

The Newsletter of the National Dragon Users Group

DRAGON



UPDATE

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\*\* -- UPDATE EDITORIAL -- NEW SOFTWARE EDITOR NEXT MONTH -- SEE PAGE 10- \*\*

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The Gaffer's Bit . . . . .

Yes, I KNOW it's late!, but if you read the Editorial you'll find out why, so stop moaning and read the explanation!. You should see the note Stephen sent me with the master disc ... I didn't think Editors even KNEW words like that!!. Anyway, there's one or two bits of news this month. Firstly there is to be a Dragon & Tandy Show at Weston-Super-Mare, Avon, on 4th. December, run by Andrew Hill. (More details on page 8.). Secondly there's a new Dragon Magazine, Dragon Logic, run by Donald Morrison, 72, Diriebught Road, Inverness. Price is 1.00 per issue for 6 or 12 issues, and it looks quite good ... I'll be giving it a proper write up in the next issue. Thirdly we've got a new Software Editor, Mike Stott, so if you've anything to review, or you want to BE a reviewer write to him. Finally, I appear to have run out of space for the moment, so this issue will go down in history as the first Update in which I haven't managed to insult anyone on the front page!. (I'll find space somewhere though!). Anyway, late or not, insulting or not, read on and see what else is new.

The Editor's Bit...

Apologies if this issue is late in reaching you, but don't blame Paul because it was all at this end. My drive belt came off whilst writing to the master disc and promptly chewed all the files and sent my drives haywire for a day or two, so it all had to be re-typed and re-printed etc, and it was very late in getting to Paul.

Now, back to normal! I'd like to thank several people regarding my SuperWriter 2 manual query a few issues ago: Doug Abel and Peter Gent for both offering me photocopies, and Francis Bailey for lending me the original - Thank you!

As you will see from the header above and also on page 10, we have a new software editor. Both Paul and I felt that Richard should vacate the position, seeing as how he a) no longer has a Dragon, and b) is no longer a member of NDUG. We are therefore very pleased to announce that Mike Stott is now on the team (software companies take note!), and...well, you can read all about him on page 10.

Following on from my piece last month about production dates, if you have anything which you desperately want to go in immediately, you can give my a ring, say, on the 26/27th, and if I've got room I may reserve space for you. However, if I do 'hold the presses' as it were, your article MUST reach me by the end of the month, or else!...Stephen.

P.S. Why is this issue written using right justification?. Last time I used it I got a lot of complaints, and I admit that I don't like it either, but Neil O'Connor seemed to think it would be a good idea, so I thought I'd give it another try ... what do YOU think?. Paul.

## Ossett Show Report...Phil Chatfield.

With my usual feelings of enthusiasm and anticipation I crawled out of my suburban pit at 4.45am on the morning of the great day.. My itinerary was as follows: leave home at 05.19, 06.15 from Kings X to Doncaster, connection arriving Wakefield at 09.22, quick gallop across the northern marches to that quaint little hamlet at Ossett. One and a half hours of blissful browsing with a determination well familiar to all Dragon owners. From Ossett the master plan then involved a dash to Leeds, change trains for Scarborough, another change for Hull, zoom over the Humber Bridge to Barton-On-Humber, back on the rails to Grimsby, half an hour for a gallop round, tatty train to Lincoln (watering stop for the excursion). From there to Newark and the final dash for home, provided that we have escaped the clutches of the ferocious northern tribesmen. That was the plan!

I first caught the wiff of a malingering rodent when the 05.19 train arrived EARLY!! It then proceeded to thunder into the Metropolis at an unprecedented rate. "This is too good to be true", I told myself, and I was right. At Vauxhall I was thrown into the gleeful clutches of London Regional Transport. In theory this was the easy bit, our train was due to arrive in plenty of time to get us to Kings X for the 06.15. Suffice it to say that it didn't. Can there be any more depressing sight than an empty platform five minutes after the train has gone?

In fear that I may be boring you I had better cut the cackle and get on to Ossett. In short we finally arrived at the good old town hall at 10.45 with just half an hour to wallow in the pleasure of the event and to rub shoulders with the brethren. The environment was still as pleasing and comfortable as I remembered it, and the attendance was good, and still increasing as I zoomed round. A really nice venue. Harris Micro Software had disappeared completely under a heap of devotees crying for attention. Orange Software's stand looked very impressive with its banks of guess-what-colour labels arrayed on its large range of products. I sincerely hope we club together and support this brave new venture. Surely there's something from their vast range for YOU!. I was absolutely thrilled to obtain 'Adventure Writer' from Harry Whitehouse for 2.50. I have not even attempted to employ the program as I am still entangled in the intricacies of the command structure. Numerous hours of pleasure (!) just in that. NDUG appeared to have several interesting items on display on their stand. I achieved my predetermined objective by obtaining a copy of DiskDream from a gentleman on the corner of John Penn's stand at the very reasonable price of 10.00. My final acquisition was a book entitled 'Language of the Dragon 6809 assembler' by Mike James which I had never seen before and was very pleased with.

Once again the Ossett event, in the brief time that I had to savour it, proved to be well worth while trekking the length of Britain to enjoy. But don't take my word for it - be there next year!

## The End Of An Era...

Last month's issue saw the 21st and final installment of R.A. Davis' Easy Machine Code series. For those of you who can't count or who haven't been a member of NDUG long enough (why not!!), it started way back in the mists of time in issue 27 (November 1986!), when it consisted of a half page article dealing with binary numbers. Now, I've only been in the coveted Editor's seat for 4 of those 21 episodes, but I'd like to extend my personal thanks to Mr. Davis for the articles, and I'm sure that Tim and Barry (are you still out there, lads?) would also like to thank him for providing them with at least 1 article for each issue (sometimes even 3 or 4!). Judging by the amount of response he got from the series (none!), he's been very good about continuing it and giving you lazy ones out there something to read.

I have several more articles from him on completely different subjects (well, most of them are anyway!) which will be appearing in future Updates. But in the meantime. Mr. Davis, thanks very much!...Stephen.

# Toolkit for DragonDOS(2)...D.J.Gray.

Toolkit contains some words that are identical to words used by DragonDOS. To ensure that there is no confusion some minor modifications can be made to Toolkit. The simple rule that I have used it to change the second letter of the conflicting words in Toolkit to 'D' - any other alternative can be made to personal choice. Listing 2, line 120-220 make the following changes to command words:-

AUTO becomes ADTO  
 ERROR becomes EDRRO  
 BEEP becomes BDEP  
 ERR becomes EDR  
 ERL becomes EDL  
 FREE\$ becomes FDEE\$

Toolkit uses the area allocated to graphics to store pages 1 and above. DragonDOS, however, has moved the position of these graphics screens for its own use, so there is a danger of overwriting DragonDOS. To avoid this, it is necessary to add two patches to Toolkit that modify the commands MOVE, FRAME and CLS. These patches are inserted using listing 2. @ he problem with a parallel printer, Dragon 64 and Toolkit is that Toolkit uses a part of RAM that the Dragon 64 looks at to determine whether it is to use the serial port or the parallel port. Toolkit's presence fools the '64 into believing that it should be using the serial port when asked to output to printer. The startup routine modifies this check (it is now all in RAM), but unfortunately is also disables

## L1.

```
10 REM #####
20 REM ## LOADER TO PUT ROM AND DOS INTO ##
30 REM ##      RAM OF A DRAGON 64      ##
40 REM #####
50 FOR I=M4E20 TO M4E5A
60 READ A$
70 POKE I,VAL("H"+A$)
80 NEXT I
```

## L2.

```
10 REM #####
20 REM ##      TOOLKIT MODS      ##
30 REM #####
40 REM ##      DISABLE SELF DESTRUCT      ##
50 REM #####
60 FOR I=0 TO 3
70 POKE MHE402+I,MH12
80 NEXT
90 POKE MHE40A,MH20
100 REM #####
110 REM ##      CHANGE COMMAND WORDS      ##
120 REM #####
130 POKE MHE1E4,MH44:POKE MHE201,MH44
140 POKE MHE22B,MH44:POKE MHE25C,MH44
150 POKE MHE260,MH44:POKE MHE247,MH44
160 REM #####
170 REM ##      ADD THE PATCHES      ##
180 REM #####
```

## \_90 EXEC M4E20

```
100 DATA 8E,80,00,1A,50,B7,FF,DE,A6,84
110 DATA B7,FF,BF,A7,80,8C,BF,FF,25,F1
120 DATA 30,8C,1D
130 DATA 10,8E,03,ED,A6,80,A7,A0
140 DATA 10,8C,03,FC,25,F6,10,8E,03,EB
150 DATA 10,9F,72,86,21,B7,DE,C5,1C,AF
160 DATA 39
170 DATA 12,B7,FF,BF,7E,C7,06
```

## 190 FOR I=MHF9E0 TO MHFA0F

```
200 READ A$
210 POKE I,VAL("H"+A$)
220 NEXT I
230 FOR I=0 TO 2
240 READ A$
250 POKE MHE565+I,VAL("H"+A$)
260 NEXT I
270 FOR I=0 TO 2
280 READ A$
290 POKE MHE556+I,VAL("H"+A$)
300 NEXT I
310 END
320 DATA 34,02,FE,03,FE,A6,48,27,04,8B
330 DATA 03,A7,48,A6,49,27,04,8B,03,A7
340 DATA 49,A6,4A,27,04,8B,03,A7,4A,35
350 DATA 02,30,89,FE,00,39,39
360 DATA 81,00,27,03,C3,06,00,C3,05,E0,39
370 DATA 17,14,78,14,AC
```



Battle Of The Scrolling Shoot-Em-Ups!

## --Lucifer's Kingdom Vs Utopia--

I've decided to compare these two new Dragon games from Orange Software and Pulser Software respectively, as they are both very similar in certain aspects.

## Lucifer's Kingdom:

The format of Lucifer's Kingdom is the good old standard downwards scrolling shoot-em-up, where you fly over different backgrounds. There are 30 different backgrounds, or planets, in Lucifer's Kingdom, and they are made up of 6 planets in 5 regions. Your ultimate goal is to escape from the 6th planet in region 5. To do this, you must of course pass through the other 29 planets, which you do by collecting the required amount of crystals from each planet. After you have completed a planet, you are transported to the next etc, until you get to planet number 30. If you have failed to get the right number of crystals, you are sent back to the beginning of the current region to do it all again.

The crystals themselves are "hidden" under blocks marked 'C' on the planet's surface. You have to shoot them with your laser until they change into a crystal shape, when you can just fly over them to pick them up. There are several other 'block' shapes on the planet, including 'bonus' blocks, which each contain a random score and multiplier. The score is added to yours as you hit these blocks. There are also blocks which absorb your laser shots, instead of letting them fly up the screen, thus making the alien ships harder to hit.

On the subject of the alien ships, there are 8 different designs which appear throughout the game. They each have their own particular movement pattern. Some scroll down-screen until they become level with your ship, when they move across towards you. Some move in set patterns (like on the bonus screen on Galagon for you arcade buffs!), and others home in on you as they scroll downwards. They also fire their own lasers at you, with the usual loss-of-ship result if you hit either the laser shots or the ships themselves.

This is the general gameplay, with little variation throughout the 30 planets. It doesn't get boring though, as you may have expected. The game holds your attention on graphical detail alone, with each planet being beautifully depicted, with volcanoes, demons etc in glorious PMODE 4.

These superb graphics are obviously the major plus point in Lucifer's Kingdom, and it is worth buying for them alone. However, the game does have a few niggling points as well. Firstly, the collision detection is not always spot on, especially for your lasers. Admittedly it is very good, but there are some occasions when it 'misses', which could leave you shouting "You cannot be serious!" at your monitor! Secondly, the detailed graphics are, of course, in black and white. This is not a bad point in itself, but it is sometimes difficult to see your ship ontop of the planet and other ships, making errors more frequent.

Lucifer's Kingdom is an excellent offering from Orange Software. A must if you're an arcade freak, and a good buy even if you aren't, just for the graphics and smooth scrolling alone.

## Utopia:

Utopia is also a scrolling space-age game. It features various backgrounds, alien ships etc, but it has one major point which makes it both different to Lucifer's Kingdom, and different to other scrolling shoot-em-ups. This point is a novel idea in a game (rare these days), and it involves you and the alien ships. You can fire at them to destroy them, but you do not see your shots travelling on screen. You must simply press fire and hope! Also, the alien ships' movement is 'controlled' by luck - they move in a kamikaze style, not necessarily homing in on you, but moving erratically.

When I first played the game, this erratic movement immediately put me off. It is too easy to get killed, as there is no skill involved in avoiding the other ships - only chance. However, I came back to the game a few days later, and found that it is surprising addictive. The general principles are the



same, with a new twist here and there. You must fly as far as possible over the background in an attempt to escape from Utopia, a dream planet which has fallen into disrepair and ruin. The alien ships are out to stop you by crashing into you etc. You have a fuel limit in Utopia, which you must refill by pulling the joystick back whilst flying over blocks which look like a cross between a gun emplacement and a fuel tank. The instructions are very sparse, and do not tell you this.

There are also 'runway'-like stretches, where you can increase your score dramatically. There are no 'planets' as in Lucifer's Kingdom, but there are borders. Each time you either run out of fuel, hit an obstacle on the ground, or get hit by another ship, you lose a life and are sent back to the last border you passed. These borders are hard to reach, and the game requires good refuelling tactics.

Utopia is a good game once you get into it, but it is this initial stage that is likely to put you off. Things like it is too easy to get killed, the fuel doesn't last long enough, the poor instructions etc do not help the game at all, but if you persevere, you find that the game becomes very enjoyable indeed. The instructions unfortunately let the game down rather heavily, for example they do not tell you which squares you can pass through etc (something that put me off until I discovered that you can fly over the black squares as normal).

In summary, whilst being both similar and different, Lucifer's Kingdom and Utopia are both good games for your collection, Lucifer's Kingdom for being a good all-round shoot-em-up with great graphics and scrolling, and Utopia for its novel gameplay twist and surprising addictiveness (once you get into it). Utopia's scrolling is not as sharp as that on Lucifer's Kingdom, indeed it is rather jerky, but this does not detract from its value a great deal. There is some Jon Cartwright music in Utopia, whereas Lucifer's Kingdom only features spot effects.

It is the age old situation when buying any game, caveat emptor, you pay your money etc. Personally, I'd recommend both. They each have their own aspects which gives them both a place in any Dragon owners shelf...Stephen.

#### 40 Track Disks for the CoCo-Chris Rouse

Having switched the CoCo to 64K the time has come to take advantage of this mode. TRSDOS only allows 35 track operation. However, the drives themselves are industry standard 40 track units.

When formatting a disk a complete track is constructed in RAM (all data in the sectors being set to \$FF). The DSKINIT routine then sits in a loop and writes this track to the disk 35 times. Of course, the correct track and sector is added to this dummy track before it is written to disk. It is a simple matter to change the loop counter to 40 tracks. Loop values at four locations have to be changed: \$D65F holds the number of tracks written out during formatting, \$D682 holds the number of tracks verified during formatting.

The DSKO\$ command does not check for a legal track number and so does not need altering. DSKI\$ does check that the track given is legal and the value of the last legal track is held at \$D534. The BACKUP command holds the value of the highest legal track at \$D29D.

Values at these locations can be changed for any value up to 40, remembering to make all of them the same. One point to note is that trying to BACKUP a 35 track disk in 40 track operation will result in an error. Also, be aware that trying to write more than 40 tracks will damage the drive.

In order to access the extra tracks the commands DSKI\$ and DSKO\$ must be used. The DOS still thinks there are only 35 tracks and so until more modifications are carried out, programs will only be saved to the first 35 tracks. Still, it is a start, giving the machine code programmer an extra 5 tracks to play with.

To set up, switch to 64K mode, then poke the following locations with &H28 (for 40 tracks):

&HD65F , &HD682 , &HD534 , &HD229D

The addresses only apply to DOS V1.1.

Henceforth (10) . . . Bob Smith.

This time I want to tell you about the slugger technique for solving puzzles. The computer magazines often set puzzles that can be solved by trial and error. The puzzle set in the March issue of PCW was typical. It was to find the two numbers with the lowest sum that start a Fibonacci series, where one of the numbers in the series is 1,000,000. A Fibonacci series is one where the next number is the sum of the last two numbers.

I am sure that by exerting the old grey matter, a large amount of computation could be eliminated, but why do all this when Dragon FORTH is at hand? My method is to use all my energy is writing a program that lets the Dragon slug away at the problem - the slugger technique.

In addition to the solving part of the program, two extra parts are needed - one to limit the number of trial runs so that one doesn't risk tying up the Dragon for days on end, and one to print out intermediate results at strategic intervals.

Pseudo-code:-

```
Put two start values on the stack.
Read and store the temporary upper limit for start values.
Duplicate the start values.
Begin the main loop by testing if the sum of the last 2 terms = 1,000,000
While this is untrue,
    Duplicate the number on top of the stack.
    Move the third number to the top.
    Add the two top numbers.
    Test whether this sum >1,000,000 and leave a flag on the stack.
    If true,
        Remove the top number and add 1 to the number now on top.
        Test if this is now greater than the temporary upper limit and
        leave a flag on the stack.
        If true,
            Print "No luck".
            Stop.
        End if
        Duplicate top of stack.
        Print a copy of top two numbers..
    End if
    Put a copy of the top two numbers onto the top.
    Repeat the Begin...While loop
    Remove the top two numbers.
    Swap the next two numbers and print them, because they are the answer!
Stop.
```

Next time, there are a few more toolbox items on the menu.

SCR #141

```
0 ( PCW-8803 )
1 0. 2VARIABLE UPPER
2 : >TOP? ( d---d f)
3 2DUP UPPER D@ D-CMP 3 = ;
4 : =MILL? ( d1---d1 f)
5 2DUP 1000000. D-CMP 2 = ;
6 : >MILL? ( d1---d1 f)
7 2DUP 1000000. D-CMP 3 = ; --->
```

SCR #143

```
0 ( PCW-8803 )
1 IF 2DROP 2DROP 1. D+ >TOP?
2 IF 2DROP 1. D+ >TOP?
3 IF CR ." NO LUCK" ABORT
4 ENDIF 2DUP ?D
5 ENDIF 2 2PICK 2 2PICK
6 ENDIF
7 REPEAT -->
```

SCR #142

```
0 ( PCW-8803 )
1 : ?D. (d1 d2---d1 d2)
2 2DUP 3 2PICK CR D. D. CR ;
3 : PCW8803 ( d1 d2---)
4 ." TO?" INPUT UPPER D!
5 2 2PICK 2 2PICK
6 BEGIN =MILL? 0=
7 WHILE 2DUP 2ROT D+ >MILL? -->
```

SCR #144

```
0 ( PCW-8803 )
1 2DROP 2DROP 2SWAP D. D. ;
2
3
4
5
6
7
```

## Going Native(3)...Chris Jolly.

Some of you may remember my articles explaining how to transfer and run compiled OS9 'C' program under DragonDOS (July/August 1987). This article concludes the series by providing notes on what you can and cannot code for portability.

The first point is that use of the OS9 I/O library is non-portable. Most I/O can be coded for DragonDOS quite easily using initialised pointers. The fact that the 6809 uses memory-mapped I/O is a blessing for 'C' programmers and frequently prevents the necessity of using an assembler with a 'C' program. The following example illustrates how to check the joystick buttons:

```
joychk (j)
int j: [
    char *port = 0xFF00;
    return j ? (*port & 1 != 0) : (*port & 2 != 0);
]
```

If the parameter j is 0, joychk (j) returns 1 if the left button is pressed and 0 otherwise. If j is 1, the function checks the right button. Note that there is a slight problem with the OS9 'C' compiler, and the following definition of joychk (j) will not work:

```
joychk (j)
int (j): [
    return j ? ((*char *)0xFF00) & 1 != 0
              : ((*char *)0xFF00) & 2 != 0;
]
```

The reason is that the compiler generates a direct address for 0xFF00, instead of an extended direct address, thus junking the most significant 8 bits and generating the wrong address. All I/O must be programmed by direct access to the ports or by use of the built-in ROM routines (using the #asm ... #endasm directives). A more subtle point is that the high-level memory allocation routines cannot be used since they rely on the OS9 system service for allocating memory. However, the low-level routine lbrk () can be used to allocate the space between the static data area and the stack (using the startup code given in the previous article). When compiling under OS9 remember to use the '-s' switch to prevent the generation of stack probes. Although the stack checking code is still valid under DragonDOS, if an overflow is detected the stack checking routine will try to report the fact via the standard error stream, which does not exist under DragonDOS. Furthermore, the elimination of stack probes will speed up your code and make it smaller.

When developing code under OS9 it is useful to be able to generate two versions of the program - one for debugging under OS9, and one for running under DragonDOS. The most convenient way to do this is to keep all the source in one file and use the #ifdef ... #else ... #endif preprocessor directives to select the correct version at compile time. Most of the source will be the same for both version, so the preprocessor commands will generally just select the right I/O routines. For example:

```
#ifdef DRAGONDOS
/* DragonDOS code */ ...
#else
/* OS9 code */ ...
#endif
```

will compile DragonDOS code if the compiler switch '-dDRAGONDOS' is used, or OS9 code if it is omitted.



## Pascal For Beginners(11)...Gary Coxhead.

For this month's offering I would like to cover 2-dimensional arrays. Now, arrays are very useful and 2-dimensional ones even more so, for example many techniques in science and commerce deal with data which is naturally organised in 2 dimensions e.g.:

Distance-chart					matrix				
	L	G	C	M		1	2	3	4
London	-	440	30	35	1	9	8	18	23
Glasgow	440	-	400	460	2	7	21	67	8
Chelmsford	30	400	-	60	3	0	1	8	2
Maidstone	35	460	60	-	4	34	2	23	78

  

Annual-Rainfall					
	Jan	Feb	Mar	Apr	May
1900	23	32	54	53	21
1901	32	51	52	62	27
1902	18	21	23	32	12

The 2-dimensional arrays shown above can be declared as follows:

```
PROGRAM array-declarations;
TYPE
    towns = (london,glasgow,chelmsford,maidstone);
    years = 1900 .. 1984;
    months = (jan,feb,mar,apr,may,jun,jul,aug,sep,oct,nov,dec);
VAR
    distance-chart : ARRAY[london..maistone,london..maidstone] OF real;
    mileage-chart  : ARRAY[towns..towns] OF real;
    annual-rainfall: ARRRAY[years,months] OF real;
    matrix          : ARRAY[1..4,1..4] OF integer;
BEGIN
    (* few statements needed here to fill and manipulate the arrays *)
END.
```

Please remember that 2-dimensional arrays are always accessed by row then column. To do anything systematically with all the entries of a 22-dimensional array, we need to use a nested loop control structure e.g.:

```
FOR row := 1 to max-row DO
    FOR column := 1 to max-column DO
        READ (matrix[row,column]);
```

The following program shows how to read a file of integer values into an array. You will have to do some work yourself as the program is designed to read in a list of integer values from a file called MARKS.DAT which you will have to create using an editor. You will also have to check the syntax that your version of Pascal uses for files, as well as the syntax of the use of RESET to open a file for reading. Note the way the file is specified in the declaration section and the way the read parameters are altered to specify the file to be read.

```
PROGRAM exam (input,output,marks); (* marks specifies a file to be used *)
VAR
    results : ARRAY[1..4,1..5] OF integer;
    marks    : text; (* may be different for your compiler *)
    row,column : integer;
BEGIN
    RESET (marks,'marks.dat'); (* opens the file for reading. marks is the
    logical name of the file, marks.dat is the physical name *)
    FOR row := 1 TO 4 DO (* fill the array from the file *)
        FOR column := 1 TO 5 DO
            read (marks,results[row,column]);
        FOR row := 1 TO 4 DO (* write the contents of the array *)
            BEGIN
                FOR column := 1 TO 5 DO
                    write (results[row,column]:5);
                writeln;
            END;
        END.
```

There are several new ideas here but they are fairly logical and self-explanatory. Next time, functions and procedures.

## December Dragon & Tandy Show!!.

There will be a Dragon and Tandy (CoCo) show, "The Colour Computer Convention", run by Andrew Hill of Dragonfire Services on Sunday the 4th. December 1988 at the Arosfa Hotel, Weston-Super-Mare, Avon.

I'll be giving more details in the next issue, but briefly most of the major firms will be there, as will the Group, and of course many demonstration stands as well.

Admission is 1.50 per person, under 10's and OAP's 75 pence, disabled persons FREE!. It should be a good event, so make sure you leave that day clear!.

## The Co-Co 3...Randy Longshore.

Having owned a Dragon 64 for nearly 4 years, I was very interested in comparing it to the new CoCo 3 from Tandy. Recently, I was able to make this comparison and my results and a general description follow:

Footprint - approximately the same size as the CoCo 2 or Dragon 64.

Video outputs - TV, composite, and RGB analog.

RAM - 128K, expandable to 512K internally.

ROM - 32K with Color BASIC, Extended and Super Extended BASIC  
(these are copied into RAM on start-up).

Other I/O - 2 joystick ports, cassette interface (1500 baud), cartridge port, and serial RS232C socket (a 4-pin port for output to a printer, or for 300 or 1200 baud output to a modem).

Video Displays - 32x16, 40x24, and 80x24 (true upper + lower case), with upto 64 colours, and 16 on screen at any time.

OS9 Level 2 will run on the CoCo 3 to give definable windows, upto seven supported.

CPU - 6809E, running at twice the speed of the CoCo 1 or 2.

All of the connections are at the back except for the cartridge port on the right. The keyboard differs slightly from the CoCo 2 in the fact that the arrow keys are together on the right. Tandy have not put a parallel port on the CoCo 3, so you will have to get a disk controller or multi-pak if you wish to use a parallel printer. However, if you wish to use the serial port for a printer, then you must get a separate board which plugs into the Multi-pak for a modem output. With respect to the Multi-pak, the one for the CoCo 1 or 2 will not work properly on the CoCo 3, but must be modified with a new PAL chip.

Also, the older 12V disk controller does not work with the CoCo 3, so you will need the newer 5V controller. To use the new OS9 Level 2 requires increasing the RAM to 512K. If you include all these, the system can be very expensive (approximately \$550 including the machine itself, RGB monitor and 512K upgrade). However, if you already have a CoCo 1 or 2, or a Dragon, you can use most of your hardware on the CoCo 3 with little or no modification (usually). The following Dragon hardware will work direct with the CoCo 3: cassette recorder, disk drives, joysticks, printer, modem (at least in the US), electronic book, and RF TV connector.

Most of the CoCo 1 or 2 software will work properly on the CoCo 3 (about 95%), and in many cases patches are available to fix others. Even though the RGB monitor will not show the false colours of a composite monitor or TV, there are some programs that can simulate the false colours. Some Dragon BASIC programs can be easily converted to the CoCo 3, but Dragon machine language programs will need considerable modification, with the exceptions of OS9 modules. The CoCo 3 is very impressive, and with a green screen or RGB monitor, you get very clear 80 column text, and also, with the RGB, the colour displays and graphics are excellent. The CoCo 3 is a very good choice for anyone with a CoCo 1 or 2, or a Dragon 64, wishing to upgrade. The major advantages which the '64 has over the CoCo 3 are the parallel port, a slightly better "feel" of the keyboard, and a serial port that supports baud rates greater than 1200. With the CoCo 3, you have a true multi-tasking computer, and Tandy designed it as an OS9 Level 2 machine - they are producing many OS9 packages. Recently, relatively inexpensive hard disk systems have become available for the CoCo 3 (approximately \$450.00 total including interface, controller, cables and hard disk). This allows very fast access to OS9 modules on hard disk and plenty of storage. (10Mb is more than enough for an OS9 system). But, only a dedicated OS9 user could justify this extra cost.

Next month, I will be looking at OS9 Level 2 for the CoCo 3.

## PEEKING THE DRAGON(4)...Mike Stott.

This month my article takes on a slightly different appearance. As you will no doubt already have read I am your new Software Editor. "What is an old codger like that doing it for?", I hear you cry. Well let me tell you that there is still some life left in the old dog and I am kept reasonably young at heart by my two sons aged 15 and 8. Quite a few of you already know me from the Ossett and Rochdale Shows but for those of you who have never heard of me let me introduce myself. I am 44 years old and now own a Dragon 64 with twin DragonDOS drives, having progressed from my 32 which I bought soon after they came out.

In 1987 I went back to College for a few months, having been unemployed, and turned my hobby of computing into something a bit more solid. When I applied for a job with a local company I was turned down for the actual job that I applied for but was offered a 6 month contract using my accounts and computer experience and this soon became a permanent job. At work I mainly use PCs (IBM, Amstrad and Epson) although occasionally I am allowed to tamper on the mainframe and am generally called upon for a variety of computer uses. Despite this I am fully committed to the Dragon and my two sons have Dragons as well.

I have written to the Companies asking for software for review and would now like to appeal for volunteers to write short reviews occasionally. If anybody is interested please write to me at the address below letting me know whether you have disk or cassette and what type of software you would be able to review. We are only asking for a shortish description and your views, nothing too hard in that, and you will get an early look at new software and the chance to tell fellow owners about it.

If anyone reads this from a company which has not received a letter from me then I apologise. Could you please send the software to me and I will give it a brief once over and a mention in my article before sending it out for review. If you are a user of software, as you all must be, then please support the Companies remaining and buy from them. Too much piracy is driving the writers away from our machine and if it carries on at the same rate we will be left without any new software.

I hope that the readers like my coverage of software over the coming months (or years) and look forward to hearing from you with your views.

Mike Stott, 10, Mellor Close, Prescott, Merseyside. L35 1RL. 051 480 7712.

## Crossword NO.33 Answers.

ACROSS:- 1A)Postman, 1J)Fool, 2C)Transport, 3A)Heuristic, 3J)Slag, 4C)Nazi, 5C)Abel, 5G)Seal, 6A)D.A.M.(S), 7C)Porcupine, 8D)Snob, 8I)Alpen, 9A)Poison, 10C)FORTRAN, 11A)Crimp, 11I)Ibis, 12G)Salute, 13A)Horatio Nelson.

DOWN:- A3)Hardcopy, B2)Pendant, C1)Stun, C5)Amplifier, D5)Blossom, E1)Maize, E11)Pat, F3)Silicon, G6)Tuba, H2)Pixel, I3)Coaxial, I10)Nile, K6)Deposit, L4)Frowl, M1)Lightpen, M9)Spoon.

First two all correct answers out of the box this month are from Eddie Freeman and Martyn Smith ... the usual games tapes are on their way.

## X-WORD 34. Compiled by J.D.Bateman.

ACROSS:- 1A) Instrument for measuring gas pressure, 1J) Piece of music played by one instrument, 2G) Acid found in rhubarb, 4G) Not transparent, 5G) Think or muse over, 6A) Covering for concealing or protecting the face, 7B) Clear or bright, 8A) Bought in packets for garden use, 8E) Abdominal organ concerned in the formation of antibodies etc, 9A) Polo Hammer, 10A) Watchful or vigilant, 10F) Liquid containing corpuscles, 11A) Short dancing dress, 11E) Time is considered to be the fourth one, 12A) You might die if you make this amphibious noise, 12G) A tincture of this element was (is) used as an anesthetic, 13A) Highly scented climber.

DOWN:- A1) Sicilian secret organisation, A6) Not an equal competition or contest, B1) Primitive single celled animalcule, C1) Unclothed, C6) You would be a shapeless blob without this, e1) Contagious disease particularly unpleasant for adult males, F1) Round Dutch cheese, F5) Pilsuit perhaps eaten at the Trades Union Conference, F10) The Editors Binary digits, G1) Archery, H5) Command, I3) One minute divided by 60 thousand million, K6) Recent Dragon Publisher, L5) Berry of the mountain ash, M1) Leave out, M5) Explosives store made of paper perhaps.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	M	A	N	O	M	E	T	E	R	S	O	L	O
2	A	M	R		U	D							M
3	F	O	K		M	A	X		N				I
4	I	E	G		P	M	O	P	A	R	A	V	E
5	A	R	D		S	T	R	O	N	D	E	R	M
6	M	A	S	K		U	A	R	B		S	O	A
7			K	L	U	C	I	S	S				
8	S	E	E	D	S	P	L	E	E	N	N	A	A
9	M	A	L	L	E	T	Y	R	C		S	N	Z
10	A	L	E	R	T	A	L	O	O	D	H		I
11	T	U	T	U	D	I	M	E	N	S	I	O	N
12	C	H	O	K	E	T	I	O	D	I	N	E	E
13	H	O	N	E	Y	S	U	C	K	L	E		

RUMINANT



## New from Metasoft.

As you'll have seen from the ads page, there is now a new OS9 Prolog compiler program replacing Chris Jolly's earlier Prolog interpreter package. I haven't seen it myself yet, but we hope to be running a review on it in the near future, and knowing Chris Jolly's programming ability I have no doubts at all as to its quality.

According to the information I have the compiler converts Prolog source code (using the Prolog 2 syntax) into 6809 assembler source, which can then be assembled using the standard OS9 assembler. Documentation is included on the disc, and the package includes a sharable runtime module containing a large subset of the Prolog 2 predefined rules. Integer arithmetic, string handling, list processing, and file I/O are all covered in the runtime module, and the compiler covers all the standard Prolog features such as pattern matching, backtracking, program control using the cut and metaprogramming. At 12.50 it HAS to be an absolute bargain... programs of this quality for other machines cost three figures, so I'd suggest you take advantage of this chance to wave two fingers at the Atari and PC peasants!. Paul.

## Give Tosh a Lift?.

As most of you know, our poor old copier is more than a little overworked, and I've been trying to find a cheap way of either replacing it or keeping it going. Now thanks to an offer from Chris Channing I've almost got an answer, but there's still a problem. Chris has the "twin" of my machine, now surplus to his requirements, and he has offered to let me have it IF I can find a practical means of getting it here.

Now Toshiba copiers aren't all that big really, they'll fit into a car boot, but they weigh a couple of hundredweight, and are NOT the sort of thing you just tuck under one arm (or even two) and walk away with!. Chris and his copier live in Dunsby (Lincs), and neither Chris or I can spare the time to transport the machine from there to Worthing, and of course trying to send something like that by carrier is both expensive and hazardous, so we're in urgent need of someone with transport who is likely to be making a run from Lincs to Sussex in the reasonably near future, and who wouldn't mind giving a lift to a Toshiba in return for a little help with the petrol costs.

Any volunteers?. Alright, don't all rush at once .... how about any long distance joggers who are into weight lifting then?. Anyway, if you think you might be able to help please contact me as soon as possible so that we can try to get something arranged. Paul.

## Show help wanted!.

As you know, we will be having our usual stand at the Weston show in December, but I doubt that either Stephen or I will be able to attend. This means we will require someone to run the stand for us .... organise things, be responsible for any loot we may take, and generally strut around behind an "I'M IN CHARGE" badge (not supplied!). We will also need a couple of helpful members to assist and stagger along there with a Dragon, drive, screen, etc, and possibly even something interesting to run on them. Obviously this really limits it to members living in the Avon area, so if that's where you are, and you feel like representing the Group for a day, please let me know so we can sort things out. No panic, but the earlier we can get things organised the better. Paul.

SUN. DECEMBER 4TH.

## —NEW ERA SOFTWARE—

NEW ERA PUBLICATIONS are pleased to announce the launch of New Era Software, a subsidiary of the publishing group, the aim of which is to provide the highest quality software for the Dragon and Tandy range of microcomputers.

If you have a program - game or utility - which you would like to be considered for publication, please write to Joanne Mayer, New Era Publications, 37 Collins Meadow, Harlow, Essex CM19 4EN.

In return, we guarantee the highest royalties, along with a unique system which means you virtually market your own game! - Using our resources

The Late, Late Bit . . . . .

Sorry if this issue isn't all it might be, but as stated earlier, everything which could possibly go wrong has chosen this week to do so, and I'm only surprised that we've managed to get anything ready for copying at all.

Anyway, first thing this month has to be a "Public Service Announcement" re Dragon User. In the past couple of weeks I've had half a dozen queries from people who want to know (a) is NDUG any connection with D.User, and (b) where do they send their Dragon User subscriptions, so here's the answers:-

(a). The N.D.U.G. has NO connection with ANY other Group, firm, magazine, or organisation AT ALL. We're on friendly terms with most of them (well, reasonably), and a lot of our members are subscribers, customers, contributors, etc to them, BUT THAT IS ALL!!!. They do and say what they like, make their own profits or losses, and do their own various things in their own equally various ways, but they are nothing at all to do with us, and the only connection is that we are all working to keep the Dragon alive. OK?.

(b). Dragon User Magazine is no longer any connection with Sunshine Publications, and is now operated by Bob Harris. Anyone wishing to subscribe to D.User (and I hope that includes most of you) should contact Bob at Dragon Publications, 49, Alexandra Road, Hounslow, Middlesex.TW3-4HP. Subscription rates are 14.00 per year U.K, and 20.00 per year elsewhere.

Right, everyone happy about those points now?. Good.

So on to other things. I've just been visited by Lee Cooke who informs me that certain moronic types have been getting programs from his P.D library, messing them about (little things like removing the credits etc) and then trying to sell them on a commercial basis!. If you happen to be one of these cretinous excrescences, take this as a first and final public warning. Not only will you find yourself blacklisted throughout the Dragon and Tandy scene, you'll also be receiving an invitation to meet our solicitors, in court, if any further attempts are made to sell these programs. That is NOT a threat, it's a simple statement of fact. No one seriously objects to anyone making the odd copy or two, but attempting to market other people's work without permission is a VERY different matter, and that's something the Dragon scene can't afford to tolerate.

That, I hope, is the last we will have to say on THAT subject, so let's talk about more pleasant things. You may have noticed that we're giving more coverage to Tandy topics recently. This doesn't mean that we're turning into a CoCo group, but we have quite a few members who own CoCo machines, and a lot of material is applicable to both computers (even if a little modification is necessary in some cases) so it seems only reasonable to give as much coverage as possible to both makes. A lot of Dragon software was originally converted from CoCo format, and I think users of both machines would benefit from closer cooperation .... so if anyone has anything useful we can print about hardware and software conversion between CoCo and Dragon, especially anything concerning DOS, it would be very welcome.

The other thing I want to mention this month is shows. Unless John & Helen Penn are keeping it a very dark secret, there will not be a London show this year, which seems rather a pity because I think it COULD still pay to run one, although it would have to be at a less expensive location than the last. However, Andrew Hill has gone ahead and set up one for December at Weston, and IF we can locate the right place at the right price the Group may try something similar in the South-East area early next year. Why not sooner?, because finding the right place, getting things organised, advertising, etc, takes a lot of time and money, and it's too late for us to start anything now which wouldn't clash with Andrews effort. If you've any useful ideas or suggestions on the subject (or even better, any useful contacts!) drop me a line and let me know.

Well, if this issue is ever going to get photocopied I'd better get on with the job. I apologise for any errors and omissions there may be this month, but I'm working on the theory that even a rough issue is better than none at all, and I can only hope that you'll agree.

*Bill*

## Classified Ads page .....

**NOUG FORTH OPERATING SYSTEM:** Written by John Payne and available ONLY through the Group. New version for DragonDOS V1.0 and SuperDOS includes an assembler as well as the original Turtle Graphics facility, 80 col. w.p., etc.

New version on V1.0 / E5 & E6 disc ONLY, 12.50 inclusive. Original version (no assembler) for SB or DB Delta as well, 8.50 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**CIRCUIT DIAGRAMS:** Available for B64, B32, Dragon DOS controller, and Cumana DOS controller. All the same price 1.00 each inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**DRAGON 32 UPGRADE MANUALS:** The cheapest and easiest way to upgrade your B32 to 64K RAM. Easy to follow instructions covering all variants of 32. 2.00 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**BRAMEZEE:** One of the best graphics utilities available. Written by R.A. Davis, simple to use, outstanding results. Available on cassette for only 2.50 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**NEWCOPY:** Machine code tape utility for the production of backup copies of any m/c programs. Allows loading and resaving of both headed and headerless programs, plus many other facilities. Written by Stuart Mills. 2.50 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**DRAGONART LIBRARY:** The Group Graphics library has a vast range of screens available at a nominal cost, so why not take advantage of them? It also wants YOUR graphics screens, and there's a prize offered every month for the best original picture submitted!. Details from the Librarian, Dragonart Library, 5, Glen Road, Parkstone, Poole, Dorset.

**P.B. UTILITY LIBRARY:** A good range of original programs and routines available and wanted!. For details contact:- Lee Cooke on Worthing 41633 (evenings) or send sae to 117, Limbrick Lane, Goring, Worthing, Sussex

**THE OS9 BOOK!:** "Everything you wanted to know about OS9 but didn't know who to ask". 150 pages of hints, tips, and articles for the Level 1 OS9 CoCo and Dragon user. Includes a disc of source files. 12.95.

**COMO9:** Easy to use, full feature OS9 comes program, together with source, Xmodem (CRC & SUM), function keys, disc monitor. Send messages direct from disc!. Suitable for ANY OS9 system. 5.00.

**PD-PAK:** Selection of useful PD OS9 utilities on one disc. Includes DBCOPY.

Cheques and orders to Jason Shouler, 70, Victoria Road, Parkstone, Poole, Dorset. BH12-3AE.

**PRINTOUT SERVICE:** 1 Basic program listing (up to 5 pages) 50 pence. 2 or more programs 40 pence each. All additional pages 5 pence each. Screen dumps 30 pence each, 2 or more dumps 20 pence each. (Size approx 4" x 4.5").

Text, Data, and Bream source code files please enquire for details. ALL tapes or discs (Superdos compatible ONLY) must be accompanied by a suitable stamped addresses envelope for tape/disc and printout. Zennan Green, Aberllywd, Insh, Kingussie, Inverness-shire. PH21-1NT.

**OS9 MODEM PROGRAM:** Up and downloading of files, any Baud rate from 50/50 to 9600/9600 (NOT split rate). Up & download buffer from 4 to 32K or program will adapt to largest capacity available. All 6551 options supported. 8.00.

Phone Barry Knapp on 0932-242800 (evenings only).

**WANTED FOR YOUR REPAIRS!!!!:** Scrap dead and/or dying Dragons and CoCo's wanted for spares to help keep the price of members repair jobs down to absolute minimum. All varieties of dead and dying printers also required for the same purpose. Computer details to Alan Butler on 0371-4234 (evenings only please), and printer details to Paul Grade on 0903-207585.

**BACK ISSUE UPDATES:** Back issues of Update reprinted to order from original master copies. Now only 75 pence per copy!. Price includes postage etc.

Orders to E.Hall, 32, Thackeray Hall, Fareham, Hants. PO16-0PQ. Cheques made payable to BACK ISSUES DEPT.(NNUG).

**DELTA DOS UTILITY:** m/c utility to copy ALL Basic and m/c files from disc to tape in one operation. Basic listing of loader and Hex dump 1.00 or on cassette for 2.50.

J.C. Dushell, 33, Tennyson Avenue, Clevedon, Avon. BS21-7UJ.

**ORIGINAL PROGRAM:** Gives facts on the countries of the world. Areas, Capitals, Populations, Currencies and Languages. Includes analysis facility and map showing position of the country required. Available on DragonDOS, Beltados, or tape at 4.00 inclusive. Also available is a very comprehensive Home Accounts program with many useful features. Available ONLY on DragonDOS or Beltados disc at 4.00.

Cheques and orders to Graham Strong, 78, Coleridge Crescent, Goring-by-Sea, Worthing, Sussex.

**CoCo to Dragon!:** Two new programs which are an absolute essential for those who own both Dragon and CoCo computers, and for most Dragon owners as well!. C2DML will convert any m/c CoCo formatted disc to Dragon DOS format (V1.0) and C2DBAS will do the same for any CoCo formatted disc containing Basic programs, so now you CAN buy CoCo discs and run them on your Dragon!. The programs were written for the Group by Randy Longshore and are available on disc at 3.00 each or both on one disc for 5.00 inclusive.

Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

**NEW PROLOG COMPILER!:** An all new OS9 Prolog compiler which converts Prolog 2 to 6809 Assembler. Full implementation with runtime module and documentation on disc. Requires OS9 Assembler (NOT supplied). Special price 12.50 only from METASOFT, 4, Pinehurst Walk, Orpington, Kent. BR6-8DJ.

**WANTED!:** Dragon DOS cartridge, MUST be cheap!.

Roger Woods, 20, Heol-ap-Prce, Yorkdale, Beddau, Pontypridd. CF38-2SH

**Dragon32 with Delta DOS and 40 track SSS drive, with PSU.** All complete & ready to run, complete with s'ware. 120.00. EPROM programmer, kit built, works well. 40.00 o.n.o. Phone Stuart on LEEDS 645519.

**2 Dragon 32's, both with manuals.** 35.00 each. Tandy Multipak converted for Dragon 20.00. Dragon 64, perfect but no manual 50.00. All in g.w.o. J.E. Slade. Phone 0843-47340.

**Full set of Dragon User magazines, Datapen, pair of Dragon Data joysticks, Peaksoft Dragon Power supply.** All in very good condition. Offers wanted for all or for individual items. Ian Smith, Phone 0236-34305.

**Single sided 80 track bare drive (Micropolis full height).** 70.00 or offer. Phone Stuart on Leeds 645519.

**Twin 40/80 track switchable drives.** Cased and with PSU and lead. Plus two almost complete drives for spares. Alan Butler, 16, Barnston Green, Barnston, St. Dunmow, Essex.

**DOS EPROMS.** Your DragonDOS or SuperDOS reblown to V1.7 (as per B.U. patch with additional corrections.). 3.00, or reblown to DOSPLUS for 9.00. DOSPLUS EPROM 11.00. (Please state whether Dragon Data, DB or SB DELTA). DELTADOS copied onto a 27128 with DOSPLUS added 11.00 (requires mod to cartridge). For mod service add 1.00 and send cartridge. 60 page DOSPLUS manual 2.50 or 2.00 with DOSPLUS. P.G. Scott, 4, Badgerwood Drive, Frimley, Camberley, Surrey. GU16-5UF.

**DOS EPROMS** blown to V1.0, patched V1.0, Eurohard V4.0, Eurohard V4.1, or translated V4.1. Send a clean 2764 EPROM and 3.00 to Paul Grade, 6, Navarino Road, Worthing, Sussex. Cheques payable to the Group.



# New Era for the Dragon

NEW ERA PUBLICATIONS, a newly formed professional organisation, will as from July 20 1988, be taking over the running of *Dragon's ROAR! Magazine*.

*Dragon's ROAR! Magazine*, since its launch at the London show in December 1987, has enjoyed steady growth, attracting a readership in excess of 140 - more than any other amateur Dragon magazine.

The range of topics covered, varying from the controversial 'Arcade Action' to the informative 'Beginner's Basic', from the comprehensive 'Computer Talk' with Philip Beed, to the somewhat frustrating 'Adventure Pit' with Simon 'Solver' Hargrave, has already proved a resounding success, resulting in *Dragon's ROAR! Magazine* being voted the no.1 Dragon publication...but don't just take our word for it!

"It really is very good, and that's coming from a former evening newspaper news editor!"...HARRY WHITEHOUSE.

"We at Arc Software were very surprised by your magazine with its snappy style...Keep up the good work!"...ARC SOFTWARE.

"A very professionally presented magazine, which caters for a wide range of users"....  
.DRAGON USER, March 1988.

"Very good value for money"...DRAGON UPDATE, December 1987.

"It's certainly the best amateur Dragon magazine"...MICRO COMPUTER MART, Edition 56.

"Congratulations on an excellent format"...R.A.DAVIS

"Much better than D\*\*\*\*\*n U\*\*r"...ADRIAN C. PARISH.

And yet, not content, New Era Publications is shortly to re-launch the magazine on a semi-professional basis in its new guise of *6809 User*, offering even greater news coverage, in-depth technical assistance with Peter Rihan, who developed Delta Dos, an extensive readers' service scheme, along with all the additional services/features you would expect from a major, fifty page, semi-colour publication.

In essence, *6809 User* promises to re-vitalise the Dragon, and to celebrate the re-launching of the magazine, we are reducing the cost of subscription to members of the National Dragon Users' Group to a mere £7.50 for one month only. Quite simply, not only is *6809 User* the largest, the most colourful, and to all intents and purposes, the best Dragon/Tandy magazine, but more evidently, it's also the cheapest Dragon/Tandy magazine!

In order to subscribe, please complete the following form, making all cheques payable to New Era Publications.

## Subscription Form

Please send me 6/12 editions of *6809 User*. I enclose a cheque, made payable to New Era Publications, for the amount of £4.00/£7.50. I understand I may claim a refund upon my remaining subscription at any time whatsoever if I am in any way dissatisfied with the publication.

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INTERESTS.....

I WISH TO BE INCLUDED IN THE dragon directory...-

.Yes/No.

Please delete as applicable

## DRAGON Users' Handbook

After four months of preparation, New Era Publications are proud to present *The Dragon Users' Handbook*, a uniquely detailed 25 page booklet listing every item of software/hardware, books/magazines/accessories currently available for the Dragon, stating where the item is available, the price, and with the help of *Dragon User*, the rating.

This invaluable source of reference is now available for £1.25 to subscribers of *6809 User*, (or £1.65 to non-subscribers), making all cheques payable to New Era Publications.

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