

# ORIC COMPUTING

THE COMPLETE ORIC USER MAGAZINE

FEBRUARY/ISSUE 4

MORSE TRAINER

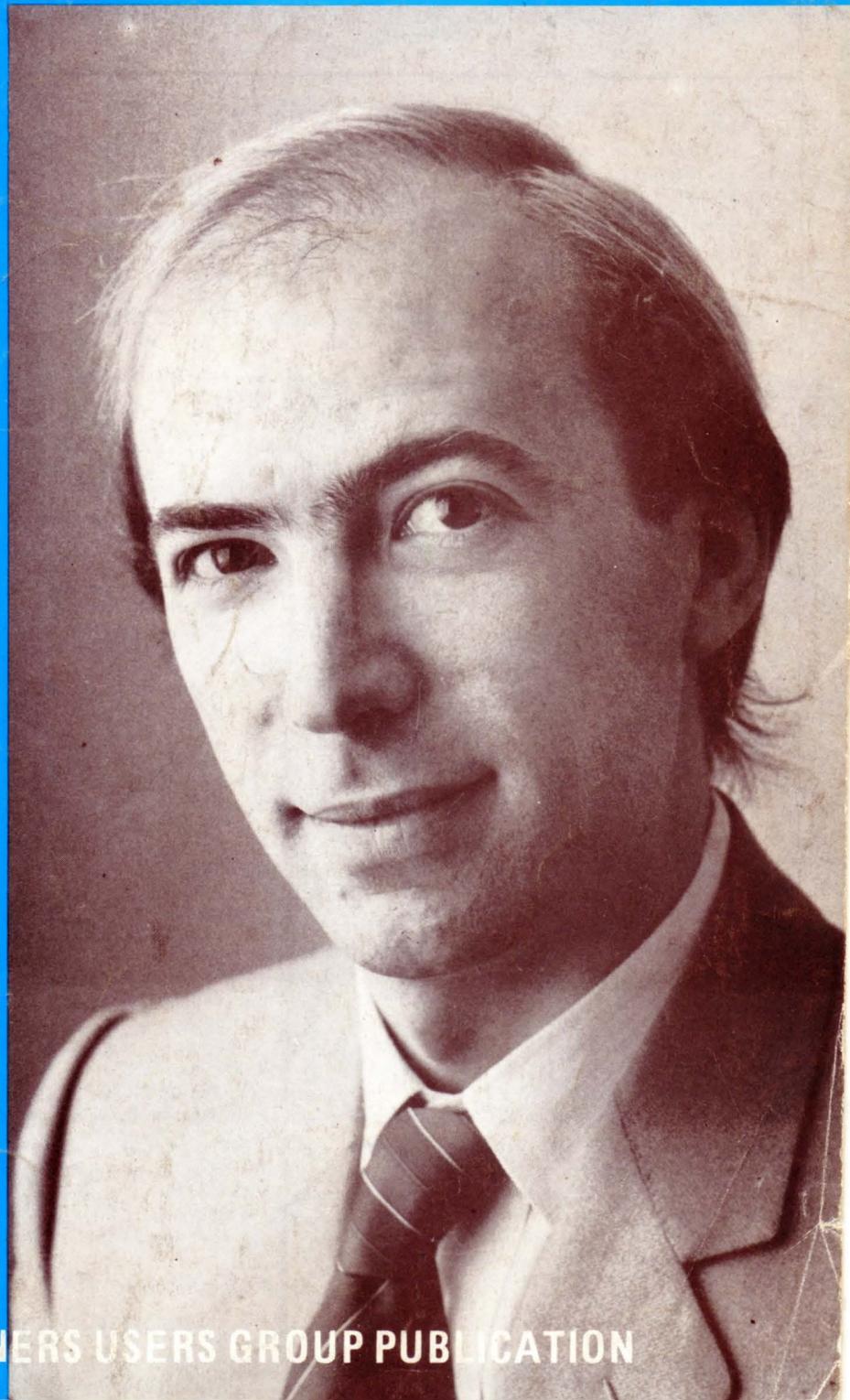
3D NOUGHTS & CROSSES

DOPPLE-GANGER

SOFTWARE/BOOK  
REVIEWS

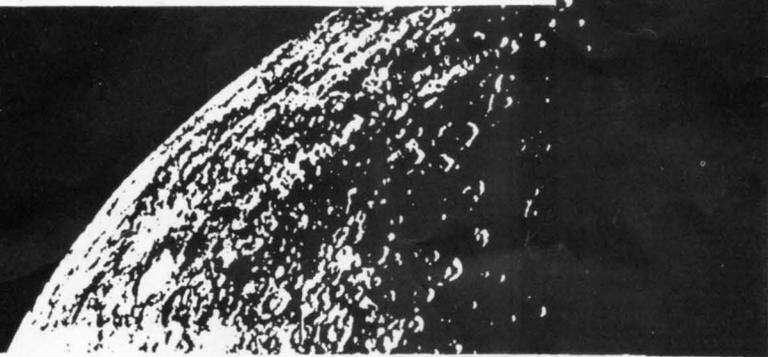
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FOR YOUR  
MICRO

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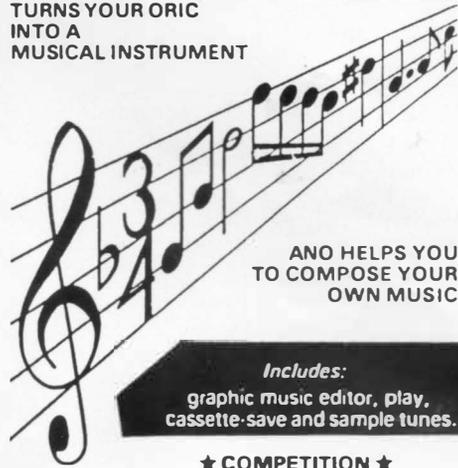
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ORIC 1 48K

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by David Brown

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TOOLKIT is a machine code 'wedge' for the 48K ORIC 1, which when loaded into the ORIC's memory, provides an extra 14 BASIC statements which can be used in programs written in BASIC or as direct (immediate-mode) commands.

RESTORE: Restores the 'data pointer' to a specified line no. such that any subsequent READ statements will read DATA from that and/or following lines.

OLD: Reinstates a BASIC program after accidentally (or deliberately!) typing NEW.

DEL: Delete one or more consecutive lines of BASIC program.

RENUM: Renumbers a BASIC program. All line no. references in the program are also renumbered (GOTO's, GOSUBS's etc).

DEFCHAR: Sets up the bit-pattern for user-defined character.

@: Print at specified coordinates on the screen.

STRING\$: Repeatedly prints a selected character a specified number of times.

VERIFY: Compares program recorded on tape with that resident in the computer's memory.

APPEND: Loads a BASIC program from tape and joins it on to the end of any BASIC program already in memory.

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Maths 4 - an excellent easy to use program with good graphics which will help very young children to master the four rules of addition, subtraction, multiplication and division.

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For the ORIC - 1 16/48 K ..... ~~£5.90~~ £5.40

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## FRONT COVER

Dr. Paul Johnson Ph.D., B.Tech., C.Eng., M.I.E.E., Director of Oric Products International with special responsibility for research and development and senior designer of the Oric-1 and Atmos systems.

After graduating from Bradford University he joined Cambridge Consultants, working on high resolution and high speed ADCs, sonar equipment, frequency synthesisers and image processing systems. In 1976, after meeting Barry Muncaster, the two men set up Tangerine Computer Systems Ltd, a company well known amongst the enthusiast/hobbyist and industrial control fields with its Microtan 6502 system which was available in either Kit form for the constructor or fully assembled. Tangerine Computer Systems then developed the range of Viewdata/Prestel adaptors now marketed by Tandata Marketing which soon became the acknowledged market leaders in their field. With the market set for a new low cost home computer the Oric-1 was developed which quickly became established at home and overseas especially in France where it became a top selling microcomputer.

## TERRY SHURWOOD JOINS ORIC BOARD FROM MATTEL

Terry Shurwood (aged 43) has been appointed to the board of Oric Products International Ltd, the Ascot based electronics company who last month launched the Atmos 48K microcomputer.

Mr. Shurwood joins Oric as Sales and Marketing Director, taking over from Peter Harding who assumes responsibility for new vertical markets including Viewdata.

A former National Accounts Manager for ITT, General Sales Manager for Ingersol Electronics and, most recently, Sales and Marketing Director for Mattel Electronics (UK) Ltd., one of Mr. Shurwood's responsibilities will be the restructuring of Oric's sales force and improving support to the company's 1000 UK microcomputer dealers.

## ORIC FORMS JOINT VENTURE COMPANY TO MANUFACTURE NEW BRITISH MICRO'S

Oric Products International, the Ascot based electronics company recently acquired by Edenspring Investments has formed a joint venture company with Kenure Plastics Ltd. to manufacture PCB's, microcomputers and other electronic and opto electronic systems.

Called 'M3' the new company has already acquired a 20,000 sq. ft. factory on the Hampton Farm Industrial Estate (at the end of the M3 motorway) where the new Oric Atmos 48K micro will be the first product to be made using the latest auto assembly and test techniques.

Kenure Plastics already manufacture the Atmos cases and assemble, test and distribute all the Oric micro computers. Till now, however, all the printed circuit boards have been manufactured in the Far East, at jointly owned plants in Singapore and Japan.

Oric plans to retain this arrangement, whilst catering for the increased production requirements by manufacturing in the UK. To this end, Oric has also signed a PCB manufacturing agreement with A + A Ltd in S. Wales where some of the Atmos PCB's are already being made.

When the £1 million 'M3' facility comes on line this summer, it will take over this work and produce around 10,000 units (a third of the planned production) each month.

"By using the latest production techniques we can manufacture the entire microcomputer just as cheaply in the UK," said Oric Marketing Director Peter Harding

"By retaining three sources for our CPU's, and at least a dozen suppliers of components, particularly Dynamic Ram's - in addition to Inmos our principal supplier - we can be certain of maintaining production despite the vararies of an industry in which many components are suffering worldwide shortages," he concluded.

## THE BOB GREEN REPORT

I don't believe in being an exception to any rule and that's probably why this month I thought we might chew over a few ideas for the Groups benefit. Considering the Group has been in operation for around four months now I thought this time of growth rate offers all of us a chance to put our views and opinions forward. To start the ball rolling, and to stir things up a little, which I enjoy doing, I would like to pass on a few ideas that we might adopt. The first of these was put forward by a typical marketing man who thought that we might improve our relationship with new members by sending them an Oric Computing magazine in receipt of their initial subscription payment or in other words when they join us. It's good ideas like this that will sharpen my public image. So, if you recently joined in this computing madness you'll be receiving a current issue of O.C. to keep you going. Another sound idea, from a member who has obviously got a lot of goodies to sell, was to include a small ad's section in the mag. So, to get this ball rolling, have a sort out and let us know what you've got hanging around and we'll set up a Small Ad's section just for you. There's always a catch to these sort of things and here it comes at a charge of 25 pence a word. Not that I get anything out of it, but it does help to pay for the artwork involved in laying up the ad. All computing related advertising is acceptable and we'll be glad to advise. Yet another, was to organize area subgroups of O.U.G. throughout the country. Any volunteers? If you think you can raise a small group of Oric-1 owners together let us know as soon as possible. Now, getting on to more serious subjects, I've been asked about the Group's activity in terms of hardware add-on's for the Oric and Atmos. Well, over the last couple of weeks I've been chasing around projects for us to get involved with, with the result that a long list has now materialised which looks very exciting to say the least. News of these items will appear as soon as they develop. If you can help us here in this new development section let us know at once. If you've got any ideas or any hardware designs you'd like us to develop for you then give us a ring, you're always welcome.

## MEMBERS NOTICE

It seems to us we are accumulating a number of 'Radio Amateurs' within the Group which leads us on to suggest that a directory through these pages might be useful whereupon contacts could be made between these enthusiasts. If you are a Radio Amateur and would like to make contact with other amateurs who are equipped with Oric's then please send us your full details, including Call Signs etc. for us to publish. For the benefit of other users, this is one area of computer application which is gaining ground where small micro's such as the Oric are finding a practical and everyday use.



## ORIC SOFTWARE STATION

Issue 1	COWORTH PARK HORRORS	£3.00
Issue 1	ORIC ATTRIBUTES IN ACTION PARTS 1 - 2	£3.00
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### ORIC COMPUTING - BACK ISSUES

Please send £1.00 + S.A.E. (A4 size) for each issue required:-

Oric Owners User Group, Unit 14, Worle Industrial Centre, Queens Way, Worle, Avon.

## ORIC LETTERS

Dear Sir,  
I'm certain I speak for many when I say I'm very grateful for the contents of Oric Computing. But I would like to see more pages and a greater variety of articles.

**ED** - As far as articles are concerned, we would be only too pleased to include more on many topics, however, we rely on the Group members supplying many of them in the first place, and much depends on members being industrious in their support of the Group and its Mag. Many of the members are raw beginners and as such are not in a position yet to offer much in terms of computing with the Oric, as a result, it leaves much of the generation of material up to those with a little more experience. Nevertheless, we welcome articles and input from everybody which enables us to cater for a wide range of tastes.

Dear Sir,  
I would like to turn my B/W portable T.V. into a Monitor but I'm not sure how to go about it and whether or not it can be done.

**ED** - Firstly I would not advise you to attempt any conversions yourself as there is a great risk of electrocution from T.V. sets if you don't know what you are doing. A far better way would be to seek the advice of a competent T.V. engineer and he will advise accordingly. Many have adopted a similar approach with successful results.

Dear Ed,  
Would you explain the use of the RND function and the use of INT instruction.

**ED** - RND(1) is used to generate a pseudo random number between 0 to less than 1.  
Enter the following:-

```
10 PRINT RND(1)
20 GOTO 10
```

Usually the values returned are between 0 - 1 (Less than 1) and are too small for many uses therefore in order to increase the result we must multiply by a given number.

```
10 PRINT RND(1) * 210
20 GOTO 10
```

You can see by the results that much larger values are returned from the random number generator. Notice however that there are fractions of numbers involved which in most cases we don't need. This is where the INTeger instruction comes in. INT returns the result of the RND(1) to a whole number, in other words, it rounds the result to the nearest whole number.  
Try this:-

```
10 PRINT INT(RND(1) * 210)
20 GOTO 10
```

Dear Sir,

Could someone please explain to me properly what a subroutine is so that I can understand it from now on. I find this world of programming a little outside my depth. People often forget that as a novice it all gets beyond my understanding.

**ED** - Point taken. A Subroutine is part of a much larger program in the first place. It is in fact a small program in its own right usually being designed for a specific purpose which may be required more than once. The action or results obtained by this smaller program may be required several times throughout the main program cycle. Rather than writing an identical routine every time these actions or results are required it only needs to be written once and thereafter called when wanted. As an example, the RND(1) explanation shows a small program to achieve a specific result and although rather a small example in this case, it demonstrates that a routine may be wanted like this several times. The Subroutine itself may be any length, indeed, simple or sophisticated but once written saves a lot of work in the future for the programmer. Taking the concept a little further you'll find that the Operating System of your machine to be made up of many subroutines and likewise the Basic Interpreter. You'll come across three types on your machine. The most common (in Basic) being the GOSUB instruction. This instruction commands the program cycle to commence execution at that line number following the GOSUB instruction. For example, I could say GOSUB 500 where at line 500 I could have a Subroutine waiting of any description. At the end of a subroutine you will find an instruction

RETURN, this is in fact instructing the main program cycle to Return from where it came, back to where it last left the main program. The same applies to the CALL command which in this case applies to a machine code subroutine either in Ram or Rom. In machine code the instruction is JSR (Jump SubRoutine), however in the latter two cases instead of the subroutine being terminated with a RETURN instruction they are terminated with a machine code RTS (ReTurn from Subroutine)  $\neq$  /60. Take a look at any of the programs in this mag and follow them carefully and count the number of times the same Subroutine is called throughout the main program cycle. Clear as mud isn't it?

Dear Ed

You'll be glad to know that I have found the cause of my loading problems on the Oric-1. The cause was a faulty cassette lead. I had an engineer who maintains our mainframe computer test it. He said the lead was not grounded properly. I had it replaced and everything has been O.K. since. I think that it may be a good idea if other people who had the problems I had know about this, and although the lead may not be the cause of their problems, it would be a good idea to have them checked anyway just in case it is the bad apple in the batch. Thank you for your concern and interest you have shown in my loading problems.

David Forshaw

## WHY THE FLOODS CAME

(Abridged 31 JAN 84)  
Jim Cruikshank PhD  
Richard Peart BSc

And the lord said unto Noah  
"Where is the computer system which I hast  
commanded thee to build?"

And Noah said unto the Lord  
"Verily I have three programmers  
off ill. The modem supplier hath  
let me down - yea even though the Oric  
modems hath been on order for nigh on  
twelve months. The software specialist  
hath not turned up. What can I do O Lord?"

And God said unto Noah  
"I want the system finished even after  
seven days and seven nights"

and Noah said "It will be so"  
And it was not so.

And the Lord said unto Noah  
"What seemeth to be the trouble this time?"

And Noah said unto the Lord.  
"Mine vdu supplier hath gone bankrupt.  
The subroutines which thou commandest me to put  
in the program are edited to the wrong library  
and do not work.  
The electrician hath gone on strike."

Noah rent his garments and said  
"The systems analyst departeth on holiday  
to majorca - yea even though I  
offerest him double time. Shem,  
my son, who helpeth me on the data entry side  
of the business, hath formed a pop group  
with his brothers Ham and Japeth.  
Lord I am undone".

And Lo it was not fulfilled.  
And Noah said unto the Lord  
"The speech synthesiser is definitely  
in the warehouse, verily and the friendly  
software supplier waiteth only upon his servant  
to find the invoices before he delivereth  
the operating software unto me".

And the Lord grew angry and said  
"What about the printers and leased lines, two  
of every sort have I ordered to come unto thee  
to get the system going, where, for example  
are the vdu's?"

And Noah said unto the Lord  
"They are expected today"

And the Lord said unto Noah  
"And where are the Oric discs to keepeth  
safe all our records?"

And Noah said, "The van cometh on Tuesday,  
yea it will be so"

And the Lord said unto Noah "How  
about the new roms?"

And Noah rung his hands and wept  
saying "Lord, Lord, they are a problem line.  
Thou canst not get new roms for love nor money"

And God said, "Where are the user guides,  
operating manuals and modems?"

And Noah said unto the Lord  
"They have been delivered  
unto the wrong address but should  
arrive on Friday, all save the modems,  
for Oric hath just told me that they  
are only sold in half dozens".  
And Noah kissed the earth and said,  
"Lord, Lord thou knowest in thy wisdom  
what it is like with delivery dates".

And the Lord in his wisdom said,  
"Noah my son, I knowest. Why else dost thou think  
I have caused a flood to descend on the Earth?"

# MORE SCOPE FOR YOUR MICRO

R. Massey

The Oric, like any computer, is a very powerful tool which is capable of a variety of functions besides game playing. Every person purchasing such a machine usually does so with a specific purpose in mind. Maybe for its generous memory, graphics capabilities, or possibly because it is easy to use as a controller when the necessary interface(s) are provided. The latter is the subject of this article.

Almost every computer is capable of holding a two way conversation with the outside world. Consider for example the cassette interface. This allows us to load and save data which once reloaded can be executed, manipulated etc, as we desire.

## **ANALOGUE TO DIGITAL CONVERSION**

If for some reason we would like to input a sound source or voltage to our computer so that it could be analysed, connecting this signal to an input would achieve very little. Why? Because first of all this information has to be converted into a form that the computer understands (a binary or digital code). This task is performed by an analogue to digital converter.

If the input to the A-D was a microphone, musical instrument or an AC or DC voltage then it would be possible to read and store the resultant digital code from the output into a reserved block of our computers memory. This code could then be read sequentially and displayed on the screen in the form of a plot. So in essence what we have done is to turn our computer into an oscilloscope. There is however one major difference in that only the most expensive oscilloscopes have the ability to store the input waveform and then only until the instrument is switched off, when all is lost. On the other hand the computer can not only store its samples, but can save them on tape or disc for later recall. Added to this is the fact that once the code is in memory then it can be manipulated in a variety of ways. If we plot the waveform on the screen it could be expanded to show more detail, inverted (turned upside down), contracted, or even plotted and a second sample taken which is also plotted to allow comparison. Obviously because our converter is capable of turning voltage into binary code then the input to the converter could be from anything generating a voltage eg temperature sensors, light sensors, etc.

A system that turns your Oric into an oscilloscope has been proposed.

## **DIGITAL TO ANALOGUE CONVERSION**

Digital to analogue converters naturally perform the opposite task of A-D converter ie they convert our digital code into analogue voltages.

If the output of the D-A is connected to an amplifier then we would be able to write our digital code from memory to the D-A and be able to listen to it. All we are doing is reconstructing the original input. This is not very useful so far because it is no different from connecting our instrument, microphone direct to the amplifier. However let's not be hasty. A computer is the ideal tool for manipulating data. We could quite easily read the code backwards and replay it. The result being backward speech or music. No doubt at sometime you have played a record at the wrong speed to see how it sounds. Taking a sample with the D-A set to one conversion rate and using a different rate setting for the D-A conversion would achieve this effect and if uses sparingly produces useful pitch shifts.

Time domain effects such as echo are achieved by recycling the output to the input but after a specified amount of time. Real time echo is another use for an A-D, D-A combination. To implement this the input is split into two paths the first going to the A-D for sampling and storage in the computer. The second route is direct to our amplifier. The sample is then subjected to a delay (echo time) before being fed to the D-A and mixed with the original signal. Thus a single echo is produced. By taking further samples of the mixture of the original and echoed signals provides multiple echo facilities.

## **FOURIER SYNTHESIS**

Fourier synthesis is a fascinating subject and far beyond the scope (no pun intended) of this article. So far we have only used our units with real input. It will have to suffice to say that fourier synthesis allows the construction of waveforms which utilising our computer can be plotted to the screen or listened to via an amplifier. The input is from the computer keyboard in the form of numbers which define peaks in the waveform.

A set of units consisting of an analogue to digital, digital to analogue converters, controllers, interface and self contained power supply have been proposed for use on the Oric. Whether or not this project becomes reality depends solely on you the end user. If you require or desire these facilities then write to your user group now!!! and you could be using them soon. Appropriate software will be made available.

The oscilloscope allows single or dual trace modes, comparison, expansion, contraction plus many more useful facilities and requires the power supply, A-D with interface and scope software. (Also can be used as a frequency counter). For echo, pitch shift and fourier synthesis the D-A with controller and software is added to the above.

This article by no means describes all the possible uses the units could be put to, but was written to stimulate your grey matter and hopefully generate the necessary feedback in order that this project becomes available to all.

# KIMBO'S KOMENTS

---

Down in the darkest corner life stirs, very, very slowly - yes the thing has moved and yes, yes, yes it actually speaks.

But alas the dialogue is meaningless, thematic gibberings of a demented automaton. O.K. so I'm exaggerating but really, do they actually train these assistants in "Micro Shops" to sell??? Perhaps I've got it all wrong — I (in my perhaps naive way) thought that the idea of a shop — any shop was to sell, and to display the goods such that they are well presented, eye catching and if that fails, have shop assistants who actually know the product and want to sell them!!! I'm afraid my conclusions after visiting several so called "Micro Shops" and (shops that sell Micros!) are in the main unprintable and leave me feeling utterly frustrated. Badly set up micros, little software (Fixons and Bumbellows please take note!), no software running — come on chaps you're supposed to catch the eye!! and the crunch — staff who just can't answer simple questions.

Oh well, perhaps in this year of enlightenment 1984 we may get the message over. Thank God for a decent User Group who can help.

O.K. so there's my first little gripe this month, now for my second.

If a piece of software is available off the shelf in a Micro Shop then why does it take 28 days or more to get delivered if you buy the same thing by Mail order?? Clever eh??!!

Now for something different.

Have you ever wanted to make "back-up" copies of your favourite piece of software?, especially if it's one of those all singing and dancing, machine code, auto-running, fully protected types. Now thanks to a neat little utility called "ORICLONE" which is sold by a Company by the name of Kilosoft, you can.

I spotted the thing advertised in the back of one of the many computer mags and taking a gamble sent a cheque for £6.50. With all credit to Kilosoft it arrived a few days later. The program is neat and thankfully menu driven, as it arrived without any decoumentation of any sort! It allows you to copy your desired piece of software with or without the Auto-run in the copy (nice one that!). It also tells you where machine code progs reside in memory, and has two other features of note:

(a) You can relocate the "clone" routine in the case of clashes in memory space.

(b) You also get a useful memory dump on screen which not only scrolls down, but also simultaneously scrolls across the bottom of the screen making the reading of text in memory easier (unless you're Chinese of course!).

One extra point I ought to mention — the program itself is unprotected, so I suppose you could clone your clone etc etc etc. (However the user is WARNED most strongly when the program starts about Copyright etc — but you wouldn't do anything as naughty as that would you??!!

## STOP PRESS

Dateline Tuesday 17/1/84

Here I am at the jolly old N.E.C. on the first day of the "Which Computer" Show. Surprise, surprise not only a brand new ORIC Disc Drive (prototype — no price yet!!), but a 170 revamped ORIC called the "ATMOS"!! Now all you Greek skolars out there (lager drinking academics) know that Atmos means "vapour" — well the new colour scheme of black and yukky reddy orange is enough to give anyone the vapours! Come on lad be serious (if you can) my dictionary definition of "atmosphere" is: "speroidal gaseous envelope surrounding heavenly body". O.K. so it contains the new 1.1 ROM but that's going a bit too far! Personally I didn't like the new keyboard, but I'm so used to the nice positive click of my trusty ORIC-1 that "standard" keyboards feel slopping and alien. The new ORIC is a bit faster than the old, and comes with a few extra commands (Verify, Store, Recall), and an extra "Function key" — which unfortunately none of the ORIC sales staff could explain to me! (perhaps in the heat of the moment it was a mirage!).

I think ORIC have probably got a winner with their new baby, but I sincerely hope that the 1.1 ROM becomes available to all existing owners, without having to fork out the rumoured £60 for the "keyboard + ROM" upgrade!!!!!!).

Finally (yes this it):

All you new ORIC owners out there — how about writing an article for the magazine, or howabout one of your "master-pieces" for the software section! This User Group relies on your contributions to keep it going — so how about it? If I can do it, any idiot can!!

Bye for now — Kimbo.

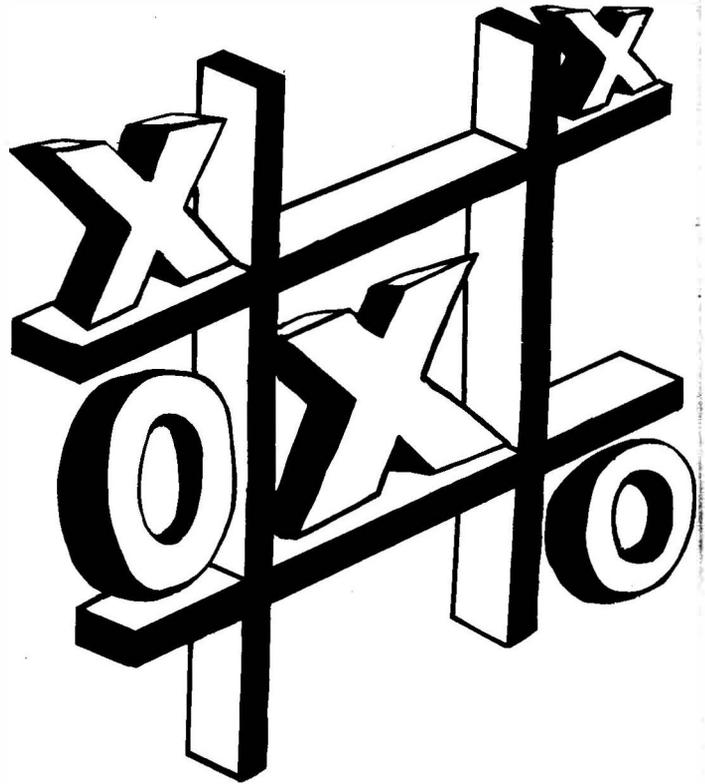
# 3D NOUGHTS & CROSSES

Mike Brown

This month I'm enclosing a copy of another program which has been popular in my front room (and others). 3D Noughts & Crosses. The game itself should be familiar with most people, but as usual, I have included some on-screen guidance for the un-initiated. In this version you, alone or in collaboration with friends, pit yourself against the Oric.

As to the program itself, it has been converted from a simplistic version written for an industrial computer! The conversion includes some features which were not in the original version, notably the facility to 'Rehearse your move and check it on screen to see if it appears where you suspect, before executing the move. In addition to the much used locations 616 & 618 have also been DOKEd & DEEKed into location 630 which can be used for count-down functions. (Eg: it takes 30 seconds to get down from 3000 to zero). The two 'machine code' routines called are:-

- a) `7/FAFA` - Producing a 'standard' key click.
- b) `7/F42D` - Which does indeed clear the RAM out and produces a 'Cold Start'



The program operates by examining each possible move and assigning a value to each, according to the state of play, from the DATA in lines 160-7. Each Oric move takes about 30 seconds, and if that seems a bit long to wait, then it may be some consolation to realize that the 'trilab' machine it originated written for took about 45 seconds. Oric is only slightly slowed by the process of re-zeroing arrays at the end of each move, but since the operating system does not allow arrays to redim'd there is no alternative.

Of course the DATA for the message arrays can be changed or extended to suit your own sense of humour, but don't forget to alter the relevant DIM & READ commands to suit.

Finally, a word about the recent 'MasterMind' program.

As published the program has one slight error which under some circumstances, can effect the clues given. Line 590 should read:-

```
590 IF(BC(Y) = 1) OR (BG(X) = 1) THEN 610
```

Right! That's it for now. I'm off to look for Morrigan!! - Happy Poking!!!

```

10 REM =====
11 REM: 3-D NOUGHTS AND CROSSES
12 REM: Converted for the Oric-1 by
13 REM: MIKE BROWN from a version in
14 REM: TRILAB BASIC
15 REM: 28-29 Nov, 27-28 Dec 1983
16 REM =====
20 PING:TEXT:CLS:PAPER0:POKE618,10
30 FORA=0T039:POKE48000+A,32:NEXTA
40 C$=CHR$(27)+"H"+CHR$(27):D$=CHR$(4):E$=CHR$(27):MESSAGE=1500
50 FORA=47088T047095:READB:POKEA,B:NEXTA:DATA,,63,63,63,63,,
60 REPEAT:LI$=LI$+CHR$(126):UNTILLEN(LI$)=38
70 DIM A(75),B(75),G(63),V(63),TH$(12),TM$(12)
80 REM -----
81 GOSUB2000:REM:WELCOME PAGE
90 REM -----
91 REM: Having given the customer
92 REM: something to read, here's
93 REM: some DATA for Oric to get
94 REM: stuck into...
95 REM -----
100 FORA=0T075:READ A (A):NEXTA
110 FORA=0T075:READ B (A):NEXTA
120 FORA=0T0 3:READ N (A):NEXTA
130 FORA=0T0 3:READ O (A):NEXTA
140 FORA=1T012:READTH$(A):NEXTA
145 FORA=1T0 6:READWR$(A):NEXTA
150 FORA=1T012:READTM$(A):NEXTA
160 DATA,,1,2,3,3,4,8,12,,1,2,3,3,,1,2,3,3,4,4,5,6,7,7,8,8,9,10,11
161 DATA11,12,12,13,14,15,15,12,12,13,14,15,15,16,16,16,17,18,19,19,20,24,28
162 DATA32,32,32,33,34,35,35,36,40,44,48,48,48,49,50,51,51,52,56,60
163 DATA1,4,5,4,4,3,4,1,1,1,16,17,16,16,15,16,20,21,20,20,19,20,16,17
164 DATA16,16,15,16,16,17,16,16,15,16,12,13,12,12,11,12,16,17,16,16,15,16
165 DATA1,4,5,4,4,3,4,1,1,1,1,4,5,4,4,3,4,1,1,1,1,4,5,4,4,3,4,1,1,1
166 DATA0,10,70,430
167 DATA2,14,86,686
171 DATA"Thinks..."
172 DATA"Oric is thinking..."
173 DATA"Sssh... I'm thinking!"
174 DATA"Silence - genius at work!"
175 DATA"Great move coming up..."
176 DATA"Whirr whirr click..."
177 DATA"Watch this space!"
178 DATA"My turn..."
179 DATA"Out to lunch. Back soon!"
180 DATA"Zootle wordle, zootle wordle..."
181 DATA"TEMPORARY FAULT"
182 DATA"I think therefore I am. I think."
183 DATA"WRONG!!!","CRETIN!!!","CHEAT!!!","Try again!"
184 DATA"'Ere, you can't put that there Guv!"
185 DATA"Are you trying to confuse me?"
186 DATA"Come on...","Yawn!","I'm bored.", "What's on Channel 4 ?"
187 DATA"Is there anybody out there ???", "Organic life-forms are so SLOW!"
188 DATA"Have you got a book I could read ?","I'm VERY bored!"
189 DATA"I think I'm falling asleep!","Are you still awake out there ???"
190 DATA"I'm waiting...","Having problems ?"
200 REM -----
201 GOSUB2100:REM:INITIALIZING
202 REM -----
203 REM: DRAW GRID ETC.
204 REM -----
205 CLS:INK7
210 PRINTC$"B"LI$;
220 PRINTD$E$"J"E$"F"E$"Q Oric-1"E$"G3-D NOUGHTS and CROSSES"D$
230 PRINT:PRINTC$"B"LI$;
240 FORA=1T04:PLOT1,4+(2*A)," . . . . .":NEXTA
250 PLOT1,16,(20):PLOT13,16,"LEVEL COLUMN ROW"
260 PLOT7,18," YOU:":PLOT12,18,(1):PLOT7,20," ME:":PLOT12,20,(2)
270 PLOT0,22,(6):PLOT1,22,(20)
280 PLOT7,22,"WINNING LINES REMAINING:":PLOT31,22,(7):PLOT32,22,"76"
290 PLOT0,24,(2):PLOT1,24,LI$
300 REM -----
301 REM: GET THE CUSTOMER'S MOVE
302 REM: (Lines 340-380 allow 30 secs
303 REM: for the customer to respond
304 REM: with a valid input.)
305 REM -----
310 MS$="After you...":GOSUB MESSAGE:GOTO340
320 IFA$=CHR$(27)THEN GOSUB1600
330 MS$="Your turn...":GOSUB MESSAGE
340 PLOT15,18,"? " :DOKE630,3000
350 REPEAT:A$=KEY$:UNTILA$<>"ORDEEK(630)<10: IFA$=CHR$(27)THEN320
360 IFA$=""THENRN=INT(RND(9)*12)+1:MS$=E$+"N"+TM$(RN):GOSUB MESSAGE:GOTO350
370 IFA$>"0"ANDA$<"5"THENL=VAL(A$):MS$="" :GOSUB MESSAGE:GOTO390
380 GOTO350
390 PLOT15,18,A$
400 PLOT22,18,"? "

```

```

410 REPEAT:GETA$:C=VAL(A$):UNTIL(C>0ANDC<5)ORA$=CHR$(27)ORA$=CHR$(127)
420 IFA$=CHR$(27)THEN320
430 IFA$=CHR$(127)THEN340
440 PLOT22,18,A$
450 PLOT29,18,"?"
460 REPEAT:GETA$:R=VAL(A$):UNTIL(R>0ANDR<5)ORA$=CHR$(27)ORA$=CHR$(127)
470 IFA$=CHR$(27)THEN320
480 IFA$=CHR$(127)THEN400
490 PLOT29,18,A$
500 P=(16#R)+(4#L)+C-21
510 IFV(P)=-1THENRN=INT(RND(9)#6)+1:MS$=E$+"N"+WR$(RN):GOSUB MESSAGE:GOTO340
520 M$="+":GOSUB800:MS$="Press RETURN or DELETE":GOSUB MESSAGE
530 IFA$=CHR$(27)THENGOSUB1600
540 REPEAT:GETA$:UNTILA$=CHR$(13)ORA$=CHR$(27)ORA$=CHR$(127)
550 IFA$=CHR$(27)THEN530
560 IFA$=CHR$(127)THENM$=" ":GOSUB800::GOTO340
570 MS$="":GOSUB MESSAGE
580 G(P)=-1:V(P)=-1
590 M$="X":GOSUB800
600 REM -----
601 REM: THE MIGHTY ORIC SELECTS ITS
602 REM: MOVE... EVENTUALLY!
603 REM -----
610 PLOT15,20,"? ? ?"
620 RN=INT(RND(9)#12)+1:MS$=TH$(RN):GOSUB MESSAGE
630 T=0:N=-1
640 FORL=0TO75
641 :S=A(L):V1=B(L):C=0:H=0:P=S-V1
650 :FORB=0TO3
651 : P=P+V1
652 : IFG(P)=1THENC=C+1
653 : IFG(P)=-1THENH=H+1
654 :NEXTB
660 :IFH#C<>0THEN680
661 :T=T+1
662 :IFH=4THEN1050
663 :P=S-V1
670 :FORB=0TO3
671 : P=P+V1
672 : IFV(P)=-1THEN676
673 : IFC<>3THEN675
674 : L1=L:N=P
675 : V(P)=V(P)+N(H)+O(C)
676 :NEXTB
680 NEXTL
690 T$=MID$(STR$(T),2)+" ":PLOT32,22,T$
700 IFN<>-1THEN1010
710 IFT=0THEN1060
720 M=-1
730 FORI=0TO63
731 :IFM>V(I)THEN733
732 :M=V(I):P=1
733 NEXTI
740 G(P)=1
750 GOSUB900
760 FORI=0TO63
761 :IFG(I)=0THENV(I)=0ELSEV(I)=-1
762 NEXTI
770 IFNOISETHENPING
780 GOTO330
800 REM -----
801 REM: PLOT THE MOVE ONTO THE GRID
802 REM -----
810 R=INT(P/16):L=INT((P-16#R)/4):C=INT(P-16#R-4#L)
820 X=1+(10#L)+(2#C):Y=6+(2#R)
830 IFM$=" ".ORM$="+"THENPLOTX,Y,M$:RETURN
840 IFSCRN(X+1,Y)=32THENPLOTX+1,Y,(7)
850 IFM$="X"THENPLOTX-1,Y,(1)
860 IFM$="O"THENPLOTX-1,Y,(2)
870 PLOTX,Y,M$
880 RETURN
900 REM -----
901 REM: PLOT ORIC'S MOVE ONTO SCREEN
902 REM -----
910 M$="O":GOSUB800
920 LE$=MID$(STR$(L+1),2):PLOT15,20,LE$
930 CO$=MID$(STR$(C+1),2):PLOT22,20,CO$
940 RO$=MID$(STR$(R+1),2):PLOT29,20,RO$
950 RETURN
1000 REM -----
1001 REM: END OF GAME
1002 REM -----
1010 MS$="I WIN! - ANOTHER GAME ?":GOSUB MESSAGE
1020 P=N:G(P)=1
1030 GOSUB900
1040 GOTO1100
1050 MS$="YOU'VE WON! - ANOTHER GAME ?":GOSUB MESSAGE:GOTO1100
1060 MS$="GAME DRAWN! - ANOTHER GAME ?":GOSUB MESSAGE

```

```

1100 PING:REPEAT:GETA$:UNTILA$="Y"ORA$="N"
1110 IFA$="Y"THENFORA=0TO63:G(A)=0:V(A)=0:NEXTA:GOTO200
1120 POKE616,25:PRINT
1130 PRINTC$"Epress"E$G[CTRL X]"E$"Eto CLEAR OUT THE RAM or"C$"EANY OTHER KEY ";
1140 PLOT15,26,"to CLEAR SCREEN and QUIT"
1150 GETA$:CLS:IFA$=CHR$(24)THEN1200
1160 MS$=" REMEMBER TO RESET REDEFINED CHARACTERS"
1170 FORA=1TO39:POKE48000+A,ASC(MID$(MS$,A,1)):NEXTA
1180 INK2:POKE618,11
1190 END
1200 MS$=" Clearing RAM .. "
1210 PAPER7
1220 FORA=1TO39:POKE48000+A,ASC(MID$(MS$,A,1)):NEXTA
1230 CALL#F42D:END
1500 REM -----
1501 REM: MESSAGE ROUTINE
1502 REM -----
1510 PLOT2,25," " (37 spaces)
1520 PLOT2,26," "
1530 POKE616,25:PRINT
1540 NS=(38-LEN(MS$))/2:IFNS<1THENNS=1
1550 PRINTD$"J"E$"G"E$"Q"SPC(NS)CHR$(8)MS$D$;
1560 RETURN
1600 REM -----
1601 REM: ESCAPE KEY ROUTINE
1602 REM -----
1610 PLOT2,25," "
1620 PLOT2,26," "
1630 POKE616,25:PRINT
1640 PRINTC$"L"E$"@"E$"SHey! You just pressed the ESCAPE key"
1650 PRINTC$"H"E$"@"E$"S DO YOU REALLY WANT TO STOP ? [Y/N]";
1660 REPEAT:GETA$:UNTILA$="Y"ORA$="N"
1670 IFA$="Y"THEN1120
1680 GOSUB MESSAGE
1690 RETURN
2000 REM -----
2001 REM: WELCOME PAGE
2002 REM -----
2010 INK6
2020 PRINTC$"B"LI$;
2030 PRINTD$"J"E$"F"E$"Q Oric-1"E$"G3-D NOUGHTS and CROSSES"D$
2040 PRINT:PRINTC$"B"LI$;
2048 PRINT:PRINTC$"GAdapted for the"E$"FOric-1"E$"Gby"E$"B"MIKE BROWN."
2050 PRINT:PRINTC$"CWelcome to three-dimensional Noughts"
2052 PRINTC$"Cand Crosses, a computerized version of";
2054 PRINTC$"Can old favourite."
2056 PRINT:PRINT"The game has four levels, four columnsand four rows. Each level is";
2058 PRINT" shown as"
2060 PRINT"a separate grid with four vertical columns and four horizontal rows."
2062 PRINT:PRINT"All you have to do is select where youwould like to put ";
2064 PRINT"your"E$"AX"E$"Fpress"E$"GRETURN,";
2066 PRINT"and wait for Oric to make its move."
2068 PRINT:PRINT"The winner is the first one to get a line of four in any direction,
2070 PRINT"including any of the diagonals!"
2072 PRINT:PRINTC$"B"LI$;
2074 PRINTC$"C"E$"Q"
2076 PRINTC$"C"E$"Q";
2080 RETURN
2100 REM -----
2101 REM: INITIALIZING
2102 REM -----
2110 MS$="Do you want the key-click on ? [Y/N]":GOSUB MESSAGE
2120 REPEAT:A$=KEY$:A=RND(9):UNTILA$="Y"ORA$="N"
2130 IFA$="Y"THENCALL#FAFA:POKE618,2ELSEPOKE618,10
2140 MS$="Should Oric PING after its moves?":GOSUB MESSAGE
2150 REPEAT:A$=KEY$:A=RND(9):UNTILA$="Y"ORA$="N"
2160 IFA$="Y"THENNOISE=TRUE:WAIT10:PINGELSENOISE=FALSE
2170 RETURN

```

# MORSE TRAINER

J. M. Pryse

Morse Trainer is designed to aid those such as potential Radio Amateurs, Scouts, Cubs etc. to learn morse codes. The program is menu driven and allows various options such as speed changes from 2 to 36 words per minute, variable tone and volume control. The output is a standard 36 groups of 5 characters, plus initiating the 36 word morse test as administered by the Post Office.

The characters can be all letters, all figures or a random number of both. The display may either show the characters just sent or be kept blank until all 36 groups have been sent. This software also allows the keyboard to send morse if required. Using a similar system I learnt morse code in a few weeks when I obtained my Class 'A' license.

```
10 HIMEM7000:INKO:PAPER7
20 DIMM$(47):VOL=10:SP=12:TN=185:GOSUB10000:END
39 REM TONE SOUNDER
40 W=(100-1.2*SP)/SP:N#=M$(CV):IFN$="2"THENRETURN
45 FORN=1TOLEN(N$):S#=MID$(N$,N,1):IFS$="1"THENLTH=3*W:GOTO50
47 LTH=W
50 SOUND1,TN,VO:PLAY1,0,0,0:WAITLTH:PLAY0,0,0,0:WAITW:NEXT:WAITW:RETURN
99 REM SELECTION & PRINT FOR B,C
100 GOSUB400:PRINT:GOSUB7000:PRINT:INKI:IFI=7THENPRINTCHR$(17)
105 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINTCHR$(32);
110 FORGRP=1TO36:FORCRK=1TO5:GOSUB200:GOSUB40:PRINTCHR$(CV+44);:NEXT:WAIT2*W
120 GOSUB250:NEXT:WAIT100:IFI=4THENPRINTCHR$(17)
130 INKO:WAIT100:PRINT:PRINT:PRINT"Same Again (Y/N) ?";:GETA$:IFA$="Y"THEN100
140 RETURN
200 CV=INT(SC*RND(1)+LI):RETURN
250 IFINT(GRP/6)=GRP/6THENPRINTCHR$(10)
260 PRINTCHR$(32);:RETURN
400 PRINT:PRINT"Display Blanking (Y/N) ?";:GETA$:IFA$="Y"THENI=7
410 RETURN
500 GOSUB400:PRINT:GOSUB7000:PRINT:INKI:IFI=7THENPRINTCHR$(17)
505 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINTCHR$(32);
510 FORGRP=1TO36:FORCRK=1TO5
520 GOSUB200:IFCV>13ANDCV<21THEN520
530 GOSUB40:PRINTCHR$(CV+44);:NEXT:WAIT2*W:GOSUB250
540 NEXT:WAIT100:IFI=7THENPRINTCHR$(17):I=0
550 INKO:WAIT100:PRINT:PRINT:PRINT"Same Again (Y/N) ?";:GETA$:IFA$="Y"THEN500
560 RETURN
999 REM ADJUSTMENT ROUTINE
1000 REPEAT
1005 GOSUB12000:PRINT:PRINTSPC(5);"Volume, Speed & Tone Menu
1010 PRINT:PRINTSPC(7);"[A] Change Volume
1020 PRINT:PRINTSPC(7);"[B] Change Speed
1030 PRINT:PRINTSPC(7);"[C] Change Tone
1040 PRINT:PRINTSPC(7);"[D] Return To Main Menu
1050 PRINT:PRINT"Select by pressing key letter....
1060 GETA$:AS=ASC(A$):IFAS<65ORAS>68THEN1005:ELSEON(AS-64)GOSUB1100,1200,1300
1070 UNTILAS=68:AS=67:RETURN
1099 REM VOLUME
1100 CLS:PRINT:PRINT:PRINT"The current volume level is "VO
1110 PRINT"Give a volume level between 1 and 15
1120 INPUT"Enter the new volume";VL:VL=INT(VL)
1130 IFVL>15ORVL<1THEN1100
1140 SOUND1,TN,VL:PLAY1,0,0,0:WAIT100:PLAY0,0,0,0:PRINT"Okay (Y/N) ?";:GETA$
1150 IFA$<"Y"THEN1100:ELSEVO=VL:RETURN
1199 REM SPEED
1200 CLS:PRINT:PRINT:PRINT"The current speed is "SP"words per      minute.";
1210 PRINT"Give a speed between 2 & 36"
```

```

1215 INPUT"words per minute";SL:SL=INT(SL)
1220 IFSL<20RSL>36THEN1200:ELSESP=SL:RETURN
1299 REM TONE
1300 CLS:PRINT:PRINT:PRINT"The current tone is "INT((500-TN)/45+0.5)".
1310 PRINT"Enter a value between 1 & 10 to alter
1320 PRINT"the tone, a higher number will give
1330 INPUT"a higher tone. Enter the value.";TL:TL=INT(TL)
1340 IFTL<10RTL>10THEN1300:ELSETL=500-TL*45:SOUND1,TL,VD:PLAY1,0,0,0:WAIT100
1350 PLAY0,0,0,0:PRINT"OKAY (Y/N)?:GETA$:IFA$<"Y"THEN1300:ELSETN=TL:RETURN
2999 REM RANDOM LETTERS
3000 CLS:PRINT:PRINT"Random Letters...36 groups of 5":PRINT
3010 SC=26:LI=21:GOSUB100:RETURN
3999 REM RANDOM FIGURES
4000 CLS:PRINT:PRINT"Random Figures...36 groups of 5":PRINT
4010 SC=10:LI=4:GOSUB100:RETURN
4999 REM MIXED GROUPS
5000 CLS:PRINT:PRINT"Random Mixed Letters/Figures...":PRINT
5010 SC=43:LI=4:GOSUB500:RETURN
5999 REM KEYBOARD SENDING
6000 CLS:PRINT:PRINT"Type carefully to send from the key-
6010 PRINT"board. Type '#' to go back to the
6020 PRINT"main menu. Spaces will appear on the
6030 PRINT"screen but will send nothing.":PRINT:PRINTCHR$(6):
6040 GETA$:IFA$="#"THENPRINTCHR$(6):RETURN
6050 IFA$=" "THENPRINTA$;:GOTO6040
6060 IFASC(A$)<44ORASC(A$)>90THEN6040
6070 CV=ASC(A$)-44:GOSUB40:PRINTA$;
6080 GOTO6040
7000 PRINT:PRINT"Hit any key to start...":REPEAT:UNTILKEY$<"":RETURN
8999 REM DATA STRINGS
9000 DATA110011,2,010101,10010,11111,01111,00111,00011,00001,00000,10000
9010 DATA11000,11100,11110,2,2,2,10001,2,001100,2,01,1000,1010,100,0,0010
9020 DATA110,0000,00,0111,101,0100,11,10,111,0110,1101,010,000,1,001,0001,011
9030 DATA1001,1011,1100
9999 REM MAIN SUBROUTINE
10000 GOSUB12000:GOSUB16000:WAIT500:GOSUB12000:GOSUB13000:GOSUB15000
10010 REPEAT:GC=FRE(""):GOSUB14000
10030 DNOPTGOSUB1000,3000,4000,5000,6000
10040 UNTILOPT=6:CLS:PRINT:PRINT:PRINTSPC(8)"PROGRAM ENDS":RETURN
11999 REM TITLE
12000 CLS:PRINT:PRINTSPC(8)"*****"
12010 PRINTSPC(8);"*";SPC(17);"*"
12020 PRINT" ";CHR$(4);SPC(7);"*";CHR$(27);"J MORSE TRAINER";CHR$(27);"H *";
12030 PRINTCHR$(4);PRINT:PRINTSPC(8);"*";SPC(17);"*"
12040 PRINTSPC(8)"*****"
12050 RETURN
12999 REM INSTRUCTIONS
13000 PRINT:PRINT"Do you need instructions (Y/N)?:GETA$
13020 IFA$="N"THENRETURN
13030 CLS:PRINT:PRINTSPC(9)"INSTRUCTIONS"
13040 PRINT:PRINT"This program will produce Morse Code,
13045 PRINT"in the form of groups of random char-
13050 PRINT"acters, at a speed which can,along
13060 PRINT"with the volume & tone of the output,
13070 PRINT"be changed by selecting Option [A]
13080 PRINT"on the Main Menu.":PRINT"The Morse sent can be displayed at
13090 PRINT"the same time, or the display can be
13100 PRINT"blanked out until all the 36 groups
13110 PRINT"of 5 characters each have been sent.
13120 PRINT:PRINT"As a bonus, Morse can be sent from
13125 PRINT"the Oric's keyboard, at the selected speed.
13130 PRINT:PRINT"Initially, the speed at which the
13140 PRINT"program sends is 12 words/minute.
13150 PRINT"This is the speed needed to pass the
13160 PRINT"Morse Test.
13170 PRINT:PRINT"Hit any key to begin":REPEAT:UNTILKEY$<"":RETURN
13999 REM MAIN MENU &c.
14000 GOSUB12000
14010 PRINT:PRINTSPC(5)"Options are :-"
14020 PRINT:PRINTSPC(7)"[A] Adjust Speed,Tone & Volume
14030 PRINT:PRINTSPC(7)"[B] Random Letters
14040 PRINT:PRINTSPC(7)"[C] Random Figures
14050 PRINT:PRINTSPC(7)"[D] Random Letters & Figures
14060 PRINT:PRINTSPC(7)"[E] Sending from Keyboard
14070 PRINT:PRINTSPC(7)"[F] End Program
14080 PRINT:PRINT"Select by pressing key letter...":GETA$
14090 IFASC(A$)<65ORASC(A$)>70THEN14000
14100 OPT=ASC(A$)-64:RETURN
14999 REM DATA LOADER
15000 FORN=0TO46:READM$(N):NEXT:RETURN
16000 PRINT:PRINT:PRINT"This program was written by J.M.Pryse
16010 PRINT"in September/October 1983.":PRINT:PRINT:PRINT
16020 PRINT"No Unauthorised Copying in any form!!!":RETURN

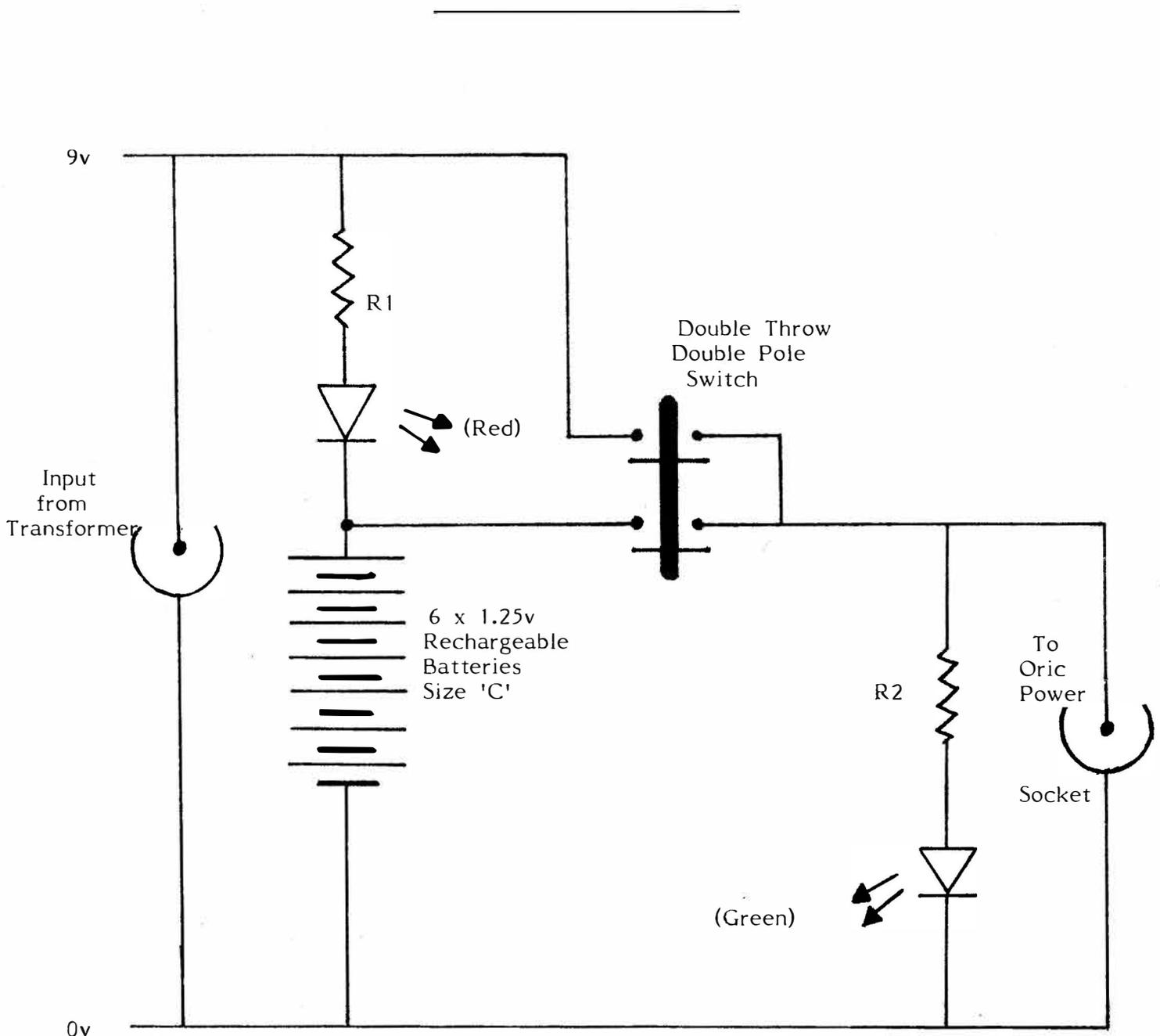
```

# A RECHARGEABLE 9v. BATTERY SUPPLY FOR ORIC

Dr. L. S. Lewis, M.R.C.P.

As a hardware tip for the magazine this battery pack was developed in stages (I have mine taped to the 'Go Faster' striped fascia of Oric). Its advantages are numerous, no loss of programs when the kids pull the plug, a convenient On/Off switch, and an hour or two's portable computing rechargeable when you return to the Oric transformer. The resistored LEDs are optional and the Green one is simply an ON indicator whilst the Red signals the activation of the recharge line.

Resistors R1 & R2 are chosen in the range 100 - 350 Ohms, keeping the current down so as not to cook the LEDs or batteries. **WARNING** The batteries will recharge from the transformer when the switch is on, but if the Oric is disconnected they will cook! Beginners to computing and its associated electronics should take care with these projects and not attempt them unless sufficiently experienced in this area.



## ORIC BOOK REVIEW

### The Dopple-Ganger

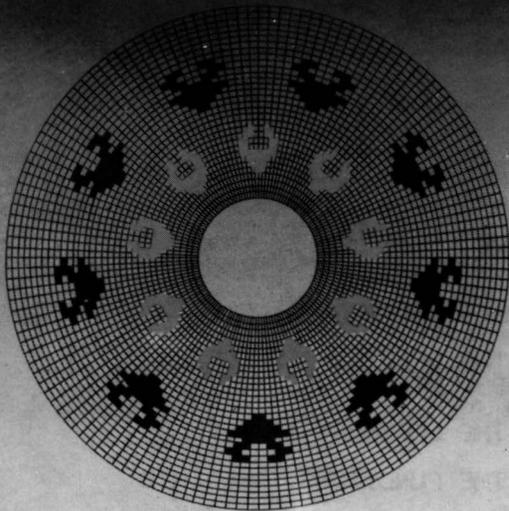
The Oric Book of Games (Granada Publishing) by Mike James, S. M. Gee and Kay Ewbank.

Shortly after I was given this book to review, I noticed in my local W. H. Smith's, another Games book from the same company and the same authors, which contained the same games as this one. When I started to type in the games, some lines were clear evidence of conversion to the Oric from other machines.

This book contains 21 games, well, not exactly all games as the last program in the book is a Conversational Program (But not the Best I've seen — Watch this space . . .), and there is also a Dice program and two Puzzles, Word Scrabble (A Very Good "Word Search" puzzle creation and playing program) and Mirror Tile, one of those puzzles where you have to rearrange tiles into an order by sliding them about.

The programs themselves are a fairly good selection, from Sheepdog Trials which I found to be difficult, to Save the Whale (I wonder if Greenpeace had anything to do with this), a re-working of the Zombie game, where you lure Eskimos onto Icebergs.

# THE ORIC BOOK OF GAMES



MIKE JAMES,  
S.M.GEE AND KAY EW BANK

I typed in more than half of the games in the book, and all but one worked first time, that one being "Capture the Quark", a spacey Fox and Hounds variant which had a very hard to spot bug. Also in the Bobsleigh program it was possible to move the sleigh off the course.

There are, of course, the almost Obligatory "Zap" games, Laser Attack, Mighty Missile, Alien Invaders.

Also a nice Horse Race program called Oric Ledger (Could they mean Leger, as in the St. Leger?) which drives you Crazy with its repeated playing of "Camptown Races".

If you, like me, have an aversion to typing in programs unless they look Very Very Good Indeed or it's all your own work, the programs in this book are all available on Two cassettes from an address given in the Foreword, where you can write for price details.

What I would like to see with all books of this type is Free Cassetts. Okay, so it would double the price at least, but a nice book with a Cassette Package would be nice, you could then play the games, and read the fully commented Listings to find how the games work.

Some of the games in this book have some very interesting Subroutines, one will set the cursor to a Row, Column position before an Input, for instance, whilst another removes attributes from a String, a cure for the STRs bug but not one which will affect the games when the bug is hopefully cured in the New Rom we've all been hearing so much about recently.

The Oric Ledger program shows you how to play a tune whilst the action is happening, a technique which could be applied in your own programs, provided the computer doesn't take too long to move things about between notes.

The games themselves are pretty good for "Games Book" games, and none of them take too long to type in, an average (For me anyway) being half an hour to an hour, which is just about right.

This book is the best Oric game book I have yet seen, the programs are presented in a Dot-matrix format, and each program has a few pages to explain how it works, and even how to improve on it a little.

This sort of book is ideal for the Beginner who wants to learn how to make the Oric Tick, (Try PLAY1,0,3,750...!) and you can learn a lot from such a book. If your Oric's sitting on your desk/table asking for More Food, Buy it this book!

# THREE DIMENSIONAL DRAWINGS

## The Dopple-Ganger

The Oric's graphic capabilities offer us good opportunities in a creative manner to explore and develop demonstration software such as these two routines. A lot can be learnt by just modifying existing software to obtain slight differences in the end result.

Once routines as these have been typed in it's a simple matter to alter or add other instruction lines to experiment further. If you can modify these routines still further then go ahead and send us your results. Dopple-Ganger Gone!

```
0 HIMEM#97FF:CLS
10 INK4:PAPER6
20 PRINT:PRINTCHR$(4)" "CHR$(27)"J  THREE DIMENSIONAL DRAWINGS "
30 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT" "CHR$(27)"J  BY THE DOPPEL-GANGER"CHR$(4):P
RINT
35 PRINT:PRINT:PRINT"Sit back and watch Oric Graphics in  Action.....":WAIT1000:PAPE
R0
40 DEFFNX(X)=((X/1.41150443)+13)-PEEK(537)'ADJUST CO-ORDINATES TO SUIT ORIC
45 DEFFNY(Y)=(199-((Y*1.03645833)+72))-PEEK(538)'DITTO Y + TURN IMAGE OVER
50 Z=0:REPEAT:HIRES:POKE#26A,10:Z=Z+1:GOSUB500
55 FORQ=0TO199:CURSET6,Q,3:FILL1,1,INT(RND(1)*7)+1:NEXT
56 SHOOT
60 FORY=0TO8STEP.5
70 FORX=0TO8STEP.5
80 IFX=INT(X)THENCURMOVFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1:GOTO100
90 DRAWFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1
100 NEXTX
110 DRAWFNX(20*(Y+8)),FNY((Y-X+2)*6),1
120 NEXTY
125 ZAP
130 FORX=0TO8STEP.5
140 CURMOVFNX(20*X),FNY(-6*X+12),1
150 FORY=0TO8STEP.5
160 IFY<>INT(Y)THENCURMOVFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1:GOTO200
170 REM IF YOU TRY AND DRAW 0,0,X, A LINE CROSSES SCREEN - ROM BUG...
172 IFFNY((Y-X+2+FNA(A))*6)>10RFNY((Y-X+2+FNA(A))*6)<0THEN180
174 IFFNX(20*(Y+X))<1ANDFNX(20*(Y+X))>-.1THEN200
175 REM LINES 172 AND 174 CHECK THAT YOU.DON'T FALL FOUL OF "THE BUG!"
180 DRAWFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1
200 NEXTY
210 NEXTX
220 EXPLODE:WAIT1000:UNTILZ=6
230 TEXT:RUN
500 ONZGOTO520,530,540,550,560,510
510 DEFFNA(A)=(SIN(X/3)*2)^3+(SIN(Y/3)*2)^3:RETURN
520 DEFFNA(A)=1/(COS(X/2)*COS(Y/2)+1.1):RETURN
530 DEFFNA(A)=1/(COS(X)*SIN(Y)+1.1):RETURN
540 DEFFNA(A)=1.5/(COS(X)*SIN(Y/2)+1.1):RETURN
550 DEFFNA(A)=1.5/(COS(X)*SIN(Y/3)+1.1):RETURN
560 DEFFNA(A)=1/(COS(X)*COS(X)*COS(Y)+1.1):RETURN
1010 REM ORIC 3-D GRAPHICS PROGRAM
1020 REM ORIGINAL BY DANIEL FREEMAN FOR RML 380Z
1030 REM AND FEATURED IN SEPTEMBER 1983 ISSUE OF PRACTICAL COMPUTING
1040 REM THE USER DEFINED FUNCTIONS FNX AND FNY
1050 REM CONVERT THE RML-380Z CO-ORDINATES TO SUIT THE ORIC HI-RES SCREEN
1060 REM THE '-PEEK(537)' AND '-PEEK(538) CONVERT ABSOLUTE CO-ORDS
1070 REM TO SUIT ORIC'S RELATIVE CO-ORDINATE SYSTEM
1080 REM USING COLOUR IN HIRES MEANS YOU CAN'T USE THE LEFTMOST 12 PIXELS
1090 REM SO I ONLY USE THE SCREEN FROM 13 ACROSS
1100 REM THIS CUTS ORIC'S RESOLUTION TO226 BY 199, THE FUNCTIONS TAKE THIS
1110 REM INTO ACCOUNT
1120 REM P.S. FNY ALSO SUBTRACTS THE CORRECTED CO-ORD FROM 199 TO TURN
1130 REM THE PICTURE THE RIGHT WAY UP (ORIC ORIGIN TOP LEFT HAND CORNER)
1140 REM (MOST MACHINES BOTTOM LEFT HAND CORNER)
```

```

0 HIMEM#97FF:CLS
10 INK4:PAPER6
20 PRINT:PRINTCHR$(4)" "CHR$(27)"J · THREE DIMENSIONAL DRAWINGS "
30 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT" "CHR$(27)"J BY THE DOPPEL-GANGER"CHR$(4):P
RINT
35 PRINT:PRINT:PRINT"Sit back and watch Oric Graphics in Action.....":WAIT1000:PAPE
R0
40 DEFFNX(X)=((X/1.41150443)+13)-PEEK(537)'ADJUST CO-ORDINATES TO SUIT ORIC
45 DEFFNY(Y)=(199-((Y*1.03645833)+72))-PEEK(538)'DITTO Y + TURN IMAGE OVER
50 Z=0:REPEAT:HIRES:POKE#26A,10:Z=Z+1:GOSUB500
55 FORQ=0TO199:CURSET6,Q,3:FILL1,1,INT(RND(1)*7)+1:NEXT
56 SHOOT
60 FORY=0TO8STEP.25
80 FORX=0TO8STEP.25
90 IFX=0THENCURMOVFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1:GOTO110
100 DRAWFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1
110 NEXTX
120 DRAWFNX(20*(Y+8)),FNY((Y-X+2)*6),1
130 NEXTY
135 ZAP
140 FORX=0TO8STEP.25
150 CURMOVFNX(20*X),FNY(-6*X+12),1
170 FORY=0TO8STEP.25
175 REM IF YOU TRY AND DRAW 0,0,X, A LINE CROSSES SCREEN - ROM BUG...
180 IFFNY((Y-X+2+FNA(A))*6)>10RFNY((Y-X+2+FNA(A))*6)<0THEN190
185 IFFNX(20*(Y+X))<1ANDFNX(20*(Y+X))>-.1THEN200
186 REM LINES 180 AND 185 CHECK THAT YOU DON'T FALL FOUL OF "THE BUG!"
190 DRAWFNX(20*(Y+X)),FNY((Y-X+2+FNA(A))*6),1
200 NEXTY
210 NEXTX
220 EXPLODE:WAIT1000:UNTILZ=6
230 TEXT:RUN
500 ONZGOTO520,530,540,550,560,510
510 DEFFNA(A)=(SIN(X/3)*2)^3+(SIN(Y/3)*2)^3:RETURN
520 DEFFNA(A)=1/(COS(X/2)*COS(Y/2)+1.1):RETURN
530 DEFFNA(A)=1/(COS(X)*SIN(Y)+1.1):RETURN
540 DEFFNA(A)=1.5/(COS(X)*SIN(Y/2)+1.1):RETURN
550 DEFFNA(A)=1.5/(COS(X)*SIN(Y/3)+1.1):RETURN
560 DEFFNA(A)=1/(COS(X)*COS(X)*COS(Y)+1.1):RETURN
1010 REM ORIC 3-D GRAPHICS PROGRAM
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1080 REM USING COLOUR IN HIRES MEANS YOU CAN'T USE THE LEFTMOST 12 PIXELS
1090 REM SO I ONLY USE THE SCREEN FROM 13 ACROSS
1100 REM THIS CUTS ORIC'S RESOLUTION TO226 BY 199, THE FUNCTIONS TAKE THIS
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```

# ANOTHER DIARY OWNER

## Mark Casey

Another Christmas has been and gone - a break from the normal routine and a chance to get some more time in at the keyboard. I read somewhere that the average life of a home computer is three weeks (it's then put away in the attic). Oric 18345 has done considerably better than that and is still proving as absorbing as ever.

Most of the time has been taken up by laboriously typing in programs from two new books. The first is a £5.95 volume called 'The Oric-1 Program Book' by Vince Apps, published by Phoenix. It contains fifty programs covering a wide range of games, practical applications and demonstrations. Suitable for both 16K and 48K machines, it looks quite promising.

The games section covers the usual range of simple games. There are variations on the Bomber, Caterpillar, Pacman, breakout, Lunar Lander and various Chase/shoot 'em games. There is a smattering of mind games as well. Generally the games are very simple, use basic graphics and provide only a limited amount of long term interest. However, all the programs are quite short and well structured. A would-be games programmer will learn a good deal about the basic method of designing a game, or could use these basic programs as the starting point for something better.

The demonstration programs are fair enough and some of the educational/practical programs (maths, spelling tests, currency converters, a cheque book program and so on) can be used around the home.

The utility programs are fair too. There's a machine code monitor, with a little explanation about what it is to be used for, a memory pack, character definer and so forth. These programs, again, are simple and of little use without knowing a little about programming.

So, overall, a pretty good little book, but one that features programs a little too simple for anyone used to those found in most computer magazines.

### Meteoric

That certainly doesn't apply to this month's second book "Meteoric Programming" by John Vander Reyden, £5.95 from Melbourne House. It has thirty programs, covering games, utility and practical applications.

The listings are, in many ways, a model for other authors to follow. Each program starts with a picture of the screen display. Then there's the usual program description and finally a detailed account of program structure and variables. Aspiring program writers will do well to study this.

The listings are fairly straight forward. Entry is aided by good spacing and indication of the length of long spaces. The only real gamble is that the bugged IF .. THEN .. ELSE is used rather frequently. There are a few odd minor bugs here and there, but they're easily cured.

The games are much better than those in the Apps book, though hardly innovative. There are versions of Frogger, Bomber, Lunar Lander and Space Invaders, plus a simple text only adventure game. Oric's facilities are well used and overall the games are quite creditable.

There is also a good selection of practical programs. These include a simple payroll program, an artist program and a program that lets you easily explore the sound features of the Oric.

Finally, there is a longish section dealing with utilities, aimed at the home programmer. There's a monitor, a line renumber, a block line deletion and a character re-definer - all very useful to the programmer. If, like me, you're new to machine code, this section may take a bit of puzzling out, but persevere as the programs are very useful.

It all adds up to what's certainly the most valuable book of programs I've tried, and one I'd certainly recommend.

Typing in all these programs taught me a few things. The most important was how to tackle an IF ... THEN ... ELSE in a program. It's quite simple - just use a GOTO. For instance, suppose you have

```
100 IF X = - THEN GOSUB 1000 ELSE 150
```

```
enter 100 IF X = - THEN GOSUB 1000
```

```
101 GOTO 150
```

If the condition is untrue, the program goes to line 101, and carries out the action otherwise arrived at by the ELSE command. It is much easier than debugging the machine each time you start using IF ... THEN ... ELSE command.

I also learnt at an early stage that using letter keys to control movement of an on screen object is not as convenient as using the cursor control keys. So, whenever I encountered programs using letters for controls, I entered a short sub-program giving control to the cursor control keys. There are several variants on the entry.

```
A = DEEK (783) A$ = KEY$ A$ = KEY$
```

```
IF A = 48351
```

```
IF A = 48255
```

```
IF A = 48319
```

```
IF A = 48375
```

```
IF ASC(A$) = 8
```

```
IF ASC(A$) = 9
```

```
IF ASC(A$) = 10
```

```
IF ASC(A$) = 11
```

```
IF A$ = CHR$(8)
```

```
IF A$ = CHR$(9)
```

```
IF A$ = CHR$(10)
```

```
IF A$ = CHR$(11)
```

```
moves left  
moves right  
moves down  
moves up
```

To save the odd bit of space, remember there's no need to use " at the end of a string that terminates a program line. Also, THEN GOTO XXX is still valid as THEN XXX.

One last tip is for when you've got many short programs on one side of a cassette. Trying to find a particular program by ear is difficult. To help, prefix the recording of each program with its spoken title. Then just listen to the titles as you play the tape back.

### Monsters

After all this hard work, it was time for some recreation, in form of games. Arcade games need faster reflexes and so on - I'll try those later. For now, adventure games seem a good idea to spend some time.

"Moirá" is from Severn Software, at £6.95. It is a multi-layer dungeon game, the object being to find a ring and escape with it. The screen shows a grid map of the level you're on, each room a mystery until you enter it. It could contain gold, a strength potion, a ring, armour, weapons, stairs up or down - or monsters.

It is a simple game to play, with just the direction to enter, or the direction as to whether to attack or not. The graphics are simple and most of the action is left up to the imagination. To solve the game, use a pen and paper to keep track of what's in the rooms you enter, as they are all blanked out if you leave and return to a level. Finding the main ring is a matter of luck, keeping track of where monsters and warps are and simply trying every room. Work mechanically and this game is no challenge at all. Work without pen and paper, and it becomes a matter of luck or photographic memory.

"Hell's Temple" is much more challenging. It costs £12 from Kenema Associates Limited, half that to members of the Oric Owners Users Group. Nicely packaged and with excellent instructions, it will keep you entertained for weeks. You'll die a thousand deaths too.

Again it's a multi-level dungeon, with over 70 different types of monsters protecting enormous amounts of treasure. Three dimensional room plans are shown, and character controls are basically directional. At doors you can listen or barge right in. You can also magically detect traps or call up details of an opponent's strength. You fight with sword or spell, often against vastly superior opponents.

There are many traps in store. The combat sequences get a little tedious, with their repetitive commentaries, so you soon learn to set the fastest test speed. The chances of solving the adventure appear minimal, and there will be many times you'll want to give up in frustration. That's what a good adventure game is all about, and I'm off down the Temple again, until next month.

```

1 REM *****
2 REM *      UNION JACK      *
3 REM *      by              *
4 REM *      DAVE GALBRAITH  *
5 REM *      01-07-83        *
6 REM *****
8 PAPER0:INK7
10 HIRES
20 CURSET0,20,1:REM Background
30 FILL120,1,20
40 CURSET0,65,1:FILL31,1,23: REM White Bar
50 CURSET0,70,1:FILL21,1,17:REM Red Bar
60 CURSET0,30,1:FILL5,1,23:REM Start of white diagonal cross
70 CURSET0,124,1:FILL8,1,23
80 FOR L=0 TO 29:CURSET0+2*L,35+L,1:FILL1,1,23:NEXT
90 FOR L=0 TO 29:CURSET0+2*L,125-L,1:FILL1,1,23:NEXT
100 CURSET0,20,1:FILL10,1,17:REM Start of red diagonal cross
110 CURSET0,133,1:FILL8,1,17
120 FOR L=0 TO 34:CURSET0+2*L,30+L,2:FILL1,1,17:NEXT
130 FOR L=0 TO 34:CURSET0+2*L,133-L,1:FILL1,1,17:NEXT
139 REM ****Continue with white diagonal
140 FOR L=0 TO 44:CURSET0+2*L,20+L,1:FILL1,1,23:NEXT
150 FOR L=0 TO 44:CURSET0+2*L,140-L,1:FILL1,1,23:NEXT
159 REM ****Refill blue background
160 FOR L=0 TO 40:CURSET15+2*L,20+L,1:FILL1,1,20:NEXT
170 FOR L=0 TO 44:CURSET15+2*L,140-L,1:FILL1,1,20:NEXT
180 CURSET100,20,1:FILL45,1,23:REM White vertical
190 CURSET100,95,1:FILL45,1,23
200 CURSET105,20,1:FILL120,1,17:REM Red vertical
210 CURSET135,20,1:FILL120,1,23:REM Red vertical
220 CURSET135,70,1:FILL20,1,17
230 CURSET140,20,1:FILL40,1,20
240 CURSET140,100,1:FILL40,1,20
250 CURSET140,60,1:FILL5,1,23
260 CURSET140,95,1:FILL5,1,23
270 FOR L=0 TO 40:CURSET140+2*L,60-L,1:FILL1,1,23:NEXT
280 FOR L=0 TO 40:CURSET140+2*L,100+L,1:FILL1,1,23:NEXT
290 FOR L=0 TO 45:CURSET140+2*L,65-L,1:FILL1,1,17:NEXT
300 FOR L=0 TO 45:CURSET149+2*L,95+L,1:FILL1,1,17:NEXT
310 FOR L=0 TO 42:CURSET155+2*L,65-L,1:FILL1,1,23:NEXT
320 FOR L=0 TO 35:CURSET167+2*L,95+L,1:FILL1,1,23:NEXT
330 FOR L=0 TO 30:CURSET175+2*L,65-L,1:FILL1,1,20:NEXT
340 FOR L=0 TO 30:CURSET175+2*L,95+L,1:FILL1,1,20:NEXT
350 PRINT:PRINTTAB(24)CHR$(4)CHR$(27)"UNION JACK"
395 MUSIC1,0,1,0:MUSIC2,0,1,0:MUSIC3,0,1,9
397 PLAY7,0,7,200
400 FOR X=1 TO 52
410 READ N1,01,N2,02,N3,03,D
420 MUSIC1,01,N1,7:MUSIC2,02,N2,7:MUSIC3,03,N3,9
430 WAIT D
440 NEXT
450 MUSIC1,3,8,7:MUSIC2,2,12,7:MUSIC3,1,8,9
460 WAIT300:PLAY0,0,0,0
470 PRINTCHR$(4)
480 TEXT:PAPER0:INK7:END
499 REM * BAR 1 *
500 DATA8,3,12,2,8,1,70,8,3,12,2,5,2,70,10,3,5,3,1,2,70
509 REM * BAR 2 *
510 DATA7,3,3,3,3,2,70,7,3,3,3,5,2,35,8,3,3,3,5,2,35,10,3,3,3,7,2,70
519 REM * BAR 3 *
520 DATA12,3,3,3,8,2,70,12,3,5,3,5,2,70,1,4,10,3,1,2,70
529 REM * BAR 4 *
530 DATA12,3,3,3,3,2,70,12,3,3,3,4,2,35,10,3,1,3,4,2,35,8,3,12,2,5,2,70
539 REM * BAR 5 *
540 DATA10,3,1,3,1,2,70,8,3,12,2,3,2,70,7,3,10,2,2,1,70
549 REM * BAR 6 *
550 DATA8,3,12,2,8,1,70,8,3,8,3,8,3,35,10,3,10,3,10,3,35,12,3,12,3,12,3,35
555 DATA1,4,1,4,1,4,35
559 REM * BAR 7 *
560 DATA3,4,12,3,8,1,70,3,4,12,3,12,1,70,3,4,12,3,5,2,70
569 REM * BAR 8 *
570 DATA3,4,12,3,8,2,70,3,4,12,3,8,1,35,1,4,10,3,8,1,35,12,3,8,3,8,2,70
579 REM * BAR 9 *
580 DATA1,4,10,3,2,1,70,1,4,10,3,7,1,70,1,4,10,3,10,1,70
589 REM * BAR 10 *
590 DATA1,4,10,3,4,1,70,1,4,10,3,2,1,35,12,3,8,3,2,1,35,10,3,7,3,3,1,70
599 REM * BAR 11 *
600 DATA12,3,3,3,8,1,35,12,3,3,3,3,1,35,1,4,5,3,8,2,35,12,3,3,3,8,2,35
605 DATA10,3,1,3,8,2,35,8,3,12,2,8,2,35
609 REM * BAR 12 *
610 DATA12,3,8,3,8,1,35,12,3,8,3,3,2,35,12,3,8,3,5,2,35,1,4,10,3,6,2,35
615 DATA3,4,12,3,8,2,70
619 REM * BAR 13 *
620 DATA5,4,1,4,1,2,35,3,4,12,3,1,2,17,1,4,10,3,1,2,17,12,3,8,3,3,2,100
625 DATA10,3,1,3,2,1,120

```

# UNION JACK

by  
DAVE  
GALBRAITH

# COMPOSER FROM SECTOR 7

## Mick Poat

If you have tried to compose any music on your Oric and been confused by the Music, Sound and Play commands, then this program may solve your problems. It has been designed to make light work of transferring sheet music to the computer using standard notation, or to compose your own.

The program comes recorded three times on a cassette, two fast and one slow, plus three pieces of example or demo music. It auto runs when loaded and displays a menu of options and there are eleven commands as follows:

Load tune from cassette.

Play tune.

Bar play and display.

Re-type bar/channel.

Modify sound controls.

Save tune onto cassette.

Type in new tune.

Add bars to end.

Delete bar.

Insert bar.

Copy from bar to bar.

The cassette commands prompt the user for all the necessary information required to load and save compositions at either speed.

All commands are single key entries, pressing 'P' then '1' followed by (RETURN), starts the piece of music currently stored in memory playing from the first bar. It will continue playing until the end is reached or the (RETURN) key is pressed, then returning to the menu.

Single bars can be displayed and played by pressing 'B' and the number of the bar. The bar is displayed as three sets of stave lines, one for each channel, showing the notes in standard musical form and is then played. Pressing 'N' will play/display the next bar and 'M' will return to the menu.

A single bar can be re-typed by pressing 'R', followed by the bar No. and channel No. to be changed. The requested channel is then displayed with all the previously stored notes removed and a flashing cursor at the bottom of the screen waits for the new notes to be typed in. Octave number is first (0-6) then note (A-G) and any Sharp, Flat or Natural, and finally the note length. The prompt will continue to appear after each note is input until the bar is the correct length, e.g. 12 in 3/4 time and 16 in 4/4 time. If a rest is required (RETURN) is pressed when Octave is requested and the cursor misses the note prompt and goes straight to length. When the bar is complete it is played.

A completely new tune can be typed in by pressing 'T' which clears any existing notes out of memory and goes to the input routine.

New bars can be added to the end, inserted or deleted from the tune in memory, at any time. Copies of bars already sorted can also be made and inserted, which saves typing a repeated phrase again.

The selection of 'M' from the menu allows you to modify the sound controls as follows:

Name of tune.

Tempo.

Time signature 3/4 . . . 4/4.

Key signature.

Organ or Special sound.

Continuous loop or single play.

Independent volume controls of three channels.

Independent decay rate of notes on three channels.

Tremelo or Staccato sound.

Noise enable . . . Envelope mode . . .  
Envelope period.

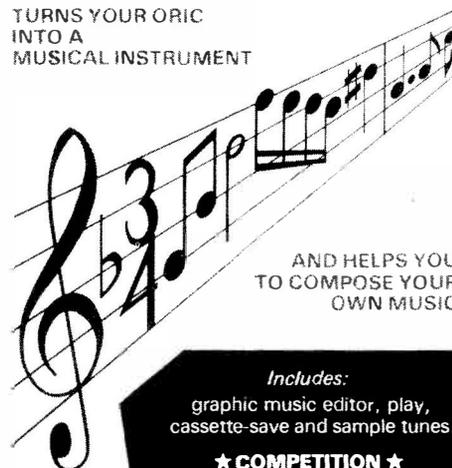
I found it useful to have the Oric manual handy when altering the special sound controls, but in general the instructions supplied on the cassette insert are helpful and concise. Also on the insert are details of a competition open to all purchasers of 'COMPOSER'.

All in all this package is very useful. It has a few limitations, such as not being able to program changes to the volume of individual channels whilst the tune is playing, but it is a well thought out package and well worth adding to your collection.

GRAPHICS.....	****
SOUND.....	****
COLOUR.....	**
ENTERTAINMENT VALUE.....	***
ADDITIVE VALUE.....	N/A
GENERAL ASSESSMENT.....	****



URNS YOUR ORIC  
INTO A  
MUSICAL INSTRUMENT



AND HELPS YOU  
TO COMPOSE YOUR  
OWN MUSIC

Includes:  
graphic music editor, play,  
cassette-save and sample tunes.

★ COMPETITION ★

# TRIUMPH THE CASSETTE

## Ray Grant

Oric is now firmly established in the market as one of the best. In France, it was voted Top Micro of 1983 Home Computer on the market, not only for price but for performance as well. Just as when you buy hi-fi separates it is important that you make sure that the speakers will match the amplifier etc, then the same is true about buying a cassette recorder for your Oric. You must be sure that it will like talking to your Oric. For instance, the Ferguson cassette recorder that has given me three years of reliable use with my other computer, gives me all sorts of headaches when I use it with my Oric, will it load that new tape, will it B\*!£!!\*£. In the end, I gave in and started looking around for a new cassette recorder. I must admit I was quite surprised at the large number of computer compatible cassette recorders that had suddenly appeared on the market recently and, so, I started the long and laborious task of sifting through a mountain of literature in an effort to compare prices with performance and so find a machine that would give the best value for money. In the end, I narrowed it down to three machines, of which the one I picked out as the best buy was the Triumph CR1610 computer compatible cassette recorder, priced at £29.95.

The Triumph CR1610 cassette recorder is a smart looking silver grey colour with black piano operation keys. There are six of these keys, giving you all the usual functions. However, there is no pause key, but this is only a minor quibble and is not something I deem necessary any way. A feature that I did like is the way in which the rewind and fast forward keys double as review and cue keys. This means that when in play mode you can hold down either the fast forward or rewind keys and with the volume up listen to the tape as it winds through the machine and if you have a lot of programmes stored on one tape this allows you to find the programme you want very quickly. There is also a tape counter and this can be used as a reference to find programmes previously stored onto tape. The record and play keys are next door to each other, which means you only need one finger to operate the record mode.

The extra features on this cassette recorder that you do not get on a standard recorder are, two red L.E.D. lamps which tell you what record mode you are in. With a switch on the cassette recorder, you can chose either normal record mode where only one red L.E.D. lights up, or you can select compute mode where both red L.E.D.s light up. There is also a green L.E.D. light that lets you know when the tape is running in either play, record, rewind or fast forward which is a feature I particularly like, as there is no auto stop on fast forward or rewind. (The auto stop works on play or record modes only). The recording level is set automatically, but gives a slightly different setting when in compute mode as opposed to normal mode. The design of the cassette compartment is also good, and allows easy access to the heads and capstan for cleaning purposes. To connect the recorder to your Oric you have a choice of using either a 3 pin din plug, or you can use a lead that has a 7 pin din plug one end for the Oric and two 3.5mm jack plugs and one 2.5mm jack plug at the other end for the cassette recorder. The output from the recorder is controlled by the volume control and, as this is the only control that has to be set when loading a tape, (the tone is fixed), finding a reliable loading is quick and easy.

Oh yes, just for the record, this recorder also has a carry handle that pulls out at the front and a built in microphone. It comes complete with mains lead, but can also be run off batteries. The instruction manual is good, easy to follow, and even shows you what to clean when the head gets dirty and it also has some important notes on using the recorder to store programs.

In conclusion then, the machine represents in my view very good value for money. It is smart looking, it performs well and is very reliable. It is easy to use and most importantly of all, it likes talking to my Oric. I have now been using this recorder with my Oric for about ten weeks and I no longer have any trouble loading or saving my own programs. The reliability of loading in commercial software is also greatly improved (even at the fast rate). So, there you have it, The Triumph CR1610.

Looks	****
Performance	*****
Ease of use	****
Reliability	*****
V.F.M.	*****
Price £29.95.	

# ATMOSPHERIC VARIATIONS

## THE ORIC-1 BUGS

The V1.1 Roms have obviously been given some attention which is favourable. Most important ones being listed here.

The FILL command has been corrected and now leaves the graphics cursor at Y after the last row filled, X is not effected and if fill goes to the last row on the screen the Y cursor position is equal to zero. With the V1.0 O/S the cursor position was undefined.

On power on the correct 'Free Memory' readout is given as 37361 Bytes Free leaving the rest of user Ram available under the Grab command if required, now much less misleading.

Problems with the POKE have been corrected with V1.1 now accepting a Hex number as the second parameter. The PRINT commands have also had some attention with the PRINT @ X,Y now putting the cursor at the absolute position on the screen given X & Y. SCRIN (X) on the V1.1 now allows 0 as the left hand edge where V1.0 gave one position from the left hand edge, likewise HEX\$(X) and POS(X), TAB(X) is now working correctly.

## CASSETTE FACILITY and PROGRAMS

Considering the basic Oric-1 printed circuit board is being used in the Atmos it goes without saying that the cassette loading problems still exist.

Programs written for the Oric-1 are unlikely to run on the new Atmos unless they have been written as Rom independent. Existing software that is using Rom based subroutines etc may find that the addresses within the Rom may have changed on the V1.1 and therefore leaving the Call instruction pointing at the wrong subroutine address. Likewise, with the TAB(X) functions etc, now working correctly, programs will have to be modified before running on the Atmos. The odds are that a lot of software is not going to run on the new Atmos V1.1 Roms unless some modification takes place elsewhere. This not only applies to Users own software but that of the commercial variety so a lot of consideration must be given to these facts before deciding whether any upgrade is going to be worthwhile or just aggravating, much depends upon the amount of software accumulated so far by the User and whether or not the improvements of the Atmos in its favour, again, much depends upon personal choice. With the fact that Atmos is selling for £170.00 and many Oric-1 owners purchasing their machine at around £109.00 a lot has got to be considered prior to making any changes. Although, it has been suggested that a replacement service might be organised by O.P.I. the word is that if such a service goes ahead it looks as though we shall be looking at a price of around £60.00 for a keyboard and Rom replacement. Any speculation that there might be a Rom only exchange service is unlikely at the moment due to the complexities involved in running this type of service, not least of that being that many inexperienced users may find themselves with problems by fooling around inside their machines and so on.

## THE ATMOS MANUAL

The Atmos manual is certainly a vast improvement on the original Oric version and much of this credit goes to the independent authors like Ian Adamson who compiled it. The 300 page manual goes much farther with various sections dealing with other subjects in more details such as machine code programming, details on the operating system and many others. At this sort of price level this manual must be one of the best around.

The burning question this month must be whether the new Atmos is a worthwhile upgrade from the Oric-1, and what format for upgrades will be available for existing Oric-1 owners.

The Atmos itself is built around the Oric-1 hardware with the exception of the new keyboard which is a 'Full Travel' Querty type, an obvious improvement over the old 'Bubble Gum' keys of the Oric-1. The additional 'Function' key being a mystery at the moment but possibilities exist for this to be used as a Reset key or a proper function key to be used with a different operating system. The new keyboard certainly has a decent feel to it and opinions will obviously differ and choices made on a personal basis. The attractive new styled livery certainly adds to the Atmos's appeal, an important asset in the days of mass marketing.

What's going to be most important to existing Oric owners is the introduction of an 'Improved' Operating System Rom (V1.1). It is not a new O/S in real terms but simply the older version (V1.0) with some of the bugs ironed out and a couple of additional routines which are as follows:

### STORE A, "Filename"

Stores a previously dimensioned array (A) which may be real, integer or string to a cassette file. Optional fast or slow baud rates.

### RECALL A, "Filename"

Recalls a file from cassette stored using the above routine.

### VERIFY

Verifies a previously loaded program against the original whether in memory or on cassette in either Machine Code or Basic. A useful facility but found to be untrusting.

### JOIN

Joins a second Basic program to the end of a previously loaded program, however, the second program to be loaded must always contain program line numbers higher to that of the first otherwise both programs will become corrupted. Another useful facility but lacking because of the need for a Rom based resident Renumbering routine.

### Catalogue

Displays current filename encountered on tape. This filename is displayed on the top status line as normal whether being loaded or not. Excellent facility for searching cassette files for unknown filenames. It's a pity that the normal status line had been used here rather than the screen as this would have allowed you to leave the computer to display all filenames found on the cassette effectively cataloguing the entire cassette contents rather than see each one disappear as another took its place on the status line.

Efforts have been made to offer what we would term as standard features in the V1.1 O/S, in particular the Store and Recall features are very important in the use of Micro's these days. Other than that there's no real exciting changes in the new V1.1 Roms.

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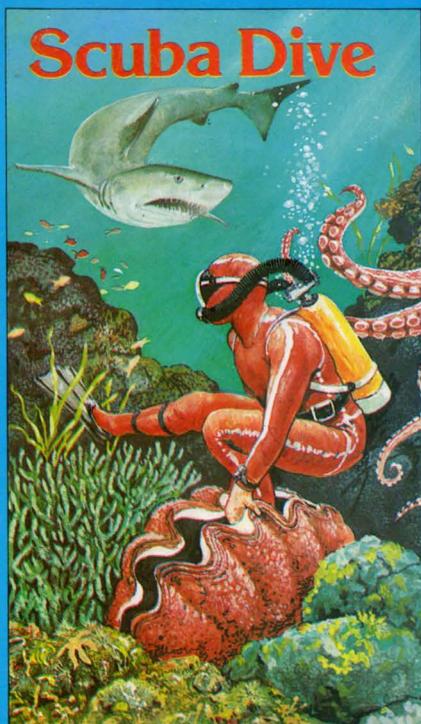
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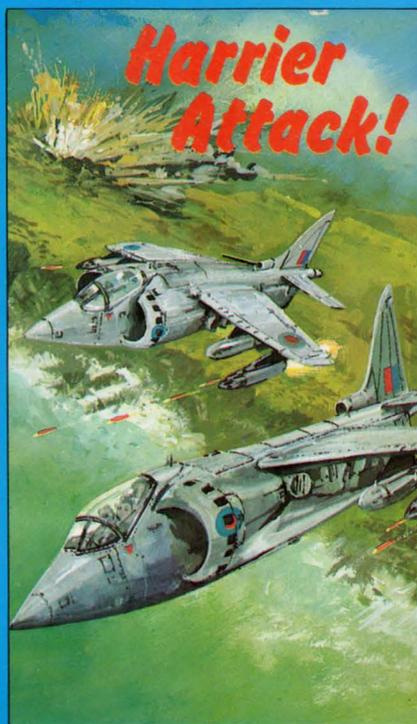


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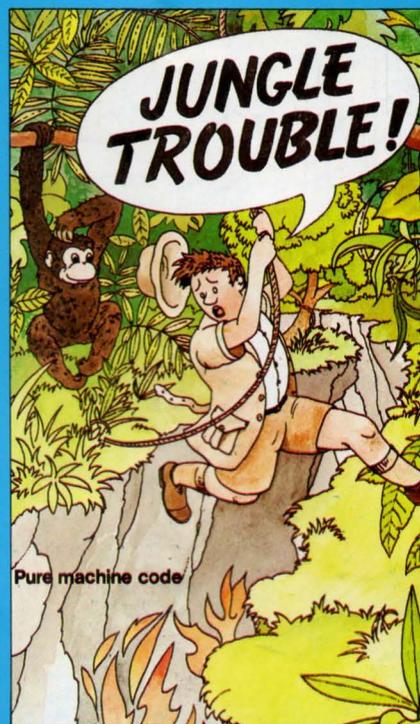
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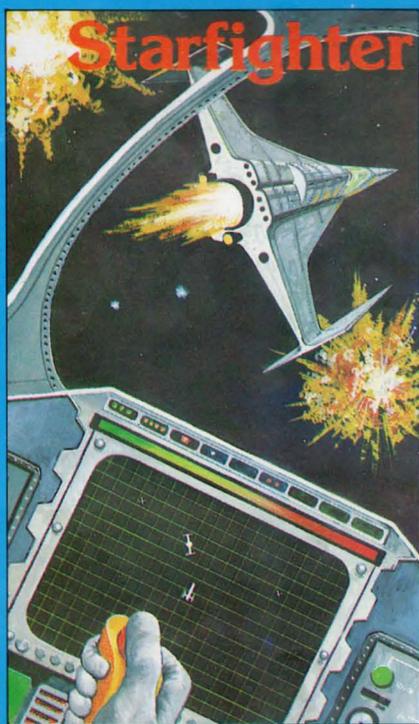
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