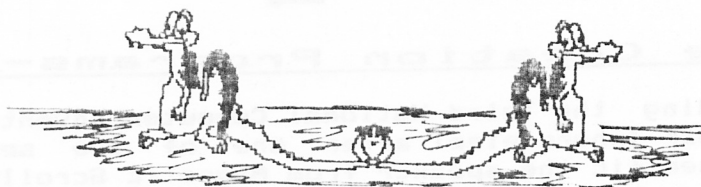


The Newsletter of the National Dragon Users Group

DRAGON



UPDATE

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The Gaffer's Bit.....

Two main pieces of news this month, one very good, one very bad, and I suppose I'd better get the bad out of the way first. I've heard from Bob Harris that he can no longer continue publication of Dragon User magazine, and that the January issue will very probably be the last. Reason is the expected one, lack of subscribers, and having discussed the figures with Bob at some length I have to agree with him that he has no alternative, and that D.User has finally reached the end of the road. There's no way that either Bob or Helen can be blamed, they did a very good job under very difficult circumstances, but the total apathy of the average Dragon owner won in the end. Everyone was warned many times, and most took no notice at all, and the result was inevitable, so we have lost the last of the commercial Dragon publications. Anyway, more on this later, but to move on to the good news, the Weston show appears to have been a 100% success!. Andrew Hill is very pleased with the result, and so far as I know all the exhibitors came away with more cash than they arrived with (the Group certainly did, thanks to the efforts of Bob Hall and his helpers). Around 250 people attended, and according to reports a good time was had by all!. This means that the way is clear for a London show in early April, which will be a joint Dragonfire/N.D.U.G effort, and we will let you have details as soon as the dates and location are finalised. The old Dragon is still a long way from dead, and there should be at LEAST two major shows in 1989, our London one and another Ossett show, so just because D.User has had to drop out that's no excuse for YOU to ditch your Dragon or for the software firms to start converting to ST format!. More on both subjects later, but that's all I've space for here, so have a good Christmas and an even better 1989, and if anyone tells you you should change machines give 'em a packet of Paxo and tell them to emulate a turkey!.

Paul G.

The Editor's Bit...

Right, I'm back and in a foul mood because this issue has taken me FAR too long to type up! As to why there wasn't an editorial last month, well you can choose any one these: Paul ate it; Paul lost it deliberately; Paul KILLED it before/after reading it; Paul spilt a Vodka'n'coke over it (is the Dragon still working, Paul?!). I dunno what happened, but I certainly wrote one.

Yes, okay, so I WAS conned into going down to Worthing to help our overworked Chairman... And help I did. ALL the 'phone calls suddenly stopped and the mountains of letters just didn't arrive!. This gave us plenty of time to watch some Blake's Seven videos (the REAL purpose of my trip!) several times each while Paul tried to set the tracking on the copier... oops! ahem. What? You mean you don't like Blake's Seven?? Shame!

If you're in the vicinity, drop down to Navarino Road. The sea air does wonders for your health. (cough, cough).

Um...what else. You were almost treated to another pageful of me this month, but I actually had a tiny response to my pleas (thankyou, keep it up!) and consequently you'll have to wait 'till the January 1989 issue...Stephen.

I dunno how he managed it, but Stephen is absolutely right about the mail and the phone calls ... and the day after he went back about twenty letters arrived and the evening was wall to wall phone calls!. He's wrong about last month's Editorial though, he may have written it, but if so he forgot to save it to the disc!, either that or someone at the Post Office unsealed the envelope, deleted the files, and carefully sealed it all up again!.. Paul.

Adventure Creation Programs-Tim Lomas.

While attending the Third National Computer Adventurers' Convention, I was chatting in the bar (where else) after one of the seminars to a group of people, to be specific the speaker from Magnetic Scrolls, one of his colleagues and a rep. of Locomotive Software. We were talking amongst other things about Adventure Creation Programs such as The Quill, and discussing the problems of Quill adventures "looking QUILLED", ie the fact that it's difficult to design an adventure that looks different with this type of program.

This got me thinking about Adventure Creation programs in general, and it occurred to me that the major problem with such devices is that they only really allow you to change location descriptions, object descriptions, and locations, exits and a few other bits and bobs such as light and dark. Now this is completely inadequate, in particular for an adventure I'm writing on and off at the moment (sorry folks, it's for the PC), which needs quite a number of specialised verbs (in latin, actually). For some odd and obscure reason my mind wandered to Forth, a language which I personally dislike. I've always hated reverse Polish notation since I owned a Sinclair pocket calculator which used it back in the early 70s, but one thing about Forth is the ability to define words from a number of primitives and build it up in that way. So what's this go to do with adventure creation? Well, when you think about it an adventure program can be viewed as a similar structure (a fairly loose analogy I know but reasonable) with most verb noun (or if you're into complex parser verb noun qualifier etc) combinations being able to be built up over a number of primitive definitions.

As an example, take a telephone box which is really a transportation booth, the command 'DIAL 99' which transports the player instantly to location 99 could be seen as a combination of 'Output transport message', 'Move player to location', 'Output location description'; or OPEN CUPBOARD when used to discover a previously hidden object becomes 'Output message "You open door" (or whatever)', 'Hide object' (cupboard with closed door), 'Show object' (cupboard with open door), 'Move object' (the thing that's hidden, into the cupboard), where the words in '' represent primitives.

This can be further extended by allowing the command 'THROW BALL AT CUPBOARD' to open the cupboard, this time we use the action previously defined ('Open cupboard') as part of the definition with a couple of messages about the ball bouncing around. Sounds simple, doesn't it?

Well, after cogitating for a while I got round to wondering how this could be implemented, and came to the conclusion that what was needed was a database style structure, which defines all the terms along with location descriptions, objects and all the other bits and bobs which will be needed. This database will then be used as a psuedo language which acts as the precompiler for the language you want it written in. It then writes the program for you (preferably directly to disc), and you simply compile the code generated. Result..... Hey Presto, you're adventure is sitting there ready to use. If you want to change things, you just reload your database, change the items you want changing, and off you go again.

It isn't quite that easy of course, the database actually needs quite a bit of structuring, and will include such nasty things as indexed message files and considerable internal checking for your definitions, especially if you try to delete a verb which is used in the definition of a later verb, but the basic idea is reasonably simple.

Personally, I'm intending to have a bash at this project later this year. I'll be using a PC and Turbo Pascal V4. Writing the source code to disc and using unit files, I should have plenty of memory to play with. For the Dragon, I suspect it may be more difficult with the lower memory and the problem of writing the source code. Possibly OS9 or Flex, which would allow you to write the source in an ASCII file, would be more suitable than trying to create a Dragon BASIC file with all the fiddly bits. When I've had a go I'll probably write another piece and let you know how it goes. If anyone wants more details of the plans then feel free to contact me, (my address is at the top of issues 12-38 when I was editor). More to the point, if anyone else decides to try the same thing, I'd be interested in hearing the results.

Seeking The Dragon. (9). Mike Stott.

At the time of writing this article (18th November 1988) the software scene appears to be rather quiet as I have not received any completed versions of any software. In fact the only new item I have received is a music disk from Dragonfire which still needs graphics and a menu adding to it. I have seen a faster-playing version of Impossiball and I believe two of my reviewers have got more up to date versions of CAD-6809 from Pulser and Dragon Graphics Suite from Knight Computer Services.

Other future releases I have heard about are a text adventure and music programs from Pulser and a disk-copier (N.B. not for piracy) from Dragonfire. I have also heard about software which has already been released by other companies but it would appear that the companies do not want them mentioned on this page as they have not been in touch with me themselves.

I would like to thank my, now slightly larger, band of reviewers for their help in getting the backlog of software reviewed and hopefully you will soon see the fruits of their efforts on your behalf on these pages. At the moment I have still got a Seikosha Screen Dumper which requires a Seikosha GP100A printer and Easel Plus which requires Basic42 to review so if anyone is interested please contact me.

• **SUNKEN GHOST - Dragonfire 3.00** (Tape only at moment) by Phil Chatfield.

This article, should it ever see the light of day, will herald two firsts. The first attempt by yours truly to review any sort of program, and (you'll like this) secondly the FIRST adventure I have ever completed.

To begin with the program is in basic and would need to be for me to cope with it. Before moving on from this point herein lies any recommendation that may be extant in this review.

You are browsing the life's work of a man who's been to Ceti V, wandered the streets of London with friend Pettigrew, clambered up Dragon Mountain, and gone in Quest of Wizards to no avail. Perhaps it's something you are born to? If so, not to me.

So here it is at last, the adventure game for all those budding adventurers who have skirted the fringes of so many exciting scenarios and got absolutely nowhere. Here's your chance to plunge to the depths and never worry about your air supply. Here's your chance to encounter no greater danger than a Crazy French Diver (bar one), and what threat does he pose to a resident of this sceptered isle. Sarcasm I hear you taunt - not a bit of it, my words are sincere. This one's for me and all those other poor faceless ones who've never got to the end.

Go to the depths, explore the hulk, concentrate on the sting in the tail, but accept it for what it is and enjoy!!! BASIC.

• (I have not edited this review at all as I really needed an unbiased view of this adventure, having first come across it in February and again in about June. The only challenge is the diver who appears randomly and either kills you or steals the item needed to progress further unless you have been lucky enough to find a useless item for him to steal. Alright for a beginner who does not mind the random finish to the game.-Software Editor)

Immortal Strain - Dragonfire 4.00 Tape or Disk.

The visual appearance of this text adventure is very different to the usual on the Dragon, being white characters upon a black background similar to the BBC (computer not TV channel). I found it better setting my colour TV to B&W.

At first I thought it was like the above game with a random chance of being bumped off but then I realised that I had gone wrong in my choice of action in an earlier stage and started again from the very beginning despite all my saved games. Only about 1/2 the locations of many adventures but very taxing, though reasonably logical, and will take anybody quite a few sessions to solve it especially as the forest is very confusing. Try and examine the cave on the beach and you are told "It's not here now" and a few other minor quirks only slightly spoil the enjoyment of this adventure. Well worth the extra 1.00 for this over Sunken Ghost.

review material and reviewers still

wanted!!!. Please contact Mike Stott NOW

Pascal For Beginners(15)...Part One.

This time I want to cover a very powerful programming tool known as RECORDS. BASIC has nothing similar to this except very expensive implementations on large PCs! Records are mainly used to process files on disc and are therefore ideally suited to database programs and the like. To explain - the record is a data structure to use where a group of elements of different types are to be considered as a unit. Records have the following general properties: a) A record has a fixed number of components, specified in a TYPE declaration.

```
TYPE    data_type = record  month : 1..12;
                                day  : 1..31;
                                year  : 1990..2000;
```

```
VAR      birth_date,today,input_date : data_type;
```

B) Each component of a records is called a field. C) Each field can be of any type available in Pascal. D) Each field is designated by its "field identifier", which is used as a qualifier after the name of the record variable, e.g. IF (input_date.month = 2) AND (input_date.day >28) THEN writeln('Invalid');

E) Records can be copied using the assignment statement, e.g.

```
birth_date := input_date
```

F) A record can be passed as a parameter to a procedure or function. G) As with arrays, it is not possible to read or write an entire record from the keyboard or to the screen in one operation. H) Records can be components of arrays and files. Records stored in arrays are lost when the program which creates them is terminated. Permanent storage on disc is achieved by storing the records in a FILE structure. Pascal provides a serial file structure, in which records may be accessed only by scanning through the elements in the file one by one. Components of files may be any Pascal type, e.g. integers, characters, arrays etc.

I) The WITH statement is provided to reduce the amount of writing needed to refer to individual files within records. e.g. :

```
WITH input_date DO
BEGIN
    writeln('Enter date in form DD MM YY : ');
    readln(day,month,year);
END;
```

The main points are illustrated in the following example, in which input from the keyboard is stored in an array of records before being sorted into alphabetical order and displayed on the screen. The array of records is then transferred to a file, The sorting algorithm used is a simple form of bubble sort.

```
PROGRAM files (input,output,class_file);
CONST    class_size = 5;
TYPE     name_type = RECORD  initials : PACKED ARRAY[1..4] OF char;
                                surname  : PACKED ARRAY[1..20] OF char;
                                END;
    student_type = RECORD  name : name_type;
                                age : integer;
                                enrol_no : integer;
                                login_no : PACKED ARRAY[1..7] OF char;
                                END;
    data_file = FILE OF student_type;
    class_records = ARRAY[1..class_size] OF student_type;
VAR
    class_details : class_records;
    class_file : data_file;
PROCEDURE fill_array(VAR input_array: class_records; limit: integer);
    (%Fill array of student records with data entered at keyboard%)
VAR
    index : integer;
```


Alternative Micro Show-George Dawson.

After a quick and easy journey down the A39 from Derby it was very nice to see signs out for the show, with plenty of room to park as well on the site. Paid and entered, and was nicely surprised by the size of the area. The emphasis was on the Einstein computer groups but others were catered for as well, like Enterprise, QL, Lynx, Texas 4a, and even one lonely chap from the Jupiter Ace group, but alas no-one to represent the dragon. Before everyone say "why didn't you organise something", I only knew about it a week beforehand and not knowing anyone local made it very difficult to know where to start. The thing that struck me was the amount of involvement by the Einstein groups from Bedfordshire, Avon, the Midlands and many other places. Support was there with the usual software and hardware sales although there seemed to be a lack of noteworthy bargains. However, there were some (new) 32s on sale for 45.00 each, and software for the Dragon from John Penn, R & AJ Preston and Emsoft and one other stall whose name I didn't get.

All in all it was a good day out and I did find other Dragon users to chat wit, mentioning NDUG of course.

Now back to the lack of a dragon stall - surely there must be some experts out there local to this show. Yes, I am local (within 50 miles) and would certainly be willing to help behind a stall, but I'm no expert by any means - just someone struggling to enjoy a hobby and still working on 10 line subroutines. As Paul so often says IT IS UP TO US, YOU and ME! If notice of shows is given early enough, can't we all try to support the ones local to us and let people know there are still Dragons out there? ■

The reason that the Group didn't have a stand there was that unlike the Dragon shows, stands for user groups at THIS one were damned expensive, and we would have lost YOUR money by taking one!. However, we DID advertise the Brum show in Update a couple of months in advance!.

Adding New Commands...Eric Hall.

In the July 1985 issue of Dragon User Brain Cadge wrote an excellent article, the Windows routine. This multi screen display attracted a lot of interest and in my case hours on the computer trying to get it to work on my Tandy. I eventually succeeded after several months.

So, why the big problem? Well, the Tandy Corporation designed their CoCo to be upgraded from a mere 4K BASIC machine in three and then four stages. Firstly, the 4K machine could be upgraded to 16K. Secondly, from the 16K machine to 16K DOS which included Extended BASIC, or as a third option a 16K or 32K Extended BASIC machine (Enter the Dragon 32). The fourth stage was a 64K Extended BASIC machine (Enter the Dragon 64) with the new DOS 1.1 to run OS9 and higher level languages.

In order to maintain downward compatibility the CoCos have two separate ROMS on board, the first containing BASIC and the second containing Extended BASIC. The Dragon mixes both BASIC and Extended together.

The command interpretation tables start at location \$120 on both the CoCo and the Dragon. Each table uses the same format:

BYTE NO.	CONTENTS	DRAGON	BASIC	TANDY EXTENDED
0	Number of reserved words	4E	53	25
1 - 2	Reserved Word Table Address	8033	AA66	8183
3 - 4	Despatch Table Address	8154	AB67	813C
5	Number Of Functions	22	20	14
6 - 7	Function Table Address	81CA	AB1A	821E
8 - 9	Function Despatch Table Address	8250	AA29	8168

The main command vectors for the Dragon are at locations \$120-\$129, followed by the secondary vectors at location \$12A-\$133. This is where any new commands are stored but in doing so you must move the USR address table elsewhere in memory. When no extra commands have been added the locations \$12A-\$133 contain jump addresses to the Error Handling Routine which will return a syntax error in BASIC. The CoCo however has three command vectors allocated. 1) for BASIC. 2) for Extended BASIC. and 3) for TandyDOS. This is where I was having trouble with the Windows routine. I attempted to relocate the USR table but the Tandy would not allow this. By putting the extra commands in the hird CMD VECT the routine worked perfectly, and since then it has been relocated in memory and runs in 64K mode with DOS connected without any problems.

RMS(2) . . . Chris Jobson.

Step 3. I need to fill in the newly formed file with information; to do this use rms.memlist. This should produce a fill out form on the screen with prompts as specified in the directory file column 4 followed by the number of spaces specified in column 3. As far as I can tell RMS decides the layout of the screen - ie I haven't found any way to influence it...(hint).

Start to fill in the screen as required remembering that the first bit is the keyfield which must be completed before the form can be entered into the records.

At this time I began to realise that I had boobed a bit. Since my keyfield was a surname and if I later found I had misspelt one then I could not change but instead had to delete and rewrite it. What is sillier is that if two people shared the same surname (not uncommon among relatives I hear you say) then only one can be entered into the file. What I should have done was make the keyfield something unique such as a membership number. Rather than restart the process, the way I worked out how to correct this was in two stages.

Stage 1 : Take the dictionary file memlist.dec back into Stylograph and add an extra line somewhere after the keyfield.

```
MEMNO 4 A "MEMBERSHIP NO : " ;
```

It isn't important where it goes. Save this as templist.dic. Make a new RMS file rmsnew templist. Copy memlist.rms file to the templist.rms file with the command rmscopy memlist templist. Try scanning through the templist.rms file using rms templist and you will see that it is still keyed by the surname but somewhere is a space for the membership number, obviously blank as I haven't done that bit yet. Start updating each file in turn by adding this number.

Stage 2 : Take the templist.dic file back into Stylograph, remove the MEMNO line from where you put it and rewrite at the top as the keyfield line. Save this as newlist.dic and do an rmsnew newlist once more. Do the command rmscopy templist newlist to copy one to the other. If I now rms newlist then the information is all there except the keyfield is now the membership number. Phew!

STEP 4. During scanning of the rms file I noticed that they come up in random order, not surprising since the manual says that. If you wish to fix the order then you must create an index file to force RMS to do it your way. You could try the command index newlist order memno which looks at your newlist.dic file and creates a file called order.ndx, based on the keyfield, in my case membership numbers. When I tried this and looked at the file order.ndx with Stylo I got a list of membership numbers that would fix the scanning order but weren't in any sequence (another of life's mysteries). However, another way is to use Stylo to produce our list as follows.

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14
```

This one I called order.ndx. Do not be tempted to add a few numbers for luck since they will produce an error later on when the system can't find the files.

To recap, I now have 3 usable files: newlist.dic, newlist.rms and order.ndx. If I were to use the command rms newlist order I could scan the files in my chosen order.

More next month.

Dragon Power Supplies.

I've just been informed that there is now a new source of replacement Dragon power supply units.

These are a direct replacement for the original Dragon Data units, and conform fully to B.S.415 specification.

Price is 22.50, and this is inclusive of postage, packing, etc, and the units are available from:-

Kevin Coleman, 1, Suffolk Gardens, Dover, Kent.CT17-9NH.

Even if you don't need one at the moment I would suggest that you make a note of these details ... you never know when you might need them in a hurry!.

OS9/II on a 128K Dragon(1)...Bob Hall.

As some of you will remember, I've been working on a mark 2 Memory Management Unit (based on the mk1 MMU which I wrote about 12 months ago), with the aim of running Tandy/Radio Shack Level Two on a Dragon. Tandy OS9/II is available from the US for 40.00, for which you get OS9, the editor, Basic 09 and a 2" manual, including the technical reference).

This was meant to be a hardware project, but because of the differences between Tandy and Dragon keyboards and disk controllers it's also required some software changes to the device drivers.

I now appear to have a working system, and so believe that I've broken the back of the problem (though I'm still trying to tidy up the software side, by replacing the Tandy I/O modules CC3IO and VDGINT with the much smaller Dragon module KBVDIO - a nearly trivial problem,?!). I can thus reveal the mk2 design to the waiting world!

In this series of articles I'll try to avoid going over the ground I covered in describing the mark 1 unit - if you want to find out what memory mapping and task switching are all about, look back at issue 38 of Paul's mighty organ.

DESIDERATA: After a study of the OS9 technical manual, aided by a chance reading of an article on OS9 Levels 1,2 and 3 (!) by Frank Hogg (in Softnews 2 by FHL), plus just a little judicious use of a CoCo3, I concluded that there are five changes that need to be made to the Dragon to run OS9/II:-

- i) AT LEAST 128K of memory.
- ii) A memory mapping unit with a segment size of 2K, and two task mappings. The two sets of registers appear at FFA0 to FFA7 (task 0) and FFA8 to FFAF (task 1), and the task switch bit is the least significant bit of FF91.
- iii) Whatever the mapping, a CPU address between FF00 and FFFF always accesses the SAM registers, and a CPU address between FE00 and FEFF accesses the 'reversed common memory'.
- iv) The CPU interrupt vectors are mapped into the top few locations in the reserved memory.
- v) MAPPED references to physical addresses XFE00 to XFFFF (ie using CPU addresses 0000 to DFFF) will access real and different RAM at these points, rather than the reserved memory or SAM registers.

HARDWARE SOLUTION: To provide i) one could use a banker board (256K, see issue 34) but to get 128K speedily on my Dragon 64, I piggybacked 64K onto the existing RAM - I'll describe this in detail next time.

To provide ii) needs one or two 74S189s (fast static RAMs) to hold the mapping, together with two or three 74LS158 multiplexors to switch the address bus around.

To provide iii) just requires a bit of logic ('glue') to switch out one (or two) of the 158s appropriately.

Requirements iv) and v) are satisfied by including a 2K-by-8 static RAM (6116 or similar) to hold new interrupt vectors and also to fill in the addresses ending in FFXX which SAM refuses to pass to the main memory.

We'll start, gently, with i) next time.

HenceForth Errata.

Unfortunately, some errors crept in to the SEPTEMBER HenceForth article. They are as follows:

SCR#	LINE NO.	Change From	To
474	3	XLN	XIN
476	6	3002	30002
477	5	3000	30000
481	0	p	@
484	4	+ LOOP	+LOOP

Sorry for any problems with these, and thanks to Bob Smith for spotting them. Stephen.

Get More From CHAIN...J.R.Sutcliffe.

I expect many people have tried the CHAIN command when they first got their DragonDOS, and like me they gave up trying when their programs crashed. It is a pity because if you can get it to work, it allows the impossibility of 20K of data with 100K of program in a Dragon 32, with hi-res graphics and DOS, and still space to spare, the limit of the program size being the capacity of the disc. With the following tips you should be able to do this.

1) Write a module ("PROG1") which clears string space and dimensions all strings and variables, the last statement being CHAIN"PROG2".

This module may not be very long. One of the foibles of the Dragon CHAIN command is that you can CHAIN smaller programs from larger ones, but if you try it the other way around they crash. Pad up all modules with 256 byte REM statements, to for example 4K, and pad up the others until they are equal - THIS IS VERY IMPORTANT.

2) Write the menu and other modules PROG2,3,4,n. If when writing these another string or variable is required, edit it into PROG1.

3) Modules can CHAIN any another module in any order - all data and variables are maintained and only the program is changed.

4) Sometimes the CHAIN command takes a long time (a few seconds), and in order to prevent the impression of a system crash print something on the screen before you CHAIN the next module, eg:

```
100 CLS:PRINT"EDIT MODULE PLEASE WAIT":CHAIN"EDITMOD"
```

5) It is recommended in the manual to do a string compression (FF=FRE\$) at the start of each module. This adds to the time taken by (4), but it is perfectly acceptable to print instructions on the screen and then do it, eg:

```
10 CLS:PRINT"INSTRUCTIONS FOR EDIT":FF=FRE$
```

```
20 rest of program
```

These delays are the penalties which we have to pay for having so much apparent memory. CHAIN will not crash so long as all modules are within 255 bytes of each other, and it works faster if they are all the same. The command

CHAIN"PROG",line is probably best used when expanding an existing program. If starting from scratch less editing of other modules is required after they are written if all modules start at the beginning or make use of a variable which is passed, eg:

```
10 IF N=1 THEN 100 ELSE IF N=2 THEN 200 ELSE 20
```

```
20 rest of program
```

Since only one module is worked on and saved at a time, development can be much easier. Sloppy development only loses one module if there is a crash.

Now I have outlined the way of using CHAINm it would be nice to find a rash of new programs which make use of the newfound space. Spreadsheets, CAD/CAM, PCB design etc. Who says you need 256K of memory to run useful programs?

Chaos House...Keith Bean.

The title change is deliberate. If anyone actually missed me last month it's because it really has been chaos around here. In fact, I've hardly touched the Dragon for weeks. When I finally got round to starting this episode, I discovered that the only thing that might be of interest is CHAOS itself. Whilst on holiday in the summer (that was a long time ago - it's snowing now), I read a book called Chaos by James Gleick. I had been looking for it since I saw a review of it in BYTE some months ago, and it turned up in the first bookshop that we visited. Visiting bookshops is an essential part of... holidays! By now, there have been two television programmes on the subject so the science of chaos may be becoming more familiar. However, for those who have so far missed the subject, here is a very summary summary.

Chaos has been found in almost all branches of science. The first discoveries are about 20 years old and were made in meteorology. Well, of course everybody knows that the weather is chaotic but we did expect that one day, given enough data and enough computing power, it would be possible to get accurate forecasts. Didn't we?

The science of chaos says that it won't happen, we will be able to say when a forecast is likely to be unreliable, but we won't know how unreliable. It turns out that the dynamic systems follow laws that depend on such tiny variations that it is impossible to establish the start conditions for a simulation. The classic example is the 'Butterfly Effect'. If a butterfly in Tokyo flies east instead of west or flies instead of settles, the difference in the wind movement that it causes is sufficient to change our weather weeks later. It sounds impossible but that is the order of magnitude involved.

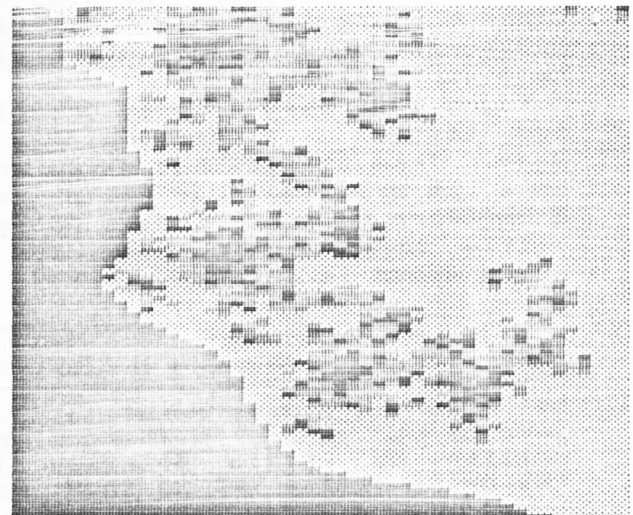
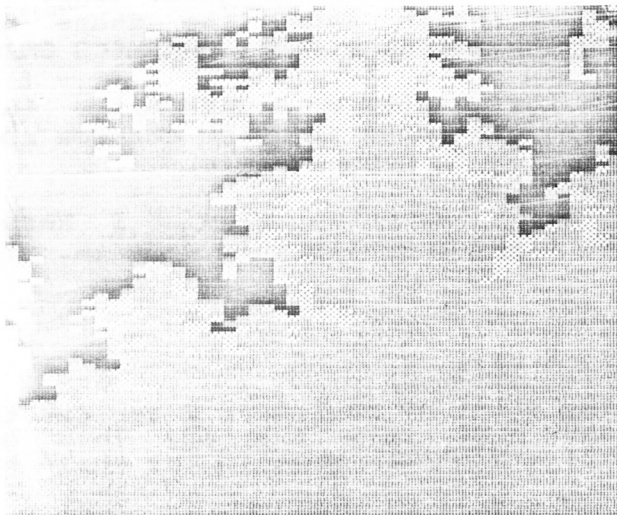
This science is now dependent on computers for its investigations (physical experiments have been done but they are much more difficult and time consuming). Many of the computer experiments produce startling graphic images of which the Mandelbrot set is the most familiar. This set of numbers has the curious property that there are areas that no matter how closely you examine it, there is always more detail waiting to be uncovered and every so often that detail contains the shape of the basic set but ever so slightly different so that the next level down will diverge just that little bit. That sentence was rather convoluted but that's what happens when you try to simplify chaos. You CAN produce Mandelbrot images on your Dragon. It is limited by screen resolution and takes a long time but it works. The difficulty is finding an area of the set that is interesting. The program overleaf, which is based on

one from Computing Age over two years ago, will let you experiment. The Mandelbrot set involves calculations with the square root of -1, but you don't need to understand that. Unfortunately I don't have space to go into detail, but if you respond to the prompts with: - .724,.263,100,.001,100 you should get something like the screen dump overleaf.

As I said this program takes a long time to run. The first time that I left it running, I started at 8.00pm. By morning it looked interesting. The following evening I had nothing. I had told my wife not to unplug the kit, I had told my son not to use the computer. I hadn't told by daughter. Well, she hardly ever uses it! Except this time! Chaos rules OK!

```
10 'MANDELBROT
20 CLS
30 D=1:E=2:F=4
40 INPUT'REAL PART 'X
50 INPUT'IMAGINARY PART'Y
60 INPUT'MATRIX SIZE 'C:C=C-1
70 INPUT'STEP 'Z
80 INPUT'STOP AFTER 'M
90 PRINT' "MANDELBROT SET SCAN"
100 PRINT'P,"REAL="X;" IMAG="Y;" SIZE="C+1;" STEP="Z;" STOP AT "M
110 INPUT'FILE NAME FOR IMAGE 'F$
120 PNODE3,1:PCLS:SCREEN1,0
130 FOR K=0 TO C
140 V=Y-K*Z
150 FOR J=0 TO C
160 U=X+Z*KJ
```

```
170 N=0:A=0:B=0:C=0:D=0:E=0:F=0
180 IF T=F OR N=N THEN 200
190 GOSUB250:GOTO180
200 CL=M/50:PSET(K,J,CL)
210 NEXT
220 NEXT
230 SAVE F$,3072,9215,3072
240 GOTO240
250 A=R-S*U
260 B=E+V*U
270 W=A*B
280 R=A*A
290 S=B*B
300 T=R+S
310 N=N+B
320 RETURN
```



The Editor's Late Bit...

Ho, hum. Another Update, another dollar (or something like that). I am now firmly convinced that ex-editors like being nasty to new ones! Not only was Tim's piece by far the longest file I have ever done (some 4.4K), it also took me over half an hour to type! My typing finger will never be the same again. Cheers, Tim (only joking!). Hopefully you will ALL have visited the Weston show (there may be some stop press news somewhere in this issue), in which case we can look forward to a 1989 London show.

If any of you are stuck for Tim's address (not that you should be, it was only 15 issues ago), drop me a line and I'll give you it, if necessary.

On the subject of Keith Bean's Chaos program, the START, END and EXEC addresses in line 230 only apply with a DOS resident. With nothing additional running, they revert to normal ie 1536, 6144, 1536. You knew that of course, but I need something to fill the space up.

As to whether you'll get this before January 1989, well that depends on how much Paul drinks over the "Festive Season" (He just LOVES Christmas!). Judging by my post, you'll be lucky to get it before February, but if you are reading this in December, then Happy New Year, and if you're attempting to read this on 1st January 1989 (whilst balancing a large mug of black coffee in the other hand), then I hope you had a good singalong to Auld Lang Syne.

Oh, Paul - don't forget to draw the holly and snow etc on the page borders! See you next year!...Stephen.

COMPOSER X - by George Cartwright.

This is a musical utility written by OLA ELDOY, a Norwegian Dragon enthusiast, whose input to the Dragon scene is most welcome.

To quote the instructions manual "Composer X lets you modify tunes compiled using MICRODEAL'S COMPOSER program". To review this program I used COMPOSER with COMPOSER COMPANION to input a tune into COMPOSER X.

An important point that I must make here is that when using COMPOSER X, the tunes that you have written, and wish to modify, need to have a consistent voice pattern. (I.E. the order in which the note groups are input on COMPOSER should be the same throughout.)

The utility has a 13 part menu, each part of which is explained in the four page manual. The second important point to make is that, having loaded a tune, option 13 (RELOAD PLAYWAVC.BIN) must be selected. Without it many of the functions of the program will not cooperate.

A very useful feature is that the program comes with a selection of tunes which one can practice with, to get the feel of the program. There are 12 waveforms available so the combinations possible with 4 voices are adequate for producing tunes varying from Honky-Tonk to a rich organ.

Experimenting with the waves from the selection quickly gives one an idea of what is possible and what is musical (the two are not the same!). It is probably advisable to compare the 12 waveforms first using option 12. This will also play all the tunes saved to the COMPOSER X disk.

Saving tunes is easy (note that tunes are saved using the .CMP extension). Tempo, pitch, and volume changes are catered for with options 7, 11, and 10 respectively. Changes are made by entering numbers. The changes in values appear to be proportional and I had to do mathematical gymnastics to return to the original values. The simple way out is to reload the original tune.

Other options available are VIEW WAVEFORM, which shows the shape of the waveform; VIEW VOICE, which displays how the voices differ; GRAPHICS ON/OFF is self explanatory.

I found that this program greatly enhanced the quality of sound of the tunes I had tested. I particularly appreciated the speed at which changes could be made. This utility has given another dimension to Dragon music.

Love the program, love the price - Well done Ola!

@ Software Editor - Thanks George for the music expert's view. I know very little about music but even I enjoyed tinkering with this program. Yes the price above is correct - 1.99.

Junior Reviewer's Column.

As Mike is always complaining about being short of reviewers I decided to give some of our younger members a chance to show what they can do. This one is written by Philip Stoneman (age 10). If any others want to try their hand at reviewing please let me know. Paul.

Balldozer. reviewed by P.Stoneman.

I received two games through the post, with a letter from Paul saying "would you like to write a review?", so here I am!.

The two games were Mandragore and Balldozer, both from Kouga Software, the latter being the one I am reviewing now.

I think it is a very good game in both graphics and content. The graphics are very clear but unfortunately in black and white only, but this does not detract from the enjoyment of the game, which starts even while it is loading as it prints the background along the bottom of the screen, written very humorously.

In the game you are the bat, and have to move underneath the ball, which will then bounce up again and hit a brick which will then disappear (or a metal plate which takes two hits to disappear), which will then drop a bonus. (These have various uses such as "P" which gives your ball extra power, "C" which lets you catch the ball, and "!" which lets your bat go double speed). If you miss the ball though you will lose a life (of which you have ten).

It is a game of skill, but sometimes when you lose it will have you shouting "I DIDN'T miss the ball!!".

I will be reviewing MANDRAGORE next month.

The Late, Late Bit.....

Well, as I said on the front page, it looks as though this is the end of Dragon User Magazine I can't see any way that Bob or anyone else can change the situation, so it seems that the Dragon scene will just have to get used to the idea of not having a commercial publication in future. Personally I'll be very sorry to see D.U. go, and it will certainly make life more difficult than ever for the software distributors, but it doesn't have to be the end of the World ... the machine is as good as ever, and sales will still be possible through the amateur magazines and user groups, and of course at shows, so there's no excuse at all for anyone to abandon ship yet!. If the products are good they will still sell, and there are some very good programs available at the moment, so I hope we won't be hearing of firms dropping out and blaming the demise of Dragon User!. If sales fall off it will be because the material isn't good enough, NOT because D.U. is no longer there to carry advertising!.

To get back to the subject of Shows, I think we should all congratulate Andrew Hill on the exceptionally well organised Weston show. I know how much work he put into getting it all set up, and the results prove how well he did the job! Dragonfire and the Group will be jointly organising a show for the London area in early April next year, which I hope will be even better, and I'm told that there's a strong probability of another Ossett show too, so 1989 looks like being quite a good year for Dragon owners.

Our "DESKTOP" package is selling well, and we can now supply both a DragonDOS and CoCo DOS version, and there are now another TEN type fonts available which can be added to your original disc for only four pounds, giving a total of 19 different fonts for you to use. Anyone wanting the extra fonts should return their ORIGINAL disc to Ray Smith, with the four pounds, of course!. If you haven't bought YOUR copy yet, what are you waiting for?!

Well, according to tradition this is the time when all publications attempt to summarise the events of the previous year, but as this is mainly because they can't find anything else to fill the pages with I think we can afford to give that tradition a miss!. After all, you were all alive (well, physically at least) during 1988, so you should know what happened just as well as I do. Dunno about you, but I get more than a little tired of all this "Traditional Christmas Spirit" stuff. There's something rather hypocritical about it all. Happy Christmas, but don't eat anything because most foods are bad for you, don't drink anything because it will make you an alcoholic, don't smoke because it's dangerous, don't drive because you'll poison the environment, don't spend because it will upset the balance of payments, don't go out because you will probably get raped or murdered, don't watch videos or TV because you'll be either shocked or corrupted, and CERTAINLY don't indulge in any form of sexual activity because that's even more dangerous. You could stay indoors, of course, except that 90% of all accidents happen in the home, but if you go out you could get radiation poisoning unless you wear a lead suit, but that would be even more dangerous, and statistics show a 100% fatality rate for people who breathe, so be careful!. Other than that, feel free to have a Happy Christmas, and I'm sure that Nigel Lawson will wish all those with mortgages a Prosperous New Year!. Never mind, it will soon be Easter, and then you can send Easter eggs to Edwina Curry!.

OK, OK, I KNOW I'm a nasty cynical person. I KNOW I ought to believe all I'm told like a nice obedient little peasant, but when I was a brat my main ambition was to be the kind of person I was told not to associate with, and I think I succeeded pretty well. If you want to believe in Father Christmas, honest politicians, government health warnings, fairies at the bottom of the garden, and similar superstitions, don't let me stop you, but don't expect me to agree with you either!. I'm going to have a nicely unhealthy, dangerous, anti-social Christmas, and with any luck I might even manage to get corrupted and depraved while I'm at it!. (and any comments from my Editor to the effect that I already am are probably perfectly true).

See you all again next year, and if you get time over the holiday don't forget to write something for us to publish next month!.

XWORD 37 ANSWERS.

ACROSS:- 1A.Slipped disc; 3A.Aspirin; 3I.Sonar; 5B.Little; 6A.Apron; 6F.Modern; 7B.Harp; 7I.Brook; 9A.Dream; 9G.Syringe; 10E.Street; 11E.Shirt; 11K.Cot; 13A.Wimp; 13F.Nape;
DOWN:- A2.Cats and dogs; B3.Sulphuric; C7.Averse; D1.Point; D7.Ream; D11.Imp; E1.Port; F6.Marathon; G1.Dungeon; H6.Drey; I1.Inside; I7.Burette; K1.Canyon; K8.Snack; L5.Drop; L9.Ghost; M1.J.J.R.Tolkien

Crossword 38 failed to arrive this month, so you can give your brains a rest over Christmas!. Don't worry, there WILL be a crossword in the January issue!.

GROUP SPECIALS!

UPGRADE MANUAL. Full DIY instructions for upgrading your D32 to 64K. Written by Bob Hall. Price 2.00.

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COCO DOS TO DRAGON DOS. Dragon version of the above program! Allows you to convert CoCo discs to Dragon DOS format. Written by Randy Longshore. Price 5.00 inclusive.

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DISC EDITOR. Utility disc for V1.0. Full view and editing facilities. Written by John Cox. Price 5.00.

ALL THE ABOVE ARE OBTAINABLE FROM: PAUL GRADE, 6, NAVARINO ROAD, WORTHING, SUSSEX. CHEQUES MUST BE MADE PAYABLE TO THE N.D.U.G.

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P.D. UTILITY LIBRARY. Contains a very good collection of utility programs and routines available at a nominal charge, new routines always wanted for Dragon, Tandy and other machines. For details send s.a.e. to:- Lee Cooke, 117, Limbrick Lane, Goring, Worthing, Sussex.

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BACK ISSUE UPDATES. Reprints of all issues of Update (from original master sheets) are available at ONLY 75 pence per copy inclusive of postage. Orders to:- E. Hall, 32, Thackeray Hall, Fareham, Hants. PO16-0PQ. Cheques must be made payable to "Back Issues Dept. (NDUG)".

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D32 & D64 REPAIRS undertaken by experienced engineer. Lee Cooke, 117, Limbrick Lane, Goring, Worthing, Sussex.

WANTED!! Is anyone in the BISLEY area interested in forming a local Dragon Users Group? P. Marsh, 37, Corbetts Walk, Bisley, Surrey. GU24-9DU.

WANTED URGENTLY!! Dead, dying, or otherwise unwanted PRINTERS of ALL kinds wanted for spares to enable me to carry out YOUR repairs at a reasonable price! MUST BE CHEAP!! Paul Grade, 6, Navarino Road, Worthing, Sussex.

WANTED!! Defunct Dragon and Tandy computers and drives for use as spares for YOUR repair jobs! Phone Alan Butler on 0371-4234 evenings only please.

WANTED!! Will any Dragon user (preferably NOT games player!) in the HELSTON area of Cornwall please contact:- Ray Roach on 032-623-477.

WANTED!! Is anyone in the SWINDON area interested in forming a local Dragon Users Group? Please contact:- S.T. Lee on 0793-617024.

FOR SALE. Dragon 32, 30.00; Dragon 64 with Plus board, 110.00 including modem and printer leads; CoCo DOS controller, 35.00; Philips monitor, 40.00; Tandy Speech Cartridge (with OS9 drivers), 12.00; OS9 System (CoCo or Dragon available), 25.00; Basic09, 12.00. Phone Jason on 0202-722599.

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IMPORTANT NOTICE

It appears that the master disc used for DESKTOP at Weston may have had a slightly corrupted file which could cause the program to crash. If you purchased DESKTOP at Weston and have experienced this problem please return your original disc to Paul Grade for correction. Apologies for any inconvenience caused. Paul.

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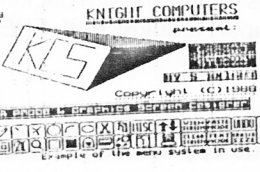
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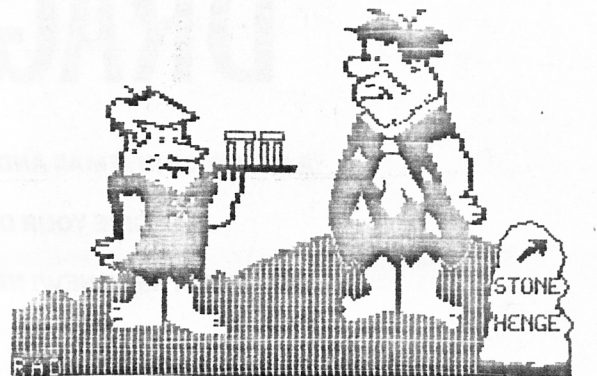
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