The Dragon scene really is picking up! What with software pouring out from every conceivable source, top quality games, such as the Tom Mix graphics marvels, rolling in from the States and the Brains capturing 3½ pages of 'Your Computer' for Dragon software reviews, they can hardly continue with the myth that the D32 lacks programs. With Windrush, Compusense, Dragon Data, et al all rushing to bring us disc drives and the FLEX stockists in the U.S.A. busily converting applications and languages, the business Dragon becomes feasible. And what about Dragon Data's plans? Dedicated cassette recorder, two dedicated printers, 64K upgrade, 128K Super and IBM-bashing Super-Super-Dragons, etc., etc. on the way! And now a pro magazine 'Dragon User' appears. This just has to be the Year of the Dragon!

Several people have asked us where 'Dragon User' leaves 'Dragon's Teeth'? As far as we are concerned (and many Club members seem to share the view), the arrival of Sunshine's monthly can only continue the good works commenced in 'Popular Computing Weekly', which seems to have a definite Dragon slant and (for a change) contributors who are providing valuable advice and sensible Dragon articles. But monthlies go to bed six weeks ahead of issue! With the Dragon scene accelerating with the speed of a 65495,0 POKE, we hope that 'Dragon's Teeth', completed a couple of days prior to dropping through your mailbox, will serve as a forum for up-to-date discoveries and news and will complement 'Dragon User' in this regard.
PIMANICAL MADNESS!!!!
A Review of Automata's PIMANIA by Clive Gifford.

Pimania, Pimania, Pimania, that's all you ever hear in our house ever since that dreaded cassette dropped through our letter box. What is Pimania? Why is it so addictive? Why does it appeal to both young and old? I'll tell you - read on.

Pimania is an adventure-type game, i.e. you have to visit locations, meet characters and obtain possessions, but there is much more to this game. For a start, there is a £6,000 trophy going to the winner (and there can only be one) who manages to solve the relevant clues and therefore cracks the game. The trophy, named the Golden Sundial of Pi, is a truly magnificent piece sculptured out of gold, diamonds and many other rare riches by Barbara Tipple, winner of the De Beers Diamond International Award.

The game arrived quickly, just two days after I put in a request for it. The cassette comes with a colourful inlay card and a four-page photostated guide. The guide does not explain how to play the game but whets your appetite with a further introduction to the world of Pimania, describing it as a 'cross between Enid Blyton and the Marquis de Sade!' The guide explained why no instructions were given, saying 'that it is difficult to describe the contents of Pimania without spoiling it for new players.' With many other adventure games, this would result in you getting nowhere, but in Pimania, with its clues and responses, your task is slightly easier but only at first.

On the B side of the tape, which loaded every time, is what Pimania describes as an 'appallingly hypnotic disco single' and, though your ears may at first be offended, listen on as it contains many clues and does become quite catchy.

Well, now on to the game itself. It starts off with a brief description of the game, your task ahead and a warning to any 'tape pirate.' You are then shown a view of the first gate of Pi which you must open. Once opened, you are introduced to the mischievous Pi Man, a creature whose allegiance to whom you can never be sure. He will sometimes help you and then betray you. He will give you useful items, only to take them away again minutes later. However, do not disregard his advice or presence, for he is your only companion on this the ultimate of quests. Everything from now on could be a clue so be warned!

There are some excellent graphic effects, my favourite being the Pi Man's little dance near the beginning of the game. The responses to your commands are very good. They cover every possible command and the reply is often very witty. As the notes with the cassette say, "players must not be afraid to express themselves through their keyboards. The Pi Man has a response for everything." Several of the computer's answers appear much more than others but this program beats all other adventure games in terms of allowing for faulty input.

There is much use of sound - both for sound effects such as the police sirens and proper tunes. Such notable music as 'Somewhere over the Rainbow' and 'Yes, we have no Bananas' are given the Pimania treatment. The game is quite fast in comparison with similar
programs and full use of the Dragon's memory is made, with just over 400 bytes of memory space left. Any of you computer wizards out there considering breaking the program and then searching for clues, forget it! The important data is loaded after the main program and cannot be accessed. At any stage of the game, by typing STOP, your then present situation can be saved onto tape. This is an important consideration in adventure gaming.

I think the main emphasis of this game is on discovery. The elation at finding a new mini-cartoon, tune or location overcomes your frustration of getting stuck in one area. All adventure games are frustrating to some extent because if they were easy to beat then the interest in them would soon decline. The real test of an adventure game's quality is the balance between difficulty and enjoyment, i.e. it must be difficult to beat but the game along the way must be enjoyable and fun to play - this one is.

As much as I would have liked to, I have not described many of the game's locations, characters and situations, as it would have spoiled your enjoyment when you came across them yourself. All I will say is that there are a countless number of situations in which you can find yourself, though in one go you may find yourself stuck in a rut between 3 or 4 of them. The method you use to escape from one situation may not work the next time when you come up upon the very same position. The only clue I will give you is this one - 'In Pimania everything is absurd, for the number can be stronger than the word.' Not exactly poet Laureate stuff, but still a useful clue.

I got in contact with Christian Penfold of Automata, a company notorious in the past for their ZX81 games such as 'Acne', 'Seduction' and 'Smut.' He is the original author of Pimania. Automata have always tried to keep away from the destructive shooting games and have produced humorous programs for maximum enjoyment. This dislike for violence can be seen in Pimania, for example, just type in 'HIT PI MAN' and see the result. Whether you agree or disagree with their views, Automata should be congratulated for sticking to their guns and producing imaginative fantasies like Pimania.

This program was originally for the 48K Spectrum and has been converted by Jon Menzies. Christian told me of the difficulties of conversion to the Dragon without User Definable Graphics and restricted Graphics and Text mixes. Also, there was the problem of the memory incompatibilities which resulted in several of the memory-consuming animated cartoons being removed. I do not have a particular love for adventure games but I have to admit that this one is difficult to stop playing once you have started.

CONCLUSIONS: This program is packed full of good music, graphics and amusing features. It is a very professional effort indeed and for any adventure buff, I would say it's a must. Even for the person who is not really into adventure games, it must be considered. I'm sure they will be surprised. I am not the only reviewer who thinks this program is very good. The Spectrum version received rave reviews in Interface, Sinclair User and Computer & Video Games. The last magazine has organised a competition to try and solve the game, such is the attention that this game is causing. At £10.00 it is a little expensive but, as said before, in many cases you only get what you pay for - I think it's worth it.

Automata's future plans include some interesting software for the Dragon. Very soon they will introduce a high resolution graphics
deomnstration cassette and also a very comprehensive doodlebug program. Further ahead are plans for a user definable graphics generator in machine code and another adventure similar to Pimania, entitled 'My Name is Uncle Groucho, You Win a Fat Cigar' - sounds interesting. We shall have to wait and see......

Presentation..............8½
Entry Complexity..........8
Play Complexity............10
Play Balance...............9
Interest Level..............9
Overall Rating.............9

COUSINS

NEWS FROM THE U.S.6809 SCENE

To those of you who were not aware of it, the Tandy Color Computer has sold in the U.S.A. on the scale of the ZX-81 in the U.K. and the 6809 chip scene there is really something! If we want to see what the Dragon is capable of and the likely directions in which it is to go, then a survey of "what gives" in the U.S. of A will provide valuable pointers. "Dragon's Teeth" is therefore instit-uting this new section. It may make you drool a bit and give rise to frustration, but what has happened there will undoubtedly give rise to many new Dragon 32 developments in the coming months.

- First, a few definitions, to set the scene. FLEX is a trademark of Technical Systems Consultants and FHL COLOUR FLEX is the operating system which we will be hearing a lot about once the Dragon gets its discs. FLEX is the world's most popular operating system for the 6809 processor and has a massive software library awaiting. Frank Hogg of Syracuse, New York, stock over 100 disc utilities for the 6809, including such delights as 24 x 51 Hi-Res screen formats for upper and lower case characters, 32 x 64 upper case format, Full Screen Editors, Pascal, Fortran, Cobol, etc., etc., etc! They'll all be here for the Dragon, given time.

- GIMIX Inc. offers custom-built computer systems based on the 6809, up to mind-boggling specifications (how does a 38 megabyte Winchester system for the Dragon grab you?) Bill Sias of REMarkable Software is planning to upgrade his own GIMIX to 512K (on board!) and six users. As he says, not bad for one 6809 chip! The point of all this is to stress just how powerful your Dragon's 6809 really is. We've not even begun to scratch the surface of the Dragon's potential here in the U.K!

- One or two of you suggested that Mark Data management would be round to punch us on the nose after the unflattering review of 'Calixto Island' in our first issue. This seems to be the appropriate place to note that they'd have a long trip to do so. Mark Data happen to be located in Mission Viejo, California and 'Calixto Island' like most of the early Dragon software, was Dragonised U.S. material!

- Expect turtle graphics on your Dragon before too long. A Color Computer version of LOGO, called TINY TURTLE is already on sale in the U.S.

- American software which we can expect here varies wildly. Pray that nobody imports "Silly Syntax", which is a straight computer
version of the old party game 'Consequences'! On the other hand, 
war gamers and admirers of high quality graphics will be impressed 
by Softwride's 'Battle of Gettysburg.'
Tandy have just launched their first 'film theme' cartridge, follow-
ing Atari's lead in 'E.T.' and 'Raiders of the Lost Ark.' This 
is a three-screen arcade version of 'Poltergeist' (can you rescue 
poor Carrol Anne?), which seemed slightly sick to us in it's detail. 
We suppose a Dragon version will turn up here.

- Telewriter-64, Cognitec's excellent Word Processor has already 
turned up in the U.K. via Microdeal. You'll already have read 
Keith and Steven Brain's detailed (and very fair) review in Popular 
Computing Weekly. In the Dragonising, we appear to have lost the 
64 x 24 and 85 x 24 formats, but perhaps they will appear later 
as separate packages.
As usual, U.S. prices seem way below the U.K. (the 3-display format 
tape version costs $49.95 there), but the falling pound can't have 
helped.

- A TINY COMPILER is on the U.S. market. This does have limitations, 
only supporting a subset of 20 BASIC commands, but we can't wait 
to see a Dragon compiler here. The route may lie via C-Language.

- For the arcade fanatic, rest assured. Your old favourite 3-D 
Trench Master is on the way via Intelex, who have rewritten the 
Atari version to avoid copyright problems. 'Tail Gunner', the 
arcade classic is available for the Color Computer through K. &
K. Tom Mix's classics have already arrived via Microdeal.

- U.S. tale of the month was the visit of a Radio Shack (Tandy) 
manager to the CSRA Computer Club. While demonstrating new Color 
Computer cartridges, he incautiously stated that ROM cartridges 
like these couldn't be copied. The 68 Micro Journal promptly pub-
lished an article showing how it could be done, simply by covering 
some of the connector pins with tape!

- Another point on those U.S. prices. The Tandy Color Computer 
Disc Drive 0 sells there at £313, so we'll probably have to wait 
for those Shugart 3½ inch floppies for a competitively priced Dragon 
system!

According to Mike Silva of George Associates, Berkeley, California, 
they are about to launch a cartridge, which plugs into the Tandy 
Color Computer games cartridge slot. This cartridge, which contains 
a Z-80A, provides an extra 64K RAM, a single/double density disc 
controller and supports an 80 x 25 video display with lower case 
and assorted graphics characters. It provides output via serial 
and parallel ports and has two expansion busses for additional 
circuitry. So what does this provide? Only the ability to run 
FLEX, OS-9 and CP/M (yes, we did say CP/M!) on any standard 5½ inch 
floppy disc drive!

The light down here in the Dungeon is pretty dim 
and we may, we just may, have misread your name 
or address. If this issue arrives with your name 
misspelt or the address incorrect, please let us 
know so that we can amend the mailing list. Thanks!

********************
Our correspondence at The Dungeon suggests that many of you are having trouble loading your commercial tapes or even the programs which you've written yourselves. Even worse, some of you are losing your programs when you CSAVE them - a diabolical event after a couple of hours of key bashing! We can't promise to solve all your problems, but, in an effort to put at least some of you on the right track, this little piece is intended to state a few home truths about cassette recorders.

Firstly, don't believe a word of that oft-quoted statement "The Dragon 32 is compatible with all tape recorders that have suitable jack sockets" - it just ain't so! We heard the other day of a Dragon owner who went through four recorders at prices up to £50-plus before he found one that seemed to enjoy life with a Dragon. Our own Tandy CTR-BOA, totally compatible with a TRS-80 Model III, acts up on occasion with the Dragon. We have heard of problems with Hitachi TRQ-295R's and (especially) Fergusons. At this point of time, pending the launch next month of Dragon Data's own dedicated recorder, we can only suggest that you tryout your intended purchase together with your Dragon and try to load and save a few programs.

Now let's assume that you have an allegedly compatible cassette recorder with all the jacks in the right holes, volume set to the recommended level, tone control (if present) set to maximum and still the wretched thing won't load or save properly. The first thing to consider is whether your tape transport and heads are clean. We cannot recommend too strongly the purchase of a Tape Cleaning Cassette. For less than a pound you can buy one at your local Hi-Fi store (Tandy sell one for 79p.) and this miserly investment can save hours of CLOAD/CSAVE struggle simply by removing deposits from the cassette heads. Use it regularly, about every 10 hours of recorder use. The roller and spindles of the tape transporter should also be cleaned regularly, using either isopropyl alcohol from a chemists shop or proprietary cleaning solution from a computer or audio store. Use cleaning sticks (like cotton buds, used for babies' ears and noses) and discard them after use. Packs of 100 cost only 70-80p. Hold the "bud", soaked in cleaning fluid, against the pinch roller and press PLAY. As the roller spins, rotate the "bud" slowly to move the dirty portion away and present a clean area. If you want to clean the heads at the same time, pressing PLAY will have caused the Play and Erase heads to move forward and you can easily wipe them with a fresh "bud." Wipe vertically, i.e., at right angles to the tape position.

O.K., let's assume that your machine is clean, properly plugged in and still acting up. Try the usual dodges of adjusting Volume (and Tone if present.) Still no go? Then try running the tape through on Fast Forward and let it run to the end. Switch to Rewind and respool the entire cassette. This often works when the tape is slightly slack on the spool and tightens it up so that it presents to the Play head at the correct angle.

That last dodge links with the main reason for loading and saving problems - azimuth angle! Without going into technicalities, one can say that the Play head must meet the tape at the correct angle or the signal is not passed from tape to head efficiently. Result - I/O error!
To adjust the angle of the head, one uses a jeweler's screwdriver or fine electrical screwdriver. If you look above the head, you will usually see a small hole with a tiny screw-head at the bottom. Adjustment is made by turning this screw. Before you do this, however, we would recommend that you invest in a Test & Alignment Cassette (available from Hilderbray Ltd., 8/10, Parkway, Regents Park, London NW1 7AA; price £4.90, post free.) This will enable you to reset the azimuth angle of the recording head with precision, rather than playing about on a trial-and-error principle.

One trick to try if your recorder seems "iffy" is to remove the EAR jack when recording (putting it back afterwards) and removing the MIC jack when playing back. This avoids a feedback loop, which can sometimes occur.

Don't forget the quality of your tapes and buy data quality C10's, C12's or C15's (around 50p. at W.H. Smiths) These shorter lengths are better buys than longer tapes, in that it is much easier to find a program on a short tape. Keep your tapes in an environment free of magnetic flux, which can corrupt them and don't pile your cassettes on top of your portable T.V. VDU (the T.V. gives out an alternating magnetic field.) We have had a number of letters from Dragon owners who claim that a tape "had loaded successfully lots of times, but now suddenly produces nothing but I/O errors." What's the betting that they put it on top of the T.V. set for a day or two? Hi-Fi speakers are also dangerous to tape integrity, so store your cassettes away from them.

If all else fails in the case of a commercial cassette, send it back to the supplier. Mistakes do happen in the tape production units and more than one Dragon user has spent fruitless hours trying to load "Prelude in E-Flat Major" into RAM! The Dungeon currently holds a manufacturer's review copy of an arcade game, which consists of a totally blank tape!

Coming Shortly

YEAR OF THE DRAGON

For those of you who haven't yet heard of new goodies on the way from Dragon Data, here's a brief list of projected launches in 1983:

April - Disc Drive, supporting a 250K 5½in. Floppy disc. The case will take a second drive. Reported prices in the region of £250-£275 for first drive and £200 for second.
April - Dedicated tape recorder said to be bought in, but Dragon Data adapted. Reported price £25.
April - 64K RAM board. No price quoted as yet.
April - DOS, with the name OS9. No price yet.
August - The Super-Dragon, with 128K (and, hopefully, a faster keyboard.) If the price is around £400, as reported, then the BEEB Model B better watch out! The Super-Super-Deluxe Dragon, with ribbons, whistles and I.B.M./Sirius-bashing bells on! With reported prices between £1,200 and £2,000 according to specifications, this should set Dragon Data firmly on the business scene.
October - 40-column (4 in. paper) and 80-column (8 in. paper) colour printers.

No dates - Further details in "Dragon's Teeth" as the facts emerge!
GEM PACK IV from GEM SOFTWARE by Gareth Hurfurt

This cassette is packaged in the usual plastic case, with a plain brown label and nowhere on the case does it indicate what the actual games are. The loading instructions are included on a strip of paper, which could easily be lost. The first program on the cassette is a short Basic program that just loads and runs the main Machine Code program. This could cause problems for people without a motor control on their cassette recorder and could easily be replaced by CLOADM and EXEC. However, I had no problems loading this program.

In the machine code program, two games are contained, 'Sea Harrier' and 'Sub Chase.' At the start of the program there is a Menu and the Gem Software sign.

'SEA HARRIER' - This game starts with instructions, which are clear and neat. They may be left at any time or repeated as many times as desired. The game is for one player and is loosely based on 'Bomber.' In this version you must bomb the clouds with a chemical dispersant and then land the plane on a ship, which moves across the bottom of the screen but slower than the plane. The number of hits in the clouds are counted and when they reach 9 the plane crashes. BEWARE of bombing your own ship (it "shrinks" each time it is hit and becomes progressively more difficult to land on.) This is a one-stage game with 4 levels of difficulty and when the game is over you are given a rating:

DEAD - if the plane crashes or misses the ship
FAIR - if the plane lands fully on the ship and there are a number of cloud hits.
ACE - when the plane lands fully on the ship and only a couple of cloud hits.

The controls, Up and Down arrows and ENTER to fire, are sufficient as this is a positional and not a fast reaction game. To give some idea of the difficulty of the game, I got an ACE rating first go on level 2 after some practice at level 1; at level 3 it took me eight goes to score an ACE rating; but at level 4 I have only once so far achieved an ACE rating.

The program appeared user-friendly and didn't crash while I was using it. The graphics in this game are no more than adequate (if colourful) and could perhaps have benefitted from the Hi-Res graphics. The game contains no surprises and I didn't find it particularly addictive.

'SUB CHASE' - The instructions for 'Sub Chase' are also clear and neat and can be left at any time. The game is the reverse of the arcade game 'Torpedo,' as you are the ship and you have to depth charge and blow up the subs (which pass under you at varying depths in the sea.) The subs fire back and at higher difficulty levels they move vertically as well as horizontally, making them harder to hit. At level 1 you must destroy 10 subs with 30 depth charges. As the level gets higher the number of subs increases and the number of depth charges decreases. BEWARE of running into your own charges and of subs near the surface firing back at you.

This game is relatively easy to complete unharmed, although to clear all the subs takes a certain amount of foresight (or luck.)
The controls for the game are the Left and Right arrows and ENTER to release a depth charge. These are a bit too close together and your hands get twisted up whilst moving and firing.

Much like 'Sea Harrier' this game is of average entertainment value and could benefit from using the Hi-Res graphic capability. Neither of the games use the sound available on the Dragon but otherwise this is an average cassette that could be improved on. At £6.91 it is average value.

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BOOKSHELF

ADVANCED BASIC FOR THE DRAGON (£6.95)

Written by Mike James, this 150-page book is due to be published later in April. This book takes off from what the reader already knows after reading the Dragon manual. The contents include:

- Inside the Dragon: hardware configuration - how the memory is used by the graphics chip, the interface chips and others.
- Graphics and Text: Using the text and graphics commands to good effect within BASIC programs.
- Sound: Using AUDIO for talking programs. Music and sound synthesis.
- Advanced Graphics: Animation with paged graphics. The joysticks and lightpen for Interactive graphics.
- Interfacing: User and printer parts. The Dragon as a VDU; Analogue to digital conversion.
- Inside BASIC: PEEK/POKE and USR. BASIC entry points and system variables.
- Colour BASIC: more advanced features including the use of AND/OR commands.

The final chapter (on machine code) leads into a second Dragon book:

6809 ASSEMBLER FOR THE DRAGON (£6.95)

This is the companion volume to "Advanced BASIC for the Dragon" also written by Mike James and due to be published by Sigma in May. It aims to teach 6809 assembler language to anyone with only a previous knowledge of BASIC. Each chapter includes examples and many "cookbook" style routines for immediate use by the reader. The reader will then be able to write programs, in assembler language, that are faster than BASIC programs. This is particularly important for high speed "arcade" style games programs. The contents include:

- Why Assembler?: Assembler versus high level languages. Using the Dragon assembler.
- Registers: Why registers are needed; register operations.
- Addressing modes: Various ways of accessing memory; 6809 addressing modes.
- 6809 Operations: Arithmetic, logic and shifts.
- Conditions and Branching: Condition codes. Branch family of instructions.
Programs and Subroutines: Writing some real assembler programs. BASIC ROM subroutines. Sample programs.
Using the Dragon Hardware: Accessing graphics and other chips for special effects.
Interrupts: Using 6809 interrupt commands for controlling external hardware.
Assembler Style: Good and bad ways of writing programs. Debugging and testing.
Appendices: Instruction summary: addressing mode summary.

Mike James is a Senior Lecturer in Computer Science at Teesside Polytechnic. He was a founder consultant to Personal Computer World and is a prolific author and journalist. His books include "The 6809 Companion" and "The Spectrum Book of Games."

LETTERS

UNSTABLE DRAGON

Perhaps readers would care to advise me reference a problem I am having fairly regularly with my Dragon 32 TV Monitor display. During keying in a program, or in the middle of running software, or even sometimes before anything is typed in at all, I get letters, numerals, whole words changing before my very eyes! The first indication that this is happening is generally the appearance of one or two sets of inverted commas -"- somewhere near the centre-left of the TV screen. If I am quick enough to notice this I can sometimes prevent further 'damage' by pressing the reset button at the side of the computer. Then it is a case of listing and editing the changed characters/words. If I am not quick enough I cannot even list, being greeted with Syntax Error on trying. (On occasions even the Dragon Data format breaks up, e.g., Dragon changes to Fragon and 16K changes to 14K or sometimes 1K.) Could this be due to voltage fluctuation sending spikes back along the mains lead to the computer? I am using a three-pin triple adaptor for computer, tape recorder and television monitor, plugged into a single wall socket.

A.E. Standing,
32, St. David's Close,
Iver Heath,
Iver,
Bucks. SL0 ORT.

(Sounds more like fluctuating current due to a loose connection of some sort. Try a stable plug with a lead to a proper three or four gang socket. If that doesn't work, it might be worth checking on the Dragon's "innards." - D.M.)

DRAGON DATA CLUB

Having just received "Dragon's Teeth" I felt I must write to praise what promises to be a very useful and informative newsletter for us Dragon Families!
Through your newsletter I would like to ask the following question. 'Has any Dragon owner received from Dragon Data any correspondence regarding membership of the "Dragon Users Club" as stated in the warranty?' I have been waiting since I returned the guarantee last September.

B. G. Chedd,
Dallas Road,
Chippenham,
Wilts, SN15 1LD.
(That's why we started the Dungeon Club! In fairness to Dragon Data, however, it should be remembered that their sale and restructuring last Autumn was followed by the upheaval of the move to Port Talbot. We guess that they were somewhat preoccupied. -D.M.)

**PROGRAMMING TIPS**

As a newcomer to micros (and a Dragon owner of just 8 months), it would have made life a great deal easier to have known from the start several very useful pieces of information completely omitted from the manual. Perhaps it might be a help to others like me if these were mentioned in "Dragon's Teeth"?

1) Since the Dragon lacks a MERGE command, most useful of all was the information gleaned from Mike Jarvis's excellent Dragon Companion on how to append a program recorded on tape to one already in memory. How many unnecessary hours I spent entering additional program-blocks (some very long) by hand that I could have added in a matter of seconds! It's ridiculous this information isn't in the Dragon manual; but it's worth the price of the Dragon Companion alone.

2) There's no mention anywhere in the manual of the PRINT TAB command (i.e. PRINTTAB (10"X")), essential when setting out tables and columns of more than 2 columns. Dragon responds obediently!

3) In its very brief mention, the manual gives no example of how to use the TIMER function, and also fails to note that 50 Timer units = exactly one second - a very useful correspondence if for any reason you want to make your program follow a realtime sequence.

I know very little about machine code (where is the book I need, which begins in language suitable for an absolute beginner and proceeds step by step to the making and entering of m/c programs for the 6809??) All the same, I'm always coming across assembly listings of m/c programs, often in computer mags, which I'd like to try out; but until seeing the little "Easy Entry" routine which Mike Jarvis includes in his Dragon Companion - which may I say again has been worth many times its price of £4.95! - I had no idea of how to set about using them.

Using Jarvis's little routine as the basis for the idea - since most of these listings are in hex - I wrote a little routine myself which serves both as a way of entering short hex routines painlessly (with a constant double-check on-screen) and also of then CSAVEMing the m/c routine as many times as you wish when entered. This is probably a very simple-minded and low-grade tool for sophisticated micro users. But it occurs to me that for the many thousands of beginners like myself - who aren't even quite sure what an assembler is! - my program might prove useful and a nudge on to the first rungs of m/c programming. I don't know if you think it's worthwhile; but if you do, you could LIST it in "Dragon's Teeth" maybe.

All the best to a much-needed newsletter!

Dominic Gill,
82 Carlton Hill,
London NW8 0ER,

(Many thanks, Dominic! We think that the outline of the new Sigma book elsewhere in this issue should give you your answers re. 6809 assembly language. We will list your m/c routine in the May issue of "Dragon's Teeth". - D.M.)
Dear Dragon Master,

What a shock - me in print!

Thank you, Master, for an excellent start. I hope you have enough contributions, written and money alike, to enable you to maintain this high standard.

I apologise for my long letters, but I am a dedicated word-processor basher (note the right justify and the clever use of BOLD?) and I have several points to communicate. Please feel free to Edit or paraphrase as and when you see fit, if indeed any of this drivel is useful.

"DRAGON’S TEETH" - Comment.

Unless you intend only the one issue, could you consider an ISSUE MONTH or ISSUE DATE reference near the title, as an aid to future back-referencing of software reviews, etc.

I can write the month on, with some help, but it spoils the presentation.

CONTRIBUTION?

My literary contributions can only be very simple and usually confused (and verbose?), but I seem to be encountering some odd problems that a real programmer probably doesn't even notice. I hope you, and the other new user(s), find it a help for someone to ask the stupid questions - a case of the non-byter bit?

I have sometimes has the disappointment, when re-running a clooded program, of having ?S/N ERROR blazing away, as a reply to my entering RUN. I know I spell it correctly, I double checked. What has happened? The only way I can get moving again is to power off - not nice if a modified program has not been csaved. Please explain in simple terms, avoiding the use of such words as 'inbuilt propensity' and 'burke on a keyboard.' (I have worked hard to improve mi spelin special, for the Dragon.)

Baffled of Bucks.

(Who is, of course, Terry Higgins of 5, Linford Avenue, Newport Pagnell, Bucks. MK16 8DD! - D.M.)

MILITARY DRAGON

Enjoyed the first edition of "D's Teeth" and am looking forward to future (even bigger?!) issues.

I couldn't resist writing to add a comment to that made by Mike Cartwright in his review of Dragon Data's "Calixto Island" program. When I bought my Dragon (by post, so wasn't in a position to really ask the dealer's advice), I also bought two of Dragon Data's cassettes - "Dragon Mountain" and "Black Sanctum." I was very disappointed! From your reviewer's comments about "Calixto Island", I know I would have felt the same way about that program if I had bought it because all his criticisms apply equally to the two I bought!

As a complete beginner I was a bit put off, I must admit. There I was, starry-eyed and raring to get to grips with exciting and challenging adventures, expecting audio and visual presentations to back up the tale...but all I got was a dull, unimaginative, text-only program that I plodded through until total boredom finally got the better of me and I switched off.

I'm only a novice with a Hugh 6 weeks' worth of experience, but even my little first efforts are more colourful and lively than those
produced by these (presumably) highly expert programmers at DD.

Phew! Glad I got that off my chest - it's been bugging me for 5½ of those 6 weeks!

On to another subject. TV's. I have a SHARP Portable Colour - Model ??? No problems with display as described in "D's Teeth" on the SONY models; where sharp contrasts of colour are used there is a very noticeable edge "wavering" - but I think this is common to almost all TV's as opposed to monitors.

I'm nearly finished!

I read the review on the "Dragon Companion" with great interest. I'm convinced! Please send me a copy. I do have a copy of "The Working Dragon" which I am manfully struggling through (the "struggle", I hasten to add, is purely due to the limitations of my slow and ageing brain - the book is excellently written with particularly clear explanations on all the tricky bits). I can recommend it most strongly.

- I've finished!

WO 1 G. D. Mead,
Odsaceur,
SHAPE,
BFP026.

(Ged Mead is not alone with a military Dragon. We have a whole group of Dungeon Clubbers in B.A.O.R. and Naval members at submarine bases which we will not name for security reasons! - D.M.)

PEEKING & POOKING

Recently a lot of publicity has been given, in such magazines as Popular Computing Weekly, to the fact that "missing" inverse characters, e.g. the ampersand, space, mathematical symbols and numbers, can be Pokes into the screen if you know the correct Poke. As the normal CHR$ number normally won't give the correct character I have attached a complete list of codes.

It is also possible to Peek to the screen, which may be useful in "battle"-type games. Although my experimentation applies so far only to the "text" and "chunky graphics" screen, it is I suppose possible to work on the hi-res screens in much the same way. As yet I don't know these addresses. In the text screen, however, the start address is 1024, and the end address 511 bytes later is 1535. All this Peeking and Poking made me think of machine code programs, which, of course, can be saved and loaded using CSAVEM "NAME", start, end, entry

and CLOADM "NAME", offset. (See pg.135 of the manual.)

Experimenting showed that using CSAVEM "SCREEN" 1024, 1535, 511 allowed me to save a text/chuncky graphics screen to tape. This can then be reloaded by using CLOADM.

HOWEVER I recommend saving and loading only from within a control program as saving in direct mode also saves the message "CSAVE(etc.)" and on reloading in direct mode all that appears of the first two lines in P(1st 8 characters). On pressing ENTER the screen will scroll as normal.

Using it as part of a program will therefore, in effect, emmulate SAVE "..."SCREEN$, which can be found on the Spectrum. This greatly annoyed my Spectrum-owning friend.

Again, I'm not sure, but I think this can be applied to hi-res screens, with a few changes of address.

Finally, I would be pleased to hear from any other Dragon owners, although my offer is not as limited as Terry Higgins in the last Feb/March issue.

(Note how in Ian's following list most differ from the standard ASCII codes - D.M.)
POKE CODES

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(Just to show Mike Jarvis that he's not the only one who can work them out - D.M.)

REVIEW

DEATH'S HEAD HOLE - PEAKSOFT
by Andrew Read

Having spent much of my youthful energy crawling around dark passages under the Pennines, I was intrigued when Peaksoft released Death's Head Hole for the Dragon. Written by the wife of a member of the Mendips Cave Rescue Organisation, it seemed likely to present something more than the usual adventure.

The program arrived in a fairly plain presentation, supplemented by two duplicated sheets. The first consisted of a large grid map with no less than 1,600 locations (40 x 40) and a cryptic letter, which gives something of the flavour of the game:

"I understand that you plan to train a team to specialise in rescues from Death's Head Hole. I'm afraid that this freehand chart, showing the entrance (black square) and the route to Main Stream Passage, is the best we have. I suggest that you try to fill in the blanks on training trips. The next time you're in Priddy, I'll stand you a drink in the Hunter's - if you ever escape from Death's Head Hole!"

On the same sheet are listed hints for Rescue Team Leaders, such as not being too ambitious at first (I was and got hopelessly lost.) A suggested plan for an opening trip was to head through the charted parts of the

Ian Barclay,
9 Beckside,
Reddish,
Stockport,
Cheshire SK5 6XU.
Entrance Series, discover the Main Stream Passage and explore this thoroughly, noting side passages. Suggested mapping symbols were S - Stream passage; D - Dry passage; St - Static sump (passage filled with non-running water); C - Climb; P - Pitch (to be laddered.)

Some of the sumps and choked passages are permanent program features, but others are the result of the unstable nature of the rock strata in the area and may have been shifted by the frequent floods on your next exploration trip. My advice is to pencil in such features, until you are certain that they are permanent. I will also give you the clue that there are means open to the rescue team to delay the formation of chokes.

Any experienced adventurers will (as Peaksoft suggest) find this game very different. It can be played rapidly, with just 4 keys in general use. Do not, however, be misled by the superficial simplicity of movement, without the usual puzzles and locked doors. The exploration has as much subtlety as a real-life caving session and the built-in program intelligence responds to initiative.

You must consider equipment carefully, opting for a standard set of gear on initial trips, but choosing more selectively once you have some idea of your route problems. You must also consider your fitness (which the program adjusts very logically.) As long as you stick to obvious, described passages you will be O.K. If, in desperation to get out of some fix, you head into an "unexplored" route (i.e. a direction which is not described) mental tension sets in, your fitness deteriorates and the route becomes very dangerous.

One handy key is 'L', for "listen", when passages in range will be scanned for sounds of the lost cavers. I will also tell you, free of charge, that the 'F' ("food") key can be a good friend! Fitness drains according to logic, falling more rapidly in exhausting manoeuvres, but replenished by food. When your main foodpack runs out, you switch to the spare packs - but you better head for a known supply dump if you know what's good for you! Your headlamp batteries run down steadily and, here again, once depleted, you switch to your spares. Extra equipment has been cached by the Cave Rescue at the Cave of Chasms, deep in the system. This is an important find and should be noted carefully.

The entire rescue mission is carried out under pressure, since the usual British weather is causing the stream passages to flood. Such is the shattered geology of the area that, not only do the floods give rise to rock fall chokes in the dry passages (which you may be able to dig through, if you have spades with you), but impassable chasms may open up. Another flooding complication is "active" sumps which form in the stream passages. These can be baled by bucket, but also passed by cave-diving, providing you have sub-aqua gear and adequate air cylinders. "Static" sumps (filled by surface drainage) cannot be baled and are effectively dead ends, since they are too constricted to dive. Obviously vertical pitches may be laddered downwards or climbed upwards, provided you have a ladder or rope respectively.

One final tip. If desperate and lost in the remote reaches of the system, bear in mind the old (and never discredited) story told by the "old hands" of an alternative entrance. Legend has it that the "lost cave" disappeared in a massive cave-in.

The scenario quoted by Peaksoft finishes with a section worth quoting: "To succeed, you must rescue every lost caver. As members of the Mendip Rescue Organisation, your party will be prepared to sacrifice themselves. The T.V. crews are assembled at the entrance and your mother has sold her story to The Sun. The eyes of the Nation are on you...and the best of British luck!"

The game is in real-time, in that you must emerge before finishing (with caustic screen comments, if you haven't brought the lost cavers out.) You may, however, use the ultimate key, 'G' - for "Give Up", when the positions of the lost cavers will be revealed.
This is an addictive, "different" adventure, which breaks new ground in home computer simulations. Highly recommended to Dragonards with active imaginations.

Presentation............. 5
Entry Complexity........... 7
Play Complexity............. 8
Play Balance................. 8
Interest Level............... 9
Overall Rating............... 8

Competitions

DRAGON TIPS

Every month The Dragon Dungeon will give software to the value of £15.00 for the best tip sent in to "Dragon's Teeth." Tips don't have to relate to programming alone and can cover any subject of potential assistance to a Dragon owner.

Winners can select the software of their choice.

DRAGON'S COLUMN

Although we have had to leave out our pet dragon's column this month, due to pressure on space, he will commence his ramblings in the May issue of "Dragon's Teeth." We've grown quite fond of the little chap, despite his annoying habit of chewing paper-clips and feel that he ought to have a name.

We therefore offer a free games tape (any choice) to the sender of the best name for the Dungeon dragon. The Dungeon Master will judge the result and, henceforth, the winner will be immortalised by Dragon's Column becoming X's Column!

CLUB

CLUB BADGES

Dragon User Club badges are now available by return of post at 30p. The fabric 3½in. diameter badges are red and black on a white ground and suitable for sewing onto sweaters, caps or jerkins, etc.

Please add letter postage is ordered separately.

T-SHIRTS

Apologies, but the much-delayed Club T-Shirts and Sweatshirts have been further delayed by the manufacturer going out of business! We are arranging for a new supplier.

BOMBER JACKETS

Top quality (and we mean top quality) showerproof Club Bomber Jackets are now available for extrovert members who wish to let the world know that they own a Dragon. These zip-up jackets, in a wide choice of two-tone colours in ripstop, non-rustle nylon (the choice of the mountaineering fraternity) are made to order for us by Dane Valley Weatherwear and intending purchasers should contact the Dungeon for details and measurements. Prices will vary slightly on the choice of colours and sizes, but will be in the region of £15.00.
NIGEL THOMAS offers a listing service using a MX-80 III Dot Matrix Printer. The service costs 1p per line with a minimum charge of £1.00. All programs are treated in confidence. The postal address is: LISTING SERVICE, 5 ST. ANNES MANSIONS, MONTEFIORE ROAD, HOVE, SUSSEX. Telephone (0273)-771539. Tapes should be packaged well and a S.A.E. included for return which is usually effected within 24 hours.

Nigel is also running a new type of adventure game developed for the Dragon 32. It is mainly a treasure hunt in and around Sussex but this need not be a limiting factor as with the summer approaching, many holidaymakers could take part. The adventure game itself offers a prize of £100 to the winner.

To play the game there are a number of clues hidden in the program and the player has to 'play' several games such as Luna Lander and Space Fighter etc. and obtain a preset high score before they can 'unlock' a clue. The game is designed in such a way that it is impossible to cheat and therefore you have to play by the rules. Details of how the game is progressing are published in the Hove newspaper's Personal column every second Friday.

THE WAR MACHINE

Interested in the best games software for the popular home micros?

Since July 1981, The War Machine has been covering the exciting field of computer simulation games with detailed software reviews by independent writers. We also carry articles on how to design your own games programs and give advice on rewriting programs for other micros.

Each issue of TWM carries a special offer, available only to subscribers. Sometimes it's a discount on software, from independent suppliers, for the Dragon, Spectrum, ZX81, TRS-80 and other computers. Sometimes it's an Emjay computer simulation game, which may be a wargame, an Adventure or an SF game. These are at present available for the ZX81 and TRS-80; versions for the BBC micro are now becoming available and other computers will be covered in due course.

From issue 17 onwards, TWM is carrying a PBM feature dealing with postal play of computer-moderated games and looking ahead to the developing area of multi-player gaming by 'phone modem. This PBM feature will in due course be split from the magazine and become a separate publication in its own right.

The War Machine
Current issue: £1.15 (overseas £1.65)
6-issue subscription £6.50 (overseas £9.50)
12-issue subscription £12 (overseas £18)
Overseas rates are for airmail delivery; payment must be made in U.K. funds. Please make cheque/P.O.'s payable to Emjay.
EMJAY, 17, LANGBANK AVENUE, RISE PARK, NOTTINGHAM NG5 5BU, ENGLAND.
The North-West London Dragon Users Group. A new club, just beginning, needs YOUR support. 'Phone 01-485-5361 (evenings & weekends) for details.

DATABASE USERS AND SERIOUS PROGRAMMERS. (Verify/DIR)!!!

Now available - a M/C program to check your recordings. It will also give the program type (Data/Basic/Machine code), file name, length and inform of tape errors of any Dragon tape. Send £1.70 (inc. p & p) to - Mr. K. Allen, 10 Ashby Road, Shepshed, Leics.LE12 9BS for the listing, Basic "easy enter" and details of Merging several Basic programs.

VIEW FROM THE DUNGEON (Contd.)

We also hope that 'Dragon's Teeth' will serve as a "talk-amongst-yourselves" forum in a way that no advertisement-based, commercial magazine can. The Dungeon will act as the co-ordinating centre, but we want YOU to take over more and more, so that the Club really does function as a D32 User Club. We need more reviewers (guidelines and "rates of pay" can be sent to you). We need your views and advice. We want to hear the gripes as well as the plaudits. And, most of all, we want to hear from you!

To the many, many writers who have taken the trouble to send in "gen" and queries, we apologise that we can only print so many letters each month. If we can't put your letter into D.T., we'll try to answer your queries direct or consolidate your "gen" into a future article.

Just to let you know how wide the Dragon has spread its scaly wings, we should mention that Club members are located throughout the U.K. and Eire... from the Outer Orkneys to Jersey. A whole clutch of Dragons have spawned in B.A.O.R. and S.H.A.P.E. in Europe and members have joined from all four Scandinavian countries and Spain. Further afield, we have Dragon owners in the Arabian Gulf and a solitary Dragon perspiring gently in Zambia (currently resting, with its owner on leave in the U.K., filling his bags with software.)
Finally, we must apologise for another delayed issue, again computer-induced. Like many Sinclair/oric/Lynx purchasers, we suffered from "delivery lag" and the printer on which this issue was produced sat on the South coast for much of March with an interface lost in the European postal system. It finally arrived on Easter Saturday, when a previously undiscovered "bug" emerged in SuperScripsit. Anybody know how to open a word-processing file, previously written to disc, when the constant error response "Attempt to read past end of File" results from every effort?

Ah well, back to the direct keyboard!

OFFER

PRE-RELEASE SPECIAL OFFER

We have just received stocks of 'Missile Defender', shortly to be launched by Tiger Software. Much more colourful than Microdeal's 'Defense' and a great deal harder than any other 'Missile Command'-type game we have played, Tiger's version has "cities" wall to wall and any missile getting through is certain to zap you. Multi-difficulty (hard to near-impossible) and continuous score display.

Special Introductory Offer to Club Members only purchasing in April - 15% off the launch price of £5.75!

***************************************************

New Club Member Mr. N.C. Gurney was unfortunately paralysed in an accident and is wheelchair-bound. The Students Association of his College presented him with a Dragon and he is currently using it a lot.

Mr. Gurney is trying to extend his knowledge of the Dragon, with a view to possible means of making a living with it. Any Member who could assist him or would like to get in touch, should write to him at Arle House, Village Road, Arle, Cheltenham, Glos. (Any local User Club round there?)

***************************************************

The Dungeon Master still wants a number of reviewers for games and books. If you feel that you could break into print, send along your contributions or ask The Dungeon for the Contributors' Guidelines & Rates.

The Club would also welcome articles on various aspects of Dragon programming.
Personal callers at the Dungeon should note that we are in the process of major reconstruction and that the retail premises will be closed until early May. It is taking longer to clear out the skeletons than expected and the building contractors are still trying to work out how to panel in the Iron Maiden.

Software stocking and mail order services are being dealt with from our main warehouse on Ashbourne Industrial Estate but visitors wishing to pick up Dragonware personally are advised that we have no Dragons up and running at this location.

We will open again for visitors wishing to test-run software and try out hardware at the earliest possible date.