

DRAGON'S TEETH



THE MONTHLY NEWSLETTER OF
THE DRAGON CLUB AT THE DUNGEON

ISSUE 7. SEPTEMBER 1983.

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NEWS

This month's "View" was sparked off by a reader's letter, so let Mr. Widdop have his say first:

"Thank you for the last six months' issues of 'Dragon's Teeth', which I have found informative and enjoyable.

I am particularly interested in Educational Software, having three children aged between 6 years and 17 years, all at school. I'm pleased to note that there is an increasing range of this type of software being produced - at long last! However, much of it is quite expensive, with packages in the £20 - £30 bracket. Obviously I am wary of laying out that amount of cash for what could be poorly produced programs. Is it possible, therefore, for some reviews of what these software packages actually contain and how good or bad are the programs, to appear in 'Dragon's Teeth?' My wife is a Primary School teacher and is a bit anti computers - she is therefore very sceptical about the contents and educational value of such software. That's another reason why I don't want to get ripped off - I'm trying to convert her to be pro computers!"

You touch on a subject dear to our hearts! In truth, we don't blame your wife - most of the software put out for school computers to date has been very limited in scope. Even the recent releases for the Dragon don't match up to what we think could be done. Remembering the sophisticated software used by the yachting contenders in the recent Americas Cup, the micro can analyse the complex interaction of many parameters at once in a way that no human can - in that case wind, time, current, speed in water, speed in relation to bottom, angle of drift, etc., etc. Why can't we have educational software which demonstrates the results of pupil input to similar complex situations?



For instance, what about a program to demonstrate the effect of changes in transport systems? Start with a stylised town (you only need block graphics) and let the pupil add shopping centres, office areas, factory estates, etc. and "build" the appropriate roads, railways. Using inputs, population changes, suburban housing growth, etc. could be simulated and the effects on vehicle/train movement required shown on the screen. Add a time element (say a typical "day") and, possibly, a budgetary basis (à la 'Space Trader') and the pupil is in the position of a Town Planner.

Or what about modifying and extending 'King of the Valley' to represent a present-day country, with the pupil in the rôle of the government - controlling the economy by inputs and seeing the various effects (including reactions by trading partners.) Yes, we know it has been done in various "You are P.M." games, but most of these are humorous romps, not real attempts to demonstrate interactions and chain-effects.

And speaking of chain-effects, what about food-chains? We can visualise a closed environment - say a lake - with various plant and animal populations linked algorithmically, where the pupil makes changes and sees the effects (with graphics, by all means.)

What about serious adventures, set in actual historical context? Let the pupil play the part of a participant in some past society or event with game incidents providing insight on life in that period. Set out with a Roman Legionary patrol to cross the Rhine and quest for the lost Eagles of Varus! A more interesting way of learning how the Chauci lived than books.

And since we already have wargaming simulations (e.g. Atari's massive 'Eastern Front'), why not smaller scale simulations of representative conflicts to see how strategy, ground and supply lines interacted. Exercise the permutations of alliances to see how things might have turned out - if only! To our mind, history provides a fertile ground for microcomputer software.

Calculus is another, as yet, neglected area. Since graphics programmers spend so much time working out algorithms to produce those curves, why can't we have software that requires input of mathematical formulae and draws the resultant graph on the screen?

Perhaps the only area where we feel that good software already exists is in the field of music. Programming in Microsoft BASIC provides insight into the structure of musical sound and a utility like Microdeal's superb 'Composer' (with it's integral compiler to convert to machine code) already gives music teachers an excellent tool.

A number of you obviously take the Educational area seriously and in the last month we have received tapes covering primary school maths, spelling and chemical formulae. How about an article on how you would like to see Educational Software develop?

HOT-SHOT PROGRAMMERS!

Although we have a regular team of programmers writing for the Dungeon (watch out for our new releases), we are always ready to evaluate programs by Club Members. We might not be able to publish them, but even then we can point you in helpful directions. Machine code programs of particular interest.

REVIEW

'STAR JAMMER' (Salamander Software) - a flop! by Clive Gifford

If you look back through earlier issues of DT you will see me praise Salamander Software up to the hilt. Some have suggested that I was in their pay, so lavish was my praise for their games software. Well, the title of this piece sums up my opinion of this game.

'Star Jammer' is an arcade-type game, very loosely related to 'Star Raiders.' In this game, you must try to blast the alien ships into oblivion before they manage to get you. You are given the screen view of looking out of the front window of your ship with the aliens approaching head on. You must line an enemy ship up in the middle of your sights, then let him have it with your laser cannon. Your fuel gradually decreases and coming across and flying through a stargate replenishes your dwindling supply.

That is about it. Apart from a few different kinds of enemy ship in different colours and a different name for every stargate you go through, the game continues like that. If you can overcome the boredom, to score 10,000 points, then you will receive an extra fighter.

The game does come in Salamander's excellent packaging and loaded every time but all this doesn't cover the fact that the game is essentially a weak one. Written in BASIC, it has to compete with machine code versions offering faster action, better graphics and sound effects.

Instructions are clear, there is not really much to explain. The game operates off one joystick. The program is not up to Salamander's usual high standard - their other arcade game 'Gridrunner' is far better. I don't think Salamander should get complacent after their great success. This game is reasonable for a BASIC effort but lacks any real addictive quality. The cassette costs £7.95 and is available from many good Software shops or directly from Salamander themselves at 17, Norfolk Road, Brighton.

| | |
|-----------------------|----|
| Presentation..... | 9½ |
| Entry Complexity..... | 9 |
| Play Complexity..... | 4 |
| Play Balance..... | 6 |
| Interest Level..... | 3 |
| Overall Rating..... | 4½ |

FREE LISTING SERVICE

As a Club Member, you are entitled to use the Dungeon's facilities to take hard copy of your treasured program!

If you can't pop along to the Dungeon, send your cassette with suitable stamped return packaging and we will print the listing and return your tape.

Bookshelf

The flood of Dragon books continues, although (we regret to say) they do not include the now-mythical '6809 Assembler-cum-Language of the Dragon'. We talked to Sigma mid-September, when we were advised that "it now looks like the beginning of October." Those two Mike James books beat all hardware-announced-before-availability stories.

For all you frustrated machine coders there is further light on the horizon, with the announcement of Melbourne House's 'Dragon Machine Language for the Absolute Beginner', £6.95. But wait a minute! At the bottom of their announcements, see the small print "October 1983 release." We keep our fingers crossed!

Melbourne House have also published the 'Dragon 32 Programmer's Reference Guide', which seems to cover the usual ground ("takes you from simple BASIC routines right through to the advanced machine language programs (again £6.95.) Can't comment on it, since we haven't yet seen it.

And now McGraw-Hill, the U.S. giant, has moved in on the D32 with "books on tape." Still awaiting sight of any of them (it seems the norm to advertise before availability these days.) Initial offerings are 'Programming the Dragon for Games and Graphics' (£5.95) the book and 'Dragon Games and Graphics' (£7.95) the corresponding tape. The concept seems to be that the tape saves you having to key in the programs. Can't say that we're wildly enthusiastic at the concept, remembering the fate of the 'Enter the Dragon' tapes.

Sunshine, as leading lights in the Dragon scene (you'll recall that they publish 'Dragon User') have followed the Brains' superb 'Dragon Games Master' with 'The Dragon Trainer' (£5.95) and 'Advanced Sounds & Graphics for the Dragon Computer' (£5.95). The former treads the familiar ground: "assumes no previous experience of computing and aims to serve both as an alternative manual and beginners course on Micro-soft BASIC." As the title suggests, the latter aims to provide a really comprehensive guide to all aspects of sound and graphics as used in the Dragon. As with all Sunshine books to date, these publications are a cut above the rushed-out books of early 1983 and reflect well on Sunshine's contacts with writers who really know their Dragons.

With the ever-increasing Dragon library, we find ourselves overstocked on a number of earlier titles and you will find that the month's special offers include a number of these. No reflection on the books concerned, it's just that we want to keep a balanced stock, to offer the full range.

Finally, the Dungeon badly needs some book reviews from members. By now, you should have had time to plough through one or two in depth. The most valuable reviews come from out there and you don't have to be afraid of saying exactly what you think. We particularly want a review of Clive Gifford's "Making the Most" (after all, he contributes to D.T. and we can hardly review the book ourselves.)

REVIEW

'CUTHBERT GOES WALKABOUT' (Microdeal) - by Edwin Aird

"Cuthbert is on the Lunar Landing Pad waiting for the Federal Chief's State Visit. He must turn the lights on by walking across the switches located at the corners of the squares before the invading Moronions get him.....Superb full colour graphics with accompanying music."

We are all getting quite used to the extreme statements made in a game's description on the side of the cassette, compared with the actuality of the game, and sometimes the extreme disappointment when a game is described in glowing terms. The player often needs a great deal of imagination to match that of the 'blurb' writer. Cuthbert is definitely in this category. That is not to say that it is a poor game; it is not. It may be better, however, and more honest, to describe the actual nature of the game somewhere on the outside cover to avoid misunderstandings. This is actually a similar game to the pencil and paper 'squares'. The player has to steer 'Cuthbert' around the squares so that they light up. You may control Cuthbert with either the keyboard or joystick. He must walk all the way around each square to "activate the switches at the corners of each pad" to "light it up." Each switch scores one point. Each square scores five points. When the whole area is lit (painted in) you get a bonus of 100, an extra Cuthbert and a new screen to fill in.

You start with 5 Cuthberts and 4 Moronions chasing. Cuthbert can walk or jump on horizontal lines but he can only climb up or down vertical lines. The basis of the game is easy to learn - that the Moronions are only semi-intelligent and only home in on Cuthbert when he gets near them, but the joystick (and keyboard) control is slightly difficult at first when a change of direction is needed. The instructions warn you about this and give some hints. Also, if you work quickly, it is possible to avoid the Chief Moronion, who appears late in each screen - very intelligent and "doesn't play fair!" The instructions also discuss "danger areas" and the habits of the enemy. Although we have played this game for a few weeks we have yet to discover the pattern of the play and have not yet reached the 3rd screen. This may be due to our using a well-worn joystick!

The Hall of Fame is a nice touch, especially if a number of people can play successively without switching the computer off.

In spite of my preliminary criticisms, I like this game. It is entertaining, colourful and tuneful for all the family. The music enhances the effect of the rather mediocre graphics, although I am getting distinctly tired of the death march, used in so many games to indicate failure! A very useful extra feature is a "pause" key (5), which allows interruption of play to answer the telephone or....., without any change in the state of play.

| | |
|-----------------------|---|
| Presentation..... | 8 |
| Entry Complexity..... | 9 |
| Play Complexity..... | 7 |
| Play Balance..... | 7 |
| Interest Level..... | 7 |
| Overall..... | 7 |

VENTURES

by CLIVE GIFFORD

It has been an exciting month and the amount of requests, comments and news means that we have a longer edition of Ventures than usual.

Firstly, after much undercover work and sneaking around dimly-lit alleyways, I have heard that a new magazine devoted solely to computer adventures is being planned. This new magazine is being produced by Scot Press of Dragon User fame. Though I know only a little about the content (my contact was stabbed in the back just as he was giving the details), I know that the Dragon computer will be well represented and that there will be many reviews of cassette based software for most micros. By the time you read this, I could be silenced forever, a block of concrete lying at the bottom of the Thames, or much more importantly, the magazine will be available. The Scot Press boffins tell me that it will be sometime near the end of October.

You may ask why I am writing like this. Well, I've caught 'Franklin's Tomb' Fever, Salamander's latest adventure offering. I'm sure that few of you have not heard of this new game. I've only just started playing it and it seems promising - I'll keep you informed of my progress.

A huge batch of software fell through my door this month, far too much to consider in one go. Included was our own 'Temple of Zoren', 'Treasure Tombe' and 'The Crystal Chalice', all written by adventure genius Mike Meineck. Again, I have only looked superficially at them and I particularly liked 'The Crystal Chalice', but, again, I'll give you more details, including an objective review of all 3, next month.

I've been playing two of the Virgin Games tapes with slightly mixed feelings. I think that there are better adventures on the market at the moment. 'Castle Adventure' is a fairly humorous program set in an old castle. The program is pretty logical save for the funny situation at the beginning of the game, when the only way to get in is to climb the portcullis. Correct me if I am wrong, but the top of a portcullis is fastened to the front of the castle - how can you climb over just the portcullis? Oh well, I did say that the game was on the light-hearted side. The program is without many of the frills that one looks for and expects in an adventure for a colour, hi-res, sound-generating computer. There is no game save facility and all this detracts from a somewhat interesting and amusing adventure.

The other game, 'Death Cruise', is more of a ship-borne 'Cluedo' than anything else. However, it does have lots of little extras, including a multi-player game on the B-side of the tape that my family really did enjoy. Both priced at £6.95, I would point out 'Death Cruise' for special attention as an interesting alternative to normal adventures.

Now onto some of the letters. A person from Mulbarton (I couldn't read the name) wrote to me telling of the 3 adventures he has managed to complete. 'Black Sanctum', 'Mansion Adventure' and 'Jerusalem Adventure' have all yielded their secrets to this adventurous person. I have written to him/her and will give them the glory of a name in the next issue. Mr. X I shall call him, has kindly sent me the solutions to these adventures and I will be publishing snatches of them every month.

A Mr. L. Compton of East Grinstead wrote to me, in desperate need of assistance over 'Adventure 200' by Folkade. I have never heard of it, let alone have a copy of it, so this one is up to the DT members out there.

Come on you lot, East Grinstead isn't that bad a place and Mr. Compton will be eternally grateful. Mr. Compton made a shrewd observation which he doubted I would mention. It concerns my 'Pimania' review way back in issue 2. In it I said 'I do not have a particular love for adventure games' and yet now, he observed, I am firmly entrenched in them. Well, 'Pimania' was the first adventure that I had played on the Dragon, previous games having been played on the abysmally slow ZX81, ZX80 and Nascom 1, so colour adventuring was then a field which I had not explored. Now, after playing such quality adventures for the Dragon as 'The Ring of Darkness' and 'Deaths Head Hole', I am totally hooked on adventure playing and writing. I have been particularly trying to crack Wintersoft's 'Ring of Darkness' but without much luck. I was in Borderton in one attempt, when the Jester said to me that he had 'the ring which you have been searching for.' He then disappeared from my screen and when I re-entered the town later in the same game, he was still missing. Does anyone know what this means or is it just another well-placed red herring?

On the subject of 'The Ring of Darkness' (TROD for short), Mr. S. Bennett from Belfast wrote expressing his opinions on the game. He made some very valid points in a most friendly and courteous letter. He noted his trouble with loading the game and the complexity of all the separate programs which had to be loaded in before commencing the game. He is very impressed with the game and has managed to get as far as actually trying to get the ring. He is frustrated by his problems here and also that this part of the game seems rather low key compared to the high standard of the rest of the game. One point, which I have noted myself, is the Steal command. It appears to be absolutely useless - I have heard of no one who has actually used it successfully. If there is anyone out there who can shed some light on this or can help Mr. Bennett overcome the final barrier, then contact me at Dragon Dungeon's address.

It would seem in the near future that things are hotting up for adventurer gamers of all micros. A BBC Micro version of the Hobbit has been written. How long before it is available for the Dragon, I wonder? Orc owners should be well pleased with an excellent new adventure called 'Hells Temple', several hundred locations all in 3D graphics, 75+ monsters, etc., gives you an idea of its quality. Speaking informally to one of the team who wrote the program, he has hinted that it could be available for the Dragon soon. I really do hope so.

A new software house has been creating a bit of a stir without having released any programs yet. Mosaic Software, based in London, have been buying computer rights to a number of famous science fiction authors' works. The names already signed include Asimov (surely not the 'I Robot' trilogy), Arthur C. Clarke and Robert Heinlein. Mosaic intend to write adventures around certain works, particularly short stories and package them together with a re-printed version of the story. Plans have been made for a launch of 2 Spectrum titles and a BBC program, to be followed up a month later with a Dragon game. It is following the Hobbit style of adventure that has become so popular on the Spectrum. This company has promised to further any information concerning these adventures whenever it is available.

Finally, a word of consideration for a fellow Dragon owner and friend of mine, who had all but completed 'Jerusalem Adventure', when his mains suffered from an interruption (a 'spike' to you technical-minded people) and the whole program disappeared! No amount of sympathy will console him and he cannot remember many of the moves that he made. Ah well, that is adventuring!

Until next month.....

LETTERS

ANTI-SCROLLING

Dear Dragonites,

I've just borrowed a copy of "Teeth" (August '83). Very good. Can I join please?

Here's a tip for anti-scrolling. I've used it in database-type programs when displaying longish lists.

```
100 FOR I = 1 TO 100
110 PRINT A$(I)
120 GOSUB 500
130 NEXT

500 A=PEEK(136)*256+PEEK(137)-&H400
510 IF A < 416 THEN RETURN
520 PRINT"SPACE TO CONTINUE.";
530 R$=INKEY : IF R$="" THEN 530
540 IF R$<>" " THEN 530
550 CLS:RETURN
```

Line 500 returns the current cursor position on the PRINT@ grid. The value 416 in line 510 can be altered to suit. Other options for R\$ can be used such as IF R\$="M" THEN GOTO MAIN MENU. Lines 100 to 130 are just for example.

Next, "Phantom Slayer". Ahem, Ahem. I've just scored 948. 289 hits and 37 kills. My best score is 2028 (with two witnesses and a photo of the screen still in camera), 789 hits and 45 kills - and I only stopped 'cos my dinner was ready. The score display distorts in four figures - maybe they don't expect it.

Keep up the good work.

Richard Taylor,
10 Main Street,
Watton,
Driffield,
YO25 9AW.

(So we have a new World Champion for 'Phantom Slayer' - unless someone out there knows better! - D.M.)

MORE MINOTAUR MADNESS

Please find enclosed my annual membership.

I enjoy reading your mag. and find it very helpful on many points. I am new to computing and the Dragon 32 is my first computer. I have had to take it back three times to Boots, where I bought it, because of faults. On two occasions they changed it for a new one and on the third time someone suggested that the TV may be at fault. We have an Hitachi 14" and although this is alright with Dragon 32, if any of the other channels are tuned too close to the computer channel, it can cause problems. In our case, we had an Intellivision Video Game tuned to the next channel. They msut be on close tuning with the computer.

Can you help with the game 'Madness and the Minotaur'? I am having problems finding the mushroom. I have only found it twice in the great tunnel and try as I might, I don't know what I did on those occasions to find it. I read so many letters about all the wonders to come in this game and I am pulling my hair out right at the start. I need help or I will be mad as a minotaur, so please give me some clues.

I have also started Ring of Darkness. It is really good - full marks on that one. Anyway, I must put my LAMP ON and go into the Maze of Tunnels.

(P.S. How do I get out again.)

Mrs. B. R. Nelson,
65 Altcar Road,
Formby,
Merseyside. L37 8DS.

(M. & T.M. seems to give rise to more correspondence than any other Dragon game! We learned this month that the "random" elements, which we have criticised in the past, don't stay random - if you do certain things. Don't ask us what the certain things are, we don't know! - D.M.)

UNIFILE TROUBLE

I wonder if you could help a member in trouble! After bullying my husband into buying me a Dragon for Christmas last year to help with 'O' Level Computer Studies (which, incidentally, I passed), I wanted to be able to help him in his work for an insurance company.

I wanted to run a file type system and, with very small adaptations, used David Lawrence's program from The Working Dragon, Unifile 1. This I thought would give me 500 records and I only needed about 250-300. However, after 152 cards I got 'OS' error. I have tried clearing extra string space, also clearing more memory using Poke, but to no avail. Is there any way I can get round this problem?

I do not really want to buy a disc-drive at present and I understand from Microcare that an update to 64K would not help me with extra available RAM under these circumstances.

Any ideas please? Your help would be most appreciated and I look forward to hearing from you in the very near future. I enclose a s.a.e. for your reply.

Marilyn L. Willis,
66, Park Avenue,
Rushden,
Northants NN10 9NR.

(We have tried to help but, for the life of us, can't see why the program crashes after only 152 records. Anyone got any ideas? - D.M.)

ZAPPING RECORDS

I would like to know if any of my highest scores break any records. They are as follows:

Meteroids - 135,000 (1 man) + 160,000 (2 man); Donkey King - 80,000 (practise); Planet Invasion - 36,000; Racer Ball - 38,000.

Here are a few tips for anyone who is stuck in Madness and the Minotaur. Try opening the drapes in the room with the Narcissus plants. Sometimes it works, sometimes it doesn't. Try jumping the Shallow Hole in the Servant Chamber. If you get the parchment, type 'Look parchment.' I don't know what the score on the parchment means. I wonder if anyone can help, as I myself am at a dead end and have just sent off for my extra clues.

Breandán Byrne,
7 Crotty Ave.,
Walkinstown,
Dublin 12,
Eire.

(At last, some help for M. & T.M.! - D.M.)

KEEP IT SIMPLE

Please find enclosed a cheque for a further year's subscription. I enjoy 'Dragon's Teeth'. I don't profess to understand all - in fact, to be honest, I suppose most of it goes straight over my head. It is good to read some of the letters by people in the same situation.

Our (it was bought for my son) Dragon is about to celebrate its first year and has given no problems at all. It is used with a Grundig 14" Television and a Sanyo cassette player. Even this increase in speed command works. I haven't got a use for it and as it doesn't appear to be covered by the specification I tend to ignore the many letters that appear on the subject. It's like expecting a Mini to do 120 m.p.h. unmodified!

Talking about modifications, when this upgrade to 64K becomes available, what will be the benefits, apart from increase in memory, if any. Maybe you could let me know in next month's 'Teeth.'

Remember, keep it simple for us 'older types who until recently had never heard of "hexamuhwhatyoum'callem" numbers.'

Cheers!

Joe Smith,
35, Bewick Cres.,
Newton Aycliffe,
Co. Durham DL5 5LJ.

(You really can't win! Half of you want more serious stuff and the other half want things simpler. We'll try to cater for both viewpoints as best we can. - D.M.)

MASTERMIND

Please find enclosed a cheque to the value of £6.00 to renew my subscription to 'Dragon's Teeth' for a further one-year. Some time ago I typed in a program from a magazine (I buy other magazines now and again if they are of interest), which was a computerized version of that well known board game

"MasterMind." In this game, you have to guess the permutation, as well as combination, of 4 colours selected by the Dragon.

However, the selection process used by the Dragon was a straight forward use of the RND function. This meant that a colour could be duplicated in the choice of 4 colours.

I thought this to be an unnecessary complication, as I had typed in the program mainly for my 8 year old daughter, who already owned and played the original board game version.

So I came up with the routine listed on the next two pages and I humbly submit it for "Tip of the Month."

```
10 L = 8 : Z = 0
20 FOR X = 1 TO L : N(X)=X : NEXT X
30 R = RND(L)
40 IF R = 1 THEN 30 ELSE T = N(R)
50 N(R) = N(L) : L = L - 1 : Z = Z + 1
60 C(Z) = T
70 IF Z = 4 THEN 90
80 GOTO 30
```

Line 20 creates an array N of length L and fills it with the values from 1 TO L

Line 30 uses random function to select location in array i.e., R^{th} location. Line 40 puts the R^{th} value of the array equal to T so that it can be itself put into an array, C, in line 60.

Line 50 is the key line. The randomly selected value from the array is replaced by the L^{th} value and L decreased by one so that the previously selected value is no longer available for selection.

Z is introduced as a counter because, in this case, I only wanted to select 4 different values/colours.

Line 60, as previously mentioned, records the value of the randomly selected location of the array i.e., T, into another array, C, to be called up later on in the program.

Line 70 ends the selection process after the selection of 4 values.

Line 80 repeats the selection process until, of course, Z = 4.

In line 40, the 1st location containing the value 1 was excluded from selection because it equated to the colour green which, when displayed on a green screen was, of course, invisible. (It was not possible, in this case, to use a black screen because black was wanted later on to denote the player had chosen a correct colour.)

For a more general routine, selecting all the available values from 1 TO L, leave out the counter Z and rewrite line 70 as follows:

```
70 IF L = 0 THEN 90
```

Also, of course, leave out the reference to R equaling 1 in line 40.

Should I hang on for "Language of the Dragon" or should I get a copy of "Programming the 6809" by Zaks & Lubick?

By way of the last word, on CSAving and CLOADing. My CCR800 is a computer compatible cassette player and I have had no problems at all.

G. Powell,
8 Hillcrest Rd.,
Coed-y-Cando,
New Inn,
Pontypool, Gwent, NP4 0RB.

(In our view, Zaks & L. is a bit advanced to learn assembly. We'd hang on for "Language of the Dragon". Sorry your letter didn't quite make 'Tip of the Month' but a consolation tape is on the way to you. - D.M.)

TIPS

When I joined your Club you could not read my signature, so you called me 'Dragon Owner'. Well, now I will reveal myself - my name is Robert Dunbar. Anyway, I'm writing in about a tip (or should I say tips.)

1) EXEC 1194 & EXEC 1184.

These EXECs are very useful instead of the INKEY\$ command. The first waits for a key to be pressed. The second waits for two keys to be pressed. I give an example of their use below:

```
10 PRINT "DO YOU WANT INSTRUCTIONS ( Y OR N ) ?"  
20 EXEC 1194  
30 GOTO 40  
40 REM INSTRUCTIONS
```

This program would first ask you if you want instructions. Then, when you press a key, it goes to the instructions. You could put a small routine in if instructions were not required.

2) I would also mention two editing commands not mentioned in the manual.

If you ever edit the wrong line, just press "Q" and it will leave the Edit mode and leave the line as it was.

If you ever Edit a line and make a bit of a mess of it, just press "A" and it will leave that line as it was and you can re-Edit it.

I'm sorry if these commands are not explained very well, but I am not much good at explaining things.

Robert Dunbar,
Hillside,
Cliffhill,
Boughton Monchelsea,
Maidstone, Kent.

(Not at all, Robert, you explained them very clearly. Try Elkan's NANOS card for the full list of editing commands. - D.M.)

CONTACT REQUIRED

Thankyou for the excellent newsletter. Have enjoyed every one.

In response to Mr. Colin Reed's suggestion:- My particular interest is in machine code programs used to simulate moving machinery, i.e., steam engines, beam engines, etc. I look at those barrels and escalators in Donkey King - "How's it done?" I ask.....

J. Mudford,
28 Rockliffe Rd.,
Bathwick,
Bath, Avon.

LOADING TROUBLE

Thank you very much for the "Salamander Golf" and "Dragon Doodles" received yesterday.

REturning to my Prinz Cassette Recorder, I had a job to get the "Golf" to load, but can only do so with the "Mic" jack removed. The "Doodle" still does not even produce and I/O error, with the "Mic" jack in or out, NO difference!

For the record, "Champs" is O.K., "Deadwood" is O.K. Not O.K. are "Dream" - not even I/O with or without "Mic" jack, "Doodles" - likewise, "Enter the Dragon Supercassette A" - nothing with "Mic" jack, I/O Error without!

I don't know where this leaves us. I return the second copy of "Doodles" with many thanks.

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

(Anyone out there got any suggestions? Why should the "Golf" tape load with the "Mic" jack removed? - D.M.)

TOP TEN

I have a Datex DX3 Cassette recorder (£26.00). It is sold as a computer compatible cassette and has never failed to load and save any tape, all at the one Volume Setting. I have, however, built my Dragon, TV, Cassette, leads, etc., into a piece of furniture, so that all I have to do is put the main plug into the wall socket and switch on. Therefore, no constant pulling out of leads, etc. - maybe this is why I'm not having any problems.

Have you thought of having a regular members Top 10 Tapes, in which members are invited to list their favourite tapes from 1 to 10 and compile a "Top Ten" accordingly? This could be a good guide to other members and so much better than the "Boots Sale League" etc. which does not reflect on how good a tape is, simply how well they have been advertised.

I have not got too many commercial tapes at present but my top 3 are:-

- 1) Golf by Salamander
- 2) Phantom Slayer by Microdeal
- 3) Flipper by Colorsoft

with such as Champions by Peaksoft well down the list (even though I am a keen sportsman.)

P.S. As a member, I am willing to collect and compile the Top 10 for you, if, as is usual with small enterprises, time is of an essence.

T. Houltyby,
2 Wold Garth,
Main St., Tickton,
Beverley, Humberside.

MORRISON'S GAMES TAPES

No, I don't think I'm being unfair to Morrison's, or to any other software houses who turn out similar rubbish. After all, at the prices they charge - "Please, Sir, we're not very good at it yet" - is hardly an adequate excuse. They should be good at it, they're in the business of being good at it. (I think myself and Paul Grade of Sussex had better start a "we hate other programmers' club.")

I hope my next letter will be with a tape for you to assess - should I start thickening my skin now, I wonder?

Ian Murray-Watson,
Slade Farm,
Peterchurch,
Herefordshire.

PREMIER DISC COMPATABILITY

For other users of the Premier Disc System, the following programs will not work correctly without modification:-

- JERUSALEM - uses the variable DO which is a reserved word under PREMIER D.O.S.
- GRAPHICS SYSTEM - SALAMANDER PROGRAMS all are too big to operate with disc
- EVEREST - the simplest solution is to split into two and use CHAIN
- STARTREK - In the graphics program, the use of PCOPY16 needs changing to PCOPY15 and change RAMTOP to suit via the clear statement.

Malcolm Brook,
64 King Ina Road,
Somerton,
Somerset TA11 6LA.

SOFTWARE COMPLAINTS

I agree with the letter from Paul Grade in August 'Dragon's Teeth' - most of the software available is very, very poor. I look forward to your new software catalogue but, must admit, that I am very reluctant to buy. I have drawn my own list of the software firms to avoid and I reckon that ABACUS are one of the worst. I would never buy anything from them and my local shop sent all their stuff back.

You may be interested to have my somments on "PSS DATAPLAN" reviewed by Clive Gifford. I have over eighty records stored, each consisting of a name and address, plus other details. When I first got the program I typed fifty in with no problem and have since added another thirty-five. No sign of OM yet.

N.M.J. Keeler,
115 Orchard Way,
Wymondham,
Norfolk, NR18 0NZ.

P.S.S. DATAPLAN

I am relieved that I am not alone in having trouble with DATAPLAN. (Your review in 'Dragon's Teeth', issue 6.)

Carefully following the 'complete instruction booklet', (actually a single sheet merely repeating the menu), I entered four names and addresses. On keying the printer, I got an OM error. Switched off and reloaded. This time got OM error Line 420. Tried PRINTMEM, got 67.

Display File. Although I had allocated 12 spaces for Column One (Identifier Column (as per instruction sheet)), the names were cut off after eight letters.

I think you have been over-generous in your ratings. Value for money? I have seen better data file type programs in books at only £5.95, whereas Dataplan cost me £12.95. I will be interested to read P.S.S.'s reaction to your review, as well as readers' comments.

G. Pallett,
26 Chilwell Road,
Beeston,
Nottingham, NG9 1EJ.

(Oh Dear! We'd better pass the last two issues to P.S.S. for their comments! - D.M.)

DRAGON GOODIES

* New Games

Flight Simulator (P.S.S.) £7.95, Submarine Commander (B.& H.) £6.95, Taskship (Programmers' Guild) £8.95, S.A.S. (Peaksoft) £6.95, Hungry Horace (Melbourne House) £5.95). And a deluge from Microdeal - Cuthbert in the Jungle, Cuthbert goes Digging, Crazy Painter, Keys of the Wizard, Inergalactic Force - all £8.00.

* New Business Program

MST-Calc, a spreadsheet for the Dragon. (£19.95)

* New Books

'The Dragon Trainer' (Sunshine) £5.95, 'Dragon Games Master' (Sunshine) £5.95.

Due in October: 'Dragon Machine Language for the Absolute Beginner' (Melbourne House) £6.95, 'Dragon Programmers Reference Guide' (Melbourne House) £6.95, 'Programming the Dragon for Games & Graphics' (McGraw-Hill) £5.95

REVIEW

TALKING ADROID ATTACK from SPECTRAL (Microdeal) - by Edwin Aird

Another great game from Spectral (Washington) which has so far given us such remarkable arcade-quality games for the Dragon such as 'Cosmic Zap' and 'Planet Invasion'. Advertised extensively as TALKING ANDROID ATTACK, the voice synthesis is, in fact, limited to:

INTRUDER ALERT
COWARD
I'LL GET YOU NEXT TIME

and you have to listen very carefully to begin with to even understand this much. However, speech does add a new dimension to games - taking the place of the sometimes irritating little tunes - and it intrigues the kids!

The instructions for the game are very clear and detailed, which is more than can be said for some games from other sources. The game takes place in a series of underground rooms on an alien planet. You are armed with a laser, which can be fired in eight directions. Your special space suit allows you some protection from the various hazards - laser bolts from the Androids, the deadly glowing walls and the mines. Each room has dividing walls which are all charged. It is possible to accidentally touch a wall and survive if you have sufficient units of protection. The instructions even recommend creating doors in the vertical walls to use as doorways. Maybe this is necessary at the higher levels of play - there are 15 levels - when androids are firing at you, but I haven't needed to do this yet at the lower levels. When all your units of protection are used up, the game ends if you are hit by laser fire or walk into a wall. As with other games from Spectral, there are useful indicator displays at the bottom of the screen. The score is in the left-hand corner, units of protection in the centre and a countdown time - giving the time left in the room before definitely being destroyed - in the right corner. This count down 'score' is added to your score if you manage to destroy all the androids, pick up the crown and leave the room.

The details of the game give it its fascination. When an android is hit, it changes into a mine and then into a ghost android, which also must be destroyed. Ghost androids cannot fire at you but they can destroy you if they touch you and they can pass through walls.

If you work quickly and receive bonus points for clearing a room ahead of time, then the next room will be more difficult. The androids become smarter and faster.

The joystick, as well as firing, allows you to duck or jump by pressing the fire button when the joystick is 'up' or 'down.'

The colours are good - especially the glowing purple of the deadly walls - and the sound effects are entertaining, particularly the changing notes of the throbbing background sound which is even more effective than 'Cosmic Zap.'

Altogether an enjoyable game, which, although it contains yet more shooting, has those extra differences which make it entertaining. We look forward to even more 'talking' games from Spectral.

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

TIPS

TIP OF THE MONTH

We give below (in full, just to embarrass member Middleton) this month's winning tip. We felt we had to reward such diligence!

"I will start this collection of Gems of Information off with compatibility, since everyone seems very keen on this. I use a "Harvard Elegance Mk II" tape recorder which is marketed under many different names but which all look the same (the tape recorders, not the names!) This has worked perfectly (almost) as long as a few important facts are kept in mind:-

(1) When the motor is started via the 'remote' jack, it may take a second or two to get up to full speed. Therefore, when recording a program (especially M/C I find) - type CLOAD "... " or whatever
- press Record + Play on the tape recorder
- pull out the jack plug
- count to three
- press "Enter"

If you have a tendency to break wires, then think up a fancy routine using MOTOR etc.

(2) If your tape recorder is too close to the television "induction hum" may result (I don't know what it means but it sounds good doesn't it?) Move it further away!

And now for the moment you've all been waiting for - a program! This is a simple little prog. of my own which will read the header that precedes your program on a tape.

```
10 CLS
20 EXEC &H 8021 'motoron and prepare for cassette input
30 POKE &H 7E , 04 'set cassette buffer area as
40 POKE &H 7F , 00 'beginning of screen memory
50 EXEC &H B93E 'read in a block of data
60 MOTOROFF
70 FOR I=0 TO 7
80 PRINT@96+I , CHR$( PEEK( 1024+I )); 'filename
90 NEXT I
100 FOR I=0 TO 6
110 H$ = HEX$( PEEK( 1032+I ))
120 PRINT@128 + 3*I,STRING$( 2-LEN(H$),"0") = H$; 'program data
130 NEXT I
140 END
```

First of all it Pokes the 15 bytes to the screen, then prints them out in alphanumeric and hex codes. It's made up thus:-

| | |
|-------------|---|
| Bytes 1 - 8 | the program name is ASCII format |
| Byte 9 | 00 for a basic program 02 for a M/C program 01 for a datafile |
| Bytes 10-11 | 00 00 for a program FF FF for a datafile |
| Bytes 12-13 | length of program for M/C |
| Bytes 14-15 | start of program for M/C |

I have not yet fathomed what these last four bytes signify for basic programs/datafiles. Some of my programs give 00's all the way through!

This routine can be very useful if you've forgotten where that nifty M/C program you spent hours perfecting was originally stored and you've lost the listing!

My hearty thanks to Mike Jarvis and his marvellous book "The Dragon Companion" for the addresses and locations used above. I cannot praise the book highly enough (no, he isn't a personal friend - it really is a good book. Honest!)

If this turns out to be your winning tip, I would like the DASM/DEMON cartridge as my reward. (Yes, I know it costs slightly more than £15, but I'll send the rest on later, I promise.)

A question, last of all, for Mr. K. Allen. How is it that though there are 78 BASIC commands, the command vector table is only 119 bytes long. Surely you need 2 bytes per vector, don't you?

On this inquisitive note I say Tara! once more, until my search for secrets man was not meant to know brings more hideously revealing information to light,

Yours questingly,
Member S.J. Middleton, Brighton."

(One DASM/DEMON on the way, together with bill! - D.M.)

REM STATEMENTS

When programming a subroutine at, say, Line 4000, do not type it in as:

```
4000 REM EXPLOSION
4010 CLS
....etc.
```

Use Line Number 3999 for the REM statement and commence the subroutine at 4000.

Why? Well, if at a future stage you decide to delete all REM's from the program (to save memory) you don't finish up with a crash when your program reaches GOSUB 4000.

For similar reasons, it is bad practice to tag REM statements on the end of command lines.

MEMBERS' ADVERTS

We would remind you that Members can insert advertising in 'Dragon's Teeth' free of charge. Whether you want to contact like-minded Members on some project or want to sell off something to fund your disc drive, the Club's pages are open to you!

REVIEW

FILING YOUR CHARACTERS - GEM'S CHARACTER GENERATOR by Michael Silcock (£9.95)

Gem Software's tape bears two programs, which are loaded separately by CLOADing "CHARGEN" or "CHARSUBS." Let's look at them separately.

a) CHARGEN

After loading, this program presents a menu with three options:

1. Create a file from scratch
2. Create from a file
3. Modify a file

Option 1 enables the user to create an entirely new character set. Option 2 is similar but enables you to read in an existing character file, which is then modified and saved as a new file. Option 3 is self-evident and differs from 2 in that it is re-saved after modification.

If Options 1 or 3 are chosen, a file name will be requested. The program is error-trapped and an illegal name will be rejected with an indicative sound. If Option 2 is requested, the program asks for two file names - the source (existing) file and the new (output) file. Options 2 and 3 then call for a data cassette, which, when inserted as per instructions, is read by the program.

From this point on the procedure is the same whether creating or modifying character sets. First the program requests the character number (from 0 to 127.) Again, the program is error-trapped and invalid calls are rejected. Assuming that a valid call is made, you will then see a "Definition Screen". The latter has a reference grid, a row and column selection area and the display area.

The reference grid covers a 9 x 7 cell with rows marked A to I and columns marked 1 to 7. Usefully, the display area shows the character created as a 3 x 3 character block, i.e. normal size. Inputting the character being created (or modifying the file character displayed) is simplicity itself. You simply enter the row and column grid reference to be filled in. Error-trapping is efficient and invalid calls are rejected. Mistakes can be overwritten by re-keying the same reference.

Once a satisfactory character (which can be a letter, shape or symbol) has been achieved, press the CLEAR key and the call menu, requesting the next character number to be worked on, reappears.

Assuming that you have worked through all the characters which you wish to create/modify, instead of keying in the next character number, you type in END. Instructions are then screened for preparation of the data cassette, ready for the CHARGEN program to CSAVE the character set.

One final point on this section of the utility. You don't need to define all 128 characters and can create what Gem call "Short Sets." The rest of the set is filled with blanks.

b) CHARSUBS

This second program consists of two subroutines. The first reads a character file into memory and the second displays the characters concerned.

Before calling the first subroutine, your datafile cassette is inserted into the recorder and input is required for the file name and the number of characters to be read. A possible criticism here is the fact that invalid filenames or invalid character numbers to be read are not error-trapped. The program will DIM automatically, using the number of characters to be read.

The display subroutine demands that you first set up a graphics screen using PMODE and SCREEN (after PCLS, of course) and define the starting point of text on the screen (via definition of the X and Y co-ordinates.) Again, usefully, there is a third input which specifies whether the character set is to be displayed horizontally (0 = horizontal, 1 = vertical). Various other options are available to handle single or multiple characters.

To use the subroutines, you simply load the CHARSUBS program and edit it to delete all but the reading and display routines and then write your program round them (I found it best to renumber them first, with high round figure start lines, which I could GOSUB to.) It is not possible to incorporate the subroutines into an existing program, without some fancy merging after the deletion.

Obviously, quite elaborate characters can be created with these programs, using a number of created characters set in adjacent or near-adjacent screen positions. Once shapes have been drawn, they can be moved around the screen using GET and PUT.

All in all, this is a useful utility. Nothing ultra-sophisticated, just helpful, easy to use programs. I would recommend it to anyone into serious programming, since it enables you to build up a helpful file library of character sets, which can be drawn upon as required.

DUNGEON PROBLEMS

Dear D.M.,

I regret to advise you that I have jiggered one of our Dragons after inserting a 'Cave Hunter' ROM cartridge into the games port. Honest, I switched off before inserting it - so it wasn't that!

Now the wretched thing will only show a screenful of mixed block graphics and inverse ASCII characters - all changing like a kaleidoscope. Switching off doesn't help and we appear to have lost Microsoft BASIC. Can any of your Club Members suggest what happened?

With apologies,
ZAP.

P.S. Have you noticed that the Tandy Model III disc drives have gone again? Five days on "soak test" in their workshops without a blink and now it boots up with a screenful of C's. Suggest you swap it for a D64 with Dragon Data drives!

M/C CORNER

So, where were we in July? We've looked at the way binary addition is carried out and gone on to signed binary (i.e. positive and negative numbers). In 'Two's Complement' representation positive numbers are represented in the usual way, so that +4 would be 00000100. However, negative numbers are represented by computing the 'One's Complement' (i.e. changing all 0's to 1 and all 1's to 0) and then adding one. Thus -3 would be 11111101 (+3 = 00000011, its One's Complement = 11111100, add one to Two's Complement = 11111101.) Add the Two's Complement of negative numbers, ignore any carry and the answer is the same as normal subtraction. Thus 4 - 3 in binary is 00000100 + 11111101 = 00000001, with a carry of 1, which is ignored. Thus we arrive at the correct answer.

There's no need to carry all the binary representations in your head, since plenty of reference tables exist and some software to assist coding input will work it out for you.

Now we have situations in which some carry situations are valid (where the number generated would require more than 8 bits to represent it) and other situations (as in the example above) where the carry is invalid (i.e. it is not required.)

| (A) <u>Decimal</u> | - | <u>Binary</u> | (B) | - | <u>Binary</u> |
|--------------------|---|---------------|------|---|---------------|
| 255 | | 11111111 | 64 | | 01000000 |
| + 2 | | 00000010 | + 64 | | 01000000 |
| 257 | | (1)00000001 | 128 | | 10000000 |
| | | ↑ | | | |
| | | carry | | | |

In case (A), the answer would require 9 bits to represent it (remember our famous friend 255, the maximum 8-bit number which is 11111111 in binary) and thus the CPU must be instructed whether it is a carry to be stored in some register or whether to ignore it (in the case of the carry in paragraph one.)

In case (B) there doesn't at first sight seem to be a problem, until you remember that 10000000 is also the Two's Complement of -128. This is an example of overflow. An internal carry has been generated from bit 6 to bit 7 and the computer, in fact, would see the result as minus 128 (accidentally) unless the situation is detected and corrected. The special register which we call the "flag" (status) register must be advised accordingly.

"Overflow" occurs in four situations:

- a) when large positive numbers are added
- b) when large negative numbers are added (-65 added to -65 produces +128)
- c) when a large positive number is subtracted from a large negative number
- d) when a large negative number is subtracted from a large positive number.

The overflow flag will be set when there is a carry from bit 6 to bit 7 and there is no external carry. It is also set when there is no carry from bit 6 to bit 7, but there is an external carry. This indicates that bit 7 (which indicates the sign) has been changed "by accident."

This would seem to limit us to numbers from -128 to +127 if we are not to

have problems (since we only have 8 bits to play with), but do not despair! A two, three, four or N-byte format can be used. For example, in Double-Precision, using two bytes per number decimal number 1 would be 00000000 00000001 in binary. Obviously, processing of arithmetic would be slowed down, since addition would have to be carried out 8 bits at a time (the reason why 16, 32 or even 64-bit micros are so desirable to business users.)

Another approach to larger numbers is to encode each decimal digit and use as many bits as necessary to complete the number. This is used in BCD, which is employed in accounting, etc., where the large amount of memory used and slow processing is less important than absolute accuracy.

Finally, before we consider alphanumerics (how characters are encoded), there remains the question of Floating Point representation. Here, the basic principle is that all decimal numbers are represented with a fixed-length format. Consider the decimal 0.000125. The three zeros after the decimal are redundant except to indicate the magnitude of the 125. In other words, they merely indicate where the decimal point is in relation to the 125. Expressing the same decimal differently (the technical term is "normalising"), it could be represented as $.125 \times 10^{-3}$. The -3 is the "exponent" (remember all those E's on the screen, when you keyed some program which resulted in large numbers?) Sorry to introduce more arithmetic jargon, but you should know that the .125 is known as the "mantissa." Normalised decimal equals mantissa times ten to the power of the exponent, or, to put it more elegantly, the floating point representation is $M \times 10^E$.

When we come down to byte level, the last byte of a number will represent the exponent (represented as the Two's Complement) and succeeding bytes represent the mantissa (again as the Two's Complement.) Sign is represented by the final bit of the exponent byte and final bit of the mantissa bytes.

We leave you this month with the picture of four byte number



Sign is indicated by bits 23 and 31.



COUSINS

WHAT IS A FIRE-BREATHING 49K COCO?

by Bob Rosen of Spectrum Projects, Woodhaven, New York.

That is a good question. Recently, Tano Corp of Louisiana sent me their new Dragon 64 to review. For those who read my article on the Dragon 32 (Sept. '83 Rainbow P. 113), there are some nice changes incorporated into the 64.

The first, of course, is the added memory. On power up, you get the same old logo - (C)1982 Dragon Data Ltd. - that you get on the 32. A ?MEM yields the familiar number 24871. Why call the machine a Dragon 64? Well, if you proceed to type EXEC, all of a sudden a different logo appears. It now says - (C)1983 Dragon Data Ltd. The change of dates means that the Dragon 64 has two different states of operation - a 32K and a 64K mode. Further investigation with CLEARO, POKE32,0, POKE31,0 and ?MEM now returns a value of 49,124 bytes! This is the maximum amount of memory one can expect, since the two ROMS inside require 16K. I was curious to see that these two ROMS were actually 27128 EPROMS and not masked ROMS which are found in the 32. Of course, this computer was sent as an evaluation unit and I would expect masked ROMS in the final versions.

Another difference was the addition of a seven pin din Serial I/O socket. Since the Dragon 64 already has a parallel printer port, one should be able to print out while online with a modem. The only other minor differences I noticed was that the on/off switch was replaced as a Channel 3/4 selector and the external power supply now had the on/off switch. The transistors on the power supply heat sink had screws instead of pop rivets. The two ROMS both had sockets now and the RF Modulator is no longer made by Astec.

The Dragon 64 will retail for \$399.95 and Tano Corp plans to market it through high end department stores. Tano is not interested in mass merchandisers as it wants the Dragon 64 to have a very professional image and doesn't want to compete with units on the toy shelves. All sales people will be trained through classes and video demonstrations. Tano feels that with TI and Atari losing hundreds of millions of dollars, it will be able to compete in the market by offering the retailer a decent profit margin for a change. Soon to come is a 128K version of the Dragon with OS-9 capabilities.

Tano expects 250,000 machines to be sold in the first year, making it a serious competitor to the R/S Color Computer. It should be interesting to see how well they do against Radio Shack in the coming year.

Now for some hardware notes from under the CoCo 2 cover! Radio Shack has introduced a new version of its successful Color Computer. The new Color Computer 2 is fully software compatible with all current Radio Shack software, but third party software and hardware compatibility is another story.

Major design changes have taken place under the CoCo 2 cover. To start with, Radio Shack has completely eliminated 12 volts from the Color Computer 2 and it runs almost entirely on +5 volts. The only negative voltage is for the RS232 interface. They have replaced the dynamic 16K chips with 4517 chips. These are 16K counterparts that require only +5 volts. Piggybank upgrades for the older computers will not work here. Other hardware items that will not work "as is" include the RS X-PAD, Eprom Programmers, Video Interfaces, Microtext, old RS Disk Controllers and Speech Synthesizers. The CoCo 2 power supply is now a simple center-tapped transformer with a fuse hard wired into the primary. Take note that CR7 and CR8 are special diodes that have no direct substitutes. These parts can only be obtained through Radio Shack National Parts.

The most obvious external change is the size of the computer and the keyboard. The CoCo 2 is smaller than the older Color Computers, measuring 13 $\frac{3}{4}$ " W x 9 $\frac{1}{2}$ " D x 2 $\frac{3}{4}$ " H. The case is no longer "battle ship grey" but a pleasing off-white. The keyboard is still of the conductive rubber type with larger key caps. This is a disappointment as I thought it would be changed to the mechanical type. The air vent holes are across the rear top of the cover like the "infamous" TDP computers.

Looking inside reveals more interesting changes. To upgrade to 64K is now as simple as 1-2-3! All one has to do is remove the (8) 4517 chips and replace them with (8) 4164 chips. Between IC chips U6 and U7 is W1. Run a jumper wire across the solder feed through holes to the right where W1 is marked and Voilà!, you now have 64K! No more capacitors or traces to cut and no pins to bend up. Old "D" board owners wish they had it as easy. Looking further reveals the absence of the Astec RF Modulator. This is because the MC1372 Video Mixer chip is now being used as both a Video Mixer and RF Modulator. Due to a new redesign in the VDG circuitry, colors from Semigraphics 6 mode do not appear. This again has no effect on RS software, only third party software.

All Color Computer 2's have the new 1.2 BASIC ROM and 1.1 Extended Basic ROM. The new Color 2 Disk Drive Kits (26-3029) contains the new 1.1 Disk ROM reconfigured to work with OS-9. The 1.0 Disk ROM's can work with OS-9 but require the cumbersome task of always inserting a boot disk. With the new 1.1 Disk ROM all you have to do to boot OS-9 is type DOS. OS-9 is a sophisticated operating system with multiuser and multitasking capabilities. It requires 64K but considering the ease of upgrading and the low cost of 64K chips (\$44.95) many CoCo 2 owners will soon be exploring the powers of OS-9.

Radio Shack has done some job in bringing in an exciting new CoCo product line. Besides the Color 2 and OS-9 there are now Multi-Pak Interfaces, RS-232 Program Paks, Color Mouses, Delux Joysticks, Color Ink Jet Printers, and soon to come in 1984 the much rumored "SUPER COCO". We'll leave that one alone for now. You do like surprises, don't you?



ZAP'S BIT

THE DUNGEON'S OWN PET DRAGON WRITES

Last week I sat in the nethermost reaches of the Dungeon, having been banished from the computer room for monopolising the trade review copy of 'Maurice Minor' (they all wanted to play it!) Having nothing to do but play with the rack (and I've stretched everything worth stretching), I started to think about the direction that arcade games are going and what I'd really like to see on the market.

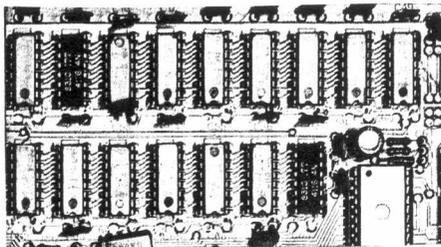
I'm fed up with zapping hoardes of PMODE4 aliens and crossing rivers/roads/crocodiles. I'm bored with hopping over scorpions/fireballs/barrels. What we need is real action!

How's about 'Programmer', an all-colour, all-sound battle to claw your way up through the hoardes of front-room, mail-order only, modified-it-from-Rainbow competitors to reach the Level 2 screen. Scrolling left and right, à la Defender, you dash among the freelance-working-part-time-for-Virgin key-bashers, as rocketing stars like Eugene shoot up at you. In this phase, you drop bricks as evil red Atari lawyers fire writs at you for infringing names.

After scoring £17,000 per annum, with the same again in bonus, you move to Screen 3, where a deadly battle with the Taxmen calls for lightning avoidance and tricky joystick work. If you still retain more than 10% of your previous score, you move to the final Screen, where you are instantly snapped up by Imagine, together with 29 other gifted machine-code writers. As you fight desperately to free yourself from the all-enveloping contract (Microdeal having made an offer you don't want to refuse), you have to keep one eye on the Workload register (over 60 hours per week and you lose one wife per wave) and the other on the Magazine Review scores. If the latter start slipping down, your bonus rating falls.

And then, assuming that you make it to the top of Screen 4, comes the Reward display (unreadable on listing, 'cos of a dongle.) The actual time and place to meet the Pi-Man!!!

Now, that's what I call a game!



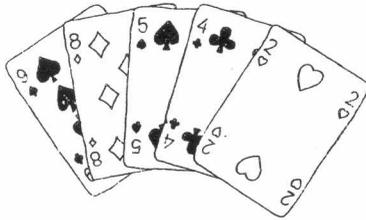
Competition

CLIVE'S POKER HAND

Oh dear, we slipped up in last month's competition! It must have been too easy, since about 100 correct entries flooded in. Many of you sent in excellent print-outs of the programs devised to calculate the answer and, since nearly all of these were very creditable efforts, we find it impossible to judge a winner. Equally, the size of the correct entry makes a "tie-breaker" difficult, so perhaps all entrants (who all got it right) will forgive us if we just draw a veil over the proceedings and increase the prize for this month's competition.

The correct answer was: 5 of Spades, 9 of Spades, 2 of Hearts, 8 of Diamonds and 4 of Clubs. We particularly liked the entry from Miha Kos:

The answer of the August competition is:



My address: Miha Kos,
61 000 Ljubljana,
Pod hrasti 74,
Yugoslavia.

SEPTEMBER COMPETITION

After twisting our minds for programming problems, we decided that, just for once, the monthly competition would be a little less serious!

What we want is your answer to Zap. That's to say, your suggestion for the ultimate arcade game. The rules are simple:

- Keep it brief (no word limit, but no three-page epics.)
- Keep it printable (we have to pay for solicitor's advice.)
- No adventures allowed (maybe we'll have such a competition someday, but keep to arcade games for now.)

Your entry doesn't necessarily have to raise a smile, but it would help!

Prize: Two tapes of your choice (usual proviso, up to £15 retail each.)

OFFERS

1. STANDING OFFER

With the demise of the Micro Software Club, we're going to offer the same terms to our own loyal members. So from now on ANYTHING from the Dungeon comes to you at 10% off the price to non-members! Postage is free on software and hardware, but still applies to some books.

2. AUTUMN SALE

In preparation for the Christmas rush and the wave of new software, Dragons disc-drives and printers, we've decided to reduce stocks of some items on our shelves. Don't be misled, we're not clearing out the junk! Some of the items are in the top-selling range, which is why we have large stocks of them.

Until the end of October, the following items are available to members only at 20% off published prices!

Software

Nightflight (Salamander)
Gridrunner (Salamander)
Drone (Cable)
Missile Defender (Tiger)

Hardware

Parallel Printer Cables

Books

| | <u>Normal Price</u> | <u>Offer Price</u> <u>(inc.p & p)</u> |
|-------------------------------------|---------------------|--|
| 'Load and Go with Your Dragon' | £5.50 | £4.50 |
| 'Making the Most of Your Dragon 32' | 5.95 | 4.95 |
| 'Dragon Extravaganza' | 5.50 | 4.50 |
| 'Dynamic Games for Your Dragon' | 4.95 | 3.95 |
| 'The Power of the Dragon' | 5.95 + 75p p&p | 5.25 |

WE'VE MOVED!

As many of you already know, the Dungeon is now formally occupied after months of refurbishing (we think that the last work done on parts of the premises was in 1820, when the Dungeon was part of the 'Blackmore's Head' Inn.) To all those who tried to contact us in the period before our new 'phones became official - sorry for the silence!

Our new address and telephone numbers are:

Milton House, St. John Street, Ashbourne,
Derbyshire. DE6 1GH. Tel: 42529 & 42639

To those of you near enough to call in (and who perhaps fancy a day at Dovedale with the family), Milton House is marked by a hanging "pub sign" just beyond the famous "across the road" sign for the 'Green Man'. Retail hours are 9.30 a.m. - 5.30 p.m.

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