

# Dragon's Teeth



THE MONTHLY NEWSLETTER OF  
THE DRAGON CLUB AT THE DUNGEON

ISSUE 5, JULY 1983

## FEATURES

Ventures by Clive Gifford  
That Speed-up POKE  
New Games  
CoCo Conversion

## REVIEWS

'Flipper' (Microdeal)  
Arcade Games (Morrison)  
J.C.B. Sound Extension Module

## TIPS

## ZAP'S BIT

## COUSINS

## BOOKSHELF

## LETTERS

## M/C CORNER

## COMPETITIONS

## OFFERS

## NEWS

## VIEW FROM THE DUNGEON

We were all disappointed to find that the Cousins are to have the benefit of the 64K Dragon before we do and equally disappointed by the postponement of the D.D. disc drive until September. The two do go together, however, since the D.O.S. ("disc operating system" to those unfamiliar with the world of floppies) takes up too much memory for a 32K system to be worthwhile.

On this subject, we do have some news which could prove good news for those thinking about an upgrade. We take the view that many of those moving to 64K are not especially interested in the RS232 interface and as from late August (or possibly early September) will be offering a Dragon Dungeon 64K upgrade for around £25. More details of this in the August issue.

The Club is really starting to expand now, and in the Autumn, when we have more facilities and staff, we'll have to start planning an expansion in 'Dragon's Teeth.' Membership ranges through New Zealand, Malaysia, Iceland, the U.S.A. and (see Letters Column), we even have a Club Dragon down in the Falklands, if only temporarily.

To those of you who found the important piece on the now-infamous speed-up POKE missing from the last issue - our apologies! We pulled it out at the last minute, when we realised that there was more to it than we had thought. Apologies are also due to those who tried to make sense of Dominic Gill's M/C input routine, where the D.M. himself forgot to put in the "more than" and "less than" signs. Corrections are enclosed in this issue.

Finally (we have to keep this brief, since space is becoming an increasing



# VENTURES

by CLIVE GIFFORD

Adventures and adventure gaming have come a long way since Crowther and Woods wrote their first adventure on a mainframe computer. Since then the popularity of adventure games and the number of varied styles have increased tremendously. Certainly, adventures need not be of the classic variety, with monsters to fight and treasure to search for. Neither do adventures have to use commands such as 'GET KNIFE' or 'ATTACK WOLF' (there are many excellent adventures which have few such direct commands.) In my opinion, a simple definition of an adventure game is a game that includes the following:

- A number of locations.
- A method of moving between those locations.
- Objects to collect.
- Hazards to avoid.
- Some system of logic (even if the logic is not too good!), linking the locations and your actions together.

Many (indeed most) adventures also have an ultimate aim, be it to rescue a princess, kill the dreaded creature or some other vital objective. I must stress that this definition is my own, you may not agree at all and if this is the case, please write to me, I would be interested to hear from you.

The purpose of this column is to try to inform and advise any adventure-playing Dragon owners. In future issues, I hope to deal with reviews of specific adventures, while giving the 'stuck' adventure gamer some hints of how to get out of his predicament. I will also try to give some ideas and help for writing your own adventure games. What do I require from you? Just send in any hints or tips, whether they are concerned with playing a specific adventure or for writing your own. Conversely, if you have any problems with an adventure game, then send them in. I may not be able to deal with all of them, but I will do my best.

On the adventure gaming front, Rob Rickard of Ashford wrote to me explaining that he was stuck in an early part of Pimania. He was baffled by the location 'I can proceed, or at the base of your face'. He noted that by entering '1' he just returned to the previous location and that typing in 'chin' or 'neck' did not work either. Well, Rob, I suggest you listen to the earliest tune that you hear in Pimania, 'The Grandfather Clock.' There is much emphasis put on clocks in the game, so I suggest you type the number in at the base of a clock face - '6'. If there is anybody still out there who has not managed to get past the beginning gate in Pimania (I doubt if there are that many), then type 'PI' and enter the game. Pimania was converted from a computer with a **TT** key and the current initial clue is slightly unfair.

It would be nice to hear from people concerning their views on Wintersoft's 'Ring of Darkness' as well as any other major adventures available for the Dragon.

One final plea. I will be starting soon an adventure book for the Dragon and am looking for reasonable length adventures as well as any other games that you have written. If you think that you may be able to help (anything

considered), then write to me enclosing a copy of your program(s) and neat documentation. I promise to return any tapes not used and will reply as quickly as possible.

To conclude, here is a brief description of a location that you may wish to include in your own adventure.

'You are in a cave of awesome size, with a narrow ledge to your left. Just in front of you lies a primitive table, with a smouldering candle resting on the table surface. The light in the cave is getting worse, as the candle light gets more and more faint. In the distance you can hear the fluttering wings of giant vampire bats. The only exit is along the narrow ledge, which requires good balance. The bats are getting nearer.....'

In this situation, if the adventurer is carrying a torch he may be able to warn off the bats, which only come out if the cave is dark. Similarly, he can try to rekindle the candle by some means. If these options are not open to him, then he may choose to stay and fight (in which case, if he lost, he could be carried off into another part of the adventure, as an alternative to death) or try to escape along the narrow ledge. As good balance is required and any large objects carried should probably be dropped before moving along the ledge....

These are just some of the many options that could be built up around this one location. Until next month, Happy Adventuring!

\*\*\*\*\*

#### VIEW FROM THE DUNGEON (Cont'd.)

problem), we apologise to all of you who have either written in and not had your letter printed or who have sent in a query which has not been answered. We are trying our best to catch up with correspondence, but you have no idea just how many letters from out there pour onto our desk everyday. We're not complaining, since we want to hear from you, but bear with us if we don't dash off an answer immediately.

Keep on Dragon-bashing!

\*\*\*\*\*

#### BACK ISSUES

Back Issues of "Dragon's Teeth" are available at 50p. post free (except for Issue 1, for which the charge is 30p.) Alternatively, members may opt to backdate their subscriptions to an earlier issue.

# REVIEW

'FLIPPER' (Microdeal)

by Brian Boyde-Shaw

If you are fed up with draughts and chess is just not your cup of tea, then play Flipper. As with draughts and chess, Flipper is a board game for two players requiring some degree of logic and cunning, hence the coloured picture on the insert - two orientals, with the words 'inscrutable oriental electronic strategy.' Admittedly, the game is electronic and you need to plan strategically, say four or five moves ahead, but whether its 'inscrutably oriental', I couldn't say. The instructions are sufficient and to the point but, as with most board games, playing the game illustrates much more what you can do and what you can't, than lists of rules.

Typing CLOAD loaded the game and thereafter loading presented no difficulties - with relief, after a few seconds, S changed to F and the program was ready to RUN in about a minute.

Playing the game presented 3 possibilities - you playing a live opponent - you against the computer - or the computer playing itself. If you instruct the computer to play, either itself or you, then it plays with one of four levels of expertise. These range from level 0 - 'I won't really try to win' - to level 3 - 'If you win it will be a miracle.'

Not wishing to perform miracles, I played the computer at level 0, just to get the hang of the game and to see how difficult it was. I could, of course, have let the computer play itself and just watched. If you're not very good at board games or have not much idea of how to play, then this is an excellent idea and quite entertaining. After a few games you find yourself trying to anticipate the next move or moves; which, of course, is the whole point of the exercise.

Anyway, back to my game - I lost - the computer won hands down. But, after three or four games I began to get the hang of the 'logic and cunning' and won one. The most important aspect of the whole game is that it is not won (or lost), until the last move is made. Why? Because the object is to capture your opponent's pieces; not to remove them from the board, but to change their colour to your colour, by flipping them - hence the name, Flipper.

There are two colours for the pieces, red and green, and 64 possible positions, in an eight by eight matrix of squares. At the start, both you and your opponent have 2 diagonal squares each in the middle of the board, so initially you can only flip one, and colour in another square, the one you landed on. You can move in any straight line, across, diagonally or up and down, but you cannot move over your own squares or a space. You can also capture squares from two directions at once if the line of squares happens to end on the same blank square. I advise you to leave the sound of your TV at a minimum, to avoid the repetitive ding and dong that occur after each input from the keyboard.

If at any point you decide that a move can't be made, then you input P, the computer checks this decision and if a move is available answers 'No.' Whereupon you will have to consider things a little longer and deeper, until you find the move you can make. Better I feel to have not had this little routine in the program and allowed the advantage to have passed to your

opponent. Similarly, any illegal move you might have made is again answered with a 'No.' To continue the game, if a legal move is available, it must be made. There is no passing and huffing allowed, I'm afraid.

The program is written in Basic and therefore runs quite slowly, but being only a board game this is not too important.

It is a good game and one I enjoyed playing. I shall play it again, which is, after all, an important point when you are forking out £8.00.

Presentation.....	6
Entry Complexity.....	10
Play Complexity.....	8
Play Balance.....	9
Interest Level.....	9
Overall Rating.....	8

## TIP

(From Mr. John R. Ford, 77 Arundel Drive, Harrow, HA2 8PN)

The following information may be of use to other Dragon Users who, like myself, use the Dragon to handle Files, etc. and have problems as detailed below.

### FILE HANDLING ON THE DRAGON

When working on a program on the Dragon to deal with Files, mistakes are often made. If you receive an error report of 'AO' the Dragon Handbook, Page 143, suggests switching off the Dragon and switching on again. If you have no copy of your program this is a trifle annoying. But, in fact, the way round this is quite easy: simply type 'CLOSEE-1', followed by the File name you have used. Peculiar things may happen and you may get a 'TM' error, but when you run the program again it will not give 'AO' error.

The second part of my notes concerns the recording of strings as a File. If you have tried to do it you would have found that any spaces before the first character would have been deleted. This is correct according to Dragon, but is useless if you have to reformat each line manually on playback. The way round this problem is to change the first character of the string from a space (if it is one) to a marker character before recording and change it back on playback. The following two lines may be incorporated in a program to do just that. (I have used L\$(E) as the line of text I am recording in my example.)

```
1 To insert Marker
  IF MID$(L$(E),1,1)=" " THEN MID$(L$(E),1,1)="↑"
2 To delete Marker
  IF MID$(L$(F),1,1)="↑" THEN MID$(L$(E),1,1)=" "
```

It is highly unlikely that a string would start with " " but if you intend to use it then another may be substituted. To use the Marker put Line 1 before the 'PRINTE-1' statement on recording (and Line 2 after the 'PRINTE-1' if you want to do further work on the text) and then put Line 2 after the 'INPUTE-1' in the playback section.

I hope this will be of use to Dragon Users as it further extends the use of the machine.

(£15 worth of software of Mr. Ford's choice on the way. - D.M.)

# REVIEW

SMASH! ZAP! BOOM!

A review of several Morrisons Arcade Games by Clive Gifford

With squinting eyes and aching hand, I drag myself away from the Morrisons arcade game tapes to write this review. My word, they are addictive! J. Morrison have been programming the 6809 processor for some time before the advent of the Dragon and now have a good range of software available, encompassing both serious and games programs. Following their recent successes, they are expanding and have become a limited company.

The two cassettes reviewed were the Dragon Games Tapes 2 and 4, both offering 3 arcade games written in machine code, for a very reasonable price of £6.95. The cassettes are packaged simply but adequately in red cassette covers and the documentation is good.

Dragon Games Tape 2 takes a long time to load but contains all three games in a menu-driven program. By pressing the correct number you can access any game and when you wish to change games, it is simply a matter of typing N to the prompt, 'Another Try' and choosing another game to play. This is an excellent idea which, naturally, can only be used for fairly short games but does give you the opportunity to chop and change between games without having to reload. The 3 games can be described as arcade standards; they are - Invaders, Snakes and Lander. At the mention of Invaders I can hear many a yawn, but this is good fun to play with 9 skill levels, bonus UFO, shields, high score and a large screenful of mean invaders ready to destroy you. A higher skill level means more bombs dropped on you, not a faster speed. At the beginning of the game, I thought the invaders rather pedestrian in their movements but, as the game progresses and you hit more, they start to speed up until there is just one alien left streaking across the screen.

Snakes is a more interesting concept which places you in a garden full of mushrooms, waiting for the snakes to appear. You must try to kill the snakes by shooting them in the head as they wind around the screen. You move round the screen using the arrow keys and fire (you only fire upwards) using the space bar. The snakes are naturally out to get you, so beware! The mushrooms are obstacles for both you and the snakes. Their actions are unintelligent, in that they do not immediately chase you, but they do cover a lot of ground quickly and, with a possible 12 snakes chasing you at the same time, the game presents a daunting challenge to most players. Once I managed to corner the snakes and by repeatedly pressing the space bar managed to clock up a score of 8910! Beat that, arcade buffs!

Lander is, as its name suggests, a 'land the spacecraft on the planet' game but this is in graphics and does present a challenging task. You must try to guide your craft with your 4 directional retro-rockets to a safe landing on one of the 2 bases. There is quite a strong 'pull' on your ship and care has to be taken with the rockets as the increased momentum may force your ship into the rock face. I liked the sound of the ship which increased in tempo as the ship moved faster and visa versa.

These games are not up to, say, a Microdeal game, which would cost £8.00 for a single program, but at a pound less for 3 games on one cassette, this is excellent value for money. The games are all enjoyable to play and are

certainly addictive.

Presentation.....	7½
Entry Complexity.....	9
Play Complexity.....	8
Play Balance.....	8½
Interest Level.....	9
Overall Rating.....	8½

Dragon Games Tape 4 has three traditional games, two of which I have never seen before. Unlike Dragon Games Tape 2, these games all load separately and are called Pterodactyl, Torpedo Run and Hornets. No joysticks are needed for the games and this is the same with Dragon Games Tape 2. I would have liked to have seen a joystick option on several of the games, particularly Snakes on Dragon Games Tape 2 and Pterodactyl on Dragon Games Tape 4. Still, you can't have everything.

Torpedo Run is a Dragonised version of an old favourite, where you must launch your torpedoes at the frigates, destroyers and battleships that sail across the screen. This version has a good 3D perspective and realistically moving torpedoes - 99 of them in fact. Morrisons have chosen to use PMODE 3,1 for this game with the buff/orange/magenta/cyan colours and this has paid off. Pterodactyl, on the other hand, uses the highest resolution available with white characters on a black background. You are in control of a detailed figure, whose aim is to move round the screen destroying all the eggs. If he takes his time, then some of the eggs start to change into pterodactyls, which lay more eggs but who also chase after him. Your man fires in three directions but not down. The game is pretty novel and very hard to attain a good score of say, 1,000.

If you thought Pterodactyl sounds hard, then try Hornets. This is very loosely based on galaxians, with a slowly accumulating band of large hornets flying round the top of the screen. When they reach their maximum number (5), they start to swoop down and attack you at the fastest speed imaginable. These hornets increase in speed until you can only rely on luck to get you through a complete wave. You just have time to gather your senses together before another wave starts. This game is amazing - I have never seen anything quite so difficult and this must be a great challenge to the arcade maestro. Oh, I forgot to tell you - when they swoop down, they change to marauding moths and rain bombs down at you. Impossible!

All three games have a high score feature, are easy to learn to play but take a long, long time to master. To me, all good games should be like this, taking only a little while to understand the games rules but taking many enjoyable hours to master. After all, this is how chess has been described.

Looking at each of these games separately, I rate them highly, but when you realise that they all are on one cassette for a mere £6.95, you start to appreciate the value that Morrisons are giving. There are a few reservations (I would have liked to see different skill levels, particularly on Hornets), but in general these programs are very good.

I would like to conclude by saying that there is no better value arcade games tape for your Dragon - simply excellent!

Presentation.....	7½
Entry Complexity.....	9
Play Complexity.....	9
Play Balance.....	8½
Interest Level.....	9½
Overall Rating.....	9

Morrison's have recently released two tapes with a single game on each. Entitled 'Bonka' and 'Vultures', the games are 100% machine code and were designed to end the Microdeal supremacy over arcade games.

A recent trend in Dragon software has been to better quality recordings. These tapes are no exception and loaded first time. Bonka comes with a "screenview" on the inlay card and Vultures has a rather morose-looking vulture. The cassettes came with several sheets of instructions, though the actual game descriptions are within the programs.

The first program I looked at was Vultures. This game has strong connections with Galaxians and involves you shooting both the vultures at the top of the screen and the more dangerous and valuable ones that swoop down at you. If you manage to clear a screenful then the eggs at the very top of the screen hatch out into mutant vultures that are meaner, faster and more difficult to hit. The game starts with a colourful title page and you are given the choice of 3 speeds. This is the first Morrison game that uses joysticks, a move that should have been made earlier in my opinion. I would have liked to see the option for joysticks or keys in all their arcade games. Vultures is written entirely in machine code and is fast and smooth. I did not like the movement of the vultures at the top of the screen - it seemed a little cluttered and I also would have liked to see bigger rockets which you fire from your base. Plus points on the game were the mutant vultures which 'home' in on your moving base and are very difficult to get away from and the effect when a vulture gets you, which sounds like the flapping of a large bird's wings. The game features on-screen scoring and a high score table and is a little cheaper than many of the arcade cassettes at £6.95, but I did not find it very addictive to play. It's a well-written game, but seems to be lacking something.

Presentation.....	7½
Entry Complexity.....	8½
Play Complexity.....	8
Play Balance.....	7½
Interest Level.....	7
Overall Rating.....	7½

Bonka, on the other hand, is one of the best games I have seen for the Dragon. It has close connections with the rarely-seen 'Panic' arcade game but this is a superior version in every way to any others I have seen. You control a very lifelike man who moves around the screen walking along the levels and up and down the various length ladders. In his hand he carries the ultimate weapon, the "spacehammer", with which he can knock holes in the levels and lure the nasty Blue Meanies into them. Once they are in a hole, he can 'bonk' them on the head with his hammer and watch them fall. The game is not quite as simple as that. For a start, the Meanies move with some speed and they do not always fall into your hole. If they do, then they are only there for a limited amount of time before they pop out and start to chase you again. If a Meanie touches you then you lose one of your lives. To add to this, you cannot hang around, since you are running out of oxygen! If you manage to clear a screenful of Meanies, then another screenful appear, with an extra Meanie out to get you!

The way to score the most points is to dig a succession of holes, one under-neath the other. Then, if a Meanie falls in one of the top holes when bonked, he will fall much further and you will receive more points. You cannot dig a hole right next to a ladder and you cannot dig a hole on the bottom level either. To top that lot, you have a choice of 4 speeds (4 is virtually impossible) and you can choose the number of Meanies to start with (between 1 and 9.) There is also on-screen scoring and a high-score table.

This game is brilliant - I enjoyed playing it very much and found it extremely addictive. The family's and friends' views on the game were unanimous - Microdeal, watch out! It's worth the price (£7.95), with my only reservation being the presentation and the use of keys. I would recommend it highly!

Presentation.....	7 $\frac{1}{2}$
Entry Complexity.....	8 $\frac{1}{2}$
Play Complexity.....	9 $\frac{1}{2}$
Play Balance.....	9 $\frac{1}{2}$
Interest Level.....	9 $\frac{1}{2}$
Overall Rating.....	9+

## ZAP'S BIT

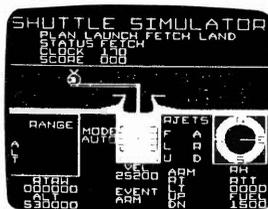
That "King" score in COOLANS set me back, how does they do it? I connected up the Dungeon modem to the nearest BBS (electronic Bulletin Board Service), which happened to be Bob Rosen's New York service, and got the latest U.S. CoCo scores.

Cor! C-Pede 2,745,982; Planet Invasion 286,075; Space Race 77,075; Storm 840,010: Four people over 1 $\frac{1}{2}$  million on "The King", etc.

What intrigued me though was the 8,710 on Alcatraz II - didn't know anyone could survive that long. And what about Phantom Slayer? It's a measure of the game that a score of only 180 gets into the "top five" Hall of Fame. Now surely someone in the U.K.'s done better than that.

To all of you out there starting on my favourite PAC-type game, Programmers' Guild's PAC-DROIDS (you know, the one with spaceships instead of gobblers), please note. You only have to rack up 28,000 to get into the U.S. Hall of Fame.

One final score (which worries me) is the initial top-score batch for 'Space Shuttle' - not one over 600! I'm searching the Dungeon chests for a book on flying!



# REVIEW

J.C.B. SOUND EXTENSION MODULE by Ed. Aird

Although the BASIC SOUND and PLAY commands for the Dragon are extremely useful and easy to use, they are not as satisfying in their range of tones and special sounds as those available on many of the recently produced home computers.

The Sound Extension Module (SEM) is a three channel sound generator which can produce, by way of the Dragon, chords and harmonies, thus creating more impressive and authentic sound effects than before. The Module is based on a well proven and popular sound chip, the AY-3-8910.

The Module is very easy to use, as it does not require the keying in of PEEKS or POKES. It uses a new command (in BASIC) called 'MUSIC.' One of the advantages of the module is that all notes produced whilst playing music are timed independently, irrespective of what the Dragon may be doing. This means that graphics can be given a musical accompaniment without being noticeably slowed down.

MUSIC COMMAND This is the new BASIC command which is used to produce three different effects. It is used with string variables to produce musical notes; with single letter variables to produce special sound effects; and with letters and strings when using the input/output ports.

For playing music, the string which is going to represent a particular note, must always be specified completely before it can be played. It must be of the form "C3//", where the letter represents the note of the scale, the digit (from 1 to 5) specifies the octave and the number of strokes (from 1 to 20) indicates the length of the note; each stroke lengthens the note by about  $\frac{1}{4}$  sec. Thus, if a three note chord is to be played, it must first be specified, e.g. A\$="C3//": B\$="E3//": C\$="G3//", and then it can be played by the command: MUSIC A\$ B\$ C\$.

This appears rather long-winded at first, but this is a versatile approach and becomes easier to use, particularly when used by the technique recommended by the author (i.e. READ and DATA commands.) My only reservation of the rather attractive organ-type music produced is that - from the evidence of the example given - pauses need building into the music to produce the correct tempo. However, this is relatively easy and does allow for the correct tempo and rhythm to be produced when graphics are used as well. Other features of the music command are:

- a) volume setting - from 0 to 15
- b) "voice" control - a choice of vibrato, piano and space-age, as an alternative to the organ.
- c) percussion effects - bass drum, tom-tom drum and snare drum and cymbals.

For special sound effects, the SEM is capable of producing its own effects (generator-controlled) or of working with the 6809 to produce processor-controlled effects. The generator-controlled effects are excellent; our favourites are "explosion" and "waves", but there are also "gunshot", "machine-gun", "car-horn" and "ping." Many of the processor-controlled effects are also very good, particularly "falling bomb", "car starting" and "crash." For games which contain shooting spaceships or aliens, there are "laser zap" and "photon torpedo." For pac-man type games there is "munch". There are also "siren" and "American siren." I have yet to see a use for

"birds" or "wolf-whistle" but I'm sure someone will find these very useful in some special cartoon! For users who are becoming familiar with machine-code, the information is given to change the various parameters, e.g., tones used, envelope shape and envelope period, which control either GCE's or PCE's.

Turning to Input/Output control, the SEM also includes the added bonus of two 8-bit Input/Output ports, which are accessible from within the MUSIC command. The details of the connections are given so that they may be used for the control of or input from external devices, such as a relay control system or a thermostat operating the central heating. A demonstration program is included to illustrate the use of these ports.

Conclusion As a complete package this module definitely enhances the capabilities of the Dragon. The tones produced by the MUSIC command are good. It is a pity that a fourth channel could not have been made available for 4-part harmony and it would be interesting to have more "voices" available. However, no doubt the user who becomes familiar with machine-code should be able to choose his own.

The module is rather expensive at £34.95, but this is a long term investment, unlike some of the games which we buy fairly frequently and without much hesitation. I would particularly recommend it for those interested in adding sounds and music to graphics for games or entertainment and the Input/Output port options will bring a new dimension to technically-minded Dragon users for control circuitry.

## LETTERS

### APPENDING BUGS

This tip may help many owners who have experienced severe frustration whilst attempting to append programs. Whilst appending two programs which included high-resolution graphics (DRAW, LINE, CIRCLE, PUT and GET) and sound (SOUND and PLAY), I found that the second program developed the following bugs:

1. SOUND commands were acted upon but PLAY commands were ignored (one was greeted with silence of the correct length.)
2. High-resolution graphics were scrambled all over the screen.

When run separately, both programs were faultless. After extensive experimentation, I discovered a very simple way of de-bugging the system. Simply insert a RUN statement thus:

```
..... 900 REM END OF FIRST PROGRAM
        1000 RUN 1010
        1010 REM START OF SECOND PROGRAM.....
```

I cannot explain why it should work, but it certainly does wonders for scrambled graphics and muted music. The aforementioned bugs sometimes develop in long programs which are written as discrete programs and not appended. The cure works equally well for these.

Dr. Jeffrey L. Bidwell,  
50 Nightingale Gardens,  
Nailsea,  
Bristol BS19 2BH.

P.S. Your 'Appending' article, P.17 of June's D.T., has proved of immense value.

## PI-MAD!

I thought I would put pen to paper again and invite a hail of abuse as I criticise what they at least would like us to think of as the ninth wonder of the world, AUTOMATA.

I had the misfortune to buy from the Dungeon two cassettes marketed by Automata, which will be the last two I will knowingly buy from this company. This is not because I consider the contents particularly bad - though neither was as good as I had hoped - but because of the standard of reproduction of the tapes.

Over a period of several days and using 9 different cassette decks from various sources, I finally managed to get each program to load. Ignoring Automata's warnings of impending imprisonment, I have copied the basic sections on to tape. As Pimania had a machine code section, my hi-fi decks came into play (and indeed record) as I copied the tape direct for this section.

It was at this point that I discovered why the tape had caused so many problems. The recording contained such a devastatingly loud hum that it was playing havoc with the loading. Fortunately, my hi-fi equipment has some useful features, like base and treble filtering, and I was able to obtain a copy which now loads every time. I suppose I spent around 12 hours in attempting to load the programs, changing cassette decks and re-recording the machine-code section.

This may be why I find the actual game of Pimania less than satisfying, although I think the 'doodle' tape is well worth the money. If I could be bothered, I would tell Automata exactly what they could do with Pimania although, judging from their inane advertisements in Popular Computing Weekly, it is doubtful that they would understand. It is a pity that they cannot be bothered to expend some of their excess energy in quality control of their product. The really infuriating part was that the catchy tune on side B was perfectly recorded where, of course, it didn't really matter.

Turning to a happier note, you may recall I mentioned J Morrison (Micro)'s chess program in my last letter. Well, I returned it to them with a letter of explanation and by return of post received DGT2 (which I had suggested as a replacement) and much to my surprise a credit note for the difference in price. This is one company whose future software I shall be watching closely.

May I recommend a program for you to stock in your adventure series. It is called "Don't Panic" by Peaksoft and whilst I have not delved very deeply yet, it appears to be a cassette containing two really testing adventure games.

T. London,  
9 The Heath,  
Chaldon,  
Caterham,  
Surrey CR3 5DJ.

(We think that Mr. London is somewhat hard on Automata, since it is quite impossible to check all tapes before despatch. One does get landed with a faulty batch now and again, the fault lying with the recording studio. We, ourselves, have had all manner of odd recordings, but to identify them we would have to have staff loading and checking all day. All that one can do in viable commercial terms is to ensure that a customer who receives a bad recording receives an immediate replacement -

and this is normally checked before despatch. Equally, Automata will replace faulty tapes without question - we don't know of a reputable software house who doesn't.

It might be worth mentioning - although obviously not the case with Mr. London - that of the "faulty" tapes the Dungeon have returned, something like 75% load first time on our own equipment! Makes you think. - D.M.)

#### ADVENTURE PROBLEMS 1

Thank you for the June issue of Dragon's Teeth. I particularly enjoyed reading the letters, so I thought I'd send you one myself.

I was particularly interested by Trevor London's comments on Madness and the Minotaur, which has been driving me round the bend too - I haven't succeeded in learning even the first spell yet. It was the first Adventure program I bought and has so far put me off buying any others....would anyone care to swap it for an adventure they've completed? (preferably an easy one.)

A word of advice to all the disenchanted owners of J. Morrison's chess program - the Dragon Data cartridge does put up a good fight against a reasonable club player (my husband, not me - I can't beat it even on level 1.) Why don't you stock this? I can quite understand you rejecting some of Dragon Data's other offerings, but this one really is worth having if you're into chess.

A couple of quick book reviews....'The Working Dragon' is useful if you want to learn how to construct a filing program, though I thought the rows of asterisks decorating the listings and the aesthetically unpleasing (to me, at least) coloured boxes decorating the titles on screen did nothing to improve David Lawrence's versions - and his education programs suffer from all the faults described in your editorial, besides being extremely arduous to set up. I was pleased to see that you don't stock Langdell's '35 Programs for the Dragon 32', compared to which any other book would seem tremendous. 'Enter the Dragon' is really good if you have the time and patience to type in all the listings.

Finally, I hope Hilary Robinson will be reassured to hear that I kept my tapes on top of the TV for several months without them coming to any apparent harm.

Margaret Norman,  
101 Narbeth Drive,  
Aylesbury,  
Bucks.

(Frankly, we don't rate 'Madness and the Minotaur' - there are too many random elements to make up a good adventure. Suggest you get Clive Gifford to put you onto a good "beginners" program. Or try the classic 'Ring of Darkness', where you can keep on exploring even if you do get immolated for the twentieth time!

Quite agree about D.D.'s chess program - it's excellent value for money.  
- D.M.)

### ADVENTURE PROBLEMS 2

I am having trouble with the Microdeal Adventure 3 - Williamsbourg. I have managed to get the book of organ music, map of maze and the silver crosses, but cannot progress any further. Can any readers of "Dragon's Teeth" help?

A. Jaffe,  
26 Old Hall Road,  
Salford, M7 0JH.

### ADVENTURE PROBLEMS 3

I sympathise with your reader L. Compton, who is battling with Madness and the Minotaur. I, too, had the same frustrations and in desperation rang Dragon Data to find out how to use my lamp. The command is apparently "Lamp on", which at least allows you to get down into the other three floors, not to mention the maze and find the MUSHROOM, which is so important for the start of the game.

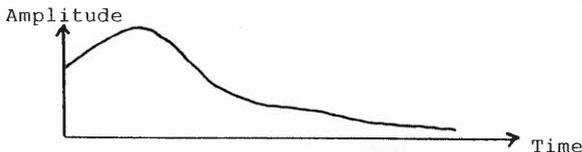
I am at present trying to finish off Dragon Data's new adventure "El Diablero." I have battled right through this adventure to the point where I confront the Sorcerer with the means to destroy him, only to be told "If you don't say my name, you are dead." Believe me, I have no idea what his name is and nowhere can I find a clue. If I get really desperate I hope one of your readers may be able to help me. Thank you again.

M. Maloney,  
32 Beverly Road,  
Liverpool L15 9HF.

(These letters and a number of others led us to set up an Adventure Column, which you will find elsewhere in this issue. From hereon, Clive Gifford will be the contact and central point for adventure queries. Write to him c/o The Dungeon. - D.M.)

### DRAGONSOUND

Since I last wrote to you I've been spending some time trying to find ways of using good sound effects in machine code games without unduly disrupting the flow of the program. The enclosed listing is my latest attempt which, incidentally, I am very pleased with! The program is based on the sub-routine 'VORHAUS', which generates a blast of white noise for a given duration (PERIOD) at a given amplitude (AMPLITUDE!) The 'quality' of the white noise is dependent upon the 'quality' of the random numbers produced by RNG. Using VORHAUS, it is possible to build up sound envelopes by varying the amplitude over time. To use VORHAUS, you pass a two byte value into PERIOD and a one byte value into AMPLITUDE - the closer to 127 it is the quieter is the blast of white noise. In the example program, the envelope has a sharp attack, with a little sustain and a slow release; graphically it might look something like this:



If you poke around with it a little yourself, you can very easily create a wide variety of different effects.

To include a sound effect in a game without having to 'hang it up' whilst the program's playing out the envelope, you need to place calls to the 'critical' parts of the program (i.e. read keyboard, joystick, move characters, etc.) at certain strategic points in the sound generating routine, for example, in VORHAUS itself. However, this is likely to alter the sound slightly, but it would only require a bit of experimenting to get the right effect.

Adrian Jones,  
55, Bromwich Rd.,  
Woodseats,  
Sheffield.

```

10 *ORG&7000
20 LDD&112:STD STORE
30 .ATTACK LDD#40:STD PERIOD:LDA#20:STA AMPLITUDE:JSR VORHAUS
40 LDA#10:STA AMPLITUDE:JSR VORHAUS
50 LDD#150:STD PERIOD:CLR AMPLITUDE:JSR VORHAUS
60 LDD#10:STD PERIOD
70 .SUSTAIN JSR VORHAUS:LDA AMPLITUDE:ADDA#4:STA AMPLITUDE:CMPA#40:BLS
                                                    SUSTAIN
80 LDD#20:STD PERIOD
90 .RELEASE JSR VORHAUS:LDA AMPLITUDE:INCA:STA AMPLITUDE:CMPA#127:BLS
                                                    RELEASE:RTS

```

```

100 .VORHAUS LDY PERIOD
110 LDA AMPLITUDE:ANDA#&FC:STA&FF20
120 LDA&FF23:ORA#8:STA&FF23
130 LDA&FF01:ANDA#&F7:STA&FF01
140 LDA&FF03:ANDA#&F7:STA&FF03
150 .BLAST LDB&FF20:COMB:ANDB#&FC:STR&FF20
160 LEAY0-1,Y:BNE AGAIN:LDA&FF23:ANDA#&F7:STA&FF23:RTS
170 .AGAIN JSR RNG
180 .DLAY DECB:BNE DLAY:BRA BLAST
190 .RNG LDD STORE:COMA:TSTA: BNE A1:LDA&113:COMA
200 .A1 TSTB:BNE A2:LDB&112:LSLB
210 .A2 MUL:COMB:SUBD STORE:ADCA&113:STD STORE:RTS
220 .STORE *RMB 2
230 .PERIOD *RMB 2
240 .AMPLITUDE
250 *END

```

#### USR BUGS

What's this I keep reading about bugs in the Dragon's ROM when using a USR call?! (June D.T., Pg. 11.) You can chase those bugs away if you get your syntax right! (On my Dragon, at least!)

I've found you can define the calls easy enough, e.g., DEFUSR0=32000:DEFUSR1=32500 ETC. but when making the USR call you MUST use a TWO DIGIT No. beginning with a 0, e.g. A=USR01(0):X=USR03(0). I've tried using all ten USR calls and they all work correctly using this method.

I hope this will be of help to other Club Members for their M/C routine.

Robert Westwood,  
16 Bevington Road,  
Aston,  
Birmingham B6 6JB.

### APPENDING VARIATIONS

We have a query (we are both only under 3 months in the game, so please excuse the elementary nature of the question.)

If you have two programs stored on tape, is there a procedure for loading one program as (a) subroutine of the other  
as (b) addition to the other  
as (c) an insertion into the other after the first program has been renumbered.

I think other novice users would find the answer helpful. Perhaps you can find room in your magazine.

P.C. Asbury Smith,  
73 Guinness Court,  
Lever Street,  
London E.C.1.

( - (a) is fairly straightforward in that a GOSUB call in the appropriate place will jump to the second program, which should be renumbered accordingly and the final command RETURN added. (b) was explained in the Appending piece in June's D.T. We are not quite sure what your intention is in the case of (c), but, assuming you simply want to slot one program into another then three RENUM commands would do the trick. Append program two onto program one, making sure that a wide gap exists between the final line number of program one and the first line number of program two. This is to avoid overwriting in the next step. Now renumber the section between the place you want to insert and the end of program one, starting at a line number higher than the sum of the last line before the "gap" and the number of lines in program two. Now renumber the lines of program two to "fill the gap" and the whole section will move accordingly. But why bother? Why not just use the GOSUB routine? - D.M.)

### FALKLANDS 32

A note to let you know that this 'military Dragon' has moved to this new address, i.e. British Forces, Falkland Islands. (You'll never again think Derbyshire is bleak if you've seen this place!)

Because I am only here for a short time (Hooray!) it makes more sense for you to continue to send Dragon's Teeth, etc., to Bicester.

Looking forward to hearing from you.

W01 G. Mead,  
HQ BFFI,  
BFPO 666.

P.S. In case you were wondering - Yes, I did bring my computer 8,000 miles with me (but haven't had a spare half-hour in the past 3 weeks to play with it.)

(Nice to think of a D32 flying the flag in Port Stanley! - D.M.)

## CoCo COMPATABILITY

Thank you for a most interesting club letter, but wouldn't it be time for you to expand a bit with more than 3,000 members? There is, though, one thing which I miss very much. A TRS-80 CC/Dragon 32 software compatibility chart. On the American market there are hundreds of games and utilities available for the Color Computer which I'm sure lots of Dragon-owners are just dying to get too. If somebody (you?) could try running some of those programs on the Dragon and then tell the rest of us which worked and which didn't, I know that would be appreciated. That again could make it possible for the DD to extend its stock of high quality programs for the Dragon. Who wouldn't like to be able to play games like Breaktru', Poltergeist, Zaxxon, Trap Fall, Protectors and Wormhole on the Dragon without having to wait half a year before Microdeal or Salamander or any of the other British Software houses sign contracts with the American manufacturers?

I would also be glad if you could advise me on any easy-to-understand book on basic m/c programming.

Finally, I would just like to recommend some joysticks that I ordered from USA. They are called the WICO Famous Red Ball joysticks. Though expensive as they might be, they are excellent quality and far superior to any other joysticks available for the Dragon. I easily make 25,000 on Planet Invasion. Apart from the price, I find they have only one minus; they aren't linear, and that means you can't use them will all games. I have found they don't work with Katerpillar Attack and C-pede (which by the way is B/W only.) They work well with the rest of my collection of games software, so it really isn't a big problem.

Halvor R. Johansen,  
Colletts gt. 39c,  
Oslo 4,  
Norway.

(Give us time Halvor, we will expand D.T. in due course. Relatively few of the CoCo programs run on the Dragon without conversion - see article elsewhere. As far as a suitable m/c book is concerned, we are still awaiting '6809 Assembler.' See 'Bookshelf' information. - D.M.)

Dear Dungeon Master,

I would like to first introduce myself. My name is Craig Hanna and I am the Vice-President of the Los Angeles Color Computer Users Group. We are the largest meeting-based group in the United States.

As you know, the TRS-80 Color Computer is a work-a-like to the Dragon. We are, as a group, interested in trading information with other clubs similar to that for the CC. I read of your group in the Dragon User magazine that I subscribe to. We thought it would be very interesting if we could exchange newsletters. Ours has been called by the editors of many Color Computer and TDP-100 magazines as the best newsletter for the CC in the States. We would very much like to trade information with your group.

We meet the third Saturday of each month and have approximately 100 members who attend from all over Southern California. At the last

meeting we had 40 systems brought to it. Steve Bjork is a member of our group who, as you may or may not know, is the author of such games as Zaxxon, Sands of Egypt, Megabugs, Clowns & Balloons, and Shooting Gallery, all of which are for the Color Computer system. You may have seen or will be seeing these programs soon for the Dragon. I am not trying to blow our horn, but simply inform you of our organisation. One of our members is currently working on the disk operating system for the U.S. version of the Dragon 64.

We are also planning with the Color Computer Magazine the first West coast Color Computer convention. This international convention will be held the first weekend in November and will be called the Color Computer Exposition '83. As far as I know, you are the first in the U.K. to hear of this convention. The convention is not at all solely for the Color Computer. It will feature the new Color Computer II, the TDP-100, UK's Dragon systems and the U.S.'s Dragon 64, all of which will be represented at the Expo. Even the new Japanese version of the Color Computer (whose name eludes me.) We would like to know of the interest in our convention here in California. If there seems to be a lot of interest, but not many from the United Kingdom can come, we will be considering planning Dragonfest '84, to be held in March of 1984. We would be interested in working with your Club Members with this project if there is enough interest.

Los Angeles Color  
Computer Users Group,  
c/o Craig R. Hanna,  
5544 Temple City Boulevard,  
Temple City, CA 91780 U.S.A.

(Anyone for California? - D.M.)

# OFFERS

## VALUE OFFER

B. & H. Software have now discontinued Games Tape 1, which contained 'Lunar Lander & Rescue', 'A Week at the Races', 'Blackjack' and 'Jackpot.' All are now sold as separate tapes, the first two at £6.95 each and the latter two at £5.95 each.

We still have 16 copies of Games Tape 1 in stock, so if anyone wants to grab £25.80 worth of tapes for the price of £9.95, they'd better move fast. You may recall that we consider 'Lunar Lander & Rescue' as the best version for the D32 so far.

## GENERAL CLUB OFFER

As members of the Dragon Users Club at the Dungeon, you are entitled to buy two cassettes (up to a retail price of £15.00 each) at 10% off. You are also entitled to buy all hardware at 10% off (and for something like the Seikosha GP100A that could save you £22!) We regret that we cannot extend the Club offer to books.

Club Badges available at 30p. each (sew-on or remove backing, when self-adhesive.)

The cassette discount offer is a monthly entitlement, but we regret that "unused" entitlements cannot be carried forward to the next month.

# BASICS

## WHY WON'T MY DRAGON RUN CoCo PROGRAMS?

We get frequent queries regarding the changes necessary to make ZX, Spectrum or BBC programs run on the Dragon and it will come as no surprise to most of you that we suggest that the caller should leave well alone. Unless you are an experienced programmer, conversions for micros using a different CPU (Z80, 6502 etc.) are a major undertaking.

What many find it difficult to understand, however, is the fact that most programs written for the Tandy Colour Computer, which also employs Extended Microsoft and uses the 6809, do not run on the Dragon. The fact is that, although the "reserved" commands used by the CoCo and Dragon are largely the same, the two machines read a tape program differently. If you take a listed program from a magazine and type it in first on a CoCo and then on a Dragon, chances are that it will RUN O.K. Now take the CoCo program, CSAVE it on tape and try to use it on the Dragon. It may load O.K., but when you try to run it you'll get a Syntax Error.

This problem relates to the fact that in some cases the command word is converted to a "token" which is different on the two machines. This month and next, we will set out the BASIC differences, which will set you on the road towards CoCo conversion.

### a) Reserved Words & Operators Same on both Micros

ABS	FOR	ON	RETURN	SOUND
DATA	IF	PRINT	RIGHT\$	STOP
DIM	INPUT	PRINT TAB	RND	
END	INT	PRINT USING	RUN	
		PRINT @	SCREEN	
		READ	SET	
		RENUM	SGN	
		RESET	SKIPF	
		RESTORE	SIN	

### b) Dragon - CoCo

ACS	MID\$	EXEC	TAB
ATN	CHR\$	EXP	LEN
AUDIO	SKIPF	FIX	ATN
CHR\$	POINT	GET	=
CIRCLE	OR	GOSUB	GOPSET
CLEAR	NEW	GOTO	GOPCLS
CLOAD	OPEN	HEX\$	COS
CLOADM	OPENM	THEN	SCREEN
CLOSE	SET	INKEY\$	POS
CLS	SOUND	INSTR	VARPTR
COLOR	AND	JOYSTK	JOYSK
CONT	LIST	LEFT\$	TAN
COS	VAL	LEN	JOYSTK
CSAVE	CLOSE	LET	RUN
CSAVEM	CLOSEM	LIST	CLEAR
DEF FN	CSAVE PRESET	LLIST	RESET
DEFUSR	CSAVE STRING\$	LINE	OFF
DEL	SUB	LINE INPUT	OFF INPUT
DLOAD	DEF	LOG	PEEK
DRAW	DEL	MEM	SQR
EDIT	THEN	MID\$	FIX
EOF	INKEY\$	MOTOR	AUDIO

We'll complete the list next month.

In the interim, remember that when you run a CoCo tape that includes the line:

```
IF 1 < 2 THEN 10
```

the Dragon reads it as:

```
IF 1 PUT 2 EDIT 10
```

No wonder it won't run!

### THAT SPEED-UP POKE!

As Dominic Gill notes in the letter below, the most important item in the June edition of "Dragon's Teeth", that of the now infamous 65495,0 POKE, failed to appear.

We thought that we had got it sorted out but, at the last moment, found two Dragons in Derby with consecutive numbers and reputedly latest production models. One accepted the POKE, but the other crashed! This set us thinking and, in the end, we decided that further investigation was required.

Firstly, to Dominic's letter. As far as the listing corrections are concerned, the D.M. must accept responsibility. Since our printer does not produce "more than" or "less than" symbols (why not, we ask?) it was left to the D.M. to check the listing and fill in the gaps. So blame him, not the Ashbourne hooch!

Dominic starts:

"Your typist has clearly been drinking too much of that famous locally-bottled tapwater. Thanks for listing my m/c-entry program in the June newsletter; but no thanks for the usual typewritten-listing gremlins!

Many readers will have sorted out the errors for themselves: but for those who entered the program as listed and found that nothing worked, perhaps you could print the corrections (and give your typist something decent to drink - I suggest a stiff shot or two of Polish vodka - for a change.)

The affected lines should read as follows:

```
90 K$=INKEY$:IFK$<>CHR$(13)THEN90
110 H$="&H"
230 IFPK < 0 THENL=L+1: GOTO180
240 IFPK > 255 THENPOKE etc.....
450 IFK$="N"THEN460 ELSE 430
460 CLS:PRINT NC;
```

Incidentally, the most important single item in the whole of the newsletter - A.E. Standing's report of the unavailability of the 65495,0 POKE on his new replacement D32 - was not expanded on elsewhere in the newsletter as promised by a footnote (another gremlin?) This seems to me to be a subject of absolutely central importance to all Dragon users, and should be clarified in the greatest possible detail, with comment from Dragon Data themselves.

The accelerator POKES have all worked fine on my particular machine (bought in October 1982): but there have been a number of dark hints (no facts) in various magazines that their use could in fact damage the machine, and perhaps even corrupt the ROM. What are the facts? Are any of the hints vaguely correct, or wholly correct, or simply untrue?

From my telephone conversation today with a very helpful and friendly Cathy Hyde at Dragon Data in Port Talbot, it would seem that DD themselves "have done no research on the subject" and do not know exactly why (i.e. which addresses and components are affected) the POKES make some machines crash, or whether any damage could be caused by them. Broadly speaking, however, the problem has arisen because different batches of the Motorola chip seem to have been made to different standards. User-specifications for the 6809 chip vary, and apparently Motorola use a simple elimination system to sort the chips into batches - all are first tested, for example, at 2Mhz and those that pass are retained for 2Mhz systems; the remainder are tested at 1.5Mhz; and the following remainder at 1.0Mhz (I trust that those which fail at this stage are discarded!)

Those CPUs which have passed the 1.0Mhz test are those theoretically used for the Dragon (since that is Dragon specification); but it obviously follows (my own guess) that it will happen from time to time that too many chips are retained at the higher-rated stages and not enough 1.0Mhz remain to meet an order. In this case, Motorola presumably throw in a handful of the higher-rated chips to make up the balance.

This would accord with Dragon Data's own observation that the distribution of machines on which the 65495 POKE works and those on which it doesn't appears to be entirely random. They do make the point, however, that the Dragon is not designed to work at any speeds higher than 1.0Mhz, and so they won't exchange or "repair" any machines on which the accelerator POKE doesn't work.

However, the above information doesn't by any means solve the problem. Apart from the fact that, like Mr. Standing, I should be furious to discover that the POKES no longer worked on my machine, since so many games and programs are devastatingly slow and boring without them, it is extremely important to know whether they may indeed be harmful. My own D32, for example, has just developed a bug which means that a short m/c routine which worked splendidly for months (an "@KEY" routine to produce a more sophisticated INKEY\$-type response, entered between \$7001 and \$7016) now suddenly no longer works at all. Could this be due to the fact that the BASIC control program also contained an accelerator POKE?

Dungeon Master, please elucidate! "

Hm...mmm! It's nice in theory, but Ted Oprychal of Compusense doesn't entirely agree. His information from Motorola suggests that it is the high quality control standards of the CPU producers that ensures that a significant number of chips rated at 1Mhz will, in fact, process quite satisfactorily at the 1.78Mhz rate. In other words, Dragon Data are supplied with "1Mhz" chips, but an unknown number of these CPUs will run at higher speeds.

But where does this leave us? As far as the Dungeon is concerned, the advice regarding the speed-up POKE is don't! There is a danger of throwing out the very fine balance of the Master Crystal frequency (which will wreck the video display via the SAM chip) and with at least five board changes in Dragons of various ages, it is almost impossible to judge what the long-term effects might be on the various versions of the Dragon 32 in circulation. It may be an unnecessary precaution, but our own instinct is to leave well alone until we know a great deal more about the interplay between the 6809E, the 6847, the 6821 and the SAM chip. There are other,

more sophisticated software options to speed up video display and, having seen the lightning display response of some of the new games under development in the U.K. (using m/c, of course), we would suggest that it is up to the software houses to provide programs that run at the fast speed without POKE'ing 65495,0.

A final point, which clouds the mystery further. Our own "home" Dragon (our son's actually) accepts the speed-up POKE, but recently we ran a review copy of the best PAC-MAN version around, Programmers' Guild 'Mr. Eater'. This has no less than two screensfull of options at the start, in which you more or less design your own game to suit your taste. We'd tried most of the options and happened to select the "super-fast" ghost speed. All went well for about 20 seconds, with gobblers positively whizzing around the screen. Then a dirty brown "mark" developed at the top of the screen and spread outwards - for all the world like a cinema screen when the film in the projector starts to melt with excess heat. The edges of the screen were crisp, but the "blob" started to spread over the whole screen. We switched off fast, not knowing what was going on and have avoided this option since (it works O.K. on the CoCo.)

To date, even P.G. are uncertain what was happening, but the message is clear. Micros are at heart very delicate beasts of incredible complexity. It simply isn't worth risking a "burn-out" for a faster 'Star-Trek'!

\*\*\*\*\*

## TELEWRITER

With reference to Mr. Grade's 'Telewriter' problems, set out in Issue 4, we quote below an extract from Microdeal's reply to him (N.B. the returned tape worked perfectly well on our own equipment) :

The problem appears to be that some tape recorders will not run up to speed quickly enough when saving, or loading, Telewriter Files to pick up the header track on the file. The solution to this is simple, and that is to remove the remote plug and have the recorder actually running when you save a file and by rewinding before the start of the file and have it running when you are reading in a file. This is probably the reason that you seem to be loading in the demo file O.K. because there is a gap between the end of the Telewriter File and the start of the demo file, thus allowing your tape recorder to run up to speed.

Our engineers and programmers have spent considerable time looking into this problem and the fault appears to be one of two things:

- (i) You could be living in a low voltage area.
- (ii) A low cost tape recorder will not have been finely tuned as regards speed control.

All our programmers and testers are equipped with either the Tandy Computer Cassette or the W.H. Smith Computer Cassette, both of which appear to run without problems with Telewriter.

Please feel free to contact us, we employ a base of programmers and persons familiar with Telewriter who will be able to answer your questions over the telephone, provided you have returned the registration card enclosed with Telewriter.

# COUSINS

## News from the U.S. 6809 Scene

- Tom Mix have just brought out 'Trapfall' for the CoCo, another m/c classic by Ken Kalish. This is the one you have seen in TV ads, with pits to jump, alligators to swing over Tarzan-like and the Monster in the tunnels. Looking at U.S. prices (\$27.95 for this one), Microdeal seem to be giving the Dragon good value with U.K. versions.
- Exciting news from Amdek Corp., who have just launched a disc system for the CoCo, based on the new 3 inch hard plastic "diskettes." For just \$599 you get a double disc drive and two diskettes, which give 624K (formatted) storage capacity. Using 3 inch diskettes, the whole unit is so neat and compact, it's not much bigger than a tape deck. Can't wait to get our hands on one!
- Radio Shack (Tandy to you) have announced a CoCo "Multi-Pak" Interface at £180. This is a unit about one-third the size of the computer which plugs into the expansion slot and takes up to four cartridges at once.
- If you really want to drool over an arcade game, try to see 'Zaxxon' on the CoCo. With the most amazing 3-D graphics of a floating space fortress, the action looks like a scene out of 'Star Wars.' Fighters, dog-fights and missiles coming up at you, give a real feel of actual flight and fight. Expensive at £39.95 but, Wow!, what graphics!
- A classic, which we hope will move Dragonwards, is 'Beyond the Cimeeon Moon', a 3-D graphic adventure, involving the exploration of a derelict spaceship. The publishers, ColorQuest, have also brought out another 3-D graphics adventure for the CoCo - 'Fembots Revenge.' Is this the U.S. answer to Women's Lib., we ask?
- In the groan, groan league, is Elite Software's 'Body Parts', in which the computer has to guess the part of the body you have in mind. The responses apparently warrant: the revised title 'Bawdy Parts' for the program.
- Want to emulate Laker? Then try Adventure International's new CoCo game, 'Airline.'
- Another arcade game reputed to be heading for CoCo stardom is 'Fury', by Computer Shack. Described as the nearest thing to actually flying a Mach 2 jet fighter, yet available as a computer program, it sounds interesting.
- Expect early U.K. arrivals (via Microdeal?) of Spectral Associates 'Lunar-Rover Patrol' and, 'Whirlybird Run.' The latter is a 'Skramble'-type game set in a tunnel system, with so many hazards it's difficult to see how you ever complete it.
- A U.S. ace has notched up 1,850,000 points on "The King." Any U.K. competitors?
- People are quick to jump on any bandwagon. Elite Software have also released a "3-D arcade game" called "Zaksund." Sounds familiar?
- Spectrum Projects have brought out a CoCo program which enables the user to redefine any key on the keyboard (all of them if you want to) to single-key commands - à la Spectrum.

- Prickly-Pear Software of Tucson, Arizona, have launched a massive m/c adventure 'Adventure in Wonderland.' With all the characters of 'Alice', we wonder what the U.K. owners of the 'Wonderland' and 'Looking Glass' publishing copyrights will have to say about it.
- We're still waiting for Microdeal's first delivery of 'Space Shuttle', but from the U.S. raves it's going to prove waiting for. If we say that there's a 10-page manual (so accurate are the control systems) and that the cockpit-view graphics are by Tom Mix, we reckon that you'll see what we mean.
- We suppose that only the Americans could publish 'Squire', a simulation based on running a country estate with "peasant workers" ("peasants", we ask you!) There's a CoCo version though!
- Lots of voice synthesiser programs starting to appear for the CoCo. We hear that some are being converted for the Dragon, but suspect that you'll need 64K. We'll keep you posted.

## BOOKSHELF

Squeezed for space yet again, we've had to hold up the book reviews. Things have quietened down somewhat on the publishing scene, although two new books dropped through our letterbox this month:

'DRAGON GAME MASTER' by Keith & Steven Brain (Sunshine Press) £5.95. We would regard this book as 100% essential to anyone writing games for the Dragon, no matter how experienced. Although it is written for the total beginner, anyone can learn sophisticated programming techniques from the Brains. Highly recommended.

'THE DRAGON PROGRAMMER' by S.M. Gee (Granada Publishing) £5.95. This is yet another "first steps to competence in programming" tutorial, with plenty of listings (one complete program per chapter, usually a game.) It is clearly and logically written and compares favourably with most other publications in this class.

- Now for the bad news!

The saga of the Sigma books by Mike James continues and we can only assume dark horrors of misprints and incorrect listings. The latest news from John Wiley & Son, the distributors, is that 'Advanced BASIC' will now be published in August as 'Language of the Dragon' and that '6809 Assembler' will be published in about four weeks time as 'Anatomy of the Dragon.' The change in titles reflects the publisher's embarrassment (we assume.)

Anyone who has these on order will receive them as soon as they come in, but let us know if your patience is exhausted and you want a refund or something else in lieu.

\*\*\*\*\*

### SELF-CENTRING JOYSTICKS

While the Dungeon considers its own joysticks the best potentiometer type available, we appreciate that in some arcade games involving only up/down, left/right or "deadstick" positions, switch-type, self-centring joysticks may be preferred.

We are now stocking Microdeal's Self-Centring Switch-type Joysticks, which sell at the same price as our own - £19.95.

# M/C CORNER

Before going on with Flags, correspondence this month indicates that many of you are floundering with the very basics of machine code and it might be best to pause at this point and go back to square one.

It is clear that the whole concept of binary representation of numbers is confusing (almost alien) to many of you - especially those who had their schooling before the micro-era led to a broader instruction in maths. Now, our everyday system happens to result from the fact that man had ten fingers to count on. The base of ten is not a particularly advantageous one mathematically, but it operates in a similar fashion to binary.

When you look at the integer (whole number) 129, what you are really seeing is  $(1 \times 100) + (2 \times 10) + (9 \times 1)$ , which we represent in decimal by 129. In binary, the same number is represented by 1000001, i.e.

## Decimal

$$\begin{array}{r} 1 \times 100 = 100 \\ 2 \times 10 = 20 \\ 9 \times 1 = 9 \\ \hline \hline 129 \end{array}$$

## Binary

$$\begin{array}{r} 1 \times 1 = 1 \\ 0 \times 2 = 0 \\ 0 \times 4 = 0 \\ 0 \times 8 = 0 \\ 0 \times 16 = 0 \\ 0 \times 32 = 0 \\ 0 \times 64 = 0 \\ 1 \times 128 = 128 \\ \hline \hline 129 \end{array}$$

Whereas decimal counts from left to right (hundreds, tens, units), binary counts from right to left. Decimal jumps the power of ten each time (1,10,100,1000, etc.), while binary jumps the power of two (2,4,8,16,32...etc.) Get it? Decimal = Tens, Binary = Two's! And we represent binary by 0's and 1's (conveniently, for a computer pulse is either "on" or "off", "pulse" or "no pulse".)

Now, to these obviously confusing differences in arithmetic.

Addition is straightforward and easy, with the rules:

$$\begin{array}{l} 0 + 0 = 0 \\ 0 + 1 = 1 \\ 1 + 0 = 1 \\ 1 + 1 = (1)0 \quad \text{- where (1) is the "carry"} \end{array}$$

Add up just as you would in decimal, starting at the right-hand column. We've put in the zeros in decimal (you usually leave them out) and have indicated the "carry" below the line:

## Decimal

$$\begin{array}{r} 119 \\ 003 \\ \hline 122 \\ \hline 1 \end{array}$$

## Binary

$$\begin{array}{r} 011 \\ 001 \\ \hline 100 \\ \hline 1 \end{array}$$

So you see, the "carry" is just the same as your normal arithmetic, except for the rules given above.

Remembering that the Dragon is an 8-bit computer, the binary numbers possible run from 00000000 to 11111111, which, if you work it out, is 0 to 255 in decimal. Now you can see why the magic number appears time and time again throughout 8-bit computing! Next month we'll go through signed binary (i.e. negative numbers) and "overflow" before turning back to Flags.

# NEW GAMES

Due to the ever-accelerating flood of new games, we have been unable to complete a meaningful catalogue supplement to date, although a revised price-list (containing many of these new issues) should be with you shortly. In the interim, we give below brief details of one or two of the better quality games which have emerged over the last two months. The new Microdeal games are not mentioned, since, at the time we went to press, we had not had the opportunity to run them.

## a) 'DRAGRUNNER' (Cable Software) £8.75

A grandchild of 'Frogger' and one which we prefer to the original. Sidney (you'll be hearing the name again!) is a security guard at a factory producing radioactive items which pass along the screen on conveyor belts. The security systems are activated and the conveyors pass through electrified walls. In addition, the floorspace is covered by laser guns, which discharge to destroy intruders when the charge level (shown in a corner of the screen) reaches critical level (Sidney had better be off the floor on a belt when they fire.) Obviously contact with any of the units on the conveyors is fatal and, just when you thought you had it figured out, there appear the Laserdroids.

You see, Super Sleuth Sidney is on the brink of discovering that the evil genius who owns the factory is secretly manufacturing robot Laserdroids to take over the world. To cut a long story short (and the scenario is complex) the Droids are out to clobber Sid, but he happens to be a dead-eye marksman and well able to defend himself (at the initial levels.)

With the speed of the game and the sheer number of hazards, death is almost inevitable, but our hero has 7 lives on each screen. To reach Screen Two (the next room of the factory) he only needs 3 successful floor crossings, hopping on and off the whizzing belts, with laserbolts flying in every direction. In round two, he needs 4 crossings, etc. We suppose he does eventually make it out of the factory, but we've never survived that long yet!

We commend this game highly to all arcade fanatics. The graphics are great (watch out, Tom Mix!), the speed is alarming and to our mind the game has the addictive quality that makes a "classic." We reckon you'll hear more of Cable.

## b) 'AND JUST BECAUSE' (B. & H. Software) £6.95

It's a long time since we laughed out loud at graphics, but, when our horse fell at a high fence in this game, we just had to! Essentially this is a collection of no less than nine interlinked graphics games, as you attempt to get your box of Milk Tray onto milady's pillow before she gets home. It's in scale-time and if you play it too slow (to be safe) you're likely to find that the whole thing stops and the computer advises you - "too late - she's home."

Let's try and remember the sequence. You drive the car round the buildings, run across the field with the sprouting mushrooms, hop on the horse and ride across the moor (jumping the fences), hop off and ride the motorbike down the busy road, do an Eddie Kyde over the ravine, grab the hang-glider and circle down until you can grab the ski-lift, ski down the mountain to the ski-jump, open your parachute and land on the lady's roof!

The problem is that it all gets harder and harder as you go along and we have to admit that we haven't yet made it in time. Good value for money with so much to go at.

c) CRYSTAL CHALICE (Dungeon Software) £7.95

O.K., we'll be brief here, 'cos it's ours, but we have to beat the drum for Mike Meineck's latest adventure epic (out in August.) After a few play sessions, we rescheduled our whole publication plan to make room for it!

To those adventure fans who demand logic rather than random elements and a scenario with depth, 'Crystal Chalice' will keep you going for weeks! Loosely connected with a certain film "D\*\*k C\*\*\*\*1", with a massive vocabulary, lots of single key commands and some very interesting "computer intelligence", our games testers rated this one very highly. More of this and the evil Klarz later!

(Mike has just finished his first real-time, graphics adventure, set in Merlin's tomb. Publication due September.)

d) WORM TUBE (Hornet Software) £8.00

Rated highly by 'Rainbow' for the CoCo, we had to go along with that view. At last a Scramble-type program for Dragon arcade aces!

You are piloting a ship in hyperspace, which warps real-space into a "tube" of variable and constantly-changing diameter. Trapped in the tube, you come across chunks of asteroids which will cause severe damage to the ship if hit. With a forward-mounted laser-cannon, you can zap them into smaller, less lethal chunks and, since they are composed of valuable minerals, you get lots of lovely bonus points if you can scoop the "bits" up in your ships chomping collection scoop. If you touch the walls of the tube, the violent electrical reaction will immobilise your ship and the repairs are pretty expensive in points.

One nice touch is the fact that you start with the high score and the object is to stop running out of points! A measure of how tough the game is, is the fact that you start with 3 million points (remembering that a major crash costs 50,000 points.) Bonuses are given for each section of the tube traversed and, although we can't be certain, we reckon that there are more than 30 sections. You do get an audible warning when the tube starts to narrow (it also lashes about.) You can alter the speed of travel by hitting the F key ("faster") followed by the number 1 to 9. Be warned - keep to speed 1 until you have some expertise.

Joystick required. Up to 4 players, with hi-score.

e) GRIDRUNNER (Salamander Software) £7.95

Most of you will be familiar with Jeff Minter's classic arcade game from machines other than the Dragon. Definitely in the "Hall of Fame" class and one of the fastest and most exhausting D32 games around. Thank goodness "continuous fire" is possible, by keeping the fire button depressed!

The game takes place on a huge orbiting solar Grid, which attacking Droids are attempting to take over. As guardian of the Grid, you are provided with a powerful spaceship, the "Gridrunner." Gridsearch Squads of Droids pour down the grid lattice, à la 'Centipede' and (again the 'Centipede' theme) split into two groups when a "middleman" is hit. The Squad Leader (first of each chain) scores 400 points versus 100 for common Droids and, on a split, the lead Droid is promoted to Squad Leader.

Now, here the 'Centipede' theme ends, for any Droid hit changes into a Death Pod. Pods sit at the intersections of the Grid, changing in size and shape. On reaching "maturity", they metamorphose into a massive bolt of energy, which hurtles down the Grid - wiping out any unfortunate Gridrunner in the way.

Just to complicate things, X and Y "Zappers" patrol the vertical and horizontal edges of the Grid, firing plasma bolts along the lattice (again, these bolts are lethal.) Where X and Y bolts meet, new Pods are formed.

There are no less than 31 distinct waves of Droids and arcade "aces" have been known to score over 150,000 points. How they do it, we don't know, having been reduced to a jelly by about screen ten!

# COMPETITIONS

## PEAKSOFT 'CHAMPIONS' COMPETITION

All the entries for the 'Weekly Bulletin' announcements have been sent to Peaksoft, who are considering them for prizes.

We were disappointed by the overall entry, but feel that you might have suffered from a touch of the "shynesses." Don't worry about the quality of your competition attempts. Have a go!

Winners names and prizes will be published in the August issue.

## A YEAR'S FREE SOFTWARE COMPETITION

So you found the first two parts easy! O.K. Take the two numbers saved as answers from the June and July sections of the competition and add them together. Now divide by two. Take the answer and add together each individual digit to obtain a whole number (which should be less than 100) which we'll call X.

Now take the smallest sum of money (in sterling, no halfpennies) which contains our famous integer collection from 0 to 9 only once. Add the number of pence to X and you'll finish up with a palindromic number of modest size.

Send this number to the Dungeon and you've probably got a year's free software (see May edition.) In the event of a tie, we'll give a "quickie" tie-breaker.

## QUICKIE (No Prizes)

The longest word possible using letters in the same order as the Dragon keyboard is reckoned to be seven letters long. So's the longest word using keyboard letters in reverse order.

Any idea what the two words are? Answer next issue. (N.B. You can, of course, repeat a letter without breaking the rules.)

\*\*\*\*\*



Published by DUNGEON SOFTWARE, P.O. Box 4, Ashbourne, Derbyshire.