old 6502.
I have recently recieved a letter from Bernhard Grone of Trippstadt in Germany.
Bernhard's full address is in this issue's Contact List. His system comprises of the following: ORIC 1/ ATMOS, BMC BX-80 and MCP40 printers,MSE controller,3" 40T S/S, 3.5" 80T S/S and 5.25" 40T D/S drives. Add-ons include:serial,parrallel and joystick interfaces;a mouse,serial keyboard, 32k SRAM and Vector-Graphics card. Bernhard lists his interests as : controlling hardware,Forth and games.

Bernhard has the following to say:
it is possible to use the 65SC802 instead of the 6502 as I myself am using it in my machine.Asit runs in emulation mode you see hardly any difference,except one(it is a bit tricky,I admit). Even in emulation modes the 65802 has no Break-Flg in Status register. In case of a BREAK (code #00) the byte point on stack as Status byte has the Breakbit set,so normally there would be no difference to 6502. Unfortunately the SEDORIC disc operating system Break handle routine works differently so you have to modify it. Under the Oricdos operating systemthere will be no problems.
The other side certainly is the software. You can double program execution speed at 1MHz using 16 Bit Accumulator and Block-move -operations,but you have to write the programs yourself. Other obstacles are the vectors.There are 2 areas: #FFF0 - #FFFF for emulation mode and #FFE0 - #FFEF in native mode (IRQ,NMI,RESET,BREAK etc.). You have to change ROM or switch Rol (or use as I do,a CMOS SR arm in one ROM socket;buffered with a battery it's your Soft-ROM).
I met all sorts of problems,but managed to sort them out. Now I am working on a big project - FORTH on 65802. Using simple machine instructions (some primitives use only 3 opcodes) it will be very fast. It will take time, but I will inform you when I have it finished.
- BERNHARD

PICTURE SNAP

Miss Judy Simms is on the look out for the kiddies game "Picture Snap". Can anyone help. Judy's address is in a previous issue of the contact list.

FOR SALE

ORIC 1 - 48k c/w PSU leads and manual plus about 10 games.
Price is £25 or near offer.
Interested parties should contact Paul Baker at 14 Carnation Close, Weston Coyney,STOKE - ON - TRENT, Staffs. ST3 6QG.
Telephone number is 0782 320718

CLUB EUROPE ORIC

This we thought was the year of change for the CEO. True,we are getting a magazine on a regular basis,even if it is not containing the material that many of our British readers want to see. The content of magazine should be at the mercy of the readers. Therefore if as you have hinted to me that you are not into Robotics and like the majority don't own a SEIKOSHA gp500A printer; now is the time to voice your opinions to the editor of the CEOMAG.
Of course, you could always send in your own articles,but if you did that; what we use in OUM.
This year to date we have recieved to date just 1 disc/cassette from the CEO.
On joining we were told that we would get 4 per year. Perhaps we will get 3 in the remaining 4 months of 1991 - I doubt it!
Come on CEO, pull your finger out.
Jon Haworth has worked hard in advertising your club,whilst OUM sends out your membership form to each new contact we make. Until you get your act together, OUM can no longer publicise a service which is far from satisfactory.

IS THIS A RECORD ?

Frank Bolton informs me that he can beat R+Knight's record for Oric's owned as per one of Allan Whitaker's recent articles. Well,even I can beat that Frank. Trouble is that only a couple work.
Frank comes up with this grand total:
5 - ORIC 1
7 - ATMOS
plus 6 pieces,which he will bring back from Spain later in the year.
Frank aims to have 15 Atmos's in working order by next summer.

RAMBLING IN THE ROM - 30

For the last few months we've been working our way into the Oric ROMs, and I know there are a good few new readers who do not have the original introduction to the disassembly, and in particular the conventions followed in the listings. After our summer break, therefore, I've decided to reintroduce the listings - those who know it all anyway, please forgive me and pass on.

ORIC ROM DISASSEMBLY - V1.0 & V1.1

Conventions

The listings follow certain conventions. The start of a routine is marked by a centre title in capital letters. Logical splits within a routine are marked by a non-centred title in lower case. A title can include an explanation in brackets, e.g. (COMMAND) indicates a Basic command is here executed, (FUNCTION) the execution of a function, and (OPERATOR) that of an operator.

Commentaries on a routine use some regular words:

- Entry: gives the particular parameters that must be correctly set up to achieve the desired result
- Exit: gives the parameters returned by the routine, with useful details such as unchanged parameters, etc.
- Programming: remarks on the use of code and its optimisation
- Principal: explains the general principal of the routine
- Bug: highlights programming errors which mean the routine does not always behave as expected. There are more than you may think!

The listing gives the two ROMs in parallel, it often being the case that they are the same, but in different positions in memory. Where the ROMs differ, each is listed separately.

The first address is always V1.0, the second that of V1.1.

Standard mnemonics are used, but particular address modes are represented as follows to save space:

```
LSR A          Addressing the Accumulator
LDA #12        Immediate: load A with the hex code #12
LDA #'2'       Immediate: load A with ASCII code for 2 (#32)
LDA #&END      Immediate: load A with keyword token (#80)
STX 0230       Absolute (argument in hexadecimal)
ADC 91         Page 0 (argument in hexadecimal)
TXA            Implicit
LDA (12,X)     Indirect pre-indexed (not used in the ROM)
LDA (E9),Y     Post-indexed indirect (argument in hex)
STA 40,X       Page 0 indexed
LDY 0235,X     Absolute indexed
BNE C570       Relative jump
JMP $C000      Absolute jump
JMP (0091)     Indirect jump
```

A special mnemonic is used: BYT, which indicates the entry of bytes, of an address (stored high/low of course), or of character strings.

Abbreviations

All the 6502 registers and flags are represented by their capital letter:

A = Accumulator	C = Carry flag
X = X Index	N = Sign flag
Y = Y Index	V = Overflow flag
P = Status Register	I = IRQ authorisation flag
S = Stack Pointer	B = BRK flag
Z = Zero flag	D = Decimal flag

A byte is represented in the form: b7 b6 b5 b4 b3 b2 b1 b0. Thus b3 is a reference to bit 3 of the byte.

The floating accumulators are represented by ACC1, ACC2, ACC3, ACC4, ACC5:

ACC1 : #D0-#D5 (main accumulator)
ACC2 : #D8-#DD ACC4 : #C6-#CA
ACC3 : #95-#98 ACC5 : #CB-#CF

After rounding, the accumulators are referred to as AACC1, AACC2, etc.
Values held by the registers are listed low byte/high byte in the conventional way:
YA --> ACC1 means place the number of which the low byte is in Y and the high byte in A in the main accumulator.

When memory pointers are used, the high and low bytes are separated by a dash, e.g. #9A-#9B

As usual, brackets indicate indirect addressing: "the contents of the address pointed to by"; thus, if A gives #04 and Y gives #C0, then AY signifies #C004, YA signifies #04C0, and (AY) signifies the contents of memory at #C004.

Since there are no standard routine labels, it would be wrong to invent some. Therefore when a routine or pointer is referred to in the text, their addresses are used; where the addresses are different in each ROM, the form #F276/#F30A is used. There is one exception: the start of BASIC pointer is called TXTPTR in the commentary but not in the listing. TXTPTR = #00E9.

Logically the ROM starts with the interpreter, followed by the essential commands, then by the calculation routines. This 8k forms the heart of Microsoft Basic, to which are added the sound and graphics routines.

So, on with the core of the interpreter.....

Jon Haworth

Insertion of line

Principal: Pass the correct parameters to the transfer routine

Remark:

The line is transferred from #31, i.e. the low byte of the link in #31 and the high byte of the link in #32 (which must not be null at risk of eliminating the end of the program).

```
C534  JSR $ C733     C524  JSR $C708     Do a CLEAR
C537  JSR $ C56F     C527  JSR $C55F     and restore links
C53A  LDA 35         C52A  LDA 35
C53C  BEQ C4C7       C52C  BEQ C4B7      if line empty, finish
C53E  CLC            C52E  CLC
C53F  LDA 9C         C52F  LDA 9C        Take end of BASIC
C541  STA C9         C531  STA C9        as top of zone to move
C543  ADC 26         C533  ADC 26        plus length of line
C545  STA C7         C535  STA C7        as target address
C547  LDY 9D         C537  LDY 9D        + same for high bytes
C549  STY CA         C539  STY CA
C54B  BCC C54E       C53B  BCC C53E
C54D  INY            C53D  INY
C54E  STY C8         C53E  STY C8
C550  JSR $C3F8      C540  JSR $C3F4     Move the block
C553  LDA A0         C543  LDA A0        recover target address
C555  LDY A1         C545  LDY A1        (saved by routine
C557  STA 9C         C547  STA 9C                  #C3F8/C3F4)
C559  STY 9D         C549  STY 9D        + adjust end of BASIC ptr
C55B  LDY 26         C54B  LDY 26        + place line in position
C55D  DEY            C54D  DEY           incl. no. (#33-4) + link
C55E  LDA 0031,Y     C54E  LDA 0031,Y    not nul (#32 is never nul)
C561  STA (CE),Y     C551  STA (CE),Y
C563  DEY            C553  DEY           Move until finished
C564  BPL C55E       C554  BPL C54E      happily the buffer uses
C566  JSR $C733      C556  JSR $C708     less than 128 bytes! CLEAR
C569  JSR $C56F      C559  JSR $C55F     restore links
C56C  JMP $C4C7      C55C  JMP $C4B7     and restart command entry
```

RESTORE LINE LINKS

Entry: nothing special, #9A-B must point to the start of Basic

Exit: the link is restored, #91-2 points to the end of BASIC-2.

```
C56F  LDA 9A         C55F  LDA 9A
C571  LDY 9B         C561  LDY 9B        Take start of BASIC
C573  STA 91         C563  STA 91        as work pointer
C575  STY 92         C565  STY 92
C577  CLC            C567  CLC
C578  LDY #01        C568  LDY #01
C57A  LDA (91),Y     C56A  LDA (91),Y    Take high byte of link
C57C  BEQ C59B       C56C  BEQ C58B      if nul, end of program
C57E  LDY #04        C56E  LDY #04       index 1st char. of line
C580  INY            C570  INY           step along the line
C581  LDA (91),Y     C571  LDA (91),Y
C583  BNE C580       C573  BNE C570      + continue to end of line
```

```
C585   INY          C575   INY          Pointer after 0 of next
C586   TYA          C576   TYA          line + calc. address of
C587   ADC 91       C577   ADC 91       next line
C589   TAX          C579   TAX          low byte in X
C58A   LDY #00      C57A   LDY #00
C58C   STA (91),Y   C57C   STA (91),Y   + place as current l/link
C58E   LDA 92       C57E   LDA 92       Now calculate high byte
C590   ADC #00      C580   ADC #00
C592   INY          C582   INY
C593   STA (91),Y   C583   STA (91),Y   and save as link
C595   STX 91       C585   STX 91       + now that must be the
C597   STA 92       C597   STA 92       new current line
C599   BCC C578     C589   BCC C568     unconditional: restart
C59B   RTS          C58B   RTS
```

TAKE COMMAND INTO KEYBOARD BUFFER

Entry: entry point is at #C5A2/#C592

Exit: the command entered is in the buffer, ending with a 0

Remark: the only routine to treat CTRL A

Principle:

X counts the characters entered.
CTRL A is treated in an original way, so that the same conditions as if the character itself was entered are found. It is a general principle which very often allows a lot of space to be gained.

```
C59C   DEX          C58C   DEX          DEL: decrement pointer
C59D   BPL C5A4     C58D   BPL C594     + cont if buffer not empty
C59F   JSR $CB9F    C58F   JSR $CBF0    When is, go to the line
```

Take a command : entry point

```
C5A2   LDX #00      C592   LDX #00      Initialise pointer
C5A4   JSR $C5F8    C594   JSR $C5E8    + take charac. at keyboard
C5A7   CMP #01      C597   CMP #01      Test for Ctrl A
C5A9   BNE C5B8     C599   BNE C5A8     no, jump
C5AB   LDY 0269     C59B   LDY 0269     Ctrl A: take cursor col.
C5AE   LDA (12),Y   C59E   LDA (12),Y   + charac. under cursor
C5B0   AND #7F      C5A0   AND #7F      cutout inverse video flash
C5B2   CMP #20      C5A2   CMP #20      is it a video attribute?
C5B4   BCS C5B8     C5A4   C5A8
C5B6   LDA #09      C5A6   LDA #09      yes, just ignore
C5B8   PHA          C5A8   PHA          Save the character keyed
C5B9   JSR $CC12    C5A9   JSR $CCD9    and display it
C5BC   PLA          C5AC   PLA          Recover it
C5BD   CMP #7F      C5AD   CMP #7F      is it DEL?
C5BF   BEQ C59C     C5AF   BEQ C58C     yes, do it
C5C1   CMP #0D      C5B1   CMP #0D      is it RETURN?
C5C3   BEQ C5F5     C5B3   BEQ C5E5     yes, exit
C5C5   CMP #03      C5B5   CMP #03      is it Ctrl C?
C5C7   BEQ C5F1     C5B7   BEQ C5E1     yes, abort and exit
C5C9   CMP #18      C5B9   CMP #18      is it Ctrl X?
```

Machine Code for the Oric Atmos (Part 7)

Peter N. Bragg

The Story so far

We have looked at the basic requirements for machine code programming on the Oric including the three essential registers, Accumulator, Program Counter and Status Register. We also used a small instruction table published in Part 5, to produce a short screen filling program.

More on the Screen Fill program

The aim of that program was to show how small sets of instructions can be used to build up to much larger operations. For example the program just put crosses on the screen. However it does not take a great stretch of imagination to realise that only slight changes are needed to alter the program so that it would fetch a copy of all the items on the screen, instead. This could form the basis of a screen dump program.

Hopefully the program also illustrated the reasoning behind the use of hex code rather than decimal values. It was not necessary to do any calculations or conversions, we only needed the start and end addresses, the Oric did the calculating for us. Using hex only, cuts out the need for lots of different values pre-fixed with various $, & and # signs, particularly the last one which can be confused with the widely recognised "Immediate" symbol.

Conversion

Inevitably there are times when we need to convert hex into decimal or binary etc, or back again. These conversions can be made on the computer, using PRINT #value, PRINT HEX$(value) etc, if not listed in the manual already. If I need to convert a value, I use a table on a crib card.

A bit of Cheating

This brings me to Crib Cards. I have used these right from the time I started computing and they are one of the most useful programming aids that I can think of. I have three cards, which were made up using the wordprocessor on the Oric. The cards are small enough to tuck neatly away inside a notebook.

It is amazing how much information can be printed on them using a wordprocessor and an Oric MCP 40 (or Tandy) Printer. The cards I use are 5" x 4" with a printout on both sides and they fit neatly into a transparent film sleeve. Of course any size card and any transparent plastic bag would be OK.

Each 5" x 4" card can hold at least 100 lines of 80 columms of print, using Size "0" print. This is more than enough for simplified versions of conversion tables, essential computer systems information, plus two complete Instruction Sets. However, the really useful thing about them is that information can be tailored precisely to suit personal requirements and it is easy and quick to update the cards as more experience is gained. So even when I am far away from any computer, I can still write programs using little more than a notebook and pencil, as all the really essential information is there on the cards.

Quick Peek & Poke

One requirement for machine code programming is a simple means to read and write data and instructions in memory. On the next page, you will find an updated version of the HexLoader program that was originally published in Part 2 of the series. If you already have the earlier version, you can update it simply by adding lines 41 and 42, plus all of lines 300 to 390. If you have an assembler and/or dis-assembler and prefer to use them, thats OK. Hexloader is intended for those people who have no easy access to Oric's memory

HexLoader II

---------- One of the instructions we looked at and used was the Branch instruction in its various forms. This can produce a relative jump, which can be very useful. However the jump needs to be set correctly, unexpected arrivals may start digital aggro !! It is fairly simple to set a relative jump by just counting, however it is much better to get Oric to do it for you. This is the reason for the updated version of HexLoader, presented here.

Enter the program as listed and save it. The value of "M" in line 10 sets the first address, which should be suitable for both 16K and 48K Orics. However you can change the value, if you wish to start at another address. If you try to access memory that the Oric does not have, the program will drop out. In this case, just restart with RUN again.

The control keys are the same as before with three additions. When you run the program, you will find that the first thing that it displays is the memory location at address #1000 and its contents. The SPACE BAR will move you on to the next address at #1001 and will allow you to step through the memory, showing the contents of each address in succession. The RETURN Key will return you to the previous address in the same way, counting down, #1001, #1000, #9FF etc. This way you can scan backwards or forwards through the Oric's memory contents. If this is too slow and you want to go to another part of the Oric's memory, far more quickly, press Key H to go higher, or Key L to go lower, in jumps of 100 hex bytes at a time.

Key R will show the Relative Jump Destination of any value in memory and can be used to check any Branch instruction operand setting. Adjustments to the setting can be made using the "Comma" and "Full Stop" Keys, or unshifted "<" and">". The two adjustment keys, if held down, will eventually rotate through the entire range of settings for that specific relative jump. The SPACE BAR will take you back to the read/write facility again. Apart from the seven control keys, there is one other, which is Key Q, to quit the program

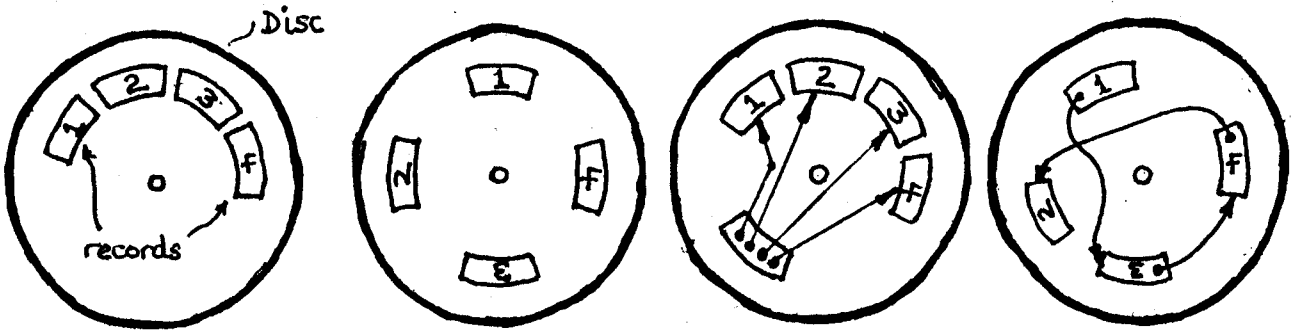
That deals with Relativity.....next time, how to produce instant Black Holes !!

BASIC LISTING

```
10 A=0:B=0:C=0:M=#1000:':Program to:
30 GOSUB 410:'          :Read/Write:
40 GET B$:B=ASC(B$):'   : HexCode  :
41 IF B=82 THEN GOTO 310
42 IF R=82 THEN GOTO 315
45 IF B=81 THEN END
50 IF B=13 THEN A=A-1:GOTO 30
55 IF B=32 THEN A=A+1:GOTO 30
60 IF B=72 THEN M=M+256:GOTO 30
70 IF B=76 THEN M=M-256:GOTO 30
75 IF B<48 THEN GOTO 40
80 IF B<58 THEN B=(B-48)*16:GOTO 190
90 IF B<65 THEN GOTO 40
95 IF B<71 THEN B=(B-55)*16:GOTO 190
110 GOTO 40
190 GET C$:C=ASC(C$)
200 IF C<48 THEN GOTO 40
210 IF C<58 THEN GOTO 260
220 IF C<65 THEN GOTO 40
230 IF C>70 THEN GOTO 40
240 C=C-55
250 GOTO270
260 C=C-48
270 LET D=C+B:POKE(M+A),D
290 PRINT CHR$(11);:GOSUB 410
295 A=A+1:GOTO 30
300 '----Show-Branch-Destination---'
310 R=B:GOTO 340
315 IF B=44 THEN E=E-1:GOTO 340
320 IF B=46 THEN E=E+1:GOTO 340
325 IF B=81 THEN END
330 IF B=32 THEN R=0:GOTO 55
335 GOTO 40
340 IF E>255 THEN E=0
345 IF E<0 THEN E=255
350 POKE(M+A),E
355 IF E>127 THEN GOTO 365
360 K=M+A+E+1:GOTO 370
365 E=255-E:K=M+A-E
370 PRINT CHR$(11);:GOSUB 410;
375 PRINT TAB(11);CHR$(11);
380 PRINT"<--Relative Jump to ";
385 PRINT HEX$(K);CHR$(11)
390 GOTO 30
400 '----Print Addr & Contents-----'
410 PRINT HEX$(M+A);":";
420 E=PEEK(M+A):IF E<16 THEN GOTO440
430 PRINT HEX$(E):RETURN
440 PRINT" ";HEX$(E);
450 PRINT CHR$(8);CHR$(8);CHR$(8);
460 PRINT"#0":RETURN:'---Finish----'
```

ØRIC Enthusiasts

Last month I had finished by identifying the storage forms as being Sequential, Scattered, Index Sequential and Linked. These are illustrated in the diagrams below.



SEQUENTIAL RANDOM INDEX SEQUENTIAL LINKED

Which storage form you use depends upon the purpose of the file and how adventurous you feel when programming. Hopefully, the examples given in this series will provide you with enough knowledge so that you can select the best storage method to suit you and your data.

DIFFERENCES BETWEEN BASICs, DOSs, PROGRAMS & DATA

I have touched on this before but just to conclude, by giving examples, I will cover the major differences that ORIC users may meet when programming their disc systems.

Although BASIC was conceived as a machine-independent language it has not stood the test of time as vary computer suppliers have added their versions (or dialects as they are known). This soon becomes apparent when programming on the ORIC with different Disc Operating Systems or programming another computer such as the IBM PC. I will be dealing with RANDOS, SEDORIC DOS and GW-BASIC in my examples.

I have already made the distinction between programs and data but during the course of this series you will have to save, load, modify and delete your test programs so I will now introduce the various commands that enable you to do this. The equivalent commands to save or load a program, obtain a directory of disc files or delete a program file are as follows (In each case the command for LOADing a file follow the same syntax as for SAVE) :-

MICROSOFT SAVE"TEST" will save the program with the extension .BAS
SAVE"B:TEST" to save to the second floppy drive.
FILES, or FILES "B:" or FILES "*.BAS" to obtain a directory.
KILL"TEST" will delete a BASIC program file from the disc.

RANDOS !SAVE"TEST" will save the program with no extension.
!SAVE"2:TEST"
!DIR, or !DIR 0 or !DIR "*."
Note: with RANDOS the space after DIR is needed.
!DEL"TEST" will delete the file TEST.

SEDORIC SAVE"TEST" will save the program with the current extension (default .COM).
SAVE"B-TEST"
DIR, DIR B OR DIR "*"
DEL"TEST" will delete the file with the current selected extension.

INTRODUCTION TO SEQUENTIAL FILES

A sequential file can thought of as being data laid out in line. For example, your audio tapes may contain various songs on them but in order to access them you must search to and fro along the tape to find the start of the track, or, more usually, play the whole tape from start to finish, this being the easiest solution. Certain sequential systems add a little more sophistication by providing search facilities but the data (in this case, your music, is still stored along the length of the tape.

Starting with any blank disc, it is necessary to open a sequential file before entering data into it. Once open the data can first be saved then subsequently loaded.

OPEN Command (Read & Write)

When opening a sequential file you usually have to provide a filename, operating mode (that is a read or write operation) and a logical file number.

MICROSOFT OPEN filename FOR INPUT AS # logical file number - READ operation.
OPEN filename FOR OUTPUT AS # logical file number - WRITE op.
or, alternatively
OPEN letter, file number, filename. Here the letter is I for Input (Read), O for Output (Write) and R for either read or write.

For example : the following commands are identical

OPEN "DATA" FOR OUTPUT AS #2

or

OPEN "O",#2,"DATA".

Since this latter form is similar to that used in SEDORIC DOS, I will use this in the future.

RANDOS !OPEN "filename",1,R - for read access.
!OPEN "filename",1,W - for write access.

For example : !OPEN "DATA.DAT",1,W

SEDORIC OPEN S,"filename", logical file number - sophistication!!!
This covers both read and write operations.

For example : !OPEN S,"DATA.DAT",1

CLOSE Command

Having written or read the data from a sequential file and finished with it, it is advisable to close the file so that you do not confuse the computer if accessing further files. The CLOSE command is much simpler than the OPEN command and is identical for all three BASICs.
MICROSOFT,RANDOS,SEDORIC CLOSE logical file number.

For example : CLOSE 2

So now we know how to OPEN and CLOSE a sequential file it is time to actually create some data and write it into a file, then read it back into the computer. Unfortunately, that will have to wait until next month.

ORIC ATMOS and ORIC-1 GRAPHICS & MACHINE CODE TECHNIQUES

Chapter 1 - LOOKING INSIDE THE ORIC (continued)

1.8 **Text screen - USING ESCAPE.** One source of confusion lies when looking at how PRINT uses ESC (CHR$(27)) in order to set attributes. It is a good idea to totally ignore what the manual tells you about using ESC when writing in machine code. The important fact is that ESC only works because BASIC is creating the attributes for you - POKE 27 onto the text screen and nothing will happen. (Try poking it onto the high-resolution screen!). The use of ESC when using PRINT is unavoidable because this command traps any ASCII value less than 32 and treats them like control control characters (changing parameters like keyclick, etc.). The PLOT command, like POKE, does not understand ESC sequences, so direct attributes must be used.

1.9 **High-resolution mode** is covered in Chapter 4 of the AUG.

Chapter 2 - BASIC

2.1 **Introduction.** An understanding of the workings of BASIC is necessary if it is required to incorporate machine code routines within BASIC programs, or if special utilities e.g. 'Renumber' are to be written.

2.2 **Memory map of BASIC.** This is dealt with in Appendices C, D and I in the AUG. Also Jon Haworth has been covering the use of pages 2, 3 and 4 by BASIC in his articles on the ROM.

2.3 **The format of a program.** This is dealt with in the ATMOS manual.
Table 2.1 **List of all BASIC tokens.** This has recently appeared in OUM.

2.4 **Pointers.** There are a number of pointers used by BASIC to separate a program from its variables and arrays. Not all of these are useful: #9A is the start of BASIC pointer, but BASIC refuses to work if you move it from its normal value of #500. **Note :** That is exactly correct. It is possible to modify the start of BASIC and get to execute. The program EAD65C uses this technique in loading itself between #500 and #2101, then BASIC or Assembler programs are loaded into memory starting at about #2200 and having the complete freedom of upper memory. The cost of this is incurred when saving and loading in that additional commands are required to keep everything in order.

The most important pointer is that at #9C which gives the address of the start of BASIC variables - or the end of the BASIC program + 1. Printing the DEEK of #9C is often more useful than the FRE command since it gives you the exact position of the end of your program. When a program is saved, this pointer is used to give the upper address limit. It follows, therefore, that by adjusting the pointer at #9C you can save more than just the BASIC program using a single CSAVE - though remember to DOKE the correct value before you do anything else after you have loaded back. The ORIC always assumes that #9C is always correct, adding or subtracting values as a program is altered. **Note :** Quite a number of commercial games use this technique to append a machine code section onto a BASIC program. Comparing the ATMOS system variable at #2AB (end address of tape just loaded) with that at #9C will show if this technique is being used. One feature of ORIC DOS is that if such a file is loaded from disc the value of #9C is automatically updated.

When a BASIC program is loaded the upper load address is automatically stored back at #9C. Version 1.0 owners should beware of separately loading machine code programs in on top of BASIC programs since the #9C pointer will then point to the end of that machine code section. The solution to this is to either correct #9C or load machine code routines before loading a BASIC program. Version 1.1 owners need not worry about this particular fault.

HIMEM. The HIMEM command is often most unhelpful - especially on V1.0 machines. In cases

where you cannot persuade your machine to do HIMEM correctly, simply DOKE#A6 with the value before running the program. If you wish this to be done as part of your program, you will also have to alter #A2 to the same value as #A6 (**Note** or DOKE#A6,<value>:CLEAR) otherwise strings will be placed in the wrong part of memory.

2.5 to 2.8 **Numeric, Integer and String variables and Arrays** are covered in Chapter 6 of the AUG.

2.9 **READ and DATA.** It is often useful to be able to use READ in a more controlled way - reading from a particular line of DATA. Some more advanced BASICs have this facility - this is often known as RESTORE N, where N is the line number from which DATA is read. The READ command does not keep account of the next line number from which to read, but instead uses #B0,1 to store the last address in memory where DATA was read. After each READ command, the line number used is stored in #AE,F so that an error message can report on the current data line (for 'OUT OF DATA', etc.). Writing to #AE,F will have no effect on READ operations.

A 'RESTORE N' FACILITY. Only a very short machine code program is needed to give BASIC this facility, which has been listed below in Program 2.1. Although the routine has been put at address #4E0, it will work at any spare memory location. Version 1.0 ROM owners should change #4E8 to 'JSR #C6E4'. The machine code routine takes the line number stored at address 0,1, calls a ROM routine to find the address of that line, and stores that address minus 1 at #B0 to #B1.

```
04E0:   A5 00       LDA  $00
04E2:   85 33       STA  $33
04E4:   A5 01       LDA  $01
04E6    85 34       STA  $34
04E8:   20 B9 C6    JSR  $C6B9
04EB:   A5 CE       LDA  $CE
04ED:   38          SEC
04EE:   E9 01       SBC  #$01
04F0    85 B0       STA  $B0
04F2:   A5 CF       LDA  $CF
04F4:   E9 00       SBC  #$00
04F6:   85 B1       STA  $B1
04F8:   60          RTS
```

USING 'RESTORE N". A BASIC program has been listed below (program 2.2) which demonstrates how to call the machine code routine. Remember, V1.0 users must substitute E4 for B9 in A$ in line 10.

```
10 A$="A5008533A501853420B9C6A5CE38E90185B0A5CFE90085B160"
15 Z=#4E0
20 FOR I=1 TO LEN(A$)/2:B=VAL("#"+MID$(A$,(I-1)*2+1,2)):C=Z+1-1:POKE C,B
30 NEXT
100 INPUT"WHICH LINE?";L
110 DOKE0,L:CALL#4E0
120 FOR I=1 TO 3:READ A$:PRINT A$:NEXT
130 GOTO100
1000 DATA 43,55,66,77,88,99
1010 DATA"THIS IS LINE 1010"
1020 DATA 66,77,88,99,66,66
2000 DATA"LINE 2000 DATA"
3000 DATA 55,6,4,4
```

2.10 **Using RND.** The RND function will start from the same sequence of numbers every time you start up an ORIC, providing the argument which follows the RND is positive. Although it is not made clear in the manual, when the argument is negative this starts off a new sequence of random numbers.

Next month -- Completion of Using RND and Chapter 2.

THE ADVENTURE SPOT — DAVE DICK

THE CASTLE

'CASTLE' IS A TEXT ADVENTURE AVAILABLE THROUGH THE PUBLIC DOMAIN. THE STORY BEHIND IT'S INCLUSION IN THE LIBRARY IS AS FOLLOWS.
ONCE UPON A TIME IN A LAND NOT TOO DISTANT FROM THE OUM OFFICE, ONE PETER THE WISE TOLD TO ME A TALE OF DISTANT TIMES WHEN HE REVIEWED ORIC SOFTWARE FOR A NOW DEFUNCT COMPUTER WEEKLY. BY SPECIAL MESSENGER HE RECIEVED A PACKAGE CONTAINING 'THE CASTLE' FOR HIS APPRAISAL. THE PROGRAM WAS FULL OF BUGS, HENCE THE SOFTWARE COMPANY NAMED THEMSELVES 'BUG BYTE'. THE YOUNG AND STRAPPING PETER THE WISE DE-BUGGED THE PROGRAM AND SENT IT BY PIGEON POST TO THE MAKERS. NOT ANOTHER WORD WAS HEARD AND AS FAR AS WE ALL KNEW, IT WAS NEVER COMMERCIALLY RELEASED.
AFTER MANY MOONS,PETER THE WISE PASSED 'THE CASTLE' TO DAVE THE SLAVE ,WHO IN TURN PASSED IT TO JON THE HAGAR.
I,MYSELF HAVE TOYED WITH THE GAME AND HAVE LEARNT BY MY MISTAKES. IF,WHEN LOADED,YOU PRESS THE 'RETURN' KEY;THEN YOU ONLY GET A FLEETING GLANCE OF THE INTRODUCTION. YOU MUST WAIT FOR THE INTRODUCTION TO INTRODUCE ITSELF. THIS LEADS ME ONTO THE THE MAIN REASON FOR WRITING THIS STORY. THERE IS ANOTHER INTRODUCTION.
HOW DO I KNOW THIS? WELL,QUITE BY ACCIDENT I ACQUIRED AN ORIGINAL INLAY FOR 'THE CASTLE'.
THE VERSION ON PD STATES FOR 32/48K ORIC,WHEREAS AS THE INLAY THAT I HAVE STATES 16/32K ORIC.

THE INTRODUCTION THAT I HAVE IS AS FOLLOWS:

AS THE WINE BEGINS TO CLEAR FROM YOUR BRAIN YOU START TO SEE THAT IT MIGHT NOT HAVE BEEN SUCH A WISE THING TO DO.ALL THAT BRAGGING ABOUT YOUR EXPLOITS IN THE Gr'n Xanth WARS WOULD BE THE DEATH OF YOU ONE DAY - AND FROM THE LOOK OF THIS PLACE THAT TIME MIGHT BE RIGHT NOW!
"EASY",YOU'D SAID."ALL I NEED ARE MY BRAINS AND A LIFT UP TO THE CASTLE. I'M MORE THAN A MATCH FOR YOUR FAIRY STORIES.ALL THOSE STORIES ABOUT TRAVELLERS WHO HAVE NEVER RETURNED - HAH! IF THERE IS ANY TREASURE TO BE FOUND THEN I'M THE MAN TO DO IT". THE LOCALS HAD MUTTERED INTO THEIR MUGS ABOUT "FOOLS RUSH IN...", WHICH HAD GOT YOUR TEMPER UP TO THE EXTENT THAT YOU MADE YOUR RASH BET.
OF COURSE YOU HADN'T REALLY MEANT THAT THEY SHOULD TAKE YOU UP ON IT RIGHT THERE AND THEN,BUT OF COURSE THERE WILL ALWAYS BE SOME FOOL WHO JUST HAPPENS TO HAVE A COACH AND HORSES READY AND WAITING ROUND THE CORNER..
YOU LOOK ROUND THE DISMAL THRONE ROOM AND SHAKE YOUR HEAD IN DISBELIEF - THE DANK SMELL OF THE DRIPPING STONE WALLS,THE SLIME ON THE FLOOR THAT SURROUNDS THE POOLS OF WATER HAS A PECULIAR SHEEN TO IT - ALMOST AS IF IT WERE TRYING TO MOVE TOWARDS THE HEAT OF OF YOUR BODY. YOU REMEMBER HOW NO AMOUNT OF WHIPPING WOULD DRIVE THE HORSES ANY CLOSER THAN A MILE TO THE CASTLE AND HOW YOU'D HAD TO WALK THE REMAINING DISTANCE YOURSELF.
YOU JUMP AS A WHISP OF MIST CURVES ROUND THE DOOR TO THE EAST. IT CURVES AND MOVES ALMOST AS IF ALIVE,AND SEEMS TO BECKON YOU TOWARDS IT.FROM THE DISTANT CLOCK TOWER YOU CAN HEAR THE BELL TOLLING ELEVEN TIMES.ONE HOUR TO GO BEFORE THE WITCHING HOUR AND YOU'RE ALONE (OR ARE YOU?) IN THE CASTLE. THE MIST SLOWLY STARTS TO GET THICKER.
STILL,YOUV'E BEEN IN WORSE SCRAPES THAN THIS BEFORE NOW. YOU LOOK AROUND AGAIN AND SPOT A CHEST ON THE OTHER SIDE OF THE ROOM. YOU MOVE TOWARDS IT - AFTER ALL SOMEONE MIGHT HAVE BEEN DECENT ENOUGH TO LEAVE A BOTTLE OF SOMETHING - AND FROM THE LOOKS OF THINGS,YOUR'E GOING TO NEED A GOOD STIFF DRINK OVER THE NEXT FEW HOURS....

++

A NEW ADVENTURE FROM GRAEME BURTON IS ON IT'S WAY - FULL OF RED HERRINGS AND THE LIKE. GRAEME PREVIOUSLY GAVE US 'INDIANA SMITH'

LISTING number 1.


```
100 REM PERMUTATIONS
110 REM By Brian Kidd  for  O.U.M.
120 REM
122 REM ALL REMS CAN BE OMITTED
124 REM
130 TEXT:PAPER0:INK7:CLS
140 POKE #26A,10:POKE 48036,0
141 A=48010
142 A$="Permutations by Brian"
143 FOR F=1 TO LEN(A$)
144 POKE A,ASC(MID$(A$,F,1))
145 A=A+1
146 NEXT
150 PRINT:PRINT"This programme can be used to find the"
155 PRINT"number of permutations of 'x' objects"
160 PRINT"taken 'y' at a time."
165 PRINT:PRINT"For example , 4 people race , and you"
170 PRINT"need to know how many ways ther are"
175 PRINT"of filling the 1st three places."
180 PRINT"(The answer is 24 by the way)":PRINT
185 PRINT"Press '1' to continue     or                '2' to quit."
186 FOR F=48441 TO 48521 STEP 40:POKE F,4:NEXT F
190 A$=KEY$:GETA$
195 IF A$="1" THEN 225
200 IF A$<>"2" THEN 190
205 HIRES:TEXT:PAPER7:INK0:POKE#26A,3
210 END
215 REM PROG ACTUAL
220 :
225 CLS:PRINT
230 INPUT"Number of objects (max 30) ";N$
240 N=VAL(N$)
245 IF N<1 OR N>30 THEN 225
250 CLS:PRINT
255 PRINT"Group size ( 1-";N;") ";:INPUT G$
260 G=VAL(G$)
265 IF G<1 OR G>(N) THEN 250
267 K=G
268 IF K=N THEN K=K-1
270 CLS:PRINT
275 PRINT"TOTAL No. OF OBJECTS IS ";N
280 PRINT:PRINT"TOTAL No. OF GROUP IS   ";G
285 PRINT
290 GOSUB 325
295 PRINT"No. OF PERMUTATIONS IS: ";P
300 PRINT:PRINT"PRESS ANY KEY"
305 A$=KEY$:GETA$
310 RUN
315 REM WORK OUT PERMUTATIONS.
320 :
322 IF EXPLODE=1 THEN P=N:RETURN
325 P=N
330 FOR F=K TO 1 STEP-1
335 P=P*F
340 NEXT F
345 RETURN
```

PERMUTATIONS

LISTING TWO

```
100 TEXT:CLS:PAPER0:INK1
105 POKE #26A,10
106 A$="Highest Common Dividing Factor programme"
107 A=48000:FORF=1TOLEN(A$):POKEA,ASC(MID$(A$,F,1)):A=A+1:NEXTF
108 PRINT
110 PRINT"This programme will allow you to find"
115 PRINT"the highest common dividing factor of"
120 PRINT"any two numbers."
125 PRINT"These numbers must be whole. Any"
130 PRINT"numbers not whole will be rounded up."
135 PRINT:PRINT" 1) Enter your numbers":PRINT
140 PRINT" 2) Quit programme"
145 FOR F=48321 TO 48401 STEP 40:POKE F,4:POKEF+4,2:NEXT
150 PRINT:PRINTCHR$(27)"LENTER YOUR CHOICE NOW"
155 A$=KEY$:GETA$
160 A=VAL(A$)
170 IF A=1 THEN 200
175 IF A=2 THEN 330
180 GOTO 155
190 :
200 CLS:PRINT
210 INPUT "1st NUMBER (+RTN) ";N1$
215 K=VAL(N1$):K=INT(K+.5):Y=K
220 IF K=0 THEN 200
225 CLS:PRINT
230 INPUT "2nd NUMBER (+RTN) ";N2$
235 L=VAL(N2$):L=INT(L+.5):U=L
240 IF L=0 THEN 225
245 IF K<L THEN T=K:K=L:L=T
250 IF K=L THEN W=K:GOTO 285
252 CLS:PRINT"WORKING OUT....."
255 W=L+1:I=1:N=1
260 REPEAT
265 W=W-1
266 N=N+1
270 C=INT(K/W):D=K/W
275 E=INT(L/W):F=L/W
276 IF N=8 THEN N=0:I=I+1
277 IF I>7 THEN I=1
278 INK I
280 UNTIL W=1 OR (C=D AND E=F)
285 CLS:PRINT:INK1
290 PRINT"1st number given was ";Y:PRINT
295 PRINT"2nd number given was ";U:PRINT
297 POKE 48241,5
300 IF W=1 THEN PRINT"THERE IS NO C.D.FACTOR EXCEPT 1":GOTO 310
305 PRINT"THE H.C.D.FACTOR IS  ";W
307 POKE 48262,4:POKE 48263,12
310 PRINT
311 PRINTCHR$(4)CHR$(27)"N      PRESS ANY KEY";CHR$(4)
315 A$=KEY$:GETA$
320 RUN
325 :
330 HIRES:TEXT:PAPER7:INK0
335 POKE #26A,3:END
```

HCD FACTOR

LISTING 3

```
40 CLS:POKE618,10:POKE26,96
50 GOSUB1000
60 O1=0:O2=0:F1=0:F2=0:O=0:O1:A$=" ":OP=1
80 X=7:Y=21:XL=7:XR=28:DX=7:YU=7:YO=21:DY=2:XA=X:YA=Y
90 REM ERROR-> GOTO100
100 PLOT1,1,2:PLOT2,1,"        CALCULATRICE        "
110 REPEAT:GETT$
120 IFT$=CHR$(8)THENIFX>XLTHENX=X-DX
130 IFT$=CHR$(9)THENIFX<XRTHENX=X+DX
140 IFT$=CHR$(10)THENIFY<YOTHENY=Y+DY
150 IFT$=CHR$(11)THENIFY>YUTHENY=Y-DY
160 PLOTX,Y,">"
170 IF(X<>XAORY<>YA)THENPLOTXA,YA," ":XA=X:YA=Y
180 UNTILT$=CHR$(32)
200 IF(X<XRANDY>13)THENGOTO500
210 IF(X=XRANDY>11)THENF2=0:GOTO700
220 IFY<11THENGOTO600
230 IF(X=7ANDY=13)THENF1=0:F2=0:O1=0:O2=0:O=0:A$=" ":GOSUB800:GOTO110
240 IF(X=14ANDY=13)THENF1=0:F2=0:O1=0:O2=0:O=0:A$=" ":GOSUB800:GOTO110
250 IF(X=21ANDY=13)THENCLS:POKE618,3:END
260 IFX=7THENS1=0:S1$=STR$(O):GOTO110
270 IFX=21THENS2=0:S2$=STR$(O):GOTO110
280 IFX=14THENO=S1:A$=S1$:GOSUB820:GOTO110
290 IFX=28THENO=S2:A$=S2$:GOSUB820:GOTO110
400 REM
401 O1=O1+O2:RETURN
402 O1=O1-O2:RETURN
403 O1=O1*O2:RETURN
404 IFO2=0THENO2=1E-11
405 O1=O1/O2:RETURN
480 REM
490 REM
500 IFLEN(A$)>10THENIFNOT(X=21ANDY=21)THENPING:GOTO110
505 IF(X=7ANDY=21)THENA$=A$+"0":O=VAL(A$):GOSUB820:GOTO110
510 IF(X=7ANDY=19)THENA$=A$+"1":O=VAL(A$):GOSUB820:GOTO110
515 IF(X=7ANDY=17)THENA$=A$+"4":O=VAL(A$):GOSUB820:GOTO110
520 IF(X=7ANDY=15)THENA$=A$+"7":O=VAL(A$):GOSUB820:GOTO110
525 IF(X=14ANDY=21)THENGOSUB580
530 IF(X=14ANDY=19)THENA$=A$+"2":O=VAL(A$):GOSUB820:GOTO110
535 IF(X=14ANDY=17)THENA$=A$+"5":O=VAL(A$):GOSUB820:GOTO110
540 IF(X=14ANDY=15)THENA$=A$+"8":O=VAL(A$):GOSUB820:GOTO110
545 IF(X=21ANDY=19)THENA$=A$+"3":O=VAL(A$):GOSUB820:GOTO110
550 IF(X=21ANDY=17)THENA$=A$+"6":O=VAL(A$):GOSUB820:GOTO110
555 IF(X=21ANDY=15)THENA$=A$+"9":O=VAL(A$):GOSUB820:GOTO110
560 O=-O:A$=STR$(O):GOSUB820:GOTO110
580 IFF2=1THENPING:GOTO110
590 F2=1:A$=A$+".":O=VAL(A$):GOSUB820:GOTO110
600 IF(X=7ANDY=7)THENO=SIN(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
610 IF(X=14ANDY=7)THENO=COS(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
620 IF(X=21ANDY=7)THENO=TAN(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
630 IF(X=28ANDY=7)THENO=ATN(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
640 IF(X=21ANDY=9)THENO=O*O(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
650 IF(X=7ANDY=9)THENO=EXP(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
660 IFO<0THENPING:GOTO110
670 IF(X=28ANDY=9)THENO=SQR(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
680 IFO=0THENPING:GOTO110
690 O=LN(O):A$=STR$(O):GOSUB820:A$=" ":GOTO110
700 IFY=21THENGOTO750
705 IFF1=1THENO2=2:GOSUBOP+400:O=O+1:A$=STR$(O1):GOSUB820:F1=0
710 IFY=19THENOP=1
715 IFY=17THENOP=2
720 IFY=15THENOP=3
725 IFY=13THENOP=4
730 O1=0:A$=" ":F1=1:GOTO110
750 IFF1=0THENPING:GOTO110
```

NOTE! BE CAREFUL!!

THE VARIABLE: O SHOULD NOT BE TYPED AS THE FIGURE Ø.

LINE 60 CONTAINS O, NOT Ø.

LINE 660 CONTAINS IFO < Ø

IT IS A CASE OF ASCERTAINING THE PRINT DIFFERENCE AND READING THE PROGRAM TO MAKE SURE THAT IT MAKES SENSE.

CALCULATOR

Listing 3 - contd.


```
760 O2=0:GOSUBOP+400:O=O1:A$=STR$(O1):GOSUB820:A$=" ":F1=0:GOTO110
800 PLOT9,5,"                    ":RETURN
820 GOSUB800
830 FORI=1TO12-LEN(A$)
840 PLOT14+I,5," ":NEXT
850 PLOT27-LEN(A$),5,A$
860 RETURN
1000 PLOT4,3,"++++++++++++++++++++++++++++++"
1010 PLOT4,23,"++++++++++++++++++++++++++++++"
1020 FORI=1TO19
1030 PLOT4,3+I,"+":PLOT34,3+I,"+"
1040 NEXT
1060 PLOT4,24,"MOVE USING CURSOR KEYS"
1070 PLOT6,25,"<SPACE> TO VALIDATE"
1080 PLOT6,5,"[                    ]"
1090 PLOT6,7,"[ SIN] [ COS] [ TAN] [ ATN]"
1100 PLOT6,9,"[ EXP] [ LNS] [ X^2] [ SQR]"
1110 PLOT6,11,"[ ST1] [ RC1] [ ST2] [ RC2]"
1120 PLOT6,13,"[ CE ] [ CLR] [ OFF] [ ./.]"
1130 PLOT6,15,"[  7 ] [  8 ] [  9 ] [  * ]"
1140 PLOT6,17,"[  4 ] [  5 ] [  6 ] [  - ]"
1150 PLOT6,19,"[  1 ] [  2 ] [  3 ] [  + ]"
1160 PLOT6,21,"[  0 ] [  . ] [ +/-] [  = ]"
1170 PLOT7,21,">"
1180 PAPER0:INK3:PLOT3,24,5:PLOT3,25,6
1190 PLOT8,5,1:PLOT31,5,3
1200 RETURN
```

SIN = SINE
COS : COSINE
TAN = TANGENT
ATN = ARC OF TANGENT
EXP = EXPONENTIAL
LN = REVERSE LOGARITH
X↑2 = SQUARE
SQR = SQUARE ROOT

EXAMPLE! TO CALCULATE 2+3, CHOOSE + VALIDATE IN THIS ORDER!
[2] [+] [3] [=] AND RESULT = [5]

NOTES! 10 FIGURES MAXIMUM, TO CHANGE SIGN UTILISE [+/-]

TO WIPE AN INCORRECT NUMBER USE [CE] - CLEAR ENTRY
[CLR] WILL INITILIASE ALL REGISTERS, EXCEPT THE 2 MEMORIES
[ST1] AND [ST2] ARE THE 2 MEMORIES FOR STORAGE
USE [RC1] AND [RC2] TO RECALL MEMORIES.

IF AN "?OVERFLOW ERROR" OCCURS, TYPE "GOTO 100", SELECT [CLR]
AND YOU CAN RE-START YOUR CALCULATION.

MORE EXAMPLES: 14↑2 + 7 * 8 / (-3.1) : [1] [4] [X↑2]

(A) [ST1] [7] [*] [8] [/] (56) [3] [.] [1] [+/-]
[+] (-18.0645161)
[RC1] [=] (177.935484)

(B) [4] [+] [6] [*] (10) [9] [=] (90)

(C) [2] [*] [*] (4) [*] (16) [=] (256)

VOILA!

THE CONTACT LIST (The last episode)

NOW FOR THE LAST INSTALMENT OF THE CONTACT LIST. OF COURSE WE WILL KEEP YOU POSTED ON ADDITIONS AND AMENDMENTS. FOR EXAMPLE, TAUNTON HAS MOVED FROM DEVON TO SOMERSET AND THEREFORE GEORGE POPLE,NOT POPPLE IS IN AREA 15 AND NOT 14 AS PUBLISHED.
AN ADDITION TO AREA 23 IS ALLAN MOORE OF 3 LUNDWOOD CLOSE,OWLTHORPE,SHEFFIELD S19 6SP - TEL: 0742 475562 - ATMOS,CASSETTE,CITIZEN 120D PRINTER.

AREA 25
---- -- - NORTH YORKSHIRE
DAVID GEOGHEGAN, 31 PLANTATION WAY,WIGGINTON,YORK,N.YORKS. YO3 8ZE - TEL:0904 765708 (ORIC 1/CASSETTE)..
.....

AREA 26 - CLEVELAND
---- --
MATTHEW BILTON, 23 PRIESTCROFTS,MARKE,REDCAR,CLEVELAND. TS11 7HW (ATMOS/CASS).....TIM PHOENIX, 54 GRANVILLE ROAD,GRANGETOWN,CLEVELAND. TS6 7DF - TEL:0642 455187 (ORIC1/ATMOS/CASS).....

AREA 27 - NORTHUMBERLAND
---- --
NEVILLE CLARK,23 PARK ROAD,ASHINGTON,NORTHUMBERLAND. NE63 8DZ (ATMOS/CUMANA DRIVE.....USES ATARI ST MAINLY NOW (eek!).....

AREA 28 - N.IRELAND
---- --
ALLEN CROWE, 1 ARDYMAGH ROAD,GLENWHERRY,BALLYCLARE,CO.ANTRIM. BT39 9TJ - TEL:026683 451 (ATMOS/ORIC1/ CUMANA 3"&5.25" DRIVES/CITIZEN 120D AND MCP 40 PRINTERS/MODEM).....JOHN EVANS, 7 KIMBERLEY HILL, LONDONDERRY.BT47 1QL (ATMOS/CASS.....GAMES and WORD PROCESSING).....

AREA 29 - EIRE
---- --
BRENDAN CLIFFORD,10 SLIP PARK,BANTRY,CO.CORK (ATMOS/CASS).....GAVIN NICHOLSON, 10 WATERMEADOW PARK,OLD BAWN,DUBLIN 24 (ORIC1/CASS).....

AREA 99 - THE REST OF EUROPE
---- --
FRANCISCO AREIAS,12 RUE BREESCH,1020 BRUSSELS,BELGIUM. (FRENCH ATMOS/ORIC 1 c/w V1.1 ROM/CASSETTE)
BOB BAZLEY,AN DER ALSTER 10/76, 2000 HAMBURG 1,GERMANY (ATMOS/CASS./HEWLETT PACKARD DESKJET....STRATEGY, DATABASE .....ENGLISH RESIDENT)
THIERRY BESTEL, 3 RUE DES PETITS PRES, 77590 BOIS-LE-ROIS,FRANCE (ATMOS/TELESTRAT/MICRODISC/OLIVETTI DM105/I/O CARDS.....FORTH AND ROBOTICS)
JEAN CESAR ANDRE BOILEAU, 33 AVENUE HENRI BARBUSSE, 93140 BONDY, FRANCE (ATMOS/TELESTRAT/4 x 3" DRIVES)
LAURENT CHIACCHIERINI, 69 RUE BELLIARD, 75018 PARIS, FRANCE (TELESTRAT/TWIN 3" AND SINGLE 3.5" DRIVES/ EPSON PRINTER....RUNS ORIC BULLETIN BOARD AND PRODUCES ENGLISH CEO MAG.)
STALE EIKBRATEN, SKRIVERVEGEN 36, 2200 KONGSVINGER, NORWAY (ATMOS/ORIC1/CASS....AUTHOR OF 'CHESS MADNESS')
BERNHARD GRONE, AM JADENHUBEL 95, 6751 TRIPPSTADT, GERMANY (ATMOS)
RAUL HAKLI, KAUPPAKARTANONKATU 16 1 118, 00930 HELSINKI,FINLAND (ATMOS/ORIC1/CASS.....GAMES,MUSIC, GRAPHICS)
JOHN HALY, PAUL-GERHARDT RING 25, 1000 BERLIN 20,GERMANY.(ATMOS/3 AND 5.25" DRIVES)
ARNT ERIK ISAKSEN, SIGURDS GT.23, 2000 LILLESTROM,NORWAY (ATMOS/ORIC1/OPELCO 3" DRIVE/HR5 AND MCP40 PRINTERS/LIGHT PEN/SYNTHESISER.....RUNS 'KLUB ORIC NORDEN')
KRISTER KARLSSON, NORRBERGAVAGEN 36, 59054 STUREFORS,SWEDEN (ATMOS/ORIC1/CUMANA 3.5"/MCP 40 AND NEC)
HANS KRAUS , HABERLGASSE 62/10, A-1160 WIEN,AUSTRIA (ATMOS/ORIC1/5.25" DRIVE/SEIKOSHA GP100a)
VINCENT TALVAS, 58 RUE DES SCULPTEURS, 93240 STAINS,FRANCE (TELESTRAT/3 AND 5.25" DRIVES/OLIVETTI DM 105 .....PRESIDENT OF 'CLUB EUROPE ORIC')
ALAIN WEBER, 1 Bd.THEOPHILE SUEUR, BAT F103, 93110 ROSNY-SOUS-BOIS,FRANCE (TELESTRAT/MICRODISC/THOMPSON 3.5"/CITIZEN 120D)
ANDRE WIDHANI, BIRCKHOLTZWEG 15, 2000 HAMBURG 72, GERMANY (ATMOS/ORIC1/TELESTRAT/3 AND 5.25"/LC 24-10.. AUTHOR OF 'TETRIX')
ANTHONY QUINN,HECKENROSENWEG 6, D-3170 GIFHORN, W.GERMANY (ATMOS/CASS.....AUTHOR OF 'GRAFFIX' AND FAMED FOR HIS DANCING IN 'ZORBA THE GREEK' - ENGLISH RESIDENT)

ORIC USER MONTHLY READERSHIP

DID WE MAKE THE 100 MARK OR DIDN'T WE. AS I TYPE THIS ARTICLE,THERE ARE 8 DAY'S UNTIL THE END OF THE MONTH AND WE ARE *THREE* SHORT. SOME WHO BOUGHT THE JULY ISSUE MAY YET BUY THE AUGUST MAGAZINE AND I HAVE A COUPLE OF NEW CONTACTS IN THE PIPELINE. OF COURSE,EVERY SO OFTEN WE LOSE A READER FOR NO APPARENT REASON. CHASE LETTERS ARE SENT,BUT MANY DO NOT EVEN HAVE THE DECENCY TO REPLY. IF YOU SELL-UP,NO LONGER ENJOY READING THE MAG OR CAN'T AFFORD IT;PLEASE LET US KNOW. IF YOU HAVE DIED;THEN PLEASE TRY AND GET A MESSAGE ACCROSS TO US!!

NOW FOR THE ACTUAL 'OUM' SALES FIGURES FOR THE LAST 5 ISSUES:

ISSUE 44 - APRIL 80
ISSUE 45 - MAY 83
ISSUE 46 - JUNE 87
ISSUE 47 - JULY 96
ISSUE 48 - AUGUST 97

AND THIS IS WHERE ARE READERSHIP IS BASED: ENGLAND - 76%, SCOTLAND - 5%, FRANCE - 5%, GERMANY - 4%, WALES - 3%, IRELAND - 2%, NORWAY - 2%, FINLAND - 1%, BELGIUM - 1%, AUSTRIA - 1%.

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O.U.M and MIRAGE SOFTWARE

AS SUBSCRIPTIONS FOR O.U.M, AS WELL AS ORDERS FOR MIRAGE SOFTWARE TITLES AND OTHER SOFTWARE TITLES ON DISC/ CASSETTE,EXCEPT CEO,PUBLIC DOMAIN and SHAREWARE; ARE ALL HANDLED AT THE ADDRESS SHOWN ON THE FRONT COVER, IT MAKES SENSE THAT I SHOULD ACCEPT CHEQUES FOR SUBSCRIPTIONS AS WELL AS SOFTWARE ORDERS AS ONE RATHER THAN HAVE YOU WRITE OUT 2 CHEQUES.
HOWEVER,RECENTLY I HAVE HAD PROBLEMS WITH a) EUROCHEQUES MADE PAYABLE TO OUM/ORIC USER MONTHLY AND I HAVE FOUND THAT IT IS BECOMING INCREASINGLY MORE EXPENSIVE TO SEND ITEMS TO OUR FRIENDS OUTSIDE THE UNITED KINGDOM.

FOR THE MOMENT I DO NOT INTEND TO RAISE SUBSCRIPTIONS TO OVERSEAS MEMBERS,BUT WILL HAVE TO MONITOR IT VERY CLOSELY.

CHEQUES FOR SUBSCRIPTIONS/SOFTWARE IN THE U.K SHOULD BE MADE PAYABLE TO: D.DICK (O.U.M).

CHEQUES FOR SUBSCRIPTIONS FROM OUTSIDE THE U.K SHOULD ONLY BE MADE PAYABLE TO: D.DICK

AS OUR SOFTWARE IS NOW AT ROCK BOTTOM PRICES,IT IS NO LONGER VIABLE TO JUST ADD 10% TO OVERSEAS ORDERS FOR SOFTWARE. AS OF NOW, ALL SOFTWARE ORDERS FROM OUTSIDE THE U.K WILL BE SUBJECT TO A CHARGE OF 50 PENCE PER DISC OR CASSETTE.

ON THE HOME FRONT,ALL ORDERS OVER 4 pound ARE POST FREE,ELSE ADD 50 PENCE TOTAL.

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THE CURRENT 'MIRAGE' CATALOGUE

MOST TITLES HAVE BEEN REPRICED - DOWNWARDS.

on 5.25",PLEASE STATE IF 40 or 80 track, single or double sided.

TITLE	DESCRIPTION	CASSETTE PRICE	3"DISC	3.5"DISC	5.25"DISC	COMMENTS
TETRIX	The no.1 strategy	3.50	5.50	5.00	4.00	SEDORIC ONLY
GRENDEL	The no.1 arcade	3.50	5.25	5.00	4.00	
CRICKET	Summer action.	2.75	4.50	4.25	3.50	ATMOS ONLY
ESCAPE	Multi-screen fun	1.75	4.00	3.75	3.00	ATMOS ONLY
INSECT INSANITY	Superb arcade action	3.50	5.25	5.00	4.00	
FOOTBALL	Action all the way	3.50	5.25	5.00	4.00	ATMOS ONLY
GRAND PRIX	4 PLAYER motor race	3.50	5.25	5.00	4.00	ATMOS ONLY
GALACTOSMASH	pure ZAP'em	3.50	5.25	5.00	4.00	atmos only
LEAGUE SOCCER	mANAGE YOUR OWN CLUB	2.50	- CASSETTE ONLY ----------			ATMOS ONLY
THE HAUNT	GOOD TEXT EXCELLENT	2.50	- CASSETTE ONLY ----------			
KRYSTAL WORLDS	MULTI-PART TEXT ADVENTURE	2.50	- CASSETTE ONLY ----------			

REFLECTIONS

IN THE LAST YEAR WE HAVE HAD 40 NEW READERS JOIN US;MANY NEW TO THE ATMOS, SOME STILL ON THEIR TRUSTY ORIC 1's AND MANY OTHERS JUST ITCHING FOR INFORMATION etc.
HERE AND THERE WE WILL BE PRINTING OLD TIPS AND HINTS CULLED FROM VARIOUS PUBLICATIONS. FRANK BOLTON HAS OFFERED TO TYPE UP SOME OLD 2 LINERS OR SHORT PROGRAMS WHICH EXPERIENCED PEOPLE TAKE FOR GRANTED , BUT AMATEURS MAY NOT KNOW ABOUT.
FRANK ALSO SUGGESTS THAT EVERY MEMBER SENDS IN HIS/HER FAVOURITE LITTLE PROGRAM FOR THE ORIC1/ATMOS (NOT TO EXCEED 10 LINES). THESE COULD THEN BE GATHERED TOGETHER INTO A BOOKLET AND EVEN ISSUE A disc/CASSETTE - I AWAIT YOUR RESPONSE !!

IN THE MEANTIME LET US REFLECT ON WHAT WAS BEING PRINTED IN SEPTEMBER 1987, 88,89 AND 1990.

THE'ORIC - ISSUE 34 - SEPTEMBER 1987

THIS GREAT FRENCH MAGAZINE INCLUDED A LIST OF ORIC PRODUCTS AND WE LOOK AT SOME OF THE MORE INTERESTING;
ARCADE GAMES: - CROCKY (Loriciels) - A NICE LITTLE 'Pac-man' effort, DEDAL (Infogrames) - A musical 3D labryinth, PENGORIC (Loriciels) - An adaptation of the celebrated 'PENGO',which was popular in cafes in France., RABBIT (Norsoft) - a two player game where you eat carrots,destroy mushrooms and beware acid rain - hectic!!, SUPER JEEP (Loriciels) - with your super jeep you patrol the surface of a hostile planet.
ADVENTURES: - AIGLE D'OR (Loriciels) - a superb graphics adventure., LE MASQUE D'OR (Ordividuel) - retrieve the golden mask or die!!, LE SECRET DU TOMBEAU (Loriciels) - discover the mysteries and secrets of the tomb. Just as much an arcade as an adventure, LE MAGOT (Oric Int.) - this is the first adventure written for the TELESTRAT with over 300 colour locations and humorous text.
UTILITIES:- D.A.O (Blue Ciel) - a design aid, GENCAR (Loriciels) - a character editor, HADES (Ere Info) - double pass assy/diss, SYSTEM'ANIM (Blue Ciel) - Animation, TRAITEMENT 3D (Loriciels) - create,modify and save 3D designs, VORTEX (Loriciels) - super WP with scrollings permitting 80 to 255 columns - used in many of my articles for OUM., EASYTEXT (Oric Int) - another tremendous WP and the one that I am using for this article.
EXTENSIONS: - RTTY (Oric Int) - transforms your ORIC into a teletype terminal.
FACSIMILE (Oric Int) - recieve and send images i.e. a fax machine.
SYNTHEVOC 1 (Ordividuel) - a vocal synthesiser.

OUM - ISSUE 1 - SEPTEMER 1987

ALL READERS WILL RECIEVE A FREE PHOTOCOPY OF ISSUE 1 WITH NEXT MONTH's OUM. THAT FIRST ISSUE WAS FULL OF REVIEWS.

OUM - ISSUE 13 - SEPTEMBER 1988

ORIC GAMES GUIDE BOOKLET WENT INTO PRINT. XENON III TOPS THE CHARTS. PAUL KERSEY - SMITH TO HOLD ORIC SHOW IN WREXHAM (IT NEVER DID HAPPEN). IT IS REPORTED THAT ALLAN WHITTAKER SOON HOPES TO START UP THE PUBLIC DOMAIN SOFTWARE IDEA.

OUM - ISSUE 25 - SEPTEMBER 1989

RESULTS OF THE READER QUESTIONNAIRE PUBLISHED. JOHN HAWORTH LISTS ALL THE BOOKS FOR YOUR ORIC. CLUB DISC ORIC PLAN THE RELEASE OF A NEW COMPILATION CONTAINING TETRIS,MIZAR AND 3D REVERSI. FOYLES BOOKSHOP AT CHARING CROSS ROAD,LONDON ARE SELLING ORIC BOOKS. CAPRI MARKETING,WHO SELL ORIC SOFTWARE, MOVE TO 9 DEAN ST, MARLOW,BUCKS - TEL; 0628 891101

OUM - ISSUE 37 - SEPTEMBER 1990

IN AN EXCLUSIVE INTERVIEW WITH OUM, VINCENT TALVAS ,PRESIDENT OF THE CEO, SAYS THAT ABOUT 6,000 TELESTRATS WERE SOLD IN FRANCE. STAN ELLISON SHOWED US MACHINE CODE HIS WAY. NEW RELEASES RVIEWED INCLUDE: 'KRYSTAL WORLDS', 'ESCAPE' AND 'NHL ICE HOCKEY MANAGER' - A NORWEGIAN GAME WHICH CONTAINS MORE BAD LANGUAGE THAN ANY OTHER GAME. 'TETRIX' AND 'ROBINSON CRUSOE' NEAR COMPLETION. IN AN INTERVIEW WITH ARNT ERIK ISAKSEN OF THE KON, WE LEARN THAT IN THE EARLY DAYS, A COPY OF XENON I WOULD SET YOU BACK 19 POUND.

DAVE DICK

ORIC - THE STORY SO FAR

FOR A REALLY PROFESSIONAL INSIGHT INTO THE HISTORY OF OUR MACHINE,THERE IS NO BETTER READ THAN - 'ORIC, THE STORY SO FAR' WRITTEN AND PUBLISHED BY JONATHAN HAWORTH AT 2 POUND'INCLUDING POSTAGE. ORDER DIRECT FROM JON. 23 FASCINATING PAGES OF A4 PAPER (GOOD QUALITY) AND SMARTLY BOUND.
IT WAS FEBRUARY 2nd 1985 THAT EDENSPRING PUT ORIC INTO RECEIVERSHIP. YET OVER 6 YEARS LATER THERE IS STILL LIFE IN THE PRODUCT. OH!WHAT MIGHT OF BEEN

.. T H E B A C K P A G E ...

THE BACK PAGE WILL VARY FROM ISSUE TO ISSUE. THIS TIME IT INCLUDES SOME LATE NEWS AS WELL AS HINTS AND TIPS.

KLUBB ORIC NORDEN

ARNT ERIK ISAKSEN HAS CEASED PUBLICATION OF THE 'KON' NEWSLETTER IN SCANDINAVIA. HE HAS ALSO STOPPED RELEASING SOFTWARE VIA 'O N SOFTWARE'.
THIS DOES NOT MEAN THE END AS GAMES WILL STILL BE WRITTEN IN SCANDINAVIA AND ARNT HIMSELF HAS RECENTLY UPGRADED TO DISC.
STAALE EIKBRAATEN IS ALSO STILL VERY ACTIVE.
ARNT's STRATEGY GAME OF 'NHL ICE HOCKEY MANAGER' HAS BEEN IMPROVED AND ALL BUGS HAVE BEEN IRONED OUT. IT IS ALSO NOW AVAILABLE WITH 'SAVE GAME TO DISC' OPTION.
ALL 'O N SOFTWARE' TITLES WILL NOW BE RELEASED ON OUR 'MIRAGE' LABEL; AS WILL ANY NEW TITLES FROM SCANDINAVIA.
HOPEFULLY,THIS WILL CUT THE PRICE OF THE SOFTWARE.
FULL DETAILS IN THE NEXT ISSUE.

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BBC USERS

AS I KNOW WE HAVE SOME 'BBC' USERS AND MANY INTERESTED IN RTTY etc; I THOUGHT I WOULD PASS ON DETAILS OF SOME EQUIPMENT THAT A FRIEND OF MINE IS SELLING.
IN THE LATEST ISSUE OF 'RADIO COMMUNICATION', A COMPANY WAS SELLING THE PACKAGES SET OUT BELOW FOR A TOTAL OF ABOUT 300 pounds. THE PACKAGE IS STILL BOXED AND HARDLY USED. PRICE IS NEGOTIABLE. VENDOR IS LES CROPLEY, TEL: 0296 21227 or TRY HIS CALLSIGN,WHICH IS 'GODFC'.
THE PACKAGE: - RX-8 MULTIMODE RECEIVE SYSTEM (FAX to screen to printer, colour SSTV,HF and VHF PACKET,RTTY,AMTOR,CW,ASCII,UoSAT etc) + APT-1 WEATHER SATELLITE MODULE (Converts satellite signal for disply on any FAX syst
m).

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HINTS and TIPS

MANY A PLEASANT HOUR HAS BEEN SPENT PLAYING 'GOLDMINE',THAT 35 SCREENER RELEASED BY 'FGC'.
MY OLD MATE HENRY MARKE FROM PORTSMOUTH HAS COMPLETED THE GAME AND ON THE WAY THROUGH FOUND A BUG IN THE PROGRAM.
HENRY GETS TO SCREEN 22 WITH HIS 5 LIVES INTACT AND GETS AN 'OUT OF MEMORY' ERROR.
TO GET OVER THIS PROBLEM HE DOES THE FOLLOWING: a) PLAY TO SCREEN 20 AND THEN LOSE ALL 5 LIVES. b) RE-START AT SCREEN 20 USING CHEAT MODE (activated by the 'return' key) AND THEN FINISH THE GAME WITH HIS 5 LIVES INTACT.
IT TAKES HIM ABOUT 45 minutes TO COMPLETE IT.

STATUS LINE

IF YOU USE THE FOLLOW AT THE END OF YOUR PROGRAM,YOU WILL OBTAIN COLOUR ON THE STATUS LINE. CHANGE THE CHR$ CODE TO OBTAIN DIFFERENT COLOURS:

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CSAVE CHR$ (4) + Title + CHR$ (7),AUTO
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FOOTBALL MANAGER (Addictive)

IN THIS GAME,THE ENERGY OF THE PLAYERS DECREASES EACH TIME YOU PLAY A GAME.
TO BUILD UP THE PLAYERS ENERGY,TAKE THE PLAYER WITH THE LOWEST ENERGY AND PRESS 'RETURN'. THEN WHEN IT SAYS: "DO YOU WISH TO SELL" ,TYPE 'N' AND LIST THE PLAYERS AGAIN. THE PLAYER SHOULD NOW BE INJURED,IF NOT REPEAT THE PROCESS. WHEN YOU PLAY THE GAME HE SHOULD BE BACK UP TO NEAR FITNESS. DO NOT DO THIS STRAIGHT AFTER LOADING AN OLD GAME AS THE PLAYERS STAY INJURED.

THE HOBBIT (Melbourne House)

TO GET RID OF THE YETI,SAY 'BOO' TO HIM.

TO TURN OFF CURSOR AND KEYCLICK

Type: POKE #26A,10

CABBAGE PATCH

TO RESET HIGH SCORE TO ZERO: POKE #2198,#30
EXTRA LIVES: POKE#1D31,X (where X = no. of lives)

SOUND AND GRAPHICS DEMO

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 1  HIRES:REPEAT:A=A+1:B=B+1:FORX=0TO239STEPA:SOUND1,X,10:CURSETX,0,1:DRAWO,
198,2
 2      NEXT:FORY=0TO199STEPB:SOUND1,B*10,10:CURSET0,Y,1:DRAW238,0,2:NEXT:
UNTILA=270
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