

Le bulletin de l'equipe nationale de les usages du 'Dragon'

DRAGON



UPDATE

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----- SPECIAL FRANGLAIS ISSUE!!! -----

The Gaffer's Bit.....

I KNEW it!! Expose a normally insane but intelligent Editor to the Dreaded Educational Virus for a couple of weeks, and this is what happens!! Now not only will all my remaining Members leave (both of them probably), but I'll have to apologise to the French ambassador as well!! I wouldn't mind so much, but I'm told that Stephen has taken to wearing peculiar hats and wandering around with his hand tucked inside his coat. I wonder how much a one way ticket to Elba will cost us? Oh well, it might have been worse, he COULD have changed his name to Josephine. (NO, that is NOT a suggestion, Stephen, it wouldn't suit you at all!!).

Now for a bit of news. I've just received a phone call from Greenweld Electronic Components of 443, Millbrook Road, Southampton SO1-0HX. They have a small stock of Dragon Data joysticks which they are offering at 3.00 each, and some "D" socket adaptors which will enable you to use Atari and similar type sticks with your Dragon, and they are offering these at 1.00 each, which is much less than the price of the components!. Both prices include VAT but postage is 60 pence per order extra. At these prices how can you lose?. Buy your Dragon an early Christmas present. Stocks are limited, so please send them your order NOW.

Will Stephen relearn English in time for next month or will we have to buy a guillotine?. Will there be any articles at all for next month?. Who is going to pay for all these gold pages?. Will I need a new keyboard if Stephen visits Japan?. For the answers to all this and more read the next issue of Update!.

Paul G.

L'Editeur's Morceau...

Bonjour, et bienvenue to ce speciale 'Franglais' numero de Dragon Update, qui has been created sans l'aide d'un anglais to francais dictionnaire. Vous will be tres pleased to savez que not toute de ce 'Update' est dans Franglais - malheureusement, j'ai decide que it was too much to inflict a complet douze pages of french waffle sur tous de vous pauvre people. Vous pouvez, cependant, blame ce front page de silliness sur notre bien amie president, Paul de Worthing... and let this be a lesson to you, Paul - NEVER tempt me with an offer I can't refuse!!! (NO, NOT that sort of offer!!).

However, returning to the real world (if there is such a thing), please take serious note of the warning on page 5 ... it WILL be enforced if necessary!

Well, now we can fully enjoy our fifth year as a group (CAN'T WE, Paul!) and look forward to another four or so. It really DOES seem to be the year of the Dragon in some respects, because not only do we have our fourth birthday, BUT our next issue is our 'Golden Anniversary' ie 50th Update. Celebrations all round! I'll get Paul to print the newsletter (sorry, le bulletin) on gold paper, and let's have those celebratory articles rolling in. Infact, let's have ANY articles rolling in, and NOW, otherwise, as a special surprise, the 50th issue will be nice gold pages with NOTHING on them!

That's enough waffling for this month. As they say in franglais, jusqu'au next time, lire on!... Stephen.

P.S....Paul, did you know it was our fourth birthday last month?

Toolkit for DragonDOS (4) . . . D. J. Gray.

This concludes the BASIC and assembly listings, and the series.

```

4E20 *****
4E20 * ASSEMBLY LISTING OF PATCHES *
4E20 * TO PREVENT MOVE, FRAME AND *
4E20 * CLS OVERWRITING DRAGON DOS *
4E20 *****
F9E0 F9E0 ORG $F9E0
F9E0 PUT $F9E0
F9E0 3402 MOVE PSHS A
F9E2 FE03FE LDU $03FE
F9E5 A648 LDA 8,U
F9E7 2704 BEQ NEXT1
F9E9 8B03 ADDA #$03
F9EB A748 STA 8,U
F9ED A649 NEXT1 LDA 9,U
F9EF 2704 BEQ NEXT2
F9F1 8B03 ADDA #$03
F9FE A749 STA 9,U
F9F5 A64A NEXT2 LDA 10,U
F9F7 2704 BEQ NEXT3
F9F9 8B03 ADDA #$03
F9FB A74A STA 10,U
F9FD 3502 NEXT3 PULS A
F9FF 3089FE00 LEAX $FE00,X
FA03 39 RTS
FA04 39 RTS
FA05 8100 CLS CMPA #$00
FA07 2703 BEQ NEXT4
FA09 C30600 ADDD #$0600
FA0C C305E0 NEXT4 ADDD #$05E0
FA0F 39 RTS
FA10

```

Toolkit for DragonDOS (2) . . . Revisited!

As you are no doubt aware by now, issue 47 was errors galore, and Toolkit part 2 was one of those hit. Paul seems to think that 3 lines went missing, but I'm not totally sure which ones, so here is (possibly) what should have appeared...

'...unfortunately though this also disables the serial port.

It is hoped that with the aid of these short routines those with almost redundant Toolkits can dust them off and bring a very useful utility back to life.'

Stephen.

Copycat...Ken Grade.

No, this is not another copying program for making "back-up copies" of the awkward arcade games, it is a very useful routine for copying disc programs from one disc to another, although twin drives are needed for this. Big deal?

Well, there is more to it than that. It will give all directory details of a disc. That is, the sector where the start of each program written on disc is shown, and how many sectors each program occupies, and the start, end, and exec addresses. OK, maybe it is not "everything you wanted to know about disc storage", but it is quite interesting to see how programs are written to disc. If you have ever had a disc with a bad sector (or more) which means you can't recover a program or file, you ought to appreciate this.

The other routines are kill, protect, unprotect and search for a given program. The search works! There's no need to be accurate with the program name - the routine will find the closest to the name given.

The program is available from Pulser Software at 3.49. Useful to have around at that price.

MICRONET PAGES.

As of now we have a new number for our Micronet Gallery pages. It is 811220029. If you have any material which you think we should include on Micronet please send it to Tim Hayton at 36, Laurel Drive, Willaston, South Wirral. L64-1TW. So far as I know we now run the ONLY Dragon page on Micronet, and Tim needs all the material he can get in order to make it interesting, so PLEASE TRY TO HELP IF YOU POSSIBLY CAN.

Pascal For Beginners (13) ... Part One.

This time, procedures in a bit more detail. In fact, procedures are very similar to functions, but a lot more useful. Functions are designed to perform one single task and give a single result, and procedures by and large should do the same. However, with functions we passed on the value of certain variables to the function for it to work on. With procedures, we have much more powerful features in passing parameters, which I will be covering next time. For this time I want to recap on procedures generally. They are, of course, independent subprograms used in programming for the following reasons: 1) It is easier to tackle a large problem as a series of self contained modules. 2) The structure and clarity of programs are improved. 3) Each subprogram can be written, tested and debugged in isolation from others. 4) Commonly occurring tasks may be performed by subprograms which can be placed in a library of standard routines. 5) If a piece of code is to be used at several points in a program it can be written once and 'called' whenever required in the program. The most important of the above points is the ability to test and debug each procedure before use in a main program. It is very straight forward to write a main program which calls each procedure in turn to test it, and give some dummy figures to test it with. The following program, called Module, illustrates some of the features above, but note the following points: a) The use of Reset, Rewrite, Read, Write and Close in file handling. These reserved words are available in most standard Pascal implementations, but check your manual just the same. b) The use of the pre defined function SUCC (also supported in most standard Pascals). c) Parameter passing to the procedure 'skip' (as a taster for next time!). Now, two things at this stage. Firstly, you will have to create a file of rainfall data which consists of values in decimal e.g. 12.10, about 120 values should be enough. Use the random program I gave you last time to generate the data. It will have to be modified slightly to handle real numbers instead of integers! Secondly, I hope the editor has enough room to print the program! (NO, I don't!!! I've had to split it in half, with the second half next month. See also page 9!!..SW)

```
PROGRAM module (input,output,rainfall);
CONST
    start_year = 1975;
    end_year   = 1984;
TYPE
    years = start_year .. end_year;
    months = (jan,feb,mar,apr,may,jun,jul,aug,sept,oct,nov,dec);
VAR
    annual_rainfall : ARRAY [years,months] OF real;
    rainfall        : text;
    finished        : boolean;
PROCEDURE fill_array; (* fills the global array annual_rainfall using data
from file 'rainfall.dat'*)
VAR
    row : years;
    tab : months;
BEGIN
    reset(rainfall,'rainfall.dat');
    FOR row := start_year TO end_year DO
        FOR col := jan TO dec DO
            read(rainfall,annual_rainfall[row,col]);
        close(rainfall);
    END; (* of fill_array*)
    PROCEDURE skip (no_of_lines:integer);(*skips given number of lines on terminal
output*)
    BEGIN
        (* ... You do this bit...!!! *)
    END;
    PROCEDURE year_average;(*asks the user to choose a year and prints annual rain
-fall for that year *)
    VAR
        input_year : years;
        sum,mean   : real;
```

```

col      : months;

BEGIN
  write('Enter year in range ',start_year,' to ',end_year,' : ');
  readln(input_year);
  sum :=0; mean:=);
  FOR col:= jan TO dec DO
    sum:=sum + annual_rainfall[[input_year,col]];
  mean := sum/12;
  skip(4);
  writeln('Average rainfall for year ',input_year,' was : ',mean);
  skip(5);
  writeln('press ENTER key to re-select from menu :');
  readln;
END; (* of year average *)

PROCEDURE month_average; (* asks the user to choose a month and prints average
rainfall for that month *);
VAR
  input_month      : integer;
  row              : years;
  month            : months;
  sum,mean         : real;

```

Tandy Keyboard Layout...Eric Hall.

I see there is a great interest currently in Tandy software from the 'states, and with the pound faring quite well against the dollar at the moment, mail order to the US is worth considering. So as one of my first contributions to Update I am going to compare the layout and differences of the Dragon and Tandy keyboards.

The keyboard memory map resides at locations 337 to 345 on both machines; only the output values are different. e.g. if the 'A' key is pressed, the Dragon returns a value of 251, whereas the Tandy returns a value of 254 at the same memory location, 339. So, what is happening? We need to look at the keyboard memory locations for both computers to find out:

DRAGON:

		contents of location					
location	245	253	251	247	239	223	191
338	0	8	@	H	P	X	ENTER
339	1	9	A	I	Q	Y	CLEAR
340	2	:	B	J	R	Z	
341	3	;	C	K	S		up arrow
342	4	,	D	L	T		down arrow
343	5	-	E	M	U		left arrow
344	6	.	F	N	V		right arrow
345	7	/	G	O	W		SPACE

TANDY:

		contents of locations					
location	254	253	251	247	239	223	191
338	@	H	P	X	0	8	CLEAR
339	A	I	Q	Y	1	9	ENTER
340	B	J	R	Z	2	:	
341	C	K	S	up	3	;	
342	D	L	T	down	4	,	
343	E	M	U	left	5	-	
344	F	N	V	right	6	.	
355	G	O	W	SPACE	7	/	

Those are the layouts, but what's missing? The SHIFT key, which resides in location 337. If no keys are pressed the locations will contain a value of 255. This gives rise to the autorepeat routine in listing 2 below.

Listing 1:

```

1 REM PEEK LISTING
2 CLS
3 A$=INKEY$:IF A$="" THEN 2
4 CLS
5 FOR L=338 TO 345
6 PRINT L,PEEK(L)
7 NEXT
8 GOTO 2

```

Listing 2:

```

1 REM AUTO-REPEAT LISTING
2 CLS
3 A$=INKEY$
4 PRINT A$;
5 FOR L=338 TO 345
6 POKE L,255
7 NEXT
8 GOTO 2

```


Techbase 1: Thanks!.....Lee Cooke

This is a short message to thank all those who have contributed to TECHBASE's software library:

R.A.Davis, C.Rouse, I.Rockett, P.Grade, G.Strong, P.Gent & S.Beardwood to name a few.

From 1/9/88, the method of use of the library will have to change. This has been forced on me by the level of work involved and the costs of photocopying lists, etc. What I am now doing is having to charge a copying fee of #1.00 per disk. This fee will include postage so do not supply return stamps, etc. I regret having to do this but it has become necessary.

I am also still in need of software for the following operating systems: DELTADOS, OS9, FLEX, TANDY COCO DOS, plus any IBM PC or APPLE II PUBLIC DOMAIN!

Help with the above would be very much appreciated (waiving of copying charge if disks sent in with submissions or when ordering!).

Helpline 1988

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

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

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

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

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

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

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

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

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

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

SPREADSHEETS: E. Freeman, 80B, Main Road, Old Duston, Northampton. NN5-6RA.

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

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

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

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

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

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

DRAGON/DELTA DOS PROBLEMS; OS9, BASIC 09, AND GENERAL BUSINESS SOFTWARE

APPLICATIONS: M.A.A. Abba, 55, Longland Court, Rolls Road, London SE1-5BN.

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

GENERAL PROBLEMS AND MOST REPAIRS: Steve Tate, 22, Fairfield Drive, Wormley, Broxbourne, Herts. EN10-6DY. @ RADIO AMATEUR PROBLEMS AND ADVICE: Fred Hopewell, 48, Gladstone Street, Loughborough, Leicestershire. LE11-1NS.

Can YOU help??.

We still need more volunteers for the Helpline service, so if you think you could help other members with their problems on ANY Dragon / CoCo related subject, software or hardware, PLEASE let me know soonest and I'll include details in the next Helpline list. Paul.

Slightly Untidy House(2)...Keith Bean.

If I write much of this stuff you will discover that things don't always work right for me. I don't mean disasters, but computers aren't always as easy as some people would have us believe. I once saw an Ian MacNaught Davis lecture, and he got it right: "User friendly means that it is not as bad as it used to be" (approximate quote). If you have seen complete novices faced with a computer for the first time, you will know that they haven't really got friendly, just accepted.

Part of my job (I'll have to admit - I actually work with the things) is user support. We have people using mainframe and mini terminals and a range of micros. Now the micros are the friendliest, but when you compare it with using a terminal on an IBM mainframe it's not hard to look friendly.

Anyway, to return to the fun part (well, I'm not doing this for money!). I am trying to understand how DragonDOS holds data. As I said last time, I have just changed from Delta and, as has been mentioned before, there isn't a good reference guide to DragonDOS, so I suppose that all over the country there are or have been people finding their own way through the mysteries like me.

In order to make any progress I needed to be able to look at the representation of data on the disk. I wrote what I think is a pretty good utility to display sector contents but then I needed to be able to find the files. NDUG to the rescue - well, it should have been! There is a suitable program in Issue 38 but could I get it to work? No way! I got something but it wasn't right and I could not find what I had done wrong. In the end I had to start again with the program by D.Rothery in DU, Nov. '86. I got that to work, but as far as I can see it will only work with single sided drives. Double sideders act like they have 36 sectors on each track so I will have to find all the 18's and change them. The number of sectors per track is stored in 1703-06 (Ref DU April '86) after the disk has been accessed. Why it needs 3 bytes is beyond me - all you need is in 1703! I can't say that I have found much out so far but it is beginning to make some sense and maybe the benefits of being able to examine a sector directly with SREAD will weigh in favour of DragonDOS. My feeling at the moment is that DragonDOS has a lot of potential because it is usable at a low level. The comparison is not exactly like that between an assembler and BASIC, but it's that sort of thing. What is needed are a few basic subroutines, and some not so basic. I have had an idea for variable length records!

For what it's worth, here are a few "discoveries": @ 1. Numbers are held in a character form and you must leave room for leading and trailing spaces.

2. You don't need to say FOR after FROM. The field gets a carriage return end marker.

3. You MUST 'CLOSE' all files. If you don't, you can get strange results, such as not being able to use a file created to 24000 bytes beyond 12000 bytes.

That's enough for now. I was going to mention the funny things that Compusense's PC-Convert does. Maybe next time.

ADVERTISING COMPLAINT.

I'm afraid that I have to print the following paragraph from a letter I received from Mr.R.A.Davis concerning an advertisement we carried in issue 47.

"Many thanks for Update issue 47. I was annoyed to see that my name has been taken in vain to encourage people to subscribe to Dragon's Roar. This by taking the single compliment from a highly critical letter clearly marked 'not for publication', which was duly published in Dragon's Roar, heavily edited. To put the record straight and restore my honour, could you please mention in Update that I would not like anyone to subscribe to Dragon's Roar on account of any remark of mine, and that I did not renew my subscription to it after a six month trial."

Will advertisers please note that ALL claims made in their advertising MUST be accurate.

As from now, a valid complaint about the contents of an advertisement will be considered sufficient grounds for the refusal to publish any further advertising copy from the person or company concerned. Paul Grade.

Tosh-Hiker 2.

Further to my request of a couple of issues ago for someone to help with transporting a replacement photo copier from Lincs to Worthing, so far only ONE person has offered to help, and he can only manage the stretch between London and Worthing. Can anyone else assist? If you're likely to be travelling South in the near future, and have car space for a copier, please let me know as soon as possible. We can help with the petrol costs, and although heavy a Toshiba isn't all that big. Paul.

Peeking The Dragon (6) . . . Mike Stott.

This month I have received several more new items of software for review. Dragonfire have sent "The Hole" which is a text adventure set in outer space and "Bust-out" described as an unusual musical version of the classic arcade game giving differing sizes of bricks and bats and also 9 different speeds. Kouga have supplied Mandragore, a sideways scrolling arcade game with some outstanding graphics. This last game is also available on disk from Orange who have sent me North Sea Action initially described to me as a Pacman type game but I can assure you that it is a lot more than just this. Full reviews of these will be in a later Update. John Foster of Kouga, a new company, tells me he is on the lookout for new Dragon software and will pay 50% royalties. I have not had many offers of help to review as yet but if anybody would like to do the occasional review please write to me or 'phone me on 051-480-7712. If anybody wants more info on any software and where to obtain it please contact me as I am always willing to help.

THE BOMB - DRAGONFIRE

This is described as a beginner's adventure but I found it to be as good as many put out as full-blown adventures. You are given the task of searching the 66 locations for the parts to defuse a bomb. Although the vocabulary is limited there is an 8 level option which allows you from 176 to 410 moves in which to achieve the completion of the task. Beware of the bees unless you have the ?????? as otherwise you appear to be trapped forever by them and will have to reload the game. I enjoyed solving The Bomb and look forward to more difficult, but logical, problems from this writer. The cost a mere 3.00 plus 50p p&p. To anyone starting out on adventures this is a must and will also be enjoyed by older hands.

SHERLOCK - ORANGE SOFTWARE

This is a disk detective program operating under Flex so will not be of use to everybody but I would urge you to buy this if you have Flex. This utility will allow you to read Flex disks and edit them if required. It enables you to verify sectors on the disk showing you which are good and which are bad. A printer can be used in conjunction with the program and there is a set-up program included which need only be used once to enable this. Deleted files can be reinstated with the usual proviso that nothing has overwritten this information. Sherlock can also be used as a cataloguer of disks together with many more useful features too numerous to mention here. A clear 6 page instruction set comes with the disk which is priced at 5.99 plus 50p p&p.

Kouga have a Breakout clone due for release shortly and Bob Harris has nearly finished a Config accessory for Klik with which a SYS file can be set up to be called by a basic program to install Klik, set up windows, etc. Also he is part way through a word processor for Klik. Jonathan Cartwright has nearly completed a forward scrolling bouncing ball game to be called Impossiball.

For those of you who want another mag as well as Update, and I hope Dragon User, why not try Dragon Magazine from Dragonfire at only 7.50 per year.

Andrew Hill has sent me a few copies and I have been pleasantly surprised by it. I have received a letter from Pauline Hampson saying that she no longer has the time to write adventure and educational reviews for Update. On behalf of the Group I would like to thank her for many good reviews and wish more reviewers of adventures would follow her example of completing the adventures before reviewing them. She has certainly helped me, albeit unknowingly, and I for one would welcome her back with open arms if she would ever offer to write more of her reviews.

Next month I hope to have a review of Curse Of Comarc together with at least one of the programs mentioned earlier and hopefully news of more new releases.

DOSplus 4: The next DOS?...Lee Cooke.

On reading the (well presented) DOSplus 4 manual you are told that the system is DragonDOS compatible. This is true if only using commands from BASIC, however from machine code a totally different picture emerges. I first realised that something was wrong when my auto-boot disk didn't. What actually happened was that the Dragon 'hung' completely with the disk drive continuously spinning. As I had already used the disk on DragonDOS 1.0 (hereafter referred to as 1.0) I knew that something about the system was not dragonDOS compatible. Reading through the manual turned up a small BOOT routine in BASIC which was duly typed in and tried. This produced a working boot which was capable of running a BASIC or machine code program. However, my problems had not finished there.

Trying to get the N.D.U.G. Forth to boot brought the same results as for the standard disk boot. This raises the important question of how to modify bootable, copy-protected commercial software to run under DOSplus 4. One nice feature is the FROM command. This is identical in operation to the DO command in DeltaDOS and provides a means of executing a set of commands in sequence, provided they are all on a single line (separated by colons as in Basic). I also liked the way that the DSKINIT command was implemented, giving a running count of the track being formatted/verified. The backup and copy commands seemed fairly solid, as well.

TeleWriter will NOT work without patching, but the details are given in addendum sheets to the manual (Version 4 only). Electronic Author also requires a fair amount of patching, as does Flex V.1.3.1. The part that annoys me about these patches is that they claim to be used to correct 'errors in the bootstrap routines' in these programs. If this is so, how come they work perfectly with 1.0 (and usually with 4.1 and SuperDOS!). The only exception to this is TeleWriter, but it was only designed for tape anyway, and thus requires patching anyway. OS9 boots correctly (at least it didn't crash) and an experimental boot called MAGIC GOLD started, couldn't find GOLD.PRg, the reset to text screen with ?WP error. Am I glad I protected the disk! Following on from the above comment DO NOT try to use bootable DragonDOS disks on DOSplus as they will almost certainly crash!! (If not write-protected, they may corrupt, depending on the crash caused).

If you are used to repairing a ?IV error by copying one directory track to another, BE VERY CAREFUL how you format your DOSplus disks. DSKINIT / tells DOSplus to leave track 16 available for use (i.e. NOT Directory) but even if a normal DSKINIT is used the directory data WILL NOT BE WRITTEN to the track unless a BACKUP DIR command is issued.

In conclusion, I would NOT recommend this DOS to a person with a large DragonDOS software collection if he programs in anything other than BASIC or uses any commercial autoboot disks. It is a reasonable thing to use for a beginner, as long as the KILL / command is not used UNDER ANY CIRCUMSTANCES as valuable programs could be lost. People interested in experimenting would be advised that a fair amount of patching is called for and that disks should be ALWAYS write protected when testing BOOT sectors. As NDUG Forth will not run and neither will other programs I use, including some versions of the DRAGONDOS disk menu system, I cannot recommend the package.

Redundant Information...

1). When using the auto line numbering routine with DragonDOS, pressing any character, then shift + left arrow will increment the line number. Useful if you're typing in a listing which has gaps of 50 or so in its line numbers - it saves breaking out of the AUTO routine and restarting it.

2). The pokes to make all screen output go to printer as well do not work with DragonDOS if used in direct mode, as most people have found out. If, however, you enter them as a BASIC program then there's no problem. e.g. 10 POKE 360,&H80:POKE 361,&HOF:POKE359,&H7E.
Ken Grade.

DRAGON USER SUBS!!!!!!

It appears that some of the renewal payments sent to Dragon User during July went missing somewhere in the post. If you sent your subscription during that month and haven't heard anything since PLEASE let Bob Harris know soonest. Also it seems that a few people were NOT sent renewal notices during the change-over period, so if you know of anyone who was getting D.User until then but whose copies suddenly ceased arriving, please tell them the new address and ask them to write in (preferably with a cheque!).



The Dragon as a Unix...Chris Jolly.

I have recently started using my Dragon 64 running OS9 as a terminal onto an NCR Tower and Wang APC at work. The Tower runs Unix, and the APC runs Xenix. At present the Tower has a terminal port configured for a 300 baud terminal, which is connected to an autoanswer modem, and the APC has a serial link to the Tower, through which I can log on using the Unix cu utility. Although full screen editing at 300 baud isn't brilliant, the unix vi editor makes a special effort for slow terminals and avoids unnecessary output as much as possible. With a suitable termcap setup on the APC, full-screen editing in vi can be quite acceptable. 'termcap' is a database of terminal capabilities which is maintained under Xenix (the Tower does things slightly differently), containing the escape codes for positioning the cursor etc for every terminal which can be used on the system. To use the right termcap entry, all you have to do is type (for example):

```
TERM=dragon|export TERM
```

in the shell. I put this in my .profile file so that it is executed whenever I log on. The termcap entry for an OS9 terminal is as follows:

```
dr!dragon|Dragon 64:\ @          cd=\EJ:ce=\EB:cl=^L:co#80:do=^J:ho=^K:\
kd=^J:kl=^H:kr=^I:nd=\EC:so=\EF:se=\EG:\
us=\EH:ue=\EI:up=\ED:li#24:cm=\EA%r%.%.:bs:
```

This is for an 80-column Plus board. For the regular 51-column driver, just change co#80 to co#51. It is a good idea to keep the termcap entry for the Dragon near the top of the file if you intend to use it frequently, because the programs that use it start searching from the top, and termcap files can become very long.

Unix is a trademark of AT&T Bell Laboratories.
Xenix is a trademark of Microsoft Corporation.

The (Editor's) Late Bit...

Just for a change, I thought I'D write a 'Late Bit' as well as Paul, whose will be elsewhere this issue I presume. There are quite a number of things to sort out, having come back from a so-called holiday to find errors left, right and centre.

Firstly, articles. I won't harp on about lack of them (for the moment), but instead about size. I had a great job squeezing this month's HenceForth onto 1 side, and, as you will have read, the Pascal article has had to be chopped in half because it was just too long. I have said it before, if you write an article it must NOT be any more than one side. A few lines over is okay, as I will find some way of editing it down to fit correctly, but 2 sides is just way over the top. Paul has also said before that if you MUST write over 1 side, then try to get a 'natural' break in the article, and serialise it to more than 2 installments if necessary. As of NOW, any articles which Paul or I receive which are uneditable to under 1 side will be SENT BACK, with instructions to clip it down to size - you have been warned!

The only time Paul or I will go over 1 side is when we have space to fill... which brings me onto the supply of articles! At the moment, I have very little to print next month, as several of our series have now finished, so get writing immediately!, if not sooner! You want to read Update, so you will have to write it!

Crossword 35 Answers...

ACROSS: 1A). Watts. 1H). Doge. 2J). Exit. 3A). Scarify. 3H). Larch. 4J). Rota. 5A). Castles. 6F). Succumb. 7J). Dupe. 8C). Veto. 8G). Spanner. 9A). Beano. 9I). Prior. 10E). Hepatic. 12C). Acrid. 13A). Photographer.
DOWN: A4). Scrabble. B4). Caramel. B11). Ash. C1). Transylvania. D3). Rut. E1). Stilletto. E10). hero. F1). Fife. F6). Score. G1). Styes. H1). Delay. H7). Sprain. I1). Or. I6). Claptrap. K1). Excommunicate. L10). Soar. M1). Strawberries.

Note from Graham Smith.

In his recent article Chris Jobson suggests bending one leg of a 27128 out of the way when inserting it into the ZIF socket of the self assembled "Steve's Electronics" EPROM programmer. I suggest purchasing a cheap 28 pin socket, removing the relevant pin from that, and then inserting the EPROM into this socket before inserting the whole into the ZIF. Every time I have tried bending a leg as suggested it has snapped, which would worry me if I had paid for it!!.

Henceforth (12) . . . Bob Smith

This time we're going to look at the way FORTH can be used to make high speed graphics for a modest CAD program.

The program will make either isometric or perspective drawings using a set of three-dimensional coordinates and a table showing which coordinates are to be joined by a line. For this program, all drawings have to be made so that the object will fit into a box that measures 256 * 192 * 192 dots on the Dragon grids. In this case, the "dot" is the smallest cube we can draw. If you are not too sure about this then read chapter eight in the Dragon BASIC manual. To specify where this dot is, we use three-dimensional coordinates x,y,z, where x and y are our old friends from the hi-res screen and z is the depth. Coordinate 0,0,0 specifies the point at the top left of the screen that is furthest away. As the program needs 15 screens I'll give you these now and keep the explanation till next time.

```
SCR #470
0 ( CAD PROGRAM )
1 0 VARIABLE HI-ADDR
2 : TOTC ( --- N ) . " HOW MANY POI
3 NTS?" IN# DUP 3072 ! ;
4 : XIN ( addr --- )
5 . " X?" IN# SWAP ! ;
6 : YIN ( addr --- )
7 . " Y?" IN# SWAP ! ;

SCR #471
0 ( CAD PROGRAM )
1 : ZIN ( addr --- )
2 . " Z?" IN# SWAP ! ;
3 : RELS ( --- )
4 . " LIST ALL LINES BY SET NO."
5 CR . " E.G. 1 2 1 3 2 3" CR ;
6 : SNR ( addr --- )
--> 7 3065 - 6 / . " SET " . CR ; --> 7

SCR #472
0 ( CAD PROGRAM )
1 5 VARIABLE SOFF
2 : RELIN ( addr--- )
3 RELS 1 BEGIN WHILE CR CR
4 . " LINE:" CR . " FROM?" DUP IN# 4
5 SWAP ! 2 + . " TO?" DUP IN# DUP 5
6 ROT ! SWAP 2 + SWAP REPEAT
--> 7

SCR #473
0 ( CAD PROGRAM )
1 4 - DUP DUP -1 SWAP ! -1 SWAP
2 2 + ! 2 + HI-ADDR ! ;
3 0 VARIABLE CTOT

SCR #474
0 ( CAD PROGRAM )
1 : DATAIN ( --- )
2 TOTC 1 SWAP 6 * 3074 + 3074
3 DO DROP 1 DUP SNR XLN 1 2 +
4 YIN 1 4 + ZIN 1 6 + LOOP 6 +
5 RELIN ;
6
7

SCR #475
0 ( CAD PROGRAM )
1 : CADUT ( --- )
2 SP! 3070 HI-ADDR @ DO 1 @ -2
3 +LOOP ;
4 : FINDC ( n1---n1 n2 )
5 DUP 3 * 1 + ;
6
--> 7

SCR #476
0 ( CAD PROGRAM )
1 : LO-C ( --- n1 )
2 32506 SP@ - 2 / ;
3 : GRAFX ( --- )
4 BI PHODE4:SCREEN1,1:PCLS 1 ;
5 : SET-OFF ( n1---n2 )
6 96 - 3002 @ 100 % / SOFF @ /
--> 7 ;

SCR #477
0 ( CAD PROGRAM )
1 : ZXYCOP ( n1---n2 )
2 DUP 3 * 1 + PICK SET-OFF SWAP
3 DUP 3 * PICK 3 PICK - >R DUP 3
4 * 1 + PICK 3 PICK + >R 2DROP
5 3000 @ 1 + PICK
6
--> 7

SCR #478
0 ( CAD PROGRAM )
1 DUP 3 * 1 + PICK SET-OFF SWAP
2 DUP 3 * PICK 3 PICK - >R
3 DUP 3 * 1 + PICK 3 PICK + >R
4 2DROP R> R> SWAP R> R> SWAP
5 LINE,S ;
6
7

SCR #479
0 ( CAD PROGRAM )
1 : CAD1 ( n-array --- n-array )
2 DUP CTOT ! GRAFX FINDC SWAP
3 DROP LO-C SWAP DO 1 DUP 30000
4 ! PICK ZXYCOP 2 + LOOP CTOT @ ;
5 : ZBIAS 3 PICK 5 + PICK 10 /
6 100 191 % / 91 + 100 % / ROT
--> 7 DROP ROT DROP ;

SCR #480
0 ( CAD-EDIT )
1 : CAD-BISP ( --- n )
2 BI CLS 1 4000 1 DO 1 PICK 0<
3 IF 1 1 - LEAVE ENDIF LOOP 0
4 SWAP DO 1 PICK 4 .R -1 + LOOP ;
5 : P-F ( n1--- )
6 256 SWAP - 5 / 100 256 % /
100 SWAP - 30002 ! ;
--> 7

SCR #481
0 : XPER 256 DUP ROT - 30002 p
1 100 % / ZBIAS - ;
2 : YPER 30002 @ 100 % / ;
3 : YBIAS SWAP DUP ROT SWAP 3 +
4 PICK 191 SWAP - 100 191 % /
5 1000 + SWAP 191 SWAP - 1000
6 ROT % / 191 SWAP - ;
--> 7 : ZXYPER ( n1---n2 ) DUP 3 * -->

SCR #482
0 DUP PICK P-F DUP DUP 1 + PICK
1 XPER OVER 3 * 2 + PICK SET-OFF 1
2 - >R DUP 3 * DUP 1 + PICK YPER
3 YBIAS SWAP 2 + PICK SET-OFF + 3
4 >R DROP 30000 @ 1 + PICK DUP 3 4
5 * DUP PICK P-F DUP DUP 1 +
6 PICK XPER OVER 3 * 2 + PICK
7 SET-OFF
--> 7

SCR #483
0 ( CAD PROGRAM )
1 - >R DUP 3 * DUP 1 + PICK YPER
2 YBIAS SWAP 2 + PICK SET-OFF +
3 >R DROP R> R> SWAP R> R> SWAP
4 LINE,S ;
5
6
--> 7

SCR #484
0 ( CAD PROGRAM )
1 : CADP ( n-array --- n-array )
2 DUP CTOT ! GRAFX FINDC SWAP
3 DROP LO-C SWAP DO 1 DUP 30000
4 ! PICK ZXYPER 2 + LOOP CTOT @
5 ( SCR-SUMP ) ;
6
7
;S
```

DOS BOARD. J.R. SUTCLIFFE.

Whilst using the Dragon User Group's excellent instructions to convert a Dragon 32 to 64K, I thought that I would tackle the job of putting the DOS inside the Dragon instead of having it stuck in the way on the outside, and at the same time leave the cartridge port free for other uses.

The Dragon Bus is unbuffered at the port, and as such has limited drive capability, so I decided to fabricate a short piece of double sided board, with an edge connector tongue, which with two edge connectors provides this function. The adaptor pokes up through the plastic cartridge port cover, allowing the DOS to be plugged in upsidedown. Supports were fabricated from two pieces of plastic angle (DIY shop), and the lead fed out through the back of the Dragon case at the join. I fitted a toggle switch into the 5V line, allowing the DOS to be switched off in situ, and the spare edge connector coming out of the port can then be used for other peripherals. The conversion required no soldering at all on the Dragon, and did not even involve removing the main board. The tools required were a drill, fretsaw, and a sharp knife.

I am an electronics manufacturer, and am willing to fabricate these conversions for Dragon owners to fit, IF the demand is great enough. You will understand that it would not be viable to have double sided boards manufactured unless there were prospective sales of at least thirty units. The price would be 12.10 + VAT (13.92 inclusive).

PLEASE CONTACT ME IF YOU ARE INTERESTED. IT WILL TAKE ABOUT A MONTH TO PRODUCE A BATCH, AND I WILL START TO MANUFACTURE AS SOON AS I HAVE 20

ORDERS. J.R.Sutcliffe, Sutcliffe Electronics, 15, West Street, Hothfield, Ashford, Kent.TN26-1ET. Phone:- 0233-34191.

No, the title doesn't refer to the new owners of Dragon User magazine, but to the other mags published for the Dragon. I frequently get asked why Dragon User refuses to carry advertising for these magazines, and only rarely gives them a mention, but the answer is really very simple Dragon User is the last of the original commercial Dragon publications, and is trying hard to stay in business ... it needs all the subscribers and advertising revenue it can get, so you can hardly expect it to plug potential competitors, can you? Update doesn't compete with anyone, it isn't even a magazine, and is merely a part of the Group services which include a lot of things a magazine simply cannot begin to provide, so we're exempt from the ban, and for the same reasons we CAN mention and advertise whatever we wish without risk. This being so, I thought it was time I reviewed the three main "amateur magazines", Dragon Logic, 6809 User, and Dragon Magazine.

Dragon Logic is the newest of the three, and to date has published only two issues. It is a bi-monthly publication, costing 1.00 per issue inclusive, and is edited and published by Donald Morrison at 72, Diriebught Road, Inverness. It runs to 38 pages of C5 size, and is quite a professional looking little magazine. Contents are reasonably varied, although there is the inevitable emphasis on reviews, particularly games programs. However, there also some useful listings, hints & tips, interviews, etc, and no doubt the coverage of different topics will widen as the number of subscribers, and contributors, increases. Considering this is only the second issue, Logic shows a lot of promise, and given a little luck and support it has the potential to become a very good magazine. The format may have to change in the near future owing to difficulty of keeping printing costs down to an economic level, but at the moment I have no firm information on this.

The second on the list, 6809 User, is really a Roar in Drag clothing!. It started off as Drag Mag (some people have more nerve than I have!), became Dragon's Roar, and now has just had its first outing as 6809 User. It is a monthly magazine, costing 8.50 per year or 10.50 overseas, and currently runs to 48 pages of C5 size. For those of you new to the scene, it is edited and published by Simon Jones (TA New Era Publications) from 37, Collins Meadow, Harlow, Essex. I have to say that it is greatly improved over its earlier form, and if you perhaps weren't too keen on Roar don't let that put you off trying 6809 User. There is far less emphasis on games reviews than previously, and a lot more interesting articles on more general topics, plus letters from subscribers, news, surveys, top ten chart, and arcade and adventure columns. The editorial style is rather more subdued than previously too, which I think is an improvement.

Last of the three is Dragon Magazine, which is a monthly publication, edited and published by Andrew Hill (of Dragonfire Services) from 13, Parry Jones Close, Blaina, Gwent. and costing 8.00 per year. It is an 18 page magazine in A4 format. I suppose referring to it as a "blue" magazine will increase Andrew's sales considerably, but this really only refers to the colour, NOT the content!. Personally I think it has the most consistently balanced content of the three magazines, concentrating more on news items than anything, and with a reasonable selection of reviews, articles, listings, interviews, etc, it makes quite interesting reading.

I'm not going to attempt to tell you which, if any, you should subscribe to. All three editors make a very fair job of producing Dragon / Tandy magazines on a very low budget and with little or no support from Dragon owners in general, and are all doing their best to keep the Dragon alive, which is becoming an increasingly difficult task for anyone!. It is your money, spend it how you will. All three magazines have their own style, and what suits one person may well not suit another, so make your own choice. If in doubt subscribe to all three, AND Dragon User, AND NDUG/Update it's cheaper than buying an ST!.

The REAL Late Bit!.

I dunno, what with these Editor types nicking my usual space, and articles that go on, and on, and on, it doesn't look as though I've got room to write anything here anyway!. Of course, with the Post Office playing games as well it probably doesn't really matter, because by the time they deliver this your subscription will have expired.

As to all this Franglais stuff, if you really want my opinion I'll give you a clue ... "Five letter French word, beginning with M and ending with E". Don't bother to send me the answer!. Next month I'll get my own back for this Editorial Insubordination, so watch out!. Paul.

YOU'RE QUITE SURE I DIDN'T
MENTION OUR FOURTH ANNIVERSARY,
PAUL...?

... PAUL?



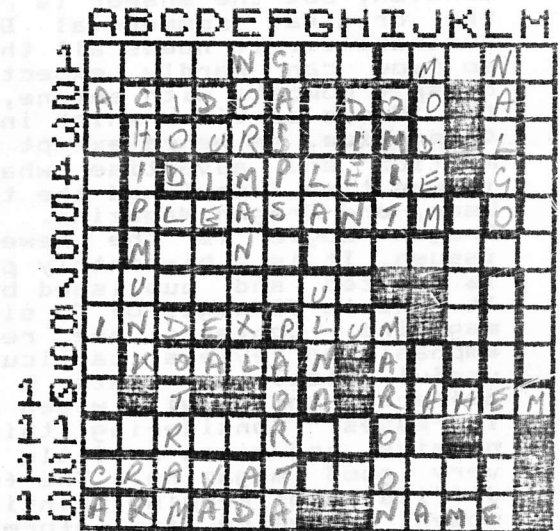
HOW, PAUL-WATCH WHAT YOU'RE
DOING WITH THAT BAZOOKA... *SW*

CROSSWORD No.36.

ACROSS: 1A)Percussion instrument. 1I)Signs of some future event (good or bad). 2A)Less than pH.7. 3B)One eight thousand seven hundred and sixtieth part of a year. 4C)Slight natural depression on cheek, chin, or arm. 5B)Change old rustic labourer into a nice person by adding one letter. 6B)Untransformed electricity in your home. 6G)Short broad bladed curving sailors sword. 7A)Metal having MW of 85.47. 8A)List of books or contents for example. 8F)Round or oval stoned fruit. 9B)Small Australian marsupial. 10J)Coughing sound intended to attract attention. 11A)The upper and larger division of the brain. 12A)An old necktie. 12G)Sun dried brick made of clay common in Texas and Mexico. 13A)A drama about a famous sea battle. 13I)Word used as the name of a person, quality or thing.

DOWN: A1)Percussion instrument. 8Z)American burrowing ground squirrel. C10)Public transport vehicle travelling on rails. E1)Mans name. F1)Sharp intake of breath. F9)Great artery leading from the left ventricle of the heart. 6Z)Shrub with perfumed clusters of mauve, white, or purple flowers. 6J)The larger of the two bones in the forearm. H2)Spotted cube. I2)Leave out. I8)To put ashore on a desolate island. J1)Modulator-Demodulator. J9)Cult hero played by a rockie person. K5)Small wooden dwelling place. L1)Local government officers union. L7)Adjustable flap near wing tip giving balance and lateral control. M1)Ageing group who are still rocking all over the world but still find time to have a Marguerita.

Last month's winners are Richard Nash and Martyn Smith. Richard gets prize from the current Dragonfire List, and Martyn gets one from our usual collection.



ALTERNATIVE MICRO SHOW

ASTON VILLA SPORTS AND LEISURE CENTRE BIRMINGHAM
SATURDAY 12th NOVEMBER 1988

ADULTS - £2.00 CHILDREN - £1.50

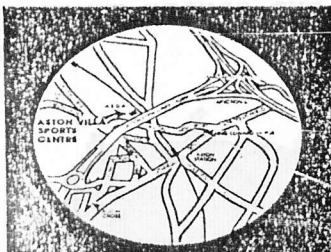
Do you own an MSX, Elnicia, Dragon, Enterprise, Texas TI99/4A, Oric, Jupiter Ace, or Lynx computer. Or even just a general interest in computers, then the place to be on Saturday, November 12th is the ALTERNATIVE MICRO SHOW.

The Aston Villa Sports and Leisure Centre is ideally situated within walking distance of Aston railway station and is served by a number of bus routes connecting with Birmingham city centre. The centre is within a couple of minutes drive of the M6 and there is parking for about 1,000 cars with extra parking nearby. There will be a cafeteria within the exhibition hall and bar for the over 18's is available within the centre.

Don't forget to collect your free copy of Micro Computer Mart from their stand!

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FROM THE NORTH (M6) ... take exit 6, keep left and follow signs to A3 Birmingham (NE) and Lichfield, drop down to Spaghetti Junction roundabout and follow signs to Aston Villa Football Ground down Lichfield Road and then Aston Hall Road is on the right about 250 yards along.

FROM (M6) SOUTH ... A38 to City, take first exit (Aston and Salford), left at roundabout, second left into Vicarage Road leading to Sycamore Road, left Church Lane, left into Queens Road, right at traffic lights into Aston Hall Road. Centre is 150 metres on left.

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Dragonfire Services
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Classified Ads Page.

NDUG FORTH OPERATING SYSTEM: Written by John Payne and available ONLY through the Group. New version for DragonDOS V1.0 and SuperDOS includes an assembler as well as the original Turtle Graphics facility, 80 col. w.p., etc. New version on V1.0 / E5 & E6 disc ONLY. New low price 10.00 inclusive. Original version (no assembler) for SD or DD Delta as well, now 7.50 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

CIRCUIT DIAGRAMS: Available for D64, D32, Dragon DOS controller, Cumana DOS, and now CoCo DOS. All the same price 1.00 each. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

DRAGON 32 UPGRADE MANUALS: The cheapest and easiest way to upgrade your D32 to 64K RAM. Easy to follow instructions covering all variants of 32. 2.00 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

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

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

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

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

THE OS9 BOOK!: "Everything you wanted to know about OS9 but didn't know who to ask". 150 pages of hints, tips, and articles for the Level 1 OS9 CoCo and Dragon user. Includes a disc of source files. 18.95.

CON09: Easy to use, full feature OS9 comms program, together with source, Xmodem (CRC & SUM), function keys, disc monitor. Send messages direct from disc! Suitable for ANY OS9 system. 5.00.

PD-PAR: Selection of useful PD OS9 utilities on one disc. Includes DDCOPY. Cheques and orders to Jason Shouler, 70, Victoria Road, Parkstone, Poole, Dorset. BH12-3AE.

OS9 MODEM PROGRAM: Up and downloading of files, any Baud rate from 50/50 to 9600/9600 (NOT split rate!). Up & download buffer from 4 to 32K or program will adapt to largest capacity available. All 6551 options supported. 8.00. Phone Barry Knapp on 0932-242800 (evenings only).

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

BACK ISSUE UPDATES: Back issues of Update reprinted to order from original master copies. Now only 75 pence per copy!! Price includes postage etc. Orders to E.Hall, 32, Thackeray Hall, Fareham, Hants. PO16-0PQ. Cheques made payable to BACK ISSUES DEPT. (NDUG).

DELTA DOS UTILITY: m/c utility to copy ALL Basic and m/c files from disc to tape in one operation. Basic listing of loader and Hex dump 1.00 or on cassette for 2.50. J.C. Bushell, 33, Tennyson Avenue, Clevedon, Avon. BS21-7UJ.

ORIGINAL PROGRAM: Gives facts on the countries of the world. Areas, Capitals, Populations, Currencies and Languages. Includes analysis facility, and map showing position of the country required. Available on DragonDOS, DeltaDOS, or tape at 4.00 inclusive. Also available is a very comprehensive Home Accounts program with many useful features. Available ONLY on DragonDOS or DeltaDOS disc at 4.00. Cheques and orders to Graham Strong, 78, Coleridge Crescent, Goring-by-Sea, Worthing, Sussex.

CoCo to Dragon!! Two new programs which are an absolute essential for those who own both Dragon and CoCo computers, and for most Dragon owners as well! C2DML will convert any m/c CoCo formatted disc to Dragon DOS format (V1.0) and C2DBAS will do the same for any CoCo formatted disc containing Basic programs, so now you CAN buy CoCo discs and run them on your Dragon! The programs were written for the Group by Randy Longshore and are available on disc at 3.00 each or both on one disc for 5.00 inclusive. Cheques and orders to the Group at 6, Navarino Road, Worthing, Sussex.

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

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

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

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

NEW FOR THE COCO!: Own a CoCo and want to run Dragon DOS discs on it? Our new program, written by Chris Rouse, will let you do just that! Converts DragonDOS discs to CoCo DOS format and retokenises Basic programs at the same time. Versions available for CoCo DOS V1.0 and V1.1. Price just 5.00 inclusive. Cheques and orders to the Group, please, at 6, Navarino Road, Worthing, Sussex.

DOS EPROMS blown to V1.0, Patched V1.0, Eurohard V1.0 and V4.1, or translated and debugged V4.1. EPROMS up to 27128 copied to order. Send a clean EPROM (2764 for DOS) and 3.00. Paul Grade, 6, Navarino Road, Worthing, Sussex.

Dragon DOS cartridge. Perfect working order 50.00. Chris Jobson, 23, Walsingham, Biddick Village, Washington, Tyne & Wear.

WANTED!: Dragon PSU, plus TV, printer & tape leads & manual. Can pay up to 24.00 for the lot. J. Rogers. F31, Sunnyhill Court, 4, Trebovir Road, Earls Court, London SW5-9LU.

FOR SALE: Dragon 64, 9" mono monitor, Delta controller with DOS 2.7 and 1.1, E09, Toolkit, twin 80 track floppy drives (Tandon 401 SS), Teletype disc, Inform disc, Home accounts, Teletype 43. 100.00 the lot, or might split. Phone Roy Jones on 08675-71390.

Dragon DOS or Cumana DOS cartridge for sale. Either one 50.00 for quick sale. Phone Andrew on 0495-292088.

NEW PROLOG COMPILER!: An all new OS9 Prolog Compiler which converts Prolog 2 to 6809 Assembler. Full implementation with runtime module and documentation on disc. Requires OS9 Assembler (NOT supplied). SPECIAL PRICE ONLY 12.50. METASOFT. 4, Pinehurst Walk, Orpington, Kent.

Dragon games, all originals (some latest) on tape and disc. Prices from 1.00 each. Send s.a.e. for list. Steve Knight. 76, Etwell Road, Hall Green, Birmingham. B28-0LE.

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WANTED!: Anyone in the Bisley area interested in forming a local Dragon User Group. P. Marsh. 37, Corbetts Walk, Bisley, Surrey. GU24-9BU.

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