ORIC USER MONTHLY

with Alternative Micros

Number 101

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Keeping the Oric alive

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THE EDITORIAL

HI,
AND WELCOME TO 1996.
RATHER LATE THIS ISSUE, DUE TO THE FESTIVITIES AND WORKLOAD.
THE BACKLOG ON ORDERS CONTINUES UNABATED. I HAVE FINALLY GOT BACK TO USING THE ORIC AFTER ABOUT 5 WEEKS OF COMPUTER INACTIVITY. HOPEFULLY YOUR ORDERS WILL BE DEALT WITH SHORTLY.
THE FUTURE LOOKS ROSEY FOR OUR ORIC. PLANS ARE AFOOT FOR THE NEXT ORIC MEET IN AYLESBURY. I STILL HAVE TO SETTLE A DATE, BUT THE VENUE WILL BE THE SAME AS IN '95.
AND SO TO THE INDEX FOR THE FIRST ISSUE OF THE YEAR.

THE INDEX

FEBRUARY O.U.M

Articles for inclusion in the February issue should reach me by January 27th. So please get your skates on.

MAGNETIX - the bugs!!

Jonathan Bristow reports that unfortunately he has not found a way round the problems on MAGNETIX.
The first problem simply needs an "on error" routine identical to the GAME file (.COM). Loading up the TITLE after playing the game and returning to default is a flaw, but Jonathan cannot see anyway round it.

ON THE MOVE TO SPAIN

Frank Bolton and Luis will be moving to Spain at the end of March on a virtually permanent arrangement. Frank has recently bought up the remaining stocks of what John Hughes was selling at the last ORIC MEET. All the ORIC equipment will also be going to Spain for use in a teaching capacity.

AUTHOR

Dennis Hughes asks if anybody has been successful in getting AUTHOR to run on SEDORIC. I know that it is available on ORICDOS nad have the Owe Fransson updated version, but do not know of a SEDORIC version. Does anyone have a SEDORIC version or know the reasons why it will not run on SEDORIC?

NEWS NEWS NEWS

ON THE MOVE!

JIM GROOM HAS RECENTLY MOVED TO:
106 HIGH STREET, PERSHORE, WORCS. WR10 1EA
JIM ASKS IF CHARLES SHERWOOD WOULD LIKE TO CONTACT HIM, AS HE THINKS THEY MAY HAVE A COMMON INTEREST.
CONGRATULATIONS TO JIM ON LANDING A JOB IN A CHEMICAL COMPANY.

GAINED A DIGIT!

FENNERS CHAMBERS, WHERE JON HAWORTH WORKS, HAS GAINED A DIGIT IN ITS' TELEPHONE NUMBER.
THE NUMBER TO REACH JON AT THE CHAMBERS IS: 01223 368761

OUM INDEX

IF YOU HAVE ORDERED AN OUM INDEX IN THE PAST COUPLE OF MONTHS, AND HAVE NOT YET RECIEVED IT, THEN PLEASE TELEPHONE JON HAWORTH (01223 368761). IF HE IS UNAVAILABLE THEN YOU CAN LEAVE A MESSAGE STATING OUM INDEX AND YOUR NAME.
APOLOGIES TO ANYONE MISSED.

THE SINGAPORE CONNECTION

THANKS TO OUR ADVERT ON THE 'INTERNET', OUR 100th ISSUE WENT OUT TO C. JEAN IN SINGAPORE. WE HOPE HE SUBSCRIBES, AND IS THUS READING THIS. IF SO - WELCOME ABOARD.
JON INFORMS ME THAT HE HAS NOW MADE CONTACT WITH 'ORICIANS' IN THE U.S.A. INCLUDING PEOPLE INVOLVED IN THE DESIGN STAGES OF ORIC AND ORIC RELATED PRODUCTS. WE LOOK FORWARD TO THE FULL NEWS FROM JON.

COMP.SYS.ORIC

There now exists an ORIC NEWSGROUP on the INTERNET. This is addition to the Mailing List and the Web sites. To gain the O.K. for its' go-ahead there had to be at least 100 more YES votes than NO votes. The voting was 123 to 11 in favour. As there are less than 100 On the Oric Net Mailing List and a number of these votes were deemed invalid, it was obvious that non-ORICIANS had voted in favour. For those interested, the NEWSGROUP is: comp.sys.oric

BYE BYE BRISTOW

Jonathan Bristow of SONIX,DON'T PANIC and ZEBULON etc. fame is on a journey in June, that will see him aboard a yacht. He will set off through the canals of France and head for the many isles of Greece. He will be gone from the scene for at least a year. He will be selling many ORIC related and non-ORIC related items, though he will keep an ORIC. We will publish a full list of the goodies for sale in the next issue.
We wish Jonathan the best of luck in his venture.

The 8-bit A to Z PART 9

Ohdamndamndamndamn ! It's coming up to the *Deadline* time and I've only just started typing. Where had we got to ? Oh the Einstein - nice machine, shame about the software ! If you look at some Oric titles which are essentially the same game, like 'Psychiatric' and 'Panic' then the Einstein software is usually at the 'Panic' stage of programming. I have not yet come across any Einstein software that looks as though it was originally written on that machine and makes use of the available features. Obviously the Einstein User Groups PD catalogue is full of stuff written on the Einstein, but I have yet to see anything of the Quality of 'Psychiatric'. Stop reading this and have a game now - it's fab !

Now, that's used up a bit of space, let's get on and look at the impressive Einstein 256 which has even more potential than the original 'Albert'.

* **EINSTEIN 256** Designed by the same team at Telford who designed the TC01, the 256 was introduced in September 86. Every care had been taken to keep compatibility with the original Einstein, and they also made sure some of the latest technology was used bringing enhanced graphics which includes a palette of 512 colours to choose from.

The machine at first glance looks something like an Amstrad CPC 6128, having a similar case and coming with built-in 3" drive and supplied with a colour monitor. I believe the drive is identical to that of the 6128 and the Einstein group claim the belt is prone to coming off, though I am not aware of the same problem on the Amstrads.

As the name suggests the computer has 256K of RAM, though 128K of this is video RAM. ie used for the display. This means that you don't have as much memory to play about with as you might think, but the graphics are much better with the inclusion of built-in 80 column colour display. In most modes there is a palette of 16 colours chosen from the 512 available on the machine. A line interrupt allows programmers to have all 512 colours on screen at once.Sprites are made up of 8x8 or 16x16 pixels, each row of 8 pixels having its own foreground and background colour. There can be up to 8 sprites on a (horizontal) row.

The sound is produced by the same chip as the TC01 but this time output has been arranged to give stereo production - rather like the Amstrads.

All the languages included with the machine have been enhanced and the BASIC now includes some 198 commands, many of which are to do with graphics. The original DOS had COPY and BACKUP files on disk which could cause problems at times. These have now been put onto ROM making them accessible at all times.

*SPEC. Z80A CPU running flat out at 4MHz RAM 256K (see above). ROM 16K which includes MOS and BACKUP etc. SCREENS: 7 modes including 32,40,60 and 80 column text, graphics upto 512x424 (though all these are **not** available through BASIC). PORTS: RS232, Centronics, 2x joysticks,(standard type this time), and a read only cassette port (?) Also there is a 'VAMP' port which stands for video, mouse & light pen. A TV port is included. Built-in 3" drive. Colour monitor and a horrible black plastic case.*

This should have been a really successful machine but it never got the backing it was promised and was taken off the market almost as soon as it had been announced. It is not that well liked by the Einstein user group who save it is more of a games machine than the TC01 and is not built so well. If you do want to get your hands on one though. Blagbrough & Hebblethwaite computers (01422) 330408 will be happy to flog you one for a couple of hundred smackers. They also offer to sell you other Einstein stock which they've had kicking around for 10 years now as they used to be one of the main dealers for Alberts. Their prices, however, have never come down since those times and most software is about £14 with serious software costing a lot more. (if you're a Pig farmer, you can get 'Pig Management'- a snip at only £359.50 !!)

This machine was another piece of technology that failed to interest the computer world and vanished like an Enterprise. The Einstein scene of today really suffers from lack of available software. What B&H offer costs far too much, and the user group don't have much to offer. It is perhaps sad that these machines were viewed more as business machines as they became as obsolete as the Osborne 'luggage' when they games machines, often looked down upon by serious users, lasted far longer and had greater support.

Well, that's another article ready for Dave and I can get round to thinking about the next one. Now, what computers were there beginning with 'F'....Hmmm

MUSO

BRIAN KIDD , 32 KIER HARDIE CRESCENT , NEWPORT , GWENT . NP9 9DQ

WELCOME TO THE START OF ANOTHER YEAR AND ALSO TO THE START OF ANOTHER CENTURY FOR O.U.M.
IT'S GREAT TO SEE MORE AND MORE PEOPLE GETTING INVOLVED WITH OUR BELOVED ORIC , BOTH IN PROGRAMMING AND IN WRITTEN MEDIA , VIA OUM & CEO. HOWEVER MORE CONTRIBUTIONS WILL ALWAYS BE WELCOME , HOWEVER SMALL - SO PLEASE TAKE AN ACTIVE PART IN YOUR ORIC MAGAZINE.

I THOUGHT THE DECEMBER ISSUE WAS THE BEST TO DATE - WELL DONE TO ONE AND ALL WHO PARTICIPATED.

SEEING JON'S ARTICLE BROUGHT BACK MEMORIES OF HOW I STARTED WITH O.U.M. - WAY BACK IN 1988 - CAME FLOODING BACK . AT THE TIME I HAD JUST MOVED HOUSE IN PLYMOUTH , AND HAD UNEARTHED MY OLD ORIC-1. UNFORTUNATELY I COULDN'T USE IT DUE TO LACK OF A PSU (MINE HAD BLOWN UP THE YEAR BEFORE , BUT I STILL KEPT THE ORIC FOR SENTIMANTAL REASONS , NAMELY IT WAS THE FIRST COMPUTER I HAD BOUGHT , WAY BACK IN 1983).
I REMEMBER SEE 'MICROMART' ON THE NEWSAGENTS SHELF , AND OUT OF CURIOSITY BOUGHT A COPY. FROM THIS I SENT IN AN AD , IN SEARCH OF A REPLACEMENT PSU AND LO AND BEHOLD OUR DAVE CAME TO THE RESCUE , AND FOR THE PRINCELY SUM OF FIVE POUNDS , I HAD A WORKING ORIC AGAIN.
DAVE , NEVER SEEING AN OPPORTUNITY GO TO WASTE , ALSO SENT ME SOME COPIES OF OUM , AS THEN EDITED BY ROBERT COOK , AND SO I BECAME HOOKED , JOINING UP SOON AFTER.
ME AND DAVE BECAME GOOD PEN PALS , AND DAVE PROVIDED A MEANS FOR ALL THE SOFTWARE THAT I NEEDED.

FOR THE FIRST FEW YEARS I WAS HAPPY JUST TO READ THE MAG. THEN DAVE TOOK OVER EDITORSHIP , AND I COULD SEE A VAST IMPROVEMENT IN THE MAG. THEN ONE DAY I SAW ONE OF MY LETTERS IN PRINT AND IT GAVE ME A BUZZ - IT WAS THEN I DECIDED TO TAKE A MORE ACTIVE PART MYSELF.
DAVE ENCOURAGED ME , AND I HAVE SINCE BECOME A REGULAR IN THE MAG.

I ENJOY DOING MY LITTLE BIT FOR OUM , AND I HOPE I GIVE ENJOYMENT TO OTHERS VIA MY PAGE/S.

SO YOU SEE HOW EASY I GOT INTO CONTRIBUTING TO THE MAG , SO COME YOU LOT OUT THERE TRY YOUR HAND AT SOMETHING USEFUL - YOU NEVER KNOW PEOPLE MIGHT FIND YOUR TOPICS OF GREAT INTEREST.

ONTO OTHER MATTERS : I AM AT PRESENT GOING DOWN TWO AVENUES AS REGARDS OUR BELOVED ORIC - THESE BEING :

1) TRYING TO LOCATE 'ROB HUBBARD' - HE OF 'MONTY' & 'HUBBARD' MUSIC FAME.I AM DOING THIS FOR J.B. , AND IF TOGETHER WE GET ANYWHERE , THEN THE BENEFITS WILL BE PASSED ONTO TO YOU VIA J.B.'S PROGRAMMING

2) I HAVE ALSO WRITTEN TO 'SCHOFIELDS QUEST' , ASKING FOR ANY ORIC RELATED DETAILS/ITEMS/MEMORIES TO BE PASSED ON.I'VE HAD A REPLY , WHICH BRIEFLY SAYS THAT MY QUEST WILL BE TAKEN INTO CONCIDERATION FOR BROADCAST . IF IT IS , THEN ANY INFORMATION WILL BE PASSED ONTO JON H. , AGAIN FOR THE BENEFIT OF US ALL.

I WILL LET YOU KNOW IF I GET ANY JOY ON THESE TWO FRONTS.

Continued on next page.

BRIAN's PAGE (Contd.)

I HAVE FOR SALE THE FOLLOWING IF ANYBODY IS INTERESTED :
BBC B / DFS / ADFS + SOFTWARE (5.25 INCH DISC) AND ALSO A SPECTRUM +3 (POSSIBLE DRIVE FAULT).BOTH COME COMPLETE WITH ALL LEADS AND SOME LITERATURE AND ARE IN GOOD WORKING ORDER - THE PRICE JUST TWENTY FIVE POUNDS incl P+P.

ALSO - FREE TO A GOOD HOME - A LARGE AMOUNT OF 1983/84 MAGAZINES (PCW/HOME COMPUTING ETC) - ALL THAT IS MISSING FROM THEM ARE THE ORIC RELATED ITEMS - IF SOMEONE OFFERS ME P+P THEN THEY CAN HAVE THEM (THE CLIPPINGS HAVE BEEN PASSED ONTO J.H.).

NOW THAT'S ENOUGH OF MY RAMBLING , AND SO ONTO THE RESULTS OF THE POSERS SET LAST MONTH , WHICH ARE AS FOLLOWS:

1) GOING TOP TO BOTTOM , AND LEFT TO RIGHT , REPLACE THE '$' SIGNS WITH :

H P B T T R H R T H S D T R G N T R N G S R N D D

ALL SHOULD THEN MAKE SENSE TO YOU.

2) WELL DAVE AMASSED 75,000 ORCS , CHOOSING THE METHOD OF PAYMENT THAT HE DID. HOWEVER BY OPTING FOR THE OTHER METHOD OF PAYMENT HE WOULD HAVE AMASSED A TOTAL OF 10,737,418 . 23 ORCS - SO YOU COULD SAY HE MADE THE WRONG CHOICE !

NOW ONTO THIS MONTHS SELECTION OF POSERS - CAN YOU WORK OUT THEM OUT ?

1) THE YUPPIES BRIEFCASE:

OUR LOCAL ORICLAND YUPPIE - MR. I.C. MONEY - HAS JUST BOUGHT A NEW BRIEFCASE - YOU KNOW THE SORT , REAL LEATHER,HAND STITCHED,GOLD PLATED FITTINGS ETC. , COMPLETE WITH PERSONALLY SELECTABLE 4 DIGIT COMBINATION LOCKS (2 IN TOTAL).
NOW MR.MONEY ALWAYS HAD A PROBLEM REMEMBERING THESE COMBINATIONS , UNTIL HE CAME UPON AN IDEA.NOW HIS LOCKS HAVE THE SAME DIGITS , BUT ONE HAS ITS DIGITS IN REVERSE ORDER (ie ABCD : DCBA)
IN CASE YOU ARE WONDERING HOW THIS HELPS HIM , HE JUST HAS TO REMEMBER THAT ONE NUMBER IS TWELVE TIMES THE OTHER.
NOW IT'S JUST A SIMPLE STEP TO WORK OUT WHAT THE TWO CODE NUMBERS ARE , SHOULD HE EVER FORGET THEM . OR IS IT ?

2) YOUNG VICTORIA IS AGED TWELVE.NOW TAKE THE SUM OF THE DIGITS OF HER AGE AND ADD THEM TO HER AGE (12 + 3 = 15). NOW ADD THE SUM OF THESE DIGITS TO THE ANSWER (15+6) AND YOU GET HER AGE REVERSED (21) . OK SO FAR !

NOW BY COINCIDENCE YOU CAN ALSO USE THIS METHOD TO WORK OUT HER GRANDADS AGE - WHAT IS IT ?

FINALLY - THE FREE RAFFLE - AT THE TIME OF WRITING , I HAVEN'T RECEIVED ANY CLAIMS (MIND YOU I'VE ONLY HAD THE MAG FOR TWO DAYS) , AND BECAUSE OF THE CONTRIBUTION DATE LINE , I WILL LIST ANY WINNERS NEXT MONTH.

ALL THE BEST - BRIAN

MULTITASKING ON THE ORIC

I don't know if someone already wrote something on this subject. I have played with my Oric for many years without any contact with other Oric enthusiasts, so I surely missed a lot of things. Many apologies if I bring nothing new here ...

The 6502 was not intended to execute several tasks simultaniously. The first 8 bit, (to my knowledge), having some hardware feature for the writing of a multitasking OS was the 6809 with its double stack register (user/supervisor) announcing the 68000 family. Well, the 6809 had its OS9: what should we do to have OS2 on our 6502 ? (OS2 and not OS/2. That is half an ... just joking!) OK, anticipating the following words and for people anxious to read a happy end: YES, a multitasking OS is possible on our beloved 6502. Every time the hardware will show too limited, the software will have to address the insufficiencies.

Let's go: First remember we are talking about pseudo-parallelism here. The CPU has to share its precious time between several tasks. But we will go beyond a simple background task. (Printing in the background, like the feature we find in MS-DOS, is not enough to be considered as multitasking.) So, what should we do in order to communicate from one task to another? As with every other processor, we must be able to suspend a running task. Here we will have to choose between a cooperative multitasking scheme, (the running task calls the kernel and tells it to be suspended), or a preemptive scheme, (the running task is suspended by the the kernel, manu militari). Both cases are easy to implement on the Oric. The timers, raising an interrupt, allow for this presumption. (Note however that a very egoistic task is able to keep the processor when masking the interrupt.)

Then we have to save the state of the interrupted task in order to resume it later. What is the task state? It consists of both hardware state and software state. The hardware state is easy: it is just about the CPU state, (the state of the other Oric components will not be saved: peripherals will be considered as critical resources).ie the register contents (PC,S,A,X,Y,P), not only the status register P. Note that the interrupt raised by the timer already saved PC and P on the stack, so only the remaining ones have to be saved, eg

```
PHA
TXA
PHA
TYA
PHA
TSX
TXA
LDX   current task
STA   task states, X
```

In order to resume a suspended task, it would be enough to say:

```
LDX   current task
LDA   task states,X
TAX
TXS
PLA
TAY
PLA
TAX
PLA
RTI
```

As a comment on the above sequences of instructions, we have used the stack of a task to save there most of the hardware state, (only the stack pointer is saved in an array), but other mechanisms are perfectly good too.

The software state is harder to determine. It depends on the operating system we want to write. It may be nonexistent in a rudimentary OS, or very big for a complex system. (It usually consists of information closely tied to the task, but not its variables). For example, if we want to write a BASIC programs multitasker, system variables in page 2 will count for the task state, and likewise for those in page 0. Note that for programs written in machine code (and not using the BASIC ROM), page 2 is not part of the task state any more. However, there still exists a problem with page 0: either each task is given a piece of the cake (in such a case there's no need to save this page 0 fragment since other tasks won't alter it), or each task has the right to use the whole page 0, and this page will count for the software state - (be saved and restored every time a task commutation occurs).

Let's go on with our task commutation and speak about the instructions we find between the two previous sequences, forwarding the questions you will have on your mouths to the end ... We reach an interesting part, indeed, that of the scheduler or dispatcher. The dispatcher algorithm may be very simple like a round-robin, (like in a Monopoly game), or it may be more complex with priorities and so on. (Like with Unix and its round-robin with multi-level feedback queues). Let's be shy and deal with only two tasks: a round-robin with no priorities would be:

```
 LDA    current task
 EOR    #1
 STA    current task
```

(Yes, we only have task #0 and task #1). It's all done! Just insert these instructions between the previous ones and you get a preemptive scheduler, (very rudimentary though). OK, time to answer some questions...

We have not addressed the initializations yet: the stack has to be somewhat prepared since the first commutation will try to restore the second task state. (We have to initially push some values on the stack: the initial values of A,X,Y,P registers and the exec address of course).

Second point. You surely notice the stack (page 1) is shared by the two tasks. Like above for page 0, either we split the cake, (eg register S being initially #FF in the first task and #7F in the second task), or each task wants its own cake: then we will have to copy page 1 from/to the task state.

Note however that sharing (splitting) page 0 is not so easy. This needs to limit the number of zero page variables and to define an executable format allowing for the relocation of these variables, (alongside with the needed relocation of absolute references). This shows there's a lot to do before getting a multitasking OS, but if you only consider having several tasks in one application, (they will be called threads!), the scheme is much easier. I hope these few words, (spoken by a Frog, sorry for that. Moreover, I've caught a cold...), will awake some developments: it's no further than your fingertips. Keep in mind the real time micro-kernal QNX is only 4Kb big (on a 386, so you can do it in half the space 8-).

How about a sort of CoreWar contest? Do you know CoreWar? It's a game of writing programs (warriors) fighting in memory: the first program to crash loses. So, if the rule is keeping the status line (top line of the screen) in a given colour (say blue vs red), the above instructions are near enough to allow the CPU to share its time between two warriors (at random locations in memory) trying to crash the opponents with illegal opcode bombs...

Waiting for your feedback.

Fabrice.

READERS LETTERS

DEAR DAVE,

CONGRATULATIONS ON REACHING 100 ISSUES.

ALLY SCOTT MIGHT BE INTERESTED TO KNOW THAT 'EVP' WORKS GREAT ON A '486'.

WANTED! - 'THE QUILL' FOR EUPHORIC. I HAVE THE ORIGINAL,BUT CAN'T TRANSFER IT.

DO ANY READERS KNOW OF ANY ATARI 400/800/XL SERIES USER GROUPS, AS MARK OXLEY AND MYSELF WOULD BE INTERESTED?

JIM GROOM (PERSHORE)

DEAR JIM,

PERHAPS IF FABRICE HAS 'THE QUILL' THEN HE COULD TELL US IF IT IS POSSIBLE TO PUT IT TO EUPHORIC. I KNOW BECAUSE OF THE PROGRAMMING STRUCTURE IT HAS NEVER BEEN TRANSFERRED TO DISC.

HOP EOUR READERS CAN HELP WITH THE ATARI INFO. MEANWHILE CHECK OUT THE USER GROUP SECTION OF 'COMPUTER SHOPPER'.

- DAVE

==

DEAR DAVE,

JUST A SHORT LETTER TO SAY HOW MUCH I ENJOYED THE 100th ISSUE OF OUM. TWO ITEMS WHICH I ESPECIALLY ENJOYED WERE YOUR PIECE ON THE HISTORY OF OUM AND JON HAWORTH'S COVER STORY.

ON PAGE 4 THERE WAS A LETTER FROM STEVE MARSHALL ABOUT HIS PROPOSED ARTICLE ABOUT A BASIC TUTORIAL REQUIRING INPUT FROM READERS. I AGREE WITH STEVE THAT VERY LITTLE HAS BEEN PUBLISHED THAT DEALS WITH GAMES PROGRAMMING. MAY I SUGGEST THAT THIS HAS SOMETHING TO DO WITH SOFTWARE COMPANIES BEING RELUCTANT TO RELEASE DETAILS OF THEIR PROGRAMMING TECHNIQUES.

I HAVE RECENTLY BEEN PERUSING SOME 'INPUT' MAGAZINES,WHICH I BOUGHT A COUPLE OF YEARS AGO. THE SET CONTAINS ABOUT 60 ISSUES, THOUGH I AM MISSING A COUPLE. THEY CONTAIN MANY EXAMPLES OF GAMES PROGRAMMING WRITTEN IN BASIC. THE EXAMPLES ARE WRITTEN FOR THE ACORN,COMMODORE,DRAGON,SINCLAIR AND TANDY MACHINES, BUT NOT FOR THE ORIC. A SET OF 'INPUT' MAGAZINES WOULD BE USEFUL TO ANYONE WANTING TO LEARN ABOUT SOME OF THE IDEAS BEHIND PROGRAMMING.

AT THE MOMENT I HAVE BETWEEN 20 & 30 BOOKS MAINLY ABOUT ORICS AND PROGRAMMING, WHICH I HAVE NOT READ YET. ONE BOOK WHICH I AM LOOKING FORWARD TO READING IS 'PROGRAMMING THE REAL WORLD' (MAKING YOU PROGRAMS LOOK REALISTIC), WHICH INCLUDES SECTIONS ON REAL BALL GAMES,FLIGHT SIMULATORS,ORBITS AND SPACE TRAVEL. ANOTHER BOOK IS 'COMPUTER ART AND GRAPHICS', WHICH GIVES PROGRAMMING EXAMPLES OF HOW TO GET A COMPUTER TO CREATE GEOMETRIC SHAPES.

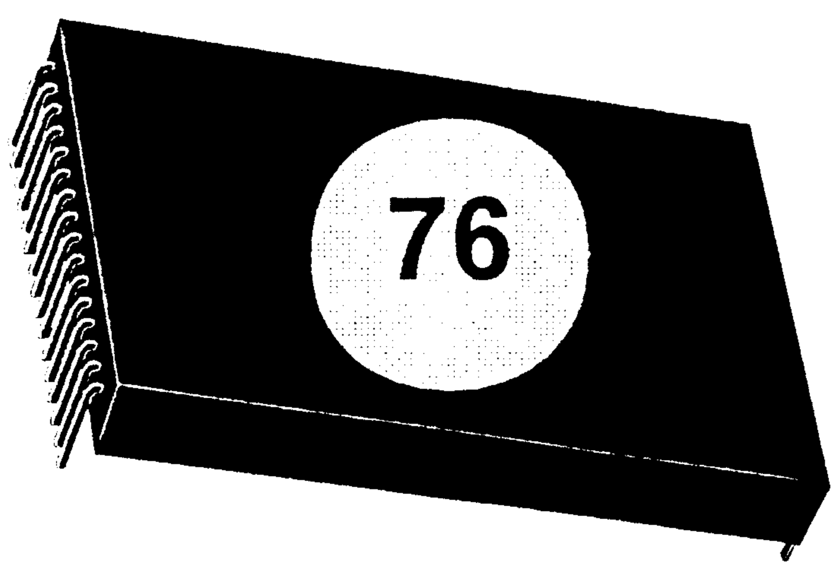
- ROBERT CRISP (MEANWOOD)

DEAR ROBERT,

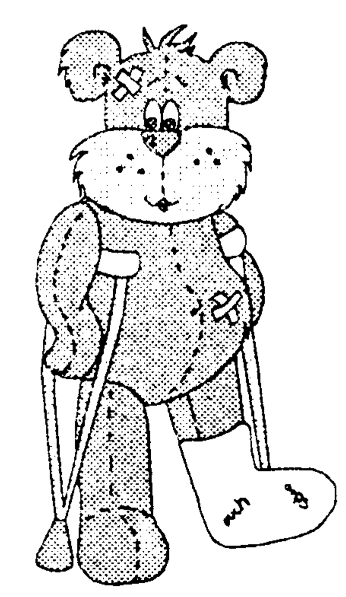
TAHNKS FOR AN INTERESTING LETTER.

REGARDING YOUR 'INPUT' MAGAZINES, I HAVE FROM THE SAME PERIOD IN TIME GOT THE COMPLETE SET OF 'THE HOME COMPUTER COURSE'. THESE IN FACT DID HAVE PROGRAMS FOR THE ORIC, AND IN FACT SHOWED THE DIFFERENCES IN USING THE PROGRAMS ON VARIOUS HOME COMPUTERS. IF YOU CAN GET HOLD OF A SET OF THESE, THEN THEY COULD BE USEFUL TO YOU.

- DAVE



RAMBLING IN THE ROM



Euphoric... just keeps improving!... again!

Fabrice still hasn't let me down. The latest version is v.0.93.

Here is the recent version history up to date:

V 0.9 (29/10/95)
- Oric goes out with his girlfriend Jasmin again 8-)
(FDC 1793 simulator separated from Microdisc electronics, Jasmin electronics added, multiple sector read command added, delayed INTRQ signal simulated differently, artificially delayed IRQ detection after RTI instruction to allow for delayed DRQ signal)
- setting X register to 0 in the patch of the read tape synchronization routine (coming soon : hardware simulator for tape loading time nostalgics :-)

V 0.9a
- Oops, I forgot to correct the serial interrupts under Linux. Hope it's ok now

V 0.91
- Changed the FDC 1793 emulator to handle a new disk image format (really a bit copy of a real disk), this will allow every exotic format (eg. the Randos system formats the first three tracks with 16 sectors (256 bytes), and the rest of the disk with 9 sectors (512 bytes)).
The bad news is your disk images are bigger (every track is 6400 bytes, with datas, sector id's, gaps, indexes,...) and you have to update your disk images with the oric2mfm utility (sorry for that), but this will soon bring great rewards for both virtual and real oric users 8-)
(anticipating, you can already examine M$-DOS disks with Nibble, like on the real Oric: use the dos2mfm utility to convert a 720K M$-DOS raw image to the new mfm format. M$-DOS raw images are easily obtained under Unix with the standard dd command, or under M$-DOS with the raw readdisk utility)

V 0.91a
- simulates the movement of drive heads, so it is easier to cope with strange habits like late selecting of drives.
- simulates the rotation of the diskettes (allowing to read sectors or sector-ids in a circular way) Look for example at the interleaving (1:2) of RANDOS diskettes (track 3 and above).

V 0.91b
- oops, I forgot to update the Sector register of the 1793 after a Read Address command.
- ACIA on the Atmos moved to address $031C again (no, it's not a tango). I have checked the address decoding of the real microdisc allows for such an address.

V 0.92

- first support of P.A.S.E interface (joystick on parallel port) with -p option: arrows on the numeric keypad for directions and 0 for fire button.
- Telestrat users have the choice to use the PASE joystick as above or the standard telestrat's joysticks (-tj option)
- new keyboard handler allowing more flexibility and configurability (but old international keyboard definitions have to be changed)
- a bug fixed in linux version: keyboard events were missing in the simple oric configuration, causing stuck keys.
- different handling of Jasmin's interrupts, the previous trick (executing one instruction after a RTI, even if an interrupt was pending) caused some programs to randomly fail (eg. Painter). So, now a virtual timer allows to reproduce DRQ interrupts every 31,25Ás (approx.), as on the real drive (250 Kbps rate)

V 0.93

- New display : with the -q option, you will get *rectangular* pixels like on your TV. DON'T use on a LCD matrix. The vga mode used is called mode Q (it is 256x256x256, so a 'CUbe') and should work with every vga card and monitor.

Just six weeks work! For upgrades just return your disk with an S.A.E.; new copies are £1.50 including postage.

Rambling on in the maths...

Calculate dividend-divisor

DE2E	TAY	DE32	TAY	save provisional result
DE2F	LDA DC	DE33	LDA DC	
DE31	SBC D4	DE35	SBC D4	
DE33	STA DC	DE37	STA DC	subtraction byte 4
DE35	LDA DB	DE39	LDA DB	
DE37	SBC D3	DE3B	SBC D3	
DE39	STA DB	DE3D	STA DB	subtraction byte 3
DE3B	LDA DA	DE3F	LDA DA	
DE3D	SBC D2	DE41	SBC D2	
DE3F	STA DA	DE43	STA DA	subtraction byte 2
DE41	LDA D9	DE45	LDA D9	
DE43	SBC D1	DE47	SBC D1	
DE45	STA D9	DE49	STA D9	and finally byte 1
DE47	TYA	DE4B	TYA	reecover result
DE48	JMP $DE20	DE4C	JMP $DE24	or... BCS: shift dividend

Calculate for extension

DE4B	LDA #40	DE4F	LDA #40	only do 2 shifts
DE4D	BNE DE1D	DE51	BNE DE21	unconditional: continue

Complete a divsion

DE4F	ASL A	DE53	ASL A	
DE50	ASL A	DE54	ASL A	
DE51	ASL A	DE55	ASL A	
DE52	ASL A	DE56	ASL A	
DE53	ASL A	DE57	ASL A	restore result of division
DE54	ASL A	DE58	ASL A	in b7 b6
DE55	STA DF	DE59	STA DF	and save extension

DE57	PLP	DE5B	PLP	adjust stack
DE58	JMP $DE60	DE5C	JMP $DE64	ACC3-->ACC1
DE5B	LDX #85	DE5F	LDX #85	
DE5D	JMP $C485	DE61	JMP $C47E	'DIVISION BY ZERO'

ACC3 --> ACC1

DE60	LDA 95	DE64	LDA 95	transfer byte 1
DE62	STA D1	DE66	STA D1	
DE64	LDA 96	DE68	LDA 96	byte 2
DE66	STA D2	DE6A	STA D2	
DE68	LDA 97	DE6C	LDA 97	byte 3
DE6A	STA D3	DE6E	STA D3	
DE6C	LDA 98	DE70	LDA 98	byte 4
DE6E	STA D4	DE72	STA D4	
DE70	JMP $DB07	DE74	JMP $DB92	and justify the mantissa

'PI' (FUNCTION)

Programming:

Placing the routine here avoids a JMP, a good (though classic) example of optimisation.

....	....	DE77	LDA #7C	
....	....	DE79	LDY #DC	index the value PI

(AY) --> ACC1

DE73	STA 91	DE7B	STA 91	
DE75	STY 92	DE7D	STY 92	save address
DE77	LDY #04	DE7F	LDY #04	index byte 4
DE79	LDA (91), Y	DE81	LDA (91), Y	
DE7B	STA D4	DE83	STA D4	byte 4
DE7D	DEY	DE85	DEY	
DE7E	LDA (91), Y	DE86	LDA (91), Y	
DE80	STA D3	DE88	STA D3	byte 3
DE82	DEY	DE8A	DEY	
DE83	LDA (91), Y	DE8B	LDA (91), Y	
DE85	STA D2	DE8D	STA D2	byte 2
DE87	DEY	DE8F	DEY	
DE88	LDA (91), Y	DE90	LDA (91), Y	
DE8A	STA D5	DE92	STA D5	byte 1 (save the sign)
DE8C	ORA #80	DE94	ORA #80	force b7
DE8E	STA D1	DE96	STA D1	in byte 1
DE90	DEY	DE98	DEY	
DE91	LDA (91), Y	DE99	LDA (91), Y	
DE93	STA D0	DE9B	STA D0	exponent
DE95	STY DF	DE9D	STY DF	extension=0
DE97	RTS	DE9F	RTS	

AACC1 --> #CB-#CF (ACC5)

DE98	LDX #CB	DEA0	LDX #CB
DE9A	BYT #2C	DEA2	BYT #2C

AACC1 --> #C6-#CA (ACC4)

DE9B	LDX #C6	DEA3	LDX #C6	
DE9D	LDY #00	DEA5	LDY #00	
DE9F	BEQ DEA5	DEA7	BEQ DEAD	unconditional

AACC1 --> (#00B8)

DEA1	LDX B8	DEA9	LDX B8	take address
DEA3	LDY B9	DEAB	LDY B9	in XY

AACC1 --> XY-XY+4

Exit: Y=0

DEA5	JSR $DEEC	DEAD	JSR $DEF4	round off ACC1 (XY unchanged)

ACC1 --> XY-XY+4

DEA8	STX 91	DEB0	STX 91	
DEAA	STY 92	DEB2	STY 92	save address
DEAC	LDY #04	DEB4	LDY #04	index byte 4
DEAE	LDA D4	DEB6	LDA D4	
DEB0	STA (91), Y	DEB8	STA (91), Y	byte 4
DEB2	DEY	DEBA	DEY	
DEB3	LDA D3	DEBB	LDA D3	
DEB5	STA (91), Y	DEBD	STA (91), Y	byte 3
DEB7	DEY	DEBF	DEY	
DEB8	LDA D2	DEC0	LDA D2	
DEBA	STA (91), Y	DEC2	STA (91), Y	byte 2
DEBC	DEY	DEC4	DEY	
DEBD	LDA D5	DEC5	LDA D5	take sign
DEBF	STA (91), Y	DEC7	STA (91), Y	force unsignificant bits
DEC1	AND D1	DEC9	AND D1	and position b7 (signed) and the
DEC3	STA (91), Y	DECB	STA (91), Y	remainder according to byte 1
DEC5	DEY	DECD	DEY	
DEC6	LDA D0	DECE	LDA D0	
DEC8	STA (91), Y	DED0	STA (91), Y	exponent
DECA	STY DF	DED2	STY DF	extension=0
DECC	RTS	DED4	RTS	

ACC2 --> ACC1

Remark: Does not affect Y

DECD	LDA DD	DED5	LDA DD	sign ACC2
DECF	STA D5	DED7	STA D5	in sign ACC1
DED1	LDX #05	DED9	LDX #05	
DED3	LDA D7, X	DEDB	LDA D7, X	take ACC2
DED5	STA CF, X	DEDD	STA CF, X	in ACC1
DED7	DEX	DEDF	DEX	
DED8	BNE DED3	DEE0	BNE DEDB	
DEDA	STX DF	DEE2	STX DF	extension=0
DEDC	RTS	DEE4	RTS	

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THE HISTORY OF O.U.M

ISSUES 51 to 75

Iss.51 (Nov '91) - now 86 programs on Public Domain. Top 3 are:SCRIVENER,EVE & CLIPPER. WORD-SPEED is released,and SEDORIC V2.0 is imminent. Dr.Paul Johnson is traced to Surrey, and John Marshall to Middlesex.

Iss.54 - the software charts based on sales from Aug.'91 to Jan.'92 reveal the top sellers in each section as thus:
Strategy - IJK CHESS
Adventure - ZODIAC
Utilities - CHARED/OBED
W.P's - WORDSWORTH
Educational - FRENCH LINKWORD.

Iss.56 - readership is at 102. MUSED from Jon Bristow is out. Arnt visits OUM. Brian Kidd commences the A to Z of software houses.

Iss.60/61 readership rises to 105. ORIC MEET '92 pictures published. The TELESTRAT is looked at. We look at Scandinavian Software. Trevor Shaw continues his articles on the Serial Port. LORICIELS (French software house) is delved into. We preview DON'T PANIC.
Iss.62 - OUMDISC #1 is released, as is the first issue of the OUMINDEX. Jon.H gives us a list of French software. Henry Marke clears all screens in MAHJONG (it takes over 2 hours). A bug is found in ZEBULON!

Iss.64 (Dec.'92) - the second edition of "ORIC - THE STORY SO FAR" is unveiled. SAUSAGES is previewed, as is ENCHANTED, and the CEO FLIGHT SIMULATOR is looked at in detail. The first ultimate Hi-SCORE table is published. Readership is now 111. (It peaked at 114 in Aug./Sept.).
Top sellers for 1992 are: 1) TETRIX, 2) ZEBULON, 3) WORDWORTH

Iss.69 (May'93) - ORICALL arrives - Nick Haworths Bulletin Board. Dad Jon looks at RGB & SCART. I tell of Nick's new war strategy game for the ORIC, but don't RISK naming it - whatever happened to it?

Iss.72/73 (Aug./Sept.'93) - our sixth birthday. V2.0 of WORD-SPEED available. COLUMNS is due for release. Dr.Ray's Basic COMPILER is reviewed. We get a pictorial look at the '93 MEET. MIND MADNEZ is released, as is Dr.Rays ASSEMBLER.

Iss.75 - SONIX is ready for release - almost! Software sales chart for Jan. - Oct.'93 shows:
1) DON'T PANIC, 2) ZEBULON, 3) COMPILER.
Steve Marshall begins his 'Muso' articles. Jon.H starts his series on Software Sounds.

In the next issue we finish this little article with a look at what was disclosed in issues 76 to 100 of ORIC USER MONTHLY.
Don't forget that back issues are available. Write with requirements for a quote. Price is dependent on whether we have spare copies or have to photocopy the original.

- DAVE

THE BACK PAGE

ONE TON ORIC USER MONTHLY - Peter N.Bragg

The 100th issue of Oric User Monthly! That's quite an achievement. Many congratulations Dave. It seems incredible that the Oric system could survive for so long. Other computer users may feel that we are living in the past,but they are wrong,because most of us have and use more advanced machines too,so that excuse wont wash! Why do we continue to use the Oric?

Looking back,there was considerable optimism about computers in the early 1980s. They were going to be the machines that would enable the average person to produce miracles. Some of those "miracles" such as wordprocessing and brilliant graphic games are an everyday event now,but there are many good ideas that have yet to see the light of day.

A few machines stood out in the crowd that appeared in the 1980/87 period and the Oric was one of those machines.

Microcomputers produced now in the mid 1990s are no longer designed for the hobby programmer. Much of the hardware and software is an expensive overkill. The operating systems are unnecessarily complex and are often changed every few months. By the time you have the necessary programming info, it's too late,the operating system has been updated and changed again and much of the expensive software is out of date. Graphics software with 16 million colours or bargain packs of 40 fonts may sound great, but it's not much good if the man in Dixons can't get your inkjet to work.

As a result computer users have become a captive market and most of the original optimism and enthusiasm that inspired the microcomputer boom has now died.

However, machines like the Oric provide a stable platform for those of us who like to do our own thing. Nobody is going to change the operating system in a hurry. We have the benefit of good manuals for the machine, plus two first class "user groups". There is plenty of good software about. The hardware should be fairly durable and even a dud Oric should be good for spares such as the irreplaceable ULA chip. The Oric still offers many possibilities for interesting programming and hardware experiments. The past few months of OUM (and CEO mag) have proved that with a vengeance. I shall certainly be using mine for a long time to come.

6522s

I have still a small quantity of new 6522 chips. Price (incl. post) is 3 pound each. Orders to OUM.

SOKOBAC

Henry Marke is still plugging away on SOKOBAC. Last time around we told you that he had completed 36 levels. He has now managed 55 levels. Updates show new levels achieved plus bettered scores.

LEVEL	MOVES	LEVEL	MOVES	LEVEL	MOVES
2	387	4	1263	5	601
8	746	10	314	11	1371
13	574	16	562	17	495
18	643	19	195	20	303
23	311	25	1591	27	1338
28	538	29	499	31	883
32	963	33	1598	34	1736
35	1402	39	1962	40	1372
41	1425	43	371	47	860
48	1156	51	822	52	2220
53	1583	58	877	59	461

THIS JUST LEAVES LEVELS 36,50,55,56 & 57 FOR HENRY TO COMPLETE. CAN YOU BEAT HIM TO IT?