

The Newsletter of the National Dragon Users Group

DRAGON



UPDATE

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The Gaffer's Bit . . . . .

If the copier doesn't throw a fit, and if I don't run out of time and temper before this issue is finished (a) it will be a minor miracle, and (b) you ought to be reading this before the Ossett Show takes place, which means that you should have already made arrangements to be there. If you haven't, well, don't complain afterwards that no one is supporting the Dragon and Tandy machines, because it's YOUR support that they need!.

What else is new? not a lot really, things seem to be going well for the Summer Show, Group membership is still increasing, finances are OK, and I suppose I ought to be very satisfied with everything, but I'm not. I miss the time when the Group was small enough for me to deal with everything myself, when I still had time to write a proper reply to every letter that came in, and when I didn't have to worry about what would happen to the rest of the Dragon scene if I decided to "fold" the Group and do something different. OK, don't worry, I don't intend doing anything of the kind, but sometimes it would be nice to know that I could if I wanted to!. Anyway, have a good day out at Ossett, and don't forget to take your cheque book along with you, it deserves an outing!.

*Paul G.*

The Editor's Bit...

Right, with this month's Update, you Dragon owners out there get loads of free, yes FREE, Tandy articles. All at Once? Bad Planning? No, not really, but seeing as all I get at the moment IS Tandy articles, I thought I'd run some of them for a change. If you want something else, then fine, as long as you write it.

Rather like Nigel Lawson's interest rises, my gripes last month have just started to take effect, but don't stop there. The more you send in, the less I moan, which should make us all happy. And on the subject of articles, you may have noticed, though I doubt it, that we haven't been running any Henceforth articles recently. Well, the reason is that I haven't got any! Maybe Bob is on strike because no one else writes anything, so until he decides to come back to work, you'll have to go without.

When you read this, there should be only about three months before THE SHOW IN JUNE, so I hope you have prepared well in advance. You really don't have any excuse no to go, as it may be the last one of its size (although if you read 6809 User/Dragon Gazette, Paul is apparently thinking of an even bigger & better show for Christmas. I had a suspicion that he was mad, but that proves it.

I'm off now, because I've got far too much work to do. YES I HAVE! I put in a 24 hour day, you know... admittedly, most of it is spent eating and sleeping, but I have to fit in such things as learning, working, reading, and... well, never you mind.  
Stephen.

\*BE ALERT ... THE GROUP NEEDS LERTS!

## Joystick Jury...Dudley the Fish (ahem).

Dudley, the incredible games-playing goldfish, is back. Yes, after 'The Expert' discovered I had usurped his column he shipped me to "Mr Chip's". However, I avoided being battered to death (groan!), with an incredible escape involving three tunnels, some top level bribes (\*\*Paul again!...SW\*\*), and the murder of two potato collaborators. But even then I was not safe, for in a deliberate attempt to deprive me of printing space, the anti gamesplaying fish lobby deliberately cut the fingers off a large number of Dragon User subscribers, thus causing the downfall of Dragon User. Well, I tell you, it takes more than that to put an end to a determined fish. "But now you're free again," I hear you cry, "what wonderful words of wisdom will you impart to us lowly mortals?" (\*\*Is this guy for REAL?\*\*) Well, I have decided to lend my piscine talents to a little covered subject on the Dragon - Joysticks. Personally, I find them far easier to manipulate than keys (unlike you lot, I've only got two fins, not ten fingers, but don't get cocky, I bet I can swim further than you so nah nah nah nah nah!!).

So, here is a list of what, in my divine opinion, are the best joysticks available. ALL require a D pin 'Atari' type interface (commonly available).

**QUICKSHOT 1** : One of the earliest self-centering sticks, this lacks all the modern add-ons. However, it's pretty sturdy, and is available at a low price. Don't expect it to last too long, though. 6/10

**QUICKSHOT 2** : Similar to the above but with an extremely handy autofire option. It's designed to be held comfortably with a grip on the stick and both trigger and thumb buttons. Although it's better than the QS1, it still won't last very long. 7/10

**QUICKSHOT 2 TURBO** : The most pricey of the QS range but worth the investment. The control is very precise, it has autofire on the stick, and both trigger and thumb buttons, and most important of all it is very durable. Not only that, it's a nice red colour too. Recommended. 8/10

**KONIX SPEEDKING** : The best of the hand held joysticks, it's supposed to be "ergonomically designed" ('comfortable' to you and me). I'm not too sure about that: I've frequently finished a long session on Lucifer's Kingdom with severe palm ache using this (\*\*I thought fish had FINS, not PALMS?\*\*) Konix claim the Speedking is the most durable stick available, but I don't think it's quite as indestructable as they make out. One good bash from a sledgehammer and it's finished. Still, nice response, fair price, will last a long time, but does look a bit silly. 8/10

**TAC 2** : Control-wise, this is the best joystick I've ever used. It's perfect for karate games, but it doesn't last long, has no autofire, and is far too expensive. 6/10

**COMPETITION PRO 5000** : This is available in several different forms, but basically they're all the same. It's very durable, reacts well, and has nice big fire buttons on the base. Although it's a little pricey, it's worth it because it lasts. Personally, I think it looks really good too, and is the best of the bunch. Very good, if you can afford the initial outlay of 15 quid. 9/10

**ATARI** : The original joystick. Ancient and it shows. Infact, it's just a stick in a square black box - one good yank will pull it's plastic cover off (so no getting into violent tempers when you get killed by that annoying moving line in Copta Snatch). Apparently, all the good game players use this, but if you ask me it handles like a brick, and is generally pretty naff. However, it is only 4.00 now so if your wad has taken a severe beating from the interface this might be the best you can buy. But if you can afford anything else, give this one a miss. Definitely bottom of the pile. 5/10

@ So, there you have it. All of these joysticks are available from any computer shop worth its chips (although not from chips hshops worth their computers). Better still, you could probably get them at a more reasonable price from one of the Dragon mail order firms. Much of selecting a joystick is down to personal taste, but from my experience the above are the best. A final word:- When you get your new joystick, steer well clear of any games which involve 'wagging'. Use your old 'stick for this, as a 100 metres dash can break your stick apart. Must go, I've got to swim through my novelty arch before bedtime. G'bye, and to all my fellow fish a special message: bubble,

## CORRECTION.

It seems that the Editorial pencil clipped an important (so I'm told) bit out of Bob Hall's article in the February issue. Section 3, from line 4 onwards SHOULD have read:-

"... it is convenient to do this in two stages, as shown, because some of the intermediate signals come in useful later. By convention the common RAM is in the top block of memory."

Everyone happy again now?. If the article is still as clear as mud I suggest you contact Bob Hall direct, because this correction is exactly as he dictated it to me!! Paul.

# 3.

## Tandy Tape To Disk(1)...Chris Rouse.

Most of the games sold by Tandy came from Microdeal and although they were copy protected, for the most part they used only one of two types of protection which we shall call 'A' and 'B'. Type A is the most common, and of the 36 Microdeal games I have looked at, 31 were of this type.

Type A splits the program on tape into 7 parts, each with an EOF block and gap before the next part. Most of these parts are the copy protection, the game itself not being loaded until part 5. The opening screen, used in all microdeal tapes for the Colour Computer, is loaded in part 3. The first 256 bytes loaded in part 5 are dummy code, and the real code for this block of the game is loaded in part 6. Part 7, the final part, runs the game.

Type B uses a modified loader routine. The first three bytes of each block containing the block length and load address. Each block is initially loaded into a temporary buffer, then shifted to its correct address once the block has been loaded. To leave time for this to happen the tape motor is switched off between each block and this gives rise to a 'ticking' from the motor relay, exactly as happens when an ASCII file is loaded from tape. The loader is modified a number of times to allow the code to be loaded into different places in RAM. For example, the intro screen is loaded into high memory, then a short routine loaded from tape which then shifts the screen data down to \$400. This copy protection scheme uses only one EOF block and is located on the tape two blocks after the namefile block.

Only one game from Microdeal, Frogger, uses the area of RAM used by DOS and to get this game to run from disk requires two modifications to be made. I have not mentioned BASIC games, for these seem to use 'autorunning' to make it easier for the beginner to load them. In part two I will describe the way to tackle type A games.

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## Sprite Designer-Reviewed By Peter Gent.

When the disc is booted, a nice touch I always think, you are presented with two choices. 'A' the designer programme - another nice touch here they spell programme the same as me and 'B' a demonstration of the capabilities of the designer. When B is selected you are presented with the familiar phenomenon of the GET command of the designs being drawn in the top left hand corner of the screen. Next comes several animated sequences showing quite well what is achievable using the commands available. The only "cheat" is the background in one sequence and all the borders are generated using machine code. The graphics produced are, by necessity, slow but are quite flicker free. If you go straight into the designer programme using the A choice, you are presented with a 40x40 black grid about five times full size. This is the work area used to draw your sprite pixel by pixel using the right joystick to move a white cursor around the grid and the fire button to set the point. If the fire button is held down and the cursor moved a line is drawn. The grid can be changed to a blank white screen with a black cursor. While the drawing is being completed on the large workspace two normal sized facsimilies are being generated at the right of the screen, one black on white and the other reversed. You can therefore see the finished product as it grows. It is probably a good idea to use a pencil and graph paper first. The library facility allows you to store up to 24 sprites and bring them to the screen in quick succession hence the animation facility. A library may be saved to disc as a file and used in other programmes. A look at the disc directory shows several library files, one of which is a 3D picture made up of lots of sprites, quite useful in graphic adventures as this would allow movement against a background. Finally the colour set may be swapped between black on white and black on green.

My view of this programme is that it is a very useful addition to the manipulative range of software. It is great fun to use and is bound only by the user's imagination. Well worth buying.

SPRITE DESIGNER available from Orange Software, The Garth, Star Road, Nant-y-derry, Abergavenny, Gwent, NP7 9DP and costs 4.99 + 50p p&p on disk or cassette.

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Visitext Extra. Reviewed by F. Fisher

This is yet another WORDPROCESSOR for the Dragon 32/64, not ANOTHER I hear you say!!!, hang on, this ones different. First you get a fairly comprehensive manual comprising seven A4 sheets printed on both sides, second a disk.

First let me say that this was a review disk and it was bugged, a few phone calls soon cleared up the problems, and I was off typing away.

On booting up you are presented with a title screen, followed by the main menu. Taking any of the options leads you into a number of other menus, all of which are easy to use, at any time you can leave your text, browse around and then return. I would advise that you set up your normal system parameters first and save them, (there is an option for this), also the printer codes as set up are for the Epson FX100, which I found to be the same as my Brother HR5.

The main difference that I found was that there was an option for ONSCREEN lines, and the last five lines were different so that you knew when you reached the end of a page. The final printout can be controlled by embedded codes which were fairly easy. The screen is 64 column, and the normal printout also 64 columns, with a right justify option, WYSIWYG is very good, and the margin can be shifted about, the cursor is also mobile.

Also available is a facility to define a screen column of any width from 1 to 64, within the 64 columns, i.e. set for column of 1 to 32 all typing will only operate within that area including wordwrap, reset for 33 to 64, go to line one and start again. You will now have MAGAZINE COLUMN print. Reset to normal and the page will be printed as one page.

I could go on listing all the features of this program, but I am only allowed less than a page to do it in. If you are already an owner of TELEWRITER and/or ELECTRONIC AUTHOR, you should find this one combines the best of both.

My conclusions?? This has to be the best I have yet tried, (I own at least five others), it is so user friendly and simple to use but contains all the features that you could want. Move over T.WRITER/E.A. your days are numbered.

Visitext-Extra available from Orange Software, The Garth, Star Road, Nant-y-derry, Gwent, NP7 9DP on Dragondos disk only, 13.99 + 50p p&p.

OS9/II on a 128K Dragon(4) ... Bob Hall.

INTRO: Last time, I described the heart of the MMU, the mapping RAM and its attendant circuitry. This time, I'll describe the decode circuitry, and the use of the 6116 static RAM to fill in those parts which the SAM cannot reach, and to provide new interrupt vectors.

THE DECODE CIRCUITRY: This (Fig 1a) is similar to that used in the Mk.I design. The LS138 3-to-8 decoder 'IC6' is enabled when the top nine address lines from the CPU (A7 to A15) and the E and Q clocks are all high, and R/W is low. (The circuit is chosen to minimise the load on heavily used CPU lines like A8). The 3 address lines A4, 5 & 6 are applied to the select inputs (A, B & C) of the decoder to give 8 enabling signals (Y0 to Y7) for 8 blocks of addresses (16 bytes each) in the top half of the I/O page. The outputs which are used are ffax, to enable writing to the mapping RAM; ff9x to enable writing to the task bit; and ff8x & ffex to toggle the video bank flip-flop. Note that the first reference to ff9x also enables the MMU (part 3).

THE 6116 SATIC RAM: Devising this circuitry (fig 1b) caused me some brainache. The logic uses the 6116 to fill in the holes in the memory map which would otherwise occur at the top of each 64K bank, between ff00 and ffff; and to provide new interrupt vectors (when MM is high). This isn't quite as easy as it sounds, because we must not enable the SAM & I/O when enabling IC7. To implement these two roles the following signals are needed:- the AND of the top 7 unmapped address lines (FE) and its inverse (FE), which we derived last time; the AND of the top eight mapped address lines (FFM); 'bus status' (BS) from the CPU - when high this indicates an interrupt; read/write and E from the CPU; MMU enable (MM) from IC13.

We output:-

- 1) a chip select (CS) to the 6116 static RAM (IC7) - this is the key signal.
- 2) an inhibit signal to pin 6 of the LS138 ON THE MAINBOARD (IC40)-fortunately CS can be used.
- 3) an output enable (OE) signal for IC7-this is the inverse of R/W from the CPU
- 4) a R/W signal for IC7 - this is R/W from the CPU, gated by the E clock to ensure reliable operation (a late discovery this, hence the use of the spare gate on IC102, from the 128K memory controller).
- 5) an R/W signal (RWE) for the

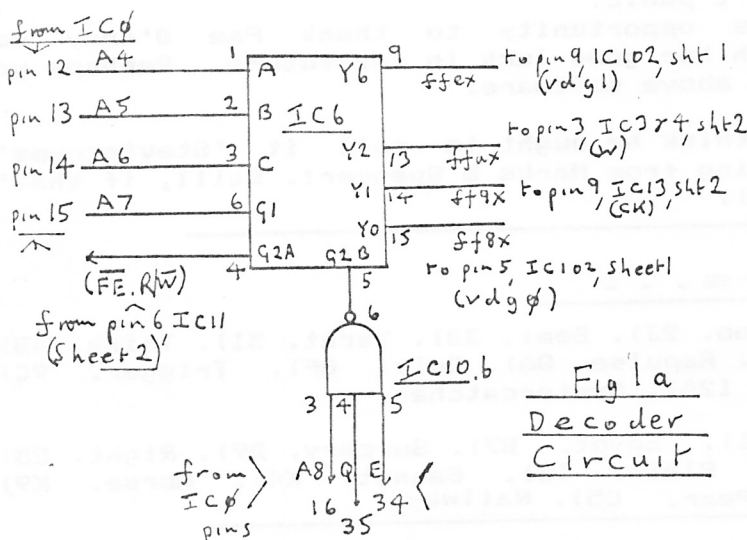
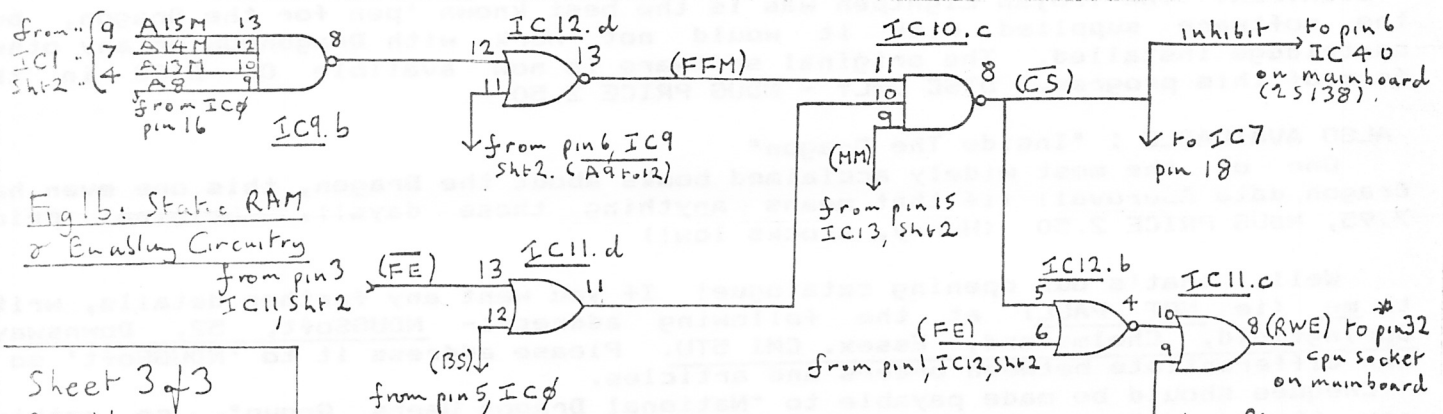


rest of the world. This is the CPU R/W signal gated with CS/FE, to ensure that when IC7 is being written to, the SAM & I/O do not also get set. (The FE signal is included for reasons of timing to ensure that a write to I/O is not delayed - some peripherals (eg disk controllers) may set their registers on the leading edge of the Q clock, and the propagation delay to enable RWE via CS (160 nanoseconds) could make this unreliable).

To return to CS. This is only active if the MMU is active, and the mapped address ends in FFFX, and either the unmapped address does not end in FFFX (ie not I/O reference) or it's and interrupt (BS high). The new interrupt vectors are stored in the very last 14 locations in memory, 3fff2 to 3ffff, and have to be loaded by mapped references, ie using CPU addresses in the range 0 to dfff (see software next time). YES, I found it difficult too! But that's (nearly) the end of the hardware.

To return briefly to last time - in an attempt to simplify the circuit diagram I left off the optional buffer (IC8); and IC4 & 5, the high order mapping RAM and multiplexor respectively (which are needed only for more than 128K of RAM). However, the connections for the last two are straightforward:- connect address line A0 to A3 of the IC4 to equivalent lines on IC3; similarly for select and write enable (pins 2 and 3). Connect data inputs D0 to D3 to CPU lines D4 to D7 (directly or via IC8 buffer, to taste); connect outputs Q0 to Q3 to B side inputs of IC5; ground A side inputs of IC5, and take control signals (MM,FE) from IC1 to equivalent pins on IC5.

Next time, how to drive the beast using OS9/II.



EditorSoft.....?

As you will have seen last month, Pam D'arcy has finally decided to quit the Dragon scene in an attempt to make money elsewhere in computers. She was left with her Dragon machines, plus hardware, and all the titles from her PamComms company. She offered these up for sale to NDUG first of all, and we accepted (or rather Paul asked me if I was interested!)

Thus I had the programs, but I needed a name for the company. Having been beaten to the name DragonSoft by Mike Townsend, I have plumped for the outstandingly boring NDUGSoft. So, I can now announce that all the previous PamComms titles are now available once more, courtesy of the National Dragon Users Group. Details of how to purchase them in a moment, but first, a quick run-down of the programs on offer.

**FORMULA ONE.** For any gamers out there, this is the racing game you ought to buy. Forget Speed Racer, this one is much better. One or Two players, 17 circuits (or you can make your own) and crisp PMODE 4 graphics. NEW NDUG PRICE 7.95

**DISK-KIT.** This is an invaluable utility for sorting out your disk problems. It is made up of two programs, DiskFix and DiskAid. DiskFix helps you recover bad sectors etc, whilst DiskAid extends many DragonDOS commands with the use of wild cards etc. NEW NDUG PRICE 8.50

**SOURCEMAKER.** For users of Dream, Sourcemaker converts object code into a 'source' code that can be used by Dream. It can also be used to modify code to your own system or tastes. NEW NDUG PRICE 8.50

**LIGHTPEN.** The Trojan Lightpen was is the best known 'pen for the Dragon, but the software supplied with it would not work with DragonDOS or any other cartridge installed. The original software is now available ON DISC in the form of this program. DISC ONLY - NDUG PRICE 2.50

ALSO AVAILABLE : "Inside The Dragon"

One of the most widely acclaimed books about the Dragon, this one even had Dragon data Approval! (if that means anything these days!). Original price 7.95, NDUG PRICE 2.50 (Hurry, stocks low!)

Well, that's our opening catalogue! If you want any further details, write to me (ie NOT PAUL) at the following address:- NDUGSoft, 52, Downsway, Springfield, Chelmsford, Essex. CM1 5TU. Please address it to 'NDUGSoft' so I can differentiate between orders and articles.

Cheques should be made payable to "National Dragon Users Group", so nothing new there. I shall attempt to turn around orders as quickly as possible, but it may be shakey to start with so don't panic!

Finally, I should like to take this opportunity to thank Pam D'Arcy for offering us the software, and to wish her good luck in the future. Perhaps you can do the same by buying some of the above software.

Stephen.

### 'NDUGSoft'?!. Personally I still think he ought to call it 'Steviecomms', even if it does sound like something from Marks & Spencer!. Still, if that's what he wants who am I to argue?. Paul.

Crossword 39 Answers...

Across:- 1A). Periscope. 2A). Igloo. 2J). Semi. 3B). Yacht. 3I). Think. 4B). Patch. 5B). Trombone. 6F). Eject. 7F). Repulse. 8A). Dole. 8F). Trigger. 9C). Wristwatch. 11D). Giant. 12H). Beech. 12A). Oystercatcher.

Down:- A1). Pint. A5). Wooden. B1). Egypt. B7). Sorcery. D9). Right. E5). Miami. F1). Cuthbert. G9). Tank. H1). Plain. I8). Gannet. K4). Horse. K9). Catch. L3). Next. M1). Mikado. M10). Pear. C5). Railways

BE AT OSSETT!. MARCH 25TH  
DON'T FORGET,

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## CoCo Matters...Chris Rouse.

It has to be said, no matter how much this and other newsletters advertise 'Dragon and Tandy catered for', they just don't. Now, that is due to just one thing - nobody writes CoCo specific articles. If you look back at the last 50 or so issues of Update, less than 1% of all articles are aimed at CoCo users. Perhaps you feel intimidated, afraid that your ideas would not be welcomed?. That has changed - for a limited period ( provided material is forthcoming) this will be the place for you.

Eric Hall, of 'Back Issues' fame, and myself for the Fareham branch of the CoCo Liberation Front, often hold meetings in the crowded shopping centre, so if you live nearby then contact us.

As there is little or no material available to us, the answer is to convert Dragon programs, and in the main this column will concentrate on this, although if there is any response at all then future topics will include a parallel printer port for about a fiver, and a conversion to give you a Dragon inside that cream box. To start with, we'll look at TRSDOS; the main entry points, and how to use some of the routines. Tandy produced two versions, 1.0 and 1.1.

To the user, the only difference is that version 1.1 has the DOS command, missing from version 1.0. However, it is best to assume that very few of the entry points are the same in both versions. The version referred to in this series is 1.1

### TRSDOS.

The disk controller ROM can be divided into three main areas: 1) the 'core', that communicates with the 1793 FDC chip; 2) the file handling routines; and 3) the other disk commands like DIR etc. There are a number of tables and messages, and a fair amount of 'free space', but more of that later. It should be noted that although both TRSDOS and DragonDOS use memory in the range \$FF40 to \$FF4B to communicate with the FDC chip, the use is not the same. It is here that we will begin. The table below shows which memory locations are used by the two systems.

USE	TRSDOS	DRAGONDOS
DSKREG	FF40	FF48
CMD/STATUS	FF48	FF40
TRACK	FF49	FF41
SECTOR	FF4A	FF42
DATA	FF4B	FF43

DragonDOS programs often use POKE &HFF48,0 to turn off the drive motor. This is necessary if a machine code program is EXECuted before the motor stops. If this happens, the drive will often turn continuously. Bit 3 of DSKREG controls the motor, so poking this with 0 turns it off. To use this on the CoCo, change it to POKE &HFF40,0. While on the subject of DSKREG, use bit 1 to select drive 0, bit 1 for drive 1, bit 2 for drive 2 and bit 6 for drive 3. Remember that DragonDOS uses drive 1 for the first drive, whereas TRSDOS uses drive 0. The register at \$FF48 has two different uses. In 'write' it is the command register, while in 'read' it is the status register. RAM in the range \$EA to \$EE is used to hold data for the track, sector etc, as explained in the manual. DragonDOS uses memory in the range \$605 to \$609 to hold a RAM image of the FDC registers, but uses \$EA to \$EE exactly as in TRSDOS.

The register at \$F0 is the status of the drive, as reported by the FDC: a zero here will show that no errors occurred. Any of the bits from 2 to 7 set will indicate an error. Starting from bit 2, these are: Lost Data, CRC Error, Seek Error, Write Error, Write Protect, and Drive Not Ready (bit 7).

Well, that's it for this month. Next month, after the addresses of the various tables, will be the first command addresses. Whatever your views on this column, too long, too heavy, let me know - at least it will show who is out there.



## Peeking The Dragon (12) - Mike Stott.

Yet another month has gone by and first let me tell you about the software I have received for review. DESKTOP+ has been produced by MacGowan Consultants, 3 Beechwood Crescent, Broughton, Nr Brigg, South Humberside, ND20 0SB.

Sunnysoft, 20 Church Street, Ilfracombe, North Devon, EX34 8HB have sent three specialised items for people interested in Amateur Radio and Electronics. The

are RAE MATHS TESTER, LOGIC GATES TRAINER and RESISTOR COLOUR CODES.

Pauline Hampson, who used to review adventures for us so well, has sent me six Orange Software adventures which she has been unable to get round to. These are THE QUEST FOR THE MEANING OF LIFE, THE HEIR OF TYOS, STARCRASH, KING'S QUEST, FOREST OF DOOM, and STARKE ISLAND so look out for belated reviews of these. Sorry Graham but better late than never. Orange Software's address was in last month's Update.

Dave Cadman has sent me a further review of Composer X which I asked him to do for us and this will be published shortly. Meanwhile he has written another Joplin Rag using Composer and Composer X and is offering copies at 1.50 each on 5 1/4" disk only and 75p will be donated to Group Funds. If Paul agrees I hope to be selling copies at Ossett.

Andrew Hill wishes to dispel rumours that he has dropped out of the Dragon scene. He can now be contacted at Dragonfire Services, Unit 3, Blaina Enterprise Centre, Rising Sun Industrial Estate, Blaina, Gwent, NP3 3JW and the telephone number is 0495 292159.

A number of people have asked whether Pulser have left us, well the reason they have been quiet lately is due to Brian O'Connor's health. I hope you are now feeling better and back into the swing of the Dragon scene. This year promises to be a crucial one for the Dragon software scene due to the uncertainty of what will happen following the demise of Dragon User. We can all do our part in ensuring a future for the Dragon. Programmers of all types of software must keep on writing it and ensure that it is available to as wide an audience as possible. For my part I will endeavour to let you know what is available through my column and with the help of my trusty reviewers. What can you do? Well for a start, attend the Shows and see what is on offer. Buy more software before the writers and the Companies decide that the scene is now too small to bother. If you have never written anything before, try writing some software - you never know you could have a big hit on your hands and sell 20 copies. To the Companies, I implore you, release the software for us, but please try to check out the programs fully, especially the spelling which is abysmal in some of the stuff I receive. The Show at Hove must have the full backing of every Company to ensure that we attract the buying public so make sure you take a stand and I hope you make enough money to ensure that you will support future Shows. Hopefully this issue of Update will reach you before the Ossett Show so I will say that I hope to meet as many of you as possible there. Please feel free to come over and have a chat. I hope to have quite a few helpers on the stand who know more about the machine than me so do not hesitate to bring you queries. Don't forget your wallets either!! We will have most of our current items available and the Companies could well have some real bargains on offer. Finally, always remember that no matter how many bugs you may find in any Dragon program, there is absolutely no chance whatsoever of picking up Listeria or Salmonella poisoning.

## The Summer Show.

So far we've had a VERY good response from most of the people and firms that we sent details to, and to date we've more than a dozen stands booked. However, Kouga say they won't be attending, and Compusense are unable to be there owing to prior commitments.

We STILL haven't heard anything at all from the following:- Harris Microsoftware, Orange Software, Protech Systems, Grosvenor, or Capri Marketing, so if any of you are in touch with them in the very near future please ask them to extract a finger or two and let us know what they intend doing about it because we have to make a lot of arrangements now if things are going to be properly organised. If you know ANY firms or individuals who would like to take a stand, same applies, tell them to let me know NOW. OK?. Paul.

Multi-Colour Dragon...Roy Cashmore.

Do you wish that you could have more than four colours on screen at a time in hi-res graphics? Well, in PMODE 3 you can: about SIXTEEN, although some are similar to each other. Allowing for these similarities, there are still a dozen or so colours possible on each SCREEN. But there is a snag (well, there had to be, didn't there). These extra colours work only in areas of about 10x10 pixels. They can be used to give your programs extra colour, AND they're available in BASIC. To see them, just type in and run the following program:

```
10 PCLEAR4:PMODE4:PCLS:SCREEN1,0
20 FOR X=0 TO 100 STEP 2
30 FOR Y=0 TO 100 STEP 2
40 PSET(X,Y,colour A)
50 PSET(X+1,Y+1,colour B)
60 NEXT Y,X
70 GOTO 70
```

Depending on the combination of colours A and B, you will get colours from bright pink, through shades of blue and green to violet. A different range of colours is available with SCREEN 1,1 (no surprise really). A different result is obtained if the same colours are used but in the opposite position. For example, in SCREEN 1,0, if A is 3 and B is 4, the result is a dark blue/grey (almost black), but if A is 4 and B is 3, the result is violet.

As you see, it does take a while, but the time can be almost halved with the following:

```
10 PCLEAR4:PMODE3:PCLS1:SCREEN1,0
12 LINE(0,0)-(100,100),PSET,B
15 PAINT(2,2),colour A,4
20 FOR X=0 TO 100 STEP 2
30 FOR Y=0 TO 100 STEP 2
40 PSET(X,Y,colour B)
60 NEXT Y,X (N.B no line 50)
70 GOTO 70
```

Colours A and B are the colours to be mixed. 4 is the default foreground colour PSET by line 12. Again, different results are obtained if the same two colours are used for A or B. Another colour can also be PAINTed over part of the mixed colour by adding:

```
62 LINE(10,10)-(50,50),PRESET,B
64 PAINT(11,11),c,b:PAINT(12,12),c,b
```

I found two PAINT commands were needed. c=paint colour, b=background colour. You could also try:

```
66 LINE(60,60)-(100,100),PSET,BF
68 LINE(0,50)-(50,100),PRESET,BF
```

Thus a 'mixed' colour can be used as a background, and other colours applied over it in several ways. Small areas of 'mixed' colour can also be applied by using either of the methods listed, but unless the area is at least 8x8 pixels, the full effect of the 'mixed' colour may not be seen.

The idea was put into my head by Lans Aleeson, who said that, as all the primary colours are available, other colours should be possible. The above is the result of my early experiments. I hope it may be of interest to other Dragon users. Finally, if you intend to use 'mixed' colours, I suggest you make a table of the results of the possible mixes.

---

THE SUMMER SHOW, HOVE, 3RD. JUNE.

YOUR DRAGON/TANDY SHOW!

Crossword 40. Compiled by D. Bateman.

ACROSS: 1C)Sheath for a sword. 2D)Make of printer. 2J)Where the Ute Indian once lived. 3J)Type of cheese. 4C)Musical instrument. 4I)The hollow shape in which a thing is cast or set. 5A)Type of dance associated with a cuckoo for example. 5I)Egg shaped. 7B)Type of dance. 8B) remove current account from mixed up teploca to obtain the open inner court of a Spanish house. 8H)Famous school. 9A)Software supplier usually associated with fairy stories. 10B)Girlish Scottish plant. 11A)Process of vapourising and recondensing a liquid. 12B)Friend of Big Ears. 13A)Name given to the alliance formed by the 11 southern states when they withdrew from the US in 1860.

DOWN: A)Idevice for holding 2 pieces of wood together. A9)Conceal. B1)Type of dance associated with a beer barrel for example. B9)Facial feature. D2)Word Pro supplied by Prestons. E10)Soap powder which could ebb and flow. F2)Metal alloy used for joining two others. G4)Knights protective clothing. H3)American prairie wolves. H11)The gas we breathe in. I4)Kind of lizard. I11)Refreshing drink from dried leaves. I11)To knight. K5)Pertaining to sheep. L3)The great epic poem attributed to Homer. L11)Abbreviation found at the bottom of poem by unknown person. N1)Kind of cheese. N8)Creator of Micky Mouse.

This month's winners are Bill Stevenson and Roy Cashmore. Bill gets a choice of programs from the current Dragonfire list, and Roy gets a games tape from our collection.

We had a record number of entries this month, but most got caught out on a couple of answers. As always we can only have 100 winners each month anyway, and these are the first two picked out of the box, NOT the first received, so don't worry if the post is a bit slow in your area!



\*\*\*\*\*

The Editor's Late Bit...

Finished for another month! As it is our special 'Tandy Month' this time, I'd better announce that the "CoCo Matters" article by Chris Rouse on page 7 is the first in a new, and hopefully regular, series (you probably guessed that from the article itself).

Regarding Mike's piece this month, does this mean that the MacGowan Desktop program is actually finished??? AND released??? What a shocker! However, don't let this dissuade you from buying OUR Desktop Program! They may not be the same thing, but ours is certainly cheap! As is the software in the NDUGSoft "catalogue" (plug). NDUGSoft will, of course, be present at the DRAGON SHOW, JUNE 3RD (another plug). If anyone fancies looking after the stand with me (and by yourself for some of the time), then drop me a line.

If you read the 6809 User/Dragon Gazette combo, you will see that good old Simon (the Jones) is stepping down from his editor's seat (which should be positioned high above the minions). You can now cheer loudly. BUT, it's only for a few months ("Boo" wildy), so don't get too excited.

Apologies, Simon, just fancied a quick jest there. I see from their (6809 User etc) circulation figures that at least 80% of you NDUG members don't subscribe to Simon's magazine. Why not? Forget what it was like as Dragon's Roar, it has improved immensely, and is well worth a look. Write now to 37, Collins Meadow, Harlow, Essex. CM19 4EN. How's that for an unexpected plug, Simon?

Finally, a message to Paul. Skip back to Issue 54, page 8. I'm surprised your Editor does ANYTHING for your sort of bribes!. Stephen.  
### Watch it, Editor, or I'll tell 'em just what kind of bribes you're demanding!!. El Gaffer.

New Era Software needs YOU!.

Simon Jones (who does seem to be getting a lot of mentions this month!) has asked me to point out that the Software side of 6809 User, New Era Software, is in urgent need of more material for distribution. If you have ever written a program that you think would be the best seller of the century, or at least would sell a couple of copies if only to members of your family, then what do you have to lose by sending Simon a copy to look at?. If he decides that it's marketable you could be getting up to 45% royalties on all sales!.

Go on, astonish the world with your brilliance, and make a fortune in your spare time. (NO!, NOT that way!!, I meant send Simon your masterpiece of programmers art!). Paul.



Escape from IV ERROR . . . . by R.A.D.

The IV error means that the disc directory is invalid and DIR has no effect. This occurred to me when I inadvertently corrupted the address at 1536, used by the DOS, by running a program which used the Hi-Res screen at that address and POKed in some After amending the addresses in the loaded program, I innocently SAVED it to a disc already fairly full, without it dawning on me that I had corrupted the DOS routines at 1536 in the first place!. The result was a first DIR with an apparent astronomical increase in the number of free bytes. The second DOR was an IV error. Not being very clever at DOS routines I tried several disc utilities without success. Then I tried to BACKUP 1 to 2. This worked and the new disc initially responded to DIR but then failed with IV error again!. So I then tried the system with a good (protected) disc, which DIR'd. I immediately inserted the faulty Backup copy and DIR'd that one. It came up with the Directory and the amazing "free bytes". I then attempted to LOAD one of the programs listed, and praise be, it loaded!, and I could Using the good (protected) disc alternately with the fouled-up copy, I was able to LOAD and SAVE each program in turn to the new disc, except for the final one which had caused all the trouble. This insisted on giving me an FM error, but at least I had saved all the other hours of work which would otherwise have been lost. In this case the usual copying of track 16 to track 20 which I tried out first of all, had no effect. In case you don't know the routine it is as follows:-

```
CLEAR500:FOR S=1 TO 10:SREAD 1,16,S,B$:SWRITE 1,20,S,A$,B$:NEXT
```

This copies a hopefully uncorrupted directory from track 16 to track 20. R.A.D.

Junior Review . . . by Philip Stoneman.

Right then, this is my second review ... MANDRAGORE, by Kouga Software. Picture it ... you are an explorer robot inside an ancient Egyptian pyramid, when you accidentally trigger the defence system and have to fight your way out of it, even though you are slowed down and halted by firing giant aardvarks, shooting ants, attacking sentinels, gloating mummies, and finally the still but fatal ramparts!.

With all these nasties after you I suppose you are thinking that you don't have much chance?. Well, as usual the nasties outnumber you 100 to 1, but you do have one small hope, a single solitary laser gun. Apart from that you can only dodge.

Over all, not a bad game, but it does not look very interesting unfortunately as it is in black and white only. There are six levels to battle your way through, so good luck!. Philip Stoneman.

## The Junior Review section is open to anyone under the age of 12, so if you are in that age group and want to be a reviewer, why not try your luck?!. Paul..

Reply to Alan Cook.

Dear Alan, I'd LOVE to move the Hove show back a week so that you could attend, I really would, but that would cost me about 500.00 of the Group's hard fiddled cash, and would almost certainly get me lynched by just about all the exhibitors, not to mention everyone who changed their holiday dates in order to attend. It won't be the same without you there, Alan, but I just can't take the risk, I've got a BA in Conardice and I'm too old to change my ways now!. Could you not "go sick" for a week and ask for your exams to be deferred?. Failing that couldn't you start a rumour that Thatcher will be stopping ALL grants to Scottish Universities so that the Examiners would all go on strike?. Use your initiative!. Paul.

*Paul G.*

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R R

A AN ANNOUNCEMENT OF GREAT INTEREST TO N.D.U.G. RADIO A

G AMATEURS . . . . . From G4PGC G

O O

N Following the big Show in HOVE on JUNE 3rd. 1989, I N

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O O

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

Yes, I KNOW there's a lot of "trade" adverts in this issue ... if there weren't you wouldn't know what was available, from whom, or how much, so stop moaning and buy something!. Before I forget to mention it, one small correction to the para on the Summer Show, KOUGA SOFTWARE have just phoned and told me that they've decided to attend after all, and will be releasing their new, top secret program at the Show!. A piece of good news for all you OS9 fanatics too ... in the next issue we will be printing a letter (which arrived too late for inclusion in this issue) from one of our members who intends starting up a replacement for the old OS9 Group's disc service and wants YOUR help in providing and distributing material, so make sure you read the next Update!!. Before you start speculating on our Stephen's sudden unsolicited praise of 6809 User I wish to state that this was entirely his own idea, and there is NO connection at all between this and Simon's visit to Worthing a couple of weeks ago!!. We're "just good friends"!!. Re the Summer Show, we now have THIRTEEN stands booked, and as stated earlier in the newsletter, there are still some firms we haven't received replies from yet. Greenweld Electronics will be there (their first Dragon Show), so there should be something to keep the hardware collectors happy this time!. Mike Stott will be representing us at Ossett, as always, and he will have a good selection of interesting material for you to see and hopefully buy, so don't forget ... Ossett on 25th March, and Hove on 3rd June ... this could well be the best year yet for Dragon Shows, and with any luck there will be more to come later in the year!. Well, have a good day out at Ossett. I won't take up any more of your time now as I'm sure you want to rush down to the bank and arrange an overdraft facility so you'll have plenty to spend there!.

*Paul G.*

\*\*\*\*\*

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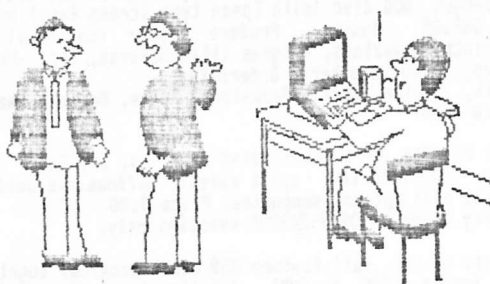
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The newly released 1.1 upgraded compiler written by Dr. David Gray for Dragon 32 and 64 owners. By converting your own BASIC programs into intermediate code, Sprint accelerates them by up to 5 or even 10 times their normal running speed. Supporting virtually all the integer BASIC and cassette and printer commands. Sprint programs are not only compiled from tape but also run independently of the compiler.

### PETITE PASCAL

**Not just a language – an education in structured programming.**

This extended integer subset of the structured programming language is the ideal introduction, not only to a language widely used in schools and universities but also to programming itself. As an appreciation of PASCAL is generally accepted as the best way to increase your understanding of structured languages, this is a must for anyone who takes computing seriously.

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