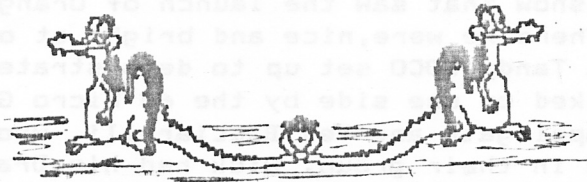


The Newsletter of the National Dragon Users Group

DRAGON



UPDATE

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The Gaffer's Bit.....

Now it can be told!. After a month or so of being told "don't say anything about it just yet" I can now confirm that there IS life after Sunshine

Publications!. Dragon User magazine WILL be continuing publication, and as of a couple of weeks ago is the sole property of that well known press baron and purveyor of software Bob Harris. Dragon User will NOT be in any way connected with Harris Microsoftware, and Bob says that the financial side of things will be handled by a new company, Dragon Publications, and of course Helen Armstrong will be carrying on as Editor, and will be responsible for ALL aspects of editorial policy. So, you can relax again now, your subscriptions are quite safe, and if you haven't renewed yours yet, you should do so immediately!. There is no truth at all in the rumour that Bob is looking for new premises in the Wapping area, and stories that he is planning a takeover of the Murdoch group are completely unfounded. (Right Bob, that's not a bad plug, is it? ... send the cheque to the usual address!).

So what else is new?. Well, Mike Stott tells me that the Ossett Show went VERY well (we even got some new recruits there this time!), and as always I'd like to thank John and Helen Penn for all the time and effort they put into organising these shows, (and of course for our stand). Mike says he is sending me a report on the show, so I'll be printing that in next month's Update for the benefit of those who couldn't get there.

I think that's about all I've space for here, so I'll leave you to get on with reading the more interesting stuff.

Paul G.

The Editor's Bit.....

Ho-hum, another issue of Update churns wonderfully off those Worthing presses, and brings with it an editor who hasn't got much to write about. This month is officially designated as 'No Connection Whatsoever' month, with both Eddie Stainer and David Marsden disclaiming any connection with the shops mentioned in their 'articles'.

Those of you who 'read' a certain other Dragon magazine will have noticed Tom Goodfellow having a dig back at Paul on the subject of his (Tom's) bulletin board. Well, never one to resist a challenge, Paul has come up with a suitably interesting thought. If this certain Dragon magazine changes its name to 6809 User, as planned, will it have anything to do with the Dragon?. As we all know, the Dragons use M6809E which is COMPLETELY different from the 6809. Indeed, the 6809 chip will not work with the Dragon...

Anyway, libellous comments aside, it's preview time. In next month's issue, we'll have a review of KLIK from Harris Micros (should have been this month but I couldn't fit it in), the usual regulars, and.... well, whatever YOU want in it. Want to see your name in lights? You know the address...Stephen.

Cardiff Show Report...Graham Smith

This is a short review of the Dragon show held on Saturday, 27th February and arranged by John Penn Discount Software at Rhoose airport, just outside Cardiff. This was the show that saw the launch of Orange Software on the unsuspecting public. There we were, nice and bright at one end of the room, with two Dragons and a Tandy COCO set up to demonstrate our range of new software. We were flanked on one side by the 68 Micro Group, represented by that happy pair Rick Applegate and Ted Bacciarelli, who managed to convince me to renew my membership in their group. Rick had his Dragon running and Ted had something called an Atari which seemed quite a small thing considering all the talk we hear about them. On the other side, we had the organisers John Penn quietly selling all their wares. Following on along that side of the room, we had Harry Whitehouse selling just about every sort of peripheral that you might want. Next was Dave Makin (I think, sorry Dave, I missed your name and forgot to ask, so if it was someone else DOUBLE apologies), anyway, he was playing lots of nice music all day. Jovial Bob Preston was the next one in line, with a large range of software and a few other odds and ends. Just inside the door Computape were selling Quickbeam stock. I now hear that Dave Hitchman has called it a day as far as the Dragon goes, so Computape have picked up their old stock as they did when Microdeal pulled out. Harry Massey of Computape was looking his usual wild hairy self, and they seemed to be doing a good trade from where I was standing. Coming back up the other side of the room, we had an empty stand due to the fact that the Radio Amateurs had moved out of the main room and were settled in at the other end of the airport terminal, to avoid interference I believe. Finally, we come to Dragonfire Services / Dragon Magazine, with Andrew Hill aided by Tudor Davies, selling a range of software packaged in GREEN (could this be the start of a colour war, I ask myself?).

Well, there you have it, a quick run around the show. So, what was it like? Well, the attendance was in the region of 120, NOT the busiest show I have been to, but on the bright side we had people on our stand all day playing on the demonstration games. On the sales side, our most popular product, next to Beanstalker, was Orange Boot. This may have been due to the fact that it was only 1.99, or that all the recently published BOOT routines have had shortcomings, which Orange Boot overcomes. One final note is that we can now offer Beanstalker already patched, on disc ONLY for 4.99. If you have the original Beanstalker, then write to us for details of a special deal.

I hope this doesn't sound too biased but I am of course representing the company.

Noise Filtering...Donna Cage.

Computers are often used to extract signals from a high background noise. This simple program demonstrates one way of doing this.

The screen is divided into 'time slots' and each is set to a random number, with the exception of one, which is set to a fixed number on each sample (screen). The program draws a graph of the average value for each time slot, each time you press a key.

After a few samples you will see the random values get closer to the centre and it will soon become obvious which is the fixed value.

```
10 'SET UP SCREEN
20 PMODE 3,1:PCLS:SCREEN1,0
30 'MOVE TO START-POINT
40 LINE(0,0)-(0,96),PRESET
50 'RESET NUMBER OF SAMPLES
60 N=1
70 DIM V(257)
80 DIM AV(257)
90 'INCREMENT TIME-SLOTS
100 FOR TS=1 TO 256 STEP 2
110 'GENERATE RANDOM NOISE
120 V(TS)=RND(192)
130 'SET FIXED VALUE
```

```
140 V(121)=10
150 AV(TS)=AV(TS)+V(TS)
160 'DRAW GRAPH
170 LINE-(TS,AV(TS)/N),PSET
180 NEXT TS
190 'CHECK FOR KEYPRESS
200 IF INKEY$="" THEN GOTO 200
210 'INCREMENT NUMBER OF SAMPLES
220 N=N+1
230 PCLS
240 'RETURN TO START-POINT
250 LINE(0,0)-(0,96),PRESET
260 GOTO 100
```

Easy Machine Code (20)...RAD

We reached line 690 which is the routine to start a new line in the screen dump.

690 BEQ @NULINE if the B register had reached zero.

Otherwise we now need the next byte, and as the X register is pointing elsewhere it has to be reset with the original top address, and then incremented by one, using LEA.

700 LDX @SCREEN where we took the precaution of storing it for re-use.

710 LEAX 1,X moving the address to the next screen byte.

720 STX @SCREEN will save it for re-use again with the new address.

730 CMPX @SCREND where we stored the screen end in line 70, and can check if the scan is completed.

740 LBHS @STOP this is a new Branch - a Long branch if higher or the same as SCREND, and ends the program.

750 LDA #\$80 otherwise carry on. 760 STA @BIT.

770 LBRA @LOOK and do the next byte.

780 @LOWER LDA #128 the same as \$80. We branched here from line 660.

790 STA @BIT starting with 10000000 again.

800 PULS X get the original address from the stack.

810 PSHS X and put it back, but it is now in the X register.

820 LEAX 96,X increment the X register so that it now points 3 rows below.

830 STX @SCREEN and save it for further use.

840 @LOWLOW LDX @SCREEN again, although it already has this address, this routine will be used when the address has altered.

850 LDA ,X start the lower rows as we did with the higher ones ---

860 BITA @BIT

960 ADDA #6

870 BNE @DWN4

970 STA @CUM

880 LDA @CUM

980 @DWN5 LEAX 32,X

890 ADDA #1 needed for printer data

990 LDA ,X

900 STA @CUM

1000 BITA @BIT

910 @DWN4 LEAX 32,X

1010 BNE @DWN6

920 LDA ,X

1020 LDA @CUM

930 BITA @BIT

1030 ADDA #24

940 BNE @DWN5

1040 STA @CUM

950 LDA @CUM

1050 @DWN6 LEAX 32,X And after this

last routine the scan is complete for one column.

Pascal For Beginners(9)...Gary Coxhead.

Last time (issue 43) I left you with a small challenge which I am sure most of you managed to crack. If anyone is still struggling and would like some help, then just give me a ring. This time I want to come back to a topic I touched on in article 4 which I said would help us in 'idiot proofing' our programs. The facilities in Pascal which we can use for this are called 'subranges & enumerated types' and 'sets', and by giving you some examples you will soon see how useful they can be. I will deal with sets next time.

% Subranges & enumerated types & - The simple data types provided in standard Pascal are integer, char, real and boolean. For some purposes it can be desirable to limit the range of values used or allowed which will trap errors or make the program easier to understand. For example the 2 variables 'hours-in-day' and 'days-in-month' can be declared in any of the following 3 ways. a) VAR hours-in-day, days-in-month : integer; Using this method both variables can store any integer value from -maxint to +maxint. b) VAR hours in day : 0..24; days in month : 1..31; This method uses a special type for each of the 2 variables, each being a subrange of the standard integer type. Any attempt to assign a value outside the permitted range will result in either a compile-time error or a run-time error. The benefit of this is in giving extra possibilities to trap errors. In a large scale program, any such help in locating potential errors is to be valued, and so it is good practice to declare variables with the most restricted possible subrange. A second benefit is in giving the reader of the code more information on the possible values of a given variable.

```
c) TYPE  hours-type      = 0..24;
        days-in-month-type = 1..31;
```

```
VAR  hours-in-day   : hours-type;
     days-in-month  : days-in-month-type;
```

This final refinement gives names to the user defined subrange types, an essential requirement in cases where parameters of these types have to be passed to procedures (covered in a later article). Here are some example programs to test this facility.

```
PROGRAM demo (input,output);
(*illustrates how subrange types help to trap errors at runtime*)
TYPE  hours-type      = 0..24;
      days-in-month-type = 1..31;
VAR    Hours-in-day   : hours-type;
      days-in-month   : days-in-month-type;
BEGIN
    hours-in-day := 24;
    hours-in-day := hours-in-day + 1;
END.
```

Although this program should give no errors when you compile it, at runtime it should give an error because the value of hours-in-day has been taken beyond its allowable range in the last line.

```
PROGRAM demo2 (input,output);
(*illustrates how subrange types help the compiler trap errors*)
TYPE  hours-type      = 0..24;
      days-in-month-type = 1..31;
VAR    hours-in-day   : hours-type;
      days-in-month   : days-in-month-type;
BEGIN
    hours-in day := 48;
END.
```

This program should generate an error at compile time because '48' is way outside the allowable range.



A second technique available for the declaration of user defined types is the use of enumerated types. These are used to increase the readability of the program and to provide more logical data values. As an example, the following methods could be used to declare and fill an array of 12 integers representing sales figures for the 12 months of the year.

```
PROGRAM demo-a (input,output);
VAR   sales-array   : ARRAY [1..12] OF integer;
      month         : integer;
```

```
BEGIN
  FOR month := 1 to 12 DO
    read(sales-array[month]);
  END.
```

```
PROGRAM demo-b (input,output);
TYPE   month-type = (jan,feb,mar,apr,may,jun,jul,aug,sep,oct,nov,dec);
VAR   sales-array : ARRAY [jan..dec] OF integer;
      month       : month-type;
```

```
BEGIN
  FOR month := jan to dec DO
    read(sales-array[month]);
  END.
```

NOTE: Enumerated types are ordinal, and the ord function can be used to obtain ordinal values. Also the purpose of an enumerated type is to make a program more readable, but they are limited to internal use in a program. They cannot be used for input or output since the standard procedures 'read' and 'write' can be used only with data types real, integer or char.

The North East Dragon Users' Club.

The above club is still in existence after nearly 4 years. We have 12 members with an average age of about 40 (old, isn't it!). There are a number of other Dragon users associated with our club who are not members, but boost this North East conclave to about 20. We meet every Wednesday in the lounge of a Sunderland pub and come from as far away as Durham and Middlesbrough. If there is anyone in the North East that we have missed, drop me a line.

As well as general chatter, which ALL Dragon owners are good at, we have an arranged programme that has included, over the past year, Printer Control, AllDream, OS9 including Dynacalc and RMS, DragonDOS, DeltaDOS, Machine Code workshops, the 6522 VIA chip and the TouchMaster tablet.

A number of our members have upgraded to Dragon 64s and have added disc drives. Some have cobbled together with 3" drives that you can buy mail order, very well priced, and requiring just a little electrical skill to fit and connect together along with a suitable power supply and reasonably priced DOS controller.

There have been various other items of hardware purchased by individual members including ROM programmers, DragonPlus boards, DeltaDOS controllers, Touchpads, and Premier Sprite Boards (any info on these would be much appreciated).

We like to play around with various utility programs, and OS9 is starting to play an important part in our programme since it certainly opens up new horizons for the Dragon.

Members of the group subscribe to Dragon User, NDUG, and MicroMart magazines, which leads me onto an interesting point. In a recent edition of MicroMart, their Clubs page mentioned two other Dragon clubs, the Dragon Independent Users Association, and the Slough Dragon 32 Users Group. Surely some member of these groups must subscribe to NDUG, in which case we would like to hear from them, either by letter or preferably through the pages of Update. Why not write a short piece, who knows, we might be able to exchange ideas for our programme of events.

I can be contacted either by 'phone :- (091) 4165415 or by writing to :- 23, Walsingham, Biddick Village, Washington, Tyne and Wear. NE38 7HF. Chris Jobson.

Henceforth (8)...Bob Smith

As promised last time, this month we'll be looking at programming, concentrating first on programs using Double Precision numbers. One of my weaknesses is solving problems that appear in computer magazines. Forth is often ideal for this, but has one drawback - it cannot multiply big numbers. The largest numbers that can be multiplied are both single length yielding a double precision product. Multiplying two numbers that will yield a product no larger than the maximum double precision number means that at least one of the numbers must be less than the maximum single precision number. However, in solving puzzles it often occurs that one of the numbers grows in size while the other decreases. This means that allowing both to be double precision will make programming much simpler.

A number of tries has convinced me that making a word that will do the above is not simple, either because the multiplication cannot handle carries from the lower to the upper half of the number, or the process takes too long.

However, I finally unearthed an algorithm originally used by Russian peasants. This works on the principle of halving one of the numbers, a process not unlike binary searching where one constantly halves the search area. Constant halving reduces the number of operations drastically, thus making the Russian method potentially fast, which it proved to be in practice.

To multiply two numbers Russian fashion, they are written down side by side, then a column made under the lefthand number where each number is half the previous one (ignoring any remainder) until 1 is reached. At the same time, the numbers in the righthand column are doubled. When the columns are complete, any numbers in the righthand column opposite an even number in the lefthand column are struck out. The remaining numbers in the righthand column will add up to the answer. Here is an example:-

To multiply 43 by 17:-

43	17	
21	34	
10	68*	numbers marked '*' are not included in the final sum.
5	136	
2	272*	
1	544	

	731	

A computer program to do this needs to:-

```

define a place that holds the sum of the R.H. column
calculate and retain the sign of the product
make both numbers absolute (positive)
repeat :- if L.H. column is odd then add R.H. column to sum.
           divide L.H. column by 2 neglecting remainder
           double R.H. column
until L.H. column is less than 1
give sum of R.H. column the correct sign.
```

Let's see how this is tackled in Forth. We assume that all necessary double precision words in the toolbox are available. Here is the listing, and I will explain how it works next time.

SCR #311

```

0 (32 bits Russian multn.)
1 2VARIABLE 2COL2
2 : D?SIGN
3   ( d1 d2 --- n3 n4 ud1 ud2)
4   3 PICK 2 PICK 2 SWAP +- SWAP 1
5   SWAP +- 3 2ROLL DABS 3 2ROLL
6   DABS ;
7 -->
```

SCR #312

```

0 (32 bits Russian multn)
1 : 2EVEN?      ( d1 --- f )
2   SWAP 1 AND 0=
3   IF
4     1
5   ELSE
6     0
7   END IF SWAP DROP ; -->
```

SCR #313

```

0 (32 bits Russian multn)
1 : 2ADD2          ( d1 --- d1)
2 2DUP 2COL2 D@ D+ 2COL2 D! ;
3 : 2SWAP2+3
4          ( d1 d2 f --- d2 d1 f )
5 >R 2SWAP R> ;
6 -->
7

```

SCR #314

```

0 (32 bits Russian multn)
1 : 2D*           (d1 d2 --- d3 )
2 0. 2COL2 D! D?SIGN
3
4
5
6
7 -->

```

SCR #315

```

0 (32 bits Russian multn)
1 BEGIN 2SWAP 2DUP + 0= 0=
2 WHILE 2DUP 2EVEN? 2SWAP2+3 0=
3 IF 2ADD2 ENDIF
4 2DUP D+ 2SWAP 2 M/MOD
5 ROT DROP 2SWAP
6 REPEAT
7 -->

```

SCR #316

```

0 (32 bits Russian multn)
1 2DROP 2DROP
2 2COL2
3 D@ ROT D+- ROT D+= ;
4 ;S
5
6
7

```

Gauntlet?..Er, not quite...

Well, after a break of nearly three months I thought I'd better put pen to paper (the Dragon's in pieces again!). This month was SUPPOSED to be a review of Gauntlet (slight problems). I have now got an original copy on disc but unfortunately it's DELTA DOS. Therefore I'm pleading with you for a DELTA user to take this disc off my hands to try it AND review it for us.

Now, what's new on the software front? Well, RALLY is still not available as Pulser are now having to rewrite the whole game over again due to one bug which they could not iron out, though I am assured by the people in the know that it WILL be out shortly, and hopefully it should have been available at Ossett at the end of April.

American software time again, and due out soon is a wrestling simulation game (cutting out the bruises etc!). However, it seems that it will need a lengthy conversion to run on a Dragon. Also on the brink of release is a very good graphical adventure, though I've yet to see it. I've also heard rumours of some other new US games which are on the horizon (ie past the planning stage), but you'll have to wait 'till I'm told or get copies sent to me (you don't think I BUY them all do you?)

Moving on to a review or two, I've decided to explore/pick on the new stack of games from Orange Software, care of Graham Smith and others. One in particular caught my attention, that being MATCHMAKER (sales of this game will now drop dramatically!). Basically, it's a child's game in which you have to pair up objects hidden beneath blocks. It has two levels of difficulty, easy and hard, the difference being that on easy an object tends to appear more than once. The game is well written, the graphics are good, and probably the best thing going for it is that it was turned down by Microdeal. It's one of those games you should buy your kids (or yourself!) because, as I've found, unlike all other action-zap games it does not lose its appeal after about ten minutes and you don't have a huge pile of broken joysticks at the end.

As I've said before with other games, it's not going to be a classic, but at the end of the day it's still going to be there and I'll guarantee that you'll want to load it up again. Please believe me when I say this, I'm NOT plugging the company and I DON'T own 51% of the shares but I know the people who have set it up, it's taken a lot of time and hard earned pennies to get it off the ground and let's face it with the state of the Dragon at the moment who in their right mind would set up a new company with the idea of making a profit?

As a summary, if you want it there tomorrow, BUY A GAME TODAY! Now onto a personal plug! I have got a spare working '64 with a DragonPlus board, along with several other bits and pieces. If you want a list or want to make me an offer drop me a line.

Well, as I think I've written enough to keep our Editor happy (some hope!), I'll sign off with a sore hand and hopefully I should have some more news next month. - Richard Boston.

Helpline 1988

If you have queries on any of the subjects mentioned here, write to the appropriate volunteer, enclosing a stamped envelope for reply. If you need help with a subject that isn't included in the list yet, or you aren't satisfied with the reply that you get, then contact Paul Grade as usual.

FORTH: John Payne, 3, Sibiland Close, Thornbury, Bristol.

FLEX: Jurgen Mitchell, 62, Victoria Grove, Lupset, Wakefield, Yorks. WF2-8JD.

PROGRAMMING LANGUAGES AND STRUCTURED PROGRAMMING METHODOLOGY: Stan Davies, 153, Allestree Lane, Derby DE3-2PG.

GAMES SOFTWARE (MAINLY ARCADE BUT SOME ADVENTURES): Stephen Wood, 52, Downsway, Springfield, Chelmsford, Essex CM1-5TU.

M/C (EXCLUDING FLEX & OS9): DRAGON MUSIC; ARTIFICIAL INTELLIGENCE; "C" (UNDER OS9): Chris Jolly, 4, Pinehurst Walk, Orpington, Kent.

TAPE TO DISC CONVERSIONS (DRAGONDOS): Graham Smith, 3, Ashton Gate Terrace, Ashton Gate, Bristol BS3-1TA.

GENERAL HARDWARE AND UPGRADE CONVERSION PROBLEMS: Bob Hall, 22, Cumbria Close, Thornbury, Avon BS12-2YE.

WORD PROCESSING & GENERAL BASIC PROGRAMMING: F.J. Fisher, 29, Thornham Road, Gillingham, Kent.

BASIC PROGRAMMING: Ian Rockett, 2, Knowle Road, Burley, Leeds, Yorks. LS4-2PJ.

LISTINGS FROM INPUT MAGAZINE; SPRITE MAGIC; AMATEUR RADIO; UPDATE ARTICLES / LISTINGS BY R.A.DAVIS: R.A. Davis, 39, Boxley Drive, West Bridgford, Nottingham NG2-7GQ.

OS9 SYSTEM AND UTILITIES: Jason Shouler, 70, Victoria Road, Parkstone, Poole, Dorset. BH12-3AE.

MODEMS, BASIC ELECTRONICS, ADD-ONS, and FLEX: Tim Hayton, 36, Laurel Drive, Willaston, South Wirral L64-1TW.

DELTA PROGRAMMING: Stuart Mills, 49, Templegate Crescent, Leeds, West Yorkshire LS15-0EZ.

DRAGON HARDWARE PROBLEMS AND REPAIRS: Alan Butler, 16, Barnston Green, Barnston, Great Dunmow, Essex.

MODEMS AND BULLETIN BOARDS / GENERAL COMMS. Gary Coxhead, 54, The Sorrels, Corringham, Stamford-le-Hope, Essex.

COMPOSER PROBLEMS:- Dave Cadman, 32, Breedon Hill Road, Derby DE3-6TG.

DRAGON/DELTA DOS PROBLEMS; OS9, BASIC 09, AND GENERAL BUSINESS SOFTWARE APPLICATIONS: M.A.A. Abba, 55, Longland Court, Rolls Road, London SE1-5BN.

DMP 110 PRINTER PROBLEMS/SCREEN DUMPS ETC.: Dr. J. Hatton, 48, Wern, Llanfairpwll, Anglesey, N. Wales.

GENERAL PROBLEMS AND MOST REPAIRS: Steve Tate, 22, Fairfield Drive, Wormley, Broxbourne, Herts. EN10-6DY.

TAPE TO DISC GAMES TRANSFER (DRAGONDOS): Richard Boston, 257, Upper Elmers End Road, Beckenham, Kent. BR3-3QR.

RADIO AMATEUR PROBLEMS AND ADVICE : Fred Hopewell, 48, Gladstone Drive, Loughborough, Leicestershire. LE11-1NS.

Crossword 32.

ACROSS:- 1A, Instrument for measuring viscosity. 2A, Do it again. 2I, Contains Holy Water. 3D, Complex & baffling network of paths. 5D, Quick moving & nimble. 6H, Main stem of herbaceous plant. 7C, Look into somethings, memory for example. 7G, Small stone. 8C, Rearrange a small one wasted ship to obtain things which can be nested for example. 8I, Combat with lances. 9B, Switch on and off a button on a duffle coat. 10B, Sacred painting. 11E, Wise old herb. 11K, Holy lady. 12C, Set of childrens wheels used for drawing patterns. 13A, Musicians timing device.

DOWN:- A1, Examine to establish truth or correctness. A7, Gas which does not burn but supports combustion. B1, Place where two roads meet. C1, A bivalve mollusc. C8, Voracious winged insect. D1, Communist companion or associate. E1, Globular reddish-yellow fruit. F9, Gain knowledge by study. G3, A regular oval. H1, First or second stomach of a ruminant prepared as food. H8, Bronchial mucus. I2, Symphony by Liszt, overture by Wagner about man alive c.1468-1541. J8, Member of a jury. J1, Found on fairground or road system. K1, Aquatic or terrestrial mollusc. K7, Type of flower. L4, Numbers for inserting in memory locs. M1, Armoured glove. M9, Rearrange one of your favourite groups to obtain a type of beetle.

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

Mains interference....Eddie Stainer.

Do you sometimes suffer from program crashes after spending ages typing in a long one? Do you get loads of rubbish in your listings afterwards?

This could be due to mains-borne interference, transients, arcs etc coming from household items such as heating thermostats, freezers, fridges, in fact ANYTHING that switches.

So why not fit a Metal Oxide Varistor, a fast acting suppressor made of zinc oxide small enough to fit in a 13amp plug, across the LIVE and NEUTRAL terminals (DO NOT CONNECT TO THE EARTH PIN) of your computer plug? It is also advisable to slip a sleeve onto each lead of the Varistor. Best Of Luck!

If you can't get a varistor anywhere, then :- D.J. ELECTRONICS, 64, ENSBURY PARK ROAD, BOURNEMOUTH, DORSET. BH9 2SL will supply one for a 1.00 cheque or P.O. and an SAE.

<<<I should perhaps point out that Eddie is not a majority shareholder in the shop, and he assures me that no insider dealing has taken place! He merely gave us the address so that you can get a varistor if you're having trouble getting one locally ...Stephen.>>>

The Radio Amateur Exam...by G4PGC.

I was surprised to learn that of the whole membership of NDUG, approximately 14% were Radio Amateurs. There have been so many enquiries from the remaining 86% concerning the modus operandi for admission to the happy band that perhaps a few words on the subject may not come amiss.

Fortunately, since the introduction of semi-conductors, valves have more or less become obsolete as far as the examination is concerned, and this, coupled with the present system of Multiple Choice Questions, has made things much easier, since you are not required to draw circuit diagrams etc, as in the old days. In fact, you are actually GIVEN the answers to the questions, but you are given 3 more answers, making four in all, and all you have to do is tick the right one! If this leads you to believe that passing the RAE is a piece of cake, - then FORGET IT, it ISN'T.

The examination embodies TWO components: 1.. Licensing Conditions and Transmitter Interference, in which you must prove that given a licence, you would be competent enough to operate your station responsibly, without annoyance to others. 2. Operating Practices, Procedures and Theory, which covers a wide range indeed. However, if you pass in one subject and fail in the other, you may enter the examination again on the subject you failed in, which means you are half-way there before you start!

So, given a little commonsense, a modicum of dedication and a fair memory (for instant recall of what you have learnt), there is no reason to suppose that passing the RAE is beyond you. It goes without saying that there is much to learn, and if you do not know the difference between a resistor and a

capacitor, it is better to get some groundwork before you enrol at your local College for the examination. The best way of doing this is to equip yourself with a soldering iron and undertake some projects which can be found in books, for example Babani Books have a good range. You will be surprised how quickly you absorb the Fundamental principles of Electronic Theory, especially if you start with projects that may be useful to you. I started with electronic alarm clocks, power supplies etc, all of which have proved useful, and have maintained my interest throughout. Interested? Next month, I shall be giving you a few book titles and addresses of where to obtain them, but in the meantime, get busy with that soldering iron, and may you have no 'dry joints' !

Calling All Clubs!....

As you will see elsewhere this issue, Chris Jobson is eager to get in contact with a couple of Dragon clubs which he knows exist in the North. However, he also wrote to me asking if we could have an update on the club situation. In the December '85 issue of Dragon User, some 20 groups were

listed, and Chris would like to know how many of them are still around, or how new groups have sprung up since.

So, if you are either a group chairman or secretary or whatever, or are simply a member of a local Dragon group, write to me giving a few details such as addresses etc, or perhaps even a small article as Chris did for NEDUC. We'll print the relevant information, and who knows, maybe you'll get a few more members come along or enrol...Stephen.

A shop that sells Dragon software...?

Yes, 'tis true, NDUG has tracked down what is probably the last shop in the UK which still sells Dragon software! Well, DAVID MARSDEN did the dirty work of tracking it down, but fortunately he's decided to share this find of the century with you lot. The address is:-

SRS Microsystems, 94, The Parade, Watford. (near the pond!).

So, if you live within 500 miles of this shop, PLEASE go there and buy something. We need them, and if they're to continue taking Dragon software they need us. David says that they while they only have a few cassettes, they also have some printers, drives etc, so go down there and see what takes your fancy.

And, as it is 'No Connection Whatsoever' month, David assures me that he does NOT work in the shop as a Saturday assistant, and that he has 'no connection whatsoever' with it i.e. his middle name is NOT SRS !

If you know of any shops in your area which stock Dragon software, then drop me a line and I'll give them a mention. I don't mean shops like Boots etc who have an odd copy of Frogger knocking around, but a shop with a genuine stock or interest in Dragon software...Stephen.

Dragon & Co-Co Memory Management.

Recently, I described a memory management unit (MMU) for Dragons with more than 64K. Amongst the usual clot errors (by the author) and typos (by the DraGrauniad staff) <<Don't blame me-I wasn't here then!..Stephen>>, there are 2 that I've noticed as important. Firstly, in part 3, issue 40, half-way down first page, the word 'incorruptible' should be 'interruptable'. Secondly, in the figure for part 4, the signal Y2 from pin 13 of IC9 (ireset) goes to pin 4, IC11, NOT IC1 as shown.

More excitingly, part of the intention of an MMU was to run extended versions of OS9, such as level II; This is now available in the States in a version for the CoCo 3. Recently, Jason Shouler sent me some info on both Level II and the CoCo 3. Both are available from Radio Shack MicroWorld Computer Centre, Route 115 & 512, Wind Gap, PA 18091, USA, at \$64 and \$145 respectively, or 'phone 0101 215 863 8911. However, remember that the CoCo 3 is designed for 110v 60Hz, and NTSC video, and note also that you'll need a Tandy compatible DOS and drive. (The DOS is VERY rare in the UK).

Jason also sent me some bumph on the structure of the CoCo 3 MMU, and I'm currently contemplating the changes I'd need to make my MK.1 design mimic it (and therefore run OS9 II on an upgraded Dragon). The main change is that instead of having 16 mapping registers each controlling 4K of memory, with only one task mapping, the CoCo has 2 task mappings of 8 registers apiece,

each register controlling 8K. There are also differences in addressing, eg the mapping registers are at FFA0-FFAF on the CoCo. Both of these features

require only minor changes to the RWH MK.1 design (in concept, anyway!), but I need some more info on the task switching convention, (and also the use of 'reserved common memory' FE00 to FEFF) before printing an update. Stay tuned!... Bob Hall.

ASCII Corner...Pauline Hampson.

I have recently received a pile of software to review, being 6 adventures from Orange software and an adventure and an educational game from Dragonfire Services. The Underbeings of Croth and Mazerace were originally from Mardian, and I have reviewed them before.

Onto Orange Software's Pyradventure (yes, the Alan cook one), which is worth playing. You have to enter the tomb of King Tutankhamun's father Amenophis the Third to find some treasure.

You start in the shop, which is full of useful things, next a valley, and then a hut. A good look around should equip you for the pyramid itself, which is full of passages and sagging ceilings. I found the locations interesting and the game fairly easy. There is a SAVE facility and a FREEZE facility which I didn't use as it was lost if you died. There is a large but simple maze which needs mapping carefully. I was too clever with this and it took hours. My advice is draw it as you see it. Price 2.99, and well worth it.

Whatsit R.A.Davis.

```

0 CLS:PRINT:PRINT" THIS WILL RECORD DETAILS OF 700 PROGRAMS AS DATA STRINGS GIVING DISC,TITLE, AND A FEW DETAILS.OR IT CAN BE USED F
OR ANY OTHER PURPOSE. THE DRIVER ROUTINE IS ON A SEPARATE DISC AND THE DATA ON ITS OWN DISC. "
1 PRINT" THIS MEANS THAT ALL 40 TRACKS OF THE DATA DISC ARE USED, AND EACH SECTOR OF EACH TRACK CAN HAVE TWO STRINGS OF 128 CHRS.:EXEC34
091
2 CLS:PRINT:PRINT"THE FIRST OF THE TWO STRINGS IS USED FOR DISC & TITLE WHILE THE SECOND IS USED FOR DETAILS. WEITHER MUST EXCEED 120 CHRS
. AT 32 CHRS PER LINE THIS IS 3+ LINES. THE SEARCH IS GLOBAL AND FINDS ANYTHING.:EXEC34091
3 CLEAR20000:CLS:T=0:S=1
4 CLS:PRINT:PRINT:PRINT" 1.ENTER NEW DATA ON DISC ? 2.SEARCH FOR ANY WORD ? 3.ALTER DATA IN TRACK/SECTOR ?"
5 I$=INKEY$:IF I$(>)"1" AND I$(>)"2" AND I$(>)"3" THEN 5 ELSE IF I$="2" THEN 22 ELSE IF I$="3" THEN GOSUB43:GOTO4
6 X$="":Y$="":S$="":N1$=""
7 GOSUB35
8 IF S=19 THEN S=1:T=T+1
9 IF T>39 THEN PRINT" DISC FULL":POKEHFF48,0:STOP
10 CLS:PRINT:PRINT" TRACK "IT;" SECTOR "IS
11 TT=720-(168T):TT=TT-S:PRINT" SPACE FOR "IT;" ENTRIES LEFT"
12 LINEINPUT" DISC NAME ";A$:GOSUB20
13 LINEINPUT" PROGRAM TITLE ";A$:GOSUB20
14 X$=" " +S$:S$=""
15 LINEINPUT"BRIEF DESCRIPTION (NE120 CHRS) ";Y$:GOSUB19
16 S=S+1:CLS:PRINT" MORE (Y/N)";
17 I$=INKEY$:IF I$(>)"N" AND I$(>)"Y" THEN EXEC4H8009:GOTO17
18 IF I$="N" THEN 4 ELSE6
19 SWRITE 1,T,S,X$,Y$:N=N+1:POKEHFF48,0:RETURN
20 S$=S$+" "+A$
21 A$="":POKEHFF48,0:RETURN
22 CLS:PRINT@10," SEARCH":LINEINPUT" WORD ";N$
23 FOR T=0 TO 39:FOR S=1 TO 18
24 X$="":Y$=""
25 SREAD1,T,S,X$,Y$
26 IF LEFT$(X$,1)(">)" THEN 34
27 I=INSTR(1,X$,N$):IFI(>0 THEN GOSUB42:GOTO30
28 J=INSTR(1,Y$,N$):IF J(>0 THEN GOSUB42:GOTO30
29 GOTO32
30 PRINT" MORE ?";
31 I$=INKEY$:IF I$(>)"Y" AND I$(>)"N" THEN EXEC4H8009:GOTO31 ELSE IF I$="N" THEN 34
32 X$="":Y$="":NEXTS
33 NEXTT
34 POKEHFF48,0:PRINT:PRINT" SEARCH ENDED";BEEP1:PRINT" PRESS ANY KEY":EXEC34091:PRINT:GOTO4
35 T=0:S=1
36 SREAD1,T,S,X$,Y$
37 IF LEFT$(X$,1)(">)" THEN S=S+1
38 IF S>18 THEN S=1:T=T+1
39 IF T>39 THEN PRINT" DISC FULL":END
40 IF LEFT$(X$,1)(">)" THEN POKEHFF48,0:RETURN
41 GOTO34
42 PRINT:PRINT"TRACK "IT;" SECTOR "IS:PRINTX$:PRINTY$:RETURN
43 CLS:PRINT@10," ALTER ENTRY":INPUT "ENTER TRACK NO."IT1
44 INPUT "ENTER SECTOR NUMBER";S1
45 SREAD1,T1,S1,X$,Y$
46 PRINTIT1;S1;:PRINTX$:PRINTY$
47 PRINT" press e to escape or p to proceed"
48 I$=INKEY$:IF I$(">)"E" AND I$(">)"P" THEN 48 ELSE IF I$="E" THEN RETURN
49 LINEINPUT"NEW DISC NAME ";A$:A$=A$+" ":
50 N1$=N1$+A$
51 LINEINPUT"NEW PROGRAM TITLE ";A$
52 N1$=N1$+A$:X$=" " +N1$:N1$=""
53 LINEINPUT"NEW BRIEF DETAILS ";Y$
54 SWRITE1,T1,S1,X$,Y$:A$="":RETURN

```

The Late, Late Bit

I think I'll become an "Expert", it has to be better than working for a living, and from what I've seen of experts generally, it doesn't require any experience or intelligence at all, although I'm told that previous employment as a thickness comparator for short planks could be an advantage. What's all this in aid of?. Not a lot, it's just that I've been reading today's papers and discovered various examples of "expertise", such as "...if the water is dry it should be watered thoroughly...", and "....death was caused by heart failure following the accident in which he was killed...", and "...MS-DOS is a system which allows programs to be used on any computer...". If people are getting paid for such expert observations I'm sure I could be an expert too!. Why have I wasted so many years working for a living?!. Well, I suppose I'd better get back to more Dragon related topics for a while. As Stephen mentions in his editorial, Tom Goodfellow was a bit put out about me passing on complaints in Update about the way some people are using his board ... although why he chose to reply via Dragon's Roar I can't imagine. However, having discussed the matter with Tom it appears that his main point is that he would prefer people with complaints to contact him personally either direct or via the board. I'll certainly go along with that, and not only where BB's are concerned. If you think you have a valid complaint about anyone or anything the correct procedure is ALWAYS to tell the person or firm responsible first, and THEN if you don't get any satisfaction tell us. It is usually quicker and is anyway more polite. I have to admit that BB's in general appear to bring out the infantile in a lot of people, rather like FM CB does, and it can get damned irritating for anyone who wants to use the things properly, but BB's all have a Sysop slaving away somewhere in the background, and if you run into pages of "my RAM's bigger than your RAM" garbage you do at least have someone to talk to about it. Why not give it a try?.

By the way, before someone tries to blackmail me with it I'd better own up to my latest crime. I have acquired another computer. No, it is NOT an Amstrad, ST, Amiga, or even an Archimedes (I thought he was the bloke who discovered screws in the bath or something), it's another antique, an Apple 2+ copy. No, it is NOT taking over from the Dragon, I just got it to play with and to find out if I could still remember how horrible CP/M really is. (I can and it is). It's quite a friendly old beast and converses quite happily with the Dragon, although they seem to have difficulty in really understanding each other's dialects, but they're learning (even if I'm not), and the Dragon still does all the work!. Anyway, now you know, so it's no use telling me to put 10,000.00 in an old Spectrum case and leave it behind the loo door at Watford Gap Services, you can tell who you like, I wont pay!!, but if anyone out there happens to find any cheap (or even cheaper) bits or pieces that a 2+ might use please let me know.

Now for the important bit!. Our Beloved and Revered Editor, Stephen of Chelmsford, STILL wont agree to move down here and take over publishing the newsletter as well as editing it. He claims I'm not offering him the right bribes, and not being complimentary enough!, even though I offered to send him a Yorkie bar so he could bribe one of the local truckers to give him a lift here!. Compliments is it, Stephen?, well, if you insist, but I'd like a written statement from you first that you wont blame ME if people start getting funny ideas about us ... I mean, I don't mind, I've been accused of most things at one time or another, but have YOU?. (and if so, were they true???!).

Well, that should be about the end of the page, so I'd better stop now. One last thing, I see that one G.Dickinson MP is claiming that "witchcraft is rampant in England", so you'd better be polite to your Chairman in future or I'll have you all hopping back to your ponds. Paul.

Crossword 31 Answers...

Across:- 1A). Call of the wild. 2C). Middle. 3A). Mammoth. 3J). Loam. 4E). Percolate. 5G). Jersey. 6A). Doris. 6F). Affront. 7B). Hydrofoil. 7K). Orb. 8A). Radial. 8G). Breeze. 9G). Stun. 11B). Rover. 12H). Asdic. 13A). Carbon Dioxide.

Down:- A1). Commodore. B1). Adapt. B8). Acorn. C3). Marry. C10). Sour. D1). Limb. D9). Save. E3). Opus. E7). Range. F5). Gaol. F10). Grin. H1). Henceforth. J1). Well. J5). Solenoid. K7). Ozone. M1). Dime. M8). Pumice.

No all correct answer so far, so next month's winner will get TWO games tapes. What are they? ... you'll just have to send in the first all correct entry and find out, wont you?!. Paul.

Notes from Gremlin Towers!. R.Harris.

A few thoughts on topics raised in the April issue of Update.

[1].The BOOT routine by Max Hantsch is excellent, provided that the resulting disc is used with the same version of DragonDOS on which it was created. Using a different version may sometimes cause a problem, since it uses the RUN vector.

This can be prevented if you change line 22, removing CHR\$(PEEK(&H195))+CHR\$(PEEK(196)) and replacing this with CHR\$(&H01)+CHR\$(&H94).

This means that the BOOT routine contains the instruction JMP404 (hex 194) and should work with any version of DragonDOS.

[2].Martin Armitage's STRUCTUR utility for BASIC 42 includes defined PROCedures, WHILE ... WEND ... REPEAT ... UNTIL etc. Details on request.

[3].I will be writing a RANDISK utility for BASIC 42, but don't hold your breath waiting for it!.

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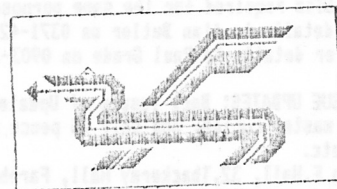
DRAGON USER magazines. May 83 to June 86 inclusive. All in good condition. Sell to highest bidder. All proceeds to Group copier fund. Come on, make me an offer!
Phone Neil Springleour on 0536-66590.

WANTED. Superwriter2 manual. Will pay all costs.
Please contact F.J.Fisher, 29,Thornham Road, Gillingham, Kent.

WANTED DEAD or ALIVE!. CoCo disc controller.
Bob Hall, 22,Cumbria Close, Thornbury, Bristol. (416445).

DOS EPRONS. Your DragonDOS or SuperDOS reborn to V1.7 (as per D.U. patch with additional corrections.) 3.00, or reborn to DOSPLUS for 9.00. DOSPLUS EPRON 11.00. (Please state whether Dragon Data, DDDD or SD 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, Frinley, Camberley, Surrey.GU16-5UF.

WANTED. Dragon DOS manual.
Geoff Lewis, 73,Swanborough Drive, Brighton, Sussex.BN2-5PH.



Classified Ads page - - - - -

MDUG 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 SD or DD 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.

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DRAWZEE: 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.

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NEWCOPY: Machine code tape utility for the production of backup copies of any w/c programs. Allows loading and resaving of both headed and headerless programs, plus many other facilities. Written by Stuart Mills. 2.50 inclusive.

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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.D. 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, Linbrick 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. 18.95.

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

PD-PPAK: 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 app 4" x 4.5").

Text, Data, and Dream 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. PH21-1WT.

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. (MDUG).

DELTA DOS UTILITY: m/c utility to copy ALL Basic and w/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. Bushell, 33, Tennyson Avenue, Clevedon, Avon. BS21-7UJ.

OS9 PROLOG! Complete implementation of this 5th generation language. Now 24.95 with printed & bound manual or 14.95 with manual on disc. "C" source code included. "Chris Jolly's Prolog is an essential acquisition". (Update Sept. 1987). Metasoft, 4, Pinehurst Walk, Orpington, Kent. BR6-8DD.

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, Deltados, or tape at 4.00 inclusive. Also available is a very comprehensive Home Accounts program with many useful features. Available ONLY on DragonDOS or Deltados disc at 4.00.

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

NEW PROGRAMS FROM THE GROUP: 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 w/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.

DRAGON MUSIC SELECTIONS: These selections of music on either disc or tape are arranged and produced by Dave Cadman. There are several selections to choose from, Marches, Classics, Rags, Standards, Miscellaneous, and Classics 2 is now ready for release. All selections are the same price and contain several full length tunes. Prices are 3.50 on tape and 4.00 on DragonDOS disc, inclusive. Cheques and orders to Dave Cadman, 32, Brendon Hill, Derby. DE3-6TG.

WANTED! Touchmaster Graphics pad and software for Dragon. Must be in "as new" condition. Will pay postage or collect. Purchase or exchange. Phone Roger on 021-384-6885.

CONTACTS WANTED!!!!: College teacher with Tano Dragon 64 wants contacts with other Dragon owners. Interests experimental, programming, B64 comms with other computers, TRS80 conversions, etc. Please write to Roy Williams, 6710 Virgilian Street, New Orleans, LA 70126, U.S.A.

DRAGON 64 with Plus board, all cables, manuals, dust cover & transit case. 145.00. DragonDOS cartridge with 1.0 & 4.0 EPROMS and recent new controller chip 40.00. BS/BD twin Toshiba drives 130.00. Full suite of FLEX software, games, books and magazines. Phone Mike Ganley on 0272-51347 or 0272-731729.

DRAGON 32 FOR SALE 35.00 inc postage, or I will upgrade it to 64K for 45.00 inclusive. 64K RAM's suitable for 32/64 upgrades 6.00 per set of eight, inclusive. 27256 EPROM's only 2.00 each!. Alan Butler, 16, Barnston Green, Barnston, Great Dunmow, Essex. CM6-1PW. Phone 0371-4234.

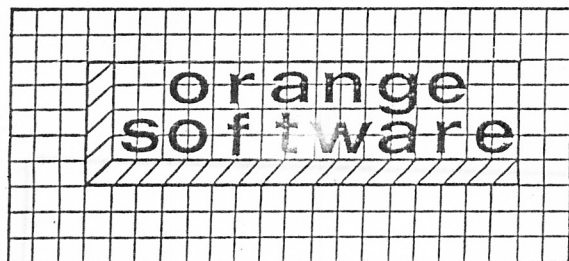
WANTED URGENTLY!!!!: Either an original "Superwriter" manual or a good photocopy. PLEASE!!!!. Stephen Wood, address as on the front page!.

WANTED: Manuals for OS9 Stylograph, "C" and Dynacalc. Please send details and price to:- Randy Longshore, 15547, Chequer Drive, Chesterfield, No. 83017. U.S.A.

FOR SALE: Gemini Database (offers). **WANTED:** Instruction manual for DREAM assembler. Richard Deakin, 55, Heron Street, Rugeley, Staffs.

WANTED: Printer routines, screen dumps etc, for OKI Microline 92 printer. If you can help please contact Bob Reid, 9, Mountside, Pontymason Lane, Risca. NP1-6JG.

15.



new software
releases

For the DRAGON 32 & 64

LUCIFERS KINGDOM



DRAGON 32/64

Lucifers Kingdom is a scrolling, "shoot-em up" game, in which you have to traverse through different planets and regions in order to destroy Lucifer himself, with a host of "baddies" trying to stop you achieving this.

The terrain is split up into 5 regions (Epsilon, Delta, Gamma, Beta, Alpha) with each region having 6 planets, all different, to complete. You begin on region Epsilon, planet Giotto, and must fight your way to region Alpha, planet Lucifer.

Game Features:-

1. Fast, smooth, hi-res scrolling.
2. 8 different alien types, each animated and with their own method of attacking.
3. Fully animated landscapes.
4. Increasing difficulty, as the planets in each region get longer and the aliens get faster.
5. 30 different planets to conquer.
6. High score table, and 100% M/C

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FISH VAN SCANDAL cassette £2.99 []

LARKSPUR II cassette £2.99 []

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VISITEXT DRAGON DOS disk £13.99 []

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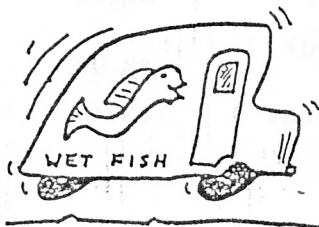


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All the normal verb/noun commands are used, including a SAVE and LOAD facility for saving your current position in the game.

THE GREAT FISH VAN SCANDAL



THE GREAT FISH VAN SCANDAL
Text adventure for the DRAGON 32/64
(C) ZENNAN GREEN

A strange thing happened this morning. As you walked to work, you were jumped by two masked men, blindfolded, tied up and gagged and thrown in the back of a van, (a fish van by the smell of it). Then one of your captors whacked you on the head. When you regained your senses, there you were, in an even smellier, damp cell. Not knowing why you were being held, your only thoughts were of escape...

This adventure uses all the normal verb/noun inputs and NSEUD for directions.

Supplied by ORANGE SOFTWARE
The Garth, Star Road, Nant-y-derry
Abergavenny, Gwent. NP7 9DP.

DRAGON 32/64

<p>VISITEXT text processing system for the Dragon 32/64 -----+----- full 64 characters / line 48 lines / page real WYSIWYG processor -----+----- 13.99 - DRAGON D.O.S disk 12.99 - Dragon cassette</p>

Your Name _____

Your Address _____

Top quality
Software

Pulser Software,
36, Foxhill,
High Crompton,
Shaw,
Oldham
OL2 7NQ.

For the
Dragon 32/64

Utilities

MAGBASE	The famous magazine article cataloguer (database)	
	Tape version	£2.49
	Disk version	£3.49
	Tape + DU (94k) or Update (50k) files	£3.49
	Disk + DU or Update files	£4.49
	Disk or Tape + DU + Update files	£7.49
DISKBASE	For cataloguing disk software with a minimum amount of work required. Many features. 5 dragon DU review	£2.99
COPYCAT	Makes copying from disk to disk so much easier, along with other features to make it an invaluable utility	£3.49
DISCUP	Moves disk workspace out of graphic pages. 64k only	£2.49
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SPY AGAINST SPY	A game where two people can play against one another, trying to collect all the items from the embassy before the other and before it explodes.	£5.49
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Extras

EPROMS PROGRAMMED to your requirements	£3.50
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Software is available on tape, Dragonos compatibles and Deltados depending on the program. Other titles have special requirements. Please enquire before purchasing.

Cheques/POs should be crossed and made payable to Pulser Software.
All prices listed include postage & packing.