

ORIC

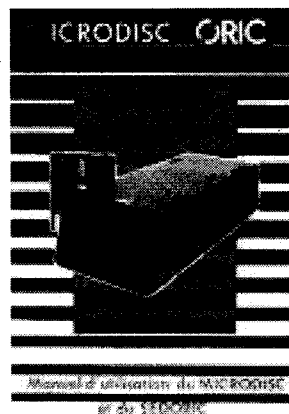
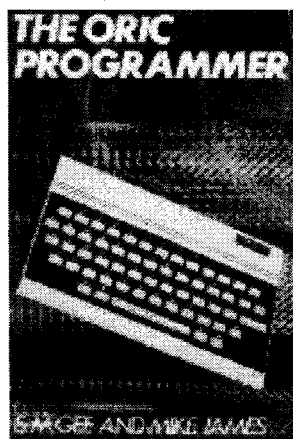
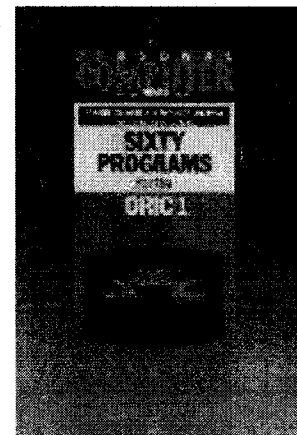
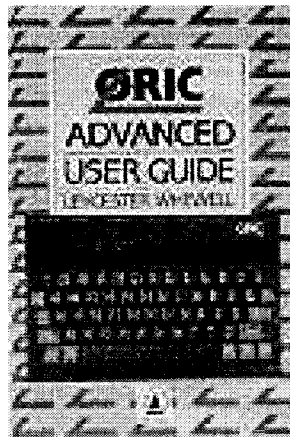
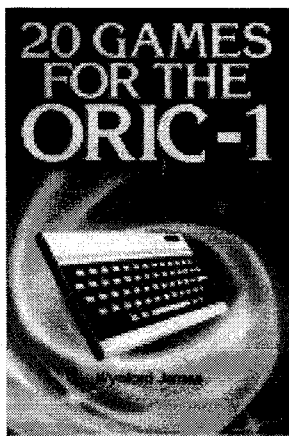
Number **143/4**

USER MONTHLY

July/August 1999

*Keeping the
Oric alive*

with Alternative Micros



Just 15 years on (part 8).....

The Editorial

Hi and welcome,

To the oh so very late July/August issue of OUM.

An enormous workload and poor health has caused delays in finishing this issue. With not much input from readers this month, I've had to put in rather a lot myself, and therefore I have come up with some things pure Oric, some Internet Oric, and some just pure Internet. I hope the mix gives something to you all.

As I attempt to finish this issue (it's already August 23rd), my thoughts are of my 2 week vacation in Alicante, Spain with my wife, and my sister and brother-in-law. I shall get the chance to meet up again with Frank Bolton, and have promised to give him some tuition on Euphoric.

Like myself and Jon Haworth, he is having difficulty running it correctly. If I can't get mine running properly soon, then I will give up the ghost. I have plenty of other fish to fry.

I have decided not to get involved with RHETORIC, but wish them all the luck for the future.

I have plenty of plans for the future, and will delve into them further in my farewell issue.

And now to the index.

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THE FINAL COUNTDOWN

I hope to send out the September Finale issue by the 28th September. If you have never input anything into OUM, then this is your last chance to be famous. I would ask all regular article writers to come up with something special.

I have held my ORIC MEET report over until next time, when you will hear all about Steve Meachen on the Karaoke, and the Orician who turned up at 4.30 p.m.

Also next month you will receive an updated contact list.

Last date for receiving your input is September 21st.

OUR THOUGHTS GO OUT

Our thoughts go out to Turkish reader Oguzhan Yilmaz and his compatriots.

The following e-mail from Oguzhan was received by Laurent Chiac.....:

"Bursa is the closest city of Central point of quake. It was so hard to feel that. I was alone at home at the time of 03:02 a.m, because my family had gone to Tekirdag, which is another city near shore of Marmara Sea. I was at Bursa, not with them because of my studies for the exam.

It was so terrible. It last about 45 seconds in high degree and it was the biggest disaster I saw in my life. Fortunately, our apartment is strong enough and nothing happens around us. Its said that, in Bursa, there are morethan 50 deaths and more than hundreds of injuries. Its so happy that my family's condition was good also. I could phone them more than 12 hours later baccuse all phone lines were useless. The electricity came on just soon before and yesterday night, I spent night outside home. There are still all the people sleeping outside. (Its now 03:09 again, so it happened exactly 24 hours before) There are still smaller quakes felt (around 4 - 4.5 degree) which are not as big as the first one which was said to be 7.8, so big) but I think our apartment is safe enough and I stayed out for now and came to home now (even all my neighbours told me not to do so, I hope no more big quakes

Be sure that, I am o.k now.."

NEWS.....NEWS.....NEWS

UPDATES

Paul Schofield can now be e-mailed at: Paul.Schofield@jet.uk

ORIC SOFTWARE

Simon Guyart has posted his list of original Oric software on cassette at the URL below. He thinks it's a good idea to know who owns what, so we don't have to search for years for a program, and so we can know which programs are missing if we want to make a complete archive. Hope many lists will follow

<http://www.geocities.com/paris/7150/jeuxoric.txt>

FREECALL

I have recently signed up with a new server, namely FREECALL. They promised free p[hone calls. It is not quite what it seems, but I am giving it a go anyway.

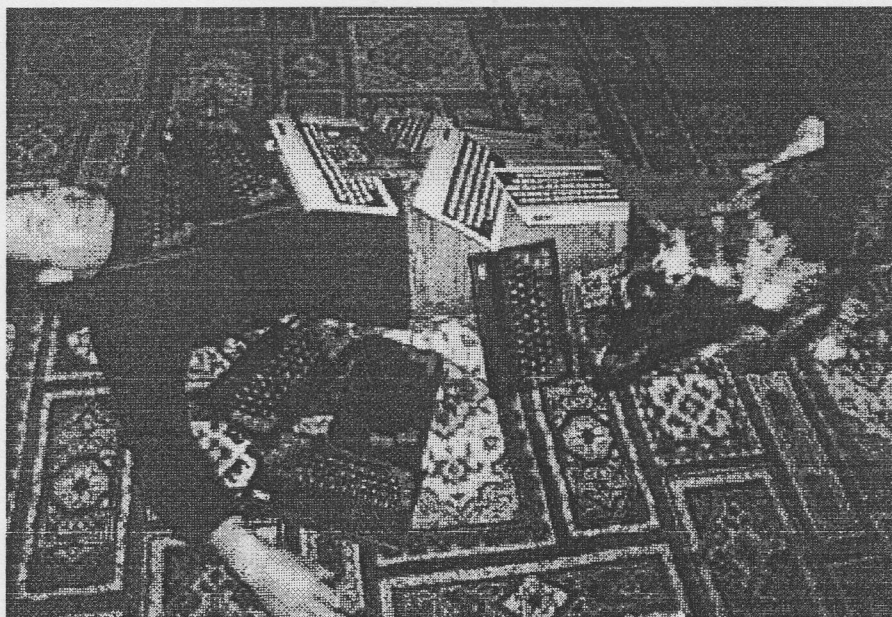
I will still be keeping my account with SOFTNET, and therefore the e-mail address: dave@oum.softnet.co.uk will still stand, and the OUM site will still be held at Softnet.

However, I now also have an e-mail account with FREECALL, and my e-mail address with them is: daveoum@freecall-uk.co.uk

To get free time with FREECALL you build up a bank of free hours over a monthly period.

The normal service is on a local call 0845 number. For every hour you use on peak time you are credited with 30 minutes in your bank. For every hour off peak, you are credited 18 minutes. Whilst for every hour at weekends entitles you to 10 minutes added to your bank.

Add the end of the month you may use your banked minutes at any time during the day or night via a free 0800 number. There is a one off £6 admin fee. Recommending people gives you extra free time, and they hope to give you more as the service progresses.



C A P T I O N C O M P E T I T I O N

Steve Marshall, canine friend and a lot of ORICS.

Your task is to come up with the best caption for the picture.

E-mail, phone or write to me with your suggestions to win a surprise gift from me.

Entries close ~~August~~
25th. Sept. 18th.

e-mails to the Editor

Dear Dave

I am sorry not to have attended the last Oric meet, I was really looking forward to being there but work got in the way. I started Saturday morning intending to do a simple 2 hour job and then to drive over to the meet, unfortunately it turned into a 9 hour marathon at the end of which I was in no state to drive anywhere. I will look forward however to the report of the meet and regret a missed opportunity to see people for the last time.

Best wishes , Paul Schofield

+++++

Dave,

Please remove me from membership of OUM. We're moving house and for two months will be with my in-laws before moving into our new house.

So what with that and the fact that Sun keeps me very busy I really am not getting enough time to even think about Oric related stuff. The last two OUMs are still awaiting to be read.

Anyway hope everything is well with you.

Regards, Gordon Wilkie

Hi all,

Back in Paris after a pleasant Eurostar travel, NOT spoiled by ringings of mobile phones !

Dave, thank you again for all.

All who came, thank you for your warm welcome.

Bristow, where and when will the next meet take place ???

Best regards - Jean Boileau

+++++

Hi Dave

Sorry I could only make the afternoon meet. I was working in the morning, nice to see the old crew



though. If I have got it right you should have received an attached TIFF file with this message which is the group photo.

Warmest Regards - Chris Hearn.

Hi Dave,

I went out on the morning of the Meet to find that two of my car's tyres had been ripped while it was standing on the driveway overnight. I'm surprised I didn't hear it.

Being in a village, it took best part of the morning to get them replaced. By the time they were done, there wasn't time to get to Aylesbury. I assume it went well. So, sorry for my non-arrival. If someone had to pay for my scampi & chips let me know and I'll send the cheque.

Again, sorry, but circumstances beyond my...etc.

- Brian Watson (8 BIT Asscn.)

Hi, Dave.

The best laid plans etc.....

Due to work and family commitments I won't be able to get to the Oric meet. I am disappointed, because it is the last one, but I will survive.

I have only just resurrected my Oric system. I couldn't get any of them to boot up and then, with the aid of a spare PC power supply, I found out that the old Oric power supply was just too tired to do the job.

Best wishes to you for the future and many thanks for all your hard work over the past years.

- Ray McLaughlin.

If You would like a colour copy of the photo on A4 paper, then please send a stamped addressed envelope.

If you want a copy of the pic as a 'tif' file, then please e-mail:

dave@oum.softnet.co.uk

All things Oric - Nigel Alefounder

Mine may be a name you remember from the past, or it may just be water under the bridge. It certainly seems like ages ago when I was subscribing to Oric User Monthly!

I came across your e-mail address while searching the internet for all things Oric. I'm still a fan and still have one Atmos left, though I must admit to rarely getting it out these days. You might (though probably not) remember I donated an Atmos, software and mags to an appeal you had going for Romania(?); this was at the time I decided to slow down Oric-wise.

Well I was very keen on the idea back then, of 'emulation'. I wrote a wish list for actions needed to design one (which you published), and indeed started the work of trying to write one myself. I hadn't got much further than downloading my own Oric ROMs via the serial interface when along came the *wonderful* EUPHORIC. There was no point re-inventing the wheel as they say - and anyway my programming skills more than likely would have let me down eventually! Euphoric turned out to be a rather amazing, high-quality emulator, with a commendably modest author. So many on the emulator scene for other platforms shout about this and that, and brag incessantly, that it was nice to find someone who had just done the work (and a great 6502 emulator this is) for the love of it.

Well, from those humble beginnings (and it was hard finding Euphoric way back then) it certainly seems to have caused a flourish recently. A search nowadays for ORIC throws up loads of links and each site points you on to the next making for a great exploration. True one or two links fail but there is still a lot to find.

Am I right in thinking the emulation scene has caused a resurgence of interest in our little machines?

If so then great, I say. All those games and utilities I used to use and enjoy are no-longer sentenced to the waste-paper bin, or worse, being recorded over! People have saved them to disk images for posterity. Geoff Phillips' own site shows he's still proud to be associated and his generosity in publishing for free his book, is splendid.

I for one never bought a disk drive for my machines but now the possibility of 'emulating' the system complete with drive, means I'd like to see what I missed. Not to mention the 'Telestrat' which I remember seeing a picture of once in Tansoft's magazine but knew nothing about.

Is OUM still circulating? I guess it must be from the e-mail address! Let me know the cost and I'll send you a sub.

I'm interested to see what's happening these days. Fair-weather Oric'er you might say; and perhaps you're right!

However I still hold the little machine in great esteem, which is why I keep one carefully wrapped. By the way, you might laugh. I had so carefully wrapped the Atmos, in all it's complete and original packaging, along with the power supply, cables and manual, for storage when my wife and I moved house a couple of years ago. Well the package got left in the garage while other more pressing needs took over. Along came the time for me to examine my little treasure - only to find the package had been used by mice as a nest!! The little blighters had gnawed their way through a thick polythene outer, through a large jiffy bag, through the original box and foam inserts, so they could set up home alongside the power supply.

The supply had been ruined by further gnawing, would you believe, and the manual and cables were also wrecked. When I discovered all this the Atmos had been, er, wee'd all over, but was otherwise intact! Sadly the box (at a guess now quite collectable) was a goner too.

Well, the machine's cleaned up now. I found a new power supply and cables (not original, but fine), and luckily I had a spare manual to hand. It still works, but the shock has left me only taking it out on high-days and holidays!

Machine Code for the Oric Atmos (Part 86)

Peter N. Bragg

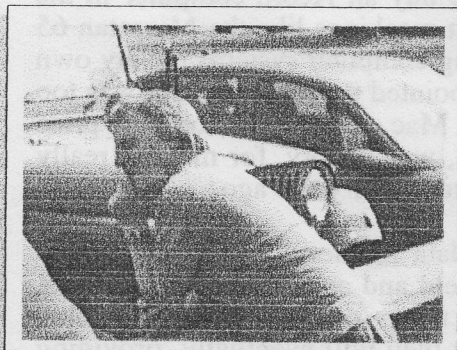
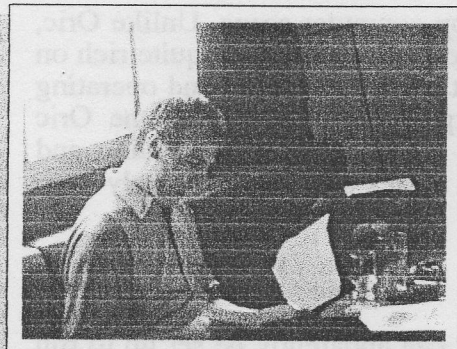
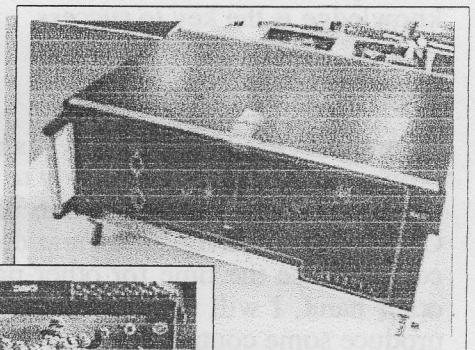
Aylesbury Festivities

Once again, the 10th July 1999, saw a gathering of the Oric clan on a hot Saturday morning, in Aylesbury, possibly for the last time? There, strategically placed in the doorway, was chief arm twister and fund raiser, our good friend "Kimbo". The raffle was intended to help finance the final issues from OUM and raised £135, which was a good result for his efforts.

There was a good turnout, considering that Oric computers stopped production in the UK, fifteen years ago. There was also quite a selection of machines, ranging from the Oric-1 to the Telestrat, as can be seen in some of the pictures shown here. One item of special interest to the writer, was a Microtan 65 computer in its case. That is where it all started for me.

It was nice to see regular visitor, Jean Boileau, who made the long trip from Paris, once again. Jonathon Bristow, was also there, busy selling, the first issue of "Rhetoric" and taking subscriptions for the magazine that is intended to take over from "Oric User Monthly" when editor, Dave Dick retires, in September.

Jon Haworth managed to solve a problem for me. My email has been giving problems and has been very slow to arrive. Simple answer from Jon, was check the Baud rate. Thanks Jon! My modem and software came with the computer and naturally I assumed it was set to the correct rate. I should have known better. Now that has been corrected, the modem is a dozen times faster.



Like many others, Jon Haworth uses the PC Emulator to run Oric software. It still seems a bit strange to see the Oric display and games running on a laptop. However, his laptop display really came into its own, when running the PC game "Railway Tycoon". The pictures included here, don't do it justice, but you can at least get some idea of the display from the smallest picture in the collection of snaps taken at the meet. I have never been a fan of the Microsoft PC computers, but I must confess, I do like some of their laptop machines and if I ever had to buy one, I would probably go for a laptop of that type.

In the end, it was rather ironic, that when the raffle was held, I ended up with a PC laptop. It's the first PC machine that I have owned and is about a dozen years old and quite heavy, but I have already tried it and it does appear to work, so it should provide some interesting experience. Lucky old Peter Thorburn went home with a couple more monitors, much to the amusement of all present, he should have enough for a "video wall" by now. All considered, it was a very good meeting and a tribute to Dave Dick, who has been the main driving force behind the Oric scene for so many years.

The Story so Far

In this series, we have looked in considerable detail at the machine code instruction set for the Oric's 6502 microprocessor and have also covered the construction and programming of a hardware project. That project added a user port to the Oric for use with devices, such as a computer mouse. The overall aim was to provide readers with sufficient information to help them expand the Oric so that it can continue to provide a useful service and a lot of fun, even in these days of advanced, super fast computers.

The Oric may seem small and slow compared with the machines on the market now. However, it still provides a much easier pathway to acquire computer knowledge and programming technique, than any machine currently available. That knowledge and programming skill can give you an huge advantage, when you need to choose and use the computers of the next Millenium. In computers as in everything, knowledge is the key to success.

Future Rhetoric !

Now that "Oric User Monthly" is nearing the end of its run, we must look at where we go from here ? The proposed "Rhetoric" is unlikely to get far without support, so if you are interested, get in touch with Simon Ulyat or Jon Bristow as soon as possible. I must confess that I have mixed feelings. The "Machine Code..." series involved a great deal of work. Whether it was worth it, only the readers can judge. I could certainly use the time for other projects, many of which have been on the back burner for years. On the other hand, I will miss reading the rest of OUM each month and so I shall be subscribing and hope to produce some contributions for it as well.

A recent complication for me, is the departure of Acorn from the desktop computer scene. Unlike Oric, Acorn departed with a £300,000 000 shareout from the kitty and some people must have got quite rich on the proceeds. An interesting story, no doubt, if we ever get to hear all of it. Acorn machines and operating systems are still being manufactured by other companies, however experience gained from the Oric suggests that now is a good time to look at our own Acorn systems, with an eye to upgrading and protecting our interests, while we can. This means that the Oric has taken a back seat and has barely been used in many months.

Future Computers

My current system consists of the Oric and an Acorn Risc PC. The latter can apparently be set up to run "Windows 98", although I have no intention of doing so. What made me buy an Acorn computer in the first place ? The answer, is that an early start and knowledge gained from machines like the Microtan 65 and the Oric, gave me a considerable advantage, when choosing and buying computer systems for my own use. An early demo of the "Mackintosh" at the local Apple Group clearly pointed to the future, but was too expensive at the time. The Acorn Archimedes vastly improved on Apple's Mac, at a more affordable price and I bought one in 1988. By then, Microsoft's old fashioned PC system, was history, for me and really still is, in spite of their eventual development of a working "Windows" system four years ago.

The Acorn machines are very reliable, stable and make better use of data memory. Their "Windows" system, shows the advantages gained by their longer experience in that field and as a result, is first class. Now that Acorn has stopped computer development and Intel have taken over Acorn's Risc chip development, Microsoft has a chance to catch up and I am quite sure that they will eventually, providing they are not overtaken by products from the Pacific Basin. So why didn't Acorn sell more computers ?

The main reason appears to be serious problems in management, plus the fact that Acorn couldn't afford the sort of advertising budget that organisations like Microsoft finance. In addition, the huge spending power of large businesses influences the choice of computers available to the home user and makes it harder to choose anything apart from the usual "compatible" PC.

Lack of knowledge means that computer buyers tend to follow the herd, because it's easier, saves time and they don't have to think about it, just do what everyone else does. However, a serious problem with this approach, is that the "herd" is more like a flock of sheep and is inevitably going to be "fleeced" at regular intervals, particularly when treading the path to computer "upgrades", so beware !

Upgrades can be a good thing, but some upgrades for the PC can be poor value and may require additional software and bug fixes. This won't bother the business user as any duff hardware and software can be quickly written off as a tax loss.

Then of course, there are those who suffer system crashes and data/file losses. OUM editor Dave is not the only one to suffer badly in this respect, a number of friends and a relative have also had similar bad experiences with their computer systems in recent months.

When similar problems occur in business organisations, they can afford to have backup systems, which can get them back on line in an hour or so, at the worst. Home users can't afford the time and money for such luxuries and have to put up with the loss.

My advice when buying computers, or anything else, is to take the trouble to learn as much as possible, about what's available and decide in advance, precisely what it is that you want. Don't accept anything less. Don't be fooled by magazine tests, most are influenced by advertising revenue. Probably the only truly independent tests on anything, are in the magazine "Which?". When buying, be prepared to walk away with your cash still in your pocket, if the shop can't produce what you want. Bear in mind that it can sometimes be better to scrape up a little more cash for a better quality machine, than to put up with that "bargain offer", which is often more trouble than it's worth. Of course, most people can't be bothered with all this, which is why so much of what is available to us now, is a load of Cr*p !! So now let's look at this months free offer !!

Crib Card

These have been mentioned before, but at the time we were still working our way through Oric's 6502 Instruction Set. We have now looked at nearly all of the Instruction Set and seen much of it in action. If you are planning to program the Oric, or any other 6502 computer, in machine code/assembler, you will find that a crib card is a useful thing to wind up this series of articles.

Most published lists of machine code instructions available, when I started programming, were long lists of jargonised data in written in alphabetical order in large and heavy books. It was easy to see why many gave up at an early stage. The 6502 Instruction Set appeared to be quite a random collection at first, but a closer look suggested that there were some instructions that were quite similar to each other, so I set about to see if it was possible to produce something a bit easier to use and carry around. The end result was the "crib card" published here, which can be tucked into a small notebook for use on long train journeys etc. I have done quite a lot of programming on the London Underground, during the rush hour.

The crib card is necessarily rather cryptic, it is meant to jog the memory, rather than to provide full information. Any instructions on it, that you don't understand can be found in the usual way, in any publication, that covers the 6502 Instruction Set. That shouldn't be difficult to find. In addition to this OUM series, there are other sources of information. These include advanced guides for the Oric and many other 6502 computers. One of the best versions of the 6502 Set appears in Mc Leans "Understanding Oric".

You can also learn quite a bit, by using this crib card to look at listings such as those produced for the recent computer mouse project. It also goes without saying that the crib card applies to all 6502 computers, for example, the BBC and Atari etc, which makes it even more useful.

The crib card no longer list instructions in alphabetical order. Instead the instructions are sorted into groups of similar operations. An interesting side effect of this is that many of the actual codes appear to be related to each other too, which makes them easier to remember.

We can't look at every instruction here, but we can look at some examples, starting with Branch instructions. Each Branch instruction has exactly the same operation. The only difference between them is the condition that activates the branch/jump. In the case of the BCC Branch, if the Carry Flag is cleared to "0" in the Status Register, it will cause a jump at the BCC Branch instruction. Branch instruction BCS on the other hand, is the other way around, the Carry Flag set at "1" will cause it to jump.

It is also easy to see that the Branch instruction codes are related to each other. They start at 10h for BPL and go up to F0h for BEQ, in steps of 20h at a time and the entire range gives you a choice of both conditions, for each of four Flags. One of the four Flags, the Carry can be preset for either Flag condition, to produce a short artificial jump, which is unaffected when relocating software in memory.

If you look at the first row on the crib card's main table, which is for the LDA instruction, it will give you all the variations of that instruction, to provide a choice of ways to load the Accumulator. Likewise, the next instruction STA provides all the same operations (except Immediate "#") to put the Accumulator contents into memory. The next four instructions do the same thing for Index Registers "X" and "Y". All these instructions can be index fetched and loaded, where a code is shown. The same applies to the rest of the instructions in the table.

The four Shift and Rotate instructions, can also be made to work on the Accumulator contents, see the last column in the table. They move all eight bits to the left or to the right. The difference between Shift and Rotate is that Shift loses one of the bits shifted as it falls "off the end" of the row of eight bits when shifted. Rotate on the other hand, picks up the fallen bit and shoves it back into the other end of the eight bit line.

The "crib card" is like a bottomless set of "Lego" bricks. When writing software, you simply choose an instruction from the card and in effect, "plug" it into the program that you are constructing. Of course, you can do this as many times as you like, because unlike "Lego" bricks it's all free !

As for the "crib card" itself, I printed it out as large as possible on a 5 inches by 4 inches piece of paper and then mounted that onto a piece of card, which was then slipped into a transparent sleeve. The Oric printer is ideal for printing out such cards. You could use a clear plastic bag to cover the card, or even "crystal" tape or similar transparent material to protect the printing. I have three of these cards, with various printouts on both sides of similar useful items such as screen addresses, VIA 6522 Registers and the ARM Instruction Set. They all tuck in together, into the case which holds my notebook and pencil. Very handy !

Branch on		Absolute	00 Page	Indirect
		addr X Y	addr X Y #	addr (X) (Y) Ac
C=0 BCC 90	Load Accu. LDA	AD BD B9 A5 B5	A9	A1 B1
C=1 BCS B0	Store Accu. STA	8D 9D 99 85 95		81 91
Z=0 BNE D0	Load X LDX	AE BE A6 B6	A2	
Z=1 BEQ F0	Store X STX	8E 86 96		
N=0 BPL 10	Load Y LDY	AC BC A4 B4	A0	
N=1 BMI 30	Store Y STY	8C 84 94		
V=0 BVC 50	Add with Carry ADC	6D 7D 79 65 75	69	61 71
V=1 BVS 70	Subtract/Carry SBC	ED FD F9 E5 F5	E9	E1 F1
Transfer				
A to X TAX AA	Compare Accu. CMP	CD DD D9 C5 D5	C9	C1 D1
A to Y TAY A8	Compare X CPX	EC E4	E0	
X to A TXA 8A	Compare Y CPY	CC C4	C0	
Y to A TYA 98	Increment Mem. INC	EE FE E6 F6		
S to X TSX BA	Decrement Mem. DEC	CE DE C6 D6		
X to S TXS 9A	Shift Left ASL	DE 1E 06 16		0A
(S=Stack Ptr.)	Shift Right LSR	4E 5E 45 56		4A
Index (Value)				
X + 1 INX E8	Rotate Left ROL	2E 3E 26 36		2A
X - 1 DEX CA	Rotate Right ROR	6E 7E 66 76		6A
Y + 1 INY C8	Logical "AND" AND	2D 3D 39 25 35	29	21 31
Y - 1 DEY 88	"OR" with Accu. ORA	0D 1D 19 05 15	09	01 11
Stack (Lifo)				
A to S PHA 48	Exclusive "OR" EOR	4D 5D 59 45 55	49	41 51
P to S PHP 08	Test BITs BIT	2C 24		
S to A PLA 68				
S to P PLP 28				
(P=Proc.Status)				
Jumps				
Absolute JMP 4C	Misc			
Indirect JMP 6C	Return from Interrupt RTI 40			
Subroutine JSR 20	Break BRK 00			
and return RTS 60	Non Operation NOP EA			
Flags (Status)				
C=0 CLC 18	Bit Numbers 7 6 5 4 3 2 1 0			
C=1 SEC 38	in Status Reg. N V - B D I Z C			
D=0 CLD D8	N=1 Negative D=1 Decimal Mode			
D=1 SED F8	V=1 Overflow I=1 Interrupt Disabled			
I=0 CLI 58	Z=1 Operation result - Zero			
I=1 SEI 78	B=1 Break C=1 Carry Effective			
V=0 CLV B8				

Crib Card

for the

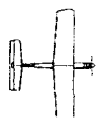
6502

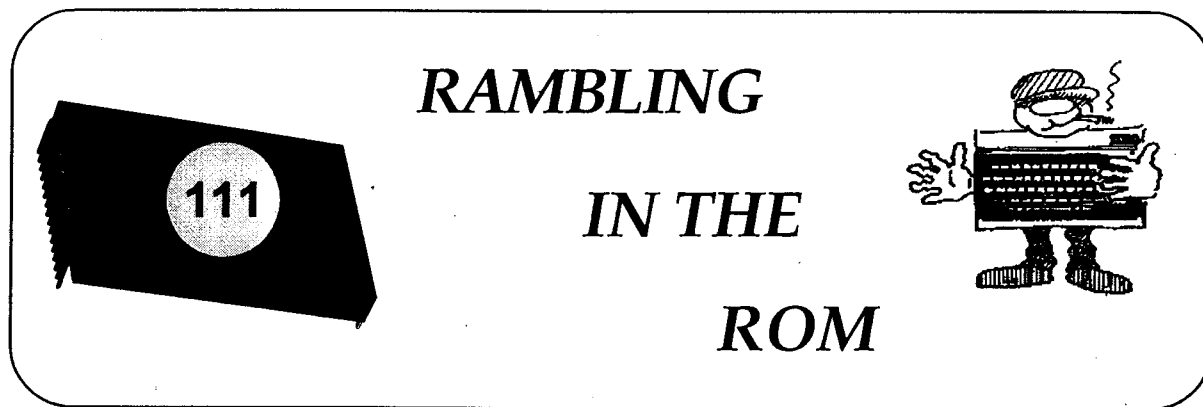
Microprocessor

Instruction

Set

See you next month





Rambling on....

With the display routines - PAPER, INK and FILL.....

EVALUATE 'COLOUR' OF A PIXEL

Entry: #2E1-#2E2: horizontal coordinate of requested pixel
#2E3-#2E4: vertical coordinate of requested pixel

Exit: #2E1-#2E2 = 0 if the pixel is not lit, or #FFFF (= -1) if lit

Remark: quite slow because it needs a division

F141	LDA #F0	F1CB	LDA #F0	240
F143	LDX #E1	F1CA	LDX #E1	index #2E1
F145	JSR \$F264	F1CC	JSR \$F2F8	verify horizontal smaller than 240
F148	BCS F17B	F1CF	BCS F200	no, error
F14A	LDA #C8	F1D1	LDA #C8	200
F14C	LDX #E3	F1D3	LDX #E3	index #2E3
F14E	JSR \$F264	F1D5	JSR \$F2F8	verify vertical smaller than 200
F151	BCS F17B	F1D8	BCS F200	no, error
F153	LDX 02E1	F1DA	LDX 02E1	
F156	STX 0219	F1DD	STX 0219	
F159	LDY 02E3	F1E0	LDY 02E3	
F15C	STY 021A	F1E3	STY 021A	
F15F	JSR \$EFA6	F1E6	JSR \$F049	evaluate pattern of pixel requested
F162	LDY #00	F1E9	LDY #00	
F164	LDA (10), Y	F1EB	LDA (10), Y	take byte
F166	AND 0215	F1ED	AND 0215	and isolate the bit concerned
F169	BEQ F170	F1F0	BEQ F1F7	if unlit, return 0
F16B	LDA #FF	F1F2	LDA #FF	if lit return -1
F16D	JMP \$F172	F1F4	JMP \$F1F9	
F170	LDA #00	F1F7	LDA #00	useless (you are arriving from a BEQ !)
F172	STA 02E1	F1F9	STA 02E1	
F175	STA 02E2	F1FC	STA 02E2	save result
F178	JMP \$F17E	F1FF	RTS	
F17B	INC 02E0	F200	INC 02E0	
F17E	RTS	F203	RTS	

'PAPER' (COMMAND)

Entry: #2E1-#2E2 contains the value of the paper colour

Exit: nothing special

F17F	LDA #10	F204	LDA #10	
F181	STA 0C	F206	STA 0C	mask for paper attribute = %00010BVR
F183	LDA #00	F208	LDA #00	
F185	STA 0D	F20A	STA 0D	and place in column 0

F187 JSR \$F197 F20C JSR \$F21C and continue in consequence
 F18A RTS F20F RTS

'INK' (COMMAND)

Entry: #2E1-#2E2 contains the ink colour

Exit: nothing special

F18B LDA #00	F210 LDA #00	mask for ink attribute = %00000BVR
F18D STA 0C	F212 STA 0C	
F18F LDA #01	F214 LDA #01	and place in column 1
F191 STA 0D	F216 STA 0D	
F193 JSR \$F197	F218 JSR \$F21C	
F196 RTS	F21B RTS	

INK / PAPER SUBROUTINE

F197 LDA #08	F21C LDA #08	
F199 LDX #E1	F21E LDX #E1	index #2E1
F19B JSR \$F264	F220 JSR \$F2F8	verify colour 0 - 7
F19E BCS F1E1	F223 BCS F264	no, error
F1A0 JSR \$F2C3	F225 JSR \$F35D	save #10-#11
F1A3 LDA 02E1	F228 LDA 02E1	take colour
F1A6 ORA 0C	F22B ORA 0C	and modify according to desired attribute
F1A8 STA 0202	F22D STA 0202	and save
F1AB LDX 021F	F230 LDX 021F	take mode flag
F1AE BNE F1C2	F233 BNE F247	jump if HIRES
F1B0 LDX 0D	F235 LDX 0D	TEXT mode: take index
F1B2 STA 026B, X	F237 SYA 026B, X	and save new attribute in registers
F1B5 LDA #A8	F23A LDA #A8	calculate address, either #BBA8 or #BBA9
F1B7 CLC	F23C CLC	
F1B8 LDY #BB	F23D LDY #BB	add desired column
F1BA TAX	F23F TAX	low byte in X
F1BB LDA #BB	F240 LDY #BB	high byte in X
F1BD LDA #1B	F242 LDA #1B	and 27 lines to colour
F1BF JMP \$F1CC	F244 JMP \$F251	(or BNE) finish
F1C2 LDA #00	F247 LDA #00	
F1C4 CLC	F249 CLC	
F1C5 ADC 0D	F24A ADC 0D	
F1C7 TAX	F24C TAX	calculate base address (#A000 or #A001)
F1C8 LDY #A0	F24D LDY #A0	in XY
F1CA LDA #C8	F24F LDA #C8	and 200 lines to colour

Colour A lines at address XY

F1CC STA 0200	F251 STA 0200	save line counter
F1CF STX 10	F254 STX 10	
F1D1 STY 11	F256 STY 11	and base address
F1D3 LDA #01	F258 LDA #01	
F1D5 STA 0201	F25A STA 0201	indicate a single byte
F1D8 JSR \$F23A	F25D JSR \$F2CD	and do as for FILL
F1DB JSR \$F2D4	F260 JSR \$F36E	
F1DE JMP \$F1E4	F263 RTS	
F1E1 INC 02E0	F264 INC 02E0	
F1E4 RTS	F267 RTS	

'FILL' (COMMAND)

Entry: #2E1-#2E2 contains the number of lines to fill
 #2E3-#2E4 contains the number of bytes to fill
 #2E5-#2E6 contains the fill value

Exit: #2E0 increments if there is an error in the parameters

F1E5	CLD	F268	CLD	
.....	.....	F269	LDA 02E3	take size in byte
.....	.....	F26C	STA 0201	and save
.....	.....	F26F	BEQ F2C9	if nul, error
.....	.....	F271	LDY #00	calculate position of cursor in byte
.....	.....	F273	LDA 0219	take coordinate of cursor
.....	.....	F276	SEC	
.....	.....	F277	SBC #06	and move on a byte
.....	.....	F279	BCC F27F	exit if <0
.....	.....	F27B	INY	if not, next byte
.....	.....	F27C	JMP F276	and continue
.....	.....	F27F	TYA	position in byte in A
.....	.....	F280	CLC	
.....	.....	F281	ADC 02E3	add the desired number
.....	.....	F284	TAY	and save it
.....	.....	F285	LDA 02E4	
.....	.....	F288	ADC #00	adjust high byte as well
.....	.....	F28A	BNE F2C9	if negative or too large, error
.....	.....	F28C	CPY #29	verify not more than 41 bytes per line...
.....	.....	F28E	BCS F2C9	and error if yes
.....	.....	F290	LDA 02E6	take fill code, high byte
.....	.....	F293	BNE F2C9	and error if negative or too large
F1E6	LDA 02E1	F295	LDA 02E1	take number of lines
F1E9	STA 0200	F298	STA 0200	and save
F1EC	BEQ F236	F29B	BEQ F2C9	if no line, error
F1EE	CLC	F29D	CLC	
F1EF	ADC 021A	F29E	ADC 021A	plus vertical coordinate
F1F2	TAY	F2A1	TAY	in Y (lower limit)
F1F3	LDA 02E2	F2A2	LDA 02E2	
F1F6	ADC #00	F2A5	ADC #00	high byte as well
F1F8	BNE F236	F2A7	BNE F2C9	if negative or already too large, error
F1FA	CPY #C9	F2A9	CPY #C9	verify =<201
F1FC	BCS F236	F2AB	BCS F2C9	no, error
F1FE	LDA 02E3	.....	.....	take number of bytes
F201	STA 0201	.....	.....	and save
F204	BEQ F236	.....	.....	if nul, error
F206	LDY #00	.....	.....	calculate position in cursor byte
F208	LDA 0219	.....	.....	take horizontal coordinate:
F20B	SEC	.....	.....
F20C	SBC #06	.....	.....	move up a byte
F20E	BCC F214	.....	.....	if <0, found, it's in Y
F210	INY	.....	.....	no, indicate next byte
F211	JMP \$F20B	.....	.....	and continue
F214	TYA	.....	.....	position in A
F215	CLC	.....	.....
F216	ADC 02E3	.....	.....	add required position
F219	TAY	.....	.....	in Y
F21A	LDA 02E4	.....	.....
F21D	ADC #00	.....	.....	high byte as well
F21F	BNE F236	.....	.....	if negative or already too large, error
F221	BNE F236	.....	.....	and test below 41
F223	BCS F236	.....	.....	no, error
F225	LDA 02E6	.....	.....	take high byte of fill code
F228	BNE F236	.....	.....	if negative or too large, error
.....	.....	F2AD	CPY #C8	new vertical coordinate below?
.....	.....	F2AF	BNE F2B3	no, OK
.....	.....	F2B1	LDY #00	yes, so go higher
.....	.....	F2B3	STY 021A	and save new coordinate
F22A	LDA 02E5	F2B6	LDA 02E5	take fill code
F22D	STA 0202	F2B9	STA 0202	and save for work
F230	JSR \$F23A	F2BC	JSR \$F2CD	do the FILL
.....	.....	F2BF	LDY 021A	
.....	.....	F2C2	LDX 0219	
.....	.....	F2C5	JSR \$F049	set address and motif of new cursor
F233	JMP \$F239	F2C8	RTS	
F236	INC 02E0	F2C9	INC 02E0	

FILL (CALCULATE AND DISPLAY)

Entry: #10-#11 contains the address of the first byte to 'colour'
 #200 contains the number of lines to fill
 #201 contains the number of bytes per line
 #202 contains the value of the fill

.....	.....	F2CD	CLD	
F23A	LDA 0202	F2CE	LDA 0202	take fill code
F23D	LDY #00	F2D1	LDY #00	index start
F23F	STA (10),Y	F2D3	STA (10),Y	save the screen
F241	INY	F2D5	INY	next byte
F242	CPY 0201	F2D6	CPY 0201	verify not finished
F245	BNE F23F	F2D9	BNE F2D3	no, continue
F247	JSR \$EFE6	F2DB	JSR \$F089	yes, move to next line
F24A	DEC 0200	F2DE	DEC 0200	verify not finished
F24D	BNE F23A	F2E1	BNE F2CE	no, do again
F24F	RTS	F2E3	RTS	

TEST PARAMETER NOT NUL AND SMALL ENOUGH

Entry: A contains the value limit (exclusive)
 X indexes the parameter in page 2

Exit: C=1 if error (parameter too great or nul)

F250	STA 0204	F2E4	STA 0204	save maximum permitted
F253	LDA 0201, X	F2E7	LDA 0201, X	if high byte not nul
F256	BNE F2F6	F2EA	BNE F2F6	so to large or negative: error
F258	LDA 0200, X	F2EC	LDA 0200, X	take value
F25B	BEQ F262	F2EF	BEQ F2F6	if null, also error
F25D	CMP 0204	F2F1	CMP 0204	if not, compare to limit
F260	BCC F263	F2F4	BCC F2F7	or... RTS!
F262	SEC	F2F6	SEC	
F263	RTS	F2F7	RTS	

Great to see you everyone at the Meet, I shall miss the annual beer and fight over the TV at Aylesbury.....

Email: jon@cambr.force9.co.uk
 Oric Mailing List: oric@lyghtforce.com

Jon Haworth
 3 Petersfield Road
 Duxford
 Cambridge
 CB2 4SF

Brian's Page

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Answers firstly to last issues posers

①

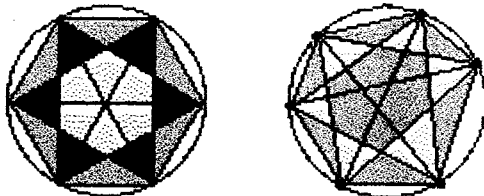
- 1) Advance
 - 2) Anyone
 - 3) Streams
- Word = Atmos

②

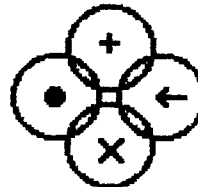
Ax, Axe, Axed, Axis, Box, Boxed, Boxer, Exalt, Exam, Exams, Fix, Fixed, Fixer, Lax, Lox, Laxed, Laxer, Mix, Maxi, Mixed, Mixer, Maxim, Maxis, Maxims, Ox, Rex, Six, Tax, Taxi, Taxed, Taxis, Taxied.

⑤

Two possible answers here, 30 or 31, depending on the type of hexagon produced:

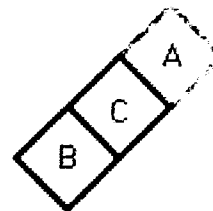


③



'D' - all others have a match, A=F; B=E; C=G

④



Pieces B & C never move, while piece A rotates anti-clockwise around them.

WINNERS.....Well, we have a few, namely; John Peach, who claimed the Travel clock, and Ken Duddle, who claimed the Rubix Clock. Both entered into the spirit of things, and while not having necessarily correctly answered all the posers, are entitled to their gift choices.

The final prize pool lists as follows:

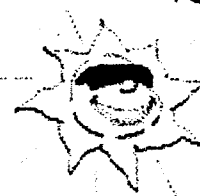
- 1) Looney Tunes Diskette Wallet (holds <=16 3.5" disks)
- 2) Calculator Mouse Mat
- 3) Desk Tidy & Musical Calculator

Claim your prize by writing to me. No claims then winners selected at random, while multiple claims - well thats doubtful!

Brian Kidd, 49 Harlequin Drive, Newport, S. Wales. NP20 5GJ



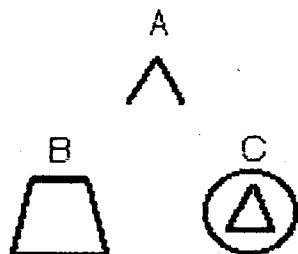
POSERS



1

	—	
		?

What replaces the question mark ?

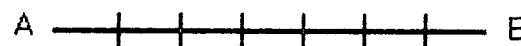


2

'All here ,
name a pot plant'

Can you use all the letters from the above sequence , once only , to spell out the names of three animals ?

3



A and B are two end destination stations of a rail line. Between them are a further 6 stations.

How many single tickets must be printed to allow travel from any one station to another ?

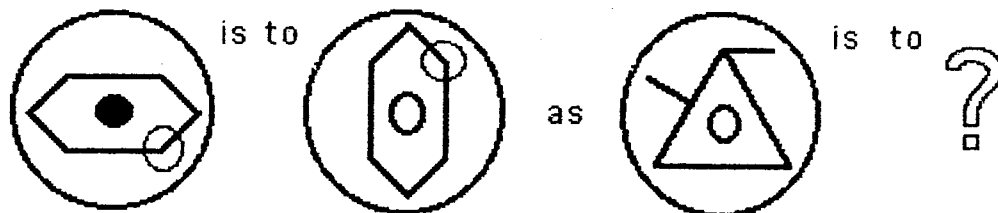
4

A man can drink a bottle of wine in 1.5 hours. His wife can drink a bottle of wine in 2.5 hours. How long would it take for the pair of them , drinking at their respective rates , to finish a bottle of wine between them ?

5

How heavy was the baby at birth , asked the mother. The nurse replied 12.96 lbs , divided by $\frac{1}{4}$ of its own weight. How much did it weigh ?

6



Spread the Word

With something of a heavy heart I set off. The journey ahead is not one that I looked forward to. Sitting for several hours until your bum goes numb and staring out at crazy drivers speeding past in their bright red cars is not my idea of fun! And first we had to go and drop the dog off! Still! this was one journey that had to be made. In a couple of days we were going to the last Aylesbury Oric meet.

For some reason there are always hold-ups at Birmingham. (Not the Dick Turpin kind - well actually). It seems to be all those fools screaming past in the right-hand lane that don't think about turning off until they get right up to the junction and then have to dive across causing everyone to jam their brakes on. This concertinas back to cause the jam we sat in wondering why the hell did these crazy things, and why traffic never 'accordions' or 'melodeons'.

After one or two stops buying terribly weak, overpriced coffee we found our selves in Oxford. This was good because I was going to stay at my Brothers house for a few days. I booted his PC up for him and showed him how easy it was to bypass the password system and how to load up a file into his spreadsheet, (instead of trying to import it).

Next day we trudged 'round Oxford where I failed to find anything Oric shaped. The only thing I found to buy was a few CDs. Maybe I'm getting old but there doesn't seem much that I would like to buy in the shops nowadays. I couldn't help thinking back to the time when Orics were available and remembering how exciting it was seeing all the new machines and gadgets being produced. Back then there were all sorts of comics and weird toys like Rubiks cubes, and interesting stuff happening. Now it seems that there is less choice; no room for individuals who want to be a bit different. If you want a computer you get a PC. If you want a toy you get the latest Disney figure whatever is the craze at the time. No wonder there is so much interest in things 'retro'. They're all the good things, like Rubiks cubes and Action Men, that were about when I was growing up. Orics and all that stuff really were so good that people still like them today.

The day of the meet and we travelled across to Aylesbury carefully avoiding the folk that forget how roundabouts work. Hitting Aylesbury you wonder why as there follows a never-ending series of roundabouts that seem to be designed to disorient you. We followed Daves instruction and managed to get very close to our destination before getting completely confused. Eventually we found our way to a dodgy looking car park. 'This can't be it' we thought, but when I went for a wonder, there walking out of the bright pink hut in the corner was one Dave Dick.

Inside the pink hut was a table with Jon Haworths collection odd strange Oric computers and peripherals and a frenchman. Jean Boileau had once again journeyed from far away. It would be nice to have seen the same commitment from the Brits! A big thank you to those that did attend.

Jon Bristow came in offering little sticking bits of paper to everyone. He's taller then most, so they generally took them. The special offer on the new Rhetoric magazine was revealed on one of the less sticky bits of paper and the said magazine was sold to all - well nearly all. (We'll get you later!) After a shaky start we actually have a magazine thanks to Simon Ulyatt and Jon Bristow who 'wouldn't let it lie'. 'SPREAD THE WORD'! Talk turned to Rhetoric and the future. When was the next one? How many pages? What will happen next? Meanwhile I buried myself in the enormous pile of 3" disks I had bought from Dave. At we may have got as many Oric as PCs working at one point!

Kimbo did the usual excellent job of selling and handling the raffle despite previously threatening to be in America at the time! This year when you won you just picked what you wanted from the prizes. First ticket and a bottle of booze was taken away! Tradition was honoured when Peter Thornburn was persuaded to take the monitor home with him.

Before long I had to start packing Daves system into the car. It was a bit of a squeeze! Ally forced everyone to go outside for a photo and before we knew it we were leaving and back in Oxford. I showed my brother the car load and he laughed when I told him I'd paid for it all.

We journeyed back up north, buying huge bags of Quavers to get a free Rubik cube on the way. Isn't it funny how things work out?

- Steve Marshall

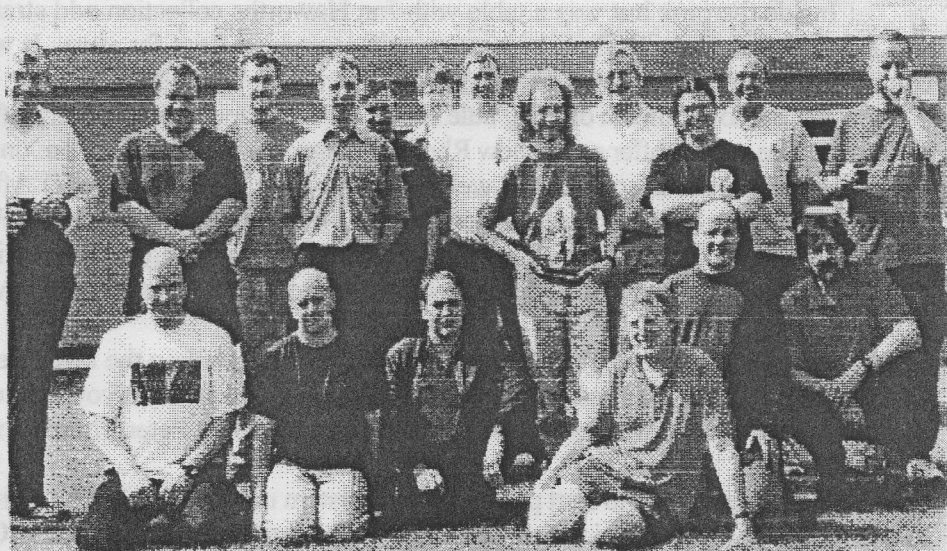
OOM GRAND RAFFLE

Many thanks to those who contributed prizes and bought tickets for the raffle at the recent Oric Meet. Due to a lot of effort from Rob Kimberley, we raised a grand total of £145. Those not at the Meet, who won prizes, should of received them by now.

<u>TICKET No.</u>	<u>PRIZE</u>	<u>WINNER</u>
81	Bottle Wine	Colin Cook
52	Pack of disks	John Foggin
29	Bottle Whisky	Matt Coates
126	Laptop computer	Peter Bragg
69	Bottle Wine	Jon Haworth
39	Music Box	Rob Kimberley
46	Printer	Robert Crisp
17	Knife	John Peach
94	Computer game	Dave Dick
60	3" Disks	Jean Boileau
122	Paper	Peter Bragg
26	Software and magazines	John Foggin
8	Magazines	Chris Evans
104	BBC computer	Jim Groom
131	Paper	Pat McNeill
22	Black box thingy	John Foggin
13	Roy Orbison C.D	John Peach
130	Amstrad computer.	Peter Thornburn
139	Monitor	Peter Thornburn
113	CEO back issues	Steve Hopps
123	GREASE video	Matt McKenzie
100	RHETORIC mag.	Ron Evans
42	Tape	Colin Bradford
54	Bag of bits	John Foggin



DICK & BRISTOW



ANOTHER GROUP PHOTO

Bits'n'Bobs for PC and Net enthusiasts.

Emulators

Jean-Christophe Tabuy has a new address for his emulators page on the Net.
It is: <http://perso.wanadoo.fr/tabuy/emulateurs.htm>

'WORKS'

Perhaps like me you sometimes receive Microsoft Works documents on your PC, but don't have WORKS. If you load them into WORDPAD, save as a 'Rich Text Format', you will then be able to load them into WORDPERFECT (if you have it!).

INTERNET MEETING NIGHTS

Those on the Net meet on the first Friday of the month at 20.00 G.M.T.
Place: [irc.greenet.net](irc://irc.greenet.net), [irc.ofex.net](irc://irc.ofex.net), [vrml.la.us.webchat.org](irc://vrml.la.us.webchat.org), [digital.ca.us.webchat.org](irc://digital.ca.us.webchat.org)
All are possible.
Channel: #oric

More info and special Oric script to join a meeting can be found at:
www.oric.net

Babelfish

Altavista have put up a goodish translation service from Babelfish, which allows you to translate text to and from certain languages. Also by typing in a URL it will go to that site and translate then download the web page in your desired language.

Check it out at: <http://www.wam.umd.edu/~losinp/translate.html> for text

and <http://babelfish.altavista.digital.com> for web pages.

French pics.

The site of the French meetings has been updated with June pictures. Check them out at:
<http://www.geocities.com/paris/7150/visufr.htm>

EUPHORIC

AS you may know, I and others have had trouble getting the new version of EUPHORIC to run. Simon Ulyatt has sent me a suggestion, that I haven't tried yet, but may be of help to others. Here it is in Simon's own words:

"My new windows version crashed everytime I loaded it - until I changed the base address of my Sound Card. It seems that my soundcard (& maybe other peoples) clashes with Euphoric and some other emulators (like HU6280 the TG16/Pc Engine emulator). I always got interference instead of sound with the original Euphoric too. Since changing the base address, the original and new versions work fine."

AND FINALLY!

Back in contact after some time is Richard Farrell of Darlington with this e-mail:

"Hello Dave, can you get in touch with me again as I would like to get hold of the Oric emulator now I'm on the net and I have a PC, plus I'm interested in how the posse has been getting on".

Letters to the Editor

Dear Dave,

The printer that I won at the MEET is being given to a friend, who has recently upgraded his PC and given his old one to his grand children, along with the printer.

The saga of upgrading my PC is coming to an end, mainly because I'm running out of space.

At a recent car boot sale I bought an old fashioned portable video recorder and camera. I haven't had time to try it yet. Some time ago I got a TV card for my PC, and I'm hoping to fit it and connect the video recorder to that. Also at the boot sale I bought a stereo cassette deck which I hope to connect to the sound card output on my PC, and use it to copy my CDs onto cassette. It's not the simplest way, but it should work.

Also I'm thinking of drilling the back of my PC case and installing 2 small power sockets to give me an external 12 volt and 5 volt power supply. I need a simple way of providing a power supply for my smart card reader.

That's all for now, I hope to write again before the final issue of OUM.

- Robert Crisp (Leeds)

Dear Robert,

Glad to hear that the printer came in useful. Also good to hear that you are keeping as busy as ever.

My PC system has recently been upgraded. I now have a new motherboard with a Cyrix 150 Chip (which I believe runs like a Pentium 120, and a lot faster than my old Pentium 60), 64 Mb of ram (I had got up to 72 Mb, but it wouldn't accept it), but still the one gigabyte hard drive. My quad-speed CD Rom wasn't recognised by the new system, so have installed a quad speed one from Creative. I also have a new sound card - a Creative Labs Soundblaster PCI 64..

- Dave

Dear Dave,

Please find enclosed a picture of Her Majesty The Queen. This is to cover OUM subscription renewal, and any other cost related to OUM work.

- Geir Pisani (Norway)

Dear Geir,

Many thanks. I'll send you the final OUM Index, and put the remaining £2.50 into OUM funds.

- Dave

Dear Dave,

Currently on holiday on the West coast of France in Verdee, where I was born.

Have been without e-mail access for almost a month - an outstanding record for me! Actually largely helped out by the fact that my notebook has fallen out of order. Therefore I'm sending the second part of my article on floppy disc.

I still managed to carry my PC and 17" monitor and 3 satchels of accessories/cables/games and an Atmos connected to the PC, thanks to a video grabbing card (so the real Oric is displayed in a window on the PC). Am I crazy or what? (Please don't answer, I know it).

- Fabrice Frances (France).

Dear Fabrice,

Your disc arrived one day, and an e-mail with the article a day later. Many thanks for yet another interesting look at Basic.

You were certainly loaded for your holiday. I hope you found some time to relax.

- Dave

Back to the past with Tangerine's BASIC (part 2)

Stepping back from Microtan's BASIC to Microsoft's original BASIC 65 is a kind of divination game, but it is greatly eased by the fact Tangerine only patched the code. My opinion is Tangerine didn't have Microsoft's source code at the beginning and they started experimenting the port of BASIC 65 to the Microtan 65 without a Microsoft licence. Then, they must have bought a licence before selling this BASIC with the Microtan.

So, how can we reverse these patches back to the original code ? Well, there are two ways: as I had first compared the disassembly of Microtan's BASIC with Oric-1's BASIC, these patches were among the differences because they haven't been kept in the Oric-1 (instead, Tangerine had Microsoft's source code at that time, so it was easy to insert additional instructions). A quick way to spot most of these patches is to simply search for JSR instructions (subroutine calls) that target addresses higher or equal than \$E210. That's the starting address of the code added by Tangerine, and it starts by an indirection table of JMPs (jumps) to the added routines.

So, here is what Tangerine added to BASIC 65:

- in the LIST command, there are two patches whose aim is to wait for a keypress every 5 listed lines (130 lines are listed if the pressed key is LineFeed).
- of course, every instance of BASIC65 had to be adapted for screen printing and keyboard scanning. So, there's a JSR \$E210 at \$C45C that waits for a character from the keyboard in command mode (i.e. not running mode) and a JSR \$E213 in \$CADD for the GET and INPUT commands (running mode). The difference between the two routines is that the first handles special control characters that Tangerine added: cursor controls for example, and a big one (Ctrl-E) that allows to enter a special edit mode (it used a lot of code so it was replaced in Oric-1's BASIC by simpler editing features and a simple EDIT command). As for printing to screen, the JSR \$E216 in \$CA49 targets an additional switch that allows to either PRINT to screen or to the printer: you had to POKE a value before PRINTing in order to select screen or printer output (of course, LPRINT on the Oric-1 is simpler).
- the code from \$C6E6 to \$C6F3 was used for detecting the special Ctrl-C character in order to a running program. Since the Microtan receives keyboard input via interrupts, looking at a pressed key uses less space than available, so we can see NOPs (No Operation) there, and two successive CMP #3 (3 is the ascii code of Ctrl-C) !!
- additional variables are used because of the other patches (e.g. number of lines to LIST, selector variable for screen or printer, cursor screen location...). So, a preliminary initialisation boot sequence has been added: Microsoft's BASIC 65 was originally started in \$E076 instead of \$E2ED.
- the original instructions of the LOAD and SAVE commands have been completely replaced by new instructions. Unfortunately, these are the two commands for which we can not guess Microsoft's original code. A few bytes remain at the end of LOAD command (TXA / STX \$9C / STY \$9D / JMP \$C3F0 : these instructions update the variables-pointer/end-of-program-pointer, and jump to a CLEAR followed by a routine chaining the BASIC lines), and some characters remain at the end of the SAVE command too:

```
..."DED"<CR><LF>"OK"<CR><LF><NUL>"SAVED"<CR><LF><NUL>
```

Of course, we can guess that the first string was "LOADED"<CR><LF>"OK"<CR><LF><NUL> but the code of the command itself has been overridden. There wasn't enough space to put the complete Microtan tape code there so only an interface to EXBUG was coded. Additionally, the remaining space is used for two small routines: displaying a character to the screen (scrolling is not included there but instead called from TANBUG), and getting a character from keyboard (called

from TANBUG too) with echoing on the screen and cursor display.

This makes me think the port of BASIC65 to the Microtan was done incrementally. At first, the developers at Tangerine tried to insert the extra code inside the main code (overriding the SAVE and LOAD commands) and then they wanted to add extra features (printer support, screen editing) so they had to add these instructions after the main core but these instructions still call in turn the first patches... that's one of the evidence of how you can partly read the history of a code development from its disassembly...

And as I told you when beginning the first part of this article, we can step back even further in the past: there are some indications of the incremental development of BASIC 65 at Microsoft.

For example, let's have a look at the GO keyword (allowing to write GO TO in two words): the token code of this keyword is completely separated from the other command tokens, and just look at the code in \$C6C8: you will see the interpretation of this keyword was added at the last minute...

And what about the location of the hidden-and-spelled-backwards MICROSOFT! signature ? It is almost at the end the main core. It would be logical if it really were marking the end of the core, wouldn't it ? There's only the ATN (ArcTangent) function after it, and the initialisation code. So, we can imagine an earlier version of BASIC65 was only 8KB long, without the ATN function and with the Microsoft's signature at the end. It seems difficult to fit the initialisation code with the main core, all in 8KB, though. So, another hypothesis could be that BASIC 65 never fitted in 8 KB, but the original 8080 version did (BASIC 65 was hand-translated from it). When translated from the 8080, we can imagine the 6502 version was a little bigger, it didn't fit in 8KB anymore, so the Microsoft developers resigned to fix the limit to 10KB so they were not so space-constrained, and they added the ATN function...

Well, maybe one day I will have the chance to get my hands on an original BASIC 65 source code and see if these assumptions are true. In the mean time, I hope you all appreciated my articles in OUM and I would like to thank Dave for all his efforts during so many years. At the end, I could read between his lines that he was now disgusted by modern computers that have largely expanded their capabilities and power, but not their ease of use. Sometimes, this led him to not-so-nice words against Euphoric, when in fact Euphoric works very well provided that the PC is correctly configured. As it might be rather tricky to correctly configure a PC, some people may think it's Euphoric fault but they would have the same problems with many games. That's the PC world: it can do a lot, but as Apple says, "the important thing is what YOU can do with it". Anyway, I'm not going to give up the Oric: I am working on "astonishing" projects for the Oric, that will discover in Rhetoric. Rhetoric will miss Dave's unique ability of grouping people together (in fact, HE was the Club), but I hope every member of OUM will switch to Rhetoric and find enough good stuff in it to be proud to demo his Oric to his friends in the 3rd Millenium !

Cheers to all,

Fabrice Frances

Rhetoric