

The Newsletter of the National Dragon User's Group

DRAGON



UPDATE

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ISSUE 116 MERRY NEW CHRISTMAS - OR SOMETHING DECEMBER 1997

THE GAFFER'S BIT

Something wrong somewhere, every year about this time I tell myself that "this will be the last year I'll have to make up a December issue" and the following year I'm still stuck in front of this screen doing the same thing yet again. Somewhere along the line I can't be getting things right!. So what wonderful new developments has the computer industry produced this year? so far as I can discover, nothing at all, unless you count the discovery that the PGF (Punter Gullibility Factor) has an infinite value and that all of the punters CAN be fooled all of the time. This year's specials include EDO RAM that was almost immediately made redundant by the FP variety, the x100 CD drive which was obsolete before it was obtainable because of the proposed change of format, and of course the admissions/denials that the next version of Win95 and NT will/will not be downward compatible with earlier versions which means that no-one is buying the current Win dependent peripherals in case they have to dump 'em next year and get new versions that haven't been designed yet because the manufacturers haven't a clue either!. Two months ago you needed a P166 MMX, now you need somewhere to dump it because it's so obsolete Intel will no longer produce or supply it!, only a P2/233 is good enough to run your word processor now, and by the time you read this even that will qualify as an antique. And this is "Progress"???. Who kiddeth whom?!

Ok, OK, so I haven't launched into my usual "Ban Christmas" spiel you've read it all before, so just change the date on last December's piece and re-read that one if you really must ... I've written it so many times it bores even ME, and anyway, if you plough on through the rest of this issue you'll probably find a few of my usual "festive references" scattered about somewhere or other. Damned if I know why you're wasting valuable drinking/eating/something time reading this anyway, but as you obviously are I may as well close this piece by saying thank you for staying with the old Group all this time and have a good holiday. All the best for Christmas and the New Year to you all. Paul G.

The Editor's Bit . . .

Bit like a Duracell battery, is Update. No other newsletter looks like it, or lasts like it. Which is rather strange, when you come to think about it. Why on earth would anybody still be interested in a piece of plastic from 15 years ago? Could it be that, back in the heady days of "personal" computing, it was all a bit more fun? Actually having to type things in instead of just clicking the OK prompt? Doing a bit of thinking and puzzling for yourself when something wasn't quite right?. Marvelling at the way in which the Dragon could also do orange on black displays "as well as" green on black? Eagerly awaiting a new piece of software, instead of the latest guaranteed-incompatible revision? — Or is it simply that, like Breakfast Television, we all got involved with something which just hangs around for years without really serving a purpose? Hnnnnnn!!!.

PEEKING THE DRAGON(72).MIKE STOTT

Last night I turned all my clocks and my watch back one hour which reminded me that it must be time for me to write another article for Update.

First may I take this opportunity to wish all our readers A MERRY CHRISTMAS AND A HAPPY NEW YEAR as this issue should be the one that drops through your letterbox with all the cards from people you have decided not to send one to this year.

I know that the TV programme Watchdog has warned you all about using Parcel Force but I feel that I have got to let you know about my experiences with them.

As you will know they are the parcel side of the Royal Mail. Several months ago I received a card saying that they had tried to deliver a parcel to me and they would redeliver it on the next working day.

As David was off college I asked him to stay in to receive it for me which he did. They did not deliver and a couple of days later it had still not arrived.

After numerous attempts to telephone I finally got through only to be told that they did not know where my parcel was but they would ring me back. Still I received no parcel and my telephone remained silent.

I rang again and this time I was assured that somebody would ring me back as soon as they came back from lunch. They did not. The following Monday my neighbour took delivery of a parcel for me. He had refused to sign for it because of the condition it was in, being all torn with no remains of who the sender was and the Jiffy Bag packing was now scattered throughout the disks that were contained in the parcel.

All the wrapping and contents were delivered within a huge plastic bag. After many attempts to telephone them again I finally got through.

I explained that I was annoyed that the parcel had originally been mislaid and about the condition it was in when it finally arrived, not even being able to work out who had sent it.

They agreed that I should fill in a claim form which I duly did, saying that it was the loss of the parcel for many days that worried me more than anything else and also the fact that they had destroyed the sender's name and address.

Back came the reply that it is only the sender of a parcel that can make a claim for any damage caused.

Why did they not tell me that before they sent me claim form as I had given them the details on several occasions?. About the same time we sent an expensive bus part back to the manufacturers for a warranty claim and what happened?

Correct, they lost it and told us we could only have twenty pounds compensation as we had used the wrong service, despite the fact that this was the service that the Post Office had recommended.

At work I have now given instructions that all parcels are to be sent by carrier which is usually more expensive but at least signatures are obtained at every step of the journey and we have got more chance of compensation if anything goes wrong. Although I will still have to send my articles on disk using the Royal Mail I will certainly not be using Parcel Force again.

This month I typed up the first part of my article on the Dragon and then used Graham Kinns' Shareware Disk, which I told you about in my last article, to transport the file over to a 3 1/2" PC disk which I then took into work.

During my lunch break (or that is what I am telling my boss) I used the word-processor option of PCTools to load in my file and printed off the beginning of the article. Knowing how much space was left on the sheet of paper I was able to work out how much more I needed to write to fill up my page and this is what I then did on my PC. Having printed everything out again I was able to check that it was the right length and you will see from this page that it is.

Then I used my last printout to type out the rest of the article on the Dragon.

Eventually I hope to be able to convert the PC version back over to the Dragon and that will save me having to type the same information twice.

Whether I manage or not it is still advantageous to me to be able to take my article into work and be able to read it on my PC using this brilliant disk written by Graham Kinns.

Another Bow To Your String. Tony Shellard

Having delved into the essentials of variable storage last time, we can now take a respite and relax with some BASIC. Type this in:

```
5 CLEAR 500:PCLEAR4:PMODE4,1:SCREEN1,1
10 CS$="XXXXXXXXXX"
20 Z=VARPTR(CS$)+2:CS=PEEK(Z)*256+PEEK(Z+1)
30 FOR A=1 TO LEN(CS$):READ B
40 POKE CS-1+A,B
50 NEXT
60 DATA 158,186,99,128,156,183,38,250,57
```

For strings the VARPTR function returns the address of the descriptor, the third (+2) and fourth (+3) bytes of which hold the location of the actual string. Line 20 calculates this as CS. Make sure you've got all the numbers right (no checksums here!) and LIST it. RUN it and then LIST it again. Different, huh? We've used a BASIC program to rewrite itself into some machine code. Don't worry if it looks a bit weird, this is the LIST command trying to interpret the bytes POKed as a BASIC program, reading in some of them as tokens and some as ASCII codes. You can type in directly

```
FOR A=1 TO LEN(CS$):?VAL(MID$(CS$,A,1)):NEXT
```

to regain the numbers typed. Now we can DEL-30 and add

```
30 LOAD"TEST.PIX"
40 EXEC 34091
50 EXEC CS:GOTO 40
```

where TEST.PIX is a graphics file of your choice. Tape users will need to use CLOADM" whatever", of course. EXEC 34091 simply waits for a keypress. This stops the display from reverting to the text screen and is shorter than it's INKEY\$ equivalent.

So, in order to use this system, just follow the simple recipe**

- i) write and assemble a (sort) position independent machine code routine
- ii) list the object code and put the byte values in line 60 onwards of the program above
- iii) put as many Xs in CS\$ as there are bytes in line 60
- iv) save this, run it, and then DEL 30-
- v) append your BASIC program, EXECuting CS as required.

That all seems too simple, so now a warning. The value of CS is calculated at the start; if the program text is subsequently moved it will need reevaluating. The text moves if the number pages of graphics reserved changes, so the simplest thing to do is PCLEAR the right number in the first line and then leave it alone. If you remembered to save the un-run version you can change this to suit a different program which uses the same routine.

The graphics pages are the only dynamically allocated part of memory below the BASIC program, so changing the amount CLEARED or DIMensioning arrays should leave it unaffected. Even if a different number of pages are reserved before the program is loaded it will be corrected before CS\$ is declared.

Next: the machine code limitations.

OK, so now you've all got something practical and useful to work on over the holiday, and a good excuse for dragging your Dragon out from the back of the cupboard and actually using the beast again!.

Programming...Mark Brocklehurst

I often find something in Update where someone says "we want some new software" and other such comments. I often think the same, but I'm unfortunately one of those people who can't think of any ideas for new software. So, as I'm sure that many you can, how about making up a "wish list" or "shopping list" of possible new software for our friendly Dragon. I don't know about other programmers out there, But I for one would be happy to start on a new package.

Bespoke software is another possibility, but obviously for that, a very detailed specification is required. I do only have evenings to work on any Dragon projects, so any projects I work on would obviously take a while.

For those of you thinking "how do we know he can program anyway?", here's a list of my capabilities - I've been using computers, and programming them since 1981, and I can program in BASIC (any version, the first language I ever used) COBOL, and Pascal (both I learned in the same year), C (learned in a year), Assembler - 6809, 6502, and 80x86 (self-taught), Visual BASIC (self taught) and Access (learned in a month!).

My only request is that nobody asks me to write a game unless you're very patient, because I've never even attempted games before and it could take a very long time. As far as costs go, once a project is finished, I would sell it via the Group, with some of the payment, possibly even all of it (depending, of course, on the time it takes to produce and so on) going to Group funds. For anyone interested in my offer, I have a D32 and D64, DragonDOS 1.0, DeltaDOS, DOSplus Delta, and Flex, and I also have a Touchmaster Graphics Tablet and an HP DeskJet 510, so that's what I can program for. The Dragon may not be as fast as a Pentium, and it may not have as much memory, But I'm sure it can be just as good at many things.

Please don't think I'm just after a fast buck, if I was I'd do the same for the PC market. In fact, it IS part of what the company I work for does. I think new software has been needed for a long time, I'm just sorry that I didn't think of this before. If nothing else, it would give Mike Stott something new to review - I don't know how he manages to fill his page every issue! I also like to think that new software might, in some strange way, help to pull the Dragon out of it's grave.

If I can prove to my boss that it might be worth covering the Dragon as well as PCs, then we might just have a new software house for the Dragon!

Another offer I'd like to make, with Mr. Grade's permission that is, is a help column in the newsletter. I may have made this offer some time ago, but I can't remember.

Anyone interested can contact me at the following address: 1, Park Avenue, Markfield, Leics, LE67 9WA.

*** OK, if anyone wants a "help column" in Update, so be it BUT please remember to send your questions direct to Mark, NOT to Stephen or I. If Mark can answer them, I'm more than willing to print both questions and answers, or if he can't, then I'm prepared to publish the question in the hope that someone else may be able to assist, but I do NOT want to spend a minor fortune sending questions on to Mark because you "thought you'd put them in with the subs renewal" or whatever. Simply, Group funds aren't up to that sort of thing these days. Understood?. Paul G.*

You think I've made a mistake printing this in big type, don't you?. There's no mistake, I just can't think of anything to write that will fill this space, and at 5.5 cpi it has to be easier than using the normal 12 cpi. Why didn't YOU write something???!!.

3.5" Drives...Gareth Tutton

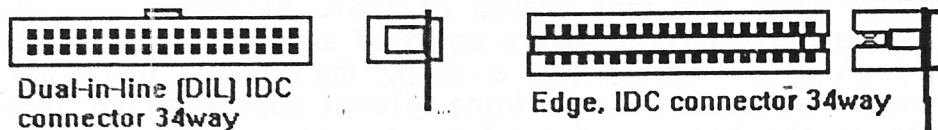
In this project, I'm going to add a 3.5" drive to an existing Dragon Data DragonDOS installation; 5.25" and 3.5" drives in the same unit.

When the Dragon disk drives were first launched in 1983, the 5.25" was very popular. At this time I knew of 3" and 3.5" drives, but the first time I came across one was in 1986, in a Hewlett Packard PC, and I wished my Dragon had one, but at the time they were expensive. The Amstrad CPC machines had 3" drives using C/PM, but the disks were expensive. So I stayed with 5.25"; 3" didn't become popular, and the price of 3.5" continued to fall.

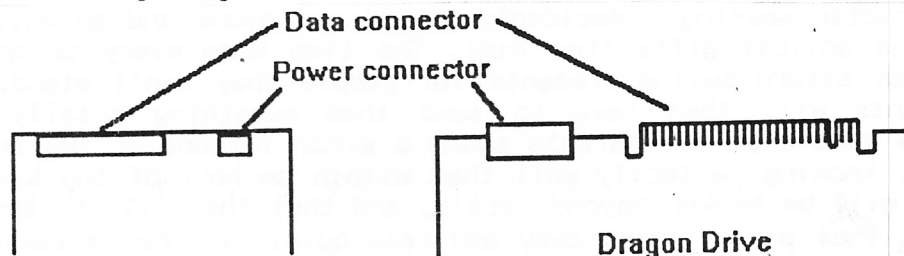
Now, with 3.5" drives being so cheap, and 5.25" largely out of favour, it made sense to add one to my Dragon set up. I acquired a lightly used Sony MFM-11W-72 with a mounting kit for a 5.25" slot. The extra capacity this gives is welcome, but it is under OS9 that I see it being a great benefit. It will be like having a hard disk on the Dragon! (Has anyone got a copy of the OS9 system programmer's manual they don't want, or at least a photocopy of the FORMAT command?)

At first, it looks a bit tricky to connect a 3.5" drive as the power and data connectors are very different. The drives also have several differences:

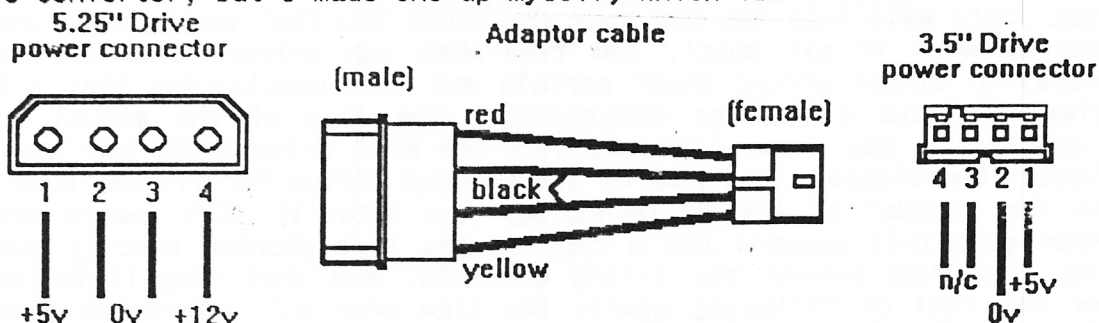
1. The 5.25" uses a 34-way polarised IDC edge connector, whereas the 3.5" has a 34-way IDC dual in-line connector, and is sometimes polarised but often not.



2. The connector's position on a drive can vary and on a 3.5" drive it does not line up with an existing Dragon 5.25".



3. The power connector on the 5.25" is a large polarised plug, providing both +12v and +5v supplies. This is still used for hard drives, tape drives, and CD-ROMs in most PCs. The 3.5" power connector is about half the size, polarised, but usually only provides +5v as the drives don't use +12v. You can buy a suitable converter, but I made one up myself, which isn't difficult.



4. To fit a 3.5" drive into a 5.25" slot, a mounting frame is required as the 3.5" drive is about half the size. If you don't have a mounting frame, hard-drive mounts and a DIY fascia would do. One thing to note: the original Dragon drives are about 1/4" narrower in width than the usual 5.25" unit, so a bit of 'easing' is required, although this does not apply if you are using Cumana or similar non-Dragon Data units.

5. Remember, when choosing a drive for non-PC computers, ensure that the drive has a switch or jumper to set the drive assignment configuration. Many new ones are set up as drive a: or 0 only, designed to be used with a cable that has the 'twist' as used in the PC.

So, let's get in to the project. I raided my parts bin and found a suitable drive cable to test the fitting of a single 3.5" drive directly to the DOS cartridge. Unfortunately, this ribbon cable has only two connectors, so isn't much use for twin drives, and is only 15" long. So, I connected the cable to the DOS cartridge and drive, ensuring correct polarity, then connected the power connector adaptor to the existing drive PSU and rested the drive on top of the drive unit casing.

Once I turned on the system, the familiar messages appeared on the screen - so far, so good. I put on old 3.5" disk in the drive and successfully formatted the disk. The formatted capacity for a 720Kb disk 728064 bytes (711K) - even on a PC, there will only be 730112 bytes (713K) available.

Now the fun begins. As the existing cable in the drive unit has two edge connectors and is too short, a replacement must be made. It looks as though a PC cable can be modified to suit, and this seems the most logical route. Unfortunately IDC connectors can be a problem - cables don't always connect properly, and it's easy to break a connector if you don't have the proper tool (guess who doesn't have the proper tool). See you in part 2.

It's Here Again

That time of year when the last traces of logic disappear the time when every credit company and utility make a point of sending in the bills, all with a footer printed on them wishing you a Happy Christmas!. The time when those paranoid parents who spend the remaining eleven months or so lecturing their revolting brats on the horrors of speaking to strangers, accepting things from them, etc, drag said brats along to the nearest money extraction emporium and positively insist that the brats should clamber all over some highly suspicious looking character wearing a decidedly peculiar costume and an exceptionally bad disguise, and solicit gifts from him!. The time when everyone spends far more than they can afford buying presents for people they can't stand, knowing that the recipients will then have to send them something totally revolting in return!. The time when all parents spend a minor fortune or two buying toys for their brats, knowing perfectly well that within an hour of the kids getting the things half will be broken beyond repair, and that they will be screaming at the kids to "put that bloody thing away and keep quiet" if they attempt to play with the remainder!. The time when everyone feels compelled to visit people they have been avoiding like bubonic plague since last Christmas, and to demonstrate Seasonal Goodwill by having the sort of arguments with them that will ensure they don't have to speak to them again until the same time next year!. The time when it is considered Traditional to eat and drink so much that the hangover and indigestion lasts well into the New Year and makes you feel even sicker when you try to add up what it all cost!. The time when cab drivers seem addicted to winding metallic tinsel around their aerials and then complaining that all they can receive is Radio 4 and the Coastguard!. The time of the annual Traffic Division contest to see which crew can nick the most drivers who may have been eating liqueur chocolates!. The time of the Dreaded Office Party, made even worse thanks to that Wonder of Modern Technology the security CCTV camera and the certain knowledge that someone has a copy of the tape showing exactly what you were doing with whom behind the filing cabinets, and that they'll be selling copies for the rest of following year!. The time when all television producers compete to see who can put together the most unwatchable compilation of old programs, and who can win the prize for screening the most repeated film the greatest number of times!. The time when people who put together computer group newsletters have to fall back on writing this kind of rubbish in order to fill the spaces left by articles that end twenty-one lines down a page, because there are no suitable length interesting articles left in stock! The time when I get more convinced every year that my personal Christmas Spirit will come out of a bottle with a Smirnoff or Bells label on the front!. The time when I should just say "All the best for Christmas & New Year" and leave it at that!. Paul Grade.

TAPES, BOOKS AND EVERYTHING...

There's been another donation of programs and books - as fast as I clear them, some more turn up! Thanks to everyone who's bought from the stock so far.

BACKTRACK (Incentive Software); GRAND PRIX (Salamander); GOLF (PSS); STOCKMARKET, (Bamby); INTERPLANATERY TRADER (Bamby); MADNESS and the MINOTAUR (DD); TREKBOER; CHICKEN RUN; MINED OUT; DEFENSE; MORBID MANSION; LUNAR ROVER; BOULDER CRASH; EVEREST; GOLF; TOTAL ECLIPSE; SPACE TREK/REVERSI; RING of DARKNESS; FROGGER; MANIC MINER.

UTILITY TAPES:

FILEMASTER (Microdeal); GRAPHIC ANIMATOR; (Salamander); FORTH (Dragon Data version); ELECTRONIC AUTHOR; DREAM (Dragon Data); DRS (another tape has turned up); SPANISH Language course; PERSONAL FINANCE; Special SELECTION 2; COMPUTAVOICE; DUPIDISK 2; CHESHIRE CAT series:- Maths 1 and 2, BASIC TUTORIAL 1 and 2; DISKPIX; LOAD-IT; Music Maker; Composer; Shaper.

ALL ONE PRICE:- 70 pence each inc postage (in U.K.) or haggle for lots of more than 2.

UTILITY DISKS:-

TELEWRITER (DISKS and tape inc. manual); TELEFORTH (DISK and cassette); MAILBOX (database and report compiler by Harris Micros, with manual); RAINBOW WRITER. 3.50 EACH inc. postage. Barter for more than one.

MANUALS for various prog.s: SPRINT; SALAMANDER GRAPHICS SYSTEM. 50 PENCE.

BOOKS:-

Dragon 32 programmers Reference Manual
The Dragon Programmer
Advanced Sound & Graphics
The Working Dragon 32
TRS-80 Assembly Language;
CoCo Graphics Basic and M/C;
D32 Companion
Dragon Graphics and Sound
Introducing Dragon M/C
Programming with Graphics

John Vander Reyden
S.M. Gee
The Brain Twins
David Lawrence

M. Jarvis
Steve Money
Ian Sinclair
Gerry Marshall

£1.25 each including postage.

2 working Dragon 32's including all leads.
1 D64 (dodgy printer port, hence price)

£15 each inc. postage
£20 inc. postage

"Mailbox", by Bob Harris, is a very adaptable and sophisticated database. It uses true random access files - each record can be updated without reading in the entire database - the layout can be customised and changed after data had been entered into the records - it makes some of the P.C. software look primitive (and overpriced). It wasn't considered very "user friendly" at the time it was released, perhaps because the users weren't ready for it. If anyone were to write a similar program in one of the compiled languages, there might be a market for it now for P.C. machines.

Phone me on Worthing 207585 most evenings if you want any of these and we'll work out an arrangement on postage etc. Ken Grade.

Dragon 32 & Business. Edwin Lilly

I was made redundant for the second time in 1983. At the time I was in my late thirties and working for a large mail order/retail group at their head office. Apart from looking for a proper job, I also considered setting up a business using a Dragon 32 that I had recently acquired. I could not come up with a good idea and business plan, and I was fortunate to obtain a good job again with another mail order company so thoughts of setting up a business were set aside. Elaine, my wife, had not worked for some years whilst the children were coming along and growing up. Once the youngest got to school age, however, she started operating as a child minder. This lasted for a few years and fitted in well with looking after our brood. The pay was not brilliant but the hours were attractive. However, moving house stopped that business in it's tracks and she had had enough of it by then in any case. I had been offered a business proposition some time before which looked interesting - printing self-adhesive labels on a dot matrix printer attached to a Dragon 32. The program was in BASIC so could be modified or manipulated relatively easily.

After Elaine had tried to find a job, having had a few interviews, and failing to find employment, she agreed that it would be worth trying the business proposition. After all, the capital requirements were modest - a printer, which we wanted anyway but had not been able to justify (a dot matrix at the time was over 300.00 for even a modest 9-pin) - and she had not a lot to lose, so in mid 1986 we took the plunge. We bought an Epson EX800 9-pin printer, a new high speed model at the time. The other investment was in self-adhesive labels. The niche market we were aiming for was the suppliers to mail order retailers, where quick deliveries and short runs were more important than print quality. I was fortunate to work for the packaging department of a large mail order retailer, and the packaging manager was very supportive. He knew the problems his suppliers were having obtaining labels in less than 2 weeks.

We were ready to start in December 1986 with a trial run at a scout Christmas Fair - printing address labels for all comers - quite a challenge with an untried system to print in a 2 hour slot anything people wanted. We were able to satisfy most customers and felt encouraged in proceeding further. The business was set up in Elaine's name and she was going to be the printer, receptionist, packer, gopher, etc. The work place was the second bedroom - a double room, and far too big for one of our sons alone - he had half of it. I would be at work all day but would be able to help in the evenings and do the bookkeeping. My main preoccupation in the early days was (A) getting the program right so she could cope with the Dragon and the printing, and (B) finding the customers.

A copy of TeleWriter was purchased and mailshot letters produced. I was fortunate to be able to obtain a supplier list from the department in which I worked, and we spent hours mailing letters to many of these companies. The Dragon and Epson EX800 were used constantly for all this. I looked around and picked up various useful business programs for the Dragon. An invoicing one in BASIC was very useful and came to be much modified to make it work as we wanted. In the next episode I will take you further into the business and show how it developed and how the Dragon continued to make a considerable contribution. E.L.

CRIMEWATCH (THE SEQUEL).

Police are trying to trace a person alleged to have persistently accosted several hundred children. All reports so far appear to support the theory that this is the work of one man. He is described as being of short, stocky build, grey/white hair, an exceptionally large and unkempt white beard, is apparently very old but active, and is always seen wearing an old style red, fur trimmed dressing gown with a large hood. There have been several reported sightings of him, usually in large stores, and there have also been reports of him unlawfully entering dwelling houses at night, and he may be driving a large red vehicle of unknown make and registration, powered by a team of animals. Please help by reporting any sightings to your local police station. There may be a reward!.

Extending Composer... Dave Cadman

Those of you who have listened to my compilations using Composer will have realised that I manage to get far more music into my programs than the basic Composer program allows. The members of the Group who showed any interest in the method have already been informed, so now the rest of you can all be bored stiff, since I understand you will not write anything new and exciting for Update! All addresses are in decimal and the EXEC address is always the same the start address. Program save names are suggestions only.

The length of any ML compilation saved via Composer is in three sections. The first is PLAYWAVC (1536 bytes), the second is the MUSIC CONTENT that you type in (n bytes) and the third is one STOP byte. The program, as any user will be aware, saves a maximum of 720 note groups, starting at 24576. The machine code saved is PCR, so it can be moved around in memory; so you may be thinking, if you can move a compiled piece around in memory you should also be able to position pieces one after the other, butted up, to make one long whole piece, and you would be correct...up to a point.

Let's consider you want to compile a piece that is longer than Composer's capabilities. You would compile up to a convenient point in the music and save it in the normal way, in ML and basic (for backup), titled as FIRST. Start again with the next section of music up to another convenient point and save as SECOND, THIRD, FOURTH etc, until all the music has been compiled. I will deal with an example that has been saved in four parts, so you now have four saves, all saved at 24576,n,24576, and each saved part has a PLAYWAVC, MUSIC CONTENT, and a STOP byte.

It follows that your FIRST save will need a PLAYWAVC and MUSIC CONTENT, but no STOP byte. Your SECOND and THIRD saves will require neither a PLAYWAVC or a STOP byte; and the FOURTH and last save does not require a PLAYWAVC but does need the MUSIC CONTENT and the STOP byte.

Obviously, the method used will vary depending on whether you are working from tape or disc, but you must choose a start address that is divisible by 256 or 1536 if screens are involved. First of all make a note of the start and end addresses and the length of your saves, four in this case. The FIRST part should be loaded, with an offset (LOAD"FIRST.BIN",n for disc and CLOADM "FIRST",65536-24576+n for tape) to place it at the start address decided. Save this, the end address being the start address plus the length and give it the name RFIRST, to show it is a repositioned save. Switch off/on and load the SECOND, the offset this time being one LESS than the end address of FIRST (so that SECOND will overwrite the STOP byte of FIRST) and then deduct a further 1536 (we don't want the PLAYWAVC). RSECOND will be saved with a start address one less than the end of FIRST and the end address will be that number plus the length of SECOND.

The same procedure is followed for RTHIRD and RFOURTH, and RFOURTH will retain the STOP byte since it is the last part. As with all ML procedures it is advisable to switch off/on between each operation. You should now have four repositioned saves. You then simply load each one after the other and save the whole down using FIRST's start address and FOURTH's end address. It might sound complicated, but in fact it is quite easy to do, and can be done from the keyboard, but keep notes of all addresses in case it does not work and you need to check your maths!

Next time I will run through an example.

Many Thanks!

My most sincere thanks to Messrs M.Townsend and J.Hutton for their contributions to the "Buy the Chairman a Drink for Christmas" fund! (and of course to anyone who contributed after I wrote this!). Now that really is my idea of spreading Christmas Spirit around, and it really is very much appreciated. Many thanks!
Paul

DATAFILES IN GWBASIC...Ken Grade.

Whilst I was making use of Graham Kinns' excellent Dragon to PC converter, I tried out some of the filewriting routines used by GW Basic. There isn't a great deal of difference. The words and syntax are different, but the method is more or less the same. I've set out the disk read and write routines so you can see how they compare. The EOF function is handled differently in DragonDos, and I never found it to be reliable. I put my own "end-of-file" marker in the last variable of an array list - usually the "*", so that when that is read in, the routine jumps to the line which has the "CLOSE" command. I'd like to learn the QBASIC equivalent of the file handling routines. Has anyone got a QBASIC manual? I shall experiment with the "random access" file handling in GW next.

FILE WRITING ROUTINES.**GWBASIC**

```
204 OPEN P$ FOR OUTPUT AS #1
206 PRINT #1,J$
208 REM List of variables can be written using the same command and syntax.)
214 FOR X=1 TO 40
216 PRINT #1,A$(X)
218 REM ANY OTHER ARRAY VARIABLES
224 IF A$="*" THEN 228 :ELSE 226
226 NEXT X
228 CLOSE
```

DRAGONDOS

```
204 CREATE P$
206 FWRITE P$;J$
214 FOR X=1 TO 40
216 FWRITE P$;A$(X)
218 REM
224 IF A$(X)="*" THEN 228 ELSE 226
226 NEXT X
228 CLOSE
```

FILE READING ROUTINES:

```
230 INPUT "ENTER FILENAME.. ";P$
234 OPEN P$ FOR INPUT AS #1
235 IF EOF(1) THEN CLOSE: GOTO 258
236 INPUT #1,ZZ$
238 REM List of variables
244 FOR X=1 TO 40:IF EOF(1) THEN 258
245 REM EXTRA LINE NOT NEEDED
246 INPUT #1,A$(X)
248 REM MORE OF ARRAY VARIABLES
256 NEXT X
258 CLOSE
```

```
230 LINEINPUT "ENTER FILENAME..";P$
234 REM Lines 234 and 235 are not
235 REM needed in DragonDos
236 FREAD P$;ZZ$
238 REM Variable list
244 FOR X=1 TO 40:Y=(EOF)
245 IF Y=0 THEN 258
246 FREAD P$;A$(X)
248 REM MORE ARRAY VARIABLES
256 NEXT X
258 CLOSE
```

The Late, Late Bit

Exit 1997 stage left ... can 1998 be any worse? of course it can, and it undoubtedly will be!. However, 1997 can be remembered for a few great mysteries ... like how are NASA going to explain it when they find their "Mars Rover" buggy parked up on four piles of bricks, with the wheels and stereo missing?!. Like how did Blair manage to find someone even madder than Howard for the Home Office job?!. Like how did anyone ever manage to flip an armoured Mercedes on one of the safest bits of road in Paris?!. Like who stage managed the resulting instant mass hysteria campaign, and why?!. Like whatever happened to all the VR software and headsets that we were going to be up to our pixels in by now?!. Like if we're all now so much better off than we were forty years ago, how come hardly anyone owed money or had an overdraft then, yet most of the population now are worried about whether they can stretch their overdraft facility enough to let them pay their plastic account at the end of the month and at least cover the interest on the overdue mortgage payments?!. Like who dreamed up the idea that a 17 year old can drive a car, join the Army and get shot, get married, have sex, but have to wait a further year before he can have a smoke afterwards?!. Like what causes the 82% of road accidents that do NOT involve "drink driving", and when is the Government going to ban sober drivers?!. Like if over 85% of road accidents take place at less than 30 mph, how come "speed" is so dangerous?!. Like why is everyone against Iraq when they only invaded Kuwait, but not bothered that Microsoft are trying to invade the entire World?!. If you have the answers please let me know.

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