

DRAGON USER



The independent Dragon magazine

November 1988

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Editorial

MERCY. Just for one month, let us off about the deliberate mistakes, will you please? I expect you found a few in October's DU. I hope you did ... I don't want totally blind readers. Let me just say, you should have seen it the way ... you nearly got your old front page back, you know, the one that says 'Sunshine Publications'. I don't want to mention the P**tial "risk" in Dragon User ever again, but there was a wee bit of a rush. And we have a new typeset up (Linda), totally innocent of any Dragons in the past, and a new paste-up person at the same time, and Pete plucking writer's block (but we got him in the end. Send him some letters and cheer him up.) and you can have hours of fun drawing in the Dragon logo on the Crossword page yourself.

Realise by saying this I am calling Mt. Sod down on this issue, but we are watching ...

Further details about the Colour Computer Convention from Dragonfire on page 8 within. Don't forget to go if you can. This is the Dragon show of the Autumn. We want one next Spring.

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How to submit articles

The quality of the material we can publish in Dragon User each month will, to a very great extent depend on the quality of the submissions that you can make with your Dragon. The Dragon computer was launched on to the market with a powerful version of Basic, but with very poor documentation.

Articles which are submitted to Dragon User for publication should not be more than 6000 words long. All submissions should be typed. Please leave wide margins and a double space between each line. Programs should, whenever possible, be computer printed on plain white paper and be accompanied by a tape of the program.

We cannot guarantee to return every submitted article or program, so please keep a copy. If you want to have your program returned you must include a stamped addressed envelope.

Letters

This is your chance to air your views — send your tips, compliments and complaints to Letters Page, Dragon User, 48 Alexandra Road, Hounslow, Midd TW3 4HP

Atari nice to Dragons

The following is an extract from a recent Atari magazine:

"In use of custom chips rather than standard off-the-shelf designs makes its architecture one of essential economy. Following on, in fact, from the mould set by the Dragon, would you believe. Their design, though anti-bit, was very much a pioneer."

Isn't it a nice change to see another magazine giving the Dragon its credit, instead of making fun of it?

Finally, drag them into local Dragon User and all the software houses which continue to support the Dragon. Keep up the good work.

David Bestworth
3 Chesham Road
Gages Cross
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SG13 4GH

YES, indeed, although most ex-users remember the Dragon with affection, it's only the boring old newscasters who think it was a toy machine like the ZX81.

Now, if it would be useful to me to know where will that letter, and in which magazine it appeared and, if possible, when. Information is power. Can you oblige?

Dump help!

Hi-Hi! I modified the screen dump program from the November 1987 issue (for the Brother 1024 printer) for disc use (under SuperDisk 650). I could not make it work properly: the tail sideways dump printed out a large dark band as well as the diagram. I was able with a bit of experimenting to get the standard printout work, but not the sideways one. Can anyone help? My printer is the Tuxton 8005.

D.A. Craig
24 Mileton Close
North Road
Canterbury
CT3 9JH

Every month we will be shelling out a game or two, courtesy of our suppliers, to the readers who send the most interesting or entertaining letters. So send us your thoughts and your opinions, send us your tips, scores and suggestions. Send us your best Dragon stories. What if you think we are, mind readers?



I put a spell on you

READING Jonathan Cartwright's piece on Data Trees in the July issue, I was impressed by the simplicity of his spelling checker. However, on more mature consideration, wonder if it would work! The algorithm details whether each pair of letters in a given word is 'legal' within the framework of accepted English spelling practice, and so every dubious peak proposition like myself, or the putative author of the *Clare Magazine* would seem ideal. On a keyboard, my calculations (I am in fact five) often spread over two keys. Yet I sense a pitfall in the system that he is employing:

Legal words better, better letters, better. Possible words: better (ie, at, being in those positions, but this is not an English word). Similarly, both and both and possibly both and English, but both and both are not, but they are still legal.

The permissible combinations of pairs of letters in English should lend themselves to the type of manipulation described in the article, but the unfortunate fact is that not all permissible combinations and groups are actually in use. The language that we discuss is probably 50% redundant (Does this mean that I have to cut my features by 50%). That is a comfort. Ed (see Peter Gerard's piece on gravel in his Wise ADVENTURE column in the same issue) without

invoking those 'words' that we do use.

The awesome fact of redundancy in the language is frequently brought home to me by the difficulty that Patricia, who works hard as the co-ordinator of the charity of which I am chairman (since she kindly offers to type correspondence for me) has in matching my vocabulary with her commercial shorthand. The trouble with all our current shorthand systems is that alliteration (Could that be homophones? H.O.) are represented by similar symbols even if their meanings are different. Hence my occasional attempts to do this kind of thing unaided.

The proof reading on DU seems to have been undertaken by just such a routine. I refer to the somewhat garbled printer dump on page 3 of the July issue. The listings printed were confusing to say the least. The omission of some characters and the apparent substitution of others made it difficult to read. Could it be reprinted at some time?

Would you like something on the use of Dragon Basic as a structured language? The majority of listings have seen in DU seem to violate every principle drilled into me when I had to learn how to cope with computers, promise you that I would try to express anything that I wrote in a simpler version of the language.

Edie Ann, 20 Clarence Place, Gravesend Kent DA12 1LD

Let's start at the letter and work up. I think that would be interesting. About 1000 words at a time is the most acceptable, with examples

and any necessary listings. This is a good place to grab my grammar book and recycle some tips for all the prospective writers I have seen

Ribbon you can't refuse

ANYONE who is having trouble in finding a ribbon for their GP-150A, give me a ring on 0475-716585. Mondays and Wednesdays only, for those awards please.

Chris Sheppard
119 Shefford Close
Spewell
Saffell
PA 302

joined this month:

The third rule of sound technical writing, as taught by every authority, is 'keep it simple, concise and direct'. Technicians (as opposed to report writers) differ only in that the active tense is preferable to the passive tense. ("The computer was plugged in and booted" — by whom, may I ask? Say "I plugged in the computer and booted it.") Avoid convoluted circumlocution and other words over three syllables. Above all, do not try too hard to force a 'writing style'. Editors can always cross out anything they don't like. That is what they are there for.

There are also there to edit programming tips for the letters page, as such tips rarely arrive in a readable state. They check them. They get them typeset. The typesetting machine erases some of the characters (yes, it's all done by computers). If they are lucky, they get to check them again. If not, they don't. I can't re-check that listing unless Harvey of Three Trees writes to me and tells me what's wrong, as I have lost the original. Which is doubtless why there are errors in it. You don't need the *Living Standard*, then?

No amount of editing experience prepares one for the horrors lurking in computer listings, and include listings taken straight from the computer.

The first person to come up with a suitable definition for 'better' will get one of those tapes from the M800.

Too old for Experts!

COULD you please tell me if the promised secret code for *Robotix* will be published soon, as I am going nowhere fast with the game!

I am glad to see that the change in ownership of *Dragon User* doesn't seem to have altered the magazine in any way. Please keep up the good work of keeping the *Dragon* alive!

I was sorry to read that Pam D'Arcy has followed the same path as many other *Dragon* people and turned to other work. It was particularly disappointing after Pam produced *Formula One* which had to be one of the best games for the *Dragon* in a very long time.

I would have volunteered myself for the Arcade Arena spot, but I am too busy in my work presentation. I think I'm still too old!

I am 25 years old and work as a computer operator. I own a *Dragon 64* (an upgraded 32, really), plus twin disc drives. I use the Amstrad GMP7000 printer. I use the *Dragon* mainly for games playing. I have a large collection of software built up over 5 years. My overall problem is trying to get as much of my tape-based software run on disc as possible. *Orange Software* have been a great help lately, but getting my *Quickbeam* games including *Supahitok* to work on a format is a small fee.

I have a problem with *Chuckie Egg* - from Pam Burgin it transfers to disc properly, but doesn't run. Can any of the readers help me?

Once again, keep up the good work and continue to be as good as any help with the back issues of *Dragon User*. Sorry this letter is boring. It is only going to be quick read!

Gael Thomas
28 Mayfield Lane
Plymouth
Sussex-SL5 5AY

WELL, there you are, another one who's too busy with his work! Pam always knew that the demands of running a trust would pull her away from the *Dragon* again, but this time to think that it was her work on *Formula One* which became the 'O' that got her a new commission in another field.

Talking of this, the Prebryn Brothers, who do our crossword, recently wrote to tell me that, thanks to their *Dragon* examples, they gained a commission to compile a book of crosswords. Not on the *Dragon*, alas. They won't stop writing for DU, but they have something new in store just after Christmas.

Yes, I think it's about time on an irregular basis about the *Dragon* to do the 'with the new version of MS released fairly recently, we may be kept in suspense a bit longer.

Perhaps Paul himself can propose a solution to your hard-boiled logic.

Raring to research

In answer to your request in September's editorial, I have a complete collection of *DOUs* and of *Dragon Stop Press* and *Dragon World* (such as they were before *Dragon* folded), plus a number of *Cuthbert Chronicles* (most of my copy's research aspects of the *Dragon's* past history and source material if your readers are interested).

Brian Thomas
61 Ashover Road
Chalfont
Chesham
SL4 2HR

MANY thanks to all the readers who wrote in to say that they had stocks of back issues. Brian has even grasped the article firmly by offering to do some research. Now it will have to 'get my head together' between 'hearty bouts of typing and think out exactly what to say to folk who are willing to do some winking out and looking up, but it would be nice to look back over the *Dragon's* long and interesting history from the perspective of 1988 we have a lot of speculation about 'what is going on' in the postbox, so I can't inappropriately to check out 'what has went on'.

Look carefully and you should find an article about the history of the Tandy CoCo in this issue.

On the same tack, thanks also to the other, unacknowledged people who sent material about the *Dragon*

Professional, I think (Pope) I still have that in my files somewhere, after scanning some of the three pages, and we may be able to draw on that at some time in the future.

One thing our historical record really does lack is any published documentation on the history of *Cuthbert's* efforts to relaunch the *Dragon*. Various people have sent news over the years, but it remains hearsay in the end. Any verified news sources from Spain would be most interesting a thing.

utilities to their fullest advantage? I am sure someone else has done this for their own use. Any takers?

Necessary for help: I have been given a number of old *Dragon* programs, one being Microsoft's *Polemio*, dated 1985. Unfortunately, the manual had gone missing, so apart from having worked out a few of the editing commands, I am completely in the dark as how to use this word-processor to its fullest extent. Is anyone willing to help? If so, I would be very grateful.

John R Willschuch
27 The Spinney
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GL1 4JN

Dump help again!

YOUR *Down in the Dump* article in November 1987 came near to my requirements, but not near enough. I have a Brother *HPSprinter*. Can anyone tell me how to modify the *MSDOS* program for use with the *HPS*? I presume all I need is to write *EXC* codes in *EFBC* to *EFBC*. Your help would be appreciated.

Keep up the good work.
RV-Ross
Senior
Manager
Retired
Cornwall

Use for utilities

I have been a reader of your excellent and enjoyable magazine since the latter part of 1983, and although it is obvious that the number of programs submitted has declined, the quality of those that are is much improved.

Not being very expert in the programming field, especially machine code, I find it frustrating sometimes to have what appears to be an excellent utility to hand and not know how to incorporate it fully into another program. I have managed to use *COL-44* in a basic program, but such utilities as *Windows*, for example, which appeared some time ago, leave me at a loss. Are there more expert amateur programmers out there who can show how to use such

This is not the first request we have had for more help with utilities, so I will appeal formally for anyone who feels they really have their best utility worked out to get in touch with DU if they would like to write this.

I will also have a word with Brian Cudge about *Windows*. I know his case is kept fairly well to the guidelines by the demands of his job, but he was granting recently about the lack of letters submitted by the (now) posted writer so I may be able to enable him while he is waiting for stocks to build up again.

I put the improvement in *Dragon User* programs down to a fierce editorial selection policy and pulling out of fingernails, etc, but seriously, DU readers must realise that they have access through DU to people who have been decided to exploring the *Dragon's* possibilities for years, and have refined their knowledge of the machine. DU also gave up publishing pages of short programs many years ago, as we (I include the former editor, John Cook) felt that readers weren't getting the mileage from these that they deserved. There are plenty of programming ideas to be gleaned from the pages of *Dragon Users* file.

This of course brings us back to the subject of mastering the art of external routines, utilities... and even whole packages which turn up without the instructions. Any offers of assistance will be looked at with our customary care, and no self-puffing. Promise.

News desk

If you have any new products for the Dragon — software or hardware — please write to The Newsdesk at 49 Alexandra Road, Hounslow, Middle TW3 4HP

Kouga gets the ball rolling again

Kouga Software is to release a new game, called Ball Dancer, which, according to John Foster of Kouga, "has many of the features of the coin-op Asteroid, with bonuses floating down the screen, including lasers and an extra-life ball, among others". The game features 36 screen "full of devilously placed bricks to knock away", and about a game after screen 30.

Ball Dancer was written in machine code by Stewart Orchard. Kouga are looking for further authors, and are offer-

ing around 50% royalties. Orange Software will be marketing disc versions of Kouga's games at the same price as the cassette versions, and will be representing Kouga at the Colour Computer Show in December.

"I have at last subscribed to Dragon User's Add-Postcard, 'I can afford it now because of the way sales of Mending Spoons have been going'."

Perhaps one day Kouga will be seeing that they can afford to plough a few bucks back into the press to inform of advertising.

New keyboards make contact

Siemens Schreienkreiser G&H 552. Hardware-Enthusiasten für ihre Dragon haben in touch-to-try that holidays and office removal have prevented them from being in touch (sorry), and that they are a very small company producing add-ons for the Dragon. Their interface, mentioned in Dragon User's August Newsletter, with a hardware clock and add-on keyboard, features 94 keys including 16 function keys, and a number pad.

The interface board comes with an English manual and software for DOS and DS-9. The full interface costs £48.95 including P&P, and a clock-only version costs £30.34.

A knowledge of soldering is needed to install the interface in the Dragon.

The company's new address is: Siemens Schreienkreiser G&H, Alexander Grasslstr., Mittern-Schulzheim, D-8520 Erlangen, Bundesrepublik Deutschland.

Get your ads on

... and while we're talking of advertising, Dragon's suppliers, don't forget that the December and Christmas issues are coming up, when the Dragon world is looking for Christmas gifts and presents to spend their Christmas money on. Even the

longest memories need updating and reminding about what you have on your lists, and special offers are especially tempting at such a time, so let us know - soon! - if you want advertising space in one or both of these festive issues.

Life on the cheap

Stefan Hargrave of Solve-Soft, last seen leading by more commercial gestures, has been in touch to say that his series of adventure games is still available from Solve-Soft as a package at £20 the four, a very good £5.

The titles involved are Starquest, The King's Quest, The Quest for the Meaning of Life, and The Hunt of Pyra.

For purchasers who already

have one or more of the games, an occasional price of £4 per game is available.

The games are also stocked by Orange Software, but Dragon User's understanding is that, at the present time, the offer applies only to games ordered from Solve-Soft directly.

Solve-Soft, Crawley Hill Farm, Uley, Dursley, Glos. GL11 5BH.

Copy dates

Advertisers: Please get your copy to us for setting by the end of the third week in the month PRIOR to the date of publication. Ad copy for the December issue should be with us for setting by the third

week in October. Self-originated copy (DTP) can be with us a week later. Any later than that and you'll have to run behind the postman and hand the ads out yourself. Save time: write! Send us your copy.

TIME National Dragon Users Group will be releasing a desktop publishing package early next month. The program is a licensed conversion of a USA CeCe program by Pabco, improved, enlarged and converted to DragonDOS, and will sell for around £12.

NDUG's Paul Grate said: "Our DTP program is simple and as cheap as excise duty, all menu-driven, so that no instructions/manuals are needed." We hope a review will follow shortly.

Inquiries to NDUG, 8 Navarino Road, Worthing, Sussex.

Don't forget the Colour Computer Convention in Weston-Super-Mare on 4th December.



Unhappily by the Vikings off High Wycombe, the Staffordshire Union Vintage Car Rally, Sunday Luncheon at the Bridge Club and Goble the Cat, the following leaves the October issue Comp Copy for the hands of Gordon Lee. Dragons try harder!

Custom control of cash assets

Title: Business Finance/Accounting System
Supplier: Llewellyn Robins Studios, 64 Endeavour Rd., Newbury, Berkshire RG14 6AH

Price: on application
T&E is a comprehensive book-keeping system for the small business owner. It provides all necessary calculations for VAT-man as well as reporting such vital things as which accounts are over/under and who owes you money. It runs on the Dragon 84 under OS-9, and requires the Dragonplus board from Compuserge.

It must be said at the outset that the program has similar aims to Dragon Data's own CashandVA Tactic which is a standard OS-9 package. Indeed the author of the present package, Llewellyn Robins, wrote it to remove some of the frustration he had experienced while using Cash and VA over a long period of time. His decision to make use of the Dragonplus board stems from a desire to improve the display of the financial data and extensive menus, which he had to split over several screens in the 32 column display of the original version, and to make use of the extra 64K of memory to vastly improve the speed of operation and give more response to the disc for accounts files. At the same time it does limit the number of optional users.

Llewellyn has not just modified Cash and VA, however. Since the original authors have 'gone away' this new program is completely rewritten and includes some interesting categories suited to his own photographic business. The source files can of course be adjusted so that it can be tailored to the user's requirements, and will be supplied 'made to measure'. The program allowing affected to improve the range of business software available and has been thoroughly tested in the author's own business. The cost will depend on the amount of work installed but the main aim in putting it on the market is to allow others to take advantage of the 'know, sweat and tears' (not to mention the sacrifices made by his 'con-

sumer widow') in the writing of it rather than to make a substantial profit.

I must confess to find it an impressive package. My review copy had minimal instructions, but despite the complexity of the program it is simple to use and the menu system is so well thought out that I was using it confidently after just a few minutes of experimenting with the disc of dummy data provided.

A small procedure first initialises the whole disk of memory as a random and automatically copies onto this a number of special program modules. The disc then replicates updates as needed and you are ready to go.

From now on, response to commands is virtually instantaneous apart from when files are saved to or retrieved from the disc. There is no menu for the changes to enter new files, to update or amend existing files or to obtain reports. The reports may be written on paper and may be detailed or just summaries. The VAT register may also be consulted in several ways and will produce a full printed soft file.

Other options allow reports on bank accounts and transfers between deposit and current accounts, payment of credit card accounts etc. A special option allows program parameters to be set, so that if the VAT rate is changed this can be entered permanently into the program, as can printer page lengths, etc. Cash and VA requires the VAT rate to be entered each time a transaction is recorded.

Once a transaction is registered a new menu with no less than eighteen different categories of income or expenditure is offered. Apart from the safe of one's grandmother it is hard to think of a category not covered. Having chosen the appropriate one you are prompted for full information including cheque number, where the payment has been deposited or funded. At each stage you can cancel or press the key to go on. Once your information has been entered, a quick look at the Bank account enquiry shows that all necessary adjustments to your

balance have been made and that all other necessary files have been corrected. At least 1000 transactions are possible on one disc and three times as many as on the old program. Normally a new disc would be used for each quarter and necessary information on bank balance is automatically transferred onto the new disc. CashandVA would not do this. The new program allows discs to be swapped to look at another quarter, and either monthly or quarterly summaries can be obtained.

I certainly could not fault the operation of the program, or its user friendliness, and had to dig deep to find any niggles. My only suggestion for improvement is in the way the date is input. Firstly the program only accepts one date format, for example 01/08/85, and if you forget that and enter 01.8.85 that is a different period of time. A small sub-routine to accept various types of input would not have taken much more memory. Also, since OS-9 requires the date to be set at boot-up, could this not be automatically used if, say, ENTER is pressed?

Reviewing a program such as this makes me feel sad, as the Dragon had had a proper 80 column display made built in and been properly marketed than a program such as this would have sold like hot cakes. After all, with the Dragonplus and OS-9 it makes GPM computers and even PCDS users really clumsy, which they are. If there is anyone out there who operates a small business and has the necessary hardware, then you would be foolish not to take advantage of this excellent and efficient program. It is a pity that a restriction in demanding special hardware I must give it four Dragons, otherwise I would certainly give it five.

David Peathey



The proof of the tarts is how hungry you are

Title: Diamond Miner
Supplier: Dragonfire Services, 13 Mary Jones Close, Baines, Gwent NP23 5AH

Price: £3.00

For some people it is no use food that a game called Diamond Miner should be a platform game. Thankfully though I don't have to do another review of a classic platform game as this game is in fact a text adventure, one of quite a few now in the Dragonfire range.

The scenarios that you have to deal with are based on a mysterious land at first seemingly impenetrable manner. Your task is to find the tarts that you are a burglar, not a person who steals cats, dear readers. Despite this quality your task is still tough.

You start off on a path, your next passages led by the smell of tarts; that's a description you may, and can only remember a handful of months since has been made use of.

Exploring further away from your starting position you find dirt tracks, hills, waste lands and the door to the mansion itself. The writer as anyone would rightly do has made sure the door is closed and that you can't open it without the key you need to keep at the back of your mind while you explore.

One disappointing factor in my opinion though is that the location descriptions are terse to say the least. For instance: 'You are on a small dirt road' does not exactly inspire the imagination to create a mental picture of the surroundings.

Having made that point though I must say that I would find it difficult to say anything more enthralling about a dirt road myself. 'You are walking along a small winding dirt track road, the orange glow of the setting sun gleaming from the pockets of dirty black mud' doesn't really describe much as pastured heeling, or perhaps

here the author was right to opt for simplicity. *Oh*, playing a choice of 'Down the Drippler' (D). Once you get into any task though, location descriptions pass unnoticed and here you're urged to get into the safe oblivion of the dirt roads outside.

The whole thing is portrayed on screen in standard green/black text which is not disappointing having seen this format for so many years. Vocabulary is fairly defensive with its mild choice of verbs, for instance if you want to drink you cannot only 'drink' but 'sip'. All in all there are over 60 commands which are entered in the standard way of verb-noun.

The game is not one of the hardest that I've ever played, but is not exactly easy either. There are added difficulties like the gardener who wanders around either pinching what you're carrying or imprisoning you if you've nothing worth stealing.

One interesting point is that my copy is an early version. Dragonfire is in its own 'bag' before release all of which will have been done by the time you read this. Andrew Hill of Dragonfire describes these bugs as spelling mistakes and punctuation omissions as well as an error in one location as to your accessible directions. As for spelling and punctuation, it's noticeable that they really care about their products, especially where the faults are fairly noticeable; it's careless things like the incorrect spelling of 'matr' in *Olympiad* bothers me.

Dragonfire could easily leave this title as in my copy but take pleasure in selling the public the product perfect. As an adventure it is a superb effort. It's pretty much a run of the mill type adventure, but not bad.

Philip Store



is not a serious fault, it would have been nice to display a message saying that the directory is empty.

The enhanced directory facility is really super. Output can be channelled to either screen or printer and not only lists the file names, but also their position on the disc and the start, finish and exec addresses to boot. The printer output is very neatly laid out, with a space between each file and the file name printed in bold type. The latter could present problems for some users, as no information is supplied as to how to reconfigure the program for a different printer. It works well on my Amstrad, which is Epson compatible, but if your printer uses a different code for bold type then it could cause a problem. As the program is written in Basic, a simple remedy presents itself. Pulse

need only print the number of the lines containing the printer codes so that the user could simply change the codes and reconfigure the program.

All these criticisms are of a fairly minor nature and, when the price of the program is taken into account, fade into insignificance. A more serious problem is that the copy routine is geared to a two drive system and cannot make a copy of a program using single drives. All the other facilities will work equally well on one or two drive systems. My advice is any disc user is to get yourself a copy of this program and use it to make copies of their own all your disks. Once you have used it, you will wonder how you ever got by without it.

M. M. Newman



Simplest is best

Program: Copycat (utility)
Price: £5.49 inc. p&p
Supplier: Pulsar Software, 36 Foxhill, High Drompton, Shaw, Doleham, Cheshire, CW12 7ND

All some time or another most disc users will have had to indulge in what's known as 'housekeeping', by which I mean tidying up the disc, deleting old unwanted files and copying all files relevant to a particular activity, onto a separate disc. This is probably one of the most tedious chores in computing. Pulsar Software have come up with Copycat. Written in Basic, this simple little program will be invaluable to disc users.

Copycat is a program that uses a single choice method either Kill, Copy, Protector or List the protection on any or all the files on a disc. The only menu the program presents is the one that asks which of the aforementioned makes you wish to perform. Once that choice is made then all other matters require no answers any. Much of the main procedures allows you to

manipulate all the files or just individual files, and as the system works its way through the directory it always offers the facility to abort or treat all the remaining files. At any of these points typing "Y" would treat only the file whose name is displayed.

The search facility is a little disappointing in that it does not repeat. Granted, it does search out a file even if the whole filename is not entered (copy will normally find copycat). However, the system seems to think that it is infallible and automatically assumes that the first match it finds is the one that you want. In addition to this a repeating search facility would make it much easier to copy all the text files by entering .TXT when in search mode.

Actual source of annoyance is the way Copycat deals with empty directories. If a disc is put in, and it is attempted to copy a file from it then an error occurs. The same thing happens if the disc is the Kilsnake, when the program attempts to display the directory for the disc, and fails to display it. Although this

Product: Seal'n Type keyboard cover
Price: £5.95
Supplier: P.A.U./Preston Kings Hall Court, St Albans Major, Mid. Glam, CF32 8BE

The Seal'n Type is a clear flexible plastic cover ingeniously custom made for the Dragon keyboard. It consists of a flexible PVC seal which is attached directly over the keyboard with double-sided self-tape and a strip of Velcro. The strip of the cover is to fully protect it at all times against spills, dust, ash and grime, while enabling typing through apparently unimpeded.

The theory is sound and the instructions correct, although they do not mention the Velcro. Fitting the cover is a snap: all you need to do is push out the cover keys, fit them over the keys of the keyboard, attach the double-sided tape by peeling off the backing, stick to the Velcro, and that's your unobscured keyboard.

I have a plastic 'Microgate' keyboard around my keyboard plus a fold back cover, a multi-

pack interface attached, plus the usual Dragon accessories scattered about. Even if that is not enough, I have a stand on which I can stand it. Fortunately with patience and a little ingenuity I can successfully carry out an extremely simple routine which anyone should be able to manage with ease.

Finally came the moment of triumph and I started to type through for the first time. Clear it may be, simple it may be, but the sensation is difficult to describe: the sense of feeling as if you're there, and somehow forgetful of what you're typing.

The problem with using mail order is often that you cannot try first. The theory of this device is first rate, but the practicality obvious. Fitting for most will be very easy, and yet somehow I wonder if the investment was really worth it. However, I will persevere if only to get my money's worth.

I will in due course report on how it wears. For the time being, if it were to extend to a disc for this on a scale of from 1 to 10 I would give it 10.

R. M. Newman



But will it stick?

Something stirred . . .

Roger Merrick digs into the history of the Tandy CoCo.

I bought what may have been the last 64K Tandy Color Computer in the country, knocked out at £2995, for me it was a very inexpensive solution to the high cost of upgrading a Tandy CoCo (it serves no longer available from Tandy), but an ignominious end to the High Street presence of one of the greatest and most enduring 8088 based machines.

Without the CoCo, the Dragon would have been a very different beast, if it had existed at all. As the CoCo never sold very well in this country, it is likely that its passing will go otherwise unremarked. A measure of how small the user base must have been although the machine was on the market for several years longer than the Dragon, and although Tandy had them on sale in many high streets, no group or magazine solely devoted to the CoCo has ever existed on a national scale in this country. The machine was virtually displaced by the "teen 80" (T1600 Model 1, 2, 4 etc) firm.

The CoCo has had an amazingly long lifetime in computer terms, through a period of rapid change and development. It was first shown in the US in July 1980, at the same time as the (long dead) TRS80 Model II, so it has been with us for eight years.

The design has, despite idiosyncrasies, proved to be remarkably adaptable and, even today, can be recognised as foregrounded. It was originally issued in a large grey case with (can you believe) 4K of RAM, 8K (now extended) basic ROM, and what was described as a "basic" keyboard (pushbutton). It offered "Color" plugged into a domestic TV, and came complete with cassette, joystick and Ram pack ports. The most forward-thinking inclusion was the RS232 port as standard.

A month later, a modified version of the machine was introduced as a dedicated terminal for an American Prestel-type service called Videotex. Unlike Prestel, Videotex used a 32 by 16 format screen (sound familiar?).

Precious memory

The reason for choosing the 8087 when the screen display is a "box" or "window" in the TV screen is that this requires a smaller amount of memory, which was in those days precious and expensive. A small number of characters per line enabled the display to be used on a domestic TV, saving the user the cost of a monitor. This, in retrospect, can be seen as an unsuccessful decision to take. The amount of time consumed by the Tandy component aggravates the typical Tandy who might expect to prefer watching the events of Albert Square in the disassembly of the Basic ROM. Long periods spent peering at a TV screen are bad for the eyesight. Still,

that was the way it went.

Father Christmas could have brought you a 16K Extended Basic model for £999.

For approximate British prices, just tell the dollars "pounds". By contrast, the top of the range T1600 Model II was £2495 for a 32K ram, twin track drive, with a monochrome display. The entry machine with 4K was £995. Tandy's first dot matrix printer retailed for nearly £1500.

It was 1991 before the CoCo appeared in Britain, by which time the 400 price tag, plus the lack of immediate application in schools, and the competition from homegrown systems resulted in lacklustre sales. It was impossible to get any information from Tandy regarding sales until mid 1988 when to the great surprise of industry commentators, Tandy began to report their claimed sales figures. For the first quarter of 1988, a time when the machine must have been past its first flush of enthusiasts, Tandy claimed 37,500 CoCo sales in the US. However, similar figures for the UK are not available.

Although the machine was on the market several years longer than the Dragon, no group or magazine devoted solely to the CoCo has existed on a national scale in this country.

Then there was the software — mainly Ram-packs available at 950 — upwards for typically 4K of code. By the way, a totally unexplained feature of the Ram-pack is that it can store and load nearly 32K of code, despite the cartridge space being only about 16K. How? Simple, the Ram-pack can contain two banks of 16K. Ram bank zero is loaded into Ram, then bank one is switched in and the program is executed. This is a design feature of the cartridge port and can be discerned from published Tandy data and applies to the Dragon. Can anyone name a Ram-pack to use this?

Just a few months later and the nation was in the grip of the "Horse Biscuit Boom". Enter, from nowhere, the Dragon.

The Dragon's specifications and price tag combination hit the CoCo's already precarious market position. Dragon's 32K Ram, extended Basic, real keyboard with parallel printer port and monitor as well as TV output for 199 made the CoCo's 16K pushbutton keyboard, no monitor output, no parallel printer output (but plus RS232) for 480 look sick. Along the way CoCoes with 32K and 64K options became available.

Rumours were originated in my hearing by Tandy salesmen of the Dragon's poor quality (assured "officially" of an aircraft hanger full of duff Dragons). They use inferior components. If you buy one of those, statistically you'll need to send it back three times before you get a machine that works. Oh, and pay by cheque. They may not stay in business long enough to cash it. As you see, I didn't forget. I'm still waiting for my Dragon to develop a fault, by the way.

Exaggerated

The Dragon did annoy Tandy, and not least because a year earlier they had obtained an injunction to stop Laser Electronics importing and marketing the Video Game, an enhanced copy of the T1600 Model I. The Dragon was just sufficiently incompatible with the CoCo to avoid this fate but again, these incompatibilities were never fully and accurately documented, and they were over-exaggerated.

Dragon Data Ltd, of course, shut to oblivion. In early 1984, the Color Computer was reintroduced in a repackaged, redesigned and updated three white case with a "real" keyboard, updated Basic ROM, more software and incompatibility with "basic" I/O controllers.

Your Computer magazine reviewed the software and hardware combination of the new CoCo II, the "series 2" drive and OS-9. It pronounced themselves thoroughly impressed. It is a nicely styled machine, and the looks have been carried forward in the CoCoII and the 16000II.

In some ways, the Dragon's ability to run Tandy CoCo software was part of its ending. Dragon Data and other companies launched out of date software written for the smaller memory CoCos, software which promised much and delivered little.

Amusingly, Tandy did not arrange to sell third party software until the Dragon was well established (indeed, Dragon Data were not trading). These programs were written for the CoCo in the States, converted by handover for the Dragon, had their marketability tested on the Dragon, and were then released for the CoCo. At one point in the collapse of Dragon Data, it appeared that Tandy/UK might actually buy and sell off existing Dragon stock. That's not it? But it never happened.

Lost interest

A range of matching peripherals drifted onto the market, but at the very time it needed promotion, Tandy seemed to have lost interest in promoting home micros in Britain. Internationally, they had seen their position as one of the top three micro manufacturers in 1980 (with Apple and

Commodore) ended until they were just running with the field, the published sales figures showed that MSX200 machines were the biggest sellers. Their strange marketing policy shortly stopping their own products in their stores meant that third party support for the CoCo had to end by mistake. This policy has now been dropped, it was too late for the CoCo, but now you can buy an Amstrad.

The CoCo had been evaluated for usein schools as part of the MEP programme that brought us the (not so) very wonderful Beeb. The CoCo was rejected because it did not offer upper and lower case as standard. Tandy never made any attempt to deal with this problem by either software or hardware, until the introduction of the 6647 T1, a version of the VDG with selectable lower case character set. This chip must have appeared from late 1985 onwards, but production was discontinued almost as soon as it was introduced. In this country, production of the CoCo has stopped and although machines were on sale with the lower case chip, the feature was not documented. The system defaults to the 'normal' state of reverse letter for lower case when anything is printed to the screen. If you have a CoCo2 and wish to test whether it has the lower case chip, try this:

```
10 FOR X = 1 TO 255 : POKE 1024 + X, X
: NEXT
20 POKE $HFF22, PEEK($HFF22) OR $6
30 GOTO 30
```

This little routine displays the character set, sets the 6647 to display lower case and a white border, and holds the screen display by looping at 30. Tandy users without Extended Color Basic must use 66214 instead of \$HFF22. (If you want to upgrade to Extended Basic, contact me).

In CoCo OS-2 V1.1 or later, try the following, which can be built into the startup routine:

```
TRIDOC TYPE=1
DISPLAY 2
DEBUT AF22
=32
Q
TRIDOC 1 -LPC
(Central G)
```

This tells the system that slower compatibility is in the terminal, primes the system, sets the title (primes the hardware), tells the terminal and finally switches on lower case with a coloured border. OS9 users have the advantage over others that the lower case display will remain in use until it is turned off.

For Dragon users wondering about the possibility of this chip there is only bad news. I have not tested this, but believe the chip cannot be simply substituted for the old 6647 on the Dragon's PCB (if I'm wrong, please correct me). And it is out of production.

The point has been made elsewhere that the CoCo system shows signs of having

'just grown' a 64K system has the Basic starting plank half way up the memory map; direct page is from address 0 upwards; insert a disc system and you have direct page, text screen, disc system variables, graphics, user Ram and then the Basic. Topped off, in CoCo's 64K format, by 16 or 64 of unaddressable Ram, followed by more system. Why, we ask, didn't it get designed from address 0 upwards system, Basic, disc, cartridge, graphics, user Ram? I suppose because the opportunities the system offered were exploited and developed over time.

What of the future? I'm probably already know of the CoCo 3, now available in the US at present, though some time ago Tandy sales persons were dropping hints that soon, maybe next year, is new machines, that's compatible with the present CoCo, may be introduced! Well it's a year later.

But I hope the CoCo 3 happens here. The new machine uses custom chips to offer total display and software compatibility with the present CoCo, but PLUS! selectable 40 or 80 column display. A custom memory manager chip allows 512K Ram. The machine powers up in good old Microsoft Extended Color Basic, but Microsoft's Super Extended Basic is on-board, to be switched in when required, and with a disc connected, OS-9 level 2 can be loaded.

If this machine does appear over here, the only question we'll be asking is can we upgrade our existing machines?

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DRAGONSWORD!

Paul Grade takes a monthly stab at setting the world to rights

HAVE you ever managed to discover why you bought a computer? Did you want to Join The Age of New Technology? Or believe a computer would help You With Your Business? Or were you one of those who watched all the big firms and thought a computer could tell you the Answers to All Your Questions?

If it was any of those reasons, you must have a lot of bruises by now from kicking yourself for wasting all that money. The same applies, of course, if you were merely trying to keep up with current fashions, because by the time you'd carted your wonder-Machine home and plugged it in it had been made obsolete by the (Even Faster Mega Mainframe With Added RAM) for Writer Justices.

You just can't win, can you? Because having lumbered yourself with that terrifically expensive lump of plastic, you then found that it needed a printer, and of course you had to buy the best, so you spent a medium sized fortune on a daisy-wheel one, only to discover in the next batch of reviews that it couldn't handle the graphics you simply HAD to have, so you refired out again, stopping only to arrange an overkill, and bought an iWidodot matrix, which was fine really, except that all the experts suddenly started proclaiming that only a brainless peasant would use anything less than a 24-pin printer, so what could you do but phone Arnes to increase your credit limit and head out again to buy one of these Ultimate Peripherals.

Still, broke and exhausted though you were, you had the satisfaction of knowing even the Joneses couldn't keep you with YOU, except that no one could possibly use a cassette recorder with a computer, it had to be a fast tape drive, so since more into the shops... baffled of course by the but got stuck in the traffic and by the time you eventually got home the manufacturer of your fast tape drive had gone out of business, and anyway, no one could possibly use anything as crude and slow as a tape drive to print the canary and hang for sale notices around the kiosk's necks, it was back to the shops again, wasn't it? It was nice of them to put all that red carpet down for you, but even nicer of them to tell you that 40 track single sided drives are now a couple of hundred pounds, it's just that everyone else had decided that double sided drives were the thing, so you had to poot all the way back to change it, and then it didn't help because meanwhile 4080 track technologies had become the only possible kind of drives ever, it didn't make a lot of difference really, because the friendly Building Society had already repossessed the house, the kids only finished a senior each, the bank had taken the cat, and you'd lost the poem titled by the cat, but YOU HAD THE ULTIMATE SYSTEM, except that the computer town was over and you couldn't even give the darned thing away, so the only thing left was to try to sell it.

This doesn't apply to you, of course, because you bought your computer to Help You With Your Business, didn't you? And it did, right up until the time that more rain from the Receiver's Office came and took it away along with the rest of the firm. It really was a good investment, it reduced paperwork by 50%, although it's strange how your stationary bill went up by 500% in the first month after you bought it, and of course by judicious use of spreadsheets you were able to forecast that by next year you would be well into making your third billion... must have been the unexpected market fluctuations or something like that, otherwise you wouldn't be a registered bankrupt now, would you? Naturally, it saved you a fortune in accountant's fees, and it was most unreasonable of the Court to insist that repaying VAT was your fault, after all, there was nothing about VAT in the software manual, was there? Well, never mind, think what a mess your business would have been in without the help of a computerised system...

Sorry I almost forgot you, sitting there in the corner watching the old Star Trek video, finally was unless the manufacturer tried to mention that computers need software, and that unlike the ones seen on the box, you have to load a program, and then call up a file, before you can ask your machine a simple little question like 'What answer is 42, what is the Question?', and then it comes up with some peculiar code message in the corner of the screen and helpfully refuses to communicate with you at all. Sigh, never had problems like that.

Has it ever crossed your tiny SK mind that you have been cheated? Ever thought that computers might NOT be the newest wonder of the world? and that the computer industry might have the same life expectancy as a flying instructor with a kamikaze squint? Yes, I am fully aware that this is funny, and that I will probably be buried in the state as soon as I'm, and the CIA have finished with me, but who wants to live forever? The one thing that really worries me is that people have become so glibly now that generally they don't even want to know whether they've been scammed. Remember the old tale about the King's New Clothes? What happened to the idiot who blew that con job? There's no mention of him living happily ever after, is there?

I know this can't apply to you. You're head-headed, logical, calculating and un-derstandable. But why are all those people who keep ranting out and insisting on buying the latest computer hardware? A computer is only a box of switches, there's no magic involved and it has about as much intelligence as a politician.

I admit that a computer has some uses, although they are usually the things that nobody uses it for, but if its primary use has always been the extraction of money from punters, I bought one originally because much of my work is connected with the

regal of machinery, and as 'computerised control' was creeping into just about every kind of machinery, I realised I ought to learn something about the things. One thing I learned quickly is that most machinery works better without it.

Computers could have been a great help to a lot of people, and made life much simpler in business and engineering, etc., and they could have given a lot of people a very cheap and instructive hobby, but the entire industry and its hangers-on decided that it was too good a chance to miss, the chance in a million to fool all of the people all of the time, so we got hardware firms bringing out new machines every month (fully non-compatible, of course), with new added flim, the wonder ingredient that makes the price bigger than gold, and there was no standard of value games at only ten times their real value, and finally, the Business systems, guaranteed to solve all your problems, at prices which made even a healthy credit card start to weep.

None of this fooled you, did it? You knew this wonder technology was worth every penny, you had to have the best, and that meant keeping up to date.

Did it ever occur to you that you could write the software yourself, that you didn't need to change your machine just because it was no longer being pushed by the manufacturer, that not only could you have written programs for your own use, but you could have made a little cash by marketing them as well? And that even a smaller computer than the Dragon can handle files and programs limited in size only by the capacity of its discs?

If the punters weren't so glibble, the manufacturers would have been forced to adopt a more realistic policy, machine compatibility would have been unnecessary in order to sell the things, and prices would have dropped accordingly. More to the point, the 'home computer boom' would never have happened, and there would instead have been a lower-key but much more permanent market, and more progress, because manufacturers would have been forced to improve the product instead of merely changing it and adding a new case.

The decline and fall of the Home Computer Empire is the direct result of the greed of manufacturers and the gullibility of the public. It could have been something really good, really useful, instead of just another rip-off, but damn! Since the computer firms... if you hadn't been so eager to have it easy, they couldn't have comeled you.

If that's all just history then how come Atari, Amstrad, Commodore etc. are still selling madcap products? Is willing enough? They aren't all first time buyers, a lot of them have come from the Dragon and Tandy scene, which would seem to indicate that people never learn at all. There about it.

IF YOU OWN A DRAGON, TATUNG EINSTEIN, MSX, ENTERPRISE, SINCLAIR QL, LYNX, TEXAS INSTRUMENTS, VIC 20, ORIC, JUPITER ACE OR YOU ARE JUST INTERESTED IN COMPUTERS.....

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Crossword

Please get your answers in to Dragon User-Crossword Department by the end of the month on the front cover

The health Dragon Crossword sanitised the site results. Well, you 'write it, you thought you'd join the tenth Dragon User Crossword, did you? This the best they can do, then, 'all a dross? Normally, we have 'undreds, 'undreds! Not are they playing at? "Excuse me, Sir" squeaked a small blue envelope.

"We only escaped yesterday after two weeks at the bottom of a dark, damp postbox. Lots of our friends are still trapped, along with several Dragon Users-in-triangles. That roaring noise you can hear is The Editor trying to kick the postbox down."

The phrase is **CLOUD AND OSAGE**.

There will be a couple of free tapes from the Editor's Magic Battered Box for the first correct entries out of the hat each month. You can try telling us which tapes you'd like — you never know, we may have them.

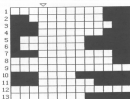
And you don't have to cut up your Dragon User — entries on a photocopied or a plain piece of paper will do, as long as we can read them.

1. Lights needed in this mine? (3,4,5)
2. Surely the speaking clock's favourite game! (3,7,5)
3. Confuse a question about marine warfare (3,5)
4. see 3
5. Frogman not so fast without one-on-? (7)
6. Accuses with digital (7)
7. Is hell (just) turned into drizzle? (3,6)
8. Invasion by young moths (11,6)
9. Someone to watch over you about to argue (and gain) (6,5)
10. For you get angry about (4)
11. see 8
12. Do not pass: you have exclusive rights to the heavens. (5,6)
13. Pure-dish spun round for young Clark Kent. (5,3)



by Terry and Derek Prebryn

All the answers are names of Dragon software. When completed, the column marked with a triangle will spell out a phrase.



Four More Commands

P.D. Smith resurrects, interrogates, pinpoints and normalizes his disc files.

THIS program adds four extra commands to DragonSuperDOS: RETRIEVE, INFO, DETAILS and DOG.

RETRIEVE allows you to recover a file that you have killed, as long as the disc space used by this file has not since been written to. Unlike most other retrieve routines, I have seen, this command flags all the sectors used in a file as being used, most other routines just reset the flag in the directory entry. The problem with this is that if you save another file after retrieving one, the saved file may overwrite the retrieved one, since the DOS does not know which sectors are used by the retrieved file.

To use this command type RETRIEVE 'filename' where the file name is in the standard DOS format as is for example KILL, after entering a RETRIEVE command several things could occur:

1) You could get an error, PE means that an 'undefined' file with the file name exists, NE means that a killed file with the name can be found, LD means that some sectors used by the requested file have since been used by another file, and the file cannot be recovered.

2) OK appears, the command has been accepted and successfully.

3) The message 'LENGTH ERROR (YRGT)' appears, this means that the code could have more than one directory entry (this is possible to be sure after a file has been killed) and so you are requested to say whether the displayed length was the original length of the file, enter Y or N, the displayed length is modulus 65536 (as a length of 65537 is displayed as 1) so you may need a calculator if the file was very long.

INFO displays information about the requested file, the syntax is as for RETRIEVE, ie INFO 'filename'. The file type is then displayed, DAT,BAS or BIN for data, Basic or binary respectively, then if the file is a binary one, the start address, length and execution address are displayed, as below:

```
BIN ST 00345 LN 3223 EX 00000
```

Here the length is 3223 bytes, the start address is 00345 and the execution address is 00000.

DETAILS displays how the file is stored on disc, listing ALL the sectors the file uses. Usually programs to do this only print the sectors which are recorded in the first directory entry, while long programs or programs on full-discs may occupy all or even most directory entries. The output of this command will be similar to that below:

```
7 19 TO 8 4
24 16 TO 34 36
16 3 TO 15 14
```

This means that the file occupies sectors from track 7 sector 19 to track 8 sector 4 and so on. This is on a double sided drive, the routine will adjust itself for either single or double sided drives, having respectively 16 and 36 sectors per track. The syntax for DETAILS is again DETAILS 'filename'.

DOS simply removes these extra commands so that you can load in a machine code program which will overwrite the routines, since otherwise this will cause all the standard DOS commands to stop working. To recover the extra commands if the

routines have not been overwritten enter EXEC 3460.

Note 1: Retrieve does not backup the directory to track 15, so if you find that the files have been retrieved wrongly by you getting the file length wrong, just copy the backup directory to track 20 using SREAD and SAVPTE.

Note 2: The default file type for all the above commands is BAS.

To use these extra commands, enter the hex loader and use this to enter the machine code. The machine code occupies addresses 34600 to 35700. To save the code on disc enter SAVE 'DISKCOM'; 34600:35700:34600, and to use it just type EXEC 34600. If you are loading the program from disc remember to enter CLEAR 30000:34600 first.

Just a word of warning, before trying out the program remember to make a backup of the trial disc first, since any error in the code could cause you to lose all your programs on the disc.

Because of this, risk the hex loader has a more sophisticated checksum than is normally used, which detects transposition of bytes which the normal loader doesn't, so using a normal loader to enter the code will always give you a checksum error.

If you don't want to enter the code yourself, you will be pleased to find you a copy of the program on disc (40 Tr 50) for £20, this will also include any further commands I have since added. My name and address are: P.D. Smith, University Hall, Birchwood Road, Penylan, Cardiff, CF2 9TB.

```
100 PER HEX LOADER
200 CLEAR 3000:31577
300 INPUT*START*151
400 INPUT*END*140
500 FOR J=ST TO ED STEP 8
600 PRINT USING***** "1J1
700 INPUT A$
800 CS=0
900 FOR K=1 TO LEN(A$)
```

```
100 CS=CS+R*VAL("BH"+R10R(A$K,R,1))
110 NEXT K
120 INPUT* = "FC
130 IF CS<>CS THEN PRINT*CHECKSUM
ERROR-TR* AGAIN*15000:1:15070 60
140 FOR K=0 TO 7
150 FOR J=R*VAL("BH"+R10R(K*2+1,2))
160 NEXT K,J
```

```
31680 : 0E7B6F7F74B0B12B = 1816
31688 : 8F7F6718B676F110 = 702
31616 : 0F012B0681668967 = 929
31624 : A04A26F7851E8781 = 653
31632 : 2AB0B120BF7F4906 = 1361
31640 : 718E0F012D373482 = 681
31648 : 81FF278488E02406 = 677
31656 : 3502669F7F4F0B04 = 931
31664 : 246632618E7F007E = 1178
31672 : 046DB07E00C1A010 = 875
31680 : 26B2E68686587F7B = 1581
```

```
31688 : 5FF77F9BA0F08208 = 1859
31696 : 182682B0A6880380 = 754
31704 : 261F88082713C680 = 738
31712 : 188E8638A688A1A0 = 694
31720 : 26855A26F7280F7C = 915
31728 : 7F78F67F78C1A005 = 963
31736 : 03C6A87E7EAB8A86 = 1874
31744 : 58C686308E08616A = 1883
31752 : 65BF7FAC777F77FF6 = 1364
31760 : 7F78F77F79C7F7FA5 = 1383
31768 : BD7C2D1826828F73 = 770
```


31776	17FA5F67F9C8D7C2D	=	1342	32224	13M7A7FA22a66398D	=	1242
31784	182682823F7F7F9A	=	1895	32232	17E8D1823a88C8B77F	=	894
31792	17F7F9BF77F9A69FF	=	1583	32240	17E686853886a6a6a	=	1857
31800	1C82818228813E8F7F	=	994	32248	185F77F77C61F78C3	=	1139
31808	19D46888588182781	=	448	32256	186D41F81E68462FF	=	1283
31816	131787FA268F6A84	=	836	32264	1C8281823a88A8F7F	=	893
31824	1F77F9F36824882C6	=	782	32272	19D46884424a4a887	=	593
31832	187F77F9F3418188E	=	875	32280	128846842888B77F	=	871
31840	17FA3A8FFC8221826	=	683	32288	19FC881F87F9Aa684	=	1214
31848	18133A8E858F7FA8C5	=	948	32296	173188D8834188C7E	=	875
31856	188681A688182788	=	478	32304	16A8D48533518F27F	=	1889
31864	148877FA28867F9887	=	1264	32312	19838881E88a9588	=	627
31872	17F981F38C487188E	=	881	32320	18D7F988178D98A1	=	1826
31880	17F98A6A8B77FA61F	=	1155	32328	17A7F9F28D48E7F9D	=	1345
31888	13844564456445618	=	513	32336	1A6A8D5282785E688	=	888
31896	18E7FA8A6A57D7F45	=	1192	32344	1828A83934188D14	=	675
31904	178A4182867FA643	=	849	32352	17A824F88957A8828	=	856
31912	1A488C887857FA618	=	761	32360	18D5A435845C8F78	=	1185
31920	17888C7A7A53D417A	=	784	32368	1957A75788a8a7882	=	543
31928	17FA226C67A7F9F36	=	1126	32376	1FC7F9A58849817C99	=	1163
31936	1887D7FA5278F8E7F	=	1271	32384	1584887F995C6A84	=	1114
31944	1A8188E7FA3A8FFC8	=	1214	32392	12AF182a1788D8887	=	962
31952	128182688A77D7F45	=	991	32400	18D88779C5786A846	=	1178
31960	126887D7F9F182688	=	695	32408	18C188E78C3A8FFC8	=	1283
31968	1978E7F98E68818C1	=	1895	32416	188182688F98E9FC8	=	896
31976	1A81824888A88A9FC8	=	1882	32424	18A58C888C88E7883	=	1839
31984	12818268887A8A846	=	735	32432	1A881A87812A8E7F	=	1894
31992	188182688788E78C5	=	1841	32440	1A78F81288E7FA9FF	=	1382
32000	18D98C88E7F988a7F	=	1343	32448	1812D39424153A85	=	678
32008	1984A8688188D957A	=	8121	32456	1A675448288882828	=	415
32016	18E78C88D98E588E5	=	1252	32464	1952F4C2878F88888	=	642
32024	1288159182788D981	=	553	32472	1544F28884415438	=	378
32032	14E28F37C7F97877F	=	1386	32480	188424153388a249	=	487
32040	19A8E7F98E688187E	=	1234	32488	1A828885354C8A85	=	758
32048	17C338A287D7F9A27	=	991	32496	18841555A8C4241A3	=	639
32056	1814C7D7F992A828A	=	8821	32504	1A85D88424545D8A2	=	621
32064	1DF877FA6FA7F98AD	=	1428	32512	1AF48D443A84149C8	=	1881
32072	19FC8281826A88D8A	=	639	32520	1A34F58D84353A541	=	513
32080	17FA6A78A68818F7	=	1183	32528	154C5A447D244524F	=	739
32088	17F98E8867FA8E818	=	871	32536	156C54453A84A849	=	926
32096	18E8a8FAD9FC82818	=	873	32544	184A824541C4A857	=	711
32104	12A88117C7F9AFA7F	=	1226	32552	154854C5A55258AF	=	788
32112	1987A7F99182A8E88	=	1235	32560	189A8A4C8C8A8FA1	=	1825
32120	15F39C8A6398D7C8D	=	1383	32568	1648A852A7C58882	=	655
32128	182A812A877F9818	=	8831	32576	1AF54654384578A9	=	733
32136	1888888C888867F9A	=	1888	32584	1845283A818D8C553	=	829
32144	1C88888A88C881418	=	661	32592	1A15A855352A541C4	=	673
32152	12A8113867F9A88155	=	871	32600	1535752495A8C8A5	=	757
32160	12783AF2883867F98	=	987	32608	15349688F4852AFCD	=	1181
32168	1877FA2C8A838887E	=	1368	32616	1A6A824541C4C357	=	781
32176	18838858C98858a7F	=	1162	32624	1A18852453A82A9A5	=	632
32184	1A2818226298E7F9C	=	1188	32632	156C5894E8A8C8A4A5	=	943
32192	188E78C8A4A88885	=	1216	32640	15444494C8344AFCD	=	971
32200	1A4A8A88D85A88a38	=	8848	32648	1788A78788C77C83	=	1267
32208	18D854A8C8134388D	=	939	32656	181828A881828A888	=	381
32216	1957A8A2888854A35	=	8977				

Primesearch revisited

Paul Weedon investigates a subject of Prime concern

DEAR Helen, I didn't think I'd be sending you another program so soon, but here we go. The program is a utility type program which determines whether any number within a certain range is prime or not, virtually instantaneously.

Regulars of Gordon Lee's competition will be aware of his "Primesearch" puzzle. This involves some fairly lengthy computing but most time is spent, needless to say, in determining whether a number is prime the same numbers could be tested thousands of times. Surely there must be an easier and quicker way.

And so there is with these two listings. Users without disc drives will be able to easily modify them to test a range of numbers, say, 1 to about 10,000. Single disc drive owners will be able to test a range of numbers, say, 1 to slightly over 500,000 while hard disc drive owners will be able to test a range of numbers, say, 1 to in excess of 1,000,000. In all cases, these ranges may be altered or even mixed but the higher the number, then obviously the longer listing one will take to run. Listing one, as it stands, does take several hours to run. Disc drive owners particularly will

never regret this small price to pay as they will reap the benefit of it for a very long time.

In listing one, lines 68-140 allow for the data statements to be read, placed into PB array and also to FWRITE them onto disc. Lines 140-320 use those numbers in PB to build up a prime number catalogue. By their very essence, prime numbers apart from 2 cannot be even, apart from 3 cannot be divisible by 3 and apart from 5 cannot end in 0 or 5. The numbers in the data statements therefore stand the best possible chance of being prime. Line 300 calculates the next value (N) to be tested for primeness in the subroutine (lines 290-300) and adds to A15 a 1 if prime or 0 if composite. When A15 is 60 characters long then it is FWRITE'N' to disc (line 340). Line 40 with line 500 are used in case of errors. Line 500 is the fast speed pole which should not be used if your machine can't handle it but if it can then line 200 will be found most useful for interrupting it to 'see' how 'things' are progressing.

Wear and tear

Listing two is a retrieval system which determines whether the number inputted is prime or not. This may be used as it stands or used in conjunction with your own program. Lines 600-680 FUREAD what is stored in the first 34 addresses of MMS on disc and place them on based computer in A15 array. This is done to save wear and tear on the disc drive, give an instant response and utilise memory which would otherwise be unused. Line 600 clears string space for this purpose and also for storing information FUREAD in from DATA0 file (lines 670-680).

You are then asked to enter your number in line 620. Line 660, assuming you have passed several elementary checks in the preceding lines, calculates the location of the address (divide by 500) and also the remainder. This remainder is searched for in PB array (lines 670-680) and its position noted. The relative address is looked up (line 720 or 730) and called A15. Line 760 looks up the required position in A15 and sets this PB (either a 0 or 1). On this (line 730) control either goes to line 750 or 760, where you are told whether your number is prime or not.

These two programs came about as a direct result of Gordon Lee's "Primesearch" puzzle. Owners of hard disc drives will have no problem in 'firing' in all possible numbers up to 999,999. Unfortunately I only have a single drive and had to make do with all numbers up to 999,999 except six digit numbers starting with an even number. (Competitors will probably know what I am talking about.) Whether you are going to use this as it is or in your own pro-

Listing one

```
10 DATA 1,7,11,13,17,19,23,29,31,37,41,43,47,
49,53,59,61,67,71,73,77,79,83,89,91,97
20 DATA 101,103,107,109,113,119,121,127,
131,133,137,139,143,149,151,157,161,163,
167,169,173,179,181,187,191,193,197,199
30 DATA 203,209,211,217,221,223,227,229,
233,239,241,247,251,253,257,259,263,269,
271,277,281,283,287,289,293,299
40 EUDON OOTO 300
50 POKE&HFFD0,0
60 DIM R$100
70 Q$="DATA0"
80 CREATE Q$,340
90 FOR I=1 TO 80
100 READ Z$
110 R$(I)=Z$
120 Z$=STRING$(3-LEN(Z$),"0")+Z$
130 FWRITE Q$,FROM 0-I)*3,FOR 1,Z$
140 NEXT I
150 NMS="PRIMES"
160 CREATE NMS,304*60
170 FOR L=0 TO 333
180 A1$=""
190 FOR K=1 TO 80
200 H=L*300+VAL(R$(K))
210 PRINTH
220 IS=INKEY$ IF IS="0" THEN POKE&H
FDB,0 ELSE IF IS="F" THEN POKE&HFFD0,0
230 GOSUB 290
240 NEXT K
250 PRINTA1$
260 FWRITE NMS,FROM L*60,FOR 80,A1$
270 NEXT L
280 POKE&HFFD0,0:STOP
290 FOR F=3 TO SQR(H)-.5 STEP .2
300 IF H/F=INT(H/F) THEN A1$=A1$+"0":
RETURN
310 NEXT F
320 A1$=A1$+"1":RETURN
330 POKE&HFFD0,0:PRINTERR:GOTO:STOP
```

gram, be it 'Primesearch' or whatever, I hope you get some usefulness out of it and maybe a little fun too.

If you experience difficulty in adapting the ranges, etc. and would like some help then send an a/c to Summerleys.

Academy, Wotton-Under-Edge, Glos. GL12 7DT. Please state requirement and the particular system you have.

Listing two

```
800 CLEAR 3000
810 DIM RR(50),A(100)
820 NMS="PRIME?"
830 FOR I=1 TO 34
840 FLEAD NMS, FROM 1-(I*50), FOR 10,Y5
850 A(I)=I-Y5
860 NEXT I
870 FOR I=1 TO 80
880 FLEAD "DATA0/DAT", FROM 0-I*3,
FOR 4,X5
890 NEXT I
900 CLS
910 INPUT "ENTER NUMBER:" N
```

```
920 IF N<10000 THEN GOTO 920
940 IF N=2 OR N=3 OR N=5 THEN GOSUB
300:GOTO 930
950 IF N/2=INT(N/2) OR N/3=INT(N/3)
OR N/5=INT(N/5) THEN GOSUB 300:GOTO 920
960 RR=INT(N/300):RS=N-(RR*300)
970 FOR I=1 TO 80
980 IF VAL(RR)+RS THEN GOTO 300
990 NEXT I
300 IF N<30000 THEN A,I=A+RR:GOTO 700
710 FLEAD NMS, FROM RR*50, FOR *I,A,I5
720 RS=MOD(A,I5,1,I)
730 ON VAL(I)+I GOSUB 300,700
740 PRINT "THIS NUMBER IS NOT PRIME" :GOTO 920
750 PRINT "THIS NUMBER IS PRIME" :RETURN
```

Dragonsoft

New software for review should be sent to Dragon User,
49 Alexandra Road, Hounslow, Middle TW9 4NP.

Draw what you like, but draw your own conclusions

Program: Picture Maker
Supplier: John Pearn
Price: £500

THERE has been a surge in the number of high quality utilities recently. However there have been surprisingly few CAD programs, and what there has been has often disappeared into obscurity. David Maker's Picture Maker, marketed by John Pearn Discount Software, is one such program.

(Hold, stop, create and delete. You make it sound as though Picture Maker is destined for obscurity — which we hope it isn't, complaints about the instructions notwithstanding. I'm supposed to edit these things, not rewrite them. A CAD program is one which is dedicated to a technical/design function, usually electronics or engineering. What we have here is a non-dedicated design, or graphics, package. This mistake is becoming increasingly commonplace. —Ed.)

Picture Maker allows you to design and manipulate PICT000 graphics in a variety of ways, using either the cursor keys or a joystick.

Lines are drawn by a cursor which appears either as a dot or a cross, which moves both horizontally and vertically. As the program loads you will begin to see an example of the

graphics. Picture Maker can produce. The screen dump which should appear alongside this review is not high quality, but shows you what effects can be produced.

Once the program loads you can either run it, print the instructions to a printer or read them on screen to a musical accompaniment from the author's Music Maker 2. The program offers green, yellow, blue, red, buff, cyan, orange and magenta as well as black

areas in any of the foreground colours.

There is always the risk of losing your creation with a graphics program. As well as being able to load and save on to tape, you can store pictures in one of eight available locations. The GET and PUT commands are particularly useful here and allow graphics to be stored and recalled anywhere on the screen, either in their original form or inverted. Stored areas can also be stored

screen upside-down.

Overall, the only drawback to Picture Maker is that the instructions are far too complex. Those who know how to use this kind of program may not think so, but the average user is bound to feel insecure. Given a simpler or clearer instruction sheet the program would be perfect for its task.

One thing which I did miss was the ability to print text on the screen without first having to draw it. It would be better if the user could enter text from the keyboard — instead, you must draw it by hand with the MAGNIFY command to help you.

Accompanying Picture Maker is a screen dump program which can be altered to suit almost every printer. First you must enter the appropriate codes for your printer, similarly to Electronic Author's COMFID program.

Picture Maker's sheer power is surprising. I cannot explain everything it is capable of. It is the most sophisticated graphics program I have seen. If you can master the rather complex instructions, you should have no trouble creating your own graphics.

Donald Morrison

Once the program loads you can either run it, print the instructions, or read them on screen to a musical accompaniment.

and white in screen 1. The background and foreground are easily changeable. Pressing a moves you into SCREEN 1 graphics.

Picture Maker has a variety of brushes, some not very close to the instruction sheet, but including Pictset, Pictrot, Pictbox, Line and others. The choice seems limited to me, and perhaps David Maker could have been more adventurous here.

The program can also draw circles, boxes and lines independently, and can FILL

shed up to three times their original size.

One of the most important features is the MAGNIFY command. This magnifies the area of the screen where the cursor is situated many times over, allowing you to produce very detailed graphics more easily.

Should you find that you have started your drawing too high or low on the screen, you can scroll the screen contents left, right, up or down. A fascinating feature is the ability to MINIFY graphics using RL and also to turn the view



Sound house

Wayne Smithson takes a sound sample.

AS the name suggests, this program is a sound digitiser (with frilly bits). It lets you sample sounds using the cassette port — this does not necessarily mean that you have to sample from a cassette recorder; you can sample sounds using a microphone or by connecting other computers to a Dragon.

Sounds are digitised and stored in memory; you can digitise more than one sound by altering the memory size (explained later). Once you have the sound you can then speed it up or slow it down and save or load it to disc. An extra facility of this program is an 'analyser' section. This listens to ordinary music tapes and displays coloured bars bouncing about accordingly. Yes, 'your Dragon can Boogie'.

First of all type in **listing one**, this is the Basic controller program that is used for disk or cassette IO, and several to-do-for cassettes, whichever you're using, as 'SNDHOUSE'. Note the changes for the cassette version. The messages about the PEEKs in lines 125 and 173 are for finding the start and end addresses of files being saved or loaded. The Basic controller also leads in the machine code which lives at address 3072 to 4094 in-store.

Once that has been typed in and saved, **NEW** the program, and type in **listing two**, the two loaders. From line 100 onwards, you must type in the data contained in **listing three** — forget about the numbers below the asterisk (*). The first data line would be that:

```
100 DATA 10,POKE,PEEK,0,1A,50,04
110 DATA FF,22,6A,2A,07,FF,25,7E,0C
```

When all the data has been typed in, it would be a good idea to save it onto disc or a separate cassette just in case it doesn't work when you run it. Once the data is typed in and the program saved, **RUN** it. You will see the numbers appearing on the screen as they are POKE'd into memory.

Providing you have saved the Basic file loader with all its data, you may now test the machine code by typing **EXEC 3072**. This is the point at which you will know if there are any errors in your data or not. If you are greeted with a blank screen or flashing bits or funny noises then there is an error in your data. If you are greeted with a

checkboard then you've typed in the wrong listing. What you should get is a menu on screen listing the various options available to you. Pressing either **BREAK**, **L**, or **R** should return you back to Basic of which point you should save the code as 'SNDHOUSE'.
SAVE "SNDHOUSE" 3072,4094,3072 (to disc)
CLDMD "SNDHOUSE" 3072,4094,3072 (to cassette, to be saved on tape after the Basic controller — **listing one**)

To use Soundhouse then, from disc just type **RUN "SNDHOUSE"**, from cassette, **CLDMD "SNDHOUSE"** then **RUN**. Alternatively you can save the Basic bit using the autumn program in a past issue of *CU* and use **CLDMD** to load the lot in.

And now, on to actually using Soundhouse; firstly make sure that the ear and record sockets are connected to each other. Dragon and your cassette recorder and unplug the remote pack. I will take each option in turn and describe what they do.

A: GO TO ANALYZER. This passes control to the pretty (bouncing bars which are) of no use whatsoever but who cares? It's fun. Play any music tape, the sound will come from the TV and the coloured bars will move up and down with the music. As always, completely useless, but it's nice to watch. Pressing the **BREAK** key will return you to the main menu.

D: DIGITISE SOUND. Guess what this does? Yes, you guessed it. Sound is 'sampled' from the cassette port and stored in memory between **START** and **END** shown at the bottom of the screen. The speed of sampling is set by **SPEED**, a value of 500 is a good speed to use. Playing music tapes while digitising will, of course, result in that music being digitised. The quality from tape is a bit grossy because the sampler picks up the background noise but you can definitely hear your Dragon playing back the Synchronix or Status Quo. To digitise your own voice, it is best to do it directly using a microphone. To do this, just plug your microphone into the RECDMD socket, make sure the ear socket is connected and that there is no tape in the recorder. You need to press **PLAY** and **RECORD** down on the cassette recorder, and to do that without having a tape in you

will have to push the switch at the back of the recorder in with your finger. You see this talk into the microphone and it will be instantly played through the TV and digitised. You can also digitise sounds made by other computers (Connectors 64 is best) by connecting the audio out and ground from the C64's monitor socket straight into the ear socket on the Dragon. I would only advise doing this if you know what you are doing. I don't, and thank go to Dave Gibbons and Mark Perry for telling me how to do that. The effects are much better though.

P: PLAYBACK SOUND (SINGLE). This plays back your digitised sound at the speed set by **SPEED** if you alter the speed after digitising, your Status Quo can sound like the Smurfs or a record at half speed. You can play back part of your sample by altering the memory boundaries **START** and **END**. Data is not lost by moving these.

C: PLAYBACK SOUND (CIRCULAR). As far P plays the sample over and over again until you **HOLD DOWN** any key. You may have to hold the key down for quite a while for it to stop.

SL: SKEWED SAMPLED SOUND. These speak for themselves and save the sampled sound between the **START** and **END** addresses inclusive. Loaded samples are placed in memory where they were originally saved from.

R: RESET MEMORY TO FULL SIZE. This places the **ADDRESS** **START** (5000) into **START** and the address **4094** (32767) into **END** to maximise the amount of memory available for samples.

ARROW KEYS: ALTER MEMORY SIZE. Two arrow keys move the memory boundaries around. Using this feature allows you to pick out certain parts of a sample like a word for instance. Right/left arrow control **END** and up/down arrow control **START**. Pressing the **SHIFT** key will speed things up considerably.

< >: ALTER DIGITISE SPEED. Obviously pressing either < or > (left key not needed) will alter the **SPEED** of digitising or playback. With this you can find out what you sound like at 75 rpm or at 553 rpm.

```
LISTED 1: BASIC CONTROLLER
10 *****
10 '* SOUNDHOUSE SOUND SAMPLER '*
10 '* (C) 1987 WAYNE SMITHSON '*
10 *****
50 '
40 PHODD:P:CLEAR1:CLEAR100,5999:
AUDI00M:POKE251,4H17:POKE252,4H7
```

```
0:POKE253,4H7F:POKE254,4HFF:LOAD
"SNDCODE.BIN":CLOSE
70 POKE4H0605,1:POKE4H0A99:NEXT
80 EXEC3072
90 IFPEEK(255)=1 THEN110 ELSEIFF
EEK(255)=2 THEN150
100 END
110 CLS:PRINT:INPUT"SAVE NAME";H
```

```

8
120 S=PEEK(251)*256+PEEK(252):E=
PEEK(253)*256+PEEK(254):PRINT:PR
INT:PRINT"START ADDRESS:"S;TAB(2
5);HEX$(S);" END ADDRESS:"E;TAB
(25);HEX$(E);" MEMORY USED:"E-S
;TAB(25);HEX$(E-S)
130 SAVENS+".DIG",S,E,359:CLOSE
140 GOTO70
150 CLS:PRINT:INPUT"LOAD NAME";N
$
160 LOADN0+".DIG":CLOSE
170 POK251,PEEK(1618):POKE252,P
EEK(1619):I=PEEK(251)*256+PEEK(2
52):Z=I+PEEK(1620)*256+PEEK(1621
)-1:POKE253,INT(Z/256):POKE254,Z
-INT(Z/256)*256
180 GOTO70
190 '
200 'TYPE "GOTO70" IF AN ERROR
210 'OCCURS IN THE PROGRAM.
CHANGED FOR CASSETTE VERSION
40 PHOD0:PCLEAR3:CLR100,5999:
AUDI00N:POKE251,4H17:POKE252,4H7
0:POKE253,4H7F:POKE254,4HFF:CLOA
DH"8CODE"
70 REM
130 GRAVEN N0,S,E,359
140 CLOADN N0
170 POK251,PEEK(447):POKE252,PE
EK(448):POKE253,PEEK(126):POKE25
4,PEEK(127)

```

```

10 'HEI LOADER FOR SOUNDHOUSE
20 '
30 PCLEAR4:CLS:PRINT#124,"ADDRES
S:"; "VALUE:"
40 FORN=3072TO4094
50 READAS:POKEN,VAL("4H"+AS)
60 PRINT#123,N;:PRINT#124,VAL("4
H"+AS)
70 NEXTN
80 END
90 'PUT DATA HERE
100 DATA .....

```

```

0C00=10 FF 0F FE 0F FF 1A 50 B6
0C09=FF 23 BA 08 B7 FF 23 7E 0C
0C12=F6 CE FF 01 8D 00 A6 C4 B4
0C1B=F7 5E 24 02 BA 08 A7 C1 39
0C24=B6 0F BE 10 00 A7 90 8C 10
0C2D=20 26 F9 8E 80 BE 04 00 A7
0C36=B0 8C 06 00 26 F9 8D 80 06
0C3F=B1 03 10 27 00 B1 BE 04 00
0C4B=CE 10 00 BE 8F 97 E7 13 34
0C51=10 A6 C4 C6 20 3D 30 8B B6
0C5A=FF 20 97 E8 B6 FF 20 9A E8
0C63=B4 01 27 00 96 E7 A7 8B E0
0C6C=A6 C4 27 10 6A C4 20 0C B6
0C75=B0 A7 84 A6 C4 B1 0F 24 02
0C7E=6C C4 25 10 96 E7 8B 10 BA
0C87=B0 97 E7 33 41 30 01 8C 04
0C90=20 25 80 20 A7 BE 03 E0 9F
0C99=B8 BE 0F E0 96 FD 8D 3A ED
0CA2=B1 96 FC 8D 34 ED 84 BE 0F
0CAB=E9 96 FD 8D 2B ED B1 96 FE
0CB4=B0 25 ED 01 DC FD 93 FB D7
0CBF=E7 BE 0F F2 8D 1B ED B1 96
0CC6=E7 80 12 8D 81 BE 0F FB B6
0CCF=00 95 8D 08 ED 84 BE 0F DE
0CD8=7E 90 E3 34 02 44 44 44 44
0CE1=B8 20 B1 29 23 02 8B 07 35

```

```

0CEA=04 C4 0F CB 30 C1 39 23 02
0CF2=CB 07 39 BD BA 77 BE 0E 8B
0CF3=BD 90 E3 8D 90 E3 BE 04 00
0D05=A6 B4 B4 BF A7 80 8C 05 E0
0D0E=26 F5 8D 83 8B 86 06 B1 03
0D17=10 27 00 D5 B1 41 10 27 FF
0D20=03 B1 44 27 5C B1 50 10 27
0D29=00 8B B1 43 10 27 00 7B B1
0D32=83 10 27 00 B3 B1 4C 10 27
0D3B=00 B1 B1 52 10 27 01 2C B1
0D44=2E 10 27 00 AE B1 2C 10 27
0D4B=00 89 B1 08 10 27 00 C7 B1
0D56=09 10 27 00 E7 B1 0A 10 27
0D5F=01 11 B1 BE 10 27 00 F2 B1
0D68=15 10 27 00 A5 B1 5D 10 27
0D71=00 C4 B1 5B 10 27 00 EE B1
0D7A=0F 10 27 00 D0 20 91 9E FB
0D83=C6 08 D7 E7 B6 FF 20 46 B6
0D8C=C5 01 27 04 10 21 FF FC B6
0D95=0B 4A 26 FD 0A E7 26 EA E7
0D9E=80 F7 05 FF 9C FD 25 D0 B6
0DA7=60 B7 05 FF 7E 0D 12 97 FA
0DB0=5F 20 03 BF D7 FA 8D 0C 13
0DB9=9E FB C6 0B D7 E7 A6 80 9C
0DC2=FD 24 14 5F 46 24 02 C6 7F
0DCB=FF F7 20 C6 0B 5A 26 FD 0A
0DD4=E7 26 E0 20 E2 96 FA 27 05
0DDD=BD 80 06 27 D7 C6 01 BD 0C
0DE6=13 7E 0D 12 B6 01 20 02 B6
0DEF=02 97 FF 10 FE 0F FE 39 B6
0DF8=0D 95 B1 10 24 01 4C B7 0D
0E01=95 B7 0F CF 7E 0D 10 B6 0D
0E0A=95 B1 01 27 F0 4A 20 ED 0C
0E13=FD B3 00 80 10 93 FB 22 0A
0E1C=DC FD 10 93 FB 23 05 B3 00
0E25=01 D0 FD B6 FF BE 01 50 A7
0E2E=B0 8C 01 5A 26 F9 7E 0D 10
0E37=DC FD C3 00 80 10 B3 7F FF
0E40=23 E4 DC FD 10 B3 7F FF 24
0E49=0E C3 00 91 20 D7 DC FB C3

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Expert's Arcade Arena

Write to "The Expert" at Dragon User
45 Alexandra Road
Hounslow, Middle TW3 4NF

AM, the sweet fragrance of Autumn delights throughout the Dragon world, and with it brings a host of new titles, new news, and even more exciting, a new Expert's services of whom you have for one month only, so enjoy and savour.

Straight down to business, and indeed, the Expert, ladies and gentlemen, boys, girls and eventful Editor is proud to present the A-Z guide to Dragon arcade games so far released this year. So with no further ado, take it easy ...

CRAZY FOOT 30 (Orange Software): Released on the verge of 1989, and priced at £2.99, the Crazy Foots destiny continues, this time offering a vast improvement. Crazy Foots 1, which reminded me of a program I once wrote on a ZX-80. However, it has all changed, this time incorporating colour graphics, along with several other new additions.

Your goal? (Yes of course to defeat the opposition, be it mankind or human using eleven players, symbolized on the screen as being eleven "matchstick men", who may only be moved in a horizontal line. This subsequently results in the game being one of strategy more than arcade, but none the worse for that.

This certainly offers a stark contrast to that of Indoor Football, with an equally contrasting price, easily justifying the outlay.

Track designer

BUSHOUT (Dragonfire Services): Not being in the luxurious position of having a crystal ball, I am unable to comment on this game as, at the time of writing, it has yet to be released. However, dusting off old memories, I am assured by Andrew Hill of Dragonfire that this is notably based upon Bushout, which was seemingly first released when cavemen first discovered the wheel. Will it survive the test of time? Only time will tell ...

FORMULA ONE (Paragonix): Released at the London show in December 1987, but still worthy of mention, this version of Scalextric, has already over-taken Speed Racer and looks poised to become one of the best all-round games produced for the Dragon.

On a split screen format, would-be Nigel Mansells have the option of racing either the computer or a friend, along with having the additional option of being able to design his/her's very own track, utilizing a separate program hidden on side B. Congratulations to Pam O'Reilly on an exceptional game, which incidentally is her first for the Dragon ... I sincerely hope it isn't her last.

(Sincerely doesn't always pay ... Ed.)

LUCIFER'S KINGDOM (Orange Software): Priced at £3.99, Lucifer's Kingdom, in my immortal opinion, deserves to be at

the top of any list which may find its way to Britain in forthcoming months. Comprised of detailed scrolling graphics, the game's aim is to find and defeat the elusive Lucifer. Having other ideas, eight sets of menacing aliens act as a speedy and seemingly never ending obstacle course, to which you must weave, dodge and generally blast to bits as you go along. This undoubtedly addictive game should not be missed, acting as a much needed stimulant from the cold, dark, evenings are almost upon us.



MANDRAGON (Kouga Software): I once had a friend who believed the Dragon, as a games machine, was a shammy, looking back at the archives, it was hard to argue against that point.

However, one brief glimpse of Mandragon, available at only £4.99, would easily dispel any myths, as without a doubt, it fits the quality of software maintenance, the Dragon is set to rival any 8 bit machine, purely on the strength of it being a games machine.

You play the part of Mandragon an advanced robot, the aim of whom is to battle through two levels of mummies, trapped



eagles, sandvarks, and anything else one could possibly imagine.

On the basis of my brief glimpse, Kouga Software is definitely a name to watch out for.

SUPA MOWA (Orange Software): Supa

Mowe is prominently based on the slide but certainly not quite Meteoroids, which many of you may have failed to accompany your Dragon 32 upon purchasing it.

As you may have already gathered, I am not the most ardent fan of Meteoroids and I am afraid this version does not inspire me enough to change my views.

For the record, your aim is to blast everything in sight to smithereens; however, instead of inheriting a more powerful "zapper" the intrepid captain must, in my view, laboriously place ordnance (mines) in the hope that an unsuspecting asteroid should trigger them off, which in turn, creates more allies; if not later, unsuspecting Meteoroids.

Even with an "economical" price tag of £2.99 I am only able to recommend this game to those to whom Meteoroids is the best thing since Neighbours, and who require a very version of an old game if not an old game.

UTOPUS (Pulsar): Fresh from the clutches of Jonathan Carwright, it has been said that this is very similar to the aforementioned Lucifer's Kingdom, although, while I find the basic elements of the game to be of a kind, the only other aspect of the game which I perceive as being similar is the fact that they are both truly excellent games, unsurpassed by any other in their field.

Your aim is to escape, as the title suggests, from the planet Utopus, and in doing so, escaping from the unique defense system, avoiding Kamikaze style space craft, avoid objects thrown on the planet's surface.

As already stated, priced at £3.49, this game carries my thorough recommendation, and indeed, rather than picking between Lucifer's Kingdom and this, I would venture to suggest you purchase both, as you are unlikely to find better.

Small but perfect

Quality comes before quantity, and that's certainly how the Dragon arcade scene looks at this precise chapter in time. In order to keep the continuing stream of new releases coming, the firm message from the suppliers suggests that they urgently require more support. With the current quality of arcade games being produced, there are few who deserve it more so.

My final message to you, my loyal friends, before I slip off into the noisier of the editorialist, never take opportunity to support them to support you. You (and your "lugging wallet") have the golden opportunity to do so at the Arcade Mart, Weston Super Mare, on Sunday December 4. In the humble words of the Four Tops, "I'll be there ... Don't let that pass you off, will you? After all, it wouldn't be much of a show without you, would it? Good night.

Winners and Losers

Every month
Gordon Lee will
look at some prize programming

The ups and downs of "halitoni" numbers formed the basis of the June competition. "What is the smallest starting number which will, while being halitoned, produce a maximum which exceeds one million," we asked. The vital words in the question were "The smallest starting number...". For those of you who did a quick calculation and worked backwards from 1,000,000 to arrive at 303,032 were well off the mark. All of the entries which attempted a "work backwards" approach often using quite refined programming ended up becoming enmeshed in an ever-increasing tangle of diverging pathways. Unfortunately, while following any number to its conclusion in the normal manner is simplicity itself, attempting to trace that path backwards is virtually impossible.

The reason is not hard to find. Certain numbers can be formed from two possible generators, and on reaching one of these there are two paths which need to be followed. For example, working backwards from 50 we can go to either 104 or 17. In fact, any number is the form $5x + 4$ where x is any positive integer will present this divergence. Consequently, we would expect to reach such a number every six steps, after which we must continue to trace two separate paths, which will themselves branch before long, and so on.

As an example of this type of approach the current year 1988 has been worked backwards for a few steps and it can be seen that after only nine iterations the initial value has diverged into twelve separate channels.

This was one occasion when the simplest method of approach proved to be the ideal method, that is, start at 1 and test each number in succession until the first is reached, which produces a maximum in excess of one million. The fact that there is no proved connection between any starting value and either its maximum or the number of steps taken to reach unity should have indicated that this was the best system.

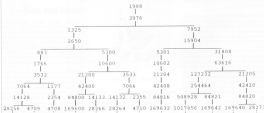
John S. Blatch of Weybridge ran an analysis on the results reached while the 1978 individual tests were in progress and found that the maximum 9,232 occurred most frequently, in fact, 625 times during the test. This was equivalent to a frequency of over 34%, by far in excess of its nearest rival. Why, he asks, is this? Following on from this idea, I ran a check on all starting values up to ten thousand and the "top ten" maxima are shown here. Because of the higher range of numbers under test, the relative frequency of 9232 has fallen from the figure just quoted, but this value is still well ahead of its nearest rival. Of course,

this percentage will continue to drop, the higher the range of numbers that are being tested.

This is clearly because once our starting value has exceeded 9232, this particular maximum can never be scored again, so the frequency will never exceed the 1978 value shown in the table. Whether, by continuing to run the program and test values up to many millions, another higher scoring maximum exists is a matter for conjecture. If there is such a value, it will probably be a very high number, in order to allow a sufficient frequency to be scored before the values being tested again pass this maximum. Then, the whole procedure will start all over again...

If any readers have any ideas concerning the high frequency of 9232 I will pass the information on in a future article. July also had an additional puzzle. This was the decipherment of a coded message. Only two readers managed to crack it, and they were that formidable duo from Middelebury, D. J. Gray and P. J. Taylor. Was this a joint effort, I ask myself? Anyway, congratulations for spotting that there must have been an intermediate "key" to the code, and in determining that this key was the words "Dragon User". (Yet another way in which Dragon User can be used to unlock the mysteries of the Universe!)

Maximum	Frequency			
1 9232	1576	-13.79%	11 14308	47
2 38344	187	-1.97%	12 8880	44
3 258304	143	-1.43%	13 63608	40
4 68868	92	-21.00%	14 2752	39
5 21488	87		15 44324	37
6 4372	71		16 8032	37
7 19888	69		17 343544	36
8 13130	67		18 41324	35
9 127828	60		19 14580	33
10 45320	54		20 30328	32



Write: ADVENTURE

Pete Gernard finds the streets of London paved with misadventure.

Six months ago, in the April 1988 issue of *Dragon* (see), this column devoted its space to something which I termed "interactive fiction". The idea was that people conjured up ideas for adventure games that were based on fact, rather than fiction, and subsequently turned those ideas into what would become some pretty interesting games. One or two of my local acquaintances have said that they would like to hear some more, so with the editor's kind permission...

We'll stick to two of the main themes, mainly episodes from my college days and getting your facts right when writing an adventure game, but we'll first be toasting quite as much with science and science fiction adventures. We'll see. What we will be considering is the streets of London and various incidents that took place upon them, and if you're going to be writing an adventure to Rainford (for example) it would be well if you got all the facts about London correct, since they are based in the place. Here if you were sending your game to a company who'd never set foot in London, someone playing it would pull you up if you got something wrong.

Alma Mater

In our imaginary adventure you are a character who, in my time at UCL (University College London, and what else that name meant about the UCL, old bats claim last time around, Haler?!) (by the way the one who said "taken has a lot of answer for" last month, me dear) was almost invariably known only by his surname, which was Pope. Pope was a legend at college, and if one of two different incidents attributed to him did in fact happen to other people, that is not important. They could, and should, have happened to Pope. What is important is that we get our settings right. For instance, if an incident took place on Tottenham Court Road, involving Barclays Bank, is there really a Barclays Bank there? There are, in fact, two of them, and the one in question is at the end of Torrington Place.

It transpired one night that our intrepid hero was cycling home (Pope cycled everywhere), and was feeling somewhat wobbly owing to an over-indulgence in horizontal tourism. Pope was in need of money, and came to a hall (outside the aforementioned bank). After a little search he came upon his card and attempted to insert it in the magic money machine, but alas for him the machine wasn't working. To his befuddled mind this must have seemed like a tremendous insult, and he searched around for a brick to throw through the window. He found one, a hefty solid sort of brick, ideal for smashing windows with. He hurled it at the bank, but

made an unfortunate error. He forgot to let go. The result of this was that both brick and Pope tumbled through the window, and therefore up to the police arrived and hauled him away. How, as an adventurer, would you explain your way out of that one?

The second incident took place at the same spot. Here you need to know another fact or two about Tottenham Court Road. The bank is on one corner of a T-junction, and here there are two sets of traffic lights. Opposite one of them there are two telephones. Rarely working, but they still are. Again it was night time, again Pope was cycling home, and again he'd been imbibing well, if not wisely, in Chelsea Cattery. He was brought to a halt at one of

been waiting for quite some time. Pope and the owner of the flat, who shall remain nameless, decided that the one thing the flat needed to make it complete was a crime crossing outside it, so that they could cross the busy road in safety during daylight. Needless to say, at three o'clock in the morning there wasn't much traffic about, and so they sat to with one tin of black paint and one tin of white paint, one each, to paint their very own crime crossing. Unfortunately, one of the neighbours noticed this and didn't take it in quite the charitable manner in which it was intended. They called the police, but by the time they arrived the crossing was finished and Pope and owner were safely back inside. When the knock on the door came the one thing you don't do is open it while carrying two tins of paint and saying "It's a fair day, guv".

Get an A to Z

With so much scope for an adventure based on the streets of London I am surprised that there aren't more games written about it. If you're going to do one, am yourself with an A to Z or some equivalent. You don't want to have Victoria station on the Northern Line of the underground, for example. You don't want Hampstead Heath south of the river Thames, or that splendid footpath The Spaniards' being northern near the Heath. Hackney and its marshes aren't east London, not west, and if you're going to have a 39 Steps-type escapade climbing up Big Ben you might like to have little details like a flag flying from Victoria Tower when parliament is sitting, and so on.

"Underneath the arches" were the wimp, and the place really exists, at the back of Charing Cross station. Close by is an excellent place to start an adventure game, a pub known as The Blacklock Holmes. This is much more than just a pub, it is possibly the most well visited of all pubs during the tourist season. It is also a kind of museum to the great fictional detective, with another alarming feature of the Blacklock being leaning down at you from the wall. Could be many an adventure less hidden in this particular building.

Minor details in adventures always help to set the scene, so if you're going to include London Zoo as part of your adventure-map it might help to recall one incident there several summers ago. Two of us were strolling around the zoo, admiring the animals, and one ended up some point in to a row of cages all full of wretched pterosaurs. Nearly was a troop of Roy Scouts being led by another harassed-looking gentleman. I was examining one of the cages, started reading the little notice in front of it that was telling me all about its



the sets of lights, and for once he didn't sail through them but decided to wait. A car pulled up alongside him, and there they waited together. And waited. And waited, until the little devil that was whispering inside Pope's brain got the better of him and he got off his bike. He leant it carefully against the lights, went over to the car, and leant in out of all its tyres. The driver was, naturally, horrified by this, but as Pope was a much bigger man he simply sat to the 'phones and called the police. By the time they arrived Pope had had a bit of exercise, and was attempting to re-inflate the tyres. The police found him lying down by the side of the car, attempting to blow them up. Plymouth. Once more horses hauled away, and once more how would you get out of that situation, adventure players?

Pope of E8

Our final incident in our imaginary adventure on the streets of London, at least, the final one involving Pope, took place in Hackney, E8, not E7 or E9, but E8. There was a partying going on, it was the early hours of the morning, and the liquid had

occupants, when I burst out laughing. I pointed at the sign, my friend read it, and she too was overcome with mild hysteria. The pleasant in question went by the rather unfortunate name of the Cockless Pheasant, and whoever wrote the sign must have had a sense of humour. This bird, this Cockless Pheasant, is apparently very difficult to breed in captivity! Hardly surprising really with a name like that... but we left the harassed gentleman to explain it to his secrets. We were saying nothing.

And of course, in 2005, chimpanzees always misbehave when young people are watching. I think they do it deliberately.

One last place that must be included in a London adventure is the famous Trafalgar Square. Complete with Nelson's column, the lions guarding the place, and the fountains. Overlooking it all is the imposing wings of the National Gallery, and in tapestries when the place wasn't crowded off and you didn't go there in fear of your life, New Year's Eve saw us all congregating outside the Gallery before going for a splash in the fountains to celebrate the New Year as Big Ben rang out the midnight hour. One year my cousin came down to London to join in the celebrations. He had

only recently turned 18, so perhaps his over-exuberance could be explained. He had, after all, spent the night in various lairs. As midnight approached, he climbed to the top of one of the fountains, and waved happily at the world as the New Year dawned. When he got back home his mother asked him if he'd enjoyed himself. He replied that he had. He hadn't had too much to drink, hoped his mother. No, answered the (admittedly, I'm afraid!) Then, his mother wanted to know, what were you doing on top of that ***** fountain on the news on television? Caught out by modern technology, another trap for the adventurer in London.

Birthday card

So with a combination of facts and experience, it's not always that difficult to come up with good and original ideas for adventure games. My own troubles, at today, in fact, would have made an interesting enough quest. Buying a birthday card for grandmother would seem, on the face of it, an easy mission. Not so, dear reader, not so, especially when buses are

being diverted all over the place because of a road being closed, the weather decides that it will transform itself instantly from sunshine to rain, some shops have closed early because of half-day closing while others remain open, those that are selling cards are selling only those sort with themes so basic that it makes you cringe even to look at them. To say nothing of knowing that one cannot leave the house before the post has arrived in case the halfpenny next door decides to add to its collection of postmen buried in the back garden by pinching another one (and his post) from under my very nose. Douglas Adams (*Hitchhiker's Guide to the Galaxy* man) has co-produced a very successful adventure called *Bureaucracy*, based on the problems of dealing with such things as banks and airports. They are as laugh compared to the problems of coping with absolute the postmen, dogs, buses, and birthday cards.

Well, I hope this gives you a few ideas for adventures. Enough of ideas, though, we've neglected programming long enough, so back to that next time around. Meanwhile, all this writing about bear and events of long ago, I'm going to the pub!



COMING up in November of this year (or at least next month) is an interesting event for adventurers everywhere. It's an annual fest, and this is a sideways look at some of the happenings from last year.

The Adventurers' Convention was held at the Europa Gallery, part of Sutton Library, on the 28th November 1999. It was apparently the second such convention, although I never heard anything about the first. At it we were promised such treats as talks on multi-user adventures, adventure creator programs and what the future holds for adventure games, as well as demonstrations of various popular games throughout the day. What did we get? Read on...

Sutton bound

You know me, always game for a laugh, so when Sandra Sharkey (then of the famous *Adventure Probe* and *Scotchpaper* fame) had now moved on to great things in the adventure world I asked me if I was travelling down to Sutton for the conven-

tion I replied "of course". The original plan was for us to travel down separately on Friday and then meet up on the Saturday somewhere near the Europa Gallery.



However, events were such that we ended up travelling down together, so, obvious to the last, I arranged a meeting with someone without telling Sandra anything

about it. The train journey was cold but otherwise uneventful, as ever I was agast at the price British Rail charge for fares at McDermott's Expo, we planned out several adventures, and were only half an hour late getting into London Euston. I forgot British Rail's excuse, dealt outlastly on the line at Crews, or some such nonsense.

On the point of showing Sandra my old university followed by the possibility of meeting some of my former colleagues I went into a particular pub, we arrived at the Jazzy Bandman at about ten past two. A nod to a friend, I asked him and Sandra what they wanted to drink, and then said to Sandra "I thought you might like to meet my brother". Yes, Mike Gerrard, adventure reviewer extraordinaire, lurking behind several pints of lager. An interesting chat about the world of adventures occupied our mood for the next hour or so, then Mike had to be off and Sandra had to be deposited on a train to Sutton to meet her sister, with whom she would be staying the night.

No problem, you might think. Hang on, this is an adventurers' convention were

going to, and life is never that easy. Sandra was, understandably enough in the wake of the terrible fire at King's Cross, unwilling to travel on the underground, and since it is many years since I sat on a bus in London I decided to do the tourist bit and walk to Victoria. It is not that hot, really ... (I made that mistake once, only in the wrong direction. Saved! Ate in tube fare and had to spend £4 getting my shoes re-soled.)

Hours later the train was going dim, the food was running out and the water had all but vanished, so we sat the train apart on Sandra's carrier bag and proceeded to admire Buckingham Palace by night light. Unfortunately we didn't have a lanterns while out to people ourselves in the station, so we had to endure the most incredible swarm of starlings around the Mall before actually reaching the Palace. Was Lady Di there? Couldn't see her. There was a guardman, but as he wasn't wearing a red uniform Sandra cursed him loudly and so-furled on.

Eventually Sandra was deposited on the correct train to Sutton and I was free, I will skate over the events of Friday night for fear of alarming those of a nervous disposition.

Saturday morning dawned bright and early, and after reading some advance news of Beyond Zork in the wonderful in-house newsletter The Status Line, to which almost everybody for immediately, I decided (the real one) my first for the weekend, John Pean and I decided that we wanted a "word of amendment". (Can the word of amendment at the discipline level) was an ample input given, I must have one. It was odd, we might have found it slightly easier to park in Sutton, but as it was we had to leave our car on a side street on a yellow line and hope and pray that nothing would happen to it.

After that bad start (we did find an NCP place that had space for £200 cars, but as we only had one we ignored it) life didn't get any better when we tried to find the Europa Gallery. Eventually we flagged down two policemen and things got rapidly worse when Dini started off with "excuse me chaps, can you ... oh, sorry madam" as a policeman in trousers went red and glared at him. Her friend seemed most amused, and directed us to where we wanted to be. Outside the gallery was a Sandra Sharkey, leaving the bag of gifts, and after a heavy cigarette we went into the convention. At last!

Civic scenario

It was taking place in Sutton Civic Centre, which housed a wonderful library and many other offices and doors and lifts, plenty of scope in which to lose ourselves. We did, of course, but finally got to the start of the convention proper.

Since Sandra had already been in for a quick look round she just marched straight past the reception desk, I, bearing my Adventure Probe free ticket, was duly registered and walked in after Sandra. Dini tried to follow me but was pulled back by the chap on the desk, "Damn!" he exclaimed, "my cloak of invisibility's worn off,

must get another one", and when he signed himself in as Dini (Sloing and tried to pay two Zorkmids for his entrance money he left behind one very confused receptionist and joined me and Sandra.

Downstairs there was not a lot going on, so we decided to travel to the upstairs part of the convention. Two lifts, an orange one and a green one, to choose from. A crucial decision, but we got into the orange one, pressed the up button, and after a moment's hesitation we were off.

Upstairs, and an engaging chat with Mike Austin, one of the many Austins responsible for Level 8. On an Atari 1040.



which amazingly managed not to disappear into Sandra's carrier bag, he was running the first Level 8 adventure epic, *Osborne Plunge*. Wonderful stuff. It's worth buying it just to read the book that accompanies the game, a diary belonging to the hero Ingrid. Such characters as *Alewife* and *Ingrid* (not sure about the spelling those) Garden, and grandmothers. In the game, whoever an 'i' can appear at the start of a word it is prefixed with a 'g'. Thus you can move, grow, grow east, the prompt for the first few moves is 'what grow?' or 'what grow?' (supposed, but grandma takes this is extremes, at one point calling someone a gringrains. The graphics on the 1040 were truly wonderful, and Dini bought a copy there and then.

We heard a lot about graphics in adventures, and it seems that many people only put them in because the distributors will not take on a game that doesn't have them. Some people rave about them of course, the very same people who rave about *MUD2* and *Shades*, two multi-user over the 'grains' games, but do they have graphics? They do not, so I think we ought to start a campaign for *MUD2* to have graphics. After all, if a humble Dragon can have them, surely something with the power of a DEC-10 or whatever is capable of having them and displaying superb pictures? Takes tongue out of these adventures on ...

We went on to another Alan and announced *Magnetic Scrolls* people by immediately turning the graphics off on *The Pean* and started to solve it from scratch. After expressing our own annoyance at the

many inconsistencies in the game, and how few was a game of the year award is beyond me, we went elsewhere.

Actually, we went to a pub, but we'll ignore that diversion and get back to the convention.

Along with Jim O'Keefe, an adventure reviewer who changed upon arrival of our innumerable visits to the coffee bar, we went to the last talk of the day (bright confusion over the other two going to put opening hours), a discussion on the future of adventure games with Peter Kilgus, who was then speaking: later? his, only speaker. The man would break no interruptions and discussions of interesting topics, and from the way he put his opinions across it seemed that no-one else in the world knew how to write adventure games except him. I believe I saw an Austin straking his head sadly alone point, and as Kilgus's closed on and on more than ever did I want my word of amendment. Failing that, I just got up and walked out with Sandra, and Dini joined us moments later in another retreat to the coffee bar. There we met Sandra's sister carrying bottles of stuff belonging to Sandra, and that was really the end of the day's entertainment.

Horizontally mobile

Being a kindly fellow Dini gave Sandra a lift back to Euston Station, and we made sure that she got on the right train at the right time. Not one of life's great travails, our Sandra, as she would be the first to admit. A minor panic at seeing several hundred policemen and police dogs on the station escorting a horde of football fans somewhere, but wherever they were going they were not going on to the adventure train and Sandra could go safely home to sunny Wigan.

I stayed on an extra day, principally because I wanted a drink at Sunday lunchtime in Hampstead. It was so misty we nearly missed the pub, but we got there in the end. What a collection of customers! I love it, do people like this really? They do, thousands of them, and they can stay there. Upstairs mobile everywhere, and by the time we left the pub we were mobile as well, but surely not very useful. A distinct incline to the horizontal, I fear.

And the convention? A good idea that no-one seemed to know how to do with, was the overall opinion of Dini and I. More publicity would have helped. Invitations to leading adventure journalists and magazines that favour adventures, and certainly more advance warning about it all. But perhaps that's best, and one or two of the exhibitors could have tried harder and made things even better. Level 8 reigned supreme, and words of praise once again for Mike Austin for indulging us in our, at times, somewhat bizarre conversations.

This year well, I'm sure, be bigger and better, and good luck to them. It's probably be there, and perhaps I might see one or two of you as well. Not too much that's specifically Oregon, but interesting for all adventures nevertheless. And that's that Bye for this month.

How many monkeys in a coconut?

Gordon Lee has a lovely bunch of puzzles

FROM time to time on this page we present an assortment of miscellaneous problems which can be solved by a computer approach. This month, here is a selection which have been sent in by readers, and which other Dragon users will, no doubt, find good practice in programming.

First, from Paul Woodson of Monks-under-Edge comes a familiar alphametic:

CROSS
ROADS
DRAGON

This is an addition sum in which the digits 1 to 9 have to be substituted for the letters (different letters represent different digits. Zeros is not used. Although the puzzle itself dates from pre-computer times, Paul suggests a programming approach especially as the letters include those in the word 'Dragon'!

Memor of this 'Dragon' connection reminds me of an alphametic problem which was one of our competition questions a couple of years ago, and which more recent readers may like to tackle:

DRAGON = 11
USERS

In this alphametic, the result of the division is a two-digit number in which the two digits may, or may not, be alike. If this value is coded and the digits of this code

replaced by the appropriate letters from 'DRAGONUSER', the result is a familiar English word.

Another problem which can be readily solved by computer is the puzzle of the 'Monkey and the Coconuts'. This has been suggested by David Legrange of Northampton.

Five castaways are marooned on a desert island. They had collected some coconuts which they agreed to share the following morning. During the night, the first awoke and, fearing that he may be cheated out of his share of the coconuts, decided to claim his share while the other men were still asleep. Dividing the pile of nuts into five equal piles, he found that he had one coconut left over, so he gave this to the monkey. Hiding his share, he piled the remaining four piles together and went back to sleep. Each of the other four men woke in turn and decided on the same course of action. Each time there was one nut remaining from the division, which was given to the monkey. The following day they all awoke and were able to divide the remaining coconuts exactly between them. Can you say what is the smallest number of coconuts that must have been present at the start? An additional problem asks for the initial number if, when making the final division the following morning, there was one coconut left over which was given to the monkey, of course!

The subject of perfect squares was of interest to a couple of readers. A. Radford of

Norwich writes that there are just four eight-digit perfect squares in which the first three digits are the same as the last three digits and are in the same order. Can you find them?

Eight-digit squares are also of interest to Tom Denton of South Norwood who asks:

1) Find any eight-digit squares in which the number formed by the first four digits is just one more than the number formed from the last four. For example, 68476848 except that here the number is not a perfect square.

2) Repeat the above, except that this time the first four digits should be one less than the last four.

Finally, here is another problem from Paul Woodson, this time relating to the digits 1 to 9 in the order that they appear on a pocket calculator:

789
456
123

The problem requires you to find sets of four prime numbers, as follows: First, select three different digits so as to make a three-digit number say 1, 2, and 9 to make 129. Note the pattern formed on the keypad by the positions of these keys, and then rotate this pattern three times 90 degrees each time and note the three three-digit numbers indicated at each turn. In the

Price

WHEN you have found your prime number (a set of four, you may be asked to choose a prime program from a set of two).

This month, Prolux Software are sending us a packet from Oxford, containing five copies of *Photopia* and two copies of *Slip against Slip*, which will be allocated to the lucky winners.

Like Gordon Lee's letters, *Slip* is said to be prime but tricky, for those who prefer a true challenge to mere mystery. *Slip against Slip* offers fun fairly free of logical frustration.

Express your preference, you may be lucky.

And if not, well, there's another Lee who's better read month.

Rules

Please place all four of your digits in an electronic Dragon, and memorise DRAGONUSER COMPETITION, along with your lettering (no tapes, I think you). CCs are acceptable, and any facilities you wish to include, and deliver by hand for any other

method currently in operation.

For this month's selection, I would like suggestions for the best way to get Dragon User copy to the right place or time, in the event of a total postal services strike. This should not involve handing the copy to a member of the advertising staff (domestically, Dragon User has no advertising staff) at the PCW Store. The best suggestions will be forwarded. (You, I don't really want to take advertising and communications).

August winners

THE August competition seems to have squeezed home before the strike. Owing to circumstances that we won't go into, the winner to the problem as posed did not work out to the nice round sum originally intended, so we have allowed a range of calculations falling (as it happened) roughly between 20470 inches and 20487 inches.

There were quite a few beautiful programs giving quite wrong answers, so it is to be expected in a puzzle of this type. The eventual recipients of a *Hotel On Mayfair* from Prolux Software, when it has

been in way across the moorlands from St. Giles Major, will be:

Anthony M. Clarke of Bristol, E. A. Newman of Aylesbury, G. H. Mansfield of Garsdon, Dave Lathin of Rutherglen, Terry Potter of Chislehurst, David O'Malley of Canterbury, Brian Hughes of Havering, George H. Fletcher of Hall Green (who may recognise parts of the problem on page 4), Prof. Cadogan of Market Harborough and Prof. Wilms of Yarmouth, who gets a special mention for sending his answer via *Kunzaga*.

Again another time we'll remember to tell you what units we'd like! My calculator finger's all worn out.

This is the first time we've had several poems without actually asking, and very good they were too. The last were evenly split between grovelly invitations and reminding the assets, so we took over Dore Robertson's view: 'If I had a Hotel On Mayfair, I would have lots of washing up to do every day.'

Solution

See opposite.

case given the set of numbers would therefore be 126, 362, 961 and 762. The solutions were after and therefore three in all must all be comprised of prime numbers. So, in the example just given, as 126 and 961 are not prime this set would be rejected.

As a supplementary to this problem, Paul

also asks if readers can say what, apart from all being prime, each set has in common with other sets. The solution to this, and all the other problems, will appear in a future issue.

The competition this month is an extension of the last problem. Instead of starting with a three-digit sequence of keys on the

keypad, choose four digits. Thus, by rotating the pattern so formed four four-digit numbers will be generated. As before, these four numbers must all be prime. Paul has found just one set, and it is this answer that is required to win one of this month's prizes.

The Answer

This is Gordon Lee's own solution to the August competition. See page 26 for results.

ANSWER: The total length of the spiral would be in the region of 568.75 yards.

SOLUTION: The calculation is performed by assuming that the record is made up of a series of concentric circular grooves rather than the true single spiral. Suppose that it was possible to cut and deform a gramophone record in the following way. First, a cut is made along a radius from the centre to the outer edge. Now each groove on one side of this cut edge is moved to adjacent the next groove along on the other side of the cut. This movement would have practically no effect on the length of each of the coils of the grooves, but would result in a series of 'almost' concentric circles each differing from its neighbour by a groove's width. Because the amount of lateral movement in relation to the circle's

```
10 D=0:K=0:P1=3.1415926
20 FOR R=2.75 TO 5.75 STEP 0.06291384
30 C=2*PI*R
40 S=D+C
50 NEXT
60 PRINT"Total distance (in yards)";PRINT D/36
```

diameter is so small, each spiral segment would be virtually indistinguishable from a circle of the same diameter.

The program below carries out this computation. Radially from the centre of the disc there is a central portion of radius 2.75 inches and an outer ring of .25 inch. Thus, the actual groove area occupies a radial distance of 3 inches. As the record rotates 33 1/3 times a minute, and plays for 25 minutes, there will be a 756666 revolu-

tions from start to finish, and therefore this many grooves across the 3 inch radial distance. Each groove has a width, therefore, of 0.00039384 inches. The program computes the sum of a series of circumferences of circles with radii from 2.75 to 5.75, each with a radius increasing by 0.00039384 inches at each step. The total obtained is divided by 36 to get an answer in yards.

Communication

Problems Urgently wanted: DetachDBS and manual and code for desperate Dragon owner.
Name: Keith
Address: Tel: (029) 525-0810.

Curtain in the Jungle, tape version.
Name: George (Bathurst)
Address: Tel: 0242 576277 (Cheltenham).

Problems: Does anybody have a Dragon's Claw interface and snap camera they want to part with?

Name: T. Glickman
Address: 15 Epping Drive, Sale, Cheshire M33 5LR.

Problems: Wanted, Pascal compiler, word processor (preferably cartridge based), Lunar Rover Control and

HERE'S MY CLASSIFIED AD.
(please write your reply in capital letters to the lines below)

Name

Address

..... **Tel**

Classified rate: 25p per word.
Please return and send this form to: Classified Department, Dragon User, 49 Alexandra Road, Hounslow, Middle TW3 4HP

Communications

Write down your problem on the coupon below (make it as brief and legible as possible) together with your name and address and send it to: Communications, 49 Alexandra Road, Hounslow, Middle TW3 4HP.

Problem

.....

.....

.....

Name

Address

.....

.....

Adventure Contact

To help puzzled adventurers further, we are instituting an Adventure Helpline — simply fill in the coupon below, stating the name of the adventure, your problem and your name and address, and send it to: Dragon User Adventure Helpline, 49 Alexandra Road, Hounslow, Middle TW3 4HP. As soon as enough entries have arrived, we will start printing them in the magazine.

Don't worry — you'll still have Adventure Trial to write to as well!

Adventure

Problem

.....

.....

Name

Address

.....

.....

Dragon Answers

If you've got a technical question write to Brian Cadogan. Please do not send a SASE as Brian cannot guarantee to answer individual inquiries.

Constant Quattro

I have a Dragon64 and terminal software which would like to use with a 'Quattro' modem that I have acquired, unfortunately without success. This set-up works fine for bulletin board running at 1200 baud, but when I try to access 1200/75 boards the Dragon can only receive. How can I set up the RS232C modem myself to run at 1200/75 baud?

THE Dragon's serial port cannot operate at odd baud rates. However, the Quattro (which is Hayes compatible) has a function known as 'constant baud rate' which allows the modem to operate at any line speed (including odd speeds) regardless of the baud rate between modem and Dragon (ie at a constant speed).

This can be enabled by sending the modem the following command sequence:

```
+++ATM1 for non-split speeds
+++ATM14 for 1200/75 or 75/1200
```

If you get in error, you can always reset the modem to the factory default settings using:

```
+++ATZ
```



Execute a routine

SOME years ago, I was trying to get an IBM PC command for SCRTN 0, 1 or 16 TEXT page (to get the effect of rotating 180 or 90°) and 14 in ASCII, but the lack of the knowledge of the IBM command irritates me. Can you help please?

R O'Connell
36 Boxley Drive
West Bridgford
Nottingham

YOU'LL actually need to call two IBM routines, firstly ASCII (0001) to set the COBOL to the default text screen position and display, then

ASCII (0002) to set the COBOL to the screen character parameter (0 or 1) in the 'F' register, ie

```
JSR ASCII2
LBR = 1
JSR ASCII0
```

Stocks for discs

I have a Dragon 32 and would like to get a disk drive to go with it. My letter says it will say the stock can find a program which will look after the shares on the stock exchange. Can you tell me if there are any share programs for the Dragon and if so where can I get one?

Tony Gardner
Cardiff

The best 'stocks and shares' program I have seen is Sharebase, so here is a brief description for your file...

Each share record is identified by a 'short name' (single alphanumeric), which are used to add and retrieve the records. For example, 'UBIshares' could be used as a short name for 'United Bank'. Within the share record are fields for: name, security code, price number, dividend month (up to 4), estimated yield percentage, purchase price, current price, number of shares held, capital gains, tax credits and dividends. Once all the information has been entered, it is a simple matter of keeping the files up to date with share prices for the current period, and any buying or selling profits.

Some of the different reports provided for are: 'for share valuation', which produces a report on the valuation of shares, 'for capital gains', which shows a list of records which contain capital gains or losses (during the current year), 'for dividends received', which (shows) all the dividends and tax credits received to date in the current year and calculates the yield percentage (the dividends as a percentage of the total value of the current year).

The 'for income tax report' will show all the shares which are expected to pay dividends within the range of months selected, and will estimate the dividend received. Another feature allows a graph to be drawn of the price changes of particular shares over twelve periods. This gives a visual indication of their performance.

Sharebase costs £16.99 and is available from Bob Harris, Jello is a new name, at Harris Micro Software, 49 Alexandra Road, Hounslow, Middlesex.

Script a page

A friend of mine has told me about a language called Postscript. Apparently, this can be used to create typography and display easily and with an graphics screen. Can you tell me if this language is available for the Dragon and if so where can I obtain it and at what price?

Adrian O'Neil
Newe Mills
London

Postscript is a 'page definition language' developed by a company called Adobe, which is used mainly in laser printers. The advantage of using this language written in an 'intelligent' printer is that the same 'program' can be used with any output device (laser printer, screen, plotter etc.) that understands

Postscript to produce the image to the best ability of the device.

Postscript is a simple structure and is quite readable. For example, to output the words 'Dragon User' in 12 point characters at the bottom of a page the postscript code would read:

```
Helvetica fontsize (36/0/144/0)
material setfont
0 0 moveto
(Dragon User) show
showpage
```

I don't know of any implementations of Postscript for any home computers, but a Dragon 64 could be connected to a laser printer (such as an Apple Laserwriter) which has the language built in, via the serial port.

