



DRAGON UPDATE



 ISSUE No.12. AUGUST.1985.

 CHAIRMAN : Paul Grade, 6,Navarino Road, Worthing, Sussex. Phone:0903-207585.
 SOFTWARE EDITOR: Neil Scrimgeour, 125, Occupation Road, Corby, Northants.
 EDITOR :Tim Lomas. 211a,Amesbury Avenue,London SW2. Telephone 01-674-0327.

The Gaffer's Bit.....Paul Grade.

As the more literate or observant of you will have noticed, we now have a new Editor. This does NOT mean that I've resigned, been fired, or awarded myself a redundancy payment, merely that I am now fortunate enough to have found a volunteer sufficiently masochistic to take over the typing up and formatting of Update, which hopefully will give me a little more time to deal with the rest of the work.All material etc, should still be sent via me, as usual, and the only real change is that I now have someone to blame for all the errors in Update!! Hopefully, the net result will be a better newsletter, so please give our new Editor a chance, and keep the material coming in. OK?.

Before you write in to tell me, Yes, I KNOW the newsletter has been arriving late for the past couple of issues. This is because of problems with the photocopying arrangements, but hopefully by the time that you read this the Group will have purchased its OWN copier, which means that in future we ought to be able to keep to schedule.

Can anyone answer the following questions?:-

MUSIC BOX (Dragon Data)..Denis Swift, 41,Headington Road, Maidenhead, Berks, would like to know why, contrary to the manual, the "voices" cannot be set to different instruments at will when running the program on his 64.

ULTRADRIVE...Norman Turner, 35,Birch Drive, Lordswood, Chatham, Kent, wants to know what happen to the Ultradrive....IS it still in production, and was/is it worth having anyway?.

OASIS CHESS...Philip Goodship, 18,Thurspit Place, Ecton Brock, Northampton, wants to know if there is any way of preventing a formfeed when listing moves to printer. Any Ideas?.

Well, thats about all from me just now....you've got a proper Editor to nag you this month!..Don't forget, 'tho, if you want to phone or write in with complaints, queries, problems, or just to talk, you'll be very welcome....You know my number.

STOP YE PRESSE!!!.There WILL be another 6809 Show in November, and we've been asking for a Stand again. I'll let you know soonest if we get one.

THE EDITORIAL BIT

Well this is it, your New Editor has arrived!, don't all cheer at once. Our esteemed Chairman, after choking on his coffee when he found that someone was stupid (sorry, kind) enough to liberate him from all this typing told me that I was letting myself in for loads of hassle, typing, and general unhappiness and then proceeded to inundate me with bits of paper (I notice he didn't send that editorial vodka he keeps going on about) and said sort it out. So this is it, I hope you like it, if not it's your fault for not volunteering first. As his bit above is so long I shall have to keep short to fit the page, but for those who like this I have decided to comander a bit of the back page to make up for it so read on.

COMMUNICATIONS (2) GARY COXHEADPART ONE - HARDWARE

Three items of hardware are required to get 'on line' (four if you count the computer). The first is an RS232 serial interface. This was one of the ports missing from the original specification of the Dragon 32, and was subsequently remedied on the 64. This interface, which conforms to a so called standard, put simply, consists of a chip or two which converts the Dragons 8 bit parallel output, i.e. 8 bits of information going out on 8 data 'highways', and turns it around so that the data is sent one after the other down the line. The reason for this is that there is only one telephone line and it handles data serially. The chip also handles how the data is 'packaged' within start and stop bits, and even and odd parity. There are various interfaces on the market some of which are quite cheap, others not so. My own interface is supplied as a kit by Maplin Electronics of Rayleigh and costs about 16 pounds. This unit only supports 3 lines, - transmit, receive and ground. Others like the one from Cotswold Computers, support the full RS232 specification giving 'clear to send' and 'ready to send' lines, which allow extra facilities such as auto-dial and auto answer, providing the software can handle these, for a very reasonable 49 pounds. So you see you pay your money, you take your choice. The kit by the way, is easy to build. I managed it first time and I have no previous soldering or electronics experience at all. But, as the interface uses a chip which is full specification but is under-utilised, the board can be modified at a later date to give extra facilities. All the interfaces have one thing in common, they all plug into the cartridge port. The Dragon 64 already has its own RS232 port.

The second item of hardware needed is a modem. This word stands for modulator/de modulator and it controls the signals actually sent down the telephone line. It is connected between the interface and the telephone line. A modem is needed because telephone lines were designed to use analogue signals, like your voice and not the digital signals as produced by your computer. The modem converts the digital signals to audio tones suitable for the telephone line, using say a high tone for a 1 bit and a low tone for a 0 bit. The modem also handles the speed at which the data is transferred down the line, and this is called the BAUD rate. This stands for how many bits per second are transferred. because of the design of the telephone lines, most systems operate at speeds between 300 baud and 1200 baud. Most bulletin boards operate at 300/300 baud full duplex, but more and more systems are offering 1200/75 baud (the Prestel standard) or 1200/1200. The higher the baud rate, the faster the data is transferred, and at 300 baud a full screenful of information will take about 15 seconds to transfer. By the way, 'full duplex' means the data can be transferred both ways simultaneously (by using different tones), while on 'half duplex' you have to wait until the other computer has finished transmitting before you can send anything or stop the data! Again you can pay as little as 30 pounds or as much as 500 pounds for a modem. the cheaper ones tend to be simpler devices offering only one baud rate, while the more expensive ones offer multi-baud rates. However, newer multi-baud modems on the market have broken the 50 pound barrier, the more expensive systems tend to offer extra facilities such as auto-dial and auto-answer.

There are two types of modem on the market, acoustic and hardwired. Acoustic modems, which tend to be cheaper, have rubber cups where a standard telephone is slotted in, but these tend to be prone to interference from exterior noise. Hard wired modems connect to the telephone line direct using a jack plug and are therefore the most reliable and should be used where possible.

My own modem cost 30 pounds from Display Electronics of Norwood London and is an ex-British Telecom job lot of 300/300 modems. They are very solidly built and, if you don't mind a box the size of an old gramophone and weighing about twenty pounds, then the model 2B is a sturdy and reliable modem for the beginner and it will not break the bank. Also with a bit of jiggery pokery, the modem will support auto-dial and auto-answer.

ASCII CORNER.....NEIL SCRIMGEOUR

Syzygy (is that spelt right?) is a weird name for a program and in fact when you first see it, trying to find out how Syg...thingy is pronounced is an adventure in itself. So, whatever you call it, what is it all about? Well, I suppose the main object of the game is to collect the Emerald and reach Yoda, that cute little muppet creature that knows everything about the force etc. The layout of the game is on the cassette insert and is unusual for the fact that it tells you what you have to do and the order in which to do it. It also lists the whole vocabulary that Syz..(I'll call it thingy from now on), thingy uses. People who collect pirate copies could come unstuck here as the insert is essential if you want to complete the game. I digress.

Thingy boasts 250 graphic pictures and 300 pictures. My estimate of locations etc. is nowhere near this so don't go and buy the prog because it's going to last for ages. It won't. I would say there are about 100 pictures and 120 different places to visit, even then some locations are duplicated. The pictures are very good, not as good as D.D's Sea Quest and Shenanigans, and everything takes place on PMODE 4 black and white. The screen is split into three. The bottom half of the screen is used for input, ie. Get Sabre etc., the top left corner lists your inventory and top right shows the graphic location. Movement is controlled by the arrow keys, a welcome addition, but for up and down you have to type the words. Walking through doors is dead easy as they open automatically as soon as you walk into them. The sound effects for the doors are great and in fact sound throughout the game has been used very well. So what about the actual game then? The first thing to do is find your Light Sabre so you can duel with Vader and send him scurrying. The fight sequence is fab as you dice with Vader, clashing Sabres. Again the graphics are good and in one location you have to fight in the dark. Of course the Sabres light up but you can't see your opponent. The control is via a joystick, another nice touch. The next thing to do is enter the airless corridor and careful perusal of the vocab. listed will give you a clue on how to do it. Once you have found out how to operate the transporter you collect your communicator on the planet below. This is the first really bad part of the program as it seems totally random whether you find it or not. Anyway, back to the deathstar you go, find the Emerald and dice with Vader again, move through the corridor with force fields and eventually you will come across Yoda, and that's it folks. It took me only 2-3 hours to complete the adventure and I was left with a feeling of emptiness for the rest of the day. I haven't laid out all of the problems but there's not really enough of the program to justify 8.00. As I've said, the graphics are good and the sound is good, even the fight sequence is good, but for the seasoned adventurer it is just too easy. The old traps are set like the lever on the wall and objects are hidden in drawers etc. One unusual feature is that you can't drop anything, you can certainly throw it, but then you lose it forever. In one location you have to throw something (someone?, a clue there) to progress further. It's really hard to sum up this game. I suppose you could call it a beginners adventure if you stretched a point but for experienced adventurers it is not a good buy, even though the graphics are good. The idea of actually having control over fight sequences is very good and I hope to be seeing it again somewhere. If Microdeal had made the game a bit bigger with half a dozen extra problems set it could have become a classic.

Shrunken Scientist, by Quickbeam is the first program I've seen from this new company. A certain member, who shall remain nameless, has not passed on the free program that Quickbeam sent us (NOT our beloved Chairman I hasten to add) Therefore in desperation I have got hold of a pirate copy. So if there are any special notes or clues on the insert (like Thingy above) I don't know about them. So what is Shrunken Scientist all about? Obviously you are smaller than you should be and your main objective is to get back to normal size. Every room, every object is seen in a different light from this Action Man viewpoint and the descriptions are quite good. I must admit that I haven't got very far as I can't seem to use the DDT (personally I think I'm losing my touch, first

Rivers of fire and now this!) but from the limited time that I've played it the program creates a certain something, a kind of feeling that it is going to be a nice adventure. One other point, Quickbeam have now incorporated a SAVE GAME feature which was missing from the first batch of programs. If you want a game that is a little different then this one is worth a look. If anyone finds out how to use the DDT then please let me know.

It has been brought to my attention that a terrific offer is available from Incentive. Apparently they are offering the Ket Trilogy for an amazing 8.50 to NDUG members. At 10 quid it was good value but at 8.50, well, snap it up before stocks go (Orders to Paul)

One last point, it has also been brought to my attention that our cute little Dragon that adorns the cover of this Mega-Mag has started cropping up on letterheads. As some of you may know I do all the artwork for the NDUG and this situation is scandalous! However if anyone wants 2 or 3 freebies of these cult figures then write to me enclosing a SAE and I'll send some off to you or, if you prefer, send me a cassette and 18p postage and I'll send you a title page with three of them so you can do screen dumps of them. You'll find my address at the start of the mag.

64k upgrade. . . . (Corrections)

1) Re the 2 banks of 4166's, IC1-8 and IC36-43; this should have read: 'IC1-8 are strobed by RAS0, which in 64k mode becomes just RAS, and IC36-43 are strobed by RAS1, which in 64k mode becomes the signal for the 8th address line (denoted Z7 on the SAM data sheet) for connection to A7 on IC1-8: when making this connection, we must include the damping resistor (R12). So clearly we move the signal over from bank 2 (pins 4) to bank 1 (pins 9) with a patch wire.

2) The CAS signal is the column address strobe, and is used to strobe in the upper part of the full address in the 2nd part of the memory cycle.

3) The diagrams of the chip pin-outs are shown with the 'notches' on the RHS (and viewed from above); ie. pin 1 is in the top RH corner.

Finally, bit 2 at &HFF22 is read by the D32's rom reset routine to determine the memory type (16+16 or 32/64) when setting up the SAM.

Willy's Tune. . . . Roy Coates.

For the benefit of those of you who bought JSW just for the music, Roy Coates has sent us the listing for it.

I DON'T think it would be a good idea to tack it on to your own program. . . . even Roy might get a little peevish at that, but there's no reason why you shouldn't use it as a basis for experimenting with your OWN variations!

```

1 CLEAR 200,24575:REM JSW TUNE. COPYRIGHT ROY COATES.
2 FOR M=24576 TO 24779
3 READ A$:A=VAL("&H"+A$):CS=CS+A
4 POKE M,A
5 NEXT M
6 IF CS(>)18676 THEN PRINT"DATA ERROR":STOP
7 EXEC24576
8 DATA 8D,49,CE,60,6B,A6,C0,27,16,B7,60,6A,C6,FF,F7,60,69,8D,0F,78,60,6A,86,7F,B
9 DATA 20,E6,8D,39,39,10,8E,25,00,F6,60,69,C4,FC,F7,FF,20,B6,60,6A,31,3F,27,12,4
10 DATA B6,60,6A,31,3F,27,05,4A,26,F9,20,E4,7F,FF,20,39,CC,B4,35,B7,FF,01,F7,FF,
11 DATA CC,B4,35,B7,FF,01,B7,FF,03,86,37,B7,FF,23,39,00,00
12 DATA 51,3C,33,51,3C,33,51,3C,33,51,3C,33,51,3C,33,51,3C,33,51,3C,33,51,3C,33
13 DATA 4C,3C,33,4C,3C,33,4C,39,2D,4C,39,2D,51,40,2D,51,3C,33,51,3C,36,5B,40,36,
14 DATA 28,3C,28,28,36,2D,51,36,2D,51,36,2D,28,36,28,28,3C,33,51,3C,33,26,3C,2D
15 DATA 4C,3C,2D,28,40,33,51,40,33,2D,40,36,20,40,36,3D,79,3D,00

```

"Dark Star" (by Design Design) - B. Caruti -

30 Space game "Dark Star" has at last arrived. It got 10 out of 10 in P.C.W. and got 100% for use of computer from Crash (that's on the Spectrum! Doesn't that surprise you!)

The game has yet another new loading system this time. A PMODE4 screen loads in SCREEN1,0 from the bottom, scrolling upwards. This screen is an excellent attempt at the coverdrawing. It also has the same conny protection system as "Return of the Ring", which cold-starts the machine if an error occurs whilst loading. After loading you are confronted with the familiar Design Design "Hall of Fame" with a little essay for^ you to read. It is by Rainbow Software (who, I know wrote Softeks "Ultrapede") and was written on a Microbox 2 computer (what's that?) with OS-9.

You then get the menu: [1] Read high scores [2] Change controls. [3] Change game options (Level, enemy missiles, game format). [4] Save option. [5] Load option. Being the chicken I am I selected easy mode and keyboard (don't use joysticks) and hit spacebar to start. The display is in PMODE3 and the graphics are quite good, but what may be a solid planet in the distance is made up of several horizontal lines when close up. The same applies to enemy ships.

You are in a galaxy divided into 256 squares, but as few as 50 are occupied on low levels and as few as 3 are unoccupied on high levels. Each sector is either; unoccupied, lightly defended, heavily defended or is a military centre.

This affects the number of bases per planet in each sector. Energy concentrations (fuel) in space are shown by pulsating squares which I am sure are impossible to hit. "How do you move?" I hear you ask. Well, you use the cursors, or whatever you define, to move a crosshair, which is where you fire and where you head towards. You also use keys to accelerate and decelerate and spacebar releases plasma bolts (yellow dots). I am informed that enemy ships fire by predicting your current course, but as I am on the easy level, I don't know.

Moving from sector to sector uses warp gates which are yellow squares changing shape (I know squares can't change shape, but just you try and describe it!).

If you go through a square you meet a tunnel of even more squares which you must fly through (this is hyperspace). Flying outside the squares costs energy and it is impossible at top speed. The new method discovered for landing on planets is flying through them. The surface of a planet around bases is defended by anti-aircraft weaponry on towers which turn red and collapse when hit. The second area of defense has a force field which has holes in it (not very effective) for you to fly through. -Guess what the holes are shown by - Yes! More yellow squares!

The final base is a let-down - instead of super graphics it's about 15 towers beside each other for you to shoot. Pressing '1' whilst on planets gives a map showing bases, defenses, fuel dumps and space ports. Also given is useless information like Name=OEK778Q (what a name!); Type:Outpost; Size:0.6; Mass:0.5 - which really adds to the game, so it doesn't! Pressing '1' in space gives a Tactical Galactic Sector Scan which shows where you are and how well the sectors are defended. You can leave the planet by pressing 'up' whilst at Max. velocity, but must have destroyed all the bases first. Fuel dumps are like the fuel in space but are easy to hit and have towers nearby. Spaceports are useless! Keys 3 & 4 self-destruct your ship the 'Liar'.

The whole purpose of the game is to "liberate the galaxy from the Evil Lords' tyrannical Empire" (never heard that before) by destroying all military bases.

I am informed on the last page of the instructions that "This program is not another boring arcade copy" but I would say that this is partially right. It is not an arcade copy but it would be boring if you over-played it. The program has more "pro's" than "con's" but I think Des(ign-Design (or Rainbow) could have done better. All in all worth the money but not sensational!

Price:7.95. Produced by Design Design. Mail order and customer enquiries: 2, Ashton Way, East Herrington Sunderland.SR9-3RX.

Grunenberg French. . . Pauline Hampson.

This program is based on the Grunenberg method of learning. It involves learning words by association with pictures in your mind. For example, the French word for rabbit is 'lapin' - imagine a rabbit lapping a bowl of water.

The program is very long and has 5 sections on each side of the tape. Each section teaches about 40 words with their genders. The whole recording is about an hour long. You do not load all the data at once, I must add, it is gradually fed in as you proceed.

You also learn verbs, adjectives and bits of grammar, so you soon make sentences. The nouns are learned in blocks of 10 in groups, like animals or travel and then you are tested. The genders are then also taught by association, masculine words being associated with a boxer and feminine words with perfume. Where words in both languages are similar, you link them with the Eiffel tower. Imagine an elephant climbing the tower. The sections include short portions of grammar which are also tested and can be repeated.

You are tested frequently in both languages. No score is given and no comment on performance is made. I found this relaxed approach helpful. Some of the sentences which you translate are rather odd but this is apparently to make you think and not learn parrot fashion. A sentence like "the doctor's house and the dentist's mouth is dry." is an example. The method of association, as I understand it, is used by memory men who astound us on the stage or T.V. and the method does seem to work. If you want to learn French then you can, Young children would find it difficult to use but it is not meant for them anyway. Also available from Touchmaster is an audio tape which accompanies the course but I have not tried this.

I had some problems with the tape, no instructions are given to rewind the tape where you wish to repeat a section. I got a lot of I.O. errors when trying to repeat a part or start on a part down the tape. If I worked through it I had no problem. I think part of this problem lies in my cassette player as I have had similar problems before. One irritation with the tape is that you often have to wait with half a screenful of data while the rest is loaded and printed, but this does not take long.

Those of you going abroad or studying French, and in need of revision should invest in a tape. It is good value for money. I was surprised that the method worked and was painless. It teaches not just lists of words but grammar and sentence construction, and all at your own pace. What more could you want? You can learn other languages too.

(The Grunenberg courses are available from Touchmaster at: 5.95.

Spanish and German versions are also available, and all tapes are available by mail order ONLY from Touchmaster Limited.

X-WORD NO. 2 ANSWERS.

ACROSS:- 1)Chip 4)Sort 7)Mouse 9)M.D. 11)Loop 12)Pi 13)Anldor (Arnold) 14) U.N. 15)Set 16)REM 18)Epee 21)Nogard (Dragon) 23)Spain 25)EDIT 26)Ear 28)Zorro 30)Lunar Rover

DOWN:- 1)Compusense 2)IF 3)Pool 4)S.S. 5)Oepr (Rope) 6)Touchmaster 7)Monitor 8)Update 10)DIN 11)Late 15)Saga 16)R.E. 19)Pedro 20)Eel 22)Opal 24)N.Z. 25)ERR 29)OV

The winner of Crossword two is Mike Blake of Rochdale. (Sorry, but he can only afford ONE prize per issue).

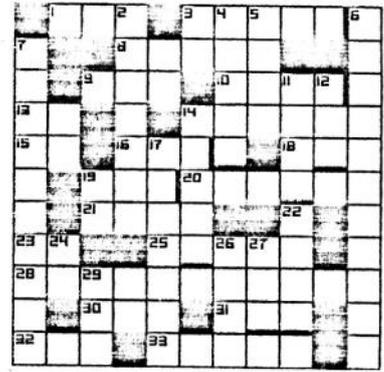
For this month's crossword the winner will get a copy of Incentive's "BACKTRACK".

If any of you have ideas for other types of competitions, or anything else that you'd like to see in Update, PLEASE write and let us know.
After all, it IS your newsletter.

Crossword No. 3.

Across:-1)Set a program in motion:3)Used for wrapping,printing,etc.:8)A shuffled pause:9)Root mean square:10)A horse sure to win:13)Not off:14)Scandinavian sea adventurer:15)Japanese board game:16)Lifeboat charity before it became Nationalised:18)20cwt mixed up:19)Siamese land measurement roughly half an acre:20)Short musket carried by a Dragoon:21)otherwise:23 Manuscript abbr.:25)Result of an addition:28)Computer's native language:30)String length:32)Marks the end of a subroutine in assembly language:33)To return you must first do this.

Down:-2)Number:4)American standard code for interchange of information:5)Look in memory:6)Readrs of Update are obviously these:7)K.Kalish or R.Coates:11)Cirlet of gold:12)Trinitrotoluene:14)Recording of a television program:17)Printout: 19)Religious Education:22)A small piece of ground:24)Eurohard ---:26)Decimal units:27)High card:29)Clear the screen.

DATAPEN REVIEW R. A. DAVIS (G3RL0)

I find that keyboard controlled sketching routines are slow to the point of tedium, and the joystick options are almost impossible to control with any accuracy. Having read the cautionary notes about lightpens, it was without optimism that I took an opportunity to try out the Datapen. I had already tried one of the cheaper pens and discarded that.

The Datapen plugs into the dragons righthand joystick port, and uses the signals available from both the stick and fire button. It is lightweight and pleasant to handle, and supplied with additional rubber sleeves, which can be inserted into the nozzle if slipping is a problem, to hold it steady on the screen. The pen has a small pressbutton on one side, and is used by placing the nozzle on or near the screen, depressing the button and then releasing it, while still holding it in position. The software provided then sends a series of dots to the screen, first vertically for the 'X' position and then horizontally for the 'Y' position. The accompanying cassette has 3 listings. The first is an INTRO which shows how the pen works, using JOYSTK(0), and 3 variables. The easy to follow manual is accompanied by several additional information sheets especially for the Dragon, including a listing of the INTRO program which can be adapted for your own needs. This INTRO program enables the Dragon to calculate the current X,Y co-ordinates of the pen, and shows you how to use it to select choices from a menu. You could use it quite easily with an 'IKON' type routine to make selections.

The second program is SKETCH. This gives the choice of PMODE 1 or PMODE4 as it stands. However, because the pen needs only 2 pages for it's routine of operation, it was quite easy to change from PMODE 1 to the higher definition of PMODE3 and as all the programs are in BASIC there are no problems in re-saving your own versions. The SKETCH routine provides for some commands by lightpen selection, and some from the keyboard. With the pen you can select DRAW,ERASE,BLANK MOVE AND PAINT. From the keyboard you select SAVE TO TAPE,CIRCLE,ACCURACY FACTOR AND SPEED FAST OR SLOW. You are also able to reload a sketch from tape. The accuracy factor, from 1-9 is a good idea, as when sketching you do need an accuracy of one pixel, while during IKON selection a coarser accuracy is desirable. In the colour PMODE, alternative colour selecton of the lines was not included, neither was the rectangle drawing (PSET,B) but these can be easily added with keyboard commands.

The final program is SHAPE which allows you to define 24 shapes, GET and PUT them on screen, rotate them, save for your own use, This is in PMODE 4 and is excellent for games, or for symbols, ie. for electronic or radio circuits. The pen proved insensitive to ambient lighting and no alteration was needed to the controls of the t.v.

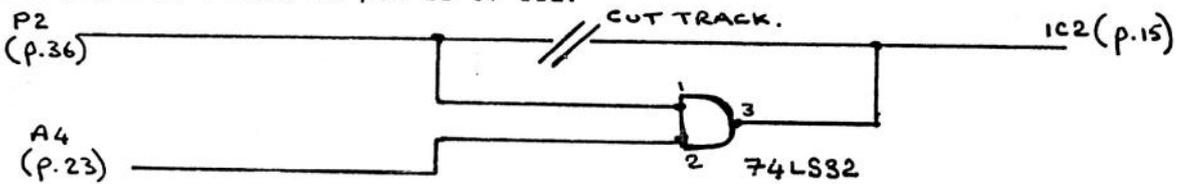
Verdict. A satisfactory product, good value for money.

Have YOU written any programs you'd like reviewed?.....if so, phone the Chairman.

TERMINAL INTERFACE PART 2

Using the interface with DragonDOS cartridge installed. With the address decoding used on the interface, the interface uses addresses in the range FF50-FF5F, the DragonDOS supposedly uses addresses in the range FF40-FF4F for I/O, theory therefore has it that you should be able to use both of them together, subject to the installation of a suitable adapter allowing you to plug both devices into the expansion port at the same time. However Dragon Data didn't do their address decoding properly and the Dos responds to addresses in the range FF40 right through to FF5F thus causing contention. Therefore a small modification is required to the DragonDOS cartridge.

1. Cut the track going to edge connector pin 36
2. Instal a 74LS32 -I just tacked it piggy back style on top of an existing 14 pin IC (pins 7 and 14 only) to get a voltage supply to it.
3. Connect edge connector pin 36 (P2) to pin 1 of 74LS32.
4. Connect edge connector pin 23 (A4) to pin 2 of 74LS32.
5. Connect pin 3 of 74LS32 to pin 15 of IC2.



Anyone having any problems or queries with the interface please do not hesitate to contact me.

Acknowledgements

Many thanks to Bob Hall for his help with my 64k upgrade and for his help 'sussing out' the addresses for the interface. And thanks to Maplin for the original idea.

Alan Butler. 16 Barnston Green, Barnston, Great Dunmow, Essex. Tel. 0371 4234

TERMINAL PROGRAM FOR RS232 INTERFACE

The following is a simple terminal program which will enable you to access most bulletin boards. I haven't found one that it doesn't work on yet, bearing in mind that this program only caters for 300/300 baud, but it shouldn't be too difficult to modify it to work on other systems. The routine writing to and reading from the 6850 was written in machine code as it was found that basic was too slow and caused all sorts of problems.

Line numbers	Function
10-220	Sets up the machine code subroutine for writing to and Reading from the interface and checking status
230-450	User setting up procedure
460-540	Final go
550-590	Reset 6850 and set baud rate and word format
600	Jump to m/c subroutine as set up in lines 10-220
610	Return from subroutine only when there is an error that Requires resetting the 6850 and goto 590 to do that
620-640	User setting up procedure keyboard scan subroutine

5 'MODEM PROGRAM--ALAN BUTLER

```

10 CLEAR50,20000
20 RESTORE:CLS
30 PRINT @10,"MODEM PROGRAM"
40 DEF USR0=20000
50 DATA B6,FF,50,84,71,81,01,27,03,25,09,39,B6,FF,51,BD,80,0C
60 DATA 20,EC,BD,80,06,27,E7,B7,FF,51,20,E2
190 FOR LOOP=0 TO 29:READ MC$
210 POKE20000+LOOP,VAL("&H"+MC$)
220 NEXT LOOP

```

```

230 PRINT @38,"'WORD FORMAT' TABLE."
250 A$(1)="(7BITS)EVEN PARITY+2 STOP BITS"
260 A$(2)="(7BITS)ODD PARITY+2 STOP BITS"
270 A$(3)="(7BITS)EVEN PARITY+1 STOP BIT"
280 A$(4)="(7BITS)ODD PARITY+1 STOP BIT"
290 A$(5)="(8BITS)NO PARITY+2 STOP BITS"
300 A$(6)="(8BITS)NO PARITY+1 STOP BIT"
310 A$(7)="(8BITS)EVEN PARITY+1 STOP BIT"
320 A$(8)="(8BITS)ODD PARITY+1 STOP BIT"
330 FOR I=1 TO 8:PRINTCHR$(I+48);
340 PRINT". ";A$(I):NEXT I
350 PRINT@391,"PRESS ANY KEY 1 TO 8!":GOSUB 620
370 IF K$("<"1" OR K$(">"8" THEN 230
380 C=VAL(K$)
390 PRINT@103,"CODE SELECTED=";C
400 PRINT@162,A$(C):PRINT@354,"DOYOU WISH TO CHANGE CODES?"
420 PRINT:PRINT@426,"TYPE Y/N"
430 GOSUB 620
440 IF K$="Y" THEN 230
450 IF K$("<"N" THEN 390
460 PRINT@9,"PROGRAM DATA:-":PRINT@64,"-";A$(C):PRINT
480 PRINT"-SPEED @ 300 BAUD"
490 PRINT@192,"TO START THE PROGRAM PRESS ANY":PRINT"KEY.THE SCREEN WILL CLEAR U
NTIL":PRINT"DATA IS RECEIVED !"
520 PRINT@320,"DATA TRANSMISSION IS DIRECT FROM":PRINT"THE KEYBOARD."
540 GOSUB 620
550 FOR I=1 TO C:READ C:NEXTI
570 DATA 1,5,9,13,17,21,25,29
580 A=65360
590 POKEA,3:POKEA,C
600 AA=USR00(0)
610 GOTO590
620 K$=INKEY$:IF K$="" THEN 620
640 CLS:RETURN

```

Assembler version of machine code routine

For those who are interested or who may want to change it.

```

B6 FF 50 RS232S LDA $FF50 ;Get status
84 71 ANDA $71 ;Check status for
81 01 CMPA $01 ;Receiver full with no errors
27 03 BEQ RACIA ;Yes, display character
25 09 BLO GCHAR ;Receiver not full, get
;character from keyboard
39 RTS ;Go reset ACIA
B6 FF 51 RACIA LDA $FF51 ;Get character from ACIA
BD 80 0C JSR $800C ;Print character
20 EC BRA RS232S
BD 80 06 GCHAR JSR $8006 ;Get character from keyboard
27 E7 BEQ RS232S ;Any character ?
B7 FF 51 STA $FF51 ;Yes then output to acia
20 E2 BRA RS232S ;Go scan again

```

STRUCTURED BASIC...Bob Smith

This article is written in a hurry in reply to Paul Grade's plea in an earlier DRAGON UPDATE. I've been the owner of a fire-breathing 64 for only two weeks, so my experience is limited. To make matters worse, the Dragon Forth package had a bug in it, so I've had to work in Basic. This is no polished article on structured programming, neither is it an attempt to preach in favour of structured languages. It is more an attempt to provide the necessary tools that structured programming requires. If you enjoy sitting down and composing at the keyboard, then go ahead. If, however, part of the job is producing a program that may have to be updated or modified later, then you owe it to yourself to give it a whirl. The nice thing about structured programs is the ease with which they can be read without a prior knowledge of them. The Basic BASIC tools. The first thing to provide is a basic toolkit that will give us the means to build a program in a systematic and logical way.

Programs consist of three differing procedures:- (a) Left-to-right (top-to-bottom) sequencing. (b) Selection. (c) Repetition. Point (a) is easy. Only spreadsheet users have trouble with this one. It just means that when we have processed one sentence, we go on to the one following and process that one; Let's call it GOTO NEXT. Point (b) is harder. We not only have to make a selection, but we have to be seen making a selection. Several sentences spring to mind - IF.....THEN....ELSE...ENDIF - ON...GOSUB - ON...GOTO. Point (c) is probably the hardest. Having done or not done something, we have to do or not do it again. Sounds easy, but computers have a knack of complicating simple human operations, and anyway, admit it, we programmers all have a secret ambition to be the Queen of Hearts. Now, let us see what we need. Sequencing we do not have to worry about until we need to change it. BASIC ploughs on with its own inbuilt GOTO NEXT without our having to think about it. If you simply have to have it visible, then tack 'GOTO NEXT' onto each statement. You think this is a waste of time? Join the club. Selection is best done using the IF..THEN..ELSE..ENDIF construction. Unfortunately, BASIC does not support ENDIF so we must write our IF statement all on one line. Fortunately, Dragon BASIC allows between 250 and 254 characters per line, which gives space for at least 22 GOSUB calls where these cannot be avoided, remembering that the best rule is to have all your code repeated in place in sequence. Most selections are made from two alternatives, hence ELSE... but where several possibilities are present, table look-ups are to be preferred. For the present, we will just note this. If possible, selection should be made on the basis of whether a variable is set true or false. Avoid constructions where values are compared, e.g. do NOT write 'IF P=3 OR D<>7 THEN...' because you'll never remember what the values 3 and 7 represent.

Dragons do not allow direct setting of logical flags, but this is easily overcome by writing TRUE=1:FALSE=0 in the initial part of the program and thereafter writing P=FALSE:D=TRUE, etc. IF statements can then be written: IF P OR D THEN... It must be emphasized that GOTO statements should be avoided where possible, although they are practical and justifiable in certain limited circumstances. Often it will occur that a common finishing point is desirable. This can be cumbersome if all labels are studiously avoided.

However, it is desirable that all labels are explicitly named in the initial part of the program, e.g. REM label:1234; label:2345.

Our third procedure is repetition, or iteration, as it is usually called in computer circles. We have two ways of achieving this in Dragon Basic, namely:-

IF true THEN GOTO an earlier line number; FOR I=N1 TO N2.....NEXT I. To obtain a good structured program we should not use the first method, so this leaves us with only FOR..NEXT. To cover all our requirements in structuring our programs, we need to do two extra things not normally done by FOR..NEXT.

These are; execution of the loop an undefined number of times until something else happens, e.g. we find the end of our data; and a way of avoiding doing the loop at all if N2 in our example is less than N1. One way of doing all

these things is by using an IF statement with a sideways FOR..NEXT statement like this:- IF N2>=N1 THEN FN=TRUE ELSE FN=FALSE. ...IF FN THEN FOR I=N1 TO N2...NEXT I. The problem of indeterminate loops can be solved as follows:- IF FN THEN FOR I=1 TO 2:IF EOF THEN I=3 ELSE I=1:NEXT I. That concludes our first look at structured programming. Next time we shall take a look at a typical unstructured BASIC program and try to structure it, and go a little deeper into the use of logical variables (known as Boolean variables).

COMPUTER JARGON (TRANSLATED)

Expected this year --- Expected next year
 Expected early next year --- Expected sometime this decade
 Expected soon --- Expected sometime this century
 It's in the post --- Now you've complained we'll put it in the post
 We'll put it in the post first thing in the morning --- We'll put it in the post next week
 State of the art --- State of the art last year
 Sensational state of the art --- Five years old
 Extensive graphics --- Four pictures repeated ad infinitum
 Superb graphics --- I knew i'd find a use for my five year old sons old programs
 sensational graphics --- rotten graphics
 Adventure program by new writer --- five locations and three objects
 Graphics adventure --- Arcade games arn't selling so we're calling it an adventure
 All machine code --- compiled basic
 Available from major stores --- A chain store with four branches sells it
 Widely available --- it's stocked by a shop in Prestwick (That's near Ayr in scotland for those who don't know, who says this isn't educational)

Anyone got any more of these ?? Send them in, and if they're printable i'll stick them in....T.L.

THE END BIT.

Well here I am again, time for the waffle. Firstly, the deluge of material means that your bit may not have appeared yet, don't worry it's not that it's not good enough, they're all better than I could do, it's just lack of space and the need to fit the articles together in some sort of order you will all get there. Also the use of the word deluge does not mean that you should stop, if this happens then you will find that you are subjected to half a dozen pages of me moaning and I shall enlist Paul's help to bore you to death in an attempt to get more articles. I'm not going to blame He Who Must Be Obeyed, but halfway through this my 64 has decided to stop working, so I'm having to finish on the old faithful 32. Now I know why he needs that vodka!, maybe he'll send it if I ask nicely ?? Well maybe not. So that's it, the end of my first issue, I hope you liked it, if not drop me a line and tell me why not, but keep sending the articles to Paul in worthing. O.K.? Thanks. Now where did I put that scotch ??? Tim Lomas.....London.....August 1985

Chairman's reply to Editorial hint.

Dear Tim, I am glad that you are observing the Group staff motto.. "If at first you don't succeed, you're fired!", but you must appreciate that all requests must be submitted through the proper channels.

Editorial Vodka can only be provided for medicinal purposes, and must be applied for using Form 1995623877(a). Six copies of this form must be submitted, in person, to the Chairman at least 28 working days prior to date of requirement, and must be accompanied by a statement from a qualified veterinary surgeon or psychiatrist that, in his considered medical opinion, this form of medication is necessary.

This statement must be submitted on Form 666(b), in triplicate. Form 666(b) may be obtained by returning six copies of Form 1966253 (Application for the Issue of a Form).
 Signed: The Chairman.
