ØRIC

USER

MONTHLY

with Alternative Micros

Keeping the Oric alive

THE EDITORIAL

HELLO AND WELCOME,
HOPEFULLY TO SOME WARMER WEATHER.
    I HAVE BEEN PUTTING IN ABOUT 30 HOURS SOLID PER WEEK ON THE
ORIC FOR THE LAST MONTH AND ALL THE OLD ORDERS AND QUERIES ARE
NOW DEALT WITH. IF YOU HAVE ANYTHING OUTSTANDING WITH ME,THEN
PLEASE LET ME KNOW - JUST IN CASE IT HAS SLIPPED THROUGH THE
NET.
    ARTICLES AND PROGRAMS ARE POURING INTO THE O.U.M OFFICE. IT IS
NICE TO SEE SO MANY OF YOU GETTING INVOLVED. I HAVE HAD TO DO
SPLIT PAGE FORMAT THIS TIME TO CATER FOR EVERYTHING. HOPE YOU
HAVE ALL GOT YOUR MAGNIFYING GLASSES!
    AND SO TO THE INDEX.....

GRAND RAFFLE

OUR GRAND RAFFLE WILL AGAIN TAKE PLACE AT THE AYLESBURY ORIC
MEET ON SAT.JUNE 18th.
    IF YOU HAVE ANYTHING TO DONATE THEN PLEASE LET ME KNOW WHAT YOU
ARE BRINGING OR SENDING.
    ALREADY PROMISED ARE:
        ACORN ELECTRON C/W BOOKS AND SOFTWARE FROM RICHARD
FARRELL.
        'INVITATION TO FORTH' - A HARDBACK IN EXCELLENT
CONDITION,WRITTEN BY HARRY KATZAN Jr. WRITTEN IN 1981,IT GIVES A
GOOD EXPLANATION OF 'FORTH' AND IS A GOOD TUTORIAL. DONATED BY
STEVE MARSHALL.
        A BOX OF DISCS - FROM YOUR EDITOR.

    TICKETS FOR THE RAFFLE ARE 1 POUND EACH.
===

'LINES' AND 'LORIGRAPH'

STEVE 'MUSO' MARSHALL INFORMS ME THAT HIS 'LINES' PROGRAM (OUT
ON OUMDISC #4) IS PROVING TO BE AN EXCELLENT AID TO USING
'LORIGRAPH'. BENEFITS INCLUDE: A) PLOTTING A SINGLE PIXEL AT A
TIME WITHOUT HAVING TO BASH THE SPACE BAR, B) ALLOWS SINGLE
PIXEL DELETION,SO THAT YOU CAN ADD DETAIL TO AN AREA OF WHITE
ETC., C) THE DIAGONAL MOVEMENT FACILITY MEANS THAT YOU CAN ADD
'SHADING'. STEVE HAS SENT ME TWO EXAMPLES OF USING 'LINES' WITH
'LORIGRAPH'. ONE IS A DRAWING OF BARRY MUNCASTER,AND THE OTHER
IS WOODY ALLEN - BOTH EXCELLENT QUALITY.
    ALSO ON THE CARDS USING THE TWO PROGRAMS IS A PROGRAM FROM
STEVE - IT'S A GAME THAT WILL FEATURE SOME 30 HIRES SCREENS.
===

N E W S ... N E W S ...

SUBSCRIPTION RATES

WITH IMMEDIATE EFFECT THE NEW SUBSCRIPTION RATES ARE AS
FOLLOWS:

    U.K... 5 MONTHS - 7 POUNDS
           1 YEAR   - 15 POUNDS

    EIRE/EUROPE .... 6 MONTHS - 10 POUNDS (UNALTERED)
                     1 YEAR   - 18 POUNDS.

WE ARE SORRY TO HAVE TO INCREASE THE PRICE,BUT POSTAGE AND
COPYING CHARGES HAVE INCREASED DRAMATICALLY OVER THE PAST COUPLE
OF YEARS,WHILST NUMBER OF PAGES PER ISSUE HAS INCREASED.
    AVERAGE SIZE IN 1991 - 17 PAGES

    "   "   " 1993 - 21 PAGES

    FEB.'94 ISSUE - 24 PAGES

CHEQUES FOR RENEWALS SHOULD BE MADE PAYABLE TO : DAVE DICK
(O.U.M), EXCEPT FOR CHEQUES FROM OUTSIDE THE U.K,WHICH SHOULD
JUST BE PAYABLE TO DAVE DICK.
    THE 'HALIFAX',WHICH HOLDS THE O.U.M FUNDS IS A BIT 'NAFF' WITH
OVERSEAS CHEQUES,AND I HAVE TO PROCESS THESE THROUGH ANOTHER
ACCOUNT.

I THANK YOU FOR YOUR CONTINUED SUPPORT. IN FUTURE NOBODY (AND I
DO MEAN NOBODY) WILL RECIEVE ANY ISSUES AFTER THEIR SUBSCRIPTION
ENDS,AND NO FURTHER REMINDERS WILL BE SENT FOLLOWING THE ONE
WITH YOUR LAST ISSUE. A FEW HAVE SEEN US OFF,AND I HAVE BETTER
THINGS TO DO THAN KEEP CHASING PEOPLE. YOU HAVE BEEN WARNED!
    IF YOU HAVE A PROBLEM WITH FUNDS ON A SHORT TERM BASIS,THEN LET
ME KNOW - WE ARE HUMAN!

===

MCP40 - DUMP

AS WE GO TO PRESS, I HAVE JUST RECIEVED SOME 4-COLOUR HIRES
DUMPS THAT HE HAS DONE TO THE MCP40. THE PROGRAM IS SIMPLE TO
USE ,BUT TAKES OVER AN HOUR TO PRINT. COLIN COOK SENT ME
COLOURFUL DUMPS OF THE LOADING SCREENS FROM THE 'HELLION' AND
'TRIATHLON',PLUS A VERY PLEASING SCREEN SHOT FROM THE FRENCH
STRATEGY ENTITLED "UN AFFAIRE EN OR".
    MORE NEWS ON THESE IN THE NEXT ISSUE.

MASTERMIND

MANY MOONS AGO COLIN COOK SENT ME HIS VERSION OF THE PEG-BOARD
GAME "MASTERMIND". AN EXCELLENT COLORFUL RENDITION,BUT
UNFORTUNATELY THE DOS HE USED TO WORK WITH COULD NOT BE
'CONVERTED' TO SEDORIC. NOW COLIN HAS SENT ME A SEDORIC VERSION
AND THUS IT WILL APPEAR ON OUMDISC#5

READERS LETTERS

DEAR DAVE,

I HAVE A PROBLEM WITH MY DISC COPY OF 'BACKGAMMON' FROM IJK. THE COMPUTER DOES NOT SEEM TO TO BE ABLE TO WIN A GAME EVER, AS IT WILL NOT 'BARE OFF' AT THE END, ALTHOUGH THE DICE ARE IN IT'S FAVOUR.

I HAVE A REQUEST FOR HELP FROM ANYONE WHO MAY HAVE KEYBOARD KEYS ON THEIR ATMOS THAT WILL NOT READ EVERY TIME WHEN STRUCK. I HAVE KEYS 'X', '5' AND 'CURSOR DOWN' THAT ARE A PAIN IN THE BUTT. I HAVE TRIED A COUPLE OF TIMES TO CLEAN THEM BY LIFTING OFF THE PRESS PADS, BUT THIS ONLY SEEMS TO HELP FOR A LIMITED TIME, AND I SOON FIND THAT I'M MISSING THINGS OUT AGAIN. I SELDOM LOOK AT THE SCREEN WHEN TYPING A LETTER, AND ONLY READ IT WHEN FINISHED.

FINALLY, DON'T FORGET THAT THERE ARE PEOPLE OUT HERE WHO ARE WILLING TO HAVE A GO AT HELPING OUT IF IT IS WITHIN THEIR CAPABILITY. I'LL DROP YOU A LINE FROM TIME TO TIME JUST TO CHEER YOU UP AS IT GIVES ME AN OPPORTUNITY TO TYPE, INSTESD OF WEARING OUT THE CURSOR KEYS PLAYING GAMES.

- JOHN HURLEY (YEOVIL)

DEAR JOHN,

A 'CLEAN' VERSION OF 'BACKGAMMON' SHOULD NOW BE WITH YOU.

REGARDING YOUR KEYBOARD PROBLEM. I HAVE CHECKED THE KEYBOARD MAP FROM THE DECEMBER ISSUE OF THE CEO-MAG, AND IT APPEARS (IF I'VE READ IT CORRECTLY) THAT THESE KEYS ARE NOT ON ONE CIRCUIT, AND THUS A DY JOINT IS PROBABLY OUT OF THE QUESTION. SOMETIMES THE GAP BETWEEN THE CONTACTS WIDENS. SOME TIME AGO IN O.U.M (I'LL LET YOU CHECK BACK - ABOUT MAY '93), WE PUBLISHED DETAILS OF THE STEVE HOPPS REPAIR SERVICE FOR THE KEYBOARD.

THANKS FOR YOUR OFFER OF HELP. I SOMETIMES WISH THAT LIKE QUITE FEW OF YOU OUT THERE THAT I HAD EARLY RETIREMENT, SO THAT I COULD DO THE THINGS I REALLY WANTED TO DO IN LIFE. UNFORTUNATELY I HAVE NO 'NEST-EGG' SET ASIDE. I HAVE BEEN PUSHING QUITE A FEW ORIC TASKS OUT TO OTHER PEOPLE LATELY AND WILL CONTINUE TO DO SO - ALL HELP IS GREATLY APPRECIATED AS IT HELPS ME AND THUS HELPS YOU ALL. SOMETIMES, HOWEVER, I HAVE TO WEIGH UP THE PROS AND CONS. IF IT TAKES ME 15 MINUTES TO EXPLAIN TO SOMEONE WHAT I WANT DONE, AND I CAN DO IT MYSELF IN 30 MINUTES, THEN IT ISN'T WORTHWHILE.

- DAVE

DEAR DAVE,

GREAT NEW COVER FOR THE MAG.... LIKE THE SMALL PRINT BIT, THOUGH THE BIG STUFF IS PROBABLY QUICKER TO DO...... LIKED THE PICTURE OF ALLY (ALLY-OOPS) - WAS AN MCP40 USED FOR THE PRINTOUT, THOUGH IT LOOKS LIKE A DOT MATRIX JOB TO ME... I'VE BEEN TRYING TO GET A PRINTER DUMP PROGRAM TO DO AN 'INVERSE' PRINTOUT FOR AGES.

- STEVE 'MUSO' MARSHALL (EDINBURGH).

DEAR STEVE,

MIXED RECEPTION ON THE NEW STYLE COVER - CERTAINLY MORE PROFESSIONAL.

I'M SENDING YOU 'PIXED' FROM THE PEN OF JONATHAN BRISTOW, WHICH MAY HELP YOU. 'CHARED' AND 'OBED' MAY ALSO BE OF INTEREST, REGARDING YOUR DRAWINGS AS MENTIONED IN THE 'NEWS' SECTION.

THE SMALL PRINT IS NOT REALLY MUCH MORE TIME CONSUMING AND I FEEL IT IS A BETTER QUALITY PRINT.

'ALLY-OOPS' WAS INDEED DONE ON THE FAITHFUL MCP40, AND I HAVE MANY MORE SUCH PICS FROM BRIAN KIDD.

REGARDING 'INVERSE' ON A PRINTOUT - TAKING THE LISTING FROM PAGE 22 OF THE LAST ISSUE OF O.U.M, CHANGE THE GOSUB ON LINE 40 TO GOSUB 2000. (HEY WELSH WIZZARD - THAT DON'T LOOK RIGHT - PERHAPS THE GOSUB SHOULD REMAIN THE SAME AND LINES 1000 AND 2000 SWAPPED).

- DAVE

DEAR DAVE,

I FOUND MYSELF IN ACCORD WITH THE ARTICLE ABOUT STRUCTURED PROGRAMMING BY MATTHEW COATES IN ISSUE 77. THERE IS AN AWFUL LOT OF RUBBISH VOICED ABOUT IT AND THE INADEQUACIES OF 'BASIC'. FORTUNTAELY THIS TREND IS DECAYING.' BASIC' DID INDEED DEMOCRATIZE COMPUTER "PROFFESSIONALS" WHICH STILL LINGERS TO THIS DAY. I LOOK FORWARD TO THE NEXT PART.

- ALAN BOWERS (ISLE OF WIGHT)

DEAR ALAN,

NICE TO HEAR FROM YOU, AND NICE TO HEAR THAT MATTHEW'S ARTICLES ARE APPRECIATED.

- DAVE

THE REVIEW PAGE

TITLE: ANKHESENAMON   OUTLET: CEO (Via J. Haworth)
PRICE: 4.99 on 3" or 3.99 on 3.5" (not available on cassette)

AUTHOR: Francois Launay

This latest release from Club Europe Oric was originally accepted by LORICIELS (the famed French software house). Due to the decline of the Oric they decided against releasing,and were instead going to release it for another machine. This did not come to fruition,and therefore the author has given permission for Club Europe Oric to market it to the Oric fraternity.

The adventure is named after TUTANKHAMUN's wife and the aim of the game is to find a route to the treasures of her ex-husband's tomb.

A good comparison to this game would be the renowned L'AIGLE d'OR,which was probably the best and most popular adventure to emit from France. Well drawn scenes and a larger than life hero/heroin. Your hero has a possible 32 stances. The objects you find en-route are very well drawn,and include the usual array of insects, plus paintings and objet d'art.

Plenty of hieroglyphics to decipher, liquids to drink, and decisions to make.

All commands are one single letter,plus cursor keys for movement.

Matthew and I took about 20 minutes to safely get away from the front of the museum. The original instructions stated that the SPACE BAR had no effect on movement,when it actually stopped movement i.e. if you press left cursor then you keep walking left until the Space Bar is hit. There can be a delay,so you need to practice your timing. After overcoming the initial problem,Matthew and I visited quite a number of rooms (I don't know how many there are in the game). Try shaking the tree! Don't get trapped in the rooms with the sliding doors!

A nice introduction to the game encompasses the history of TUTANKHAMUN,and lists the commands,whilst you listen to background music. The HIRES animation demo is most impressive.

I found this to be a much more playable adventure than the author's ROBINSON CRUSOE. This is much more interesting and graphically far superior.

Those that have never seen L'AIGLE d'OR will swoon over this,as the context will seem excitingly original for the Oric.

Text adventures bore the pants off me,whereas this can hold my interest. Well worth the investment.

You die when you lose all your strength, meet a nasty insect or commit suicide.

A MUST FOR ALL ADVENTURERS.

OUM RATING - 91%.

- Dave Dick

===

ANKHƩENAMON
A game by François Launay

Oric/Atmos Paint Routine

by Kieron Smith

INTRODUCTION : Do you remember all those years ago that moment when you first saw that the Oric had a command 'FILL' ? Did you think, like me, that this was a magical function that did as its name would suggest ? Well here's a neat machine code routine that actually does *fill* any given closed shape. I first saw it in 'Your Computer' of December 1984 and have found it very useful as it is very quick and uses little memory (about 1.3 kbytes).

DETAILS : The routine will fill any closed space. If you wish to fill in *ink* then you must set the initial fill point with CURSET,CURMOV OR DRAW in *background*
EG; CURSET 120,100,0. If you want to fill in background (I can't think why you would want to do this) then you must set a foreground point. In short, the type of paint used will be opposite to the type of point plotted.

WARNING : 1. Note the changes for 16K users (are there any out there!)
2. Don't leave out the check loop to save time, it will find typing errors and the line(s) on which they occur.
3. Only fill inside *closed* shapes unless you want 48000 black dots staring at you !

THE PROGRAM : Written by S Linnik from Nuneaton.

```
10 SI=0      '16k machines SI=32768
20 HI=38900 '16k machines HI=6132
30 ST=255
40 CA=HI-510:PRINT"Call progam with C
ALL ";CA:PRINT
50 PRINT"to CSAVE program as data use
"
55 PRINT"address A";
60 PRINT HEX$(CA-23);",E";HEX$(HI)
70 PRINT:PRINT"POKE address for INK/P
APER paint:=";CA-23
80 PRINT:PRINT"checking data..."
90 FOR LI=0 TO 37:CS=0:FOR BY=0 TO 13
100 READ V:CS=CS+V:NEXT BY
110 READ CV:IF CV 256 THEN GOTO 130
120 IF CS=CV THEN NEXT LI:GOTO 140
130 PRINT"checksum error in line ";10
10+10*LI:END
140 PRINT"checksum ok... type L to lo
ad program"
150 GET A$:IF A$  "L" THEN END
160 RESTORE:PRINT:PRINT" loading..."
170 FORLI=CA-7 TO CA+497 STEP 14:FOR
BY=0 TO 13
180 READ V:POKE LI+BY,V
190 NEXT BY:READ V:NEXT LI
200 FOR BY=1 TO 12:READV:A=CA+V
210 DOKE A,DEEK (A)+HI-38900:NEXT BY
220 DOKE CA-8,CA-42-ST:DOKE CA-10,CA-
42-2*ST:DOKE CA-12,CA-42-3*ST
230 DOKE CA-14,48920-SI:DOKE CA-16,41
176-SI:DOKE CA-18,40920-SI
240 DOKE CA-23,256*ST
250 PRINT"HIMEM set to ";HI-560-3*ST:
HIMEM (HI-560-3*ST):END
1010 DATA 1,32,16,8,4,2,1,120,32,229,
151,32,2,150,780
1020 DATA 32,229,151,88,96,173,229,2,
201,2,176,6,73,255,1713
1030 DATA 170,232,134,20,173,25,2,162
,255,56,233,6,232,176,1876
1040 DATA 251,105,6,168,185,240,149,1
33,1,138,24,101,25,133,1659
1050 DATA 2,169,0,101,26,168,174,26,2
,240,13,169,40,24,1154
1060 DATA 101,2,133,2,144,1,200,202,2
08,243,162,0,134,12,1544
1070 DATA 134,13,134,19,166,2,165,1,3
2,184,150,164,13,196,1373
1080 DATA 12,208,1,96,177,33,133,10,1
77,35,133,11,177,31,1234
1090 DATA 133,9,41,128,133,15,16,26,1
65,10,56,233,40,133,1138
1100 DATA 10,176,2,198,11,200,196,21,
208,2,160,0,132,13,1329
1110 DATA 6,9,70,9,16,6,177,31,9,128,
145,31,162,0,799
1120 DATA 134,6,134,14,232,32,213,150
,162,255,32,213,150,165,1892
1130 DATA 14,208,16,165,6,240,23,133,
```

ORIC PAINT ROUTINE CONTINUED :

```
11,165,5,133,10,165,1294
1140 DATA 4,133,9,16,221,164,6,240,7,
165,4,166,5,32,1172
1150 DATA 184,150,184,80,150,132,16,1
64,12,145,31,138,145,33,1564
1160 DATA 165,16,145,35,200,196,21,20
8,2,160,0,132,12,196,1488
1170 DATA 13,208,2,104,104,96,134,17,
162,0,134,18,134,7,1133
1180 DATA 134,8,165,15,240,4,230,7,20
8,2,230,8,165,11,1427
1190 DATA 133,3,165,10,133,2,165,9,13
3,1,165,3,197,28,1147
1200 DATA 176,7,166,2,228,27,176,1,96
,197,30,144,7,166,1423
1210 DATA 2,228,29,144,1,96,160,40,17
7,2,168,69,20,37,1173
1220 DATA 1,240,7,165,19,208,2,104,10
4,96,152,41,96,240,1475
1230 DATA 250,162,0,160,0,177,2,168,4
1,96,208,4,169,1,1438
1240 DATA 208,12,152,69,20,37,1,208,5
,164,7,240,1,232,1356
1250 DATA 133,7,160,80,177,2,168,41,9
6,208,4,169,1,208,1454
1260 DATA 13,152,69,20,37,1,208,6,164
```

```
,8,240,2,232,232,1384
1270 DATA 133,8,138,240,74,224,3,240,
51,165,2,164,15,240,1697
1280 DATA 14,224,2,240,41,56,233,40,1
70,165,3,233,0,208,1629
1290 DATA 12,224,1,240,27,24,105,40,1
70,165,3,105,0,168,1284
1300 DATA 165,6,240,25,165,4,197,1,20
8,8,228,5,208,4,1464
1310 DATA 196,6,240,19,165,1,166,2,16
4,3,230,14,76,184,1466
1320 DATA 150,165,1,133,4,134,5,132,6
,165,18,208,8,230,1359
1330 DATA 18,165,17,133,19,16,8,160,4
0,165,1,81,2,145,970
1340 DATA 2,165,1,166,17,48,13,74,144
,25,169,32,230,2,1088
1350 DATA 208,19,230,3,208,15,10,201,
33,144,10,169,1,166,1417
1360 DATA 2,208,2,198,3,198,2,133,1,7
6,245,150,162,36,1416
1370 DATA 181,0,188,203,149,157,203,1
49,148,0,202,208,243,96,2127
1380 DATA 2,5,8,40,86,153,158,189,426
,493,500,503,1,1,2565
```

Well I hope you find this useful. Please note that it runs on both the Atmos and Oric-1 16/48K.

FUTURISTIC CHARACTER SET: Whilst I have the space I thought I would continue to fill the page with meaningless numbers ! Here is the data for an alternative 'futuristic' character set that I designed many years ago and found during another rummaging session !

```
A 62,34,34,62,50,50,50,0        L 32,32,32,48,48,48,62,0        W 34,34,34,50,50,62,34,0
B 60,36,36,62,50,50,62,0        M 54,42,34,50,50,50,50,0        X 34,34,36,24,28,50,50,0
C 62,32,32,48,48,48,62,0        N 62,34,34,50,50,50,50,0        Y 34,34,34,62,6,6,30,0
D 60,34,34,50,50,50,60,0        O 62,34,34,50,50,50,62,0        Z 62,2,6,12,24,48,62,0
E 62,32,32,60,48,48,62,0        P 62,34,34,62,48,48,48,0        1 24,8,8,12,12,12,62,0
F 62,32,32,60,48,48,48,0        Q 62,34,34,50,50,50,63,0        2 30,34,6,12,24,48,62,0
G 62,32,32,48,54,50,62,0        R 60,36,36,62,50,50,50,0        3 62,6,12,6,6,6,60,0
H 34,34,34,62,50,50,50,0        S 62,32,32,62,6,6,62,0          4 32,32,32,44,62,12,12,0
I 60,16,16,24,24,24,60,0        T 62,8,8,12,12,12,12,0          5 62,32,60,6,6,6,60,0
J 30,4,4,6,6,6,62,0             U 34,34,34,50,50,50,62,0        6 32,32,32,62,50,50,62,0
K 34,38,44,56,60,54,50,0        V 34,34,34,52,52,24,24,0        7 62,2,2,14,6,6,6,0
                                                                8 62,34,34,62,50,50,62,0
```

FOOTNOTE: I have nearly finished my golf program that Dave mentioned in the last issue. It is mostly written in BASIC. but I hope that if you get a copy you will find it quite ingenious. Bye for now....

```
9 62,34,34,62,6,6,6,0
0 62,34,34,50,50,50,62,0
```

KIERON

INTRO. Last month we saw how different notes were achieved. This month we will have a look at the notes that musicians use. After all, you can't use them all at once ! Musicians use chords - notes that are played together, and play on a scale - a specified selection of notes. Sometimes notes outside the scale are used. These are called 'accidentals'. But before I drift off the subject, let's look at the simplest of the scales.

MAJOR SCALES. You may have heard of music that is "in C minor", or "played in the key of G". This refers to the scale used. (Remember, a scale is a sequence of musical notes in order.) The simplest of these is C major, which uses only the 'white notes' on the piano. Let's take a closer look at this scale.
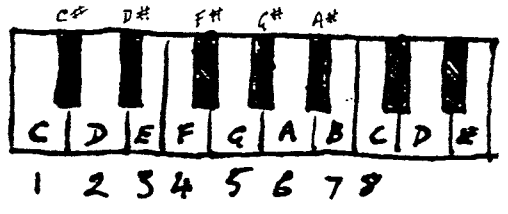
(THE 'C' SCALE STARTS, AND ENDS ON 'C'
USING THE WHITE NOTES NUMBERE 1-8.)

From any note on the piano, to its immediate neighbour, (up or down), is a semitone. e. g. C-C#, or D-C#, or E-F. A tone is equal to two semitones e.g. C-D, or E-F#, or A#-C. Our major scale therefore has the form:

TONE   TONE   SEMITONE   TONE   TONE   TONE   SEMITONE
(C-D   D-E   E-F   F-G   G-A   A-B   B-C   )

This is the same for all the MAJOR scales. So, for instance, the scale of E major would be:

  E F# G# A B C# D# E.   (Follow this through on the keyboard drawing.)

INTERVALS. You will notice I have numbered the notes in the C scale. If we play a C followed by an E, the two notes would be 'a third' apart - an you can see this is 'note 3' in the diagram. C-F is a fourth, C-G a fifth etc. These are known as intervals. It is important to note that a third does NOT have three notes in between the two played.

CHORDS. A basic chord is comprised of the 1st, 3rd and 5th, (of the scale), so a C major chord is made from the notes C,E and G. (Similarly, a E major chord is E,G#,B.) To obtain a MINOR chord we simply move the third down a semitone, so a C minor chord is C,D#,G - our E minor chord E,G,B.

INVERSIONS. The three notes of a chord can be played in three different 'inversions'. This simply refers to the order they are played in - so the first order that a C major chord can played in is C,E,G, which we have already seen. This is called the 'root position'. To obtain the 1st inversion, we play the bottom note, (a C in this case), an octave higher. The structure is now E,G,C - the 1st inversion. To get the 2nd inversion, again move the bottom note up an octave. We now have G,C,E. If we did this again we return to our original C,E,G form, so there are only three different ways of playing the chord.
As ever, the terms used in music are confusing, and when it comes to numbering things, the 2nd item oftenends up being called the 1st. Funny old world !
They do sound different, and can be used to give your music a more interesting sound. On the piano they are also useful in playing, in that, you can play several chords without moving your hand about too much. (I often use guitar music to play from. This comprises of chords written as letters, e.g. C, C7, Bm, and the melody line written on the treble clef stave.) If all chords were played in their 1st inversion, it would become very difficult to keep track of hand positions. Using other inversions makes things a lot easier !

     STEVE THE MUSO

THE GAMESTER

INTERTRON

THE BUG REPORTED IN 'INTERTRON' (FEB. O.U.M) HAS BEEN FIXED BY
BRIAN KIDD. WE HOPE TO PUT THE GAME ON OUMDISC #5

NHL ICE HOCKEY MANAGER
--- --- ------ -------

THIS STRATEGY GAME FROM ARNT ERIK ISAKSEN IS NOW ON SEDORIC AND
WILL BE ON OUMDISC #5

COLUMNS

LIZ COATES (WIFE OF MATTHEW) HAS BEATEN ALL BUT ONE OF STEVE
MARSHALL'S HI-SCORES ON 'COLUMNS' - FULL DETAILS IN THE NEXT
PRINTING OF THE 'ULTIMATE HI-SCORE TABLE'.

PALLIDA MORS/COWORTH PARK HORRORS
-------- ---- ------- ---- -------

A MAP OF THE FIRST PART OF THE ABOVE ADVENTURE (SENT OUT ON
OUMDISC #4) WILL BE PUBLISHED SHORTLY.

MATTHEW'S HALF-TERM
------- - ---- ----

DUE TO THE INCLEMENT WEATHER, YOUNG MATTHEW DICK HAS SPENT MOST
OF THE SCHOOL HALF-TERM HOLIDAY INDOORS.
THE ORIC HAS TAKEN A REAL BASHING. TWO GAMES IN PARTICULAR TOOK
UP MOST OF THE WEEK - 'OPERATION GREMLIN' (WINTERSOFT),AND
'FRIGATE COMMANDER' (IJK). ALSO TAKING UP SOME OF HIS TIME WAS
'BUCCANEER' (F6C). MATTHEW HAS VISITED SOME OF THE ISLANDS,BUT
WOULD LIKE TO KNOW IF IT IS POSSIBLE TO LAND,AND IF SO,HOW? ANY
INFORMATION WOULD BE GREATLY APPRECIATED.

HI-SCORES
-- ------

HALF-TERM ALSO MEANS A HOLIDAY FOR TEACHERS,AND PETER THORNBURN
HAS BEEN ATTACKING THOSE HI-SCORES. HE REPORTS THE FOLLOWING:
    TETRIS6B (OUMDISC4) - 8,347
    STRESS (OUMDISC4) - 1,688
    INVADERS (ARCADIA) - 1,850

COLUMNS

I SHOULD OF SENT ALL 'COLUMNS' USERS THE UPDATED VERSION,WHICH
INCLUDED THE ABILITY TO CHANGE TUNES AND VOLUME. IF YOU WERE
MISSED,THEN PLEASE DROP ME A LINE.

MIND MADNEZ
---- ------

THOSE WISHING TO UPDATE THEIR VERSION OF 'MIND MADNEZ' SHOULD
SEND ME A DISC.

'HI-SCORE TABLE'
-- ----- -----

NEW HI-SCORE TABLE NEXT MONTH. ANY NEW HI-SCORES TO SCORES
STEVE MARSHALL A.S.A.P

BITS 'N' BOBS

OUMDISC #4
------- --

THE OUMDISC WENT OUT WITH 28 PROGRAMS ON IT. IF YOU WERE MISSED
OFF THE MAILING LIST THEN JUST SEND 3.50.
THERE WERE STRATEGY GAMES,UTILITIES,DEMOS,ARCADES,ADVENTURES
AND MUSIC ON IT.
THE ONLY BUG I HAVE ACCROSS IS THAT PROGRAM 29 WILL ONLY LOAD
WITH: !LOAD"LINES". THIS WAS IN FACT CORRECTED ON LATER
DESPATCHES.

OUMDISC #5
------- --

NO PROMISES THIS TIME ON WHEN IT WILL BE OUT. I AM PLANNING FOR
MAY. IF YOU DO NOT WISH TO RECIEVE IT THEN PLEASE LET ME KNOW BY
APRIL 20. I HAVE ALREADY DUMPED SOME FILES TO MY WORKING
VERSION. THESE INCLUDE: MORE UTILITIES FROM DR.RAY, 'DONALD
DUCK' TRANSFERRED FROM A PC.PCX FILE, A 'COLUMNS' DEMO,SOME
MUSIC (A LA SONIX AND OTHER METHODS), AN ARCADE AND ......

SONIX LIBRARY
----- -------

WITH ANOTHER 'SONIX' DEMO FROM THE 'MUSO' ALREADY TO HAND AND
THE IMMINENT ARRIVAL OF A COUPLE MORE FROM J.B., WE HOPE TO
START A 'SONIX' LIBRARY. ALTERNATELY THESE TUNES WILL BE SENT
OUT ON FUTURE O.U.M DISCS.

NEW CLIP ART FROM THE C.E.O
--- ---- --- ---- --- -----

SOME GREAT NEW CLIP ART IS NOW AVAILABLE FROM JON (SEE PAGE
20).
I HAVE ONLY SCANNED THE DISCS - FAVOURITES TO DATE ARE 'ANIMAL
FONTS'(THE ALPHABET IN ANIMAL FORM), AND THE 'WILDWEST' SCENES
FROM CLIP-ART 2. ON 'ANOTHER 40 ANIMALS' I PARTICULARLY LIKED
THE WOLVES AND THE TRIO OF PIGS. SPACE AND TIME PERMITTING, I
WILL TRY AND PRINT SOME FOR AN ISSUE.

THE BOOK
--- ----

JONATHAN BRISTOW AND JOHN FOGGIN SENT ME THEIR REASONS FOR
WANTING THAT GEOFF PHILLIPS BOOK. ONE A THREATENING LETTER,THE
OTHER WAS BEGGING!
LET'S SEE WHO GETS IT. TWO SCRAPS OF PAPER,WITH A NAME ON EACH.
CHUCK THEM IN THE AIR AND SEE WHICH LANDS WITH THE NAME RIGHT
SIDE UP FIRST.
JONATHAN BRISTOW IS THE WINNER. SORRY JOHN - YOU'LL GET THE
NEXT AVAILABLE COPY.

ROMANIAN UPDATE
-------- ------

FRANK BOLTON'S ROMANIAN APPEAL IS GATHERING MOMENTUM.
STEVE MARSHALL HAS DONATED SOME CASH TOWARDS A DISC DRIVE, NICK
HAWORTH HAS DONATED A COPY OF HIS 'COLUMNS', COLIN COOK IS TO
CONTACT SOME OLD ORIC PALS TO SEE IF HE CAN GET THEM TO PART
WITH MACHINES,AN ORIC-1 FROM MATTHEW SHAKESHAFT,AN ATMOS FROM
NIGEL ALEFOUNDER,AND TIM 'CHEQUE IS IN THE POST' PHOENIX WILL
DIG SOMETHING OUT. WHAT ARE YOU GOING TO DO??

Machine Code for the Oric Atmos (Part 33)   Peter N. Bragg

The Story so far
----------------- We have looked at essentials for machine code programming
and a small selection of useful 6502 Instructions appeared in Part 22 of the
series. A few programming techniques, have also been covered. The last few
issues have concentrated on the subject of binary code and we have been
looking at instructions that can be used to mask out specific items of data.

It is easier to grasp how things work, if you can see an example of them in
action. As I have already mentioned, masking instructions come into their
own, in graphics or when used to set up hardware.

The main thing that I have used masking instructions for on the Oric has
been setting up the Expansion Board, which is featured as a project in the
Oric "Advanced User Guide". The Expansion Board is a very interesting item
and there are quite a number of functions on it, that I have yet to try,
but of course, not many people have this piece of hardware.

In this series, I try to avoid the use of extra hardware and keep to the
essential Oric-1/Atmos setup. It is also a good thing to keep practical
examples of instructions as small and simple as possible. This bring us to
the subject that we looked at briefly last time. That involved control of
software from the keyboard and the problems that can be caused if the "CAPS
LOCK" has not been set correctly. This is not a serious problem, but it does
provide an opportunity to illustrate a simple use of a masking operation.

First of all, the problem. This is caused by the difference between the
codes for small (lower case) letters and capital (upper case) letters.
If your keyboard is set to produce small letters and your software expects
capitals, the chances are that your program may "hang up".

The reason is simple. The code for a small letter is different from that
used by it's capital letter, so the software doesn't recognise it. However
there is a relationship. Look at the ACII character code set (listed in most
computer manuals) and you will see that the codes for capital letters "A" to
"Z" run from from 41 to 5A in hex. For the small letters, "a" to "z", it is
61 to 7A. If you look at these codes and convert a few samples from each set
into binary values and look specifically at Bit 5 in each case, you will
find that it is Bit 5 that controls whether the code is for an upper case
(capital) letter, or a lower case (small) letter.

For a small letter, Bit 5 is always set to "1". but in the code for it's
capital letter, Bit 5 is always cleared to "0". That is the only difference.

This is where we can make use of a masking instruction. If you use an AND
instruction with a mask set to 1101 1111 (DF hex) on any data byte, you will
find that it will clear Bit 5 to "0" in that data byte, unless Bit 5 is
already clear. If the data byte is a code for a letter, masking with that
value, will have no effect on the capital letter codes, but it will change
the small letter codes to capital letter codes. So in effect if you are
reading the keyboard for control input, your software will only see capital
letters, irrespective of whether the "CAPS LOCK" is set, or not.

If you are only using letter codes, it is simple enough to pass all of them
through an AND masking instruction, with the mask set to 1101 1111 in binary.
Look at the small hex/binary conversion table published in the last issue of
OUM and you will find that binary value 1101 1111 of the mask, is DF in hex.

I should mention that there is one thing to watch out for. If you are simply
using the letter keys for control, you can pass all input from the keyboard
straight through an "AND" instruction. However, if you are also making use
of other ASCII codes such as numbers and punctuation marks, you may well
need to confine the masking instruction to the letter codes only. The
routine listed below will do the trick, if called up to vet keyboard input.

```
Oric                           Sample Routine                    10 Feb 94
----                           -------------                     ---------
[ JSR 1210 ]----------------[Convert L/Case only, to U/Case]----------[ / ]

                  :                : Enter with input item in Accumulator.

         ---start---          ---Filter Out Lower Case Codes---
1210:C9 61      : CMP# "a"    : Is item 61 ("a") or higher code value ?
1212:30 06      : BMI"121A"   :    No - so skip to finish now ("N" Flag = 1).
                               Yes - so test for "z" plus one.
1214:C9 7B      : CMP# "z+1"  : Is item a higher code value than 7A ("z") ?
1216:10 02      : BPL"121A"   :    Yes - so skip to finish now ("N" Flag = 0).
                                   No - so item must be in "a" to "z" range and
                                        therefore lower case, so convert it.

                             ---Change Lower Case to Upper Case---
1218:29 DF      : AND# DF     : Mask Bit 5 to "0" (DF hex = 1101 1111 binary)

                             ---Finish---
121A:60         : RTS         : Exit
          ---end---


[ CALL#1010 ]--------------[Any Old Software]---------------------------[ / ]

          ---start---       ---Fetch a Key Press---
1010:20 78 EB : JSR EB78    : Read keyboard (using GTORKB) and then
                              test to see if key pressed ?
1013:10 FB      : BPL"1010"  :    No - Key not pressed, read keyboard again.
                                 Yes - Key was pressed so...

1015:20 10 12 : JSR 1210    : Convert any Lower Case input to Upper Case
                              (using routine listed above)
```

and carry on from there, to use the keyboard input for controls etc....

[--]
The above is just a sample The addresses shown here, are only used to
illustrate how the above listing works. The routines can be relocated to any
available address, you wish to use.

The main operation, is the masking instruction, shown here at address 1218.
That clears Bit 5 of the item in the Accumulator, in the way illustrated in
the last couple of articles. We want the masking instruction to operate on
lower case letter codes only, so the first four instructions, 1210 to 1216,
are used to ensure that any other codes, skip the masking instruction. Those
four instructions sidetrack the unwanted higher and lower values past the
mask instruction, by using CMP to set the "N" flag which controls the two
Branch instructions. The calling routine, starting at 1010, illustrates one
way to incorporate the operation into software.

Next time, we look at the other main binary operation, Rotate instructions.

Around the middle of December I had an idea to buy a small pair of amplified speakers just in case my sons bought me a portable CD player for Christmas. Fortunately for them they did take the unmerciful jibes to heart and came up with the goods, much to my surprise.

At time of purchase I did think the speakers could be connected into the Oric to enhance the music quality. The only adaptor required was from the 7 pin din tape output to a miniature stereo jack socket for the speaker connection, as long as one is not using the cassette port for anything else it is quite easy.

The speakers were connected to the mains via a plug top adaptor and the Oric connected, unfortunately the volume was no greater than from the Oric speaker which meant some extra thought had to be given to the matter.

There are not many things I leave in one piece for very long; armed with a circuit diagram supplied with the speakers and a screwdriver I took the case apart and checked the circuit out. It so happened that the amplifier chip used is in the Maplin Catalogue and the typical circuit showed less resistors around the front end, I therefore took the soldering iron in my hand and unsoldered the appropriate resistors. Upon reconnection to the Oric the sound output was amplified to a level which I consider acceptable, needless to say this modification has not impared the performance of the speakers when used with the CD.

Speakers used are Ross RE-4230,purchased from a market stall for 10.00. Maplin sell a very similiar Ross active speaker, order code MK51F for 14.95 a pair (2.00 OFF IN FEBRUARY SALE).

The 7 pin din plug and 3.5mm stereo line jack socket are about 75p the pair, I would suggest the use of a 6v plug top adaptor in place of batteries, it is essential that a regulated unit is used and this can be purchased from Maplin for 5.95.

Dave Dick has been bought a pair of Quickshot speakers for 10.00. Having tried them out, the performance appears very similiar to the Ross before modification; it seems likely that most of these small amplified speakers may require tweeking but as long as they retain their dual role of Oric and CD player compatability it could offer a cost effective speaker system.

It may be possible to offer modified units to those interested in this project who do not feel happy to carry out the modifications themselves.

NOTE FROM THE EDITOR
---- ---- --- ------

DAVID HAS SINCED TWEEKED MY 'QUICKSHOT' SPEAKERS TO GOOD EFFECT. I WILL HAVE TO GET MYSELF ANOTHER ADAPTOR AS I WAS ORIGINALLY USING THE ONE THAT CAME WITH MY AMSTRAD NOTEPAD - BUT THAT IS ANOTHER STORY!

ANOTHER NOTE FROM THE EDITOR
------- ---- ---- --- ------

I RECIEVED THE ABOVE ARTICLE FROM WILKIE AS AN 'AUTHOR' TEXT FILE ON ORICDOS,AND DECIDED TO TRANSFER IT TO A 'WORD-SPEED' SEDORIC FILE,USING ALLAN WHITAKER'S UTILITY.

IT TOOK ME ABOUT AN HOUR TO SORT IT OUT AND HERE IS WHY.

DAVID HAD SAVED THE FILE UNDER THE NAME: hifi1a.TXT. I SUCCESSFULLY (OR SO I THOUGHT) CONVERTED IT TO SEDORIC, AND THEN TRIED TO LOAD IT INTO ALLAN'S UTILITY. THE PROGRAM THREW UP AN ERROR. THE FILE WAS ON THE DIRECTORY,BUT NOT ONLY WOULD IT NOT LOAD INTO THE UTILITY; IT WOULD NOT ALLOW ME TO LOAD IT IN ANY FORM,NOR RENAME IT,OR INDEED DELETE IT. TO ALL INTENTS AND PURPOSES - IT DID NOT EXIST. ONLY BY DOING A DEL "*.*" COULD I GET RID OF THE DAMN FILE. I WENT BACK TO ORICDOS AND RENAMED IT TO: HIFI.TXT - THUS GETTING RID OF LOWER CASE AND NUMERICS. THEN I CONVERTED IT TO SEDORIC AND THEN INTO 'WORD-SPEED'.

ACCORDING TO THE SEDORIC MANUAL - "THE FILENAME CAN BE UP TO 9 CHARACTERS WITH ALPHA AND NUMERIC CHARACTERS" - SO WHY THE BLOODY HELL WOULDN'T IT ACCEPT THE ORIGINAL FILENAME?

AFTER I GOT THE FILE ACCROSS IT WAS JUST A CASE OF GETTING RID OF THE 'AUTHOR' ESCAPE CODES AND USING 'WORD-SPEED' ALTERNATIVES.

I HOPE THIS MAY SAVE A FEW PEOPLE A BIT OF TIME IN THE FUTURE.

SUB EFFECT
--- ------

ORDERS FOR ISSUE 2 OF 'SUB EFFECT' FROM SIMON ULLYATT ARE NOW BEING TAKEN.
A FEW ADDITIONAL FEATURES OVER ISSUE 1, INCLUDING: "THE CAR BOOT SALER'S GUIDE TO COMPUTERS", "EMULATORS", AND "PROGRAMMING IN COBOL".
ORDERS TO SIMON AT: 6 SCHOOL LANE,BUTTERWICK,BOSTON,LINCS. PE22 OHU.

ATARI JAGUAR
----- ------

THE JAGUAR HAS PICKED UP 5 AWARDS FROM AMERICAN MAGAZINES FOR TECHNICAL ACHIEVEMENT, BEST CONSOLE ETC.

SCRUMPY COUNTRY
------- -------

"NEW AND USED COMPUTERS" ARE AT: 18 WYNDHAM ST.,YEOVIL,SOMERSET. (TEL:0935 33328).
THEY SELL USED COMPUTER SYSTEMS FROM 195 POUNDS, NEW SYSTEMS (386'S AND 486'S), PRINTERS (NEW AND USED),DISCS,RIBBONS,FAX MACHINES ALL MANNER OF MEDIA.

SURPLUS TO REQUIREMENTS
------- -- -------------

ITEM 1 - AMSTRAD CPC 464 BASE UNIT + TAPES (IN WORKING CONDITION).
ITEM 2 - AMSTRAD 286 BASE UNIT CASE,EMPTY.
ITEM 3 - MICROTAN 65 - MINUS SOME HARDWARE.

THE ABOVE ITEMS TO WHOMSOEVER WILL PAY THE POSTAGE.

BOOKS

ZX80 HANDBOOK AND THE WORKSHOP HANDBOOK FOR THE TANDY TRS80 COLOR COMPUTER/COLORGENIE.
DONATIONS ACCEPTED FOR THE BOOKS OR SWAPS FOR THE FOLLOWING ITEMS:
HANDBOOK/INFO. FOR SPECTRUM 128.
AN A/D CONVERTER,ANY KIND.

ALL CORRESPONDENCE TO: ALAN BOWERS AT 39 UPTON ROAD,RYDE , ISLE OF WIGHT. PO33 3HP.

SCUBA DIVE
----- ----

WHAT SIMON ULLYATT HAS TO SAY ON THE SPECCY VERSION -
" I DON'T AGREE WITH STEVE MARSHALL'S COMMENTS ON SPECTRUM SCUBA DIVE. THE SPECTRUM VERSION IS AN EXCELLENT GAME WITH SMOOTH SPRITES,FLUID ANIMATION AND EXCELLENT PLAYABILITY! I'VE A GOOD MIND TO SET UP A SPECTRUM SCUBA DIVE APPRECIATION SOCIETY! TRY RUNNING THE GAME ON AN EMULATOR WITH AN AMIGA 1200 WITH 40MHz ACCELERATOR - AMAZING! AND AS FAR AS I'M CONCERNED THE ORIC VERSION OF 'HARRIER ATTACK' IS POO!"

SPECCY QUERY ANSWERED
------ ----- --------

REGARDING THE SPECTRUM 128 AND THE CONNECTOR DETAILS; ALAN BOWERS WANTED TO KNOW IF ANYONE HAD TRIED PLUGGING IN INTERFACE 1 TO ONE; I.E. DOES IT WORK WITH MICRODRIVES?
FOUNT OF KNOWLEDGE,RICHARD FARRELL,INFORMS ME THAT IT WILL WORK WITH THE 128+ OR +2 (GREY CASE VARIETY),BUT NOT THE +2A (BLACK CASE) OR THE +3.
===

HEY - WAKE UP THOSE WHO JUST USE THE ORIC
--- ---- -- ----- --- ---- --- --- ----

IF YOU ARE LOOKING FOR SOME ODDBALLS IN THE ORIC CASSETTE WORLD, TRY THE FOLLOWING (ALL FUNDS TO O.U.M):
STYX (NO MANS LAND), WAYDOR (IMS), WORDSEARCH (CDS), PSYCHO III - THE REVENGE (LA SOFTWARE), GRENDEL (MIRAGE), CRICKET (OUM),BRAND PRIX (OUM), PAINTER (A&F), FOOTBALL (HGC),RING OF DARKNESS (WINTERSOFT),MINED-OUT (QUICKSILVA),ACHERONS RAGE(SOFTEK).
ALL DONATED BY MATTHEW SHAKESHAFT - ALL AT 1.25 EACH OR 1 POUND EACH IF 3 OR MORE ORDERED.
ALSO AT 2 POUNDS EACH ARE THE FOLLOWING C.E.O JOURNALS ON CASSETTE:
JEO 2 - MAGAZINE (CONTAINS NEWS,TIPS,ARTICLE ETC) + ROLAND GARROS,EUROPE,CHEOPS,MUSIC AND MICRORIC TYPE-INS.
JEO 3 AND JEO 4 - BOTH CRAMMED WITH FRENCH SOFTWARE ETC.
JEO 1 - MAGAZINE + TRIOLYMPIC,MUSIC,ZAMCOPTER,SEPTIEME DAN.
AND FINALLY FOR 2.50 - FROM THE C.E.O - FLIGHT SIMULATOR + MR.PRESIDENT.
FIRST COME - FIRST SERVED - PHONE ORDERS WELCOME.

A few oddments, maybe they will be of interest, maybe not.

First a 1 liner.   As you know, I don't claim to be a programmer, but I see from the OUM INDEX that it hasn't been done before and I find it useful as a utility, - that's why I "DISCOVERED" it. The problem arose thus:-
If you want a 40 column screen you can get it by using PRINT CHR$(29) + RETURN. But I find that if I put this in an English lesson programme and then with a class I have constantly to use control C, explain something, and re-run, well, - the second time I run, the CHR$(29) cancels the first instruction and I'm back to 38 columns. This also happens if I run more than one programme per lesson, which is what I often do. My lessons are built up of a series of shortish programmes. So I wanted a quickie that would put in CHR$(29) if it wasn't in, but ignore it if it was. My way of doing it hasn't been LISTED before in OUM so it might fill in a corner space and be of use to some-body. It uses POS (0) which gives the X position of the cursor on the screen.   If you're on a 38 column screen, then POS (0) = 2 at the beginning of a line. If you're on 40 then POS (0) = 0 So:-

10 IF POS(0) = 2 THEN ?CHR$(29)

and you have it.

  Second

  A piece of advice about an error in the ATMOS Manual. I was using KEYDEF to redefine the function keys with BASIC and DOS keywords when I came across this anomaly.
  Page 288 Basic reserved words and tokens.
  INPUT = token 146
  MID$ = token 146
  Now they can't both be right, and in effect it is the INPUT which has the 146 token. But what's the token for MID$?
Well, after a bit of a search through all the text books I found that the storage code for MID$ was F5 hexadecimal and I could easily convert that into a token of 246. So perhaps it's worth passing on to readers of OUM to save them a search and a clanger if they follow the ATMOS MANUAL token of 146 for MID$. OK? (I'm a mine of useless information!)

  I came across a few bugs (anomolies would be a better word) in the Sedoric KEYDEF/KEYUSE set-up for the function keys.   If you think any of the readers, or even the SEDORIC team of Broche/Sebbag/Haworth/Whittaker might be interested, I can outline it to them in a future letter. It's just that certain keys are just not programmable for Function key use. To give you one quick example, if you programme capital I, or (O or P) to any KEYDEF instruction (with SHIFT I,O,or P), it doesn't assign the instruction to it. What happens is that it shoves the KEYDEF, for instance of SHIFT +I onto 'shift+ 6' which is the ^ key instead of the 'I' (shift i) that you programmed. I thought it might be a bug in my ATMOS but I've tried it on a couple of machines with the same result. And like the O and the P there are other keys that refuse to take a Function key with SHIFT set-up. Anybody interested?????
  You know, for years I've mucked about experimenting and finding odd things but never taken the trouble to make a list of them. Perhaps with my one foot in the grave, the other dragging, and the third one useless (it never was REALLY a foot anyway!) it is time to take note of them and pass them on. I wish we had a team of wise men making a panel of experts that we could write to via OUM. Even if they charged for a reply, it would make us feel that we had a "fount of knowledge" and we wouldn't feel so bad about asking questions in case we were thought of as stupid. And the money could go to building up OUM, -- although you're doing a bloody marvellous job with the dosh you get in.

  Many of the instructions in the Sedoric DOS user's guide may be highly intelligible to people like Jon, but to nutters like me they don't make much sense until I've arrived at the conclusion by other means and THEN I say "Oh, so THAT's what it bloody well means!" F'rinstance -- (I quote)
LCUR RETURNS THE HORIZONTAL AND VERTICAL CO-ORDINATES OF THE CURSOR IN TEXT MODE IN THE VARIABLES CX AND CY.
That's it. It took me months before I realized that what it meant was:

"To determine the co-ordinates of the cursor in text mode type LCUR, then type PRINT CX for horizontal co-ordinate and PRINT CY to get vertical co-ordinates." Now I know I'm a bit thick at times, but all my life I've read text books and I can read a book on linguistics as if I were reading Agatha Christie. Why is it, then, that when I read a manual or a guide which is supposed to guide beginners (otherwise why would we need a manual?) it often reads like Greek (except that I might understand Greek better than the manuals)?

FRANK BOLTON

THE EDITOR RESPONDS
--- ------ --------

FIRST OFF FRANK, I'D LIKE TO THANK YOU FOR SENDING ME YOUR LETTER AS A TEXT FILE AS WELL AS ON PAPER. I WAS CAUGHT A BIT SHORT AND I REMEMBERED WHAT YOU SAID ABOUT THE QUALITY OF YOUR PAPER COMPARED TO WHAT THE ROMANIANS HAVE TO USE! PLUS IT GIVES ME CHANCE TO EDIT YOUR TOME DOWN TO AN ARTICLE,RATHER THAN A NOVEL!
JOKING ASIDE, I THANK YOU FOR BEING SO INFORMATIVE AND BLUNT,AND WILL NOW TRY AND ANSWER SOME OF THE POINTS YOU RAISED.

THANKS FOR THE TIPS - I AM SURE THEY WILL BE OF HELP TO MANY.
REGARDING THE SEDORIC 'TEAM' - YOU MISSED A NAME - DR.RAY - I AM SURE HE WILL RESPOND TO YOUR QUERY ON KEYDEF/KEYUSE, AND ON ANY OTHER 'SEDORIC' RELATED QUERY THAT YOU MAY WISH TO RAISE.
AS FOR A TEAM OF WISE MEN - WELL I THINK WE HAVE THEM AND ARE UTILISING THEM TO A GREAT EXTENT. JUST SEND ME YOUR QUERIES AND I'LL ANSWER THEM OR PASS THEM ONTO WHO I THINK MAY BE OF HELP. IF THE QUERY SOUNDS 'STUPID' THEN I WILL REPLY PERSONALLY,RATHER THAN PUT IT IN PRINT AND LET EVERYONE THINK THAT YOU'RE A PRATT!   I ASK STUPID QUESTIONS MYSELF SOMETIMES,AS I TEND TO OVERLOOK THE OBVIOUS.
I MUST AGREE WITH YOU ON THE POINT RAISED REGARDING POOR EXPLANATION OF SOME THINGS IN THE 'SEDORIC' MANUAL.
THE ORIGINAL FRENCH 'SEDORIC' MANUAL WAS IN FACT 111 PAGES LONG - I KNOW BECAUSE I HAVE GOT IT. THE 'SEDORIC' MANUAL A LA JON HAWORTH AND ALLAN WHITAKER IS 47 PAGES LONG, THOUGH IN MOST INSTANCES CONTAIN MORE LINES PER PAGE. THEIR VERSION STATES -
" A USER'S GUIDE BASED ON THE FRENCH SEDORIC MANUAL". THE WORDS "GUIDE" AND "BASED" ARE ALL IMPORTANT. IT IS NOT A WORD FOR WORD TRANSLATION. A FEW EXAMPLES: 'FILENAMES' - 2 PAGES IN THE ORIGINAL,BUT LESS THAN A PAGE IN THE 'GUIDE'; 'GRAPHICS INSTRUCTIONS' (LINE,BOX,LCUR,HCUR) IS OVER 2 PAGES (INCLUDING SKETCHES IN ORIGINAL),BUT LESS THAN 1 PAGE IN GUIDE; 'JUMP' - 6 LINES (INCLUDING EXAMPLE) IN ORIGINAL,WHEREAS 2 LINES IN GUIDE.
NOW I'M NOT KNOCKING ALLAN OR JON,FOR THEY HAVE DONE A MARVELLOUS JOB, BUT I DO FEEL AT TIMES THAT A LOT OF TIME IS WASTED TRYING TO GET THE 'DRIFT' OF A CERTAIN COMMAND. OF COURSE EVEN A FULL TRANSLATION OF CERTAIN COMMANDS WOULD OFTEN LEAVE A LOT TO BE DESIRED. NOTHING BEATS A PROPER TUTORIAL BACKED UP WITH ONE'S OWN NOTES.
THE ANSWERS - LET'S HAVE SOME IN-DEPTH LOOKS AT CERTAIN ASPECTS OF SEDORIC (VOLUNTEERS PLEASE), AND I WILL ALSO TRY TO FIND TIME TO REPRINT SOMETHING FROM MY LITTLE SECRET - IT'S A 60 PAGE (A4 SIZE) TRANSLATION OF THE FRENCH MANUAL. IT IS PRACTICALLY A WHOLESALE TRANSLATION. BIGGER PAPER AND LESS GAPS THAN THE ORIGINAL AND THUS LESS PAGES. IT INCLUDES ALL SKETCHES AND EXAMPLE LISTINGS ETC. I'LL BRING IT UP IN APRIL ,FRANK.

- DAVE DICK

===

APRIL IS MINE - Dave Dick
----- -- ----

GENERALLY AT THE BEGINNING OF A YEAR I TAKE A MONTH OFF FROM RESOLVING OTHER PEOPLE'S ORIC PROBLEMS TO DO MY OWN THING. THIS YEAR I WANTED TO FULLY CLEAR THE BACKLOG FIRST.
I AM NOT GOING TO DEAL WITH ANY QUERIES FOR USERS DURING THE MONTH OF APRIL. I HAVE A WEEK'S HOLIDAY - SOME OF WHICH WILL BE SPENT WITH FRANK DEALING WITH HIS QUERIES AND HOPEFULLY PUTTING TOGETHER SOME ITEMS FOR ROMANIA. ANOTHER ORICIAN (BOB TERRY) WILL BE ASSISTING ME TO DRINK FRANK'S BRANDY AND DO SOME SOLDERING ETC.
I THEN WANT TO VISIT THE SOUTH COAST, DO SOME ORIC WORK OF MY OWN, AND OF COURSE PREPARE THE MAY ISSUE OF O.U.M, AND FINISH OFF THE FIFTH OUM DISC.
A WORKING MONTH REALLY. PLEASE KEEP QUERIES TO A MINIMUM OR TRY CONTACTING ANOTHER USER - THEY ARE ONLY A LETTER OR PHONE CALL AWAY, AND DON'T FORGET TO TAKE ADVANTAGE OF THE CHEAP TELEPHONE RATES AT THE WEEK-ENDS.
I THANK YOU IN ADVANCE.

"MENU . TST"

by ARTHUR CRAWFORD

I am very much in sympathy with the comments by Peter Bragg about making software "useable" or in the contempory phrase "user friendly". We are amateurs and drawing flow diagrams keeps us away from the keyboard and may cause anxiety symptoms,so we peck away developing programs in the way much despised (except when no one is looking) by "professionals". For a long time I have tried to start program development by producing a MENU and thus a semblance of order and have gone through several different methods. The method I have ended up with makes use of subroutines so that the menu is always returned to and is designed to be easily expanded or contracted in scope. The program shown prints a menu with six options. The menu options are the DATA in lines 120 & 130, lines 140-180 read the DATA into an array the length of which is determined by REPEATING until the last desired data is read in line 180 (the "slashes" in the DATA lines are there just to produce printing spaces), the counter in line 150 provides for printing the correct number of menu lines in the FOR/NEXT loop lines 300-320 and adjusts the error trap in line 380. The menu and selection of options is inside a REPEAT/UNTIL loop (lines 280-420) so that each time a function is completed the menu will be re-established on screen except when 5 is selected to RETURN TO BASIC. Modification of the menu is achieved by appropriate changes to lines 120 or 130,180 and 400. For instance to delete EDIT DATA. Delete EDIT DATA and the following comma and / from 120,130 delete 800 from 400,no other changes need be made. The menu program can be saved as a utility then loaded at the start of any new program development. The line numbers I have used are quite arbitrary. Up to ten functions can be accomodated and if more are needed then a second MENU can be accessed as a subroutine from the first.

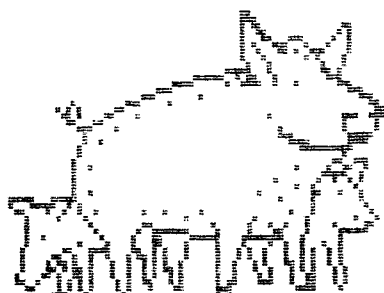The program "MENU.TST" is to be found on OUMDISC#4 (Feb. 1994).
==
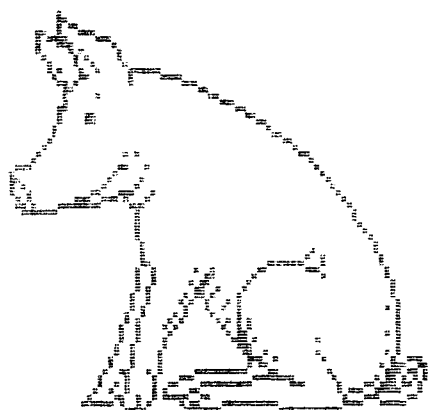
THE

O. U. M   TEAM

C
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CONFESSIONS OF A WOULD-BE 'CLEVER DICK'
or
IT AIN'T WHAT YOU DO IT'S THE WAY THAT YOU DO IT.

I have been an ORIC owner since the start and, as many others, became hooked on using it as a working tool with loads of uses both home and at work.
  However my limitations extend only to a very good knowledge of BASIC Programming, and most of the codes and methods of obtaining good screen presentation with all the atributes.
  In the early days I was part of a group of seven persons all employed at Normalair Limited YEOVIL, and all owning an ORIC-I.
  We used to donate 50p per week to a kitty to purchase games as they became available, and soon had a library of games to share.
  The first Clever Dick used a double cassette deck to copy tape to tape for his private collection, but this was not always succesful. Others, such as myself, bought up all the books and magazines containing Oric related hints/tips and games that became available, and built up a knowledge of improving medeocre games to my own satisfaction.
  After exchanging my original Oric-I on two occasions due to faults (sound chip not working/screen output going fuzzy) I purchased my first ATMOS. This as we now know meant the game tapes in our little groups library would no longer play.
  I soon dropped out of the group and went solo. All the other members continued for a while but gradually packed their Orics away and became bored telly addicts.
  However, here we are in 1994 and I have just met up again with the original group member, Clever Dick No 1, and he still has his Oric-I complete with all of his tapes including many masters, unused since around 1983.
  Having recently got SEDORIC to work with my 3" OPELCO Disc Drive, and knowing it contains a program to overlay the ORIC-I ROM into the ATMOS, I persuaded him to loan me the tapes, around 10 masters and up to 20 others.
  This was when Clever Dick No 2 was born.
  I quickly set up my system and loaded up the ORIC-I ROM overlay, and tried loading tapes. You've guessed it, some would load, most wouldn't; they had been stored for far too long without being used. After many tries and using fast rewind to exercise the tapes, I could get most to work but only using SLOW LOAD.(can you still remember waiting 25 mins for OPERATION GREMLINS to load)?. Well so far so good! Next using a Tape Catalogue program I identified all of the files, and the start/end addresses and types. Armed with this information I mistakenly thought nothing could be more simple.
  Now I needed a Tape Stop Auto Run program, so I loaded Allan Whitaker's Cassette Stop Program which has Fast and Slow loading capabilities. This soon proved no use as many cassettes used the area at #501 so overwriting the Basic Auto Stop program just loaded. I then loaded SAFE-STOP as this uses code placed high in memory. Again failure, as this program is geared for FAST LOAD only, and not being the Clever Dick I thought I was, do not know what to change to convert it to SLOW LOAD.
  I read through many back issues of O.U.M and found Collin Cooks two pages of INFO and started again. Sorry to say I still did not make much headway. By now I had spent some 2 weeks of my allocated computer time and achieved nothing.
  Once again I decided on a fresh start. Load up Oric DOS, load the tape and wait for the ERRORS flag to appear. Save the memory locations to disc for future transfer back to clear cassettes, as this is the only way the SEDORIC ORIC-I ROM overlay can accept them.
  Now I have more problems as games with many files like DINKY KONG / HUNCHBACK (etc) load the next file from within the Mch Code and I wish to re-record at FAST SPEED to save time on loading.
  More time now spent on trying to be this Clever Dick No2. I loaded up TOOLKIT EXTENSION EAD65C and printed out reams of dissasembly code from various games at

both Fast and Slow tape speeds to try and find a common code area that calls
Loading of the next file.
   By now Clever Dick No2 finds he isn't so clever and abandons that idea. Also I
find that my head aches, my eyes hurt, I'm getting work stress and indigestion
pains giving me heartburn, and I have had to start wearing Sun Glasses when
using the computer to cut down on the glare.
   It is now the third week of January and still no further foreward, so as a last
attempt I reload files from disc previously saved and re-record them onto new
clean tapes at the same speed I copied them. This should be it !!!. Boot up
SEDORIC, load ORIC-I ROM Overlay, load newly recorded tape.
   1st file loads but the ERROR flag inhibits auto-load of the next file. Quickly
type CLOAD"",S for next file, same again, (ie) loads but no searching flag. Try
CALL#(whatever it was) and the keyboard locks.
   Start all over again but put in the BOGUS ERROR program from the ATMOS manual,
then load tape. Nothing goes as hoped.
   By now it is the 27th of January and I have admitted defeat, who wants to play
stupid games anyway. So, Clever Dick isn't such a Clever Dick after all.
   I know I shall get over it, but should there be a further Clever Dick out there
in the vast unknown, who might have been along the road I travelled, and might
just point me back onto the correct path, I suppose there will allways be
another day.

   HAPPY PROGRAMMING.

   John Hurley.

FOR SALE

BOOKS

TITLE	AUTHOR
Oric and Atmos Machine Code	Ian Sinclair
The Atmos Book of Games	Wynford James
Oric Assembly Language Course	Holmes and Watson
30 Hour Basic(Oric edition)	Clive Prigmore
The Oric Atmos Handbook	Lupton and Robinson
6502 Machine Code for Beginners	A P Stephenson
Programming the 6502	Rodney Zaks

CASSETTE SOFTWARE

TITLE	COMPANY
Chess	Tansoft
Football Manager	Addictive
Escape from Manhattan	CRL
Megabase	FGC
Rat Splat	Tansoft
Chopper	Severn
Warlord	Lothlorien
Don Juan	No Man's Land
Land of Illusion	Tansoft
Wintergames	
Don't Press the letter Q	IJK
Bank Account	No Man's Land
Pasta Blasta	Arcadia
Wordworth	FGC
Forth	Tansoft
Xenon-1(Oric 1)	IJK
Optimum	No Man's Land
The Quill(+ manual)	Gilsoft
The Hobbit	Tansoft
Orion assembler/disassembler	Lothlorien
Linkword Italian	Tansoft

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New C.E.O. Software

Released this month is the latest adventure game from C.E.O. - CEOSOFT 6, 'Ankesenamon'. In the best tradition of French adventures, the graphics are excellent. Fully translated into English, the cost is £4.99 on 3" disc, £3.99 on 3½". Hopefully Dave will have a review copy in time for this issue.

Also new are two more P.D. Clip Art discs, 'CEO CLip Art 2', and 'Another Forty Animals'. Prices are as for the previous two discs, £3 on 3", £2 on 3½".

All the above are available to members and non-members alike - order from me at 3, Madingley Road, Cambridge CB3 0EE. Post and packing are included in the prices.

Books

C.E.O. members recently received a list of books I have for sale - about a dozen in all. If anyone else would like the list, just drop me a line. There are both English and French titles.

O.U.M. Disc 4

Congratulations, Dave. It's superb!

Rambling on...

MICROWAVES

Oric screen widened, scroll derolled

On the Oric, the run time variable at address 621 and 622 (26D and 26E in hexadecimal) stores the start of the display file. When switched on the value stored is 48000 (BB80 in hex.). In HIRES mode it is 48960. (Check it by PRINT DEEK(621)). Also, the number of lines that can be displayed is stored in address 623. In TEXT mode it is 27, HIRES it is 3.

The above information is useful as we can change them by POKEing at the above addresses. For example, we can increase the size of the screen to include the top line (normally for messages) by entering:

DOKE 621, 47960
POKE 623, 28
CLS

Also we can protect parts of the screen from being scrolled by reducing the appropriate number of lines in 623. Other effects can be achieved by experimenting.

H.E. Lim,
Moss Side, Manchester.

Calculate the address of an element

Principal:

Arrays are stored after variables, and so their address can change when a new variable is declared. An array is structured as follows:

L1 L2 TL TH ND DnH DnL ... D0H D0L Data...

L1 L2: The name of the array, with the same conventions as for simple variables. Use with functions is not permitted.

TL TH:		The total length of the array, including header. This permits easy jumping from one array to another in memory when searching for one (unnecessary for simple variables, since they always occupy 7 bytes).
ND:		The number of dimensions in the array (1 to 255)
DnH DnL ... D0H D0L:		(NOTE: High byte first) These are the number of elements, or cells, within each dimension. Arrays always start at element zero in each dimension, and the element cannot be a negative number. The value for the last dimension is stored first because of the structure of the routine to evaluate an array.
Data...:		These (finally!) are the contents of the elements of the array, the actual variable data. Here space is not wasted, and only the memory strictly needed is used: 5 bytes for a real variable, 2 bytes for an integer, and 3 bytes for a string.

Obviously the data is stored in a logical order. The position of the data making up a particular element is given by the following formula:

Convention: The array has been dimensioned using:

$$DIM\ A\ (C_0-1,\ C_1-1,\ ...\ ,\ C_n-1)$$

and the element is located by:

$$A\ (V_0,\ V_1,\ ...\ ,\ V_n)$$

The position of the element is thus given by the formula:

$$R = ((((V_n*C_{n-1}+V_{n-1})*C_{n-2}+V_{n-2})\ ....\ )*C_1+V_1)*C_0+V_0)$$

This is how it is calculated in the ROM. For example, DIM A(2,2,2) gives $C_0=C_1=C_2=3$, and the position is given by the following formula:

$$(V_2C_1+V_1)C_0+V_0\ or\ V_0+V_1C_0+V_2C_0C_1$$
or again $\qquad(3V_2+V_1)3+V_0\quad or\quad V_0+3V_1+9V_2$

Staying with our example of DIM A(2,2,2), this gives us the elements stored in memory in the following order:

```
Position  0:  0,0,0   1,0,0   2,0,0   0,1,0   1,1,0   2,1,0
Position  6:  0,2,0   1,2,0   2,2,0   0,0,1   1,0,1   2,0,1
Position 12:  0,1,1   1,1,1   2,1,1   0,2,1   1,2,1   2,2,1
Position 18:  0,0,2   1,0,2   2,0,2   0,1,2   1,1,2   2,1,2
Position 24:  0,2,2   1,2,2   2,2,2
```

To find the start address in memory of an element, its position must be calculated and then multiplied by the length of data in each element of the array (2, 3 or 5 according to the type of array), and added to the address of the start of data. The routine for finding an element in an array works in exactly this sequence of operations. All clear?!!

D343	LDA (CE), Y	D3EB	LDA (CE), Y	Take number of dimensions
D345	STA 26	D3ED	STA 26	and save it
D347	LDA #00	D3EF	LDA #00	
D349	STA E0	D3F1	STA E0	initialise result
D34B	STA E1	D3F3	STA E1	to 0 for the moment
D34D	INY	D3F5	INY	index the element
D34E	PLA	D3F6	PLA	
D34F	TAX	D3F7	TAX	recover element on the stack
D350	STA D3	D3F8	STA D3	and save (low byte)
D352	PLA	D3FA	PLA	
D353	STA D4	D3FB	STA D4	and high byte
D355	CMP (CE), Y	D3FD	CMP (CE), Y	compare to maximum permitted by DIM
D357	BCC D367	D3FF	BCC D40F	if less, OK
D359	BNE D361	D401	BNE D409	'BAD SUBSCRIPT'
D35B	INY	D403	INY	adjust index

D35C	TXA	D404	TXA	recover low byte
D35D	CMP (CE), Y	D405	CMP (CE), Y	and also compare
D35F	BCC D368	D407	BCC D410	if less, OK
D361	JMP $D29D	D409	JMP $D333	'BAD SUBSCRIPT'
D364	JMP $C483	D40C	JMP $C47C	'OUT OF MEMORY'
D367	INY	D40F	INY	
D368	LDA E1	D410	LDA E1	take the element number
D36A	ORA E0	D412	ORA E0	is it 0 for the moment?
D36C	CLC	D414	CLC	adjust C if jump
D36D	BEQ D379	D415	BEQ D421	and skip multiplication (0*X=0)
D36F	JSR $D3A5	D417	JSR $D44D	calculate number of element in XY
D372	TXA	D41A	TXA	and add value of element
D373	ADC D3	D41B	ADC D3	low byte
D375	TAX	D41D	TAX	and save as ever in X
D376	TYA	D41E	TYA	and same for low byte of element
D377	LDY 91	D41F	LDY 91	recover the index
D379	ADC D4	D421	ADC D4	
D37B	STX E0	D423	STX E0	save the low byte
D37D	DEC 26	D425	DEC 26	have all elements been accounted for?
D37F	BNE D34B	D427	BNE D3F3	no, carry on
D381	STA E1	D429	STA E1	save high byte of number of element
D383	LDX #05	D42B	LDX #05	X = length of a real variable
D385	LDA B4	D42D	LDA B4	
D387	BPL D38A	D42F	BPL D432	save if true
D389	DEX	D431	DEX	X = 4 if integer variable
D38A	LDA B5	D432	LDA B5	
D38C	BPL D390	D434	BPL D438	save if true
D38E	DEX	D436	DEX	
D38F	DEX	D437	DEX	2 for integer, 3 for string
D390	STX 97	D438	STX 97	and save
D392	LDA #00	D43A	LDA #00	indicate high byte = 0
D394	JSR $D3AE	D43C	JSR $D456	and calculate number * length
D397	TXA	D43F	TXA	
D398	ADC C7	D440	ADC C7	add to the start of array address
D39A	STA B6	D442	STA B6	and save
D39C	TYA	D444	TYA	
D39D	ADC C8	D445	ADC C8	and high byte
D39F	STA B7	D447	STA B7	save as well
D3A1	TAY	D449	TAY	and put the address
D3A2	LDA B6	D44A	LDA B6	in AY and #B6-#B7
D3A4	RTS	D44C	RTS	

Calculate #E0-#E1 * element in XA and XY

Entry: #CE ponts to the start of arrays, Y to the element of the dimension, and #E0-#E1 contains either the number of the element (if you have come from calculating the address) or its displacement in the array (if you have come from creating the array).

Exit: Y in #91, XA=XY=#E0-#E1 * element, also C=0.

D3A5	STY 91	D44D	STY 91	save index pointer
D3A7	LDA (CE), Y	D44F	LDA (CE), Y	take element (low byte)
D3A9	STA 97	D451	STA 97	and save it
D3AB	DEY	D453	DEY	
D3AC	LDA (CE), Y	D454	LDA (CE), Y	take element (high byte)
D3AE	STA 98	D456	STA 98	and save as well
D3B0	LDA #10	D458	LDA #10	there will be 16 shifts
D3B2	STA CC	D45A	STA CC	and save counter
D3B4	LDX #00	D45C	LDX #00	low byte result = 0
D3B6	LDY #00	D45E	LDY #00	as does high byte

D3B8	TXA	D460	TXA	
D3B9	ASL A	D461	ASL A	shift the result
D3BA	TAX	D462	TAX	
D3BB	TYA	D463	TYA	
D3BC	ROL A	D464	ROL A	and high byte
D3BD	TAY	D465	TAY	
D3BE	BCS D364	D466	BCS D40C	too long: 'OUT OF MEMORY ERROR'
D3C0	ASL E0	D468	ASL E0	
D3C2	ROL E1	D46A	ROL E1	shift multiplicand
D3C4	BCC D3D1	D46C	BCC D479	
D3C6	CLC	D46E	CLC	if it comes out as 1
D3C7	TXA	D46F	TXA	add the element
D3C8	ADC 97	D470	ADC 97	low byte
D3CA	TAX	D472	TAX	and save the result
D3CB	TYA	D473	TYA	and the same for the high byte
D3CC	ADC 98	D474	ADC 98	
D3CE	TAY	D476	TAY	
D3CF	BCS D364	D477	BCS D40C	passed by: error
D3D1	DEC CC	D479	DEC CC	another shift?
D3D3	BNE D3B8	D47B	BNE D460	yes, continue
D3D5	RTS	D47D	RTS	

'FRE' (FUNCTION)

Principal:
　　Strings are reorganised to occupy a minimum of memory. The space left free is then calculated. The argument can be numeric or a string, since it has no effect on the command.

Bug:　　In V1.0, the result is not forced to numeric. Thus a FRE("") gives a TYPE MISMATCH ERROR.

D3D6	LDA 28	D47E	LDA 28	Take type of argument
D3D8	BEQ D3DD	D480	BEQ D485	if numeric, jump
D3DA	JSR $D715	D482	JSR $D7D0	if string, increase space reserved
D3DD	JSR $D595	D485	JSR $D650	in every case, reorganise strings
D3E0	SEC	D488	SEC	and calculate memory available
D3E1	LDA A2	D489	LDA A2	
D3E3	SBC A0	D48B	SBC A0	i.e. lowest string
D3E5	TAY	D48D	TAY	less highest array
D3E6	LDA A3	D48E	LDA A3	
D3E8	SBC A1	D490	SBC A1	the result is in YA
....	....	D492	LDX #00	indicate that the result
....	....	D494	STX 28	is numeric
D3EA	JMP $D8D5	D496	JMP $DF40	YA → ACC1 (unsigned)

YA → ACC1 (SIGNED)

D3ED	LDX #00	D499	LDX #00	
D3EF	STX 28	D49B	STX 28	Force numeric result
D3F1	STA D1	D49D	STA D1	save high byte
D3F3	STY D2	D49F	STY D2	and low byte
D3F5	LDX #90	D4A1	LDX #90	indicate exponent
D3F7	JMP $DF1D	D4A3	JMP $DF2C	and adjust the mantissa

See you next month....

Jon Haworth

There were some serious reasons for setting the puzzle:

a) THE HERCULE POIROT FACTOR:
   i.e. "stimulate the little grey cells". We cannot all write
   programs, either because we haven't the time, or because we think
   that we don't have sufficient skill and/or experience. If you
   bother even just to ATTEMPT puzzles, (it doesn't really matter if
   you come up the 'right' answer), then the effort expended is amply
   rewarded in sharpening up your programming skills, WHATEVER your
   level of programming competance.

b) THERE IS MORE THAN ONE WAY TO 'SKIN A CAT':
   (Where DOES that saying come from ?!!)
   It is useful for programmers to realise that there are more answers
   than you may at first realise. A little creativity or 'lateral
   thinking', as Edward de Bono would say, may lead you to discover all
   sorts of interesting ideas: some may NEVER have been seen before!

c) THERE IS NO SUCH THING AS "THE" BEST WAY OF DOING THINGS:
   It is even more important for programmers to appreciate that
   past solutions, though valuable, may not always be "THE ONLY WAY",
   regardless of application. What was 'best' for one program may not
   be so for another.

d) NO MAN IS AN ISLAND:
   A number of the above solutions were thought up by programmers other
   than me, (i.e. I have shamelessly 'nicked' their ideas !!). The
   point here is that, like learning a sport or a musical instrument,
   you really cannot put too high a value on learning from the
   experiences of others, whether you benefit from their mistakes, or
   share in their successes.

   Point (d) is really THE most important one of all.

   With this in mind it is a shame that no entries were received.
   If you "had a go" but didn't get round to entering; well at least
   that's better than nothing. If anyone DOES have entirely different
   ways of generating "1" & "-1" at random, then please, Please,
   PLEASE, send them into Dave, for EVERYONE's benefit, (& amusement!).

Dave:

These are the solutions to my puzzle as I can remember them.

I have, I'm afraid, jumped on my 'hobby horse' and leapt onto my 'soapbox' to
make a few personal points. If these are 'out of order' then feel free to cut
them out.

        B.F.N. John Hughes

```
SOLUTIONS TO 'RANDOM' CHALLENGE  +  JOHN'S SOAPBOX
--------------------------------------------------
```

Assuming that the following function has been declared:

```
DEF FNR(X) = INT(RND(1)*X) + 1
```
{ You DO use functions in your
  own programming don't you ?!! }

i) 10 REM - Solution 1a
   20 C = FNR(3) - 2
   30 IF C = 0 THEN C = -1
{ Perhaps the most obvious, BUT
  gives UNEVEN results, because
  -1 occurs twice as often as 1. }

ii) 10 REM - Solution 1b
    20 C = FNR(3) - 2
    30 IF C = 0 THEN GOTO 20
{ Next most obvious. This one
  Gives EVEN results, but ties
  routine to a specific line number. }

iii) 10 REM - Solution 1c
     20 C = FNR(2)
     30 IF C = 2 THEN C = -1
{ Simple re-assignment if the
  value is 'wrong'. This gives
  EVEN results. }

{ All further solutions will
  generate 1 & -1 evenly }

iv) 10 REM - Solution 2
    20 C = FNR(10)
    30 IF INT(C/2) * 2 = 2
       THEN C = -1 ELSE C = 1
{ Uses FNR() to generate odd or
  even numbers. An even number
  corresponds to -1, an odd
  number corresponds to 1. }

v) 10 REM - Solution 3
   20 C = 2 * FNR(2) - 3
{ Subtle! It is fun to devise a
  'clever' formula }

vi) 10 REM - Solution 4
    20 C = (-1)^FNR(2)
{ Another subtle one
  Remember: -1^1 = -1, -1^2 = +1 }

vii) 10 REM - Solution 5a
     20 C = VAL(MID$("-+",
        FNR(2), 1) + "1")
{ And now for something completely
  different! The first of several
  solutions to use 'functions'. }

viii) 10 REM - Solution 5b
      20 C = VAL(CHR$(43 -
         2*(FNR(2)=2))+"1")
{ A little help: '43' is ascii "+"
  '45' is ascii "-". Now compare
  this with solution 5a. }

ix) 10 REM - Solution 6a
    20 A(0) = -1
    30 A(1) = 1
    40 C = A(FNR(2) - 1)
{ Simple, direct, but requires
  overhead of array. All 10
  elements will have been
  (wastefully), reserved. }

x) 10 REM - Solution 6b
   20 FOR X = 1 TO FNR(2)
   30 READ C
   40 NEXT
   50 DATA -1, 1
{ Okay, so now there is no array,
  BUT; this will only work if the
  main program is not itself in
  the middle of a "READ .. DATA".
  Change of line# might be 'fatal'! }

xi) 10 REM - Solution 7
    20 C = 1
    30 FOR X = 1 TO FNR(2)
    40 C = -C
    50 NEXT
{ Another 'loop' solution.
  In this one, 'C' oscillates
  between the two values '1' & '-1'
  depending on the end-value
  of the 'FOR' statement }

xii) 10 REM - Solution 8a
     20 REPEAT
     30 C = FNR(3) - 2
     40 UNTIL ABS(C) = 1
{ Needs thought. (Compare '1b')
  1 --> -1 , 2 --> 0 , 3 --> 1
  The use of ABS allows '-1' & '1'
  to be checked with ONE test }

xiii) 10 REM - Solution 8b
      20 REPEAT
      30 C = FNR(3) - 2
      40 UNTIL C
{ Subtle again! Since ANY non-
  zero value yields "TRUE" we
  can use the value itself as
  the condition 'result' }

xiv) 10 REM - Solution 9
     20 C = SGN(FNR(1000000)-500000)
{ Another 'function' solution
  Q: When does it FAIL ??!! }

xv) 10 REM - Solution 10
    20 C = INT(SIN(1+2*FNR(2))+0.9)
{ Okay, starting to get silly }

xvi) 10 REM - Solution 11
     20 C = NOT (-2*(FNR(2)-1))
{ Neeehh! YOU work this one out! }

...

nn) 10 REM - Solution ... unlimited
{ I'm sure there are still MORE
  ways of doing this. }

T H E   B A C K   P A G E

3" disc software

Due to delays in deliveries of 3" discs from my suppliers (DABS PRESS); orders for 3"disc software have been put on the back-burner. Apparently DABS PRESS only order new supplies now,when I order from them. As we go to press I have been waiting virtually a month. Please bear with me.

SONIX update

I have just recieved an update to SONIX - the musical editor from Jonathan Bristow. It has corrected one of the disc faults,which returned you to BASIC if you input a wrong file name etc. An error number is not reported,but at least you get the chance to try again. This will please those who may of put a musical score into the program only to lose it with this annoying bug. I will write to SONIX owners individually advising whether to return their discs or to just amend the program. As yet I have not had chance to look at the update.

THE GAMESMASTER

NO - Not Patrick Moore! Our own Jonathan Bristow has been busy of late.
 I have just recieved a utility to enable compacting of any memory area. Uses include compacting of a HIRES screen and compacting a SONIX music file. More details next issue.
 Jonathan is also busy on his latest (as yet untitled) epic game. It is fast,completely original and will sell like hot cakes!

GOLF

 Kieron Smith is still working on his GOLF game for the Oric. Speed and lack of memory are holding him up. It could well mean that the game is finished off on a disc based system.

THOSE YOU MAY OF MISSED

 Don't forget the releases from MIRAGE/OUM over the past year.
 Have you got your copies of the following yet:
    COLUMNS - super version from Nick Haworth (disc or cass.)
    COMPILER - Dr.Ray's exceptional disc based utility.
    ASSEMBLER - another from Dr.Ray,with plenty for FORTH fans.
    MIND MADNEZ - 115 puzzling screens for the dexterous brain and hands from
Arnt.
    SONIX - THE musical editor from J.B - even if you can't read music then you
can still do what other readers are doing - buy it and less to the many demos
with the software and with OUMDISCS.
    DON'T PANIC - another thinker from J.B.
    Prices for the above can be found in back issues.

SEDORIC V2.1

Those with OUMDISC # 4 should now be working with SEDORIC V2.1
 A copy has been sent to Allan Whitaker. He will advise when new registrees
can order it.

COMING IN THE NEXT ISSUE

 Next month: Jon Haworth's SOFTWARE SOUNDS series, musical listings from
Steve Marshall, some one-liners and utilities from Frank Bolton, your views on
the latest software, more on Machine Code from Peter Bragg, HI-SCORE TABLE,
PLUS whatever else we can fit in.