ORIC COMPUTING

THE COMPLETE ORIC USER MAGAZINE

JANUARY/ISSUE 3

MCP 40
COLOUR PRINTER REVIEW

ORIC DRAGON CURVE

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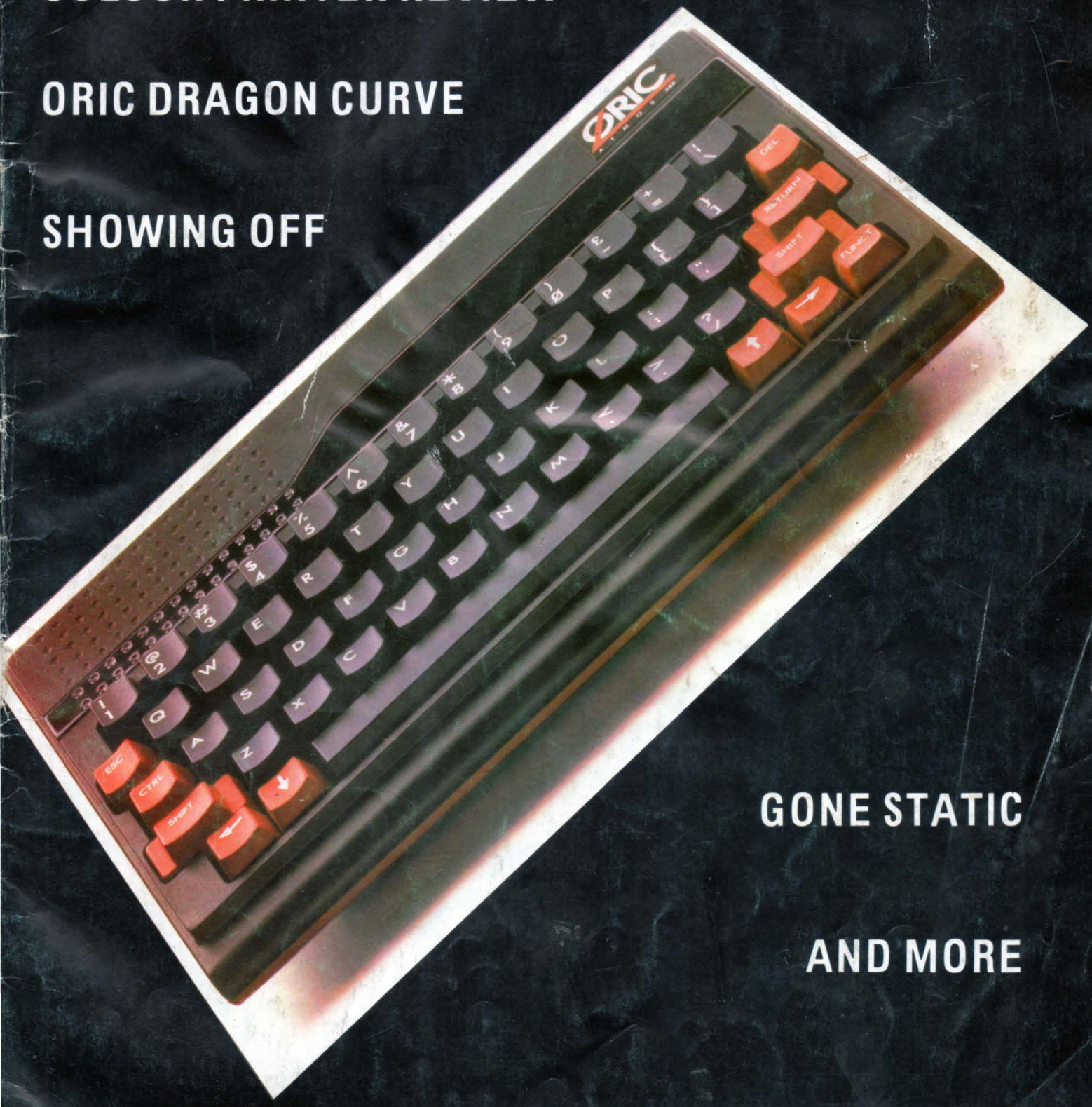

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ORIC 1

NEWS...

BOB GREEN REPORTS

The difference between your Xmas and mine is not that I've found an Oric-1 computer in my stocking but I get the chance to wallow in a hot steaming bath with a bottle of Scotch, ice cubes and American dry along with my slave girls in attendance. To me, punching away at a key-board of any description is strictly taboo over this festive season. Counting large amounts of money is preferable to eating large amounts of foods. Any other form of Xmas entertainment is strictly for the birds. If you think a magazine editors job is flavoured by endless sessions of drinking parties with attractive hostesses, then I've got news for you - it is! and the very next time I'm asked to one I'll invite you all along. With the whole world gone raving made on computers I thought I'd join in and do my bit for a change. Come to think of it - Did you hear the one about an Irishman who thought a geriatric computer - was an old 4 bit valve job!

If you're wondering what these subjects have to do with a fine computing publication as this, I will tell you. During the pre-Xmas shopping rush at a local store I encountered a salesman informing a customer that "Basic was the fastest and most efficient language available for computers these days". I promptly spoke up, in my usual manner, and run both the customer and the salesman through a short sharp lesson in computing. It was during this period that I drew quite a crowd of interested people, the end result being four Oric's sold. The silly point being that I also persuaded them to join a decent Users Group. All this, and that I was invited by the shop owner to discuss an permanent position with his company. So, when I've finished this article, I'm going to write to that company asking for about 18 G's a years plus perks and a regular fortnights holiday over Xmas. The ironic point is, that during this encounter not once did I give my name!! I know one thing, at least I've made four people very happy this Xmas and that I look forward to a prosperous new year. - But the Madness goes on! - Overheard on a sci-fi video film - A space fighter pilot says (Quote) "Standby to FIRE! The enemy is 10 MICRONS and Closing!" WOW! I thought, those guys must be really sharp!! With that, and the fact that I witnessed one of the most appalling adverts on the t.v. of some jerk in glasses trying to sell a top brand micro, my senses collapsed under the weight and I reached for a refill. As the madness goes on around me I know that I'm safe in my bath sure in the know-ledge that computers will never replace my slave girls. And to leave you with another thought. If I ever see another idiot fall into a computer - I'll pull the plug on computing and go back to steam radio.

ORIC FUTURE SECURE WITH EDENSPRING

From its take-over by Edenspring Investments plc and subsequent Over the Counter (OTC) sales of shares, Oric Products International Ltd has raised approximately £4 million in working capital to fund expansion and product diversification. After just ten months trading to October 1983, the company has shipped 120,000 of its Oric-1 8 Bit 16K and 48K microcomputers and is looking at a first year turnover in excess of £10 million: putting Oric in the top league of British home computer makers. In addition to sustaining growth in the volatile home computer market, Oric is broadening its product base into business communications and opto electronic systems which are being developed at its new 11,000 sq.ft. Cambridge R&D centre - already equipped with the latest CAD (Computer Aided Design) and test equipment.

A substantial press and t.v. campaign is being prepared for the new year for which Oric has appointed KMP Advertising a Saatchi & Saatchi subsidiary.

Inmos, the British semiconductor manufacturer, is supplying dynamic Ram's (Random Access Memories) to be used in the present and future microcomputer based products and is co-operating in the design of future products.

"Our overall corporate plan anticipates very substantial increases in turnover and profit for 1984 & '85 by which time a large part of the turn-over will come from products other than micro-computers and peripherals," said Barry Muncaster, one of Oric's founders who continues as Oric's Managing Director. "In addition to securing our future through product and market diversification we also plan to increase our exports - currently standing at 50% primarily to France, Scandinavia, Asia and Australasia" concluded Mr. Muncaster.

THE ORIC BOARD

The existing Oric Board of Directors comprising John Tullis (Chairman), Barry Muncaster (M.D.), Peter Harding (Sales and Marketing), Dr. Paul Johnson (R&D) and Alan Castle (Finance) has been enlarged by the appointment of two Edenspring Directors - Peter Jones and Nicholas de Savery. Oric's head office remains at Coworth Park, London Road, Ascot, Berkshire. In addition, John Tullis and Barry Muncaster, have joined the board of Edenspring.

FRONT & BACK COVERS:- By courtesey of Oric Products International Ltd

```
90 X=#9800:CALL#E563:POKE#BB80,2
100 PAPER0:INK2:POKE#26A,10:POKE#BBA3,0:T=0
110 CLS:GOSUB 1150:GOSUB610:GOSUB 990:SC=100
120 GOSUB390
130 GOSUB230
140 A=0
150 REPEAT
160 A=A+1:P=P+2
170 IF T=18 THEN GOSUB 800
180 GOSUB540
190 IF F=0 OR F=2 THEN WAIT 4
200 CALLX
210 UNTILA=40
220 F=0:GOTO130
230 B=INT(RND(1)*8)+2
240 IF SC<0 THEN 800
250 POKE#983E,B+3
260 PLOT36,B-1,3:PLOT36,B,3:CALL X
270 PLOT36,B-1,"g":CALLX
280 PLOT36,B,"h":CALLX
290 PLOT36,B,"i":CALLX
300 PLOT36,B,1:PLOT36,B-1,5:CALLX
310 PLOT36,B,"a":CALLX
320 PLOT36,B-1,"b"
330 PLOT36,B,"c":CALLX
340 PLOT36,B,"d":PLOT36,B-1,3:CALLX
350 PLOT36,B-1,"e"
360 PLOT36,B,"f":CALLX
370 SOUND4,31-T,1:PLAY0,1,0,0
380 RETURN
390 FORZ=26 TO 21 STEP-1
400 PLOT3,Z,"jjjjjjjjj   jjjjjjj jjjjjjjjjjjjj"
410 NEXT
420 PLOT3,20," #######     ######   ##############"
430 PLOT3,19,"  #####       ####     ############ "
440 PLOT3,18,"   jjj        jjj       #########  "
450 PLOT3,17,"   jjj        jjj        ####### "
460 PLOT29,16,"#####"
470 PLOT29,15," jjj"
480 PLOT29,14," jjj"
490 FORC=26TO21 STEP-1:PLOT23,C,5:NEXT
500 FORC=26TO21 STEP-1:PLOT12,C,3:NEXT
510 FORC=26TO21 STEP-1:PLOT2,C,4:NEXT
520 FORC=20TO14 STEP-1:PLOT2,C,1:NEXT
530 RETURN
540 K=PEEK(#208)  'GET KEY PRESS
550 IF F=2 THEN RETURN
560 IF F=1 THEN GOSUB 880
570 IFK<>180 THEN RETURN
580 IFK=180ANDF=0 THEN PLOT37-A,B+2,"e":P=B+2:L=37-A
590 GOSUB880
600 RETURN
610 R=46080+(97*8)
620 RESTORE
630 FORC=0 TO 7
640 READ K
650 IF K=255 THEN RETURN
660 POKER+C,K
670 NEXT C
680 R=R+C:GOTO 630
690 DATA39,39,35,17,8,4,2,1
700 DATA8,28,28,8,28,62,62,62
710 DATA63,63,63,63,63,32,32,63
720 DATA63,63,63,63,63,0,0,63
730 DATA0,54,54,54,0,54,54,54
```

SANTA CLAUS

```
740 DATA63,62,60,60,56,8,8,63
750 DATA1,2,2,2,12,28,62,51
760 DATA63,15,15,4,8,16,32,0
770 DATA63,63,62,4,4,2,1,0
780 DATA60,60,63,63,30,30,51,51
790 DATA28,42,28,42,28,42,8,8,255
800 PRINT:PRINTCHR$(4) CHR$(27) CHR$(78);
810 IF T=18 THEN PRINT"WELL DONE YOU SCORED  ";SC;"POINTS":GOTO 830
820 PRINT"YOU'VE FAILED THE SANTA TEST";
830 PRINTCHR$(4):PRINT:PRINT:PRINT"PLAY AGAIN ?  (Y OR N)":GOSUB 1280
840 A$=KEY$
850 IFA$="Y"THEN RUN
860 IFA$="N"THEN END
870 GOTO 840
880 IF F=2 THEN RETURN
890 IFL<33ANDL>29 AND P>13 THEN GOSUB 950:RETURN
900 IF P>16 AND((L<20 AND L>16) OR (L<9AND L>5)) THEN GOSUB 970:RETURN
910 IF P>24 THEN SC=SC-20:F=2:RETURN
920 PLOTL,P+2,"e":PLOTL,P," "
930 F=1
940 RETURN
950 IF F=2 THEN RETURN
960 SC=SC+10:PLOT17,0,"MERRY XMAS":F=2:POKE#BB82+T,107:T=T+1:RETURN
970 IF F=2 THEN RETURN
980 SC=SC+10:PLOT17,0,"HAPPY NEW YEAR":F=2:POKE#BB82+T,107:T=T+1:RETURN
990 A=#9800
1000 READB:IFB=999THEN RETURN
1010 POKEA,B
1020 A=A+1
1030 GOTO1000
1040 DATA#A9,128,#85,128,#A9,187,#85,129
1050 DATA#A9,1,#85,130,#A5,128,#85,131
1060 DATA#A5,129,#85,132,#A6,130,#A5,131
1070 DATA#18,#69,40,#85,131,#A5,132
1080 DATA#69,0,#85,132,#CA,#D0,240
1090 DATA#A0,3,#B1,131,#88,#91,131,#C8
1100 DATA#C8,#C0,39,#D0,245,#A9,32
1110 DATA#91,131,#88,#91,131
1120 DATA#A6,130,#E8,#E0,28
1130 DATA#F0,5,#86,130,#18,#90,198,#60
1140 DATA999
1150 PRINT:PRINTCHR$(4)CHR$(27)"N          SANTA SLEIGH RIDE"CHR$(4)
1160 PRINT:PRINT:PRINT:PRINT"   LAST WEEK SANTA SENT YOU A MESSAGE"
1170 PRINT:PRINT"HE SAID HE WAS GETTING TOO OLD FOR "
1180 PRINT:PRINT"FLYING AROUND IN WINTER AND WOULD YOU"
1190 PRINT:PRINT"TAKE OVER THE JOB."
1200 PRINT:PRINT:PRINT"IT IS NOW CHRISTMAS EVE AND YOU MUST"
1210 PRINT:PRINT"DELIVER THE PRESENTS BY PRESSING THE"
1220 PRINT:PRINT"          'DOWN' CURSOR KEY."
1230 PRINT:PRINT"THEY MUST GO DOWN THE CHIMNEYS TO"
1240 PRINT:PRINT"SCORE POINTS."
1250 PRINT:PRINT:PRINT"PRESS A KEY TO PLAY"
1260 GOSUB1280
1270 GETA$:CLS:RETURN
1280 A$="626264626265629222426772727272726262624242426247"
1290 FOR M=1 TO 48 STEP 2
1300 PLAY1,0,0,0
1310 MUSIC1,3,VAL(MID$(A$,M,1)),3:WAIT VAL(MID$(A$,M+1,1))*9
1320 PLAY0,0,0,0
1330 NEXT M
1340 RETURN
```

By MICK POAT

MCP-40 COLOUR PRINTER REVIEW

THE MCP-40 COLOUR PRINTER/PLOTTER

When I first saw the MCP-40 on the Oric stand at the show, I must admit that my initial impressions were a little sceptical as to whether a small printer/plotter with such a narrow paper width could be an effective tool to complement our machine. Eventually these impressions were proved to be wrong.

The printer comes well packed in a sturdy polystyrene packing and is complete with an interface lead to your Oric (20 way ribbon cable), a set of 4 pens, 1 roll of plain paper, an axle to mount this in your printer (careful it doesn't get lost!) and a manual. You will need a suitable mains plug to be up and running as although the MCP-40 has it's own power supply, it comes without said plug fitted.

HARDWARE IMPRESSIONS

The overall look of the printer follows the (to me) nicely styled lines of the Oric-1 itself and is more or less the same size in area as well. It also has the same rake to its top panel, so they complement each other nicely. The case seems to be made of the same high grade of plastic as the Oric and consequently feels very sturdy. There are a total of four controls accessible to the user including the ON/OFF switch, which is a very neat affair, on the right hand side of the case. The other 3 controls are for: LINE FEED, COLOUR SELECT & PEN CHANGE. The use of the first 2 should be fairly obvious but note that if the printer is running under the control of the micro, then these have no effect. They can instead be controlled by software. The 3rd button will be covered in more detail later.

I found the top cover a little stiff in use but this will probably loosen up in time. As this machine is basically the same as a Tandy printer, I was expecting to find another facility on it as well. That of the DIL switch on the bottom of the case, which allows different options to be selected for power up purposes. On the MCP-40, the hole is there but it is covered over by a label and the DIL switch is in fact not fitted. This is a bit of a shame as it allows for the selection of 40 or 80 column mode, to be selected, or "add a line feed" for computers that don't etc.. It would be fair to say that the Oric-1 is not in need of this latter facility but as it operates from a standard CENTRONICS interface, it is conceivable that other computer users might like to take advantage of the plotter facilities offered by the MCP-40 and therefore might require it. Should you wish however and if the User feels himself competent and not bothered about breaking guarantees etc., then there is no reason why a DIL switch could not be fitted in place of the hard wired straps. The CP-40 powers up, in standard form, in 40 column mode with L/feed suppressed 80 column mode can of course be selected by software but having now seen the quality of 80 column print I would have been quite happy to have it on power up.

As you will see, later in this review, the facilities provided in the hardware are quite amazing for it's price so a final consideration in this hardware section should be "What makes it tick?" Perhaps not surprisingly, if you venture inside the case, you will find a 6805 dedicated microprocessor as the "brains" of the piece!! No wonder it's so clever!

SETTING UP & THE MANUAL

The Manual is a fairly brief affair but is clear and perfectly adequate for the job it has to do. Good use is made of photos to help you with the job of setting up for the first time. Pen Installation is particularly well covered as this is quite a fiddly job with pens less than an inch long!! Incidently, these pens are readily available through your local Tandy and Spectrum stockist, or the like, and the paper can be got from most good office stationers as it is a standard size. Mention can be made here of the Pen Change switch on the front panel. Basically all it does is to move the printhead over to the extreme right of the platen. In so doing, a spike is brought to bear underneath the currently selected pen and at the press of a small catch, the spike lifts the Pen clear of it's mount. As long as you are careful and patient, Pen changing is a doddle with this feature. See pages 4/5 of the manual for more detail.

Having got our pens and paper loaded, switch on always invokes a small routine that draws 4 little boxes in each colour at the pen position. I suspect that this is a thoughtful way of getting the ink flowing nicely in each pen before any work is done. I've often cursed my own ball-point for drying up a little when I've forgotten to put the tops on after use! The manual does recommend that the pens are removed and their tops put on before storage, should the printer be non-operational for any length of time. What it doesn't tell you is that there is a neat parking place for these pens at the front of the case just under the cover. There is another self-test built in which seems to be fairly common amongst all printers and that is, if you hold the L/Feed button down whilst turning on the power, the full character set in the printers Rom will be output in groups of 16; changing colour for each group. The nice difference here is that you don't have to turn it off again, a la EPSON, before you can start work!

The "DIP" switch facility is tantalizingly made mention of on page 7 of the manual but nothing elsewhere!

IN USE

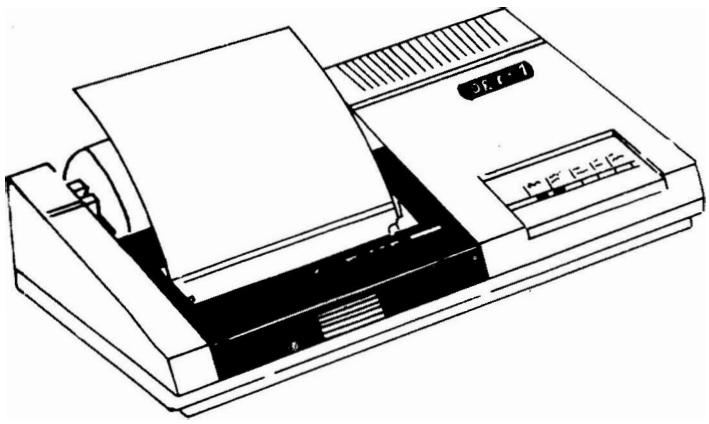
As far as normal character handling is concerned, there is really no difference between this and any other printer except that because this is really a Plotter, the characters are actually "written" and not built up by dots as in a dot-matrix device. The quality and shape of the characters, is excellent because of this and wouldn't disgrace a letter. The penalty to be paid here is one of speed. The manual quotes 12 chars/sec but in fact on timing it in 80 column mode over a fixed number of characters to ease timing, I consistently came up with 11 chars/sec. OK, you may say that 1 extra character is not much but it becomes significant when the program being LLISTed is 12.800 bytes long!! Anyway, I found it fascinating to watch it rattling away (and I don't mean that literally!) at it's tiny but oh so clear letters! In use

MCP-40 COLOUR PRINTER REVIEW

it is no noisier than any other printer that I have worked with and quieter than a few I could mention! Only one real gripe about the characters are that they do not match the Oric's. However, to be fair, it's not really the MCP-40's fault because it is the Oric which has a slightly non-standard set in that useful things like the pound sign and copyright symbol have been added. It would have been nice to have these on the printer as well though.

So, to the Graphics plotting! I'm sure any of you that went to the PCW show and saw the test program in action, were suitably impressed with the clever multi-coloured outputs it was producing. What you couldn't see and can in the manual, is the listing of the same demo program which shows how delightfully simple it is to pass plotting commands to the MCP-40. Basically, there are two control codes which determine whether the next command received by the printer is to be a TEXT or GRAPHICS type instruction. If text, then a normal character results but if graphics then the printer sits and waits for further commands without doing anything until they arrive. Legal commands take the form of "M20,100" which simply means (M)ove 20 along the X axis and 100 up the Y axis with "pen up". There is the equivalent (D)raw command, both being "absolute", while there is also the same commands but in "relative" fashion which match the types of HIRES graphics drawing routines in the Oric's opsystem. You may of course define an "origin" anywhere on the paper and work from that. All in all, a delightfully simple introduction to graph plotting etc. with a computer.

Being eager to try my own ideas and to see if I could produce some pretty Moire interlace patterns, I studied the sample demo program for the technique of passing BASIC variables, for coordinates, to the printer. This seemed fairly conventional and so I embarked on a small program to plot a fine fan across the paper. The result was a little disturbing as it didn't work! No matter what I tried, I couldn't get any normal numeric variables to be accepted by the printer in the fashion that had been used by the demo prog. Feeling sure that I had done something wrong, I typed in a short extract from said program and unfortunately that didn't work either. It was now starting to dawn on me what was wrong because if I tried a normal command in the form LPRINT"D20,130" it was perfectly happy to accept and act upon it. Sad to say, again, it's not the fault of the MCP-40! My Oric is one of the very early ones, it's serial number being in the 5000 region. Much has been said of bugs in the early Oric's EPROMs but in this one's case, it has a direct effect on the computers performance when linked with the MCP-40. Normally when PRINTing a variable to the screen, the lack of a leading space and presence instead of a §02 (green ink attribute) doesn't cause to much problem as it is stripped of as being illegal by the PRINT command in BASIC. When LPRINTing, however, codes below § 20 hex must be allowed to pass as they could be considered as valid commands by the CP-40. This is where the problem lies in my Oric/MCP-40 combination. On seeing the hex 2 instead of a leading space when trying to pass valid variables, the MCP-40 simply goes into "neutral" and ignores all after until a further valid input. This was obviously not a problem on the brand new Orics at the show, so it would appear that at least that particular bug has been corrected. To prove my own theory, I added a short subroutine to the existing program that I had written, which simply converted my variables to STRINGS and then having stripped of the leading character passed the variables embedded in a valid string thus:- LPRINT"D"; X$; ","; Y$. The result was a perfect working program. Unfortunately, this has further reaching implications because, as I mentioned earlier, the MCP-40 will accept "relative" commands and hence a "-ve" coordinate. In my Oric, -ve variables of course come out correctly because the rogue hex 02 is simply replaced by a hex 2D (minus sign). This means then that some gymnastic programming has to take place if I am to use this relative drawing facility so that a valid minus sign will not get stripped of by mistake! Perhaps I have gone on too long about this particular thing but I'm afraid it has to be noted if, like me, you are the owner of an early Oric.



OVERALL IMPRESSIONS

The last observations must not be allowed to cloud any verdict to be passed on this machine. In my estimation it represents excellent value for money at the full price of 169.95 pounds. If you are one of the lucky ones with an Oric P.I. voucher for 40 pounds off, then I would say take advantage of it right away. To me it is a new kind of animal being a printer and plotter, and as such provides a good quality low cost entry into these type of facilities. A number of colleagues, who I have shown it's printed output to, have remarked that with that sort of letter quality and "if only it was full size paper ... ", who needs a daisy wheel!!

Bearing in mind that it appears to be a badge engineered Sharp movement, Oric P.I. are to be commended on choosing a good first peripheral device for the Oric-1 and I look forward in anticipation to seeing my system now really start to grow up. Only time can tell of it's reliability, but suffice to say, that during the period of this testing, my MCP-40 has covered a lot of "miles" and hasn't faltered once! Not even a smudged letter!!

MCP-40 COLOUR PRINTER REVIEW

```
10 CALL#E6CA:POKE49,255
20 Y1=0:Y=400:X=480:X1=480
30 LPRINTCHR$(18)"M0,-600"
40 LPRINT"I":J=1:LPRINT"C0":LPRINT"S1"
50 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$
60 C$=CHR$(48+J):LPRINT"C"C$:J=J+1:X1=X1-6:Y=Y-5:IFX1<0ORY<0THEN80
65 IFJ=4THENJ=0
70 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$:GOTO60
80 IFJ=4THENJ=0
90 X=480:X1=0:Y=0:Y1=0
100 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$
110 C$=CHR$(48+J):LPRINT"C"C$:J=J+1:X=X-6:Y1=Y1+5:IFX<0ORY1>400THEN130
115 IFJ=4THENJ=0
120 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$:GOTO110
130 IFJ=4THENJ=0
140 X=0:X1=0:Y=0:Y1=400
150 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$
160 C$=CHR$(48+J):LPRINT"C"C$:J=J+1:X1=X1+6:Y=Y+5:IFX1>480ORY>400THEN180
165 IFJ=4THENJ=0
170 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$:GOTO160
180 IFJ=4THENJ=0
190 X=0:X1=480:Y=400:Y1=400
200 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$
210 C$=CHR$(48+J):LPRINT"C"C$:J=J+1:X=X+6:Y1=Y1-5:IFX>480ORY<0THEN230
215 IFJ=4THENJ=0
220 GOSUB10000:LPRINT"M"X$","Y$:LPRINT"D"X1$","Y1$:GOTO210
230 LPRINT"M60,195":D$="ORIC USERS GROUP INTERNATIONAL"
240 J=0:FORI=1TOLEN(D$)
250 C$=CHR$(48+J):LPRINT"C"C$:J=J+1:IFJ=4THENJ=0
260 LPRINT"P"+MID$(D$,I,1):NEXT
264 FORI=0TO3:C$=CHR$(48+I):LPRINT"C"C$
266 X=416:Y=193-I:X1=60:Y1=193-I:GOSUB10000:LPRINT"M"X1$","Y1$
268 LPRINT"D"X$","Y$:NEXT
270 LPRINT"H":LPRINT"C0"
280 LPRINT"A":FORI=1TO5:LPRINT:NEXT
9999 LPRINTCHR$(18)"S1":LPRINT"A":LLIST
10000 X$=STR$(X):X$=RIGHT$(X$,LEN(X$)-1):Y$=STR$(Y):Y$=RIGHT$(Y$,LEN(Y$)-1)
10010 X1$=STR$(X1):X1$=RIGHT$(X1$,LEN(X1$)-1):Y1$=STR$(Y1)
10020 Y1$=RIGHT$(Y1$,LEN(Y1$)-1):RETURN
```

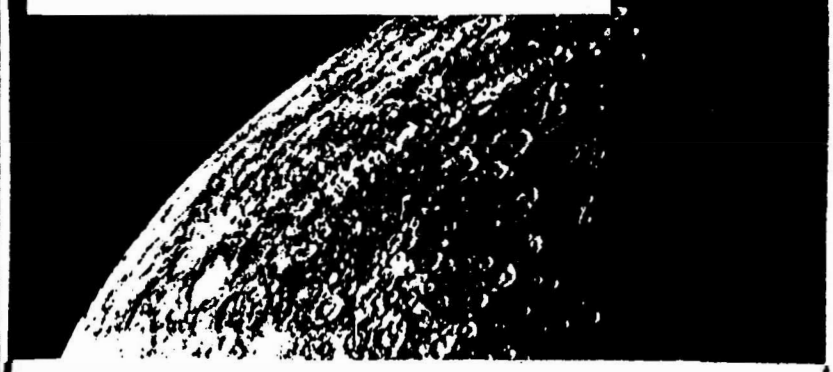
NEW

ORIC SOFTWARE STATION

Issue 1	COWORTH PARK HORRORS	£3.00
Issue 1	ORIC ATTRIBUTES IN ACTION PARTS 1 - 2	£3.00
Issue 2	YAHTZEE	£3.00
Issue 2	MASTERMIND	£3.00
Issue 2	ORIC ATTRIBUTES IN ACTION PARTS 3 - 3B	£3.00
Issue 3	ORIC SHOW OFF	£3.00

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.

STARSHIP



* Fast-action classic arcade game
* 100% Machine-code
* 8 different alien squadrons
* Hi-score table
* Full colour high resolution graphics

You are the commander of 3 heavily-armed starships defending your sector from waves of attacking alien spacecraft from the war-fleet of the Cirellian Empire.
When all 8 squadrons have been destroyed, another wing moves in to the attack.

'Also available for the ATMOS'

COMPOSER 48K £6.50
STARSHIP 48K £6.50
GAMESPACK 48K (7 games) £7.00
GAMESPACK 16K (5 games) £5.95

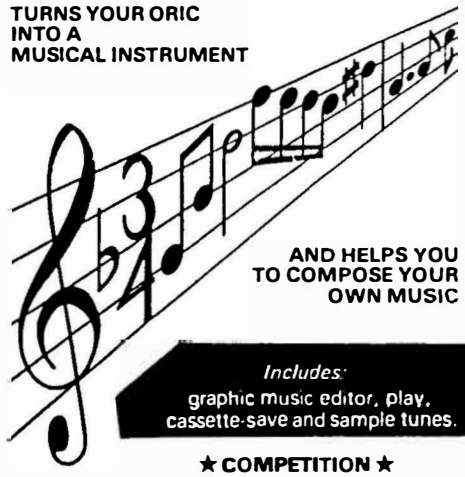
Send cheque or P.O. to SECTOR 7 SOFTWARE, P.O.BOX 8, NEWTON ABBOT, DEVON.
Trade enquiries welcome Tel: 06267-4504

SECTOR 7 SOFTWARE

Composer

A VERSATILE MUSIC PROCESSOR for the ORIC 48K

TURNS 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 ★

ORIC MUSIC COMPETITION

First Prize £100.00
Second Prize £50.00.

Will be awarded for the most entertaining piece of original or arranged music, produced using COMPOSER.

'3 parts Harmony, any key, 3/4 ro 4/4, up to 80 Bars, Full Control over Sond and Speed'

DETAILS ON CASSETTE INSERT.

"Ode to Oric"

I heard the news, I was so impressed,
They said that 'Oric' was the best,
Off with money clutched in hand,
To buy an 'Oric', ain't life grand!

They said no software could be got,
I felt quite faint, and went all hot,
Then Laskeys rang me on the 'phone,
We've software here, no need to moan.

Off to Laskeys, parked the car,
And walk a distance, not too far.
Bought two tapes and felt so grand,
They didn't work, which made me mad.

Back to Laskeys, spoke to Liz,
A charming girl who knew her 'bizz'
A change of tape from her obtained,
Twas just as bad, so nothing gained.

Saw Mr. Taylor, helpful chap,
All computers he could zap,
Went past hours, well over the top,
Someone locked us in the shop.

I ran the tape all full of glee,
It won't go in, oh, woe is me.
Then in walk son, a clever youth,
Who said in accents quite uncouth,

"Dear ancient Dad, it just won't work,
You're running it fast, you silly burke"
And then with beaming smile wide,
He turned it to the other side.

I rang 'Oric' once again,
I'm sure you think I'm quite a pain,
They said I needed book and tape,
The two things didn't correlate.

They then said "Please ring Tangerine
At Ely", please what did they mean?
I just got a high pitched howl,
Which made my temper really foul.

Then Tansoft products I did ring,
Local exchange success did bring,
A sexy voice the other end,
Said all the info, she would send.

Today the postman brought the lot,
Magazine, book and list I got.
Send ten pounds at once she said,
A years supply to read in bed.

Thanks to all who gave their time,
To cheer me up, and hence the rhyme.
Oric, Tansoft, Laskeys too,
Many thanks must go to you.

I hope that now I'll get it right,
With modern things I'm not too bright,
All these prints and beeps and pokes,
Are difficult for we older folks.

INPUT/OUTPUT MEMORY MAP FOR THE 6522 ULA CHIP

ORIC - 1 I/O MEMORY MAP PAGE = 300

N.B. These Locations Repeat Through The Whole Page!

MEMORY ADDRESS Dec Hex	READ	WRITE	MNEMONIC
783 = 30F	Same as IRA without handshake	Same as ORA without handshake	
782 = 30E	Interrupt Enable Register	Interrupt Enable Register	IER
781 = 30D	Interrupt Flag Register	Interrupt Flag Register	IRF
780 = 30C	Peripheral Control	Peripheral Control	PCR
779 = 30B	Auxiliary Control	Auxiliary Control	ACR
778 = 30A	Shift Register	Shift Register	SR
777 = 309	Timer 2 Counter High Byte	Timer 2 Counter High Byte	T2C-H
776 = 308	Timer 2 Counter Low Byte	Timer 2 Latch Low Byte	T2C-L
775 = 307	Timer 1 Latch High Byte	Timer 1 Latch High Byte	TIL-H
774 = 306	Timer 1 Latch Low Byte	Timer 1 Latch Low Byte	TIL-L
773 = 305	Timer 1 Counter High Byte	Timer 1 Counter High Byte	TIC-H
772 = 304	Timer 1 Counter Low Byte	Timer 1 Latch Low Byte	TIC-L
771 = 303	Data Direction Port A	Data Direction Port A	DDRA
770 = 302	Data Direction Port B	Data Direction Port B	DDRB
769 = 301	Parallel Port A	Parallel Port A	IRA/ORA
768 = 300	Parallel Port B	Parallel Port B	IRB/ORB

Register Addresses of the 6522

STATIC ELECTRICITY ON THE ORIC

STATIC ? SO WHAT ? I'VE NEVER BLOWN A CHIP

As Oric owners become more enthusiastic about computing and enter into hardware design and experimentation there is one area of electronics which is now showing itself to be a major 'component killer' is static electricity. Static discharges are all around us all the time, but as they have to be in excess of 3,000 volts before you feel it (that's just a tingle) and over 5,000 volts before you see it, most people don't understand the damage it can do. Static discharges cost companies hundreds of thousands of pounds a year, in fact when the problem was investigated it was found to be on a much larger scale than anyone appreciated. By examining components under a scanning electron microscope, static damage is easily recognised. It was discovered that components can be degraded by static, causing pattern sensitivity (where certain bit patterns give problems), decrease in performance characteristics, premature failure or intermittent problems. This is added to the problem of destroying the component completely.

As this 'degrading' ability of static is not fully appreciated, it is still not given the respect it deserves by the majority of people who handle components and PCB's on a regular basis. Many companies are now embarking on educational programmes for their staff to teach them how to handle static sensitive devices both new and faulty. (We don't want initial problems compounded by static induced problems).
The difficulty that arises in educating people to use anti-static measures is that they don't really believe in them. Oh, they will push an EPROM into conductive foam or wrap a PCB in aluminium foil but only for transportation. These sort of safeguards must be used every time the device is removed from it's circuit.
As VLSI chips achieve greater circuit density the insulating layers between individual conductive paths become thinner and can therefore be damaged by relatively low voltages. Typical voltage levels necessary to damage a component are:

MOSFET	100 - 200
CMOS	250 - 2000
TTL	300 - 2500

while typical voltages generated are:

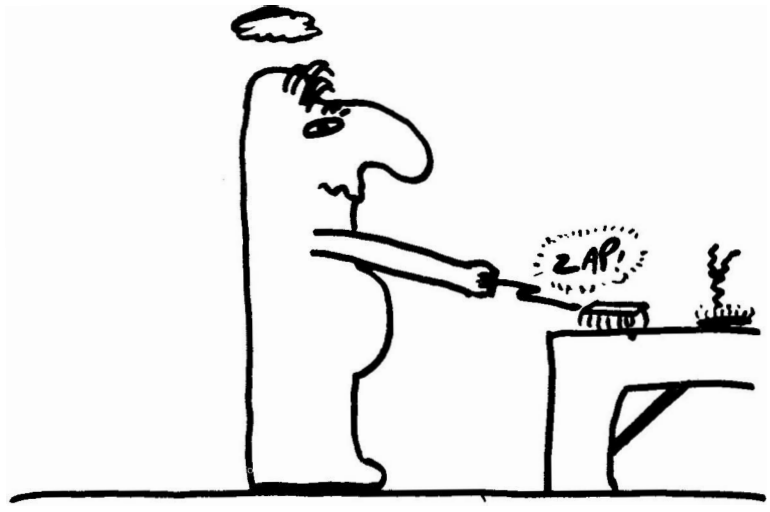
ACTION	COMMON	HIGHEST
Person walking across carpet	12,000v	39,000v
Person walking across vinyl floor	4,000v	13,000v
Person working at bench	500v	2,500v

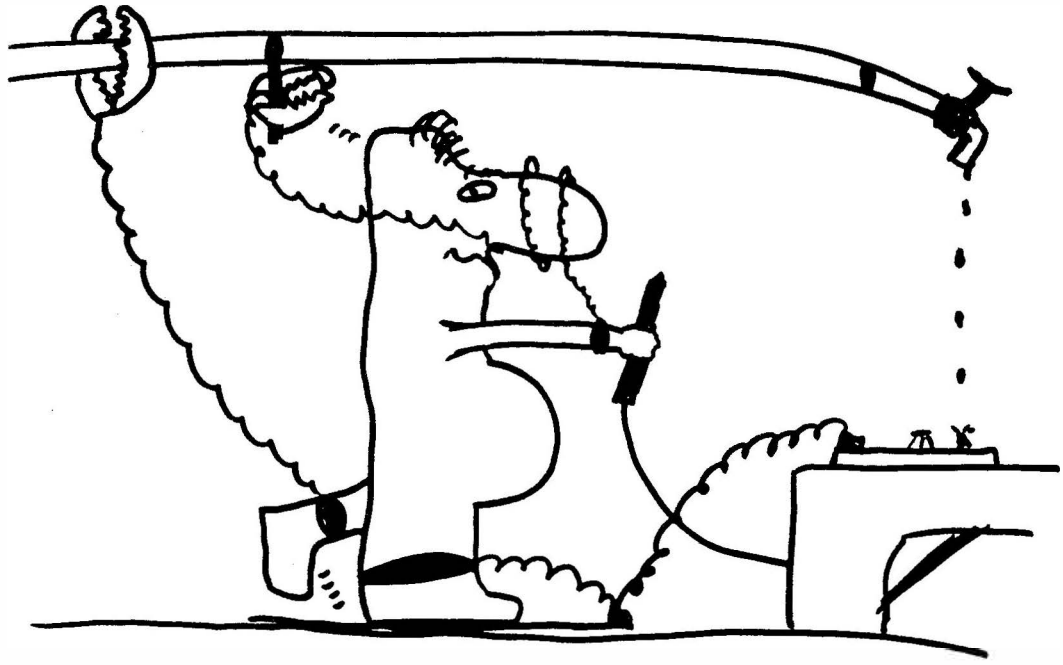
To bring the problem to a personal level, this could have happened to you already without knowing. Have a think - that last chip you changed - did you touch it 2 weeks, - a month, - or 6 months before. According to the latest research you could have damaged it then.

Although the generation of static electricity cannot be prevented it can be controlled in a limited area. If the item to be dealt with is conductive then the problem is very easy. Charge on a conductive material will equalise itself over the whole surface area. Merely grounding the material will remove the charge.

On non-conductive materials this practice will not work as the charge can vary greatly from one point to another. This has to be dealt with by using an ionised air blower - a device which bathes the area with positive and negative ions which are attracted to the charged areas of non-conductors and cancel them out.

In the next part the article will describe the measures that can be taken against static. Both in order to produce a totally static free area and also to guard against the more common static associated problems.





WELL ! WHAT CAN I DO ABOUT IT ?

1. An Ideal World

Ideally all static sensitive devices should be handled in a static safe work area. This can be defined as an area where static is discharged at the same rate at which it charges. Therefore no static build up can occur. In order to achieve this we have to drain all conductive materials to earth. This can be done by using a conductive work surface connected to ground via a 1Mohm resistor. (to limit current). You should use a conductive mat and wear a wristband - both connected to earth via 1Mohm resistors. This will protect the components and PCB's from any static charge on any conductive material used in the work area. The wristband effectively grounds you and should also be used when removing circuit boards from machines.

Don't pull the plug (or else connect the earth separately) - connect the wristband to an earth on the machine - then remove the component. if the board has to be carried to the work area it should first be placed in a static shielding bag.

This only takes care of the conductors. For non-conductors an ionised air blower should be installed to bathe the work area. This would complete a static safe work area - at some cost it is true, but for a company handling thousands of components and PCB's it is a worthwhile and wise investment.

2. Our World

What about us? We can't go installing ionised air blowers I hear you cry. Well for the average Tugger who wants to stave off the anti-social lightning, here's a few ideas.

1. Make yourself a work area with a conductive top that is connected to ground with a 1Mohm resistor. - Not too difficult for a bright lad like you.

2. Get a wrist strap and use it! Something like a 3M Charge Guard 2066. It is comfortable to wear and easy to use.

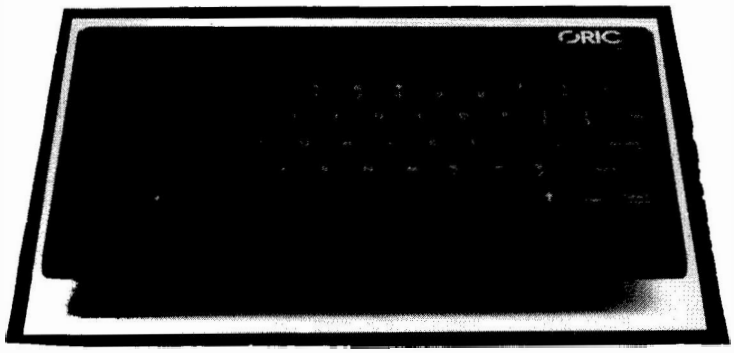
3. If you don't like the idea of operating on your Oric without anaesthetic (removing the plug) then connect the earth separately.

4. Only use a soldering iron with a grounded tip.

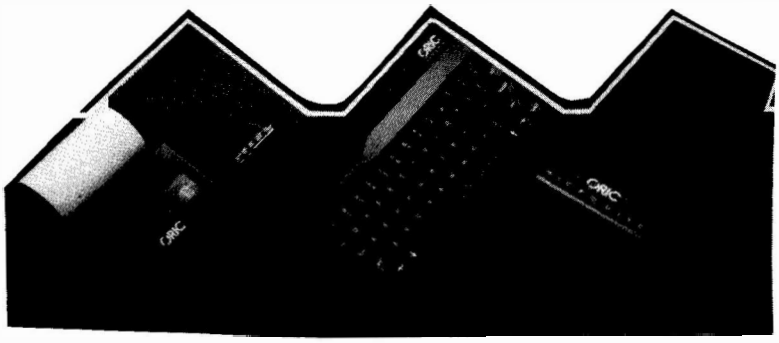
5. And those non-conductors - Keep them away - no exceptions (I have a picture showing the damage done to a chip by a polystyrene coffee cup).

When you have seen the damage it can do, you realise that these few precautions can save a lot of heartache. keep Tugging and lay off the zapps!

Written by Peter Kerrison.
All facts and figures supplied by 3M Company courtesy of their head office at Bracknell, England. Probably the world leaders in static control.



ORIC ATMOS



WANTED

ARTICLES PLEASE

If you're a beginner with something to ask or say...

OR

If you're an experienced user with something to teach or stimulate others with...

WE NEED YOU!

TOP QUALITY HARDWARE FROM MCP FOR THE ORIC 1

GAMES CONSOLE - Speech synthesiser/joystick interface (Atari compatible) ORIC approved	79.35
PROGRAMMABLE JOYSTICK INTERFACE	23.70
A/D CONVERTER - 8 Channel analogue to digital, 1-channel digital to analogue, 8 latched output channels	77.00
CLOCK/CALENDAR	30.00
RS232-C INTERFACE - Software programmable	38.50
RS232-C SWITCH - Allows switching between two peripherals	37.00

ALL hardware, except RS232-C switch is modular and will plug into expansion port. Fully compatible with ORIC-1 peripherals

ALL PRICES INCLUDE VAT & P+P, DEALER ENQUIRIES WELCOME.

Runelord

ORIC-1

The Ultimate Concept in Role-Playing Adventures
* Graphical & Text Games
* Customised Characters can be used again & again
* Game-Save facilities
* Battle-Magic "Wandering Monsters
* Hidden Treasures

The Runelord Masterpack (Character Generation Module plus sample game) is now available for the ORIC-1
Each game can be played on its own or built into a massive 10 part quest! - new modules will be released over the next few months. Each game becomes increasingly more complex and will build into not just a game but a way of life!

RUNELORD Masterpack 7.50 incl.

MODULAR CONCEPT PERIPHERALS
FREEPOST
SWANSEA SA8 4ZZ

ORIC IN CONSTANTINOPLE

by David Churchward

I recently developed this program for a competition that I entered. It was to find as many four letter words that can be made up from the word 'Constantinople'. The program doesn't solve the problem but it assists! The way it works is:-
(a) Type in all the four letter words beginning with 'C'

(b) The program checks that the word is only four letters long and that all other letters can from the SOURCE WORD 'CONSTANTINOPLE'. Repeat for all other letters in that word. When you have been through your dictionary you type in '9' when prompted. The program then used a crude sort to average them in alphabetical order and then prints out the list.
The source word and the length of the object words are prompted for in the program.
In fact the competition I entered, the source word was 3 words totalling 22 characters and the object words 5 letters long..... Good Luck!!

```
10 HIMEM#97FF:DIMB$(500):PRINTCHR$(17):CLS:PLOT12,2,"=============="
30 PLOT12,4,"A N A G R A M":PLOT12,6,"==========  =="
35 REM (C) D J CHURCHWARD  2 OCT 1983
40 PLOT8,20,"Press bar to continue"
50 GETX$:IFX$=""THEN50
120 PRINTCHR$(17)
129 REM INPUT SECTION +++++++++++++++++
130 CLS:PRINT:PRINT:K=1:INPUT"TYPE IN SOURCE WORD ";TT$
140 PRINT:INPUT"TYPE IN NUMBER OF CHARACTERS IN OBJECT WORD ";NU
145 PRINT:PRINT"TO TERMINATE THE INPUT TYPE IN 9.":PRINT:PRINT
150 PRINT:PRINT"TYPE IN WORD No ";K;:INPUTZ$:IFZ$="9"THEN290
160 IFLEN(Z$)<NUTHENPRINT"WORD TOO SHORT":GOTO150
170 IFLEN(Z$)>NUTHENPRINT"WORD TOO LONG":GOTO150
180 R$="":T$=TT$
190 FORI=1TONU:Q$=MID$(Z$,I,1)
200 FORJ=1TOLEN(T$):P$=MID$(T$,J,1)
210 IFP$=" "THEN250
220 IFP$<>Q$THEN250
230 T$=LEFT$(T$,J-1)+" "+MID$(T$,J+1,LEN(T$)-J)
240 R$=R$+P$:J=LEN(T$)
250 NEXTJ
260 NEXTI
270 IFR$=Z$THENB$(K)=Z$:K=K+1
280 GOTO150
289 REM SORTING LIST ++++++++++++++++++
290 PRINTCHR$(17):CLS
300 PLOT15,8,"SORTING":PLOT13,14,"Please wait"
310 FORI=1TOK-1
320 IFB$(I)<=B$(I+1)THEN420
390 Y$=B$(I+1):B$(I+1)=B$(I):B$(I)=Y$
400 IFI=1THEN420
410 I=I-1:GOTO320
420 NEXTI
430 CLS:PLOT12,10,"ARRAY SORTED":PLOT8,20,"Press bar to continue":PING
440 GETX$:IFX$=""THEN440
449 REM PRINT OUT LIST +++++++++++++++
450 I=1:FORL=1TOK
460 I$=STR$(I):I$=RIGHT$(I$,LEN(I$)-1)
480 LPRINTI$,B$(L):I=I+1
490 NEXTL
500 CLS:LPRINT"END OF LIST":PRINTCHR$(17):END
510 END
```

CHOOSING A HOME MICRO

WARNING

Choosing a home micro can be a daunting task to the newcomer, and with an ever increasing number of micros emerging on the market, even up-grading, say, from a ZX81 can be a risky and expensive exercise if the wrong decision is made. It is important to look at the real facts and specifications, and check exactly what you get for your money before choosing your micro-computer system.

THE PITFALLS

"DON'T LET THE ADD ONS ADD UP"

A number of large companies are offering packages that seem to be good value and low cost.
These offers usually have a hidden sting inasmuch as the essential accessories such as connection leads, peripherals and software often carry very high cost premiums.
e.g. software for low cost hardware usually costs between £29 and £49 for a ROM cartridge!!

CHECK THE QUALITY OF THE PRODUCT.

Raw materials are now an area where corners can be cut, and shoddy workmanship during 'building' can effect the 'up-time' of your unit.
Areas to watch out for are unreliable edge connectors, corrosion and poor quality P.C.B.s. Low quality components and bad design will seriously effect the reliability of the end product, and can lead to false economy.

DON'T BUY A GAMES MACHINE

Unless you want just games and nothing else! With a games computer you are limited.
Some computers, however, have the advantage of both games facility plus the whole world of computing to explore, as your interest and skills develop. A real computer system will allow you to expand your knowledge of the Hi-Technology world, and help earn its keep with its added uses in the field of education, communication and home business use.

SOFTWARE

Make sure the system you choose has a growing library of support software, to enable you to realize the full potential of your machine.

KEY POINTS TO LOOK FOR

● High Resolution Colour

In general most home computers have a poor graphics resolution (or detail). Check on the vertical and horizontal resolution in graphic mode and multiply the two numbers together. If the result is less than 35,000, then the graphics can hardly be considered high resolution.
Without high resolution graphics displays such as those used in games tend to be "Chunky" in appearance.

● High Quality Sound

Some computers claim to provide a sound channel when in reality all that can be found inside the computer is a small buzzer controlled by electronic pulses. At the very least a sound facility should provide more than one channel and a raise channel as well (for gun shot effects in games for example). The best systems also provide envelope control of the sound channels to produce very sophisticated effects: very important for generating music. Also look for the ability to connect to external amplifiers.

● Keyboard

For accurate entry of programs and data into a computer it is important that the keyboard has a good tactile feel in operation. Coupled with acoustic feedback the user is fully aware when the computer has accepted his/her actions. Also of importance in a keyboard is layout. A standard computer keyboard layout will familiarise the user with the vast majority of computers used in the world of business and professional applications: very important if the purpose of purchasing a computer is educational.

● RAM

One of the most important features of a computer is the amount of RAM, or memory, included. In general the more powerful and exciting a computer program is the more RAM it requires. But take care, all computers are advertised quoting the total RAM used in the system. Computers use up a great deal of their own RAM for storing essential data and particularly in supporting the graphics display and the CPU.
If it is less than 32K think again, is it enough?

● Computer Language

It is too dificult to program a computer in its own binary language so high level languages are used, the most popular being BASIC. However, there are a number of BASICs, some being very different from the rest.
A de facto standard in the computer industry is Microsoft BASIC.
Learn this one and you will be able to program in the majority of computer BASICs; such an important point if a home computer is to be used to educate your children to face the technology of the future.

● Expansion

As your interest and knowledge of computing grows, you will need a computer system that will grow with you; able to accommodate Printers, Disk-drives, Joysticks, Communications Modem, and Colour Monitor, as well as produce HI-FI sound effects.

Choosing the right system carefully will save you from throwing your money away. Check full specification, plus peripherals and software prices, before you buy. Preferably choose a Real computer system that can expand to meet your needs.

● Software

The computer you choose should have a growing selection of utility software to make the most of its capability.
Remember, computing is here to stay. You can't learn to compute on a toy, or a device which does not behave like a real computer.
In short, look out for a computer which offers all the points above, and you will be sure of getting the best value for money.

To find out which company offers you the right choice, with:-

- Good value, high specification, quality micros.
- A quality, 4 colour, plain paper printer/ plotter.
- Communications Modem.
- Micro Disk Drives.
- Comprehensive and growing range of software

TURNOVER... →

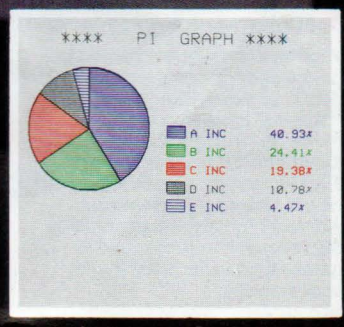
The Growing System

ORIC 3" MICRO FLOPPY DISK DRIVE

Coming soon the incredible new 3" Oric Micro Drives. Small size, Compact, High precision disks with storage capabilities from 100K Bytes to in excess of 1 Megabyte unformatted. With their own built-in power supply, these easy to use units will add big system capability to your home micro.

ORIC MCP 40 COLOUR PRINTER/PLOTTER

The Oric Colour Printer is quality engineered to provide 4 colour hard copy on plain paper, with superb graphics and text capability, printing either 40 columns or 80 columns. It prints in red, green, black and blue, onto a 4½" width standard paper roll. With a print speed of 12 characters a second, the MCP 40 comes with its own power supply and all necessary leads to connect straight into your Oric or to any standard Centronics interface.



This superb printer represents excellent value at just £169.95 including VAT.

ORIC PRODUCTS INTERNATIONAL LTD. COWORTH PARK, LONDON ROAD, ASCOT, BERKS.

The right choice for real computing

ORIC-1

Before making your final choice, check any other home micro in the same price bracket, against the incredible specification of the ORIC-1.

Quality of build and materials		Real computer keyboard layout and moving keys	
Superb styling / Full colour display		High Resolution colour graphics 240 x 200 pixels	
Choice of 16K or 48K RAM		Real computer language programming – Basic / Forth	
Latest design technology and circuitry		Teletext/Viewdata compatible graphics (28 rows x 40 characters)	
Real sound – 8 octaves plus Hi-Fi output		Cassette Port & R.G.B. output.	
Centronics printer interface		Fully supported and growing software library	
Colour printer / Disk Drives		A fully expandable system for home, education & small business use	
Communications Modem		Full range of peripherals to support your system...	

ORIC-1 Setting todays standard in Quality and Price.

ORIC-1 48K £139.95 inc.VAT **ORIC-1 16K £99.95 inc.VAT**

All ORIC computers purchased before 31st December 1983 come with a **£40** voucher off the M.R.P. of the MCP 40 Colour Printer.

MCP 40 COLOUR PRINTER £169.95.
OFFER PRICE £129.95

TANSOFT ORIC Software

NEWS FLASH
LATEST RELEASE
THE HOBBIT

The fast growing success of ORIC-1 means that an incredible number of software titles are becoming available for your Oric. With many well known titles from independent software houses, plus exclusive ORIC SOFTWARE from TANSOFT, you can now drive your Oric towards its full potential.
Below is a small selection from Tansoft's range, all of which offer superb value.

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FORTH, ORIC MON.

COMPUTER GAMES
ZODIAC, HOUSE OF DEATH, ORIC MUNCH, SUPER BREAKOUT, ULTIMA ZONE, DEFENCE FORCE.

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GERMAN, SPANISH, ITALIAN, FRENCH.

GENERAL INTEREST
ORIC CHESS, MULTIGAMES 1, MULTIGAMES 2, ORIC CAD, THE NOWOTNIK PUZZLE.

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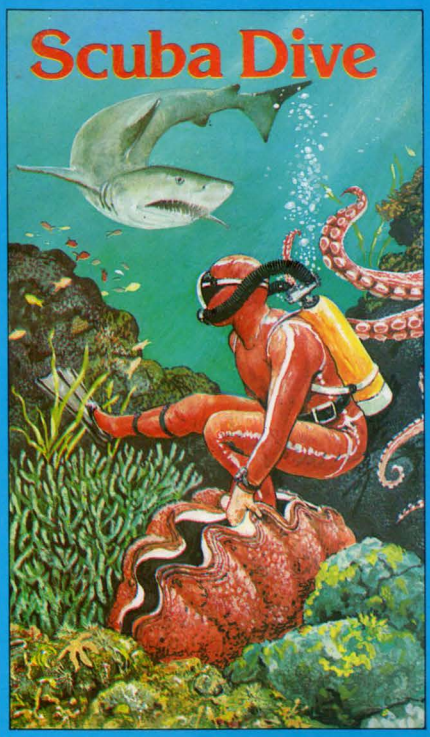
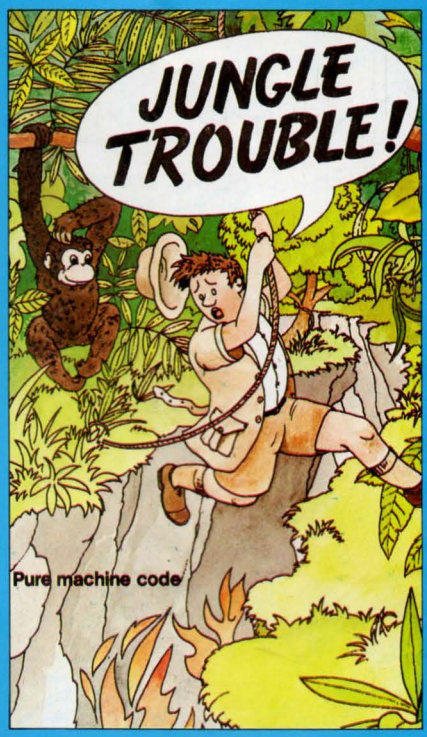


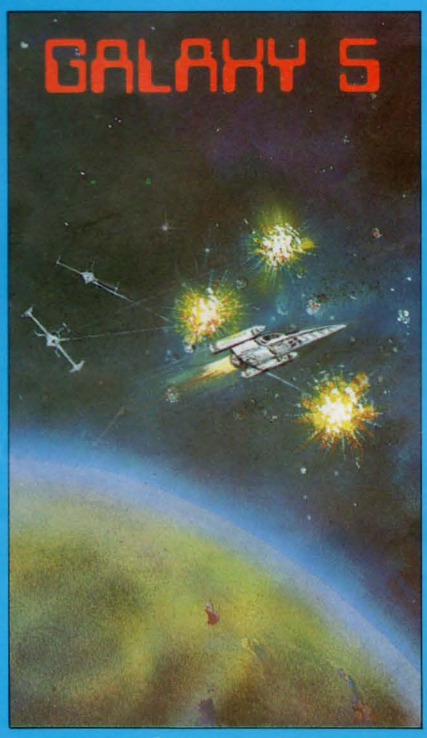
Spectrum 48k
Oric 16-48k
Commodore 64

Spectrum 16-48k
Oric 16-48k
Commodore 64, Atari



Spectrum 16-48k

Oric 48k



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DRAGONS ON ORIC

John W.M. Morgan

A **"Dragon String"** is a string of 0's and I's put together in a particular way. In a moment you can find out how, but let's suppose this particular Dragon String is 1101100.

With this as your guide you now set off on a walk. 'I' means 'turn left', '0' means 'turn right'. By the end of the process you have walked a **"Dragon Curve":**

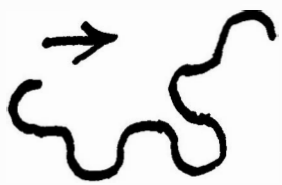
This one is only a baby dragon - more like a worm, really. Mathematically, it is a "dragon curve of order 3". Let's see how to move up to the next order:

(a) Write out the existing Dragon String;
(b) Write '1'
(c) Write out your original Dragon String, but with its middle digit altered.

So the Order 4 Dragon String is 1101100-1-1100100 (the dashes are put in only to show the construction). Treat the Order 4 String in the same way to get Order 5, and so on. The Order 1 String is simply '1'

Each Dragon Curve looks like a decorated version of its predessor.

eg. Order 4:



The following program will compute Dragon Strings of order 2-8, and then draw out the appropriate (single) Dragon Curves. Note how each tries to fill all the space available without ever tangling with itself.

The piece de resistance is the Dragon Quartet - four dragons joined (almost) at their tails and writhing skilfully past each other. Orders 7 and 8 are particularly spectacular.

Notes on the Program

30-130 allows choice of Single dragon (SQ$ = 'S') or Quartet (SQ$ = 'Q'), and or order (0) 2-8.

200-400 creates the Dragon String (D$) of order O, then prints it on the screen.

500-590 selects suitable scale (S), starting point (X,Y) and bearing (B:0 for North, 1 for East, etc). (530-550 for Quartet, 560-590 for Single).

700-780 turns D$ into a series of values V(N).

800-960 calculates X1,Y1,X2,Y2 for draw command (930), and new bearing (B). 860, 870 give abosulte values; 880-920 give signs.

970-1030 send back to 840 to draw 2nd, 3rd, 4th dragons (if quartet required), or send on to conclusion.

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DRAGON CURVES

```
5 REM "DRAGONS"
20 REM JOHN W.M. MORGAN 1983
30 REM 30-130 CHOICES
40 CLS:PRINT:PRINT:PRINT
50 PRINT "   Single Dragon curve (Key 'S')":PRINT
60 PRINT "   or Quartet (Key 'Q') ?"
70 GET SQ$
80 IF SQ$="S" THEN GOTO 110
90 IF SQ$="Q" THEN QI = 30 :GOTO 110
100 GOTO 70
110 PRINT:PRINT:PRINT:PRINT"   Order of curve (2-8)?"
120 GET O$:O=INT(VAL(O$))
130 IF O<2 OR O>8 THEN GOTO 120
200 REM 200-320 CREATE DRAGON STRING
240 D$="1":N=1:L=1
250 L$=LEFT$(D$,(L-1)/2)
260 M$=MID$(D$,(L+1)/2,1)
270 IF M$="0" THEN M$="1" ELSE M$="0"
280 R$=RIGHT$(D$,(L-1)/2)
290 D$=D$+"1"+L$+M$+R$
300 L=LEN(D$)
310 N=N+1:IF N=O THEN GOTO 370
320 GOTO 250
350 REM 350-400 PRINT STRING
370 PRINT:PRINT:PRINT "Order "O SPC(19) "Length ";L
380 PRINT:PRINT D$
390 PRINT:PRINT "To continue,press any key"
400 GET K$:GOTO 560-QI
500 REM GRAPHICS PARAMETERS
530 IF O<5 THEN S=5:GOTO 550
540 S=9-O
550 X=121+S:Y=100:B=1:GOTO 700
560 B=INT(O/2+1):IF B>3 THEN B=B-4
570 S=INT((15-O)/3)
580 X=50
590 Y=80
700 REM VALUES OF STRING ELEMENTS
740 PRINT:IF O>5 THEN PRINT "     WAIT FOR IT!"
750 DIM V(255)
760 FOR M=1 TO L
770 V(M)=VAL(MID$(D$,M,1))
780 NEXT M
800 REM GRAPHICS
810 HIRES
820 IF QI=0 THEN PRINT:PRINT "DRAGON OF ORDER ";O
830 IF QI=30 THEN PRINT:PRINT "FOUR ORDER ";O;"DRAGONS"
840 CURSET X,Y,1
850 FOR N=1 TO L
860 IF B=0 OR B=2 THEN X1=1:X2=S:Y1=S:Y2=1
870 IF B=1 OR B=3 THEN X1=S:X2=1:Y1=1:Y2=S
880 PS=B-V(N)+2:IF PS>3 THEN PS=PS-4
890 GOTO 900+10*PS
900 X1=-X1:X2=-X2:GOTO 930
910 X1=-X1:X2=-X2
920 Y1=-Y1:Y2=-Y2
930 DRAW X1,Y1,1:DRAW X2,Y2,1
940 B=B+1-2*V(N):IF B>3 THEN B=0
950 IF B<0 THEN B=3
960 NEXT N
970 QI=QI-7:IF QI<3 THEN GOTO 1040
980 WAIT 100
990 IF B=0 THEN B=3:X=119-S:GOTO 840
1000 IF B=2 THEN B=0:X=120:Y=99-S:GOTO 840
1010 IF B=3 THEN B=2:Y=101+S:GOTO 840
1040 PRINT "Key 'R' for Rerun, any other for":PRINT "finish"
1050 GET R$:IF R$<>"R" THEN TEXT:END
1060 TEXT:RUN
```

The Doppel-Ganger Rides Again! or rather he doesn't....

Hi there Folks, Doppel-Ganger here, with my first article of the new year..

Have you seen the badge on the latest Orics? the tasteful White, Light grey and Dark grey toning has been replaced with a Red, Green and Blue colour scheme.. I prefer the Former myself.

Have you also noticed that the keyboard of the new IBM PCjr has a remarkable resemblance to an Oric?, the keys look very similar to Oric keys, but a little larger..

Also I read that sometime around the middle of January the Oric 3 Disc drives are to be released. I wonder.....

Still, if you can transfer programs from tape to disc it should be really neat, imagine, not having to wait around five to ten minutes for something like "Zargon's Revenge" to load..!
As far as I'm concerned you can stick Clive's Cheap-tack Floppy tapes up his I.Q. I'd rather pay the extra and have Good Quality REAL Disc storage..

The chief competitor to our very own Hell's Temple is, probably, The Hobbit (Spit spit)
Now it is widely available, some of you may be thinking or buying it, my advice is, don't!

Okay, so I bought it, out of curiosity, after all, if you know about something you can criticise it better.

For your Fourteen Ninety-five, you get a little Manual, a Paperback Book, and a very large box containing a lot of plastic and a cassette, the Cassette doesn't even have the added protection of an extra plastic case...

Why a Book? Surely Anyone who is into Tolkien will already have The Hobbit, and I should think that people who just bought it as an Adventure program and not as a version of Tolkien's book (I never could stand all this Tolkienesque nonsence) would prefer to save money and, say, borrow the book from their friendly local Library, or maybe even a friend?

The book helps, but in the words of Paul Daniels, Not a Lot.

One of the things that people talk about when they mention Hobbit are the graphics.
Hey What? (Pause for manical Laugh) the odd picture here and there, no attempt has been made to adjust the fact that you cannot Plot in the two left Character positions of the Hires screen whilst using Colour, so some of the picture is missing.

Colour did I say, Two, Foreground, and Background, AND some pictures take an age to ink in the Foreground.

The little manual raves on at length about features called "Animaction" and "Animtalk"

Animaction mainly consists of Gandalf and Thorin trolling around, plus the odd Gobling, Wood elf, a few Wargs, (Pardon?) and the Dragon.

Animtalk is mostly Gandalf or Thorin telling you to Hurry Up, and Elrond saying 'Hello'.

Hey Wow! Far Out! Oh I forgot to mention a Butler who keeps locking you up but will give you the key if you ask him, Gollum, the Bard, who you have to cajole into going in the direction you want hime to to kill the Dragon (If you're lucky) Also the program (which loads in four Parts, but if you're expecting a Title screen like the Spectrum, or even Large Friendly Letters constructed from Teletext Graphics as a title page, Forget It, all you get is "Please wait while THE HOBBIT loads" in plain old Black on a White screen. Oh God! Is that the best they could do?) the program is riddled with Bugs, Some of the bugs not fatal, like when it draws a windowless Goblin's Dungeon, when you enter the Treeless Opening after going East from the Goblin's Gate, and then tells you you are in the treeless opening, is just a niggle, caused by the L-O-N-G!! time it takes to draw the aforesaid picture, when you get Stung to Death in safe places, like the Hobbit Hole, or the Troll's Clearing, etc, is also a niggle, but when the game Crashes, just locks up, at an important stage in the proceedings, that's Ridiculous!! And very Annoying!!!

It is Clear to me that The Hobbit is a masterpiece in the art of Hyping, it's been Hyped to the Limit, it's not what it's made out to be, not at all.

I suspect that the Authors (Yes, Four people, Too Many Cooks...) of Hobbit intended it to be a Text Only Adventure, but found themselves left with so much memory spare and said "What shall we do with this spare memory, I know, let's stick a few pictures in!"

If anyone tells you that Hobbit is the Best Adventure around, tell them they're just Tolkien Rubbish!

But if you are Into the Tolkienesque world of Middle-Earth, with Dwarves, Trolls and Orcs (Goblins to you), I suggest you save yourself a Fiver, and buy one of the Superb 'Middle Earth' Trilogy from Level Nine Computing.

I purchased the three, Colossal Adventure, Adventure Quest, and Dungeon Adventure, Dungeon had a fault and had to go back, but the two I have played are Great!

There are something like 200 locations in each one, some of the locations and messages taking up most of the Oric screen, there are a few niggles, like there's no Auto-run, and after using RESTORE to load in your last position you have to type GOTO 500 before you can proceed.

The Adventures are mostly Machine Code, with just a little Basic header for Game Save and Game Restore, and use some method of Tokenisation for storing most common words, and letter grouping, to allow the Extremely tight Packing.

The Text descriptions are Beautifully Explicit, with descriptions like that Who Needs graphics anyway?

These are the best Text Adventures that I have ever played, and although I tend to dislike the "Middle Earth" scenarios, I recommend these to Anyone seeking a good Old Fashioned Adventure.

By the way, Colossal is the Original Crowther and Woods adventure, but with 70 extra locations and an object moved, Quest begins in the same locations, many years after, with the grate concreted up, and you travel across deserts, past Pyramids and up mountains etc in search of stones you need to defeat Agaliarept, and the Dungeon is set after the Quest, you start on a beach beside a Packing case, and go on to find a statue of an Octopus (Leading to a Terrible Joke!) a Siren, a Giant Bird and is supposed to be the hardest of the three.

I think Snowball, and the Lords of Time will be more to my liking though, it's a matter of taste..

It really is nice to see more decent Oric Software around though, recently I purchased Ocean's "Hunchback" program, probably the best arcade type game since Zorgan's Revenge, the Graphics knock spots off the graphics in the original Spectrum (spit spit) version, if you really like arcade types then that's a goodie.

But let the Buyer Beware! there is still a lot of Bovine Excreta being sold for the Oric, December's Golden Turkey award for my part goes to Superior Software's Lunar Mission, All Basic, simple Hires line drawings, and a Auto Repeat Delay turned into a feature. I've seen better programs in Magazines than this!

Runner Up was Artic Computing's Asteroids, Eeeuuurgh! Spaceships done by the DRAW command with a PATTERN meaning gaps in the walls of your ship, and phantom dots appearing as you rotate, and the ability to shoot through an asteroid, not to mention terrible spelling.....

My advice to people is to See before you Buy, If the shop assistants won't let you then take your money and your custom elsewhere.....

Well, to round off, a slightly belated call of 'Happy New Year to Oric Owners Everywhere'
Be Seeing You.

Doppel-Ganger

P.S. Let's all make this OUG's year and Not George Orwell's. OK? - Dop.

```
0 HIMEM#97FF
10 REM ORIC SHOW-OFF PROGRAM
20 REMARKABLY WRITTEN BY THE DOPPEL-GANGER
35 INK2:PAPER0
36 FORA=46080+(96*8)TO(46080+(96*8))+7:READB:POKEA,B:NEXT
37 DATA0,#10,#18,#1C,#2E,#1C,#18,#10
40 HIRES:POKE#26A,2
50 X=18:Y=80
60 REPEAT:X=X+1:Y=Y-1
70 CURSETX,Y,3' SET PLOTURSOR POSITION
80 DRAW0,-60,1:DRAW60,0,1:DRAW0,60,1:DRAW-60,0,1:CURMOV15,-15,3:DRAW0,-30,1
85 DRAW30,0,1:DRAW0,30,1:DRAW-30,0,1 ' "O" IN OUG
90 CURSETX,Y,3:CURMOV70,0,3
100 DRAW0,-60,1:DRAW20,0,1:DRAW0,40,1:DRAW20,0,1:DRAW0,-40,1:DRAW20,0,1
101 DRAW0,60,1:DRAW-60,0,1 ' "U" IN OUG
110 CURSETX,Y,3:CURMOV140,0,3
120 DRAW0,-60,1:DRAW60,0,1:DRAW0,20,1:DRAW-50,0,1:DRAW0,30,1:DRAW30,0,1
125 DRAW0,-10,1
130 DRAW-10,0,1:DRAW0,-10,1:DRAW30,0,1:DRAW0,30,1:DRAW-60,0,1
131 REM DRAW 'G' IN OUG
140 UNTILX=23
150 T$="PROUDLY PRESENT...."
160 CURSET60,100,3
170 FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV8,0,3:NEXT
180 T$="THE COMPLETE ORIC SHOW-OFF"
190 CURSET20,120,3
200 FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV8,0,3:NEXT
210 T$="WRITTEN AND PRODUCED BY"
220 CURSET30,140,3
230 FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV8,0,3:NEXT
240 T$="The Doppel-Ganger.."
250 CURSET40,160,3
260 FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV8,0,3:NEXT
270 REPEAT:Z=Z+1
275 FORPP=7TO0STEP-1:FORIK=0TO7
290 IFPP=IKTHEN310
300 INKIK:PAPERPP
301 PT=(IK+1)*(PP+1)^(Z+1)
302 IFPT>65535THENPT=PT-65535:GOTO302
303 REMMUSIC2,IK,((PP*3/2)+1),0:SOUND1,PT,0:SOUND4,(PP*4)+3,0
304 REMPLAY3,1,INT(RND(1)*7)+1,1000
305 WAIT20
310 NEXTIK,PP
320 UNTILZ=2
330 INK0:PAPER7:EXPLODE
350 FORY=0TO199
360 CURSET0,Y,3:FILL1,1,16
370 NEXT
380 FORY=199TO0STEP-1
390 CURSET6,Y,3:FILL1,1,INT(RND(1)*7)+1
400 NEXT
410 T$="YOU CAN'T DO THAT ON A SPECTRUM!"
420 CURSET30,0,3:FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV6,0,3:NEXT
440 PRINT"Hi there Oric-eenies! Doppel-Ganger"
450 PRINT"Introducing this Oric Show-off Program";
460 PRINT"Sit back and feast your Eyes and Ears";
480 DATA"TUNE1"
490 DATAA,2,1,A,2,1,A,2,1,A,2,1,G,2,1,F,2,1,F,2,1,E,2,1,D,2,1,D,2,1,F,2,1,A,2,1
500 DATAD,3,1,D,3,1,D,3,1,D,3,1,C,3,1,A#,2,1,A#,2,1,A,2,1,G,2,1,G,2,1,A,2,1
505 DATAA#,2,1,A,2,1,A#,2,1,A,2,1,C,3,1,A#,2,1,A,2,1,A,2,1,G,2,1,F,2,1,F,2,1
510 DATAE,2,1,D,2,1,E,2,1,E,2,1,E,2,1,F,2,1,E,2,1,D,2,4,END,0,0
520 A$="TUNE1"::GOSUB60000
530 WAIT1000
540 HIRES:POKE#26A,34
550 CURSET0,0,3:FILL200,1,3:CURSET6,0,3:FILL200,1,20
```

SHOWING OFF

```
560 FORX=-110TO110:CURSET123,100,3:DRAWX,-99,2:NEXT
570 FORY=-99TO99:CURSET123,100,3:DRAW110,Y,2:NEXT
580 FORX=110TO-110STEP-1:CURSET123,100,3:DRAWX,99,2:NEXT
590 FORY=99TO-99STEP-1:CURSET123,100,3:DRAW-110,Y,2:NEXT
600 PRINT:PRINTCHR$(132)CHR$(151)CHR$(140)"    TOTAL PERSPECTIVE VORTEX"
610 WAIT1000
615 ST=0:REPEAT:ST=ST+.5
620 HIRES:POKE#26A,2
630 CURSET0,0,3:FILL200,1,1:CURSET6,0,3:FILL200,1,19
650 FORX=12TO233STEPST:CURSETX,199,3:DRAW0,-INT(RND(1)*200),2:NEXT
660 FORY=199TO0STEP-ST:CURSET233,Y,3:DRAW-INT(RND(1)*222),0,2:NEXT
670 FORX=233TO12STEP-ST:CURSETX,0,3:DRAW0,INT(RND(1)*200),2:NEXT
680 FORY=0TO199STEPST:CURSET12,Y,3:DRAWINT(RND(1)*222),0,2:NEXT
683 PRINT:PRINTCHR$(140)"           NOT BAD EH?"
690 WAIT1000
695 UNTILST=2
699 WAIT1000
700 Z=0:REPEAT:Z=Z+1
705 HIRES:PAPER0:POKE#26A,34
706 PRINT:PRINTCHR$(129)CHR$(151)CHR$(140)"THIS IS COLOUR STRING ART.NICE EH?"
710 FORY=0TO199:CURSET6,Y,3:FILL1,1,INT(RND(1)*7)+1:NEXT
730 X=INT(RND(1)*215)+12:Y=INT(RND(1)*199)+1:W=INT(RND(1)*215)+12
740 Q=INT(RND(1)*199)+1
750 A=10-INT(RND(1)*20):B=10-INT(RND(1)*20)
760 C=10-INT(RND(1)*20):D=10-INT(RND(1)*20)
770 FORK=1TO150
780 CURSETW,Q,3:DRAWX-PEEK(537),Y-PEEK(538),1
790 IFX+A>227ORX+A<12THENA=-A
800 IFY+B>199ORY+B<0THENB=-B
810 IFW+C>227ORW+C<12THENC=-C
820 IFQ+D>199ORQ+D<12THEND=-D
830 X=X+A:Y=Y+B:W=W+C:Q=Q+D:NEXT
840 WAIT1000:UNTILZ=3
850 WAIT1000
860 HIRES:POKE#26A,2:INK0:FORY=0TO199:CURSET6,Y,3:FILL1,1,INT(RND(1)*7)+1:NEXT
870 CURSET120,100,3:FORY=95TO5STEP-5:CIRCLEY,1:PATTERNINT(RND(1)*128)+128:NEXT
880 FORX=1TO100:CURSET120,100,3:DRAW113-INT(RND(1)*226),99-INT(RND(1)*199),1
890 SOUND1,X*10,0:PLAY1,0,1,100:WAIT5:NEXT
900 WAIT1000
910 Z=0:REPEAT:Z=Z+1
920 HIRES:POKE#26A,2:FORY=0TO199:CURSET6,Y,3:FILL1,1,INT(RND(1)*7)+1:NEXT
925 IFZ=3THENPAPERINT(RND(1)*8)
930 FORA=0TO85STEP2
940 X=60+96*SIN(A*0.017453292)
950 Y=47+96*COS(A*0.017453292)
960 I=198-Y:J=X-32:Q=226-X:W=199-Y:E=226-I:R=199-J
965 IFZ=2THENPATTERNINT(RND(1)*128)+128
970 CURSETX,Y,1:DRAWI-PEEK(537),J-PEEK(538),1:DRAWQ-PEEK(537),W-PEEK(538),1
980 DRAWE-PEEK(537),R-PEEK(538),1:DRAWX-PEEK(537),Y-PEEK(538),1
981 SOUND4,A/2,0:PLAY0,1,Z+1,100+ABS(900*(Z=1))
990 NEXT:WAIT1000:PLAY0,0,0,0
1000 UNTILZ=3
1020 HIRES:POKE#26A,2:FORX=0TO199:CURSET6,X,3:FILL1,1,INT(RND(1)*7)+1:NEXT
1030 A=INT(RND(1)*226)+13:B=INT(RND(1)*200):C=INT(RND(1)*226)+13
1040 D=INT(RND(1)*200):E=INT(RND(1)*226)+13:F=INT(RND(1)*200)
1050 U=10-INT(RND(1)*20):V=10-INT(RND(1)*20):W=10-INT(RND(1)*20)
1060 X=10-INT(RND(1)*20):Y=10-INT(RND(1)*20):Z=10-INT(RND(1)*20)
1070 FORK=1TO100
1080 CURSETA,B,1:DRAWC-PEEK(537),D-PEEK(538),1:DRAWE-PEEK(537),F-PEEK(538),1
1090 DRAWA-PEEK(537),B-PEEK(538),1
1100 IFA+U<12ORA+U>227THENU=-U
1101 IFB+V>199ORB+V<0THENV=-V
1102 IFC+W>227ORC+W<12THENW=-W
1103 IFD+X>199ORD+X<0THENX=-X
1104 IFE+Y>227ORE+Y<12THENY=-Y
1105 IFF+Z<00RF+Z>199THENZ=-Z
```

```
1108 A=A+U:B=B+V:C=C+W:D=D+X:E=E+Y:F=F+Z
1109 PATTERNINT(RND(1)*255)+1:NEXT
1110 WAIT1000
1120 HIRES:POKE#26A,2:V=18:W=100
1121 PLAY1,1,0,0
1125 PRINTCHR$(131)"HERE ORIC DISPLAYS HIS HIGHEST"
1126 PRINTCHR$(131)"COLOUR RESOLUTION......"
1130 FORZ=1TO200
1140 I=INT(RND(1)*7)+17
1150 X=INT(RND(1)*17)+1
1160 Y=INT(RND(1)*99)
1170 CURSET6+(V-X)*6,W-Y,3:FILL1,1,16
1175 CURSET(V-X)*6,W-Y,3:FILL1,1,I
1180 CURSET6+(V+X)*6,W-Y,3:FILL1,1,16
1185 CURSET(V+X)*6,W-Y,3:FILL1,1,I
1190 CURSET6+(V-X)*6,W+Y,3:FILL1,1,16
1195 CURSET(V-X)*6,W+Y,3:FILL1,1,I
2000 CURSET6+(V+X)*6,W+Y,3:FILL1,1,16
2005 CURSET(V+X)*6,W+Y,3:FILL1,1,I
2006 FR=INT(RND(1)*4096)+1
2007 SOUND1,FR,10:SOUND4,FR/10,5
2010 NEXT
2020 WAIT1000
2040 FORZ=1TO100:CURSET108,100,3
2050 DRAW108-INT(RND(1)*216),99-INT(RND(1)*199),1
2060 SOUND1,X*5,10:SOUND4,X/2,7:NEXT:PLAY0,0,0,0
2070 WAIT1000
2080 TEXT:CLS:POKE48035,0:POKE#26A,2
2090 INK0:PAPER2
2100 PRINT"    Hi there Folks!"
2110 PRINT"This is"CHR$(140)"Your Oric"CHR$(136)"speaking so"
2120 PRINT"stop whatever you're doing and "
2125 PRINT"      "CHR$(4)CHR$(27)"N"CHR$(27)"G"CHR$(27)"QPAY ATTENTION! ";
2130 PRINTCHR$(27)"R"CHR$(4):ZAP
2135 PRINT
2140 PRINT"You are watching the Complete Oric"
2150 PRINT"Showoff program written by....."
2160 PRINT"     "CHR$(4)CHR$(27)"N"CHR$(27)"G"CHR$(27)"QThe Doppel-Ganger ";
2170 PRINTCHR$(27)"R"CHR$(4)
2180 PRINT:PRINT"The story of the Oric is one of"
2190 PRINT"Serial Attributes......"
2200 DATA"STREET"
2210 DATAD,3,16,C,3,10.5,A#,2,10.5,C,3,11,G,2,11,A#,2,4,END,0,0
2220 A$="STREET":GOSUB60000
2230 WAIT50:PRINT"Not that kind of Serial Dum-dum!"
2240 PRINT"Serial attributes allow you to do "
2250 PRINT"Things like this:-":WAIT500:INK2:PAPER0
2260 PRINT"Notice? Most of the text changed "
2270 PRINT"Colour and Background, but not that"
2280 PRINT"which had Attributes in it."
2290 PRINT"The serial attributes are used by the"
2300 PRINT"Oric in order to be compatible with"
2310 PRINT"Prestel, in fact we can even use the"
2320 PRINT"Prestel,Ceefax, Oric,sorry Oracle"
2330 PRINT"Chunky graphics on Oric, like this."
2340 WAIT2000
2350 LORES1:FORX=1TO100+INT(RND(1)*100)
2360 SQ=INT(RND(1)*63)+1:SQ=SQ+32
2370 R=RND(1):IFR>.5ANDR<.85THENSQ=INT(RND(1)*7)+1
2380 IFR>.85THENSQ=INT(RND(1)*7)+17
2390 Q=INT(RND(1)*39):W=INT(RND(1)*24)
2400 PLOTQ,W,SQ:NEXT
2410 WAIT1000:TEXT:CLS
2420 PRINT"See what I mean? But we're not going"
2421 PRINT"To use Chunky Graphics, we're going "
2422 PRINT"Back to the Old Hi-res and maybe some"
```

```
2423 PRINT"User Defined Characters...."
2425 WAIT1000
2430 HIRES:POKE#26A,2
2435 PLAY0,1,0,0
2440 FORX=32TO63:CURSET0,0,0:FILL200,40,X:WAIT50:SOUND4,X-32,7:NEXT
2450 HIRES:POKE#26A,2:FORY=199TO0STEP-1
2460 CURSET13,Y,0:FILL1,38,Y/6.41935484+32:SOUND4,Y/4,7:NEXT
2470 Z=0:REPEAT:Z=Z+1:PLAY1,0,0,0
2480 FORY=0TO199:CURSET6,Y,3:FILL1,1,INT(RND(1)*7)+1:SOUND1,Y,10:NEXT
2490 UNTILZ=2:PLAY0,0,0,0:WAIT1000
2500 HIRES:POKE#26A,2
2510 PRINT"I am laying down Colour..."
2520 FORN=0TO198STEP2:FORZ=0TO228STEP12:CURSETZ,N,3:FILL1,1,RND(1)*7+1
2530 CURSETZ+6,N+1,3:FILL1,1,RND(1)*7+1:NEXTZ,N:ZAP
2545 CURSET120,100,3
2550 FORX=95 TO5STEP-5:PATTERNINT(RND(1)*127)+127:CIRCLEX,1:NEXT
2560 WAIT1000
2565 PATTERN255:PLAY0,1,0,0
2570 FORX=1TO93:CURSET120,100,0
2580 DRAWINT(RND(1)*240)-PEEK(537),INT(RND(1)*200)-PEEK(538),1:
2590 SOUND4,X/3,6:NEXT
2595 WAIT1000
2600 HIRES:POKE#26A,2:FORX=0TO199:CURSET6,0,3:FILL1,1,INT(RND(1)*7)+1
2605 SOUND1,X,5:NEXT:Q=0:REPEAT:Q=Q+1
2610 Y=INT(RND(1)*200):X=INT(RND(1)*48)+13:Z=INT(RND(1)*3)-4
2620 FORR=YTOXSTEPZ
2630 CURSETR,R,2:DRAW0,199-2*R,2
2640 DRAW226-2*R,0,2
2650 DRAW0,-199+2*R,2
2660 DRAW-226+2*R,0,2
2665 SOUND1,R,10:SOUND4,R,0:PLAY1,1,1,100
2670 NEXT
2680 UNTILQ=15
2690 WAIT1000
2700 HIRES:POKE#26A,2:FORX=0TO199:CURSET6,X,3:FILL1,1,INT(RND(1)*7)+1:NEXT
2720 X1=INT(RND(1)*226)+13
2730 Y1=INT(RND(1)*200)
2740 FORX=13TO239
2750 CURSETX1,Y1,2:DRAWX-X1,-Y1,2
2760 CURSETX1,Y1,2:DRAWX-X1,199-Y1,2
2761 SOUND4,X/3,0:SOUND1,X,9:PLAY1,1,1,100
2770 NEXTX
2780 FORY=0TO199
2790 CURSETX1,Y1,2:DRAW-X1+13,Y-Y1,2
2791 SOUND4,Y/4,0:SOUND1,Y*2,9:PLAY1,1,1,100
2792 CURSETX1,Y1,2:DRAW239-X1,Y-Y1,2
2794 NEXTY
2795 PLAY0,0,0,0
2796 WAIT1000
2799 PLAY1,0,0,0
2800 HIRES:POKE#26A,2:FORX=0TO199:CURSET6,X,3:FILL1,1,INT(RND(1)*7)+1
2810 SOUND1,X,5:NEXT:PLAY0,0,0,0
2820 N=7:L=10:K=2*PI/N:R=0
2830 X=220:Y=175:CURSETX,Y,1
2840 Z=0:REPEAT:Z=Z+1
2845 FORI=1TON
2850 :X=X+L*SIN(R):Y=Y+L*COS(R)
2860 :IFX<12THENX=12
2870 :IFX>227THENX=227
2880 :IFY<0THENY=0
2890 :IFY>199THENY=199
2891 IFX=LXANDY=LYTHEN2901
2900 :DRAWX-PEEK(537),Y-PEEK(538),1
2901 LX=X:LY=Y
2910 :R=R+K:K=K+.1
2914 SOUND1,Z*N,0:PLAY1,0,1,1000
```

```
2915 NEXTI
2920 UNTILZ=100
2930 WAIT1000
2940 HIRES:POKE#26A,2:FORX=0TO199:CURSET6,X,3:FILL1,1,INT(RND(1)*7)+1:NEXT
2945 PING:Z=0:REPEAT:Z=Z+1
2950 X=120:Y=100
2960 FORR=1TO90
2970 CURSETX,Y,3:CIRCLER,2:NEXT
2980 FORR=1TO90:AX=X:AY=Y-R
2990 CURSETAX,AY,2:DRAW-R,R,2:DRAWR,R,2:DRAWR,-R,2:DRAW-R,-R,2
2995 PATTERNINT(RND(1)*127)+127
2996 SOUND1,X,0:SOUND4,X/PI,0:PLAY1,1,1,100
3000 NEXTR:PATTERN255
3010 UNTILZ=5:WAIT1000
45000 HIRES:POKE#26A,2
45010 FORX=0TO159:CURSET0,X,3:FILL1,1,20:CURSET6,X,3:FILL1,1,0:NEXT
45020 CURSET173,19,3:FILL22,1,3
45030 FORX=160TO199:CURSET0,X,3:FILL1,1,19:CURSET6,X,3:FILL1,1,0:NEXT
45040 CURSET59,109,3:FILL50,24,63
45050 CURSET59,99,3:FILL10,2,63:CURSET69,106,3:FILL3,2,63
45060 CURSET179,106,3:FILL3,2,63:CURSET191,99,3:FILL10,2,63
45070 T$="DISASTER AREA"
45080 CURSET87,100,3:FORX=1TOLEN(T$):CHARASC(MID$(T$,X,1)),0,1:CURMOV6,0,3:NEXT
45090 CURSET189,29,3:FORX=1TO10:CIRCLEX,1:NEXT
45100 PRINTCHR$(29)CHR$(30)CHR$(27)"S"CHR$(27)"@"
45110 PRINTCHR$(27)"S"CHR$(27)"@":PRINTCHR$(27)"S"CHR$(27)"@"CHR$(30)CHR$(9)CHR$(9);
45120 PRINTCHR$(9)CHR$(9)CHR$(129)"  A DISASTER AREA CONCERT ENDS"CHR$(29)
45140 DATA"END OF THE WORLD"
45150 DATAD,3,10.5,B,2,10.5,D,3,10.5,B,2,10.5,D,3,10.5,B,2,10.5
45160 DATAD,3,10.5,B,2,10.5,C#,3,.6,C#,3,1.5 ,D,3,2,R,0,1
45170 DATAC#,3,10.5,D,3,.5,D,3,.5,D,3,.5,D,3,.5,D,3,.5,R,0,1,B,2,10.5,C#,3,.5
45180 DATAC#,3,1.5,B,2,1.5,R,0,1
45190 DATAA,2,10.5,D,3,.5,D,3,.5,D,3,1.5,D,3,2,D,3,10.5,E,3,11
45200 DATAC#,3,1,A,2,2,R,0,1
45210 DATAD,3,.5,D,3,.5,B,2,.5,D,3,2,B,2,.5,C#,3,.5,C#,3,1.5,B,2,2,R,0,1
45220 DATAC#,3,10.5,A,2,10.5,C#,3,10.5,A,2,10.5,C#,3,10.5,A,2,10.5
45230 DATAC#,3,10.5,A,2,10.5,C#,3,.5,C#,3,1.5,D,3,2,R,0,1
45240 DATAB,2,10.5,C#,3,10.5,A,2,10.5,C#,3,10.5,A,2,10.5,C#,3,1.5,C#,3,1.5
45250 DATAC#,3,.5,C#,3,1.5,B,2,2,R,0,1
45260 DATAA,2,10.5,C#,3,1.5,A,2,10.5,C#,3,1.5,C#,3,.5,C#,3,.5,R,0,.5
45270 DATAC#,3,1.5,A,2,.5,C#,3,1.5,C#,3,.5,C#,3,.5,R,0,.5
45280 DATAB,2,.5,C#,3,.5,C#,3,.5,C#,3,.5,C#,3,.5,C#,3,1.5,C#,3,.5,D,3,.5
45290 DATAE,3,10.5,C#,3,11,A,2,2,DR,0,.5,DR,0,.5
45300 DATAR,0,1,C#,3,.5,D,3,.5,D,3,.5,D,3,.5,D,3,1.5,C#,3,.5,B,2,.5
45310 DATAC#,3,1.5,C#,3,.5,D,3,1.5,CY,0,1
45320 DATAR,0,1,D,3,.5,D,3,.5,D,3,.5,D,3,1.5,C#,3,.5,B,2,.5
45330 DATAC#,3,1.5,C#,3,.5,D,3,10.5,E,3,1.5,R,0,1
45340 DATAD,3,.5,D,3,.5,D,3,.5,D,3,1.5,C#,3,.5,B,2,.5
45350 DATAC#,3,1.5,C#,3,.5,D,3,10.5,DR,0,1
45360 DATAD,3,1,B,2,.5,C#,3,.5,D,3,1,B,2,.5,C#,3,.5,D,3,1,B,2,.5,C#,3,.5
45370 DATAD,3,1,D,3,1.5,END,0,0,"FINALE"
45380 DATAC#,3,1.5,A,2,.5,C#,3,1.5,C#,3,.5,C#,3,.5,DR,0,.5,DR,0,.5
45390 DATADR,0,.5,DR,0,.5,CY,0,.5,CY,0,.5,R,0,1
45400 DATAC#,3,1.5,A,2,.5,C#,3,1.5,C#,3,.5,C#,3,.5,DR,0,.5,DR,0,.5
45410 DATADR,0,.5,DR,0,.5,CY,0,.5,CY,0,.5,R,0,1
45420 DATAC#,3,1.5,A,2,.5,C#,3,1.5,C#,3,.5,C#,3,.5,DR,0,.5,DR,0,.5
45430 DATADR,0,.5,DR,0,.5,CY,0,.5,CY,0,.5,R,0,1
45440 DATAC#,3,1.5,A,2,.5,C#,3,1.5,C#,3,.5,C#,3,.5,DR,0,.5,DR,0,.5
45450 DATADR,0,.5,DR,0,.5,E,3,1
45470 FORX=1TO2
45500 A$="END OF THE WORLD":GOSUB60000
45501 NEXT:EXPLODE:PLAY0,7,3,750:WAIT100
45502 WAIT50:A$="FINALE":GOSUB60000
45505 SHOOT:PLAY0,1,3,750
45510 XP=35:Y=26::REPEAT
45520 CURSETXP,Y,3:FILLB,2,31:XP=XP+6:CURSETXP,Y,3:CHAR96,0,1
```

```
45525 PLAY1,0,0,0:FORFR=300TO400:SOUND1,FR,15:NEXT
45526 SHOOT
45530 FORFR=400TO300STEP-1:SOUND1,FR,15:NEXT
45535 CURSETXP-7,Y,3:FILL8,2,31
45536 EXPLODE
45540 UNTILXP>=175:CURSETXP,Y,3:FILL9,1,31
45550 EXPLODE:PLAY0,7,4,65535
45560 FORY=0TO79:CURSET6,Y,3:FILL1,1,1:NEXT
45565 CURSET189,29,3
45570 F=0:REPEAT:DRAW29*SIN(F),29*COS(F),1
45571 CURSET189,29,3:F=F+.05:UNTILF>2*PI
45572 FORDE=1TO100
45580 A=INT(RND(1)*26)+8:B=INT(RND(1)*60)+109:C=INT(RND(1)*31)+32
45590 CURSET(A*6),B,3:FILLINT(RND(1)*7)+1,1,C:NEXT
46010 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46020 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46030 DATAB,2,.5,D,3,.5,B,2,.5
46040 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46050 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46060 DATAB,2,.5,D,3,.5,B,2,.5
46070 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46080 DATAD,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3,D,3,.3
46090 DATAB,2,1,D,3,.5,B,2,.5,D,3,10.5,CY,0,8,END,0,0
50005 PRINT"     "CHR$(4)CHR$(27)"D"CHR$(27)"NANOTHER SHOWING FOLLOWS"CHR$(4)
50040 FORX=1TO1000
50050 CURSETINT(RND(1)*240),INT(RND(1)*200),1
50060 SOUND4,X,5
50070 WAIT5:NEXT
50075 WAIT100
50076 PLAY0,1,1,1000
50080 RUN
59999 END
60000 RETURN:RESTORE:REPEAT:READC$:UNTILC$=A$
60010 PLAY6,0,0,0
60020 REPEAT
60030 : READC$:IFC$="END"THEN61000
60040 : READO1,MT:O2=O1
60050 IFC$="C"THENNT=1
60051 IFC$="C#"THENNT=2
60052 IFC$="D"THENNT=3
60053 IFC$="D#"THENNT=4
60054 IFC$="E"THENNT=5
60055 IFC$="F"THENNT=6
60056 IFC$="F#"THENNT=7
60057 IFC$="G"THENNT=8
60058 IFC$="G#"THENNT=9
60059 IFC$="A"THENNT=10
60060 IFC$="A#"THENNT=11
60061 IFC$="B"THENNT=12
60062 IFC$="R"THENMUSIC2,O1,NT,1:MUSIC3,O2,N2,1:WAIT26*MT:GOTO61000
60063 IFC$="DR"THENSOUND1,999,0:SOUND4,1,0:PLAY1,1,1,1000:WAIT26*MT:
60064 IFC$="DR"THENPLAY6,0,0,0:GOTO61000
60065 IFC$="CY"THENSOUND4,7,0:PLAY0,1,1,7777:WAIT30*MT:PLAY6,0,0,0:GOTO61000
60070 : N2=NT+5:IFN2>12THENN2=N2-12:O2=O2+1
60080 : MUSIC2,O1,NT,15:MUSIC3,O2,N2,15
60081 IFMT>10THENWAIT26*(MT-10):GOTO61000
60090 : WAIT26*MT:MUSIC2,O1,NT,1:MUSIC3,O2,N2,1
61000 UNTILC$="END"
61010 PLAY0,0,0,0:RETURN
```

SOFTWARE REVIEWS

REVIEW OF EXTENSION MONITOR by Chris Mitchell

Pledge: I, the author of this review, pledge that under no circumstances shall I make disparaging comments about
1. the Oric cassette handling system
2. the Oric resident monitor (be it in EPROMs or ROMS)
3. Oric Products International Ltd

... unless deemed absolutely necessary.

Right, now the software : Who needs an 'Extension Monitor' ?

Well basically anyone contemplating writing machine code/assembly language programs needs a machine code monitor of some description. Without one, assembly language programming becomes a very hit and miss affair - if the program works first time (an extremely rare occurence) then fine, but if not, without any debugging aids, you might as well forget it and start again.

Oric, in their infinite, um, shall we say wisdom, did not provide any form of machine code monitor commands other than PEEK and POKE. Actually, this is a blessing in disguise, as it encourages people to purchase extension monitors, which are far superior to the sort of monitors provided in ROMS on competitive machines anyway.

So, now that you have decided to buy an extension monitor for your Oric, the next problem is - Which one? Well, there are currently about four on offer for the Oric, and inevitably some are better than others.

What do you need in an extension monitor? Clearly you need to be able to view and alter the contents of any location in the 64K of memory (with the exception of the EPROM/ROM area, which amazingly enough being read-only memory, cannot be overwritten). One also needs to be able to dump hexadecimal and dis-assembled listings in blocks or pages, just as one needs the LIST command in Basic; and execute the routine once it has been written. So far so good - all monitors have these commands. The real bonus of the better monitors comes in being able to set 'breakpoints' in the machine code, which cause execution to terminate and the contents of the registers to be displayed. These can then be modified if required and execution continued.

Why is this essential? Well, machine code programs have this uncanny tendency to 'crash' - perhaps here a quick note would be helpful: When a Basic program crashes or 'hangs up', the end result is not particularly disasterous : the program 10 GOTO 10 will clearly hang up, but on typing control C, execution is terminated and control returned to Basic. However, when a machine code program crashes, the system does not look for a control C, and there is nothing that you can do from the keyboard to regain control!

The next step is to press the reset button on the underside of Oric (that's the square hole!) and see what happens. If during the course of your program you have not messed up the operating system, Oric will recognise this reset signal, and you will be dumped unceremoniously back into Basic from where you can re-enter the monitor.

Unfortunately, the damage done by executing an incorrect machine code program is often such that pressing the reset button has absolutely no effect as all - in this case the only resort is to unplug the power jack and start again; reload the monitor (Exmon only takes about 45 seconds to load at fast speed) and your machine code program ..... Oh yes, I forgot to tell you - always save your machine code before executing it otherwise 19 times out of 20 you will end up having to retype it!

So how do breakpoints prevent your program from crashing? Well unfortunately they don't, all they do is act as a powerful programming tool that enables you to check out each section of the program in isolation, a single step at a time if required, while monitoring what is happening in the registers. Thus when you see your program jumping to address $A000 rather than storing the accumulator there, you can stop it quickly and track down the offending instruction. Exmon allows you to set and clear up to eight break-points, and to single-stop the program from an address or breakpoint as required.

Some other useful functions included in the package are 'Memory Move' and 'Memory Relocate'. The first allows blocks of data to be moved around in the Oric's memory map; the second does the equivalent for programs, correcting all three byte absolute addresses so that the routine will execute correctly at the destination address (this is the same principle as correcting the destinations of GOTOs and GOSUBs when renumbering a Basic program). It is also possible to search the Oric's memory for particular byte or character strings (useful for finding where the operating system has stacked away all your Basic variables when you want to access them in a machine code routine).

A complete hexadecimal arithmetic facility is included to allow decimal/hex conversion, addition, subtraction, multiplication and division, overflow and remainders. This is invaluable when

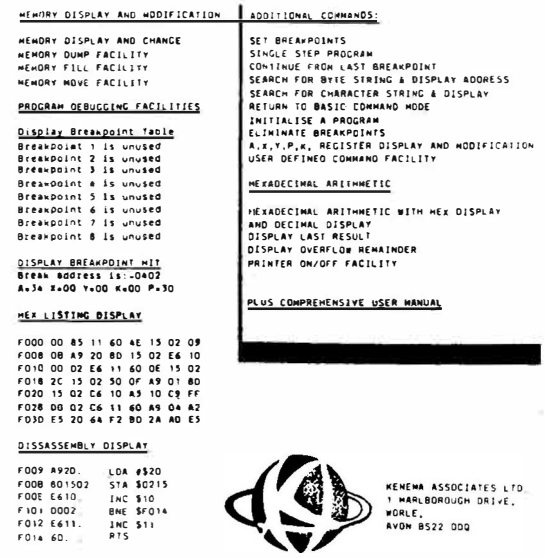
calculating destination addresses or laying out data tables in memory as your average Casio calculator hasn't heard of hexadecimal numbers.

All in all, this package is an extremely powerful extension monitor, and will be very hard to beat. But what doesn't it have? First of all, as expected, it does not include an assembler. In other words, the routines you write in assembly language must be hand-assembled into machine code before they can be entered into the machine. This is not unusual (assemblers are usually separate packages), and is not a handicap for the average user learning about assembly language. The expert, who is likely to be writing large programs e.g. the '100% machine code games' advertised in magazines, would need an assembler in addition to this package, but as no assembler would provide such powerful debugging commands, an extension monitor would still be essential. Actually, hand assembling is nowhere near as tedious and time consuming as it sounds, and for short routines it is often quicker than entering the assembly language memonics and running a two-pass assembler.

The only other facility I would have liked to have seen incorporated is a slow-motion run (i.e. a compromise between single-stepping and a full speed execution) in which the registers are constantly displayed and updated. This would be useful in those situations where a routine is failing somewhere inside a large loop, as to single step through more than about 50 instructions gets very tedious (not to mention the 'ping' that must be tolerated as the breakpoint is hit after each step!)

The Exmon cassette comes in a double size vinyl case with a very helpful and clearly written 14 page manual. At £15 (the retail price) this represents good value for money for anyone intending to use assembly language/machine code - when the 50% discount available to Oric members is taken into consideration, the package becomes a must for all serious Oric programmers.

The most powerful Extension Monitor for the ORIC-1



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ORIC LETTERS

Dear O.U.G.

I've often seen the term 'HIMEM' in a program but as yet I've failed to discover the meaning behind it, so perhaps you'd take a little space to explain it not only to me but others who must be confused by these terms.

ED - You will find a Hexadecimal address following the 'HIMEM' command i.e. HIMEM#97FF together they serve to control the amount of memory alloted to a Basic program. Normally this instruction would be used to set an upper limit to Basic's operating area allowing any memory above this address to be protected. The example 'HIMEM#97FF' is frequently used to protect the Oric's Standard Character Set' which commences at the Hex address #9800 and ensures that the character set will not be overwritten by Basic. It is sometimes required that an area of memory be set aside for Machine Code routines, in which case, these require to be protected against being erased or overwritten by the main Basic program which it is in use with, and so an upper limit is set protecting the machine code routine. #97FF is the most commonly used address you will find in programs; any others will probably indicate the use of a machine code subroutine is in use.

Dear Sir,

With regret at having to part with the 'Ready's', my family (Bless them) insists that I get my own 'Telly' to keep the peace. Taking advantage of the Oric's R.G.B. facilities I'm considering buying a colour monitor rather than a normal colour television on the grounds that not only will I get a better colour display but it will save it from getting borrowed for other uses! But I would like to know if there are any problem areas should I wish to go ahead with this move.

ED - Not at all. Using the Oric's R.G.B. (Red, Green, Blue) output will prove worthwhile. Depending on the quality of the picture you've been used to on your domestic colour telly, the increase of quality to a clear sharp picture image produced by using a colour monitor can be quite remarkable. I've been very impressed with the quality of the recently introduced 'Opus' monitors seen in this mag, along with their price I'm bound to say that they offer good value for money.

Dear Sir,

Before I order an Oric printer/plotter, how easy is it to get hold of the spare rolls of paper and the pens it uses.

ED - Replacements are quiet easy to obtain. Local outlets of Tandy, Spectrum and Computers For All chains will stock these items, possibly at varying price levels. It would be prudent to obtain a spare set as a back up as soon as you get your printer. The machine comes ready to operate with one roll of paper and a set of coloured 'Pens' which will last forever if you don't use them! As a matter of interest, one of our colleages has discovered that the humble toilet roll can be used in emergencies, as a result, rumour has it that he's now working on an interrupt driven machine code routine to step over the perforations!!

ORIC SOFTWARE STATION

We have had numerous enquiries regarding the facilities offered by the Oric Software Station so this is an opportunity to answer all those letters in one go.

The software station has been designed to offer a service to our members by providing those larger programs found in 'O.G' in tape format. Many Users often find that after patiently typing in a program it fails to work due to a typing error somewhere resulting in many hours being wasted in debugging. Also, many members cannot find the time to type in a program and under these circumstances the enjoyment of computing with the Oric-1 is lost to them. As a result we are providing a service to our members with the opportunity of getting good software at an economical price. Acting as a Users Group and offering these types of services we are forced to adopt a policy of economics to ensure the survival of the software station. Those prices quoted include postage and packaging and the labour costs involved in the duplication, all expensive overheads. Also the original authors of that software will receive a royalty payment in return for their effort and their support. All in all members have thought this a good idea, however it requires the support of all our members. If it helps you, use it, after all that's what it's there for - Good Luck!!

YOU HAVEN'T SEEN ANYTHING LIKE THIS ON A COLOUR MONITOR BEFORE.

Opus
Approved by Oric Owners Users Group!!

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You can order by filling in the coupon below and posting to: Opus Supplies Ltd., 158 Camberwell Road, London SE5 0EE. Or by telephoning 01-701 8668 quoting your credit card number. Or, of course, you can buy in person at our showroom between 9am-6pm Monday-Friday, 9am-1.30pm Saturday.

MODEL REFERENCE	1302-1 Medium Resolution	1302-2 High Resolution
RESOLUTION	370 x 470 Pixels	580 x 470 Pixels
C.R.T.	14"	14"
SUPPLY	220-240v. 50-60Hz.	220-240v. 50-60Hz.
E.H.T.	Minimum 19.5kv Maximum 22.5kv	Minimum 19.5kv Maximum 22.5kv
VIDEO BAND WIDTH	6MHz.	10MHz.
DISPLAY	80 characters by 25 lines	80 characters by 25 lines
SLOT PITCH	0.63mm	0.41mm
INPUT: VIDEO	R.G.B. Analogue TTL Input	R.G.B. Analogue TTL Input
SYNC	Separate Sync on R.G.B. Positive or Negative	Separate Sync on R.G.B. Positive or Negative
EXTERNAL CONTROLS	On/off switch and brightness control	On/off switch and brightness control

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_____ Connection lead(s) at £6.00 each.

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Please state the make of your computer _____

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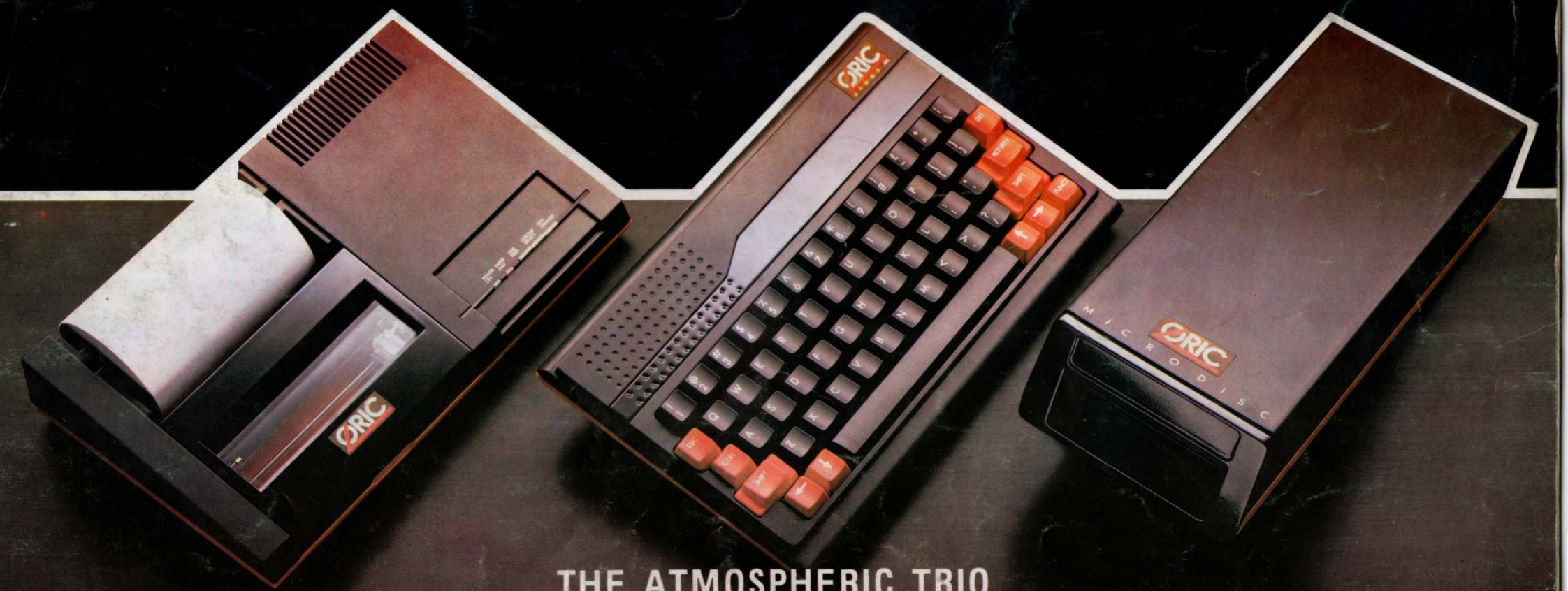

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