ØRIC
USER
MONTHLY
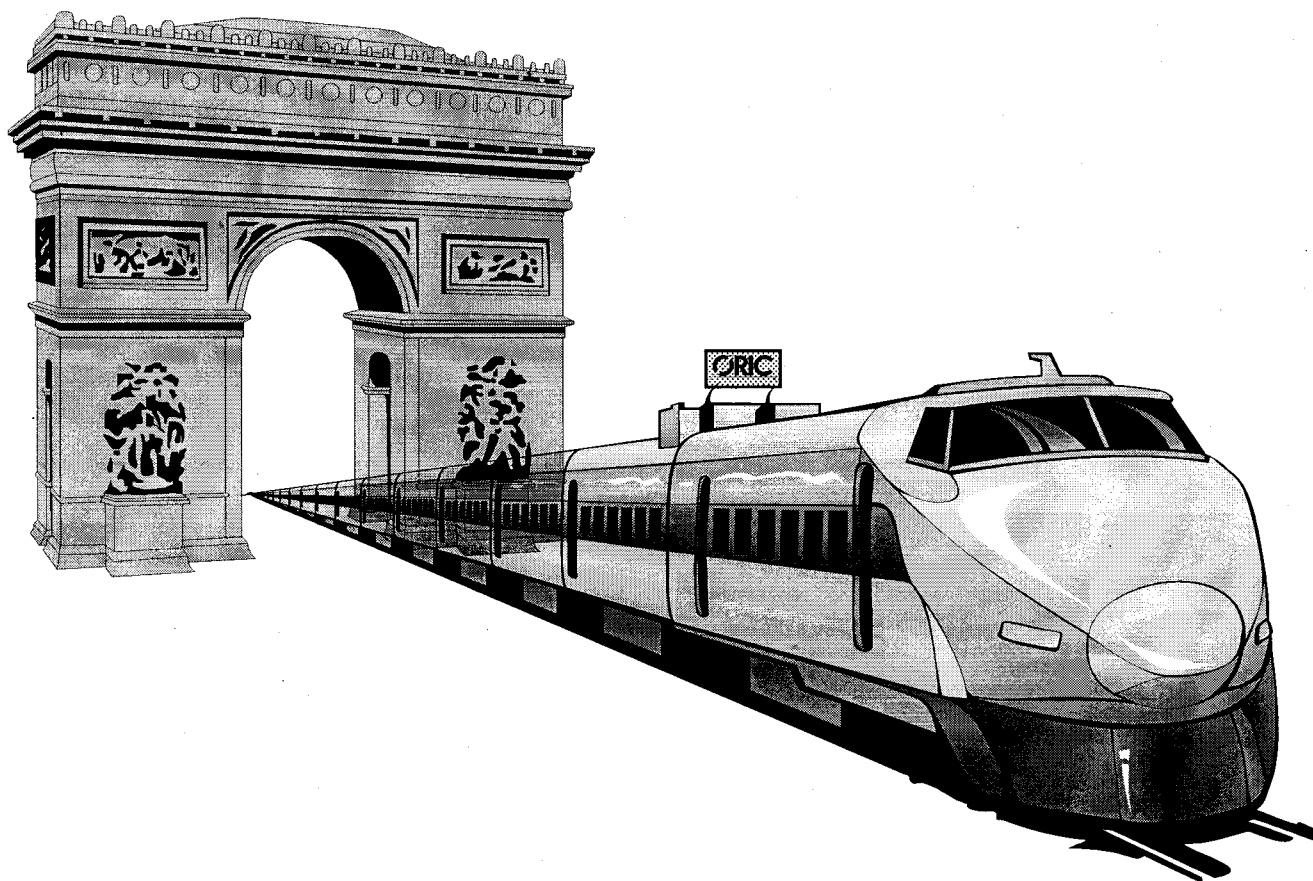## with Alternative Micros

Number **95**

July 1995

Keeping the

Oric alive

THE EDITORIAL

HELLO & WELCOME,
                    to yet another issue.
You will find that this page only contains half of the Index.
 As I get articles completed I tend to add them to this page,and then save the
text file to disc. Unfortunately I appear to be having a problem in saving data
at present. Therefore rather than turn the Atmos off and then re-type everything
later; I will print what is here and continue the Index on page 3.

INDEX

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BIRTHDAY WISHES
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  Happy Birthday to Frank Bolton on attaining the ripe old age of 71.

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  MAGNETIX is coming!!!!!

        MAGNETIX is coming!!!!!1
                MAGNETIX is coming!!!!!
                        MAGNETIX has arrived!

===

  AYLESBURY ORIC MEET
  --------- ---- ----

 Your last chance to get tickets for the MEET on Saturday July 29th.
 With this issue,in some form or other (depending if I can sort out my disc
problems), you will recieve raffle tickets, entry passes, and a map for the MEET
- if you've paid.
 Don't mix up the MEET raffle tickets with the one stapled to the front cover -
this is for Brian's raffle.
 At the MEET you can view the ORIC Emulator, The INTERNET, Peter Bragg's camera
and his Mouse, MAGNETIX, a new strategy game from France + all the software you
may have missed.

 BE THERE - OR BE SQUARE!

===

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

THE INDEX CONTINUES

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NEW FROM FRANCE

Written for the Oric is SAKOBAC. This French strategy game has 60 screens,
each of which is dedicated to a member of Club Europe Oric.
The game is already available on the INTERNET, and hopefully will be
released shortly by the C.E.O for Oric owners.

==

FUTURE ISSUES OF O.U.M

Articles for inclusion in the August OUM should reach me by July 29th.
(ORIC MEET DAY). Those attending may bring articles on the day. I expect to
send out the August issue about August 7th.

Due to holidays (Jon is away for August and I take off at the beginning of
September), there will be NO September issue.

There will be a double issue at the end of September (SEPT/OCT issue).
Closing date for inclusion for this issue is September 17th.

I hope you all have a very pleasant Summer.

==

LINKER

In the last issue of OUM we tried to rectify the errors found in LINKER -
a program published in the CEO-MAG.
Ron Evans has spotted another error.
It now appears that there are other errors. I am informed that it is now
completeely de-bugged, and will be re-printed in a future issue of the
CEO-MAG. It is also planned to put the utility on the September disc from
the CEO.
==

I AM OUT ON THE 29th.

Would those who have queries on the MEET venue please note that I will NOT
be available on Friday July 29th. to take your telephone calls, as I will be
out from 4.p.m. until midnight.
==

READERS LETTERS

DEAR DAVE,

a message to Frank Bolton and anyone else interested in the English Language:-

I was taught at school that the use of the apostrophe was to indicate something missing in the word,that is,an abbreviation had been used. Thus "don't" was an abbreviation for "do not" with the apostrophe indicating the missing letters. By the same logic, PC's should be a valid spelling because PC is an abbreviation of Personal Computer,whereas P's and Q's is not valid because they are just letters. I's and A's should be so written because the apostrophe gives information to the reader about the meaning:they are plural words and not "Is" or "As" which are words in their own right. Information is,in my opinion,more important than rules,and students should be taught anyway about avoiding ambiguities (from whatever source) in their writing.

Whether the current,infuriatiing,custom of putting an apostrophe before a plural 's' comes from the above,or from copying its useage pertaining to ownership (such as "Martin's house") is debatable. Here,the 's' is an abbreviation of "his", and I was quite surprised to hear,in the Welsh valleys around 1972,the use of "my wife his house" instead of the usual abbreviated form. Even "her" to indicate the ownership was not being used at that time. The "s" must have been added quite recently to create the words "yours","hers" and "theirs", but perhaps you could enlighten us as to the reason.

"Its" I have left to last,for emphasis,because a lot of Oricians are spelling it "It's",and again,no apostrophe is required. "It's" means "it is", whereas "Its" means "that which belongs to it", will everyone please note.
                                                        - COLIN COOK (Pitsea)

DEAR COLIN,

Im sure that Frank's reply will soon be arriving with lot's of other letter's. As for the Welsh bit; its probably because the right of ownership ha'snt yet passed to women. Men first - sheeps second.

Am I taking the pis's!

OOPS! - I had better watch my "Ps" and "Qs" or is it "P's" and "Q's" or is it "Pees" and "Queues"?

I think I will try and write an article without the use of plurals or apostrophes. Could start off with:- "I am the owner of more than one Personal Computer.."; much easier than "I've got P.Cs..."

Changing the subject for a minute - what is a P.C? As far as I am concerned it is any computer for personal use,whether it be an Oric,Spectrum,Amstrad,IBM etc; but increasingly the term P.C is only being used to describe an IBM or one of its clones. There must be a new rule,which states that all P.Cs have hard drives and a minimum CGA monitor!

                          - DAVE
===

DEAR DAVE,
              thanks for OUMDISK#6.
I liked 'SAMPLER' - the voice I could understand and the 'STARSHIP' I liked very much!! (was that Capt.PICARD??).
'TITLE' (interesting) but very slow'.. Steve Marshalls 'OOPS' was good though.
I like 'FRACTALS' of all types - but 'ANT LIFE' too slow (Does it form a LARGE piccy??)
'MIND MADNEZ' was very colourful and good big graphics too - very nice!!
'MORTGAGE' - very practical program!!
By the way, this SEDORIC V2.1 spec. I'm not sure that I am at home with it. It gives a red "warning" DOS HAS BEEN CHANGED" on the 'Slave' side of it... what gives??
Hope your trip to the coast was a happy one.
                  - Dennis Hughes (Sale)

DEAR DENNIS,
                    perhaps Denis Bonfield could answer regarding Capt. Picard and
likewise Brian Kidd on 'ANT LIFE'.
 Regarding the 'Slave' side of the Sedoric disc. As stated in the literature
sent out with the disc - due to space restrictions,it was found neccesary to
format the 'B' side of the 3" disc as a 'Slave'. A 'Slave' is the work-horse
type of disc - that is to say no brains. It is sufficient for it to be told what
to do - no need to take up valuable space by telling it how to give commands
etc. Therefore you MUST install a 'MASTER' prior to reading or utilising the
'Slave'.
 As for the warning; It actually states DOS HAS ALTERED.
 The reason I send out instructions with discs is so that they are read and
adhered to.

 Enjoyed the trip to the coast. Visited my old hometown of Gosport in
Hampshire. Stayed with friends and celebrated my birthday (40 ++++) with a FEW
drinkies etc..

                                                                      - DAVE

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 DEAR DAVE,
                    congrats on another great OUM issue. I was ecstatic to read about the
new Oric emulator for the PC - until I read that you need a 386 minimum to run
it! What a disappointment to people like you and me who have stone-age XTs! I'd
even painted my PC black and red to make it look like an Atmos (!)
 I was interested to read Jonathan Bristows letter about the speed of the Oric,
and its capability of running software such as DRILLER and ELITE. The Oric, of
course,shares the same CPU as the C64 & BBC, so it should be possible to port
(non-custom hardware) C64 titles without any speed loss, and BBC stuff at a
reduced speed. After all,porting of software is the staple business of Major
companies such as Ocean and U.S.Gold. A few years ago,most Atari ST games were
ported to the Amiga with little change of code, and Spectrum titles to the
Amstrad CPC (by lamers such as Codemasters). I see no reason why some boffins
couldn't port across some of the classics of computing history such as the BBC's
FRAK!,Planetoid,Mr.EE etc, or some simpler C64 titles such as
Gridrunner,Matrix,Sheep in Space etc. Perhaps after coding Magnetix,Jonathan,you
could perhaps be persuaded to convert some of these classics.
 Finally, while the subject of grammar is still raging, I have sent you a useful
software title that I picked up at a car boot sale. It is called Prostyle,and it
analyses your text documents for good writing style,cliches,& provides graphs
charting your skills,comparing your writing style to publications ranging from
the Beano to the New Scientist! Maybe some of the readers would be interested in
a challenge.
 I have been machine buying again, and have got hold of a Panasonic 3DO CD
console thing, and an Atari Lynx. If anyone has any cheap software for sale, I'd
be very happy to hear from them.
                    - SIMON ULLYATT (Boston).

 DEAR SIMON,
                    although a little disappointed that my PC XT won't run the
Emulator, it is not the end of the world as far as I'm concerned. I have my
trusty Oric and Disc Drive. For those witha 386 and up,then it is a way of
keeping the Oric name alive. I cannot envisage readers forking out 600+ pounds
just to see Oric games with a few additional features. The beauty of the
Emulator is that it is there for those who want to move up. For those with PCs
who long ago discarded their Orics; it will I believe bring them back into the
fold.
 Now that MAGNETIX is about complete (see Preview elsewhere), perhaps Jonathan
could be persuaded to work on some of the titles mentioned.
 I asked young Matthew to run Prostyle on the PC, but he encountered some
problems. As yet I have not found time to have a look at it. I will report in
due course.
                                                                      - DAVE

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DEAR DAVE,

I am surprised and sorry about Frank Bolton's decision, although this letter will not make him cancel it.

As you know, I am a reader of both Oric magazines and as you have the right to publish non-Oric related matters, the OEO-mag editor has the right not to publish them. it simply is a choice and had never been a judgement on the quality of those articles. I think that the two magazines are complementary, and I will renew my subscription to OUM.

P.S. (not supposed to be published) (but you are the editor)
I will be at London-Waterloo station on Friday 28th at 22.13 hrs. and I intend to be in Aylesbury...later in the evening. By the way, why did you name the station after such a great disaster as Waterloo?

JEAN BOILEAU - (the black and red frog) France

DEAR JEAN,

I decided to publish your letter as it is not often that I get two letters from France in the same week.

Why are you coming to Aylesbury - is there someone there that you know?

Oh! - I am slow! Perhaps you would like to sleep at my house that night as there is an Oric MEET the next day that you may like to visit! I'll write to you separately with train times from Waterloo to Aylesbury. It will be marvellous to meet up with you again.

Why was Waterloo so named? Perhaps one of our resident historians may remember - I'm sure that Jon Haworth was around in those days!

For anyone left at Waterloo station for any great length of time; it surely is a disaster!.

                                                        - DAVE

===

DEAR DAVE,

For interest I have included the latest version of LEAGUE CHAMPIONS. It has been radically updated from the original (which i wrote and released through F.G.C).

The game is 99% complete,it is fully operational,but wants some minor changes to the text.

For the Hi-Score tables that you sometimes publish, I've NEVER yet been able to win the FA Premiership and the FA Cup in the same season, followed by winning the charity shield as the first match of the next season.

                    - COLIN BRADFORD (Keighley).

DEAR COLIN,

thanks for the chance to see your updates. Most interesting. I did try to convert the game to Sedoric with limited success. All but two files went across,due I think by the different file handling techniques employed by Cumana Dos.

Perhaps the reason that you never win all three trophies is down to your choice of team. Leeds United would in reality be lucky to win just one trophy - you must be using a cheat version of the game!

                                                        - DAVE

===

DEAR DAVE,

as promised, I send you two pictures of my new Oric desk constructed by me and put together by my dad. Notice the tidy set-up of my Oric system,the Atmos board that can be pushed in and the wheels to move the table around. The height is perfect,and both of my Oric disc-boxes can be stored below the disc-drive board. I must admit that I have used my Oric in the last few weeks - mainly to play "National Hockey League pro", Alistair's "FOOTBALL" or to draw random numbers for my pools coupon (soccer) system.

I am travelling to London again (fifth time) for the weekend from July 6th to 9th. This is not an Oric related trip. I travel with a friend to see a Wrestling Card featuring the wild Sabu. I must admit to of been a fan of this fake wrestling for almost as long as I've been an Oric fan. I will send pictures and a report to the OUM. Talking about England, I am moving to Leeds this Autumn to continue my marketing studies.

                    - ARNT ERIK ISAKSEN (Norway).

DEAR ARNT,

thanks for the photos. A couple of them are re-produced below.
I was thinking of making my Oric system a lot tidier. First move will be to hang the double bed out of the window. I could suspend the PC from the ceiling! "Ann — what do you mean: it's cold sleeping outside. The fresh air will do you good!". Perchance to dream!

I look forward to your Wrestling report - I am sure we can turn it into an Oric-related subject!

You can always telephone me from London. Don't forget that British dialling codes have changed. The code for Aylesbury is now 01296.

We have an Orician in Leeds in the form of Robert Crisp. I'm sure he would be pleased to get together with you for a game of NHL ICE HOCKEY on the Oric.

— DAVE
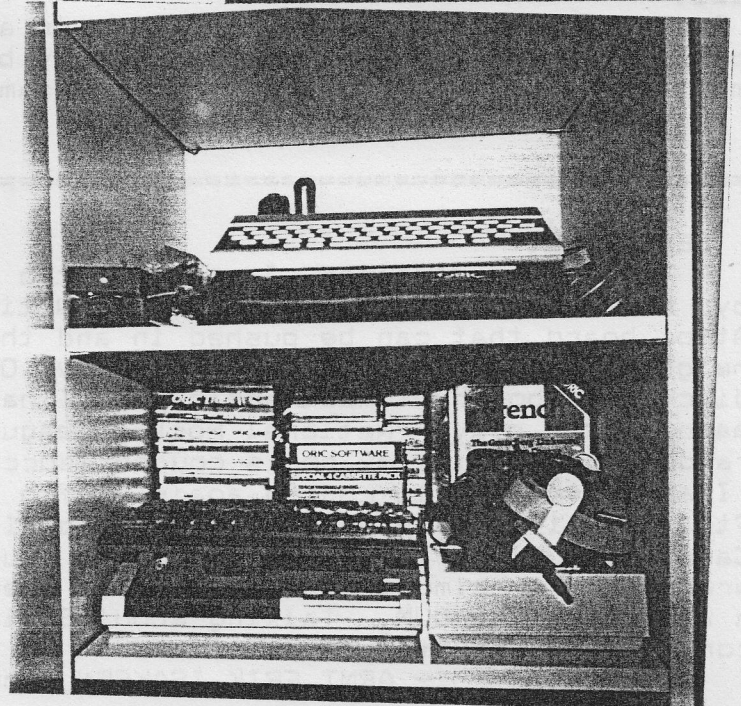
Laurent Chiacchiérini
69 rue Belliard
75018 PARIS

19 June 1995

Dear Dave,

With reference to Frank Bolton's letter in the June OUM, I would like to use my 'right to reply', so could you please publish the following text:

From Laurent Chiacchiérini, editor of CEO-MAG, English Edition

In reply to Frank Bolton's letter in the June issue of OUM, I'm afraid it all stems from some misunderstanding. In our February issue, Frank's letter read "One day soon I'll get around to sending off some of my English courses to Laurent". I thought Frank was referring to some courses in the form of Oric software he told me about just after last year's meet in Aylesbury, much like the Spanish lessons distributed on OUM disks. I then answered him that I would be interested, especially if the software could be easily adapted to the Telestrat. Maybe I misunderstood Frank right from the start... Anyway, in my mind, these courses had nothing to do with the articles published in OUM which are obviously not suited to French children aged 10 or less who do not speak a single word of English.

May I add that I personally enjoyed Frank's articles and the strong knowledge of English linguistics behind them. Of course the policy with regard to what or what not to publish in OUM is a matter for Dave Dick alone. I did not question this. Actually, when introducing Frank's articles in OUM 91, Dave wrote: "... although not Oric related, will be of benefit to many ... If you do not want this type of article, then it is up to you to write in."

Well, I did not even write that these articles should not be published in OUM, I wrote that we would not publish them in CEO-MAG, just because we have a different editorial policy which consists of publishing only material related to Oric computers, because this is the raison d'être of our Club. As an OUM reader since June 1991, I have witnessed a gradually decreasing proportion of purely Oric-related pages. I certainly do not blame Dave for this, as this is apparently the way domestic OUM readers like it. I for one regret this trend but—unlike Frank with regard to CEO—I am not throwing out the baby with the bath water, and I still subscribe to OUM.

I did not criticize the standard of Frank's articles (or of Steve Marshall's article about Stradivarius). But maybe I should have made myself clearer than by writing "Oric-irrelevant ... no matter how interesting they can be"... In fact your articles deserve a wider audience, possibly through a nationwide computer magazine?

This is what I had to say on the subject, so that OUM readers who are not CEO members do not get a one-sided picture of the 'incident'. CEO members will read Frank's letter in the July issue of CEO-MAG, as well as my detailed reply.

One final word: As you know I will not be attending this year's Aylesbury meet, but I hope that this will not be misunderstood as my shunning or boycotting an event staged by OUM. We announced several months ago that CEO would be represented by our President Jean Boileau (in addition to Jon Haworth, of course). I can't make the trip myself for family reasons—I'll be on a holiday in the Alps and a detour through Aylesbury is hardly possible!—but I sincerely hope to be able to attend next year's meet like the last four ones.

Yours sincerely,

Laurent C.

☆ ☆ ☆

P.S.   Dave, regarding my subscription to OUM, Jon will pay on behalf of all French readers, like the previous year.

Machine Code for the Oric Atmos (Part 47)   Peter N. Bragg

The Story so far

---------------- Last time, we interrupted our look at the Zero Page
instructions, to look in detail at another instruction called the Indirect
Jump. As explained at the time, the reason for this diversion, was that Zero
Page instructions make use of indirect addressing and the Indirect Jump uses
a pure form of it. That makes it easier to explain how indirect addressing
works. As a demonstration is better than an explanation, that last article
also contained a small set of demo routines, in the hope that it would make
the operation simpler to understand.

The demo routines used the four Oric sound effects and the Indirect Jump
instruction was used to switch each sound effect in sequence, so that each
time you pressed a key, you would hear the next sound effect in the sequence.
The only exception, was the ESCAPE key, which was used to provide a means
of escape from the routines.

If you look at those routines again, you will find that essentially, you can
ignore the JSR 1030 (1030/5A), it's sole purpose is to provide the means to
change the contents of Params 1002 and 1003. The only minor point of
interest is that the the code listing for it makes it re-locatable, because
it uses a CLC and BCC branch, instead of a jump at instruction 1057.

The essential routine was JSR 1024, specifically the Indirect Jump at
instruction 1024. This was set to the address 1002, which meant that
the instruction would make the computer jump to any address, currently set
in locations 1002 and 1003. You can see that this is so, by stopping the
routine at regular intervals and examining the contents of locations 1002
and 1003. In this case the address in 1002/03, will always be that of one of
the Four Sound Calls.

This may be a fairly trivial operation, but I have used the same operation,
written in 32 bit ARM machine code for modifying and updating a readout
display. OK, so it's a different instruction set, but the essential
functions are the same and probably are for most machine code/assembly
languages, so these little routines can be useful, in all kinds of software.

Right, so we have looked at indirect addressing and just prior to that, we
looked at the indexed addressing again. Now, let's return to the Zero Page
instructions, some of which can combine both types of addressing, to produce
a very useful operation.

Zero Page again

---------------- There are two types of instructions, that use a combination
of indexing and indirect addressing. One instruction type uses Pre-Indexed
Indirect Addressing and the other uses Post-Indexed Indirect Addressing.
Quite a mouthful ! So what does it mean ?

Well, we now know that an indirect address is one that can be stored in a
parameter block and used like a stepping stone, by an indirect instruction
placed somewhere else in the depths of a program routine. We also know that
we can access a series of addresses by using Register X or Register Y added
to a single address. That enables us to read, write, or modify the contents
of a small area of memory with a simple routine.

Put those two operations together and you get some interesting possibilities,
which brings us to the Pre-Indexed and Post-Indexed Zero Page instructions.

Note that the two instruction labels are exactly the same, except for the words "Pre-" and "Post-" that start them off. These labels indicate two things about the instruction operation.

1) "Pre-Indexed" means that the indexing operation is done BEFORE the indirect addressing operation and that Register X is used for the indexing.

2) "Post-Indexed" means that the indexing operation is done AFTER the indirect addressing operation and that Register Y is used for the indexing.

What happens is this. You may remember that Zero Page instructions use the memory area 0000 - 00FF. If you pick an address in this area, say location 0050 for your instruction address, the instruction will earmark locations 0050 and 0051 as the place it will find the address it will use.

Now if you use a Pre-Indexed Indirect Addressed instruction, it will add the contents of Register X to that address 0050. So if Register X contains 08, the instruction will add that 08 to it's 0050 location and will then look for a final address in locations 0058 and 0059 and it is the final address stored in those two locations that it will use.

On the other hand, if you use a Post-Indexed Indirect Addressed instruction, it will add the contents of Register Y to the contents of locations 0050 and 0051. If you set the address in locations 0050 and 0051 to address 1020 and Register Y to 08, the instruction will add 08 to address 1020 to get an address of 1028 which is the final address it will use.

In effect the two labels "Pre-" and "Post-" give you two options. If you use "Pre-", you can use Register X to select a single Absolute address from a range of Zero Page storage locations.

If on the other hand, you use the "Post-" type instruction, you can use a single Zero Page storage location to store an Absolute base address and then use the Register Y to select from a range of 100h addresses based on that Absolute address, stored in the Zero Page location.

Indirect Instructions
-------------------- There are eight different operations available. Each one offers a "Pre-" or "Post-" version, which can be operated as detailed above. Available operations are load (LDA) and store (STA), add (ADC) and subtract (SBC), three logic operations AND, EOR and ORA, plus the test (CMP).

We have met all of these operations before in this series. These new Zero Page versions operate in exactly the same way. The only real difference is that they offer more options for access to data in memory.

If you were with me, way back in the beginning of the series, you may recall that we started by loading an item and then storing it in the data memory. Yes, it could be done with a couple of simple instructions (LDA and STA) but, it was a very slow method of programming and required a new set of addresses for each and every item. Certainly you could write successful software that way, but who would want to ? Later on, we found that that we could write a simple routine to deal with larger areas of memory using Registers X and Y and indexed instructions. The Zero Page instructions briefly looked at above, now add to our programming facilities, by allowing us to remove variable items such as addresses from program routines and store them in a more convenient parameter block. More on the subject next time...................

* **AMSTARD CPC 464** Amstard seemed to wait until other computer manufacturers had made their machines, looked at the response and criticisms, and produced a machine that people were asking for. The 464 came with a proper WP type keyboard with numeric keypad and separate cursor keys. It came with a monitor, (either mono green screen or colour), which also supplied the power to the computer. The cassette deck was built-in so the whole thing only required one mains plug – pretty neat!

There are only two computers that still have commercially produced magazines available for them, and Amstrad is one of them, (the other is the Commodore 64). This shows that Amstrad got it right and produced a decent machine that people wanted to use. It has suffered a little from Amstrads image, (cheap tacky products), and there was a lot of software produced that is just awful. The 80 column screen makes it a good machine for word processing and desk top publishing is possible. WACCI, one of the many user group magazines available is entirely produced on Amstrad machines.

The CPC scene is alive and kicking with plenty of PD libraries, serious commercial software and a few commercial games still being produced. The only real drawback is that you can only use 4 colours on the 40 column screen, so most games use the 20 column one which allows 16 colours. This means that the graphics are a bit blocky.

spec. Z80 CPU. 32K ROM, 64K RAM (42K available to the user). SCREENS 20,40 & 80 columns (160 x 200, 320 x 200, 640 x 200).On which you can use 16,4 or 2 colours respectively from a palette of 27 colours. PORTS 2 x joysticks, centronics printer, expansion bus and monitor. 'Locomotive BASIC' V1.0 is included which requires the correct use of spaces or you get a syntax error. Otherwise it is a very good and comprehensive BASIC. 3 channel stereo sound. (One channel left, one right and one to the centre).

A decent machine that is well worth owning if you're patient enough to find the good software amongst all the dodgy stuff. Although the you have 27 colours to choose from, most of these are different shades of red, green, blue or yellow. There is a purple, orange and pink, but no brown or grey, which is a shame really. A modulator is available that allows you to connect the computer to a colour telly instead of the green screen monitor, so you can see all those colours.

* **ANSTRAD CPC 664** This is basically a disk drive version of the 464. The specifications are otherwise the same, but it has a much better keyboard and Locomotive BASIC V1.1. The disk drive is, of course, a 3" one so you have the problem of finding 3" disks, but it is possible to connect a 3.5" drive. Contact WACCI if you want to do this. (See previous OUM'S for address). The disk drive makes it a better machine for word processing etc and you can use CP/M 2.2. Not many 664's were made as they didn't sell too well and Amstrad soon released an upgraded version – the 6128.

* **AMSTRAD CPC 6128** Very similar to the 664 but has 128K of memory and a re-styled case. The keyboard is different and, I think, not quite as good as the 664 one. The extra memory means that it can run CP/M plus. The BASIC has again been upgraded to allow switching between the two banks of 64K memory. (A Z80 or 6502 can only handle 64K at once so machines with more memory have to switch between memory banks often using one part for the main program, and the other for program data).

* **AMSTRAD CPC 464/6128 +** As late as 1990 Amstrad again decided to release new versions of their old computers, also releasing a console version – the GX4000. The CPC plus cases were a much better design than the hugely long earlier versions. A cartridge port was added which could accept the GX4000 cartridges. The graphics were improved and there is an art package that allows the use of a 4096 colour palette. What is actually available to the user via BASIC I'm not sure. Just about all of the old CPC software can be loaded on the plus machines so there is no shortage of material available. People soon cottoned on to the idea that a 16 ST or Amiga was a better deal than an 8-bit Amstrad and the plus machines were soon dropped.

Most of the user groups about for the CPC support all of the above machines. 'WACCI' have a stand at many of the 'All Formats Computer shows' and often have hardware for sale, as well as a range of cheap software. The other main CPC user group is the United Amstrad User Group (01329 234291) which is more for the all round user. (WACCI being aimed at the serious user). UAUG also has PD software etc and both groups produce good quality magazines. (WACII's is monthly, UAUG's is bi-monthly.)

BRIAN'S PAGE - O.U.M. JULY 1995

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

I HOPE YOU ALL ENJOYED LAST MONTHS BUNCH OF POSERS - THANKS TO THOSE
WHO REPLIED , NAMELY COLIN C. , JIM G. , FRANK B. AND JOHN H. - I
SHALL REPLY TO YOU ALL VERY SOON.

THE ANSWERS ARE AS FOLLOWS :

1) 120 (SUBSTITUTE A=1,B=2....Z=26 AND TOTAL THE SUM)

2) HELLO (AS C.C. SAYS - TRY AN   AUSTRALIAN CALCULATOR)

3) WAS THIS REALLY DIFFICULT - IT TIES WITH POSER No.6 - THEY'RE DOOR
NUMBER DIGITS , COSTING 50 PENCE EACH.

4) TWO ANSWERS : 1207 * 7 = 8449
                 1043 * 7 = 7336

5) 90 (MADE UP TEN DIFFERENT WAYS)

6) 1-9 , 53 , 371 & 913 (HEX = 1-9 , 35 , 173 & 391)

ONTO OTHER MATTERS - IT SEEMS SOME PEOPLE OUT THERE HAVE SHOWN AN
INTEREST IN MY LOTTERY NUMBER GENERATOR.GLAD TO HEAR IT.YOU MIGHT BE
GLAD TO HERE THAT I AM NOW WORKING ON A NEW PROGRAMME,THAT WILL
HOPEFULLY BE ABLE TO PREDICT THE NEXT WINNING NUMBERS.IT WILL BE ABLE
TO GIVE VARIOUS OPTIONS FOR CHOOSING OF NUMBERS , AND WILL HOPEFULLY
BE READY FOR THE NEXT OUM DISC.
I APOLOGIZE TO ALL THAT HAVE TYPED IN PREVIOUS LISTINGS THAT I HAVE
GIVEN AND FOUND THAT THEY SOMETIMES DO NOT WORK CORRECTLY.ENTIRELY MY
FAULT,AS I HAVE HAD TO PRE-LIST BY HAND THEN RE-TYPE INTO THE ORIC,
OFTEN HAVING TO SLIGHTLY ALTER LINES IN ORDER FOR THEM TO FIT ON THE
PAGE - IN FUTURE THEY SHALL APPEAR AS WERE - SOD THE PAGE LENGTH
I HOPE POSER 6 OF LAST MONTH DID NOT OFFEND - I JUST FELT IN A
SARCASTIC MOOD.
I AM STILL NOT FINDING A GREAT DEAL OF TIME FOR THE ORIC -
GREAT NEWS ABOUT THE PC ORIC EMULATOR , IT'S A PITY THERE ISN'T ONE
FOR THE MAC.MIND YOU I SUPPOSE I COULD ALWAYS BUY THE PC EMULATOR FOR
THE MAC , THEN TRY TO RUN THE PC ORIC EMULATOR,BUT ON SECOND THOUGHTS
I DON'T THINK I'LL BOTHER-WHY EMULATE WHEN YOU STILL HAVE THE REAL
THING!
I WILL BE PRESENT AT THE MEET - HOPE TO SEE SOME OF YOU THERE.....NOW
FINALLY THE USUAL ASSOCIATED WITH THIS PAGE - YES THE POSER/S !!!!!

1) USING ANY COMBINATION OF LETTERS FROM THE ALPHABET (WHERE ELSE ?) ,
 BUT NOT REPEATING ANY , WHAT IS THE LONGEST WORD YOU CAN GET - A
SNAZZY PEN FOR THE LONGEST WORD SENT INTO ME .

2) AS ABOVE BUT THIS TIME YOU ARE ONLY ABLE TO USE EVERY OTHER LETTER
OF THE ALPHABET STARTING FROM A (ie ACE...Y)

3) NOW TRY USING THE FIRST THIRTEEN LETTERS.

4) AND FINALLY JUST THE LAST THIRTEEN.

A VARIED BUNCH FOR THE NEXT ISSUE - WILL HAVE TO FINISH NOW - THE
DEADLINE FOR SUBMISSIONS HAVE ELAPSED BY SEVERAL DAYS - SORRY DAVE!

TO DOS or ~~not~~ not TO DOS

Here be dragons — Here be treasure

Once upon a time there came a man to lead us to the treasure of ORIC. His map, "The Atmos Manual", was drawn with great care. He was dealing with code words that would be unfamiliar to his readers, words like DOS and LEFT$ (A$). Some of the words, however, were identical in spelling to real words from the English language; nouns like MUSIC, adjectives like NEW, and verbs like GET, LOAD, PUT, and POKE. These words formed part of a new language called BASIC which was an acronym for Beginners All purpose Symbolic Instruction Code, using the initial letters to form the code word. But like all acronyms it wasn't a real word, nor were GET and PUT real words. For one thing, they always had to be written in capital letters and also they were invariable, which meant that GET was on the map but GOT wasn't. LOAD was part of the code, but LOADING and LOADED weren't. CIRCLE was there, but not CIRCLES. That is to say they had no way of forming tenses, or being plural, though in their inflexible form they had a meaning. In BASIC, CLS represented "Clear the screen", but that did not permit you to write or say, "After you have CLSed....." and call it English. It would strike at the very heart of our linguistic structure.

Our map-maker gave us the BASIC code-word PRINT, and then, forgetting that this word was invariable, he spawned a hybrid and wrote, "When you are PRINTing...". Feeling rather pleased with himself and unaware of the dragon that he had called up, he continued, "After you have PRINTed..." and then, "There is a WAITing period...". He even used a code word in plural and said "all possible LEFT$s." He was careful not to put apostrophe + s so as not to offend the Grand Wizard of Linguistics. (The old Mago Bolton). So, having escaped calumny once, he wrote, on page 22, "PINGs companions are ZAP, EXPLODE and SHOOT.", completely oblivious to the fact that it ought to be "PING's companions" and not "PINGs".

On page 154, the blow fell. He had written, unconcernedly, "if you are PEEKing.." so he blithely wrote "if you are POKEing and then went on to commit such blasphemies as to speak of CSAVEing and STOREing, blissfully unconcerned that he had broken a 100% rule in English. Millions of young computer enthusiasts would henceforth become familiar with STOREing and SAVEing and POKEing, so that in future, generation after generation would write "storeing" instead of "storing" and "smokeing" instead of "smoking". And all because of the dragon that he had just called FORTH (excuse the dreadful pun!).

Now, not only was the treasure trail getting perilous, but people were beginning to say that he had devalued the coinage that we already possessed. But he took the dragon by the tail and from BASIC USR he gave us "a USeR DEFined routine". Pleased with his technique he extended it to FN, but he balked at FuNction or FunctioN and wrote FUNction which was neither BASIC, nor English nor even good red herring. He couldn't let go of the dragon he held, but he was being dragged into desperate straits and St George was diplomatically unavailable (questing for damsels). But how to go on? Does he write "When you have SHOOTed it..", or "when you have SHOT it"? Can he say "RUNed it" or must it be "RUNned it" or even "RAN it"? Will it be "STOPing" or STOPping"? He had given us "the SCReeN location" on page 77, but does that mean we must write "at RaNDoM" and "SPaCes" and "LOw RESolution"? This is not reductio ad absurdum. We see worse things than that in any computer text book or magazine.

BASIC acronyms are not WORDS. They cannot be used as VERBS, and should only be used as NOUNS with very great care and _never_ in plural form, like "three ABSs" (or ABSes and definitely not ABS's). At best they are adjectives and we can speak of a STOP command or an INPUT or GET instruction. But if, instead of "the character can be obtained by INPUT or GET", we write "The character can be INPUTted or GETted" ("GOT"?) then we will not only never find the treasure. We shall have lost our marbles in the attempt.

MORAL: NEVER USE BASIC KEYWORDS AS IF THEY WERE PARTS OF SPEECH FROM OUR GRAMMATICAL STRUCTURE. DON'T GIVE THEM SUFFIXES OR PREFIXES. _TACKLE THE DANGER HEAD-ON. Cry "GOD FOR ENGLISH, OUM AND ST. GEORGE!!!". SLAY THAT FRUMIOUS DRAGON "COMPUTERSPEAK"._

COMPETITION: Identify the origin and probable meaning of "FRUMIOUS", and (not and/or) the origin of the misquotation "Cry 'God for English, OUM and ST. George". Ring me at 0116 2877128 with your answers. I can't promise you a prize except the righteous glow of cockiness if you know them, but we can have a natter, and I shall pray each night for Heaven to reward you. A list of winners will be published in next month's OUM. (DV. --- Dave willing).
Good bye for now. (I nearly wrote, "Happy ORICking"!!!!!!!!!!!!)
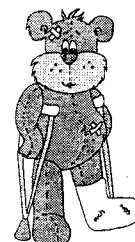
Frank

RAMBLING

IN THE

ROM

71
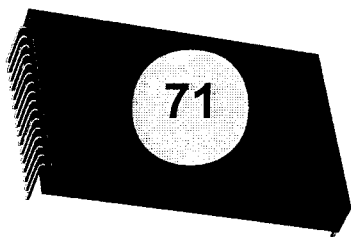
Johnny does Paris II

It's two years since I wrestled with the waffle of Stansted and the concrete doughnut of Charles de Gaulle airports, so this time it had to be the Channel Tunnel and Eurostar... now, what metaphor for a train speeding into a tunnel?

Saturday the 24th June dawned grey and drizzly (remember the one bad day during the Test Match?) as I left home at 5.30 a.m. - as it turned out a good hour too early. I reached Waterloo International station at 7.15 a.m. for the 8.23 train! Never mind, time to size up the place - just like an airport! But I've missed the prologue. When I went to book I was early enough to ask for a 'cheap' return - except that all the allocation of those tickets was booked. The difference between a second and a first class ticket was £40, but for the extra you got a full meal served at your seat. So, first class it had to be. And it turned out to be a very good choice.

As we drew out of Waterloo, breakfast was served. And served, and served. It lasted all the way to the Channel, a good hour and a quarter. Then, after our amble across Kent (maximum speed 80 m.p.h.) we entered the tunnel - and a mere 20 minutes later emerged at Calais. In a journey lasting just under three hours it was hardly noticeable. Then off across the plains of northern France, on a specially built line, where our speed for long stretches was... 180 m.p.h.! And all very smooth and quiet, most impressive.

Bang on time we slid into the Gare du Nord, and there was Laurent to meet me. A good choice of station, Eurostar - lunch was waiting across the road in the usual haunt, the Oasis restaurant. Greet the 'old' faces (why did I put that in quotes?), a beer and lunch, and off round the corner to the Meet. More old faces, and one or two new ones, and we spent a busy and pleasant afternoon exploring the delights of 'Euphoric' and the latest CEO Telestrat programs. By 6.30 p.m. we were departing, leaving Jean Boileau pouring apparent gallons of water into his faithful motor. Laurent and I poured a pint or two of different liquid down our throats, and at 7.30 I crossed the road back to the Gare du Nord.

At 8.23 (7.23 British time) we glided out of Paris, and this time it was dinner that was served.. and served, and served, at 180 m.p.h. all the way to the Channel. A quick duck under the Channel, back to Waterloo bang on time, and home by the chimes of midnight. It was a wonderful day out, and I do like eating and drinking on a train [*only on a train? - Ed.*]. It really didn't seem as though I'd been abroad, yet I'd spent eight hours in Paris with good friends. A day trip to Paris is a reality!

Euphoric… with Sedoric!!

Euphoric has stirred up a lot of interest, and as I said last month, Fabrice Frances was such a quick worker that I was bound to have more news this month. Well, here it is - the emulator now emulates Sedoric <u>and</u> Oric DOS. We've reached version 0.6d as I write this. It works using disk image files held on the PC. You can specify up to four disk images in each of four drives - yes, A, B, C and D! And it works beautifully. It also comes with two utilities - readdsk, which literally reads a Sedoric formatted disk on the PC and creates a disk image file from it. It's that easy to move your Oric disks to the PC emulator.

The second is even better - writedsk, which does the reverse process. So now you can manipulate disk image files on the PC, and then write them back to an Oric formatted disk, and run them in your trusty Oric. The utility won't format an Oric disk - yet! (Fabrice is working on that).

So here is the update to the version history since last month:

V 0.5e
- Oops, two bugs fixed (one in the state restore, one in national keyboard for Oric-1)

V 0.5f
- Oops, didn't notice I deleted one line. Problem with the AltGr key.

V 0.6 alpha1
- First floppy disk controller emulation, it works… but the memory switch mechanism is far too sloooow. Why don't they stop switching, even when waiting for user interaction ?

V 0.6 alpha2
- Faster memory switching mechanism (approximative also). Final release should bring the memory scheme in the heart of the 6502 emulator in order to optimize the whole thing. Notice also the scan codes are sometimes different under Linux and Dos, it works OK with Linux, but under Dos, AltGr is interpreted like the Alt key (Oric's FNCT key).

V 0.6 alpha3
- Fix the displacement of the drive's head. Still not have time to add track and multiple sectors read/write, though.

V 0.6a (19/06/95)
- New 6502 module with integrated paged memory mechanism
- Optimized VIA 6522 emulation
- New disk image format
- Up to four drives
- translation of some DOS scan codes to Linux corresponding ones
- Hardcopy (PrtSc key)

V 0.6b
- Corrected lost interrupts with the DOS version (when go32 switches to real mode for disk access)

V 0.6c
- Can now format virtual disks.

V 0.6d
- Can now hardcopy several screens during a single session
- Oops, a bug fixed (introduced with 0.6a, affecting the CSAVE command)

So there it is, still progressing. Cost of a copy is £1.50 on a 1.4Mb disk. If you wish to update your existing copy, simply return your 'Euphoric' disk to me with a stamped addressed envelope - no further charge.

And now to finish off, an excerpt from the 'readme' file that comes with 'Euphoric':

EUPHORIC Readme

QuickStart
OK, you want to try the emulator now ? Start "euphoric" then load a program with the Basic command : CLOAD "GOBBLER"

...(two hours later), press F10 to exit and go on reading this documentation, it is not that long, you will use the emulator in a better way, and so I have written it for someone.

Function Keys
Real Oric fans remember these keys, never use the F1 key, and keep the Oric display identical to the real one...

F1: Display/Hide the help line
F2: Sound on/off switch
F7: Reset Button under the Oric
F8: Power plug (power on reset)
F9: Dump the state of the Oric and exit (restart from this state is allowed)
F10: Exit emulator
PrtSc: Hardcopy to a ScreenXX.bmp file.

Features
Euphoric emulates Oric 1 and Oric Atmos :

● complete emulation of MOS technology 6502 microprocessor, including unofficial op-codes, and even hangs up the emulator on invalid op-codes (you will have to plug the virtual power off and on in this case)
● emulation of the clock, by counting the clock cycles needed for each instruction.
● speed identical to the original Oric, whatever cpu you have
● emulation of the VIA 6522 : I/O ports, programmable timers counted   down with clock above, interrupt control (only the serial register is missing, it is not used in the Oric)
● emulation of peripherals interfaced to the 6522 : printer, keyboard matrix, programmable sound generator access (soon joystick and hardware tape interface)
● emulation of the Reset switch under the Oric with F7 key.
● emulation of the programmable sound generator GI AY-3-8912 : three sound channels with original envelopes, and partial noise generator emulation (frequency is not programmable).

Also, the emulation needs to retrieve the original square wave.
● emulation of the Floppy Disk Controller WD1793, and support for up to 4 virtual drives (3", 3"1/2, 5"1/4... size does not matter)
● emulation of ROMDIS and ROMSELECT signals, as used with the original disk interface, enabling switch to and from Basic rom, overlay ram, disk eprom.
● emulation of the ULA to build the screen image, with all the serial attributes, including blinking and mode changes (text/hires), dynamic redefinition of char sets, and so on.
● emulation of the TV with 50 screen refreshes per second (depending on the host processor power, only some lines of the screen might be refreshed, or more than a full screen)

Plus:

● reading and writing of files on the host by interception of read/write to the tape.
● sound switch on/off (F2)
● more keys on the Òric's keyboard matrix for national keyboards, and interception of Ascii translation.
● power switch (F8) : complete reset of the Oric.
● Dump of the state of the Oric in two files ('State' for cpu registers, VIA registers, etc. 'Dump' for the whole memory). Resuming this state is achieved with the -r option on the command line, so you may use saved games, examine memory...
● 'On the fly' hardcopy of the screen to a .bmp file
● an Oric speed index may be given on the command line, to obtain a faster Oric (or slower) than the original.
● F1 key summarizes the functions.

Using disk images
Euphoric emulates an Oric with up to 4 drives. Just feed it with 4 disks images on the command line and you will get a 4 drives system booting on the first. If you don't give any disk image, you will get a no-disk system, i.e. working with tapes only. Disks images are files on the host with the exact contents of real Oric disks, sector by sector. It is independent of the Oric Disk Operating System you want to use (today, Oric users prefer to use SEDoric (SED is the equivalent of DOS in French : Systeme d'Exploitation Disque)). Disks images may be created with a DOS (Bios) program reading 3"1/2 or 5"1/4 Oric disks (256-bytes sectored). The program is named readdsk and is able to read near every exotic format, whatever head/track/sector numbers the disk is. Of course, once you have a disk image, you may duplicate it free with the host copy command, this is one advantage of virtuality...

Time for an example : assume you have three disks images called
        Sed10.dsk
        Arcade1.dsk
        Nibble.dsk
you may start a 3 drives system by issuing the following command:

        euphoric Sed10.dsk Arcade1.dsk Nibble.dsk

so, you will boot on Sed10 image in drive A, and have the opportunity to access Arcade1 image in drive B and Nibble in drive C.

Now assume you need a new virtual floppy disk, just go to a free drive (i.e. with no disk in

it) and format it. A blank disk will automagically materialize in it and you get a formatted floppy disk with no stick label (the name will be _____.dsk on the host). When you exit from euphoric, don't forget to put a label on it, I mean rename the file...

Conversely, you may write 3"1/2 or 5"1/4 Oric disks from disks images with the writedsk tool (available for DOS only), although you have to format the disks on a real Oric (I will work on this soon).

Printer output
No problem here, file Printer.Out will cumulate all outputs to the printer (even the first NUL char during power on...). You will then have the opportunity to print this file with the host, or do some post-processing.

Changing the speed
This option is intended for 386 owners who can't use Euphoric at the Oric nominal speed (but owners of powerful cpu may use it to try a fast Oric...)

Euphoric reads a speed index on the command line, 100 is the index of the real Oric and is the default value. Smaller values will give a slower Oric, bigger values will lead to a faster Oric. For example, in order to have a two times slower Oric, you just have to type euphoric -s 50 .

++++++++++++++++++++++++

Tail-ender
Euphoric can format a 'virtual' Sedoric v2.1 disc to the maximum permissible capacity of 19 sectors per track, 99 tracks, double-sided - 3660 sectors, or 915k! Almost 1Mb on a single Sedoric formatted disc!

And now some real rambling - A Sedoric bug
Many moons ago in Ramrom (in 1990) I pointed out a bug in Sedoric - that if you use CSAVE"", A..., E... for a machine code save to cassette it is very, very slow. I gave the workaround - do a QUIT first, but never found out why this happened. Fabrice Frances has noticed the bug, and found the reason. The CSAVE routine in ROM (Atmos address #E7B2) stores the fact that there is an A parameter present in zero page address #0E. When Sedoric meets a command with parameters, it uses the ROM routine at #00E2 plus code appended to that routine by Sedoric in Page 4. That appended code uses the address #0E as well, and so the flag set by the ROM is overwritten. The result is that CSAVE then thinks that there is no A parameter, so it happily treats the save as a Basic program starting at #501. The end address works OK, so a CSAVE "", A#2000, E#4000 saves not that block, but in fact a block from #501 to #4000 - and therefore takes a very long time!

Correcting the bug in Sedoric is tricky, because at least two other important locations use #0E (at #D5E2 and #DADA), and any commands in the ROM and Sedoric requiring parameters use the #00E2/Page 4 routine. Any thoughts, Ray? Within the Euphoric emulator it is easy, because the Atmos ROM is in memory. We simply change the location where CSAVE stores the A flag to an address unused by either the ROM or Sedoric - such as #BB. So change ROM addresses #E82B and #E83C to #BB and the bug is gone.

But it would be nicer to correct Sedoric rather than alter the ROM...   Jon Haworth

BITS 'n' BOBS

LOTTERY

In the last issue of OUM I stated that an amended listing from Brian Kidd would be published in this issue. After this David Wilkin rang to say that he had amended the lines involved. I thought it would be better just to print the amendments, rather than a whole new listing. David promised to send me them. In the words of the Diana Ross song - "I'm Still Waiting".
Slapped wrist time for ND40!
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P.S.S off to Australia!
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Recently popping up on the Internet to Jon Haworth was Anthony Clarke,who has recently moved to Australia.
Anthony worked for P.S.S, who were responsible for the likes of ELEKTROSTORM and HARRIER ATTACK. Anthony informs Jon that he has the code for a game that was never released,due to it crashing at the end. If we can get hold of it and rectify the problem, then there may be a new title for our collection.
===

ADDITIONS TO PRIZE RAFFLE
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Latest additions to the list of prizes for the Grand Draw to be held at the ORIC MEET are:
TRACKBALL - donated by Alan Bowers.
Two PC compatible Modems, made by B.T, but without manuals - from Robert Crisp. PSION Organiser without manual,but comes with a book on the machine - again donated by Robert.

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CASSETTE SOFTWARE
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Going out with this issue to cassette users and disc drive users,who have shown interest, is the Final Clearance List of Oric cassette software. I will shortly be binning my stocks.
Elsewhere in this issue I hope to publish details of disc only software, and next month I will send out a full list of disc based software.
===

AYLESBURY MEET LOCATION
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Rather than waste a page on printing a map of the location of the MEET , only those who have paid will get a map.
For those who just turn up, you will have to not the following:
   If coming from the North,East or West of Aylesbury, on arrival in the town you should head south on the A4010 in the direction of STOKE MANDEVILLE HOSPITAL (well sign-posted), Princes Risborough,High Wycombe.
   After passing the old meeting place of Rivets, you should take the second turning on the left into Harvey Road (STARS Newsagents on the corner). Harvey Road is just before you get to the hospital. Harvey road also shows signs for the Ludwig Guttmann Stadium, where International Paraplegic Games are being held that week.
   Once in Harvey Road, take the third turning on the left,which is Simpson Place. Follow the road to the end,where there are some garages and a Green directly ahead of you. The Mandeville Residents Association Club is situated at the back and to the left of the Green.
   If you miss the turn off into Simpson Place then you will end up in Barnard Crescent,which is where I live.
   I will be at the club from about 9.30 a.m. and so if you have any difficulties you can telephone me there on 01296 24731. If you get lost before 9.30 a.m. then please ring me at home on 01296 26050.
   For those coming from the south, you should come in on the A4010 and head for Stoke Mandeville (DO NOT turn off where there is a sign for Aylesbury).
   After Stoke hospital you should do a right turn into Harvey Road,and then follow the instructions above.

ON THE DAY
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   Lunch will be provided by a local Fish'n'Chip Shop. Orders will be taken at about noon for delivery at about 1.p.m.   Tea and coffee will be served at the club. The bar will be open from 12 noon until 4.p.m, and then again from 6.p.m.
   When the MEET ends at about 6.p.m, a BAR-B-Q will be operating so that you can top up your bellies with food.
   For those staying overnight, entertainment in the form of a Disco with yours truly ('DISCO DAVE'), will commence at 8.p.m.

MAGNETIX

AT LAST IT IS HERE - the long awaited new software title from the pen of Jonathan Bristow on his TWILIGHT software outlet.
It has been two years in the making - and well worth the wait.
As we go to press there are still a few little things to iron out,namely, instruction sheets, and the Outro section.

FEATURES
----

25 minute title tune.
Parralax scrolling on 75% of screen.
Settable brightness during game play.
Up to 33 sprites on screen.
3 channel sound effects - 21 in total.
Rotational smooth screen hi-score section.
9 levels with different aliens and backgrounds for each.
Up to 4 colour game playing areas.
8 difficulty settings.
Pase and IJK joysticks supported,as well as two key styles.
Hi-scores saved to disc - up to 16 entries.
8 frame animation on players craft and aliens.
Level pass codes.
Flicker free game scrolling.
Massive complex levels.
Hires in-laying for for game status panel.
256K game!
16 settable volume levels sffecting sound.

THE GAME
--- ----

 A complex game,which will take many moons to master.
You control a craft,which can move in 8 directions. Firing is not a simple matter. There are 4 different techniques associated with firing, and these are allied to a charge bar.
In the game you will come across the following:
Charge crystals, Power blocks, Vortex's to transport you elsewhere,Time capsules,Guards,Scouts,and Homers.
Above the game playing area is the status panel showing various info.
   The game is certainly impressive - the most professional piece of Oric software ever written, or ever likely to be written.
I manged to get onto the second screen (more by luck than judgement).
It is difficult to compare it with other Oric software - best described as GRENDEL meets SECRET De TOMBEAU with superior sound/graphics/scrolling/programming.
This is the nearest the ORIC will ever get to one of those NINTENDO type games.
 If you are a Gamester, then this is for you.
Well done Jonathan.

RELEASE DETAILS
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MAGNETIX will be finished in time for the ORIC MEET, though the instruction sheet will not be avialble until shortly after.
Orders for this game are now being taken.

3" Disc users should send 3.50 and supply their own disk. If you have a problem supplying a disk,then please contact me.
3.5"/5.25" users should send 4.20, and will be supplied with a disk.

GET YOUR ORDERS IN NOW!
Orders will be sent out in strict rotation.

                                        - Dave Dick.

THE   BACK   PAGE

DISC SOFTWARE

Some of the disc software that you may of missed now follows.
All prices exclude a disc. You should add 80 pence if you require me to supply a 3.5" or 5.25" disc. Those on 3" should supply their own. If you have a problem supplying a 3" disc, then please contact me prior to placing an order.

WORD-SPEED .... This excellent word processor from Dr.Ray comes with your own personalised number and excellent laser printed manual. Additional features include a couple of utilities.
Price is 8 pounds.

MIND MADNEZ .... From the pen of Arnt Erik Isaksen is the complete game, of which a smaller version was sent out on an OUM disk. This has 115 brain teasing levels.
Price is 3 pounds.

SONIX .... The musical editor from Jonathan Bristow with manual.
Price is 5 pounds.

COMPILER .... An excellent utility for compiling your Basic programs.Written by Dr.Ray.
Price is 3 pounds.

ASSEMBLER ... Another from Dr.Ray. Included is the source code for FIG-FORTH and a 20 page manual.
Price is 4.50.

COLUMNS ..... Excellent strategy from Nick Haworth at 3 pounds.

DON'T PANIC & ZEBULON ... two excellent games from Jonathan Bristow.
Each costs 2.50.

TETRIX .... A standard Tetris game + an alternate version. From the pen of Andre Widhani, priced at 3 pounds.

ACCOUNTS BOOK & ORIC CALC .... the Softbacks and Tansoft programs on one disk. The Accounts package has been updated. There are manuals for both.
Price is 4.50.

MAGNETIX .... Soon to be released game from Jonathan Bristow. Price:see review on previous page.

OUMDISKS 1 to 6 ..... all still available at 3.50 each, including a disc.