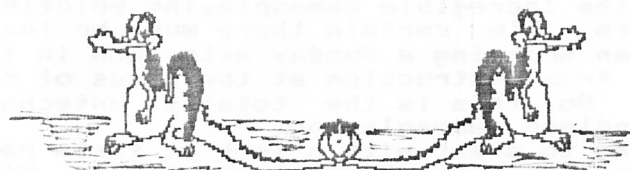


The Newsletter of the National Dragon Users Group

DRAGON



UPDATE

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The Gaffer's Bit . . . . .

Well, did YOU go to Ossett?. Judging by some of the figures I've been given a lot of you didn't, and while the Group stand did very well there I don't think that the same can be said for some of the other stands. Well, it was your choice, and if this turns out to have been the last of the Ossett shows you can't blame the retailers ... there's a lot more work than you'd imagine in getting things ready for a show, and a lot more money involved too, and if expenses aren't covered then there's not much point in repeating the exercise, is there?. Many thanks to all of you who DID take the time to attend, and to Bob Preston and all those who worked so hard to make it a good show ... I'm only sorry your efforts weren't better rewarded.

Re the Hove show on 3rd June. I'm not going to give you the usual advertising hype, or make any wild claims, but I CAN tell you that it looks like being the biggest and best Dragon and Tandy show for several years. I now have twentyone definite stand bookings, and there is a good possibility that the final total will be around two dozen, which is over 100% more than at any show since the days of Exhibition Schemes Ltd!. Hove is an easy place to reach for most people, whatever form of transport is used, probably even easier than Ossett for many, and all we need now is for as many people as possible to attend. I'm sticking my neck out by holding a show in a new location and at the "wrong" time of year, but a lot of people are putting a lot of time and money into making it work, so please don't let them down. Make the effort to be there yourself, and don't just come alone, bring everyone else you can drag along with you, even if they think a Dragon is some kind of transvestite lizard!. They could learn something, have a good day out, and might even decide to buy a machine themselves!.

I'm including an A4 size poster with all UK Updates this month, and what I'd like you to do is make sure that it is displayed where as many people as possible will see it ... your local newsagents, library, school, office, factory ... the choice is all yours, but please make sure that it is seen!. Ossett had just under 200 through the doors, at Hove I want 2000. MAKE IT SO!.

*Paul G.*

The Editor's Bit...

Greetings, fellow beings, and a belated "Happy Easter". Did you know that it is now just over ONE MONTH TO THE SHOW IN JUNE? You did? Good, because we wouldn't want you not to be there, now would we!

The trouble with writing this a month in advance (by the way, it is now 5.40 pm on Wednesday, 29th March 1989) is that anything to do with current affairs will be a month out of date. For example, did you know that in the Soviet elections, Boris Yeltsin won 89% of the vote? See what I mean! So, what I have to do is make up stories like "Paul Grade complains of nothing to do". The beauty of this is that by the time you read this, Paul will be totally fagged out (in more ways than one - lay off the cigs, Paul!) from all the copying, typing, sealing etc etc he has to do to produce Update, and he will have 'nothing to do' for another month. Thus, the story becomes correct, and more to the point, up to date.

If you're still with me after all that, you'll know that it's a load of rubbish, Paul is overworked, underpaid etc etc, and doubtless he will have some less than flattering reply in his column which I won't be able to answer 'till next month! So until then, Avanti!  
Stephen.

## Fishy Business...

This is the first of what will, I hope, be a regular series of columns written by me, Dudley the Incredible Gamesplaying Goldfish. With an influx of ex-Dragon User readers, I'm certain there must be loads of you out there who like nothing better than spending a Sunday afternoon in front of your Dragon, saving the free world from destruction at the hands of countless aliens with no vowels in their names. So, this is the totally untechnical part of Update, devoted entirely to mindless gamesplaying.

This month, I'm going to start with a look at three recent releases which are arguably the best ever for the Dragon: Lucifer's Kingdom, Balldozer, and Mandragore. My apologies for not mentioning Utopia, but I had trouble getting a copy. Maybe next month.

But on to the other three. I'm sure you'll have read the reviews, so I'll get straight down to my views on them. Lucifer's Kingdom really excited me at first. At last a really decent Dragon shoot-em-up. And that much it is. The graphics are good, and varied, but the action is a bit too random. Because the aliens are randomly placed, and different each game, too much of the game relies on the luck of the draw. As a result, it's difficult to develop a strategy, and the will to keep playing is stunted by the fact that what it comes down to when getting a good score is more often than not whether you get the easy aliens at the right time. Still, it's good fun for a while, and definitely worth a look if you're not too bothered about getting high scores.

Balldozer has one thing going for it more than anything else, and that's lasting interest. With so many screens, there's always the compulsion to get to the next screen, and believe me, all that work is worth it, just for the last screen. The odd bugs are annoying, and at times difficulty level seems a bit unreasonable, especially when a cruel bounce puts the ball impossibly out of reach. Frustrating at times, but great fun.

Finally, Mandragore. The graphics on this are excellent, and that's what makes it. Jerky scrolling can be a bit off-putting at first, but that is soon forgotten. Like Balldozer, there is a long way to go, and the promise of different sentinels at the end of each level certainly keeps you playing. I can't stop playing this, and the last game that did that to me was Shocktrooper.

This is all very well, but what, I hear you plead, is your learned opinion about the best buy, oh fishy one (\*\*Keep off the fish food, Simon!...SW\*\*). Well, I'd have to go for Mandragore. It's great fun to play, the graphics and presentation are superb, and it is set at just the right difficulty level - but that's not to say that the other two aren't good.

And now to the PREVIEWS. I know of two new games soon to arrive on the Dragon scene, and about time too. Firstly a new one from Pulser which I believe is now available, based on the mainstream smash hit "Trailblazer". I don't know the name (\*\*impossiball!\*\*), but apparently it's very well programmed and worth a look. Secondly, we have the new game from Stewart Orchard, author of Balldozer. It will be called "Revenge of the Alien Bongo Beast in the Criss Crossy Lines Dimension" (!). I have to confess a personal interest, as I've written the storyline for it, but I have to say that early demos point to this being a very high quality release. It should be ready by the June show, so there's even more reason for you to go.

Finally, I'd like to appeal for help. I want to know individual hi-scores for any recent games, as well as any opinion on the Dragon games scene, cheats, tips, and so on. Send your words of wisdom to DTIGG, "The Vicarage", Norwich Road, Watton, Norfolk, IP25 6DB. All letters must have an SAE if you want a reply, as it's a well known fact that goldfish can't lick stamps!

### Personally I think our Dudley should be taken with a pinch of salt ... and vinegar!. Paul.

## Crossword 40 Answers...

Across:- 1C). Scabbard. 2D). Epson. 2J). Utah. 3J). Brie. 4C). Vida. 4I). Mould. 5A). Waltz. 5I). Ovoid. 7B). Foxtrot. 8B). Patio. 8H). Eton. 9A). H C Anderson. 10B). Heather. 11A). Distillation. 12B). Noddy. 113A). Confederacy.  
Down:- A1). Screw. A9). Hide. B1). Polka. B9). Chin. D2). Editext. E10). Tide. F2). Solder. G4). Armour. H3). Coyotes. H11). Air. I4). Monitor. I11). Tea. J1). Dub. K5). Ovine. L3). Iliad. L10). Anon. M1). Cheddar. M8). Disney.

## Any statisticians out there?

If so, can you please help me to understand "Official" statistics? According to our local Genarmes, out of 75 people killed in road accidents last month 12 were not wearing seat belts ... this is supposed to demonstrate that wearing belts is safer than not doing so. HOW? I make it 6 point something times more dangerous according to those figures!. Likewise 8% of drivers involved in accidents were over the drinks limit, which is supposed to prove that drinking is dangerous although presumably the other 92% were sober!. On this basis, if 1% of computer owners use Dragons, does this make it the most popular machine?. I'll pay a tenner for the best explanation!. Paul.

## Peeking The Dragon (13) - Mike Stott

As I write this article I am also having to get everything ready for the Ossett Show so everything is rather rushed. The new items of software that I have received are : Printer Control Fonts from Knight Software (extra fonts for MacGowan's Printer Control), Intelligent Disk Copier (useful for people with only one drive), and Small Business Package, both from Dragonfire (Database, Word Processor and Telephone Directory, available separately but can be used as one package).

Yet again I have decided to hack my article after writing most of it as I have decided to give you an idea of the Ossett Show for those of you who missed it. Attendance was down on previous years, both paying customers and stands, but as usual it was the atmosphere that made it so good. Thanks to everyone who came over to see us on the NDUG stand and I apologise for not having more time to talk to people but things were rather hectic and we actually managed to recruit 14 new members - Sorry Paul, I know it means more work for you! As one entered the door and turned left Kouga were demonstrating their, as yet unfinished game, Revenge of the Alien Bongo Beast etc., a thinking man's zap-em game. Pulser were next and presented me with two new items for review. French Test is what it suggests and Data Designer is for creating your own databases. They were selling their usual software together with a variety of seconhand hardware. Dragonfire were next in line with a wide variety of software and Andrew even offered to let one chap take home a Tandy version of Tape Doctor to try on his Dragon and let him send the money on if it worked. Nice one Andrew. MacGowan also had two new items in Lister and Dismon. These are nice looking utilities which Frank Fisher has already taken for review so look out for these in a future Update. Bob Preston stretched right along the front of the stage. Sorry Bob, what I meant was your stand. Amongst the great assortment of hardware and software I even spotted PINK joysticks. If I hadn't already got hold of a pair of Voltmace joysticks I could have even bought this make there. Starship were demonstrating their software and also pushing Dragon Logic. Computape had the ex-Microdeal tapes together with boxes of unusual goodies like Zorakk the Conqueror from Icon which we bought for 50p. What would a Dragon Show be like without Harry??? John Penn Software had their usual wide assortment of software on display. Back near the door was a great stack of Hi-Fi equipment and stacked Dragons which had arrived in a motor-bike's sidecar driven by Stuart Beardwood. This took up half our stand and everybody was treated to STEREO Dragon music. Jim Blackman spent most of the day demonstrating our Desktop program which proved to be very popular. Thanks to Jeff Smith and Chris Jobson for their printouts using Desktop. The North West TRS80 Group completed the stands showing their support for the Dragon. Bob Preston has now got the rights to quite a large amount of some of the older software and gave me Hotel On Mayfair, Autorun2, Filing System, and Dragonchess for reviewing in Update. A few addresses that I have not mentioned before are Starship Software, 23 Tintern Road, Cheadle Hulme, SK8 7QF, John Penn Software, Dean Farm Cottage, Kingsley, Bordon, Hants, GU35 9NG and Computape, the last address for whom I have as 27, North End Southminster, Essex, CMO 7ND. A new company, Dragsoft, 41 Hereford Street, Presteigne, Powys, LD8 2AT have sent me a copy of Data and Loader Printer to give a hard copy of machine code programs. Paul Burgin, 18 Moorcroft Road, Sheffield, S10 4GS has written to me to let us know that he is still around and selling software. He actually apologised for his high prices, 2.50 to 4.00. Have I now reached the end of the list of companies still supporting the Dragon or are there even more I do not know about. If you have not been mentioned in the last few issues please let me know so the buyers know where they can get software. At the show I was running a new powerpack as a demonstration and anyone in my area thinking of buying one is welcome to have a look at it before I have to return it.



## More on Composer X-Dave Cadman

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When I first made my music available through the group, I was asked by several members if it were possible to alter the four waveforms available in Composer. At that time I could no more than suggest altering the voices around to get different effects. This had, of course, to be done whilst entering the basic data. Now Ola Eldoy has come up with an answer to the question and I hope that all those who wrote have rushed out and bought this inexpensive program.

George Cartwright has already reviewed the facilities on the disc and I don't intend covering the same ground. If you own music compiled by Composer you can use this program, you don't have to own or be able to use Composer. Composer X can be used to modify the sound and volume of your own programs. (You can also alter tempo and pitch, but I am assuming that these are correct) Load your music and then experiment with the 12 waveforms and the volume variation. The first four waveforms are the same as Composer, but you can enter waveform 1 into all four parts or turn them upside down 4,3,2,1, so having the original waveforms in the program is an advantage. The volume of all four parts, or any single part, can be increased or decreased. Since some of these waveforms are quieter than others, this feature can be used to balance things up. A word of caution here. After trying any volume change, or any of the other changes that utilise the ultra high speed poke, switch off and reload before starting another idea, because every alteration will add an amount of noise due to the processing through the Dragon, thus producing second/ third/ fourth.... generation copies with a resultant increase in noise.

I have found an increase of volume on the bass line to be an advantage. It redresses the lack of bottom end frequency response of small TV speakers. You will, no doubt, be hearing the bass line for the first time in some cases! (Unless you save the AUDIO to tape and play back on your Hi-Fi - recommended) The possible combinations of altering existing music are varied enough, but if you write music using Composer, then the possibilities are as infinite as your imagination or the memory of the D32 will allow and you could easily be spoilt for choice. @ Altering existing music limits you to only one change, that is at the start, so you are once again stuck with your choice for the whole piece. Why not alter the waveforms whilst the music is playing? It can be done. First of all note where you want to make tonal changes throughout the piece of music. Write and save units using Composer in the normal way from address 24576, with, at this stage, the original waveforms. Next use Composer X to change the waveforms in each unit, experimenting until satisfied and save. Next reposition all the units in order, so you will most likely need to drop the start address well down in memory, because each unit must have PLAYWAVC in front. PLAYWAVC is 1536 bytes long, so 6 different waveforms would take up more than 9K, but the end result does make more pleasing listening and creates more interest in the writing. Remember that PLAYWAVC must be relocated in multiples of 256, so there will be some blank data involved between the end of one unit and the start of the next at a 256 multiple. Don't worry about this, you will not notice the gap when the music is played. When all units have been repositioned in order, call them all back into the computer one after the other and re-save the lot using the new parameters. If you don't want any graphics or any basic in your program you can always use the graphics pages to make more space. Composer X works quickly from disc, it could be made to work off tape, but it would be unrealistically slow.

Anyone wishing more information or help, write direct address in helpline.

COMPOSER X available from Orange Software, The Garth, Star Road, Nant-y-derry, Abergavenny, Gwent, NP7 9DP for 1.99 (+ 50p p&p)

S/Ed - don't forget to enclose an S.A.E. when writing for help to anyone in Helpline. Dave has written a Joplin Rag to illustrate the method he describes above. It runs from basic and displays on screen when the waveform changes. Believe me it is a cracker. He is offering copies at 1.50 each 5 1/4" disc only which is 75p for p&p and disc and 75p to be donated to Group Funds. Thanks Dave for the review, especially after he's been messing you around, and also for this offer.



HenceForth (17) .. Bob Smith.

I've run into some problems with FORTH on disk which has led to some of the text words misbehaving themselves. While this is being sorted out I'll include a few of the tips and so on I've been saving for a rainy day.

## LISTING OF FORTH SCREENS

The standard FORTH word LIST does not work well on the Dragon because the line numbers increase the line length to 35 characters and the last three characters wrap around. This makes them awkward to read, and also causes the top lines on a full screen to disappear. I find that the line numbers are rarely needed so here is SLIST that gives you eight lines of text. It is used just like LIST, e.g. @ 100 SLIST to list screen 100.

SCR #714

```
0 ( SCREEN LISTING #714)
1 : SLIST ( n--- )
2 CR 8 0 DO DUP I SWAP (LINE)
3 -TRAILING DUP ROT ROT TYPE 32
4 < IF CR ENDIF LOOP DROP CR CR
5 CR CR ;
6 ;S
7
```

MISSING!!!Where is the OS-9 DISKNEWS???

It was a very fine time to get a DISKNEWS diskette from Martin Vernon every few months. I felted happy when his letter arrived. Always I found an interesting article, a good program, or something brand new about my hobby on it.

Martin ceased, he had no time to continue it. I am sure he had a lot of work with it, and in the last time it was too much for him. So he stopped it. Sorry! Many thanks for his idea and for its realisation. It has gone now, hasn't it?

I think it should not have gone. Somebody should continue it. It was so successful. But who will do it? Where can we find somebody to do that work?

Nobody? So I will offer somebody for it. I myself am ready. I plan to continue Martin's DISKNEWS.

Sorry, my address is not a British one. Sorry, my English is not at the best. But that is no reason not to try. I am no youngster, within a year I will retire. Business will be no reason for me to stop it. And I am very interested in OS-9. If Martin agrees, I will continue his DISKNEWS. I've got 18 issues from him. I would be proud to start with number 19. If I can't get his agreement, I will start another series beginning with Number 1. But the concept will be similar.

The theme of DISKNEWS will be OS-9, not only Level 1 but also the very interesting Level 2, not only for the Dragon but also for all home computers and PCs using OS-9/6809, not only in Great Britain but all over Europe. There is the relative of the Dragon: CoCo, especially CoCo 3 with its Level 2. And there are other (home brew) computers using OS-9. I myself am using both Dragon and CoCo 3.

We need ideas, articles, Questions and Answers, ads, and mainly programs (public domain only) for it, as it was with Martin's DISKNEWS.

Who is interested in it? Who can offer something to public? Who will help me distributing the disks (avalanche system)? It would be great to reactivate Martin's DISKNEWS.

Please, send me just a short notice only with your ideas. After that we will see how to realise it. Please, soon send your message to:

Burghard Kinzel, Leipziger Ring 22A, D-5042 Erftstadt, W.-Germany. Tel. 02235/41069.

### For several months now I've been getting letters and phone calls from people wanting to know what had happened to the "Disknews" discs, and complaining that no-one seemed willing to carry them on. Well, now someone HAS volunteered, but he is going to need a lot of help from YOU if the idea is to have any chance of success, so don't just sit there saying "what a good idea" and expecting Burghard to do it all himself ... get in touch with him NOW, and do whatever you can to assist. Paul.

## OS9/II on a 128K Dragon(5)...Bob Hall.

Last time I finished off describing the hardware - it looks a bit daunting, but in many ways it's more straightforward than upgrading to 64K, because most of the bits of circuitry can be tested separately. For example, provided you've wired IC1 and IC13 correctly, the Dragon will start up normally and you can then test that the mapping RAMs and the 6116 RAM hold data... This month, on to the software, and as light relief some of it is bog standard BASIC. The system I'm going to describe is based on the version of OS9 Level 2 available from the States for the CoCo 3, but with modules for Dragon related I/O taken from Dragon Data OS9 Level 1 V1.2 or Eurohard Level 1 V2.0.

In detail:- OS9P1, OS9P2, IOMAN, RBF, SCF, INIT, CC3G0 and SHELL are taken from the Tandy disk unmodified; CLOCK and REL are also used, but patched. From Eurohard/DD Level One I've taken PRINTER (no mods needed) and patched versions of KBVDIO, BOOT, ACIA51, DDISK, and the device descriptors TERM, P, P1, T1, D0, D1. (All are from V2.0 apart from BOOT which is from V1.2).

I've split the system between two disks; the first of these is in DragonDOS format and is only on startup; it contains a BASIC program, COCOSWITCH, and part of the kernel of OS9. The second disk is in OS9 format and contains the bulk of the modules (in an "OS9BOOT" file made up with OS9GEN).

The startup program (see program p1 below):-

- i) sets up the MMU registers (lines 10 to 40)
- ii) loads in the 3 modules REL, OS9P1 and BOOT from a .BIN file ("L2BOOT")
- iii) overlays the Tandy BOOT (for the Tandy disk controller) with one designed for the DD controller ("BOOT6")
- iv) patches REL (line 70)
- v) disables interrupts, enables the MMU
- vi) sets up the new interrupt vectors, pointing to reserved common RAM (80-100)
- vii) pauses to let you exchange the BASIC disk for the main system disk and then executes REL.

The contents of L2BOOT are taken from the bootstrap track on the Tandy Level 2 disk: I used a BASIC routine ("L2STEAL", p2) to read the 18 sectors of track 34 into memory (note the pause (line 60) after each sector read) - then saved the memory contents using SAVE "L2BOOT", &H2600, &H3900, &H2602. (NB the boot track on Dragon OS9 disks is only 16 sectors long and is on track 0).

Getting the file "L6BOOT.BIN" (which overlays the Tandy BOOT module) takes two steps. Firstly the module from DD Level 1 V1.2, is patched (to change the nmi interrupt vector, and the size, which has to be the same, &H01D0, as the Tandy one) - I'll go through the details next time; then the patched module is moved across from OS9. To do this, I used a BASIC09 program ("BSAVE") to store the module on a scratch disk, and a modified version of L2STEAL (changes are: D=0; E=&H2730 in line 10) to move it into memory, and hence save to L6BOOT (the first five didn't work!).

Next time, the last lap - the module patches, and how to do them.

```
0 ' COCOSWITCH
10 PCLEAR 1
20 FOR I=0 TO 7
30 POKE &HFFA0+I,(&HF8+I):POKE &HFFA8+I,(&HF8+I)
40 NEXT
50 LOAD"L2BOOT.BIN":LOAD"BOOT6.BIN"
60 POKE &HFF03,&H34:POKE &HFF90,0:POKE &H2682,&HDF:POKE &H2631,0:POKE &H26E0,&H48
70 POKE &H272D,&H94:POKE &H272E,&H99:POKE &H272F,&H55:POKE &HFFA2,&HFF
80 FOR I=0 TO 7:POKE (&H5FF0+I+1),&HFE:NEXT
90 POKE &H5FF3,&HEE:POKE &H5FF5,&HF1:POKE &H5FF7,&HF4:POKE &H5FF9,&HF7
100 POKE &H5FFB,&HFA:POKE &H5FFD,&HFD:POKE &H5FFE,&H26:POKE &H5FFF,02
110 POKE &HFFA2,&HFA:POKE &HFF48,0:PRINT"READY TO RUN":INPUT J:EXEC &H2602

0 ' L2STEAL
10 PCLEAR1:CLEARI000:DIM B$(128):DIM A$(128):D=&H264:E=9728
20 I=INT(D/18)
30 J=D-I*18:J=J+1:SREAD 2,I,J,A$,B$:FA=VARPTR(A$)+2:AD=256*PEEK(FA)+PEEK(FA+1)
40 FOR CT=1 TO 128:POKE E,PEEK(AD):E=E+1:AD=AD+1:NEXT CT:FB=VARPTR(B$)+2
50 BD=256*PEEK(FB)+PEEK(FB+1):FOR CT=1 TO 128:POKE E,PEEK(BD):E=E+1:BD=BD+1
60 NEXT CT:D=D+1:ZZ=FREE$:PRINT I,J:INPUT TE:GOTO 20
```

```
PROCEDURE BSAVE
DIM ARRAY(600):BYTE
DIM DDISK:INTEGER
START=$B400
FOR I=1 TO 600
ARRAY(I)=PEEK(START+I-1)
NEXT I
PLACE=0
OPEN #DDISK,"/D10":WRITE
SEEK #DDISK,PLACE
PUT #DDISK,ARRAY
```

## Longrange Exhibitors!.

I've just received a letter from Bernd Neuner, Chairman of the Siegfried Computer Gruppe, asking us to reserve a stand for them at the Hove show!. Makes some of your excuses about it being "too far to travel" look a bit sick, doesn't it?!. If Bernd can manage it AND run a stand, then YOU can get there too!. Paul.

## Desktop + ... Reviewed by R.F.Roach.

Were I asked to review a Monitor Programme I would take the view that prospective buyers would know quite a bit about the workings of computers. Reviewing DESKTOP programmes I have to assume I know little about computers and their technology. Reading the 26 page Operating Instructions in that light gave me quite a headache. DEFD, EOF, and MEM are, with others, referred to in the text without enlightenment. The good part, however, is the programme itself. As the instructions say - DESKTOP+ uses graphic and normal modes, switchable in the text. Once mastered it is all very easy to handle. Text can be laid out in one, two or three columns with ease. Editing facilities are excellent and graphics are simple to use. Enlarged, Boxed and Underlined facilities are available. The programme is supplied customised to the user's printer and is available on disc or cassette and operates on Dragon 32, Dragon 64 in 32 mode and the 64 in 64 mode. I would like it to be a little more user friendly when option selecting - I tend to forget which key I pressed and so find it difficult to CONFIRM without an indication of my selection. I recommend it to any serious user and to those wanting something different and professional. Retailing at 35.00 it is certainly not a toy.

Available from MacGowan Consultants, 3 Beechwood Crescent, Broughton, Near Brigg, S. Humberside, ND20 0SB. IMPORTANT- Please check before ordering whether it is available for your printer. My BMP105 is not catered for. Raymond us... the program to send me his copy of the review and a letter in which he made the comment that he liked the hyphenation instead of endless inserted spaces when using right justification. SOFTWARE EDITOR.

## NDUGSoftware.

Trying to type in the newsletter master as well as processing orders is NOT easy, but here I am, struggling on (can't you just hear those violins) to bring you some up-to-date information regarding NDUGSoft.

Firstly, "Inside The Dragon" has been selling very quickly, and I only have a VERY limited amount left. If you want one, give me a call first, just to check that they're still available.

Secondly, Formula One and Sourcemaker are available on tape or DragonDOS disk, but Disk-Kit and LightPen are available on DragonDOS disk ONLY, no tape versions (not really surprising with Disk-Kit!)

Lastly, I had a terrific response to my call last month for help at the show (HOVE TOWN HALL, SATURDAY JUNE 3RD). That is, of course, Editorspeak for "sod all replies". So, if anyone can lend a hand running the stand, PLEASE drop me a line. Stephen.

## Hex-BASIC... A. Montieth.

The floating point BASIC on the Dragon is a very powerful one, but too slow for some applications. This is one way to speed it up a bit, hopefully without too much complexity and effort.

I remember reading about the Acorn Atom that the BASIC could accept and use both floating point and integer variables. This seemed to work quite well, and although fiddly to use, some expensive RAM was saved and programs ran faster. The Dragon does not have such a capability, but after giving up on the idea I noticed that many programs use pokes in hex (base 16) rather than decimal (base 10). Hex is normally used because it is closer to binary than decimal. This means that hex numbers should be processed quicker than decimal. As Dragon BASIC does not have hex variables either, it seemed like a dead end. Tests using hex constants, however, gave excellent results.

The use of hex constants is fiddly and there are limits to its use, but the rewards make the efforts worthwhile. Line statements run up to 20% faster in hex, 'print' up to 58%, and POKE saves over 60%. These savings may also apply to CoCos. @ The limits are that numbers have to be in the range 65535 to -65535 and must be integers. Also, some commands such as GOTO and GOSUB cannot use them at all. I would advise writing a program in decimal first and then debugging it to save effort. Don't convert numbers below 10 as there is no gain in running time, and put the initialisation at the end as a sub-routine, leaving it in decimal.

## Copier Fund .....

In answer to various questions about the old Copier Fund (some of the newer members don't know what it is, others want to know how it is getting on), the position is as follows:-

The 'fund' consists of contributions from members (usually in the form of 'rounded-up payments on orders) towards (a) keeping the old Toshiba copier I use for printing Update going, and (b) eventually getting a much needed replacement. Current position is that the replacement is as far away as ever ... we've still only a couple of hundred in the fund as 'Old Tosh' has needed some expensive spares in order to keep going. However, many thanks to all contributors ... we WILL get a new machine eventually!



## Tandy Tape To Disk (2)...Chris Rouse.

Although the protection scheme used in type A is relatively complex, it is an easy matter to defeat it. The seven parts on the tape each have an EOF block, some of these EOF blocks having errors, and the CLOADM routine can be used to load each part until the game code is reached. When the CLOADM routine finds an EOF block, or a block with an error, it returns to the calling routine. The first part of CLOADM is used to get the file required and starts at \$A4FE. We can enter part way into this routine, at \$A52B, as long as the load address has been poked into \$7E and \$7F. In this way any headerless program can be loaded, for by entering at this point no search for a namefile block is made.

The chart below lists the games using type A protection. Also shown (in hexadecimal) are the start, end and exec addresses for each program. I have to admit that I cheated slightly, and used an end address of \$3FF0 for 16K games and \$7FF0 for 32K games. Although these values may not be correct, it saved time and makes no difference.

All games are initially loaded using the same technique, then using the values shown in the chart save them to disk using SAVEM name, &Hstart, &Hend, &Hexec. Remember to keep the name length to 8 letters or less. To run the game, load from disk, type EXEC and press ENTER.

Position the tape just before the game to be loaded and enter CLOADM "", &H4000. This will load the first part so that the RAM hooks are not overwritten. Do not touch the tape recorder during this procedure, just leave PLAY pressed. The tape will stop with either OK or I/O Error displayed on the screen. Now repeat the following instructions three times: EXEC &HA52B (ENTER). This will load a further three parts. The tape is now positioned just before the game code and this will have to be loaded to the correct place.

Take the start address shown and POKE the first byte into \$7E and the second into \$7F, for example if the start address is 18A6 then poke &H7E, &H18: POKE &H7E, &HA6 (ENTER). The game code is now loaded by EXEC &HA52B. When this is finished the first block in part 6 has to be loaded. First POKE the start address into \$7E and \$7F, as above, then type EXEC &HA52B. This data block will overwrite the code at the beginning of the game. Now save the program to disk as detailed above, and after typing EXEC &HSTART the game should run.

NAME	START	END	EXEC	NAME	START	END	EXEC
KING TUT	1A00	3FF0	1A00	KATER II	1806	3FF0	1806
DEVIL ASSAULT	1C00	3FF0	1C00	CUTH. IN SPACE	18A6	3FF0	18A6
KING CUTHBERT	1A00	3FF0	1A00	PHANTOM	1F00	3FF0	1F00
BUMPERS	1A00	3FF0	1A00	CUTH. IN MINES	2000	3FF0	2000
ANDROID	1A00	3FF0	1A00	ELECTRON	1400	3FF0	1400
CASHMAN	3000	7FF0	3000	PLANET INVASION	1A00	3FF0	1A00
KONG	2000	7FF0	2000	BUZZARD BAIT	1A00	7FF0	1A00
INVADERS REVENGE	2900	3FF0	2900	BEAM RIDER	1C00	3FF0	1C00
DANGER RANGER	1A00	3FF0	1A00	EIGHT BALL	2106	3FF0	2106
DUNGEON RAID	1806	3FF0	1806	PENGON	2000	3FF0	3906
SPEED RACER	0EOF	7FF0	7100	GOBBLER	2220	35D7	2220
CASTLES	3000	7FF0	3000	ATHLETYX	1A00	3FF0	1A00
ASTRO	1600	3FF0	3200	CHAMBERS	1E00	7FF0	7C00
DRACON	1A00	7FF0	1A00	MUDPIES	3E00	7FF0	7A00
TIME BANDIT	3000	7FF0	3000	GALAXIAN	1A00	3FF0	1A00
FLIGHT	1E00	7FF0	7C21				

## -Crossword Number 41.

ACROSS: 1A) Place of advanced learning. 26) Voracious tropical freshwater fish. 3A) Knock ones toe. 3E) Piece of ground where rabbits live. 4D) Famous utility by Knight Software. 5A) Small industrious insect. 5J) Amphibious (furry) marine animal. 7A) Girls name. 7E) White spring flower. 9A) Apparatus for weaving fabrics. 9E) Perfect (the first person singular hands out playing cards). 9J) Green plant that grows on moist surfaces. 10C) To do with the sun. 11A) An inert gas. 11F) Yellow flower usually seen around Easter. 13D) Piece of paper used for and onomatopoeically linked with a sneeze. 12F) Cowboy hat.

DOWN: A1) Back in the .... (Beatles song). A7) Famous Irish (girl) singing group. C2) Hot condiment used for beef. D7) Gas used in smelling salts. E3) Output of loudspeakers is measured in these. E8) Remove a vowel from a mixed-up utensil to get something extremely quiet. F4) Type of piano possibly bought for 1000.00. G1) See 4D. G10) Rodents. H7) Accustom a puppy to food other than mothers milk. I1) Increase threefold. J6) Spring flowering hedgerow plant. K4) Common name for a spray can (paint etc). L3) Stop Olga being mixed up and obtain a piece of timber for holding a net. M1) Artificial water course. M6) Remains of plant or animal preserved in the Earths crust.

I haven't checked for this months winners yet, but as usual first correct entry out of the box gets the choice of a program from the Dragonfire Services list, and the second gets a games tape from our collection. All entries to Paul Grade, please.



## Community Programming...Chris Jolly.

This is an idea that I had last Christmas. I'm sure that most of you will think it's completely batty and unworkable, but here it is anyway. Many Dragon owners must have a 'wish list' of utilities and applications they would like to see available for the Dragon, while others of us have the skills and resources to help. It would therefore seem possible that the Group could organise a register of willing programmers through which users could submit requests. This would be all well and good if all requests were for small utilities that people could knock up in a few evenings, but I would expect that some 'wish lists' would include good ideas for substantial projects (compilers, text processing systems, databases etc) which require far too much effort for one hobby programmer to undertake in their free time. I can imagine that with a bit more organisation, large projects could be organised through the register to co-ordinate the resources of a number of programmers to produce some fairly significant products. To make such a scheme work, we would need to organise:

- \* a list of competent and willing programmers
- \* a contact to whom users could submit their 'wish lists'
- \* people who are willing to take on project co-ordination

There seems to me to be at least two possible major pitfalls to this idea:

- \* users must take the scheme seriously and submit ideas for interesting and useful projects
- \* Programmers must all take their commitments to a project seriously and endeavour to perform their work professionally, even though they are only working for the benefit of the Dragon community.

With failing support for the Dragon, the onus is on group members to keep new products coming, and this could be a way of doing it. Clearly, it's no good moaning about the lack of new products if no one is prepared to put any effort into making them. I think we must all accept that there are no longer enough Dragon users to make program development financially worthwhile, so we should be prepared to put some effort into keeping the Dragon alive, and accept as our reward the satisfaction of writing programs that we know people want, and sharing them with the Dragon user community.

I would be very interested to hear from programmers who would be willing to volunteer, users with particular requirements, and anyone else who has any comments on the idea.

(\*\*Comments and letters can be sent to Chris via myself...Stephen\*\*)

## The Editor's Quite Early Late Bit...

I have actually finished this issue before the end of the month, something which for various reasons I haven't been able to do recently, so this is an earlier than usual late bit.

Unfortunately, I see that CHRIS Rouse's regular series CoCo Matters is not going to be quite as regular as I thought. Will it be bi-monthly, Chris? Please drop me a line if you can. And as a general announcement, PLEASE give your views on the "Missing" and "Community Programming" pieces, because feedback is what these ideas are all about, and if there is none, then they will fail.

Regarding the OS/9 DiskNews article, don't ask me about the spelling or grammar, I was told to print it 'exactly as is'. "I get my orders from a higher source - I will offend again" (a free copy of Formula One to whoever can tell me which recent film that line comes from!). No offence intended, Burghard. Your English is miles better than my German will ever be!

Ho-hum. Well, another Update bites my disc drive. This was my 14th issue by the way...doesn't time fly! Finally, I wonder if Paul knows that we're coming up for our fifth birthday...? Stephen.

## This month's disc!.

This month we have yet another exclusive disc on offer ... something completely different!. Thanks to the efforts of R.A.Davis we can now offer you a collection of simple games, tunes, quizzes, etc that should appeal to just about everyone regardless of age or interests.

Over TWO DOZEN programs on a single DragonDOS disc for just 3.50 inclusive!. This just HAS to be a bargain, and one you can't afford to miss. Orders to Paul Grade, cheques payable to the Group, of course.

## Junior Review. North Sea Action.

REVIEWED BY PHILLIP STONEMAN.

Right, time for my third review, this time North Sea Action, an arcade game written by Geir Hovland, one of Orange Software's Norwegian authors. The game is set on a drilling platform in the middle of the North Sea. You are in charge of the platform and have to drill your way through the complex of passages looking for the precious oil. So far this sounds a pretty easy game, but watch out for the Oil Monsters! Yes, even in this seemingly simple game you get the traditional obstruction, in this case the Oil Monster, which will happily put an end to one of your lives if you are careless ... (you begin the game with three). The game is played by you, a small ball, moving across the screen. You start at the top of the screen and progress by moving the joystick, pressing the fire button to retract your pipe. You have to be always on the lookout as the Oil Monsters will kill you, not only by running into you, you will lose a life if they run into your pipe.

The game itself has very good graphics even if it is only in black and white. Personally I think that it is a good game, easy to start yet hard to finish. It is another one of those addictive games which has you saying "Just one more go!". Phillip Stoneman.

## Eurohard Plans Exposed...Alan Cook.

Ever since the Dragon was taken on by the Spanish company Eurohard SA, mystery has surrounded the actions and intentions of this foreign firm. One new version of DragonDOS and a Spanish educational contract later, they have disappeared as enigmatically as they had arrived. Since then, rumours as to their fate have drifted over from the continent, but not until now has the truth been told of Eurohard's connections with the shadowy world of espionage. Previously unreleased documents have been passed to the NDUG by a former Eurohard employee, kept secret until now by this employee for fear of recriminations. The documents are mainly in Spanish, but they have been translated for us by Jason Smith, a Group member currently studying GCSE Spanish.

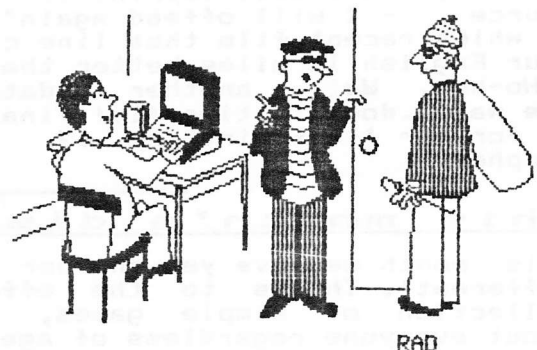
The bundle of documents begins by outlining the publicly stated aims of Eurohard. However, delving deeper into the bundle provides some new and disturbing information. In 1985, the Associazione Pubbico della Rascisto Loutos per Fervento Logisticos, the secret Spanish technological intelligence service, met with Eurohard management to plot "the end of the British domination of European computer markets". This evil plan was twofold in operation - firstly, a computer virus would be spread by Associazione agents throughout the computer population of Europe, programmed to reset the ROMs of all infected computers when their internal clocks reached the 1st April 1986. Secondly, the twin drive 512K Dragon Professional would be launched by Eurohard, free of the memory-wasting bug which would by then be sweeping Europe. As the documents conclude, "this can only mean the long awaited 'armadalle' (word not in Jason's dictionary) of Spanish fortunes in Europe".

Next month the truth behind Dragon User and the CIA. Alan Cook. Glasgow. 1/4/89.

## WANTED!!!

Does anyone out there know of a couple of SHINWA CP80 Mk1 printers looking for a good home?. I know the old Mk.1 is virtually an antique now, and that there have been half a dozen Shinwa and Mannesmann variants since they were produced, but they happen to be what I use for producing Update (and everything else!), and I need a "spare" one as stand-by, and also one that Stephen could use, because at the moment the machine HE uses has totally different type and line spacing to those available on my machine, which causes a lot of problems when it comes to formatting Update pages!. Yes, I KNOW there are "better" printers now, but that isn't the point, I happen to like the way the old Mk.1 operates, so if you know of any unwanted ones at a reasonable price, please let me know soonest ... it might even mean that you get your Update a few days earlier each month!. Paul.

He's showing us how to rob the Bank without going there!





## The Late, Late Bit .....

I suppose I ought really to be writing the usual load of garbage telling you just why you ought to attend the Hove show, but what's the point?. If you don't know the reasons by now you must be so thick that you'd get lost on the way there anyway, so I'll just say that it is going to be the biggest Dragon/Tandy show for years, with over twenty stands booked already, so if you don't turn up, hard luck, YOU'RE the one who will be missing out!. Off the subject, but if you ever want a depressing occupation try reading through the more expensive computer magazines (if you can get a big enough overdraft to buy them, of course). Pages and still more pages of ads all telling you to buy the latest in obsolete technology at extortionate prices, and spend even more buying hacked around versions of antiquated programs to run on it!. Not content with that, the damned rags are full of "reviews" which read more like paid advertising than objective comment ... and what are you supposed to do with all this expensive rubbish (assuming that you can get any of it to work before someone brings out the even more obsolete non-compatible version)? .... according to the "experts" it would appear that you can then spend ten times longer and three times more to do work that an averagely intelligent ten year old could do using a pencil, paper, and his brain!. If this is the "Hi-Tech Society" you can keep it!, office work must have been faster and simpler in the days when a word processor was a quill pen and a sheet of parchment!. Still, people weren't so gullible in those days, they can't have been or none of the present generation would exist!. This is the Age of the Expert, the period when everyone is far better educated and more sophisticated than ever before!. We have all the benefits of Science now ... if you believe the "experts" (although that can be rather confusing) ... take your pick whether you want to believe in a New Ice Age or a Greenhouse Effect, or which of the newly invented diseases you want to catch, or you could try drinking poisoned water, or even worse the dreaded alcohol, or you could try eating food, if you could find some which isn't currently poisoned by additives or likely to give you heart failure or cancer or something equally ridiculous. Sex can seriously damage your health, as can exercise, lack of exercise, driving, breathing, going out, staying at home, watching television (other than Party Political Broadcasts), smoking, sleeping, stress, lack of stress, using computers (all that deadly radiation from the VDU), drugs (including Aspirin), and writing insulting material for publication (looks like I'd better fit the old motor with full armour plating!). Stupid?. Of course it is, but this is just a small selection taken from press and TV during the past couple of weeks, and people are believing it!. They're believing all the advertising hype just as readily too, or why else would the "PC" craze exist?. The machines serve no real purpose, their operating systems are so old that the Science Museum holds the copyrights, and the software so pathetic that in most cases you'd be better off with a blank disc, so why are people spending thousands of pounds of the credit companies money buying the things if they aren't totally gullible?!. Don't you think it would be nice if there was a NEW fashion craze .... to try everything possible yourself and form your OWN opinions based on experience?. A lot of firms would go out of business, and a lot of politicians and their associated tame "experts" would be on the dole, but it might make a very pleasant change!.

Before you come up with the obvious comment, yes, I DO try to do things that way .... I've always believed in trying everything I possibly could (regardless of whether it was "approved" or not) for myself, and I've found that 90% of the time the "experts" are totally wrong ... and I'm still around to prove it!. Why not give it a try some time, you might be pleasantly surprised at the results, and save yourself money and/or worry too!.

OK, give your brain a rest now, I promise I won't ask you to have a thought or anything else which might be construed as a traumatic experience!. Do any of you work for the BBC (no, NOT the Acorn variety!)? If so, could you please tell me what BBC2 are playing at with the Ceefax pages?. At one time page 702 used to carry a quite useful list of Group and Club addresses, then that was suddenly removed without either warning or explanation, leaving 703 occupied only by the "Events Diary" and 701 full of stuff that looked like extracts from old Readers Digest magazines. Now 703 has disappeared altogether, again without the slightest attempt at explanation. What goes on?, has someone at the BBC decreed that mentioning computer shows is contrary to the Official Secrets Act?, or do they think Shows spread the latest deadly disease, the Computer Virus (it's like AIDS but you can only catch it by injecting your computer with a dirty disc)? Whatever the reason (if that's a word you can apply to the BBC), I'd be interested to know what they imagine they are playing at. Maybe they'll start running a list of Australian computer shows .... they seem to get the rest of their programs from there!. Oh well, I suppose I'd better get the rest of this issue put together now, and then get the last of the Show paperwork typed up and sent out. Be good, if you must, and be exceptional if you can!. Paul G.

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Helpline 1989

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 are not satisfied with the reply that you get, then contact Paul Grade as usual.

FORTH: John Payne, 3, Sibland Close, Thornbury, Bristol.  
 DOS PROBLEMS: Phil Scott, 4, Badgerwood Drive, Frimley, Camberley, Surrey. GU16-5UF.  
 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 CC7): Chris Jolly, 4, Pinehurst Walk, Orpington, Kent.  
 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, 46, Spalding Towers, Lincoln Green, Leeds, Yorks. LS9-7PE.  
 SPREADSHEETS: E. Freeman, 80B, Main Road, Old Doston, Northampton. NN5-6RA.  
 OS9 SYSTEM AND UTILITIES: Jason Shouler, 14, Rosemary Road, Parkstone, Poole, Dorset.  
 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.  
 COMPOSER PROBLEMS:- Dave Cadman, 32, Breedon Hill Road, Derby DE3-6TG.  
 DRAGON/DELTA DOS PROBLEMS; OS9, BASIC OS9, AND GENERAL BUSINESS SOFTWARE APPLICATIONS: M.A.A. Abba, 127, Ankerdine Crescent, Shooters Hill, London SE18-3LE.  
 DMP 110 PRINTER PROBLEMS/SCREEN DUMPS ETC.: Dr. J. Hatton, 48, Wern, Llanfairpwll, Anglesey, N. Wales.  
 EPSON COMPAT. PRINTER SETTING UP & GENERAL PRINTER PROBLEMS. Gareth J. Sims, 24, Logwell Court, Standens Barn, Northampton. NN3-3TN.  
 RADIO AMATEUR PROBLEMS, INFORMATION & ADVICE. Fred Hopewell, 48, Gladstone Street, Loughborough, Leicestershire. LE11-1NS.  
 GENERAL PROBLEMS AND MOST REPAIRS. Steve Tate, 22, Fairfield Drive, Wormley, Broxbourne, Herts. EN10-6DY.  
 CO-CO HARDWARE & SOFTWARE PROBLEMS: Chris Rouse, 18, Gregson Close, Bridgemary, Gosport, Hants.  
 BASIC PROBLEMS, ESPECIALLY USE OF GRAPHICS FROM BASIC, EPSON COMPAT. PRINTER (SOFTWARE) PROBLEMS, SIMPLE PASCAL: Steve Knight, 76, Etwall Road, Hall Green, Birmingham.

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### The Ads start here!!

#### GROUP & MEMBERS PROGRAMS etc.

NDUG DESKTOP!. The Group's DTP package. Based on a FALSOFT program (produced under licence) this package is now available on either Dragon DOS disc (with Epson type screen dump) or CoCo DOS (with DMP105 dump). Produce your own small posters, advertisements, magazines, program title screens, etc. 9 font version 8.50. 19 font version 12.50. Orders to:- Ray Smith, 5, Glen Road, Parkstone, Poole, Dorset. Cheques made payable to NDUG.

OS9 NODEM PROGRAM. Up & downloading of files, any Baud rate from 50/50 to 9600/9600. (NOT split rates). Up/download buffer from 4 to 32K. All 6551 options supported. Price 8.00. Phone Barry Knapp on 0932-242800 evenings only.

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

PD-PAK. Selection of useful PD OS9 utilities, includes DCOPI. Price 5.00.

Jason Shouler, 14, Rosemary Road, Parkstone, Poole, Dorset.

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

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

THE PROLOG COMPILER. An all new PROLOG compiler which converts Prolog 2 to 6809 Assembler. Full implementation with runtime module and comprehensive documentation on disc. Requires Assembler 09 which is NOT supplied. SPECIAL MEMBERS PRICE 12.50  
 METASOFT, 4, Pinehurst Walk, Orpington, Kent.

Program giving facts on areas, capitals, population, currency, etc for over 170 countries. Includes analysis facility and map showing country's position. Available on DragonDOS, Delta, or tape at 3.50 inclusive.

Home accounts program with facility for up to 22 different types of bill. Facility for monthly and annual display. Built in calander, bill analysis, and automatic set-up of estimates for next year. DragonDOS or Delta ONLY. 3.50 inclusive.

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

DESKTOP UPGRADE!. Want the additional fonts added to your 9 font DESKTOP?. Simply make a backup of your 9 font disc and send the ORIGINAL disc, with a cheque for 4.00 to:-  
 The Librarian, Dragonart Library, 5, Glen Road, Parkstone, Poole, Dorset.

GROUP SPECIALS!

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

**CIRCUIT DIAGRAMS.** Available for D32, D64, Dragon DOS controller, Cumana DOS controller, and CoCo DOS. All the same price 1.00 each.

**NDUG FORTH O.S.** Written by John Payne, the best FORTH implementation available. Includes Turtle Graphics, 80 col w.p. and Assembler.

Available for V1.0, E5/6 and DosPlus price 10.00 with comprehensive manual. Delta version (single or double density), NO assembler. Price 7.50 inclusive.

**DRAWZEE.** The best selling Graphics utility program. Written by R.A.Davis. Available on tape at 2.50 inc. or the NEW DISC VERSION with FREE "Mirrorimage" program included (DOS V1.0 or CoCo DOS) only 3.00 inc.

**NEUCOPY.** Machine code tape utility. Allows copying of headed and headerless programs. Written by Stuart Mills. Price 2.50 inclusive.

**DRAGON DOS TO COCO DOS.** Want to run Dragon discs on your CoCo? No problem. This program written by Chris Rouse allows your CoCo to convert Dragon DOS discs to its own format and retokenise Basic routines. Versions available for CoCo DOS V1.0 and V1. Price 5.00 inclusive.

**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.

**DOS EPROMS.** EPROMS blown to V1.0, patched V1.0, V4.0, V4.1, or translated & debugged V4.1. Price 3.00 each. Send a clean 2746 EPROM when ordering. ANY EPROM up to 27256 copied. Price 3.00 plus suitable clean EPROM.

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**FUN DISC!.** Over two dozen simple games, quizzes, pix, tunes, etc, written and compiled by R.A.Davis specially for the Group. Something to amuse and interest ALL ages and tastes. Available on DragonDOS disc (only) for just 3.50.

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

GROUP SERVICES.

**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.

**DRAGONART GRAPHICS LIBRARY.** Contains THE biggest and best collection of graphics screens for the Dragon, all available at nominal charges. The Library also wants YOUR original graphics efforts. Full details and list available from:- The Librarian, 5, Glen Road, Parkstone, Poole, Dorset.

**TX Lo-res screen editor and manipulator.** Written by Ian Rockett. Price 2.75 inclusive. The Librarian, 5, Glen Road, Parkstone, Poole, Dorset.

**BACK ISSUE UPDATES.** Reprints of all issues of Update (from original master sheets) available at ONLY 85 pence per copy inclusive of postage. 14 page index of Update articles only 2.50. Single articles 50p. each. (see for details). @ Send to Eric Hall, 32, Thackeray Mall, Fareham, Hants. PO16-0PQ. Cheques made payable to "Back Issues Dept. (NDUG)".

MISCELLANEOUS ADVERTS

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

**WANTED!.** Is anyone in the Swindon area interested in forming a local Dragon Group? Phone S.T.Lee on 0793-617024.

**WANTED!!.** Dead or dying Dragons and Tandys for use as spares for YOUR repair jobs!. Phone Alan Butler on 0371-4234. evenings only please.

**WANTED!!.** Defunct printers of ALL kinds for use as spares in YOUR repairs. MUST be cheap!. Phone Paul Grade on Worthing 207585.

**Not so dusty!.** Help the Group and yourself by buying your Dragon a top quality dust cover at a real bargain price!. YOU get a bargain, your DRAGON keeps cleaner, and the GROUP gets half the money!.. Send your cheque for 2.50 to:- R.Preston, Kings Hall Court, St.Brides Major, Mid Glamorgan.

**FOR SALE.** Editext. Used once only. 3.50 inclusive. J.D.Bateman, Orchard House, Cleator Moor, Cumbria.

**DRAGON64** with Delta disc controller and 40 track drive, plus approx. 300 games converted to disc, and Dragon User Magazine from Issue 1 to December 1987. 150.00 n.n.o. Phone 0943-227025.

**Brother HR5 printer for sale.** Epson compatible 80 col. Runs on thermal or normal paper with ribbons. (2 included). Offers around 40.00. Steve Knight, 76, Etwell Rd, Hall Green, Birmingham. B28-0LE. Phone 021-777-2477.

**FOR SALE.** Dragon 32 complete with two pairs of joysticks (switched and pot), and over 40 cassettes (mainly games) and a cartridge. 50.00 or nearest offer, but buyer must collect or pay postage. Simon Walley, 16, Barrowby Gate, Swindon, Wiltshire. SN3-4UH.

**FOR SALE.** Cumana 40 track drive, cased, suitable as second drive for any Dragon system. 38.00 + postage. Dragon 64 with manual and PSU in full working order 70.00. Dragonplus 128 board with Compuserve Edit+128 and OS9/Flex upgrade discs 65.00. (or both supplied as unit for 130.00 inc.). Phone David Rothery on Glossop 3912.

**PRINTER BARGAIN!!.** Paper Tiger 7 pin dot matrix printer, tractor feed, 80 col., with Parallel AND Serial ports and 2K buffer!. A really heavy duty machine ideal for anyone owning both CoCo and Dragon!. ONLY 50.00 plus postage. Phone Brian Crosby on 021-701-2837 (days) or 0203-373518 (evenings).

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