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Vol 4 No 43

ST BASIC - ALL IS REVEALED P9

THIS WEEK'S NEWS

- COMMODORE'S 128 DISC SETBACK
- MINER WILLY THE FINAL CHAPTER
- AMIGA THE CLONING BEGINS

MICRO MAGIC



Find out if you have won an Amstrad 6128 this week or at least some special Popular Computing Weekly cassette labels. Enter your personal Micro Magic number into our special computer program on page 6.

ATARI is poised to announce a number of new additions to its ST 16-bit micro family next month

Among the new models is a 1M Ram model, the 1040 ST.

The 1040 ST, which apparently is to be offered in this country together with a colour monitor for as little as £1,000, will be upwardly compatible with both the planned 260 ST and 520 ST and will feature a built-in 720K formatted capacity disc drive.

The machine, together with the other new Atari models, is likely to be previewed for the first time at the American Comdex show held in Las Vegas from November 20-24.

Atari is taking a large stand at the show, and as the Personal Computer World Show, is offering third party software companies booths on its stand to show ST titles. Atari UK declined to confirm any details of the other new models to be shown for the first time at Comdex.

"Life doesn't stop with the 520 ST," said Rob Harding, Atari UK's sales and marketing manager. "The range will be moving both upwards and downwards and we hope that the new developments at Comdex will put a bit more excitement into the industry."

It is thought, though, that Atari may also give its 32-bit workstation, the TT, based on the 32032 processor, a preview at Comdex.

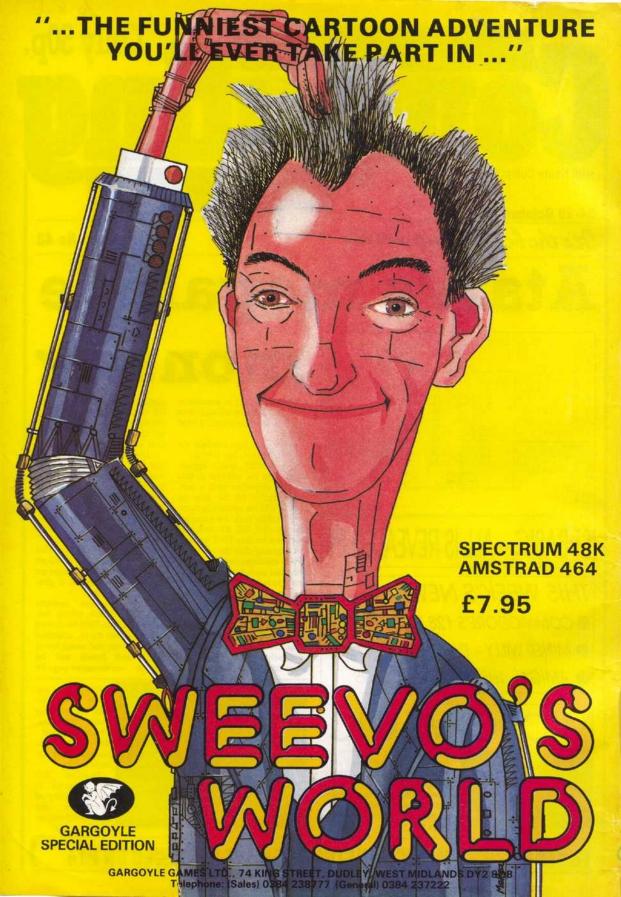
The alternative monitor unit, the PS3000, which features a built-in 720K formatted capacity disc drive, intended as an add-on unit using fewer leads and flexes will be shown. continued on page 4



TAU-CETI is the latest title from CRL, combining icons, windows, adventure-style text input, logic puzzies, and arcade action.

Tau-Ceti will be released at the beginning of November for the Spectrum, at £9.95.

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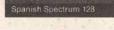
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EDITORIAL

ou can always tell a true microcomputer company by the way it behaves.

It is easy to tell that Amstrad, for example, is not a real micro firm (even though computers now account for more than half of its sales) because it manages to achieve what it says it will, with the minimum of fuss, and on time.

Both Atari and Commodore, though, have this week proved that they are real computer companies.

Atari has, rather spectacularly announced a new model in its range of 68000-based ST computers, notwithstanding the fact that, of the three models previously planned, one has appeared only in the development form lacking in finished firmware (see the ST Basic preview, this issue), one has been scrapped altogether, and the third has been seen once briefly at the PCW Show. The Atari ST is on important new micro, in danger of being devalued by delays and continued confusion over what models will eventually be offered in the UK.

But Commodore must take this week's biscuit. Its C128 micro has now finally reached the shops. Unfortunately, vital accessories needed to use it properly – the disc drive and monitor – have not. Where are they? Commodore hopes to have a few 1570 disc units available for evaluation within ten days. Without them the C128 can only really satisfactorily be used in C64 compatible mode. Its two other modes – C128 and CP/M both require the disc unit and monitor to be used to get the best out of the machine. This must be regarded as sometimes of a triumph for Commodore.

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Sir Clive's C5 venture appoints receiver

C128 hampered by disc drive delay

A RECEIVER has been called in to sort out the finances of Sir Clive Sinclair's troubled electric vehicle company. The decision follows nine months of disappointing sales after widespread criticism of the C5 vehicle's design at its launch in January. A creditors' meeting will be held shortly and the company is expected to go into liquidation. The receivers hope that a buyer will be found for the company, especially as research work on the more sophisticated C10 and C15 electric vehicles is apparently well advanced.

Sinclair Vehicles, which was renamed TPD on September 19, owed over £700,000 to 110 different suppliers. In addition, Sir Clive had personally invested £7m in the electric vehicle project.

PURCHASERS of Commodore's new C128 micro, now available, will be disappointed to discover that they can only use the machine satisfactorily in one of its three

The new 1570 disc drive, designed to complement the new 128 micro enabling it to be used in 128 and CP/M modes, has still to reach the

Without the disc drive, the Commodore 128 is no more than a rehoused Commodore 64. Owners who already have the C64's 1541 disc unit will however to able to use a small number of CP/M packages on

with software written in the non-standard GCR CP/M format. However, accessing the disc will be slow, and the £199.99 1570 was specifically designed as a fast drive. "We are expecting a ship-

the 128. The 1541 will work

ment of between 5,000-10,000 this week," said a Commodore spokesman, who hoped that disc drives might become available next week.

It is not clear why the name change was made - at the same time, a direct subsidiary of TPD was formed, called Sinclair Vehicles (Sales), which is not insolvent, and continues to trade, administered by the joint receivers, David Sapte and Anthony Locke of Begbies.

"TPD sold all its assets to the subsidiary company,' said David Sapte. "Its only assets now are its shares in Sinclair Vehicles (Sales)."

The writ taken out by Hoo-

ver against Sir Clive Sinclair in July, for £1.5m, was never served

Apparently the dispute between the two has now been

In its short existence, Sinclair Vehicles sold 4,500 of its C5 pedal-assisted electric tricycles, having predicted sales of 100,000. The production line at Hoover's Merthyr Tydfil plant was cut from 1.000 to 100 units per week in April, and then closed down altogether in August.

Datasoft in court over takeover bid

DATASOFT, the US software company responsible for titles such as Bruce Lee, Goonies and Zorro, is currently involved in a court wrangle over a proposed takeover.

Gillette, best known as a manufacturer of razors, has owned 40% of Datasoft for the last two years. Now it is trying to increase that share to 60%,

and gain control.

Gillette's bid was rejected by Datasoft's managing di-rector Patrick Ketchum, and the matter has now been referred to a court hearing, Datasoft having been effectively been placed under a Chapter 11 ruling in the meantime, whereby the company's trading is controlled by its bank. If the judge decides in Gillette's gavour, Datasoft will then be administered by Sam Poole and Ted Hoffman, currently department managers at Datasoft, and other executives appointed by Gillette.

However, Datasoft's titles, released in this country by US Gold, will not be affected.

"We have got the finished version of Goonies, which we have to release here by the beginning of November to tie in properly with the film," said US Gold's general manager Tim Chaney. "The only slight hiccup is Zorro on the Commodore 64 - the music for that isn't finished yet, and I'm not yet sure what will happen.'



Spectrum 128: A rare picture of Sinclair's 128K Spectrum, launched in Barcelona last month, show-

ing its separate numeric keypad. It is not expected in the UK until Spring 1986.

Atari's 1M monster

continued from page 1

The new 1040ST has the IM disc drive built into the main keyboard/cpu unit in the same way as the 260 ST, but on the opposite (right-hand) side. To accommodate the disc drive a number of the ports have been moved - the mouse socket on the 1040 ST to be found underneath the cpu, so that the mouse and cable extend from the front of the keyboard rather than from the side.

Spectrum Elite put back

FIREBIRD has been forced to delay the launch of the version of Elite. It is now not clear when the game will appear.

"Spectrum Elite has now been delayed almost to the point of embarrassment," said Firebird publisher Herbert Wright. "We feel that the game as it stands is too difficult - while some people would be able to play through and reach Elite status, we really want everyone to enjoy the game.'

Firebird has also changed

its plans as regards its new range of Super Silver games, which include Thunderbirds and enhanced Amstrad conversions of Booty and Cylu. The range, intended to denote titles which although inexpensive are of higher quality than the rest of the Silver series, will now cost £3.95 rather than the £3.50 previously planned.

The existing price of the Silver range has recently been reduced from £2.50 down to £1.99.

Commodore seeks to license Amiga chips

FAVOURABLE reaction from critics and the public alike to Commodore's new Amiga micro looks set to provoke a series of imitations and Amiga-lookalikes.

Commodore itself is also now considering licensing the custom chips in the Amiga, Agnus, Daphne and Portia, to other hardware manufacturers in order to enable them to develop Amiga compatibles. It has also approached Metacomco, the Bristol based software house which wrote Amiga Dos about licensing AmigaDos together with the custom chips.

"Commodore has talked to us about licensing chips, and how we felt about licensing our operating system," said Peter Mackeonis of Metacomco. "We said 'yes'. Anyone interested in licensing AmigaDos, please get in touch."

Sophisticated graphics and sound created using custom

chips, the Amiga's hallmark – are regarded by many companies as the next important features for micros. One source inside another major home computer manufacturer indicated that imitating the Amiga's chips may not be as difficult as it appears.

Companies which are almost certainly now looking at Amiga-type technology for their future projects include the MSX manufacturers, Amstrad and Acorn.

Members of the Japanese MSX Firms have recently introduced a series of 'MSX 1' machines with significantly improved graphics, and are widely thought to be looking at the 68000 chip for MSX 2.

Acorn's breakthrough with its RISC chip technology now gives it the wherewithal to produce custom chips on a par with Amiga.

Amstrad is particularly interested in undercutting Commodore's price. "We have no plans for an Amiga rival at the moment," said William Poel, head of Amsoft. "The 6128 looks sure to last a lot longer than anyone thought, and there's no need for modifications.

"We'd love to do an Amiga lookalike if the technology was available, but we'd also want the software to be there. Amstrad does not take technological risks, and there'll be nothing in that line in the next twelve months. Mind you, if the Amiga were £499, I'd buy one tomorrow."

Miner Willy in new game for January

MATTHEW Smith, top-selling author of Manic Miner and Jet Set Willy, has at last come out of semi-retirement and written the third and final part of the Miner Willy trilogy, Willy Meets the Taxman.

In this game, Willy is being hotly pursued by the agents of the Inland Revenue, after their share of his finds in the mines

Fighter Pilot sequel launched

EIGHTEEN months after the release of its the acclaimed Fighter Pilot simulation, Digi-



tal Integration has announced the follow-up, *Tomahawk*, for the Spectrum. It should be out by December at £9.95.

"Willy Meets the Taxman uses a different graphics style in that the pictures will be larger," said Paul Patterson, sales manager of Software Projects, which will publish WMTT, and of which Matthew Smith is a director.

The program will be simultaneously released on Spectrum, Amstrad and Commodore 64 in January 1986. A price has not yet been released.

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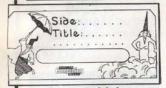
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40 LET win + 27
40 LET win + 27
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60 LET wi 65 GOTO 60 70 FRINT "Your matching Micro Magic number is by 71 FRINT "You have won an Amstrad a 1281"

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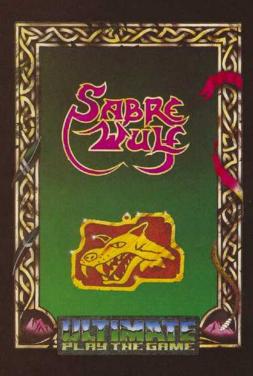
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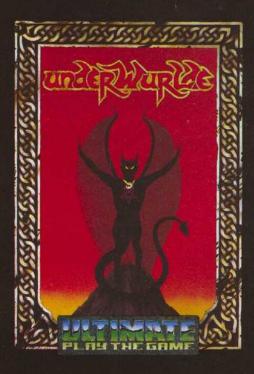
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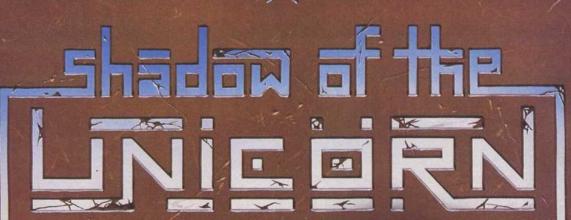




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Basic Basic for Atari's ST

Atari has finally released first versions of its Basic for the ST. Jeremy Vine presents the first look

nyone who has recently acquired one of the new 16-bit Atari ST machines will have noticed as well as being the 'power without the price' it is also that 'without' most of its advertised bundled software.

Not least the Basic, which was expected to be available on launch, and was conspicuous by its absence.

Finally, however, the Basic is available – well, almost. The version that is reviewed here is, in the words of an Atari spokesman, '95% complete'.

It has to be said that after such a long wait (I've had my machine for many months) rumour has been rife about what goodies would be included within this Basic.

In particular, would there be any 'hooks' into the Gem operating system, enabling users of basic to write their own Gem-like programs?

The quick answer is – forget it! If you want to write Gem programs you'll need the Gem programmer's toolkit and competency in programming. But what of the Basic?

The version supplied to me was on disc (Wot - no Roms yet!?) and contained around 140K of code. On loading Basic, the screen divides into four Gem windows, though only three are clearly visible. These are the List, Output and Command windows. A fourth window. Edit, is almost completely covered by the aforementioned windows and is accessed either by the Edit pull-down menu or by clicking the mouse pointer on the visible part of the windows. Of course, like all Gem packages, these windows can be reconfigured to personal taste though the arrangement makes reasonable sense.

The size of the Output window, where the results of a basic program are displayed, may at first seem small but the user can change the size of the window by means of the mouse or directly within the program using one of four Basic keywords (Clean, Closew, OPenw, Fullw). Each of these commands are followed by a numerical value in the range 0 to 3, respresenting the four screen windows. In this way it is possible from Basic to direct each window separately to clear the area within the window, close or open a window and make a window full size. One of Atari's '5%' bugs showed in the windowing area, when all windows were closed. There was no way to re-open a window and continue Basic! This has been noticed by Atari and will apparently be corrected by the release version.

The one thing ST Basic is not short of is editing tools. There's a host of them. What it lacks in speed and power it makes up in its editing facilities. The ten function keys contain basic editing facilities such as deleting and inserting lines or characters. Such is Atari's enthusiasm for presenting these facilities that they are not only available by pressing the relevant function key but also by using the drop-down menu (Edit) and mouse. I felt spoilt for choice.

In addition to the editing facilities, Atari has gone overboard to provide debugging commands to help the weary programmer track down those irksome gremlins that cause programs to crash. There is a drop-down menu which provides the now obligatory Trace option, listing the lines in the Command window as the program runs. Tron works in a similar fashion but prints only the line number. Those two facilities are fairly standard and are no surprise. But Atari programmers obviously enjoy their comfort and they have provided a few niceties to make error-trapping that little bit easier

Spoilt for choice

Break causes the program to stop executing after each program line and the line is displayed in the Command window whilst any output is shown in the Output window. Pressing the Return button causes the next line of the program to be run. Just in case you fancy doing

exactly the same a different way, the user can invoke the Step command which carries out precisely the same task! Normal program execution is resumed with Cont.

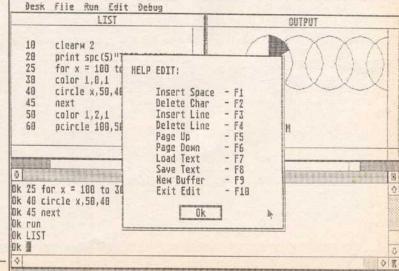
And that's not all! Follow allows the programmer to follow the value of variables. Whilst a program is running, each time a changing variable is encountered, the name of the variables, its value and the line number are printed in the Command window. Unfollow turns off the command. The Edit statement calls the editor section of Basic and the user can specify which line is to be edited. An omission which annoyed me was being unable to move the editing cursor by means of the mouse.

Annoying omission

Considering the emphasis on mouse control, it would make life easier if there was less need to return to the keyboard. The final debugging feature is in addition to error messages which are generated as lines are typed in (similar to the Sinclair syntax checker but thank goodness not as rigid!). On listing a program (in the List window) which has generated error messages, a question mark (?) appears by each line where an error had been generated. This makes glancing through a long listing less of an eyestrain.

All these editing and debugging features suggest that more attention has been paid to appearances than the structure and power of the language.

This is a pity as a machine of the ST's calibre should be boasting a fast, powerful, structured Basic. In a few benchtests, using simple loops ST Basic, however, appears quite slow and was in some cases almost twice as slow as an equivalent program on my BBC. Where a specific function (ie Circle) was used,



ST Basic Preview

though, the speed was more than acceptable. Atari recognises that this Basic is not as fast as it could be and I am assured that there will be an increase in speed before the final version. However, don't hold your breath as the speed will still be slow for what is a fast processor. It seems that we will have to wait for a faster, better Basic.

Graphics is poorly represented with only Circle, Ellipse, PCircle, PEllipse and Colour commands. This will be viewed with great disappointment by those who have waited to try their hand at graphics using Basic. No doubt somebody will argue that if its graphics you want, there's always Logo. But a Basic on the ST should have a host of graphic commands, not just leave the user wondering and at the mercy of Poke and Peek, which is likely to produce some fun for us terminal addicts. It is also a necessity for attempting to access Gem functions.

Sound accessible

The sound chip is at long last accessible using the Sound and Wave commands. Nothing very special here but sufficient to control the usual aspects of the sound chip including shape of envelope, duration etc.

The manual is pitifully lacking in this area and is of little help.

I've already mentioned the feeling that the Basic lacks power and this shows up in its poor range of control structures. For-Next and While-Wend loops are present but that's it. I'd like to have seen a little more power in the shape of Do-While and Repeat-Until features.

The user can return to the Gem Desktop at anytime by using System or Ouit (yet again, identical commands), though this does have the effect of wiping the program out of memory. The manual provided to me as a proof of the final version and can only be considered as a reference guide. As a source of reference for keywords it is good with the exception of the sound commands explanation. If you intend to learn Basic

TABLE: Atari Basic command words

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don't even consider using the manual. It's a reference guide for those acquainted with programming in Basic.

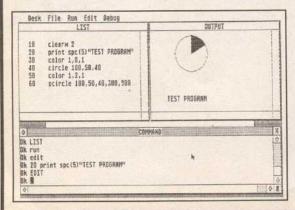
The Basic should, Atari says, be shipped in three to four weeks. On past form this means you might be playing with Basic before Christmas.

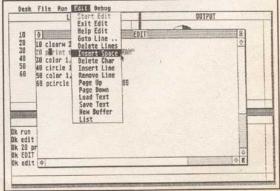
ST Basic is a reasonable version of Basic but, considering this is potentially such an advanced micro it is more than a little disappointing. It lacks speed, is extremely disappointing in its graphics commands and control structures but does have a host of editing and debugging features. The windowing system makes writing programs appear more attractive but it may well be that the effort that has gone into making Basic

appear good, has made the more essential elements of a good Basic suffer.

Atari argues that as part of the bundled software, ST Basic shouldn't be considered the ultimate in Basics and a spokesman has already confirmed, unofficially, that a new basic is being written, though not to be included in the bundled software. This particular hybrid of the language will address many of the criticisms of ST Basic and will include more hooks into Gem as well as being far more structured and a great deal faster.

But for the moment we'll have to make do with Atari's first offering. A wholly unremarkable job! Even so, after such a long wait for any ST Basic language it's very welcome.





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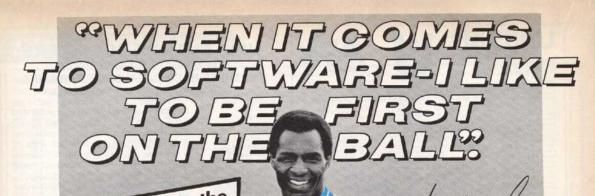
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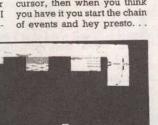
NOW WITH MORE GAMES FOR MORE MACHINES

Absurd flights

Program Potty Professor Micro Spectrum Price £6.95 Supplier Software Farm.

he Potty Professor isn't the inventor of a better chamberpot as far as I know, though on the eviisn't always so easy) by the most unlikely means. It all calls for absurd flights of fancy of the Professor Branestawm variety.

Presented with the resources available at the top of the screen you have to arrange them carefully using a cursor, then when you think you have it you start the chain of events and hey presto...



dence of this game he might well be. After all, how many people do you know who need a table, fish bowl, hammer, cigarette and lighter, match and box of matches, spring and finally a red herring just to light the match?

Yes, Software Farm has devised the year's oddest computer game and I'm hedging my bets and not specifying which year!

The idea is to complete six simple tasks, such as frying an egg, flushing the loo or even loading a program into a Spectrum (sorry, that one you usually find that you haven't and it all falls apart!

It's a superb idea with many amusing touches but it all collapses because the positioning of elements demands extreme accuracy. For me it all became frustrating, though I suppose more patients souls with a love of lateral thinking will enjoy it more.

And if you find it all too obvious. . . then you're probably certifiable!

John Minson



Faint-hearted

Program Subterranean Striker Micro CPC range Price £8.95 Supplier Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex.

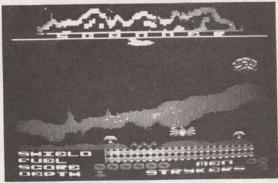
ith this tape Amsoft has taken elements of Scramble and combined Defender and them in a game that lacks the classic simplicity of both of them. It is also remarkably dated in its implementation chunky graphics, tinny sound effects and, worst of all, juddering flickery scrolling that is almost bad enough to induce migraine in faint-hearted onlookers.

The idea is that you have to fly left, right, up and down in your spaceship over a scrolling landscape trying to find little men who have been put to work digging by evil aliens. At the same time, space invader type creatures float around ready to be shot. At one point in the landscape is a hole in the ground down which you can fly to find a series of caverns, some very narrow indeed, where the same sort of thing is going on. At the top is a Defender style radar screen showing the cavern layout, location of monsters and so on.

In fact, as a game it's not too bad if you like that sort of thing, which I do, and it would have made a good cheapy. It's even reasonably addictive, although it kills you off a bit too arbitrarily, forcing you right back to the beginning again. If only the implementation had been a bit better I would have liked it much more. Now excuse me while I go to lie down in a darkened room.

Tony Kendle





Screen editor

Program QC Micro QL Price £59.95 Supplier GST, 91 High St, Longstanton, Cambridge, CB4 5BS.

popular language aimed at a rapid and efficient compilation into machine code. Its fans boast of its structured approach, general simplicity and suitability for a wide range of systems applications. Cs origins lie in work on mini-computer assembly languages at Bell Laboratories but the last few years have seen a growing concentration in the micro

There has been a bit of a race on to be the first to market a C compiler for the QL but the winner was GST whose recently launched QC package has been even more recently up-dated to include a full-fledged screen editor.

QC is a variant of RatC-a sub-set of C-but has several additional features including unsigned values, assignment operators and initialised local variables. The main features missing are full floating point maths and multi-dimensional arrays. Multi-dimensional arrays, however, may be simulated through the use of pointers (variables designating other variables) in an array and accessed as if it were two dimensional.

Opening the box reveals

one 84 page user manual, one copy of A Book on C by R E Berry and B Meekings (published by Macmillan and worth £7.50 in the shops) and three QL microdrives. Those recoiling in horror at the idea of microdrives will be glad to know that they contain a copy function in addition to the all-important C-files.

The first microdrive (QC1) holds the QC compiler and assembler as well as a linker to join programs with the library files on the second microdrive (QC2). In addition to the libraries and a window manager, QC2 contains the compile file which drives the compiler, assembler and linker in combination. The third microdrive (QC3) is the most recent up-date to the

product and contains the screen editor and an improved version of the compile program which utilises the editor and displays directory lists.

OC is good value for money and the combination of manual (well presented) and book make it an excellent choice for someone with some experience of programming who wants to learn

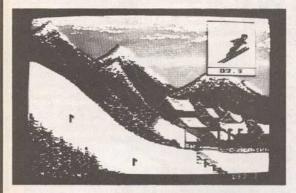
The package is probably not suitable for an absolute beginner but first-time computer buyers who have opted for a QL are probably still working their way through Super Basic anyway.

Jonathan Prestidge



Hot dog

Program Winter Games Micro Commodore 64 Price £9.95 (tape) £14.95 (disc) Supplier US Gold, Unit 10, The Parkway Industrial Centre, Heneage Street, Birmingham same), you control the movements of a skater using the joystick, but for once, skill and timing are needed. Axel Jumps and Lutz Jumps proliferate. . . but expect to spend most of your first few attempts on your bottom. Hot Dogging (acrobatics on skis to you) requires very much the same skills.



hat's the secret of good comedy? Timing, of course, but it is a lesser known fact that it is also the secret of good marketing...enter Winter Games stage left, for the festive season approacheth and

With Ski Jumping, you must time the moment of your takeoff, then adjust your position in the air.

Bobsled is another left and right job, but this time you are steering your sled down the run, slamming into the cor-



this Epyx epic is one destined for many a stocking.

Yes, after a whole summer of sports simulated by joystick waggling, the Olympic flame transfers itself to colder climes to give armchair athletes everywhere the opportunity to indulge in such diverse sports as Free Skating, Figure Skating, Speed Skating, Ski Jumping, Biathalon, Bobsled and Hot Dogging. Just another joystick destructor? Well, in the main, no.

In the Free Skating and Fig-Skating (largely the ners - you'll find yourself swaying in synch!

Finally, my favourite - the Biathlon. Racing against the clock, it is a combination of wrist endurance and reactions, as you alternate between shooting and ski-ing.

It is the fab graphics and sound that put this program head and shoulders above the competition. Neat touches abound, and the package oozes with professionalism.

John Cook

Hard work

Program Chemistry Micro BBC & Electron Price £11.95 Supplier Letts & Co, Diary House, Borough Rd, London SEI IAW.

'll admit my own chemistry leaves a lot to be desired. . . well, it did until I came across these programs. I don't want to re-sit O-levels, but if I did then this would be on my revision schedule. It is the latest in the Letts range of study aids: a set of computer revision programs covering 16+ Chemistry - ie, O-levels, CSE etc.

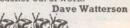
It is a suite of programs in two cassettes covering a wide range of topics in the common core syllabuses. The approach is a series of quizzes. Some are of the "fill in the missing words" type, others require you to move the

cursor to the correct part of a chart or table of elements. There is even a clever program drawing apparatus, requiring you to swap bits around until you have the correct configuration for making various gases. Each quiz offers choices of difficulty and a "help" prompt.

I enjoyed the challenges and the displays are pretty good. Make no mistake this isn't as much fun as playing Death Star. It is hard work and can become a shade tedious if you run through several items at one sitting. Nevertheless it beats re-reading text books and notes umpteen

times

The package does its job quite well. It gives you limitless practice at what you are unsure of. But don't worry: it is unlikely to put your science teacher out of work.



Scaled up

Program Music Construction Set Micro Commodore Price £9.95 Supplier Ariolasoft, Retail.

remember my old piano teacher telling me week after week to practice my scales and learn my note reading.

Today, armed with a computer, your priorities change, all you need is to know which key makes which note and all the rest is done for you. Oh well, maybe she now teaches the quitar!

Normally in any musically orientated program you need to know at least two basic things, an ear for timing, pitch and tone and at least some knowledge of written music, but, with this marvellous Icon driven release, life is a lot simpler even for those who are less gifted.

There will be some comparison here to Activision's Music Studio, which basically does the same thing as this albeit in a more colourful way, but I feel M.C.S. is easier to use in every sense of the word.

On loading up you are presented with two choices; listen to the demo tunes, or start

writing your own compositions. There are 13 tunes available to listen to from Bach to Mozart, showing you the many different sounds that can be made from this program.

Actually writing the music is easy. On screen are a number of working Icons, musical notes and a blank sheet of 'music paper'. You simply select the pointer Icon, pick up a note with it and using the joystick (or keyboard) position it on the sheet. As you lay it down, the sound of the note is heard, and after all the notes are positioned, simply select the piano Icon and your tune will play.

Obviously, to program a full composition with bass notes, chords, and percussion, utilising the Commodore's full three channels will take some time, but after hearing the demos it will be worth it. (I think Bach is tailor made for synthesized sound!)

A good handbook is supplied, well written and providing a few examples for you to get you on your way.

This was previously only available on disc, but I am assured that nothing had been omitted from the original. Highly recommended.





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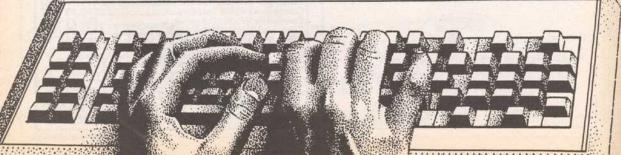
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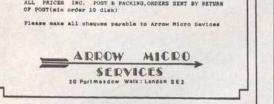
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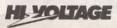
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Hi-Lo

Chance your arm without losing your shirt – on the Commodore 64 written by John Parsons

his is a game based on the popular arcade money-guzzler. Basically, the player aims to win the jackpot (which starts at 20p but increases by 5p for every unsuccessful go) by correctly predicting whether the turn of a card will reveal a card-value higher or lower than that of the preceeding one.

If they predict correctly for all five cards, then the jackpot is won. Full instructions are included in the program, which makes good use of the 64's own graphic characters.

Program Notes

10-70 Initialisation 100-140 Instructions 145-270 Calculates cash left and displays along with backs of five cards 300-340 Suit and value of cards Checks for repetition among cards

350-360

362-920

1000-1060

1070-1265

1270-1300

1400-1470

1500-1550

Prints out the card Processes player's decision Displays appropriate message Asks "Another Go?" - if not, displays overall profit

Displays message for bankrupt player Sound effects



```
530 PRINTTAB(B) "5 ":REM---5
540 GOSUB425:GOSUB412:GOSUB420
  REM *
REM *
                                                                                     H I - L 0
                                                                                                                                                                                                                                                                                                                             550 PRINTTAB(B)"
560 GOTO402
                                                                                                                                                                                                                                                                                                                             5560 GOTO402

570 PRINTTAB(B)"6, ":REM---6

580 GOSUB425:GOSUB425:GOSUB420

590 PRINTTAB(B)" 6"
           REM * J.PARSONS.....1984/85 * REM ***************
  5:
10 POKE53280,7:POKE53281.12
12 VZ=54296:MZ=54276:AZ=54277:HZ=54273:LZ=54272:AY=138:15 DEF(1)="MLON":DEF(2)="MHIGH":GOSUB100
18 H=0:J=15
20 POKE53280,5:POKE53281,12
25 PRINTTU:A=1:B=2:MY=33:SH=1
30 IFDACL0THENL400
40 DA=DA-10:CC=CC+1
50 J=J45:GOTO145
60 IFC(7)<CC(TT)THENS60
70 GOTO318
                                                                                                                                                                                                                                                                                                                            599 FRINTINGS)
609 GOTO492
610 PRINTINGS)"7 ":REM--7--
620 GOSUB420:GOSUB410:GOSUB425:GOSUB420
630 PRINTINGS)" 7"
                                                                                                                                                                                                                                                                                                                            040 00/10402
650 PRINTAB(E)"8 ".REM--8-
660 00SUE420:GOSUE410:GOSUE420:GOSUE410
670 00SUE420:PRINTAB(E)" 8"
680 00T0402
                                                                                                                                                                                                                                                                                                                             648 BOTO482
                                                                                                                                                                                                                                                                                                                           680 GOTO402
690 PRINTTAB(B)"9";CHR*(C(T));" ";CHR*(C(T));" ":REM---9---
700 GOSUB405:GOSUB420:GOSUB410:GOSUB425
710 GOSUB420:PRINTTAB(B)""]DBBB"
720 GOTO402
730 PRINTTAB(B-1)"10";CHR*(C(T));" ";CHR*(C(T));" ":REM---10-
740 GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB420:GOSUB
    70 GOT0310
70 GUIUSAS
90 :
100 PRINT"CM"TAB(13)"MEN H I - L O "
110 PRINT"MEN THIS IS A GAME OF LUCK & JUDGEMENT"
112 PRINT" IN MHICH YOU MUST GUESS WHETHER THE "
114 PRINT" YALLE OF THE NEXT CARD IS HIGHER OR"
114 PRINT" LOWER THEN THAT OF THE PRESENT ONE."
118 PRINT" LOWER THEN THAT OF THE PRESENT ONE."
119 PRINT" CARD'S & ACE IS (IN ASCENDING ORDER):"
120 PRINT" CARD'S & ACE IS (IN ASCENDING ORDER):"
121 PRINT" SPARES ALWEST SIDP—A-GO', IF YOU LOSE "
124 PRINT" MIT COSTS IOP—A-GO', IF YOU LOSE "
127 PRINT" THEN THE JACKPOT INCREMESS BY SP; IF "
128 PRINT" YOU WIN THEN YOUR PRYOUT EQUALS THE"
129 PRINT" JACKPOT, YOU MUST CHOOSE HOW MUCH"
130 PRINT" MONEY YOU WISH TO START WITH."
131 PRINT" (EG - ENTER '1.5' FOR £1.50) MOM"
134 INPUT"SHOW MANY POUNDS(1-10)"; CA
136 IFCACIORCAPISTHENIB®
                                                                                                                                                                                                                                                                                                                           758 QGSUB428:PRINITHD 0.768 GGSUB428:PRINITHD 0.779 FRINITHB(B)"J ":REM--JACK--775 PRINITHB(B)"J ":GOSUB438 738 PRINITHB(B)" ";CHR#(C(T))
798 PRINITHB(B)" J"
808 GGT0492 ":REM--QUEEN--
818 PRINITHB(B)"Q ":GOSUB438 SES PRINITHB(B)" ";CHR#(C(T))" ":GOSUB438 SES PRINITHB(B)" ";CHR#(C(T))" 398 PRINITHB(B)" ";CHR#(C(T))" 398 PRINITHB(B)" Q"
                                                                                                                                                                                                                                                                                                                             0-10 00/10-02
858 PRINTTABKB)"K ":REM--KING--
855 PRINTTABKB)"K ":GOSUB438
868 PRINTTABKB)" ";CHR$(C(T))
878 PRINTTABKB)" K"
                        DA=INT(CR#100):IFCA#100=DA+1THENDA=DA+1
    140 RETURN
   143 :
144 REM
   889
                                                                                                                                                                                                                                                                                                                                                G0T0402
                                                                                                                                                                                                                                                                                                                            $80 GOTO402

$90 PRINTTAB(E)"A ":REM--ACE--

895 GOSUB405:GOSUB405

900 PRINTTAB(E)" ";CHR#C(CT));" "

905 GOSUB405:GOSUB405

910 PRINTTAB(E)" A"
                                                                                                                                                                                                                                                                                                                             920 GOTO402
980 :
                                                          -DRAW PLAYING-CARDS-
    185 REM
                                                                                                                                                                                                                                                                                                                             988 : "ENTER DECISION---
1800 B=B+7:FORI=ITO200:HEXTI
1800 B=B+7:FORI=ITO200:HEXTI
1810 GETF#:"IFF##""HENDE | FF##"
1820 IFF##"#"HENDE=1:GOT010440
1830 IFF##"#"HENDE=1:GOT010440
                       R=1:FORZ=1T05
PRINT"MUNN"
    196
                       PRINTIAB(A)"N "
FORI=1TO?
PRINTIAB(A)" N DO N' NEXT
                      PRINTTHBCRD" | New | OI" : NEXT | PRINTTHBCRD" | PRINTTHBCRD" | PRINTTHBCRD" | PRINT" | IFCCOSTHEN260 | CC=0: PRINT" | PRINTTHBCD | YOU MANT TO SHUFFLE THE CARDS? (Y/N) "GETSHS: IFSHS-0" Y "ANDSHS-O" N" THEN230 | IFSHS-0" Y "Y THENSHS-6: GOTO150 | PRINT" | TO SHUTTER | TO SHUTT
                                                                                                                                                                                                                                                                                                                           215
    238
    258
    260 PRINT"S F1 - HIGHER"
270 PRINT" F3 - LOWER"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M-SORRY. MYOU LOSE. W": T=T+1:
                       REM --- RANDOM SUIT & CARD VALUE-
  295 REM --RANDOM SUIT & CARD VALUE---
300 FORT=ITOS
310 C(T)=INT(44RND(1))+1
315 IFC(T)=ITHENC(T)=97:REM ---SPRDE--
320 IFC(T)=2THENC(T)=115:REM --HERRT--
325 IFC(T)=3THENC(T)=120:REM --CLUB--
330 IFC(T)=4THENC(T)=120:REM -DIAMOND-
340 RA(T)=INT(13#RND(1))+1
                                                                                                                                                                                                                                                                                                                                                      PRINT"7
                                                                                                                                                                                                                                                                                                                             1130
                                                                                                                                                                                                                                                                                                                             1150 NEXTY
1200 WY=17
1201 FORY=1T06
1205 PRINT"
    348
    349 REM ---AVOID REPETITION---
350 FORTT=T-1T01STEP-1:IFRACT)=RACTT)ANDT>1THEN60
     360 NEXTIT, T
362 FORT=1T05
                                                                                                                                                                                                                                                                                                                             1205 PRINT"
1216 FORZ=1T098:NEXTZ:GOSUB1580
1215 PRINT"
1215 PRINT"
1215 FRINT"
1216 FORZ=1T0128:NEXTI
                        PRINT"
                       IFC(T)=1150RC(T)=122THENPRINT"3"
                                                                                                                                                                                                                                                                                                                            1228 NEXTY: D用型用中J: GOTD1278
1248 IFC(T)=1150RC(T)=122THENPRINT"等
1258 U=99: PRINT"時間的
    398
     401
                                                                                                                                                                                                                                                                                                                                                      402 IFU=99THENU=9:RETURN
403 GOTO1808
405 PRINTTAB(B)" ":RETURN
410 PRINTTAB(B)" ";CHR$(C(T));" ":RETURN
411 PRINTTAB(B)" ";CHR$(C(T));" ":RETURN
412 PRINTTAB(B)" ";CHR$(C(T));" ";CHR$(C(T));" ":RETURN
420 PRINTTAB(B)" ";CHR$(C(T));" ";CHR$(C(T));" ":RETURN
427 PRINTTAB(B)" ":RETURN
430 PRINTTAB(B)" ":RETURN
430 PRINTTAB(B)" ":RETURN
441 : "RETURN
441 : "RETURN
441 : "RETURN
                                                                                                                                                                                                                                                                                                                             1269
                                                                                                                                                                                                                                                                                                                               1270 PRINT" HONDON DONO DONO DONO DE LA TRANSPORTACIONE
                                                                                                                                                                                                                                                                                                                          | 1279 | PRINT | Indicated and a consideration | 23 ANOTHE |
| 1275 | PRINT | Indicated and and and additional and a short |
| (Y/N) | "PRIN | 25 COUD |
| 1280 | GET#S: IF#S="Y"FINDH=GTHEN20 |
| 1285 | IF#S="Y"FINDH=GTHEN20 |
| 1286 | GE=INT(CRM:180): NP=INT(DR-CB) |
| 1290 | IF#S="N"THENPRINT"| Indicated | YOUR NET | PROFIT IS : ";
| NP; "PENCE. N": GOTO1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               # ANOTHER GO?
                                                                                                                                                                                                                                                                                                                         441 RM ---DEFINE CARDS---
442 REM ---DEFINE CARDS---
445 PRINTTAB(B)"2 ":REM---2-
450 GOSUB410:GOSUB430:GOSUB410
455 PRINTTAB(B)" 2"
    470 PRINTTAB(B)"3 ":REM--3
475 GOSUB412:GOSUB412:GOSUB410
480 PRINTTAB(B)" 3"
                                                                                                        ":REM-
    485 GOTO482
490 PRINTTAB(B)"4 ":REM---4-
500 GOSUB420:GOSUB430:GOSUB420
510 PRINTTAB(B)" 4"
     520 BOT0402
```

24-30 OCTOBER 1985

Adventure by numbers

The final part of an adventure generator for the Spectrum by **Hugh Walker**

his week, some brief program notes plus the remainder of the Basic listing. Don't forget, this is not actually an adventure, but a framework on which you can write your own by 'filling in the blanks'.

1. Input System (Lines 200 to 480)

Commands are printed on screen, as they are typed, letter by letter, on the keyboard. The usual editing facilities are present: Delete letter with Caps Shift – 0, Delete whole line with Caps Shift – 1. However, it is not possible to use Cursor keys. In addition, Symbol Shift – 2 reprints the last command entered.

Press Enter to terminate Command and send to the Analyser ("parser").

2. Command Analysis (Lines 1110 to 1990)

The Analyser recognises three types of Command: (a) Movement, eg, 'N' or 'North' (b) Single Verb (eq, 'L' (ie, Look),

'Look' or 'Quit', (c) Verb + Noun.

While the program responds faster to the Verb or Verb - Noun type of Input, fairly complex 'semi-English' commands are accepted, including 'lt' (recognised as the last Noun entered) and 'Everything' (ie, Ever) and 'All' in the case of the Get/Drop routines.

The words 'And', 'Then' or 'And Then' are recognised as conjunctives between separate commands, thus, relatively complex multiple commands may be entered as one statement. While no limit has been placed on the number of commands which may be conjoined in this way, the proposition will stop analysing the statement as soon as it is unable to execute one of the commands.

The expressions 'OB+NN' and 'OB+NN-2' in Lines 1810 & 1910 (resp) are used during program development. The cumulative effect of the calculations repeated during analysis increases the response time significantly. When the

various arrays are complete these expressions should be replaced by the appropriate numeric values.

The rest of the program is fairly standard. The Location-dependent status conditions are dealt with in each location subroutine as are the Verb/Noun or Verb or Movement conditions checked in their own specific routines. This prevents the General Status Table becoming 'clogged' with irrelevant conditions.

This program is written with Caps Shift on; I realise that this gives an 'archaic' feel to the presentation but it is purely for clarity, especially as a ZX Printer has been used. Similarly, I have avoided multiple-statement lines for the sake of clarity. Considerable memory may be saved by using multiple statements in the finished program.

The use of variables for commonly used numeric values is also beneficial in terms of memory but not recommended in the Analyser routines because of the need for a fast response time. Finally, on the Spectrum, if you can bear to program in capital letters you may save quite a bir of memory by using Keywords for 'FOR', 'AT', 'IN' etc.

```
3420 LET TU=0
3450 REM ##DIMENSION AFFG9X##
3450 DIM X(11): DIM L(LC5,4)
8470 DIM O(0B): DIM L(LC5,4)
8490 LET A#="
3510 PRINT AT 21,0; INK 3;" Rest
00 a PFGY10US GBBE ? (Y/N)": PA
USE 0: PRINT AT 21.0; THEN GO TO 42
820 IF INKEY#="Y" THEN GO TO 42
                                                                                     50
8530 IF INKEYS<>"N" THEN GO TO 8
 S150 LET TUN=2: DIM U$(TUN,4): F
OR F=1 TO TUN: READ U$(F): NEXT
```

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WHO DARES WINS 2	
NODES OF YESOD	
	BEACH HEAD 2 KARATEKA NOW GAMES BARRY McGUIGAN WORLD CHAMP DOUGH BOY WHO DARES WINS 2 NODES OF YESOD

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```
2700 NEXT X:PRINT"I can't spe any "NOS" here!"N2S
                                                                                                                                                                                                                                     3360 IF LO(2)=-1 AND NO$<>0B$(1) THEN PRINT"Don't be silly..!":60TO 2420
3370 IF LO(1)=-1 AND (LO(2)=-1 AND NO$=0B$(1)) THEN PRINT"O.K. It's done...":EN=
 2700 PRINT;PRINT"Try another instruction. "N28:BBTD 2490
2720 IF LD(X)</PM THEN PRINT*There's nothing here':BBTD 2420
2730 NOS=BB(X):IF NOS=BB(39) THEN PRINT "Good! the're needed for analysis."
                                                                                                                                                                                                                                     TOURS TO THE THE PRINT O.K. It's off..":P=OFF:DARK=1:GOTD 2420
3390 F NOS:"F OF X=1 TO DB:IF OBS(X)=LEFT&(NOS,LEN(DB*(X))) THEN 3410
3400 NEXT:PRINT Light What...?":GOTD 2420
3410 NOS=OBS(X)=IF NOS*(OBS*(3) THEN PRINT MOM!! That was SUPER!! Do it again...":
 2740 IF CA=6 THEN PRINT"I can't carry "NO$" N2$":50TD 2390
2750 LD(X)=-1:CA=CA+1:PRINT"Ok "N2$" I got it!":50TD 2420
 2760 FOR X=1 TO OB:IF OB$(X)=LEFT$(NO$,LEN(OB$(X))) THEN 2780
2770 NEXT:PRINT*Drop what?*:GOTO 2710
                                                                                                                                                                                                                                     GOTTO 2420

3420 IF LO(3)<>-1 THEN PRINT'I don't have it...":GOTTO 2420

3430 IF LO(1)<>-1 THEN PRINT'I CAN'T...":GOTTO 2420

450 FLECT THEN PRINT'IT HON'T light. Out of
2770 NEXT:PRINT'Drop what?"sGDTD 2710
2780 IF LOUX(>-1 THEN PRINT'] haven't got "NO%:GDTD 2420
2790 NO%=GBM(X):IF NO%=GBM(39)THEN PRINT:PRINT'BUT The're needed for analysis."
2800 GHCA-1:LO(X)=RDF.PRINT'RIght! "NZ#" I dropped "ND%:GDTD 2420
2810 IF ATT THEN PRINT'Aye: aye! TROUBLE!!".":PRINT:GDTD 3040
2820 LEPHID:S=LEFT&NDW, 1):IF DI$="N" THEN RM=N
2830 IF DI$="$" THEN RM=N
2830 IF DI$="$" THEN RM=N
2850 IF DI$="$" THEN RM=N
2850 IF DI$="" THEN RM=U
2870 IF DI$="$" "THEN RM=U" THEN RM=N
2880 IF LOYS AND DI$="" THEN RM=U" THEN DARK=O:RM=26
                                                                                                                                                                                                                                     3440 IF LOUID--I AND EN-0 THEN PRINT*It won't light. Out of charge!!*:60TD 2420
3450 IF P-LIT THEN PRINT*It's already on..!*:60TD 2420
                                                                                                                                                                                                                                     3460 IF LD(3)=-1 AND (LB(1)=-1 AND EN)0) THEN PRINT"D.K. It's on.. ":P#LIT:DAPK=0
                                                                                                                                                                                                                                      :FOR T=0 TO 300:NEXT:MODE 1:80TO 1070
                                                                                                                                                                                                                                      3470 GOTO 2420
                                                                                                                                                                                                                                      3480 REM # RUN (14) #
                                                                                                                                                                                                                                       3490 MODE O:LOCATE 5,5:PRINT"DONT PANIC!!":FOR T=0 TO 750: NEXT T:MODE 1
2870 IF DIS*"U" HERN ROTUD
2880 IF LERSY AND DIS*"U" THEN DARK-01RM-26
2890 IF LR-47 AND DIS*"U" THEN DARK-01RM-48
2900 IF RM-0 THEN MODE 0:LOCATE 8,121PRINT*DUCH!!":FOR T=0 TO 350:NEXT T:NODE 1:
                                                                                                                                                                                                                                      3500 X=INT(RND(1) #6):ON X GOTD 3510,3520,3530,3540,3550,3560
                                                                                                                                                                                                                                      3510 RM=N: GOTO 3570
                                                                                                                                                                                                                                       3520 RM=S: 90T0 3570
                                                                                                                                                                                                                                     3530 RM=E:60T0 3570
                                                                                                                                                                                                                                       3540 RM=W:80T0 3570
 2910 IF RM=-1 THEN 4130: REM END GAME
                                                                                                                                                                                                                                       3550 RM=U:80TD 3570
  2920 IF DARK=1 THEN MODE O:LOCATE 6,12:PRINT"Arrigh":FOR T=0 TD 350:NEXT T:IN=IN
                                                                                                                                                                                                                                     3560 RM=D
 +5:MODE 1:CLS
2930 IF DARK=1 AND RND(1)>0.25 THEN ZH=INT(RND(1)#LF)+1:90TD 3040
                                                                                                                                                                                                                                     3570 IF RMC1 THEN 3500
                                                                                                                                                                                                                                      3580 ST=ST-10:AT=0:80T0 820
 2940 IF DARK=1 THEN 2970
2950 IF AT=2 THEN AT=0:80TO 2970
                                                                                                                                                                                                                                     3590 REM # REPORT (15) #
                                                                                                                                                                                                                                       3600 WINDOW 1,40,1,25:CLS:PRINT"SPARROW STATUS REPORT:-"
 2960 IF AT=0 AND RND(1)>0.45 AND RM>15 THEN 2980
                                                                                                                                                                                                                                     3610 PRINT: PRINT N28"'S Status Report....":Z=0
3620 PRINT: PRINT*STRENGTH - "ST:PRINT:PRINT*INJURY -"IN
 2970 PRINT*Dkay "N2*"!*:FOR T=0 TD 350:NEXT T::BOTD 820
2980 REM * HONSTER TABLE (12) *
                                                                                                                                                                                                                                      3630 PRINT: PRINT"YOU ARE CARRYING:
  2990 ZH=INT(RND(1)#LF)+1:X=INT(RND(1)#3)+1:RM=LR
                                                                                                                                                                                                                                     3640 FOR X=1 TO OB:IF LO(X)=-1 THEN PRINT:PRINT DB$(X):Z=1 3650 NEXT X:IF Z=0 THEN PRINT:PRINT:NOTHING"
 3000 DN X BDTD 3010,3020,3030
3010 PRINT"Help: it's a "LF#(ZH)"!!":AT=1:BOTD 3040
                                                                                                                                                                                                                                     3660 PRINT: PRINT*YOUR SCORE IS -*1:5C=0
3670 FOR X=1 TO 08:IF LO(X)=-1 THEN SC=SC+SO(X)
3020 FRINT'Dh wy god: it's a "LF$(LH)"!!":AT-1:GOTD 3040
3030 FRINT'Dh: ND:.it's a "LF$(LH)"!":AT-1:GOTD 3040
3040 EN 2H GOTD 3090,5120,3150,3160,3210,3240,3270
3050 IF AT
                                                                                                                                                                                                                                     3690 MEXT X:SC=SC+FP:PRINT SC:FDR T=0 TD 10000:NEXT:GBT0 B20 3690 REM # BREAK & OPEN (16) #
                                                                                                                                                                                                                                     3700 FGR X=1 TO OB:IF OB*(X)=LEFT*(NO*,LEN(OB*(X))) THEN 3720
3710 NEXT X:PRINT VB* What...":GGTD 2420
3720 NO*-OB*(X):IF VB*-COB*(11) THEN 3730 ELSE 3780
 3060 FOR X=1 TO OB:1F QB*(X)=LEFT**(ND*,LEN(OB*(X))) THEN 3080
3070 NEXT X:PRINT "That won't work!!..":GDTO 2420
3080 NG*=QB*(X):QN ZH GDTO 3100,3130,3160,3190,3220,3250,3280
                                                                                                                                                                                                                                     3730 IF LD(8)=-1 AND ND$=DB$(8) THEN PRINT*It belonged to Pandora!... BYEEEEE...
.*:FOR T=0 TO 850:NEXT:BOTO 4120: REM DEATH
3730 IF LD(8)==1 AND NDS=088(8) THEN PRINT*It belonged to Pandora!... BYEEEE 3790 FIRIT'S PRINT*The place is full of Spooks!...*:80TD 2420 ...**SOTD 2420 ..
3300 FED123==1 NNO NOS-OBS(5) THEN CLS:PRINT'IL rest... = IN IERRANI: 1. THEN 3820
3400 FER 10 CHI.P LEFT:NNOS, LEN(CHICK;X)) = CHICK; AND LO(X+30)=-1 THEN 3820
3400 FER 10 CHI.P LEFT:NNOS, LEN(CHICK;X)) = CHICK; AND LO(X+30)=-1 THEN 3820
3400 FER 10 CHI.P LEFT:NNOS, LENCON, LE
 P=FP+50:AT=2:GOTO 2420
                                                                                                                                                                                                                                     d it!!..":GDTO 3920
3840 IF LD(32)=-1 AND NOS=CHS(2) THEN CLS:PRINT "TASTY TASTY - VERY VERY TASTY!.
 3170 BOTO 4120: REM DEATH
  3180 PRINT:PRINT"GOD!! The size of that MOUTH!!..":GOTO 2420
                                                                                                                                                                                                                                      ":80TO 3920
3190 IF LD(17)=-1 AND ND#-DB#(17) THEN CLS:PRINT*1E's mouth stuck UP:.. It's GDN 3850 IF LD(31)=-1 AND ND#-DB#(1) THEN CLS: PRINT*Nothing stronger:.º":BDTD 3920 El:..*:FPP-FF-10:A1%-BDTD 2420
3860 CLS:FRINT*DDWT*1 SE SELLY:...THEN CLS: PRINT*Nothing stronger:.º":BDTD 3920
3860 CLS:FRINT*DDWT*1 SE SELLY:...THEN CLS: THEN CLS:PRINT*Ne was a tough old Tom!..*:BDTD 3920
3860 CLS:FRINT*SEDUCHA!!!.....**BDTD 4120: REM DEATH
3890 IF LD(36)=-1 AND NOS=CMS(6) THEN CLS:PRINT"So where's the Kid.. Eh!!..":EDT
COSTO CLESPRINT The class are too much. II'S GOT MEEE. ": GOTO 4120; REM DEATH 3240 PRINT: PRINT The smell is terrible"... ": GOTO 2420 3250 IF LOIZO --1 ARM DM-GOBS (20) THEN CLESPRINT: It didn't like that!.. It's gon
                                                                                                                                                                                                                                     3900 IF LO(37)=-1 AND NOS-CMS(7) THEN CLS:PRINT"They've stuck in my teeth. OUCH
                                                                                                                                                                                                                                       ":60TO 3920
#:\.":FPFFF50:41=2:E0TD 2420

3260 CLS:FRINT'#rrrrrrgh!! It's taking meee..":E0TD 4120: REM DEATH

3270 CLS:FRINT'#rrrrrrgh!! It's taking meee..":E0TD 4120: REM DEATH

3270 CLS:FRINT'#rrrrrrgh!! It's taking meee..":E0TD 4120: REM DEATH

3270 CLS:FRINT'#rrrrrrgh!! It's taking meee..":E0TD 420

3280 IF LO(33)=-1 AND NOS=084(33) THEN CLS:PRINT'It staggers off Drunk!":FP=FP+2
                                                                                                                                                                                                                                     3910 CLS:PRINT"You must be JDKING!!..":8070 2420 3920 IF CT(X)=1 THEN TH-100:IF CH(X)=1 THEN HU=100
                                                                                                                                                                                                                                     3930 ST=ST+ES(X):CA=CA-1:LO(30+X)=0
                                                                                                                                                                                                                                    3940 GOTO 2420
0.000 T 1.0000 T 1.0000 T 2420
5290 CLS:PRINT*IT HAS NO EFFECT....*:IN=IN+50:ST=ST-20:AT=2:90TD 2420
                                                                                                                                                                                                                                     3950 REM # READ (18) #
                                                                                                                                                                                                                                    3960 FOR M=1 TO GB:IF GB=(X)=LEFT=(NOS,LEN(DB=(X))) THEN 3980
3970 NEXT X:PRINT VB=" what..: ":GOTD 2420
3990 ND=OB=(X):IF LO(28)=-1 AND NOS=GB=(28) THEN GOSUB 4540:GOTD 2420
3990 IF LO(16)=-1 AND NOS=GB=(16) THEN GOSUB 4400:GOTD 2420
 3300 REM # CHARGE & LIGHT (13) #
3310 FOR #1 TO 08:16 08:K()=(EF15(ND5,LEN(OB*KX)) THEN 3330

3310 FOR #1 TO 08:17 08:K()=(EF15(ND5,LEN(OB*KX))) THEN 3330

3320 ND=08:GC ()= 17 LO(2)(-)-1 THEN PRINT*How can 1..?*:60TD 2420

3340 IF LO(1)(>-) AND NDS=08:(1) THEN PRINT*I haven't got it..*:60TD 2420
                                                                                                                                                                                                                                     4000 IF LU(6)=-1 AND NON-CDR4(6) THEN PRINTTCAN't the're corrupted..':GDTD 2420 4010 IF LU(4)=-1 AND NON-CDR4(1) THEN PRINTTCAN't It's burnt..':GDTD 2420 4020 IF LU(4)=-1 AND NON-CDR4(1) THEN ROTHER AND PRINTTCAN'T IT's lurnt..':GDTD 2420 4020 IF LU(4)=-1 AND NON-CDR4(8) THEN ROTHER AND PRINTTCAN'T IT's all in code..
 3350 IF NOS=DB$(3) THEN PRINT*I can't do that...":60TD 2420
```

```
With a crew of twelve plus the crews of Clipper and Ion aboard
                                                                                                                                                                                                     h was strange.
":FOR T=0 TO 500:NEXT T:80TO 2420
4030 PRINT"I CAN'T READ....": GGTD 2420
4040 REM # DESTROY (19) #
                                                                                                                                                                                                      the scanners mustpick up something, life forms, anything.
                                                                                                                                                                                                     4700 PRINT"Sparrow had been on another expedition chasing Wallies when the orders had comein. The company made it clear that this assignment was unlike any oth
4050 IF AT<>1 THEN PRINT There's nothing here!!.. ": 90TO 2420
AGOS IF AICT I MEN PERMY INFE'S BOURING MEN'S. 150TO 2420
AGO XEINT (RND(1) X33+1:0N X SDITO 4060,4070,4100
AGOS PRINT: PRINT"1" m waiting..!":PRINT CHR(7):RETURN
4000 PRINT: PRINT"HAVE you gone to sleep...":PRINT CHR(7):RETURN
4100 PRINT: PRINT"COME ON...MAKE UP..!":PRINT CHR(7):RETURN
4100 PRINT: PRINT COME ON...MAKE UP..!":PRINT CHR(7):RETURN
                                                                                                                                                                                                      er and thatextreme caution was needed.*
4710 LOCATE 5.25:PRINT*# Press Space Bar to turn page. #
                                                                                                                                                                                                      4720 AS=INKEYS: IF AS="" THEN 4720
4730 CLS:PRINT:PRINT*COMPANY REPORT:-
                                                                                                                                                                                                       4740 PRINT: PRINT"SUBJECT - SPACE STATION ZEBRA"
                                                                                                                                                                                                      4750 PRINT:PRINT"Communications ceased - 04.27 - 24/4/20"
4110 REM # END SAME (20) #
4120 FDR T=0 TD 800:NEXT:CLS:MODE 0:LOCATE 1,12:PRINT"You've souffed it!!":FDR T
                                                                                                                                                                                                      4760 PRINT:PRINT*No distress recorded."
4770 PRINT:PRINT*ACTION TAKEN:-"
  O TO BOO: NEXT: MODE 1
                                                                                                                                                                                                       4780 PRINT:PRINT*Ion dispatched - 04.43 - 24/4/20
4130 PRINT: PRINT "YOUR SCORE WAS: - "15C=0
4140 FOR X=1 TO DS:IF LO(X)=-1 THEN SC=SC+SD(X)
4150 NEXT:PRINT:PRINT SC+FP:END
                                                                                                                                                                                                      4790 PRINT:PRINT:Ion - Iebra - 22.00 - 19/8/20
4800 PRINT:PRINT:Ion Com's ceased - 23.50 - 19/8/20
                                                                                                                                                                                                      4810 PRINT:PRINT*No distress recorded."
4820 PRINT:PRINT*All Commands and Stations alerted."
4160 REM # SUCCESS (21) #
4170 CLS:PRINT:PRINT*CLASSIFIED INFORMATION - SPARROW -*:PRINT
                                                                                                                                                                                                       4830 PRINT:PRINT"STATUS: RED"
4840 LOCATE 5,25:PRINT"$ Press Space Bar to turn page. $*
4850 A$=INKEY$:IF A$="" THEN 4850
4180 PRINT'SCIENCE OFFICERS - EVES ONLY. ":PRINT 4190 PRINT'Disengage Zebra and 'ISOLATE' Sparrow.":PRINT 4200 PRINT'Zebra in distorted disension. DANGER!!":PRINT
                                                                                                                                                                                                       4860 CLS:PRINT:PRINT*Clipper diverted - 00.03 - 19/8/20*
4210 PRINT ACTION TAKEN: "FPINT 4220 PRINT ALERT ASORTED - ALL SCTORS CLEARED":FRINT 4220 PRINT Destroyer squadron diverted. ":FPINT 4240 PRINT Colossus (Towing Vessel) dispatched. ":FRINT 4240 PRINT Colossus (Towing Vessel) dispatched.
                                                                                                                                                                                                        4870 PRINT:PRINT*INFO:-
                                                                                                                                                                                                       4880 PRINT:PRINT"All Commands and Stations report normal activity in their sector
                                                                                                                                                                                                       PS.
                                                                                                                                                                                                       4890 PRINT:PRINT"Clipper - Zebra - 11.10 - 18/9/20"
4900 PRINT:PRINT"CLIPPER REPORT: - LAST - 14.50 - 18/9/20"
4250 PRINT"YOUR BRIEF: ": PRINT
4260 PRINT"Await Colossus. ": PRINT
                                                                                                                                                                                                        4910 PRINT:PRINT*Ion neutralized.*
  4270 PRINT"Escort according to Colossus orders.":FRINT
4280 LOCATE 5,25:PRINT"# Press Space Bar to turn page. #"
                                                                                                                                                                                                       4920 PRINT:PRINT*No damaged sustained - Personnel missingLife support and com
                                                                                                                                                                                                        ications aborted! Systems damage none. Energy source dead! Investigation of statio
 #290 AS=INVEYS:IF AS="" THEN SOME SET OF THE SOME SET OF THE ASPO ASSOCIATION OF THE ASSO
                                                                                                                                                                                                        n Zebra follows."
                                                                                                                                                                                                        4930 PRINT: PRINT "Communications ceased."
                                                                                                                                                                                                        4940 PRINT:PRINT"No distress reported."
4950 LDCATE 5,25:PRINT"# Press Space Bar to turn page. #"
 4320 PRINT"SCIENCE OFFICERS - EYES ONLY -":PRINT
4330 PRINT"EXTREME WALLY ACTIVITY":PRINT
                                                                                                                                                                                                       4960 AS=INKEYS: IF AS=""THEN 4960
4970 CLS:PRINT:PRINT"CLASSIFIED ORDERS - SPARROW -"
  4340 PRINT CHR$ (75) CHR$ (101) CHR$ (121) CHR$ (9E) CHR$ (111) CHR$ (97) CHR$ (114) CHR$ (100)
    Sector, ":PRINT
                                                                                                                                                                                                        4980 PRINT: PRINT"SCIENCE OFFICER - EYES ONLY"
  4350 PRINT"ACTION: -": PRINT
                                                                                                                                                                                                        4990 PRINT:PRINT"Enc: - Zebra - Ion - Clipper
  4360 PRINT"- ARREST OR TERMINATE WITH PREJUDICE. -":PRINT
4370 PRINT"GOOD LUCK!...":PRINT:PRINT:END
                                                                                                                                                                                                                                                 Reports to date.
  4370 CLS:MODE 0:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PR
  OO: NEXT: MODE 1: GOTO 4120: REM DEATH
                                                                                                                                                                                                       5010 PRINTIPRINT' INVESTIGATE and Secure Station Law a.
5020 PRINTIPRINT'ALD other considerations terminated."
5030 PRINTIPRINT'FORW expendable."
5040 PRINTIPRINTERINT'ALTERNATIVE ORDERS:-"
5050 PRINTIPRINTIPRINT'EMPHINATE ZEBRA MITH EXTREME PREJUDICE:"
                                                                 MEDICAL LOG
                                                                                                                 ZEBRA -":PRINT
  4400 MODE 2:PRINT*
                                                                                                           DIAGNOSIS: -
                                                                                                                                                             TREATMENT: -":PRI
                                                                                                                                                                                                        5060 LOCATE 5,25:PRINT"# Press Space Bar to turn page. #"
  4410 PRINT"SUBJECT:-
                                                                        DATE:-
                                                                                                                                                                                                       5070 A$=INKEY$:IF A$=""THEN 5070
5080 CLS:PRINT:PRINT"ADDENDUM:-"
  4420 PRINT*CREW 3.
                                                                        19/4/20
                                                                                                                                                             EXTENDED RMR":PR
                                                                                                                                                                                                         5090 PRINT:PRINT"# TARGET ZEBRA #"
                                                                                                             INTOXICATED
                                                                                                                                                             SOLITARY": PRINT
  4430 PRINT"ENGINEER 2.
                                                                        19/4/20
                                                                                                                                                                                                        5100 PRINT:PRINT*DESTROYER SQUADRON DISPATCHED*
                                                                         19/4/20
                                                                                                             PHYSICAL
INTOXICATED
                                                                                                                                                             84%":PRINT
  4440 PRINT"5KIPPER.
                                                                                                                                                                                                        5110 PRINT:PRINT:PRINT*ORDERS:-"
                                                                                                                                                                                                        5120 PRINT: PRINT: PRINT AUTOMATIC TERMINATION ON ARRIVAL
  4450 PRINT"ENGINEER 2.
                                                                        20/4/20
                                                                                                                                                              92%":PRINT
  4460 PRINT"CREW 4.
                                                                         20/4/20
                                                                                                             PHYBICAL
                                                                                                                                                                                                        5130 LOCATE 5,25:PRINT"# Press Space Bar to turn page. #"
                                                                                                                                                             2 cc PULSE 4":PR
  4470 PRINT*1e+ DEFICER.
                                                                        20/4/20
                                                                                                             TOOTHACHE
                                                                                                                                                                                                        5140 AS=INKEYS: IF AS="THEN 5140
                                                                                                                                                                                                        5150 CLS: PRINT:PRINT*The reports spoke for themselves. What had happened to io
n and Clipper could well happen to other ships and crews. The only reason Sp
arrow was assigned wasbecause she had the most experienced of science officer in
  INT
  4480 PRINT*COOK.
                                                                        21/4/20
                                                                                                            D. D. A.
                                                                                                                                                             AUTOPSY": PRINT
  4490 PRINT*TECHNICIAN.
                                                                                                            NERVOUS B/DOWN
                                                                                                                                                              OBSERVATION": PRI
                                                                        21/4/20
                                                                                                                                                                                                           the fleet.
                                                                                                             INTOXICATED
  4500 PRINT*ENGINEER 2.
                                                                       21/4/20
                                                                                                                                                                                                        5160 PRINT:PRINT"It was strange that Ion or Clipper had not got back another re
                                                                                                                                                                                                        port after they went to investigate station Zebra. The auto systems should have a taken care of that."
                                                                        22/4/20
                                                                                                                                                             AUTOPSY": PRINT
  4510 PRINT"ENGINEER 2.
  4520 PRINT'Press Space Bar To Turn Page..."
4530 As=INKEYs:IF As="" THEN 4530 ELSE MODE 1:RETURN
  4530 As=INKEYS: IF As=""
4540 MDDE 2:PRINT"
                                                                                                                                                                                                        ZEBRA - CONFIDENTIAL": PRINT
                                                                       LOGBOOK
                                                              REPORT: -": PRINT
   4550 PRINT"DATE: -
                                                              Power loss in auxillary plant room. ACTION:- System rep
Engineer 2. reprimanded for drunkeness. ACTION:- Solita
  4560 PRINT"20/4/20
                                                                                                                                                                                                          hefore locking omand securing. Life support systems were equal and therefore sui
  aired.
                                                                                                                                                                                                          ts woren't needed"
  ry.":PRINT
                                                                                                                                                                                                          5190 LOCATE 5,25:PRINT*# Press Space Bar to turn page. **
                                                              Periodical computer malfunctions - All Stations report
  4570 PRINT®
                                                                                                                                                                                                          5200 AS=INKEYS: IF AS=""THEN 5200
                                                               ACTION: - Diagnostics in operation. ": PRINT
                                                                                                                                                                                                          5210 CLS:PRINT"As the hatches clear you become aware ofthe reports on Ion and Cl
  EFFOFS.
                                                              Radio communications damaged beyond repair. ACTION: - Em
                                                                                                                                                                                                            pper. Choice of entering Zebra has elapsed. It's yourduty as a science officer of the fleet, and clear, that regardless of your own safety, that Zebra be inv
  4580 PRINT"21/4/20
                                                               measures underway.
   ergency
                                                               All sections report computers unuseable. ACTION: - inves
Power fluctuations in all areas. ACTION: - N.B.G."
   4590 PRINT®
                                                                                                                                                                                                          estigated."
                                                                                                                                                                                                          5220 PRINT: PRINT The alternative is to destroy both Zebraand fighters and whatev
   tipating.
                                                               Cook found dead in restroom. Autopsy reveals murder
                                                                                                                                                                                                                is contained within. The Council cannot permit Zebra to remain unknown within
                                                                                                                                                                                                         n the great plan of things."
5230 PRINT:PRINT*Seven years ago you performed a similar function, scapegoat for
                                                               ACTION: - Investigation follows. No motive for attack. ":
                                                                                                                                                                                                         5230 PRINTIPRINT Seven years agg you performed a statian function, scapenost to
the Council, anothat's shy they called on you again."
5240 PRINTIPRINT But remember, your crew on Sparrow rely on you. If you fail, the
yo die along withyou, and so does Sparrow."
5250 PRINTIPRINT Sparrow - My friend and companion!"
5250 CRESTANT PRESS Sparrow - Spa
   4610 PRINT"22/4/20
                                                               Engineer Baker found dead at Turkey Crossing - MURDER
                                                               - Head Missing!. ACTION: - CREW ARMED - 2 MAN PATROLS."
   4620 LOCATE 5.25:PRINT"# Press Space Bar to turn page. #
   4630 A#=19KEY#:1F A#="" THEN 4630 ELSE MODE 1:RETURN
4640 CLS: ZUNE 2:FOR U=1 TO 100
                                                                                                                                                                                                          SZBO CLESFRINIFERINI "Instructions are: "
SZPO PRINIFERINI "GET - DROP - 00 - USE - CHARGE - LIGHT - READ - RUN - REPORT -
SREAM - OPEN - EAT - LOUG - DRINK - DESTROY*
    4650 C=RND(6)#100:1F C (48 OR C)122 THEN 4650 ELSE PRINT CHR#(C),:NEXT:RETURN
   4660 REM # THE STORY (22) #
4670 CLS:PRINT" The fight
                                                The fighter Sparrow closed in on itstarget. A last minute bur
  4870 CASPENIN!— The righter sparrow Closed in on itstarget. It was minute our neased her in to an orbit around the station. Hanginghter motionless alongsid e two others ofher class she rested after a long tour."

4860 PRINITERINI The other two fighters, Clipper and Ion were dead in space now, crewless, not a sign of life from them. Neither the lifesupport or navigation systems showed anysign of activity."
                                                                                                                                                                                                          5300 PRINT:PRINT Movements: "
5310 PRINT:PRINT FO (N) ORTH ":PRINT:PRINT FO (S) OUTH ":PRINT:PRINT FO (W) EST ":PRIN
                                                                                                                                                                                                          T:PRINT'SO (E)AST":PRINT:PRINT'SO (U)P":PRINT:PRINT'SO (D)OWN"
5320 LOCATE 5,25:PRINT"# Press Space Bar to continue. #"
                                                                                                                                                                                                           5330 As=INKEYS: IF As=""THEN 5330
   4690 PRINT:PRINT"Sparrow's scanners got nothing back from the station either whic
                                                                                                                                                                                                          5340 RETURN
```

The adventure continues. . .

More mythical goings-on on the QL. . . all from the keyboard of Philip Sproston

ostly listing this week. . . but a formatted microdrive (plus £3.50) to don't worry, it's well worth the effort! However, you can send

me at Marloes, Borrowby, Thirsk, North Yorkshire, and I'll send you back a copy

4530 BEEP 300,C+RND(30 TO 1000):END FOR C:MESSAGE 'QUICK, RUN AWAY...

of the game.

The remainder of the listing will be printed next week.

3520 Al 6,24:PRINT "2) ";:INK 4:PRINT HE(2):INK 7 3330 INK 1:PAPER 7:AT 7,23:UNDER 1:PRINT "WHAT'S THIS?":UNDER 0:PAPE 3340 AT 14,22:PRINT 'ABILITY: 1:DNK 3:PRINT A: T ':DNK 7:AT 16,23:PR
INT 'PIECES: :DNK 4:PRINT P:DNK 7:FOR C=0 TO 1
3350 FOR V=1 TO 4 3360 AT 18+C,26+V:PRINT D\$(V+(C+4));:END FOR V:END FOR C 3370 KEY8-'YDU ARE HON ON LEVEL 'ALIMESSAGE KEY8:BEEP 500,100,9,9,9. 4: FMB DEFine 3400 DEFine PROCedure SEISCR 3410 AT E-1.0-1-PRINT 'a" 3420 DE-DATES: AT 2,28:PRINT DECLE TO) 3450 AT 14,31:18K 3:PRINT A: 1 ":ENK 7:EF A:1 THEN 50 TO 4200 3480 AT E-1,0-1:PRINT "1":ENG DEFINE 3490 REMARK NOVEME 3500 BF-IMEEYS: BC-CODE (BS) 3510 IF SC-192 THEM SU TO 3600: REMark LEFT 3520 IF BC=200 THEN GO TO 3620:REMark RIGHT 3530 IF BC=208 THEN GO TO 3640:REMark UP 3542 IF 80-216 THEN 60 TO 3660: REMark DOWN 3550 IF 6C-32 AND ARCE, DICY " THEN HESSAGE "YOU CAN'T DROF ANYTHING HERE!": N=0:50 TO 8210 3555 IF BS=" THEM W=0:DROP 3560 SQ 10 8210 3600 IF AS(E,D-1)()'a' THEM PIX -1,0:00.050R:0=0-1:60 TO 4000:END IF 3629 IF AS(E,D+1)()'a' THEM PIX 1,0:0LDSQR:0=0+1:50 IB 4000:END IF 3640 IF A4(E-1,0)()'4' THEN PIX 0,-1:0LD508:E=E-1:60 TD 4000 3650 S0 T0 3700 3660 IF AR(E+1,0)()'a' THEN PIR 0,1:0LDSSR:E=E+1:50 TO 4000 3700 MESSAGE "DOUBCH!! A WALL ':A=A-1:N=0:FDR C=10 TD 15 3710 MEEP 400,C,4,5,15,9,C:END FOR C:60 TO 8210 3/10 MET 400,C,4,3,13,7,CEND FOR C160 TO 8210
3000 DEFINE PROCESSE CUSTOM SEFENCE
3010 FT 16** THEN FOR DEFINE
3010 FT 16** THEN AT E-1,5-1:TINK 4PPRINT 'C':TINK 75END DEFINE
3020 FT 10** THEN AT E-1,5-1:TINK 4PPRINT 'D':TINK 75END DEFINE
3020 FT 10** THEN AT E-1,5-1:TINK 4PPRINT 'D':TINK 75END DEFINE
3020 FT 10** THEN AT E-1,5-1:TINK 4PPRINT 'C':TINK 75END DEFINE
3020 FT 10** THEN AT E-1,5-1:TINK 4PPRINT 'C':TINK 75END DEFINE
3020 FT 10** THEN AT E-1,5-1:TINK 4PPRINT 'C':TINK 75END DEFINE O: INK 7: PAPER O: END DEFine 3860 IF IS='; THEM AT E-1,8-1:INK SIPRINT 'j':INK 7:END DEFINE 3870 AT E-1,8-1:PRINT 'E':END DEFINE 3999 REMARK NEWSQUARE 4000 W-G:EF-AF(E,E) 4010 IF E4()" THEM 90 TO 4050 4020 NESSAGE "NOTHING": BEEP 500,200: A=A-1:50 TO 8210 4050 IF 18() % THEN 60 TO 4100 4060 MESSABE 'OH! SOME SRUB YUN! YUN! 14-100:FUR C-1 TO 30 4070 BEEP 300,C:END FOR C:80 TO 8210 90/7 SELY 300,CEND FOR CED TO 8229

4110 RESSAE: "THE GOT TO 250 KEY "FOR C"1 TO 30

4110 RESSAE: "THE FOR TO 30 KEY "FOR C"1 TO 30

4110 RESSAE: "THE FOR TO 50 KEY "FOR C"1

4130 EF FOR CYC.C,C,C,C,C,T,E,ED FOR C"

4130 EF FOR CT THE SELY "THE SELVEN FOR C"

4130 EF FOR CT THE SELVEN FOR CED TO 120

4150 REFE 400,C,0,0,5,15,2,15,END FOR C:00 TO 8210 4160 END 1F 4100 EMB IT 4170 HE413 ** A EXY ":MESSAGE "THAT'S MARGY!":AT \$,27:1NK 2:PRIME MET 11:1NK 7:FOR C-020 TO 10 STEP -1 4180 BEEP 300,0:EMB FOR C:FOR V+1 TO 2 4190 EFF 700,-LAND STEV=0 MOD REFSHE BEEN 50 TO 4210 4200 END FOR V 4210 F(V)=0:AS(E,D)=' ':ES=' ':60 TD 8210 4250 IF 18()'d' THEN SO TO 4700 4260 NESSAGE "YOU FIND A GOLDEN CHEST":FOR C-50 TO 30 STEP -1 4270 BEEP 300,C/1,3:END FOR C 4280 IF HS(1):C)*A KEY THEM 4290 MESSAGE "BUT YOU HAVR'T GOT A KEY TO OPEN IT*:FOR C=1 TO 10 4300 BEEP 200+C,C,0,0,0,1:END FOR C:A-A-1:60 10 8210 4310 END 1F 4320 NESSAGE 'YOU HAVE A KEY AND SPEN IT UP' 4340 IF KIMI-L AND MINI-D AND MINI-E THEN SO TO 4360 4350 END FOR W 4360 IF W()1 THEM MESSAGE KO(W) 4370 FOR C=-25 TO 0:SEEP 300,-C:END FOR C 4380 IF W=1 THEN KINI=0:PICK:68 TO 6210 4390 IF MC)2 THEM GO TO 4500 4400 IF H6(2)() SHIELD THEM 4410 RESSAGE "YOU HAWN'T GOT A BLAST SHEED!!!!!":FOR C"! TO 40
4420 BEEF 300,000'S TO 101:END FUR C.MESSAGE "YOUR ATOMS ARE SPEAD
ACKOSS THE NEAREST WALL":FOR C"! TO 50

MAGO MESSAGE "ON! HE'S GOT AN ORDER FORM FOR A "CS:"1FOR C=-10 TO 10 4610 REEP 700, ABSHC1, 0,0,0,0,9:END FOR C:MESSAGE 'CRIS 4700 IF INC) "" THEM 50 TO 4800 4710 MESSAGE "YOU FIND SOME STAIRS LEADING BOWNNARDS":FOR C+1 TO 30 4720 SEEP 500,C:END FOR C:L-4.415G TO 8100 4800 IF L\$4C) 6" THEN GO TO 4900 4810 MESSAGE 'YOU FING SOME STAIRS LEADING UP':FOR C=-30 TO 0 4820 SEEP 400,-C:END FOR C:L=L-1:60 TO 8100 4900 IF IS() ("THEN 60 TO 4950 4910 NESSAGE "YOU FIND A ROPE LEADING DOWN :FOR C=20 TO 50 4920 SEEP 100,C:EMD FOR C:L=L+1:BO TO 8100 4950 IF ISC) h' THEN BD TO 5000 4960 MESSAGE 'EEEKXX!!! A LARGE HOLE':FOR C=30 TO 60 5050 BEEF 300,-C:EMD FOR C 5060 IF H\$121() SHIELD THEN 60 TO 5100 5070 MESSAGE 'BUT YOU ARE MUREAUY CARRYING OME':FOR C=-20 TO 20 5080 BEEP 400,ABS(C):END FOR C:50 TO 8210 SIGO MESSAGE 'THAT WILL BO NICELY': MR(2)= 'SHIELD ':AT 6, Z7: INK 4:PRI NT HR(2): INK 7 5110 FOR C+1 TO 3 5120 IF E(C)=L AND Y(C)=G AND E(C)=E THEN 90 TO 5140 5130 END FOR C 3130 EMB +UN C. \$140 ICL10018=" :AFFE,D]=" :180 TO 8210 \$200 BEFINE PBDCmdure PIX [HD,G8] \$220 LOCAL J_KAR E-1_B-1:PRINT " :1F ND=0 THEM 60 TO \$250 \$220 K-1(E-1)978: 1-1:FR 2-1:0-11112 TO (G-1-MED)912 STEP 2-MIN \$220 K-1(E-1)978: 1-1:FR 2-1:0-11112 TO (G-1-MED)912 STEP 2-MIN 5250 AT E-1,0-1:PRINT * :CURSOR J,K:PRINT PRE:EMD FOR J:EMD DEFINE 5250 J=(D-1):(2:FOR K=((E-1):9:E-1) IQ ((E-1:581:9:E-2:(68(d))) STEP 2499 5260 AT E-1,8-1:PRINTA' ':CURSOR J,K:PRINT PRE:END FOR K:END DEFINE 5300 SEFine PEDCedure BROP 5310 FOR C+10 TO 25 5320 BEEF 500,C,1,1,1,0:END FOR C:FOR V+1 10 8 5330 IF J(V)=0 THEN 60 TO 5350 5340 END FOR VEMESSAGE "YOU HAVE NO PIECES TO BROP HAVE YOU?":60 TO 9210 SISS MESSAGE 'YOU BOOP A PIECE OF SPELLBOX':FOR C-1 TO 20 SIGO BEEP SOO,C,3,3,3,5:EMB FOR C:IX='1':P=P-1:ME='YOU MUN MANE 'EP& 'PIECE':IS P(3) THEN ME=MAL'S: \$365 MESSAGE MS:18(V)=08(1):3(V)=L:U(V)=B:1(V)=E:AS(E,D)="1":AT 18,3 2: INK 6: PRINT P: INK 7 5370 FOR V=2 TO B 5390 BS(V-1)-05(V):END FOR V:05(B)=' ':FOR C=0 |0 | 5390 FOR V=1 TO 4:AT 18=C,26=V:PRINT D\$(V=(4=C)):END FOR V:END FOR C :END DEFine 5400 DEFine PROCedure PICK S410 MESSAGE "YOU FIND A PIECE OF SPELLBOX":FOR C=-30 TO 0 5420 BEEF 300,AMSKC1:EMD FOR C:FOR V=7 TO 1 STEP -1 5430 0s(V+1)=0s(V):END FOR V:FOR V=1 TO 8 5450 END FOR V SAGO GREED : ERVELT J (V) -C:ARIE, D) - ":IS-" :P-P-1:RS-"YOU MOW HAVE '& PE PIECE :AT 16,32:INK 6:PRINT P:INK 7 5470 IF P)1 THEN MS-MS& S' 5480 MESSAGE MS:FOR C-0 TO 1 5485 FOR V=1 TO 4:AT 18+C,26+V:PRINT D&(V+(C+4));:END FOR V:END FOR 5490 IF POR THEN END DEFINE 5495 FOR V=1 TO 8 2950 FOR NYLVO Oppretur" (V) THEN MESSAGE SPELLBOY PIECES ARE NOT I N GROER!":FOR C=1 TO 100 STEP 1018EEP SOO, CLERG FOR CLEAD DEFINE 5510 END FOR V:HESSAGE "SPELLBOX PIECES ARE IN GROER NOW BET OUT!":U \$='Y':FOR C=-20 TO 0:BEEF 500,-C,1,2,3,4:END FOR C 5550 EXD DEFine 5000 BEFine PROCedure OUT 6010 FOR C=0 TO 90 STEP 10:BORDER C,0:END FOR C:CLS:BORDER 0,0:CS='o perstay! POP SEAR ...

6-030 FOR C-1 TO 6
6-030 FOR C-1 TO 1:FOR 0-1 TO Y-10K C_072-PRINT CST(V+4)+1 TO (V+4)+4
1):FOR 0-20 GAPMAT ...

1):FOR 0-20 GAPMAT ... 070 KEYS=INKEYS: IF CODE (KEYS) ()13 THEN BU TO 4070 6070 END DEFINE
6070 END DEFINE
6070 END DEFINE
6070 MESSAGE YOU ARE COSIZE 3, IT MK Z, b.PAPER 7:CURSOR 308, YOU PRE

MT 'BEAB!': CSIZE 0,0: INK 7: PAPER 0: FOR C=1 TO 10: SCROLL #8,2:EMD FOR

6205 FOR Vol TO 2+P1 STEP .4 6207 PAN 48, 5+(SIN(V))+2:SCROLL 88, -.5+(COS(V))+2:8EEP 100, V:END FD A210 FOR C=10 TO 90 STEF 10:BURDER C,0:BEEP 500,90-C:END FOR C:CLS:8 DWDER 0.0 6215 EMK 2,3:FILL 1:FOR V=0 TO 1 \$250 LINE 30,00 LINE \$7 TO 20,-3 TO 80,0 TO 0,20 TO -80,0 TO -80,0 TO 0,-20 TO 0,20 TO -80,0 TO 0,-20 TO 0,20 TO -80,0 TO 0,-20 TO 0,20 TO -80,0 TO 0,20 TO 0, 6240 FILL OF THE OFFEND FOR VIINE 7 6250 FOR C=1 TO 20:5CROLL 5:END FOR C:THE 2,4 6300 AT 0,0:PRINT ' DUE TO CIRCUMSTANCES BEYOND YOUR U HAVE DIED....'
AXIO PRINT * AN UNHAPPY OCCASION AT THE BEST OF TIMES BUT I'M SU RE THAT.... CHAPFLE WAFFLE LIKE PEOPLE BO!!
6320 PRINT \" PRESS 'P' TO PLAY"\" 0' TO GUI
THEM FOR A SALLY MOISE!" "O" TO QUIT"IN" OR ANY O 6330 IF KEYROW(4) = 32 THEN 60 IS 2010 6300 IF RETHORIGET PIEM 60 10 2010 6300 IF PETRORIGET PIEM 60 TO 6500 6330 IF PETRORIGET THE 60 TO 6330 6350 IFF DOMESTAT THE 60 TO 6330 815,888015:60 TO 6330 4400 PAPER 2:CLS:PARSE 1:PAPER 1:CLS:CLSBO 6410 PAPER 40,3:PRINT 80; ':PAPER 40,0:PAUSE 10 6420 IF KETRON(1)()1 THEN CLSBO:PAUSE 10:60 TO 6410 O-MOD IF RETROMATIVES THEM CLEMOFRANCE TOTHO TO 6410
6440 MESSAGE "MAIT I HAMN'T FINISHED THE"-FOR CHO TO 50
6440 MESSAGE "MOD HAVE TO CONTINUE ANY MAY MAY MAY MAY MAY MAY MAY MAY MAY FOR CC CT CT SOCKEOUL, NB, 11-EMS FOR C 6490 PAPER G:CLSBO:80 TO 2010 6500 DEFine PROCedure MUNSTER A505 FOR 8=2 TO 5 6510 IF Q(B)=L THEM GO TO 6530 6520 END FOR BLEND OFFice 6550 BE-R(B): DY-S(B): IF R(B) >D AND AF(S(B) ,R(B)-1)=' ' THEM R(B)-R(B J-1:60 TO 6550 7-1100 10 6330 \$250 IF RESIGN AND SESSIBLARES+51=" THER RESH-RES+5 6530 IF SESSIC AND AREGOS+1_RESH-7" THER SESS-563-1:80 TO 6576 5550 IF SESSIC AND AREGOS+1_RESH-7" THER SESS-563-1:80 TO 6576 6570 IF GT-4819 AND GT-6219 THER 80 TO 6568+1 A700 08-0:0E-E:0-01:E-07:TY-R(D)-01:IF TICO THEM PRO- a':PII II,0:P R#='1':0-0+TI 6710 TY=5(8)-GY:1F TYC)0 THEM PRS='@':PII 0,TY:PRS='1' 6730 B+00:E-6E 6740 IF D+R(B) AND E-S(B) THEN GO TO 6200 £750 60 TO 6520 7000 DEFine PROCedure INSTRUCT 7010 CLS:COL=4
7020 RESSAGE "NI THERE! I'M YOUR INFO WINDOW":ENTER JOSO RESSEE "1 WILL NEEP YOU THROUGHOUT THE SEMETIFIES TOWN TESSEE "A WARTS KEEP AN ETE ON MOTENTIES TOWN TESSEE THANKS KEEP AN ETE ON MOTENTIES SCREEN": P-0:A-00:L-1:51M RECZ,71:51M ANTO, 20:HR11= MOTENTE : SCREEN": P-0:A-00:L-1:51M RECZ,71:M ANTO, 20:HR11= MOTENTE : S :SCREEN:ENTER 7060 MESSAGE "THIS IS THE LEVEL YOU ARE ON": OVER 1:FLASH 1:AT 0,25:P RINT ":ENTER 7070 OVER 0:FLASH 0:AT 0,25:PRENT 'LEVEL:'
7000 MESSAGE "THIS IS THE TIME YOU HAVE TAKEN":OVER 1:FLASH 1:AT 2,2 3:PRINT ":ENTER 7090 OVER 0:FLASH 0:AT 2,25:PRINT "TIME: 7100 MESSAGE "THIS IS WHAT YOU'VE GOT IN YOUR LEFTWRIERT POCKETS":ON ER L:FLASH L:AT 4,24:PRINT ' ':ENTER 7110 OVER OFFLASH OFAT 4,24 PRINT YOU HAVE: 7/10 VERY G-FLASH G-FT (-2.1:FS.ENT 'YOU ANNE:
17/20 MESSAGE 'HID IS A MESSAGE OF HAW FAR YOU CAN GO':DVER 1:FLASH
1ART 14,72:FS.ENT ':CRITE
7/10 VERY G-FLASH G-BT 14,73:FS.ENT SADLITY:
7/10 VERY G-FLASH G-BT 14,73:FS.ENT SADLITY:
7/10 VERY G-FLASH G-BT 14,73:FS.ENT SADLITY:
7/10 VERY G-FLASH G-BT 16,73:FS.ENT FLEES:
7/10 VORE G-FLASH G-BT 16,73:FS.ENT FLEES: 7140 MESSAGE THE IDEA IS TO FIND ALL THE PIECES SENTERSMESSAGE THE M YOU MUST PUT THEN IN THE CORRECT ORDER SENTER 7170 MESSAGE THEN FIND THE SECRET PASSAGE ON LEVEL L':ENTER 7180 MESSAGE 'THIS IS THE UNDER OF THE PIECES YOU HAVE' 7190 AT 18,25: FLASH 1: PRINT "-) ": FLASH 0: ENTER: FOR C=0 TO 7 7210 RESSAGE "MOW I WILL EXPLAIN THE SYMBOLS" SENTER 7270 CSIZE 3,1:AT 4,8:PRINT '1':CSIZE 0,0:MESSAGE THIS IS YOU-HOO! 7230 C512E 3,1:AT 4,8:PAPER 3:INK 6:FLASH 1:PRINT '1:C512E 0,0:PAPE R 0:INK 7:FLASH 0:HESSAGE 'THIS IS A PIECE OF SPELLBOT :ENTER 7240 CSIZE 3,1:AT 4,8:PAPER 2:PRINT 'a':PAPER 0:CSIZE 0,0:MESSAGE "T

0.70.30

4450 END IF

\$430 BEEP 500,C+RND(1 TO 100):END FOR C:EG TO 6200

4460 RESSAGE 'LUCKY YOU HAD A BLAST SHIELD!!':FOR C=-20 TO 0 4470 BEEP 500,-C:END FOR C:60 TO 8210

4500 IF #=5 THEN MESSAGE "THAT'S HANDY":A=100:K(W)=0:A\$(E,D)=" ':I\$=" ':60 TO 8210

4510 IF WC>4 THEM 50 TO 4600 4570 MESSAGE "EEEXXX: IT'S LARSE, HAIRY, AND REALLY SMELLY":FOR Co-1

continued next week

7250 CSIZE 3,1:AT 4,8:INK 4:PRINT 'b':INK 7:CSIZE 0,0:MESSAGE 'IHIE

IS SOME SHORE :ENTER 7740 CSLIE J, 1:AT 4,0:LNK 6:PRINT 'C':LNK 7:CSLIE 0,0:MESSAGE THIS

15 A KEY'1ENTER

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Driven by sound

Music brought to you on the BBC B by Cy Noble

his is the first in a series of three programs for creating music on the BBC B. The next one will take the tune data (written by this one) from cassette or disc and write a Basic program version of the tune. The third program uses the same data to play the music via machine code interupts so you can use it in games or whatever.

After you've typed in the programs (and saved them) and debugged them you'll have a means of writing music easily and quickly for performance. If you don't feel up to doing all that work then send £10 to me for a cassette containing the entire suite of programs. If you send £11.50 you get a five inch disc with all the programs plus two demonstrations plus all three articles in this series in Wordwise format. A three inch disc costs £15 (because they are more expensive for me to buy!).

The first program stores the notes created in a one by four matrix (array) and keeps track of how many notes are in the tune in the variable 'notes'. Rather than try to give you a blow by blow description of how the program works, I will tell you how to use it.

The first thing to do is create some suitable sound envelopes and there is a menu driven envelope designer within the program. To reach it Press 'C' < Return> in response to the first sound parameter asked for in the main input section. Remember you will not hear the demo note until you actually select a parameter. The User Guide may help you to understand this section but experiment will teach you more.

Above the main input window is a coloured help window to remind you of the various commands available. All these command options only work on the first parameter input. If you make a mistake you get the opportunity to do it again. The program is plentifully supplied with prompts and boob traps and, once debugged, escape will always abort whatever section you're in and return you to the main input menu though it's better to use the escape routes provided. 'n' < return> will change the help window to the note window which displays the note values for all the octaves available. 'h' < return> brings the help window back.

'Pxxx' < return> will play back from note xxx or P < return> plays back from the beginning. While the notes are playing their parameters are displayed in the input window together with a reference number for each note. That is the number used for editing, deleting, play back, etc.

'Exxx' < return> allows you to edit the note with that number of 'E' < return> with no number takes you to the editing section which will ask for the number of the note to be edited.

"Dxxx" < return> performs similarly and asks for confirmation before deleting the note.

'Ixxx' < return > lets you insert a note after note number xxx. It displays and plays note number xxx then asks for the parameters of the note to be inserted. If you confirm the new note it will be inserted at that point and the music will be played back from a few notes before the inserted one.

'X' < return> allows you to synchronise up the three notes on channels one to three; you'll be asked how many notes and their numbers. Do not try to sync channel zero as it will appear to work for while then hang up the program. You may be able to get out of the hang up with escape but sometimes only break will work and then you've lost all the music data written so far.

'S' < return> allows you to save the tune data to disc or cassette. Just in case you've used the 'sync' facility the first two bytes of each note are compressed into one byte. They are expanded again when used by any of the three programs. This allows a considerable saving in memory requirement.

More notes and the remainder of the listing next week.

```
10REM Music data creator program
20REM By Cy Noble
30REM 323 North Circular Rd.
40REM London NI3 5AH
                                                                                                    640PRINT"the form needed by most machi
                                                                                               ne code'
                                                                                                     650PRINT"interupt routines using OSWOR
    SOREM ONERROR LFLAG=notes%:60T0 270
   SOREM ONERRORPROCERTINE: END
70REM While debugging use line 60
80REM After debugging delete 50 AND
                                                                                                     660PRINT'CHR#130; "<SPACE> TO CONTINUE"
                                                                                                    670REPEATUNTILGET=32
                                                                                                     6BOENDPROC
  90REM all of the errline procedure
100REM (lines 4830 to 5110) and
                                                                                                     690:
                                                                                                     700DEFPRDCinput: VDU26
  110REM then use line 50
                                                                                                     710notes%=LFLAG
  120CX=5: DX=13: EX=21: FX=25: GX=33: AX=41:
                                                                                                     720LOCAL channel, env, note, length, t%, 6$
             B%#49
  130PROMPT#="ABCDEFGHIJKLMNOPSabcdefghi
                                                                                                    730PROChelp(0,24,39,6)
              jklmnops
                                                                                                     740b%=0:CLS
   140MODE7
                                                                                                     750IF notes%>b% PROCplayback(b%,notes%
   150PROCinstructions
  160LFLAG=0
                                                                                                     760t%=notes%:IF t%>17 t%=17:PRINT
   170DIM NX(250,3), HX(1,3), EX(16)
                                                                                                    780tx*notesxip tx;1/ tx=1/iPMINI
770Ntx*": *KX1,0
780PRINTTAB(0,tx);SPC(29)
790PRINTTAB(0,tx);notesx;
800PRINTTAB(4,tx)**::IMPUTN*:VDUI1
810IFN*=" AND notesx>0 THEN FOR RX=0T
  180FORN%=0T0250
190N%(N%,0)=1:REM Channel 1
  200N% (N%, 1)=1:REM Envelope 1
  210NEXT
                                                                                               D3:NX(notesX,RX)=NX(notesX-1,RX):NEXT:GD
TD1020 ELSE IFN#="" PRINT"No notes yet":
 230PRINT"Load previous tune ?"
240PROCyesMo:IF YX>0 PROCload
250PRINT"Load previous envelopes ?"
260PROCyesno:IF YX>0 PROCloadenv
                                                                                               GDTO 800
                                                                                                    820L=LEN(N#): IFL=1 b%=0:G0T0840
                                                                                                830b=="":FOR b%=2T0 L:b#=b#+MID#(N#,b%,
1):NEXT:b%=VAL(b#)
840M#=LEFT#(N#,1):M=ASCM#:IF M)ASC"Z"
 270PROCinput
280MDDE7
                                                                                               M=M EOR 32:M#=CHR4M
850IFM#="P" PROCplayback(b%,notes%):GO
 310DEFFROCinstructions
                                                                                                TD760
 320PROCtitle("MUSIC DATA CREATOR")
330VDU26,28,0,24,39,2
                                                                                                    //60
860IFM#="E" PROCedit(b%):60T0750
870IFM#="D" PROCelete(b%):60T0760
880IFM#="8" PROCsave:60T0760
 340FORA=2TO24
350VDU132,157,135:PRINT
                                                                                                    890IFM#="X" PROCsync:GOT0760
900IFM#="I" PROCinsert(b%):GOT0760
  360NEXT
 370VDU26,28,3,24,39,2
380PRINT' "Enter numbers as directed an
                                                                                                     910IFM#="R" PROCrepeat:GOTO760
                                                                                                     920IFM#="N" PROCnotes(0,24,39,6):GOTO7
 d the"
390PRINT"corresponding notes will
                                                                                                    9301FM#="H" PROChelp(0,24,39,6):60T076
       be played
 400PRINT
                                                                                                   940IFMF="C" PROCenv:PROChelp(0,24,39,6
 410PRINT CHR#129; "P(N)"; CHR#135;
                                                                                               ): GOTO760
420PRINT"= Playback from N"
430PRINT CHR#129; "E(N)"; CHR#135;
                                                                                                     950IF INSTR("0123456789PEDSXIRHNC", M#)
                                                                                               =0 PROCboob:BOT0760
960channe1=EVAL("&"+N#)
 440PRINT"= Edit note N"
450PRINT CHR*129; "I<N>"; CHR*135;
460PRINT"= Insert after N"
470PRINT CHR*129; "D<N>"; CHR*135;
                                                                                                 7501NPUTTAB(9,t%),enviVDU11
9801NPUTTAB(14,t%),note
9901NPUTTAB(14,t%),length:VDU11
1000N%(notes%,0)=channel:N%(notes%,1)=e
480PRINT"= Delete note Nº
490PRINT CHR#129; "Note: "; CHR#135;
500PRINT"N is optional"
                                                                                                 1010N% (notes%, 2) =note:N% (notes%, 3) =leng
510PRINT CHR#129; "<RETURN>"; CHR#135;
520PRINT"= Repeat the last note
530PRINT CHR$129; "R"; CHR$135;
                                                                                                 1020PRINTTAB(0, t%) SPC(29)
                                                                                                 1030PRINTTAB(0,t%);notes%
1040PRINTTAB(4,t%);"&";"N%(notes%,0);
540PRINT"= Repeat a section"
550PRINT CHR$129; "5"; CHR$135;
                                                                                                 1050PRINTHAB(15,t%); %% NX(notes%,1);
1050PRINTHAB(15,t%); NX(notes%,1);
1050PRINTHAB(15,t%); NX(notes%,2);
1070PRINTHAB(20,t%); NX(notes%,3);
1080PRINTHAB(23,t%); "OK ("";
1090SGUIND NX(notes%,0) MOD256,NX(notes%,0);
NX(notes%,0) NX(notes%,0) NX(notes%,0);
NX(notes%,0) NX(notes%,0) NX(notes%,0);
NX(notes%,0) NX(notes%,0);
NX(notes%,0) NX(notes%,0);

560PRINT"= Save the tune"
570PRINT CHR#129; "X"; CHR#135;
580PRINT"= Synchronise notes"
S90PRINT
600PRINT"The saved data will have the
                                                                                                 1),N%(notes%,2),N%(notes%,3)
1100PROCyesno
610PRINT"of notes (256 max) as the fir
                                                                                                 1110IF Y%=0 PROCboob: GOTO 770
                                                                                                  1120PRINTinotes%=notes%+1
620PRINT"byte and the rest will be gro
                                                                                                 113060T0760
1140ENDPROC
```

630PRINT"of eight bytes per note which

Arcade Avenue



Hall of Fame

fter the fun with Finders Keepers a few weeks ago (September 12), Gregg Shordoc of Bootle writes that he tried out a modified version of the message finder on some Amstrad programs. Needless to say we wouldn't be printing this if it hadn't worked. To see silly messages and playing hints enter this and play Amsoft's Scout steps out. When you've done Gregg would like an infinite cornflake (lives) poke.

5 mode 2 10 memory 18060 20 load "code!" 30 for f = 16344 to 17398 40 if peek(f) < 31 then 60 50 print chr\$(peek(f)); 60 next

Scout is a marvellous game. It has an extraordinary sense of humour that stops it becoming just another platform game, eg, the way the scout tries to climb the tents on screen one, the crunchy noises as he walks across sand – little touches that make the game special rather than jut the bare minimum necessary to get Amsoft to publish it.

Following on from that plug, Colin Bewes of Banstead says that since we publish people's best-buy games why don't I reveal my own particular 'hall of fame'. For a bit of fun I gave it a go to mark the recent passing of the first anniversary of the column.

The games industry has come a long way from its origins. All we had at first were conversions of Space Invaders, etc. It quickly became apparent that home games could not compete graphically with the arcades, but had tremendous scope for adding complexity and richness of plot.

With the exception of the work of a few companies such as Atarisoft and Superior writing for the BBC, and US

Gold's range, very few pay machine games are now being converted. Of those that have appeared I find it hard to pick favourites since, having wasted a fortune on them, I like any decent implementa-Cresta. tion. Moon Tankbusters, Defend or Die, video pool/snooker are all never far from my micros. I would include Summer and Winter Games and Melbourne's Fist here - from the letters I get Fist is everyone's current favourite.

Instead of conversions of course we now have megagames such as Knight Lore, JSW, Elite, etc. Of these there are actually very few that I ever bother to load up these days, despite the awe with which I first viewed them.

Perhaps it is the result of seeing so many games yet having little time to get very deeply into any one of them. Alternatively perhaps it's part of a general backlash against the increasing complexity.

Write in if you agree or disagree and we'll see what the world thinks.

Of the arcade adventures my favourites are a mixed bunch but in fact have much in common – Dun Darach! Marsport, Avalon! Dragontorc, Castle Quest, Staff|Entombed; etc, and the Wally series all have an addictive combination of arcade fun and adventure problem solving.

Objects appear in the right places, problems have (relatively) sensible solutions and there is a realistic flexibility about the things you can do. They are all steps towards the first computer generated interactive movie.

I will also call Halls of the Things an arcade adventure since I don't know where else to put it. It looks dated now but still conjures more suspense than any game, with the possible exception of the excellent Alien.

Return of the Things was disappointing. The monsters were made so vicious the only way to win was to go onto auto-fire, which you could do without running out of magic, and bisto! . . . the skill had gone.

Of strategy games I have already written about *Chaos* and of course you can never forget *Football Manager* or CRL's *Formula One* – exactly the same game idea as FM but with different trappings and jazzier graphics. I haven't seen Ariolasoft's Mail Order Monsters or Archon II yet, but they sound pretty good.

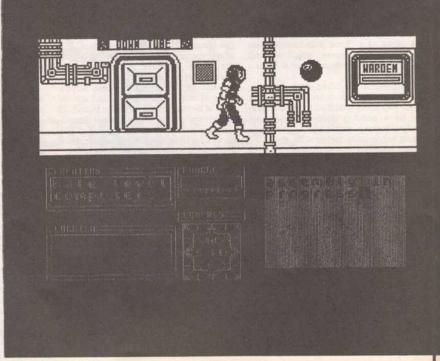
The final type are releases that are of high enough quality, addictiveness and simplicity to warrant conversion the other way – from the micro on to the big arcade machines. These include Stop the Express, most from Taskset, especially Pipeline II, and Pistop II, Impossible Mission, and Highway Encounter, the latest from Vortex. I've recently seen the Amstrad conversion of this and it is brilliant.

Like Knight Lore, the graphics leap out with crystal clarity in the higher res and look like they were designed with the CPC in mind. The game itself has an original and fascinating atmosphere, truly alien to look at and strikes a nice balance between being easy enough to be encouraging, yet enjoyable enough to keep you playing even if you've finished it once.

In fact I'm off to have another go now.

Tony Kendle

Marsport from Gargoyle Games



Tony Bridge's Adventure Corner



Pure puzzle

here is much variety in adventures nowadays, and we have a couple of examples this week that illustrate the two poles towards which most new text adventures seem to be

Sophisticated command input is the norm nowadays, but a verb/noun input is just as viable, albeit a little inflexible. Probably the most well-known writer to use this form, and he still uses it, is Scott Adams. As I said last week when talking about Sinclair's The Pawn, even when offered a complex sentence input I usually use the two-word form - I find it quicker and not so prone to typing errors, which are quick to correct anyway. I find myself wondering, of course, how much memory has been used up in coding the necessary responses, although it's true that Scott Adams and Adventure International seem to have used the extra memory available nowadays to create graphics rather than more complex scenarios.

Richard Sleep has written a new adventure for the C64 which he proudly describes as a 'Scott Adams-style text adventure with some graphics and sound'. It is on disc or tape, and there is a Vic-20 version too.

The program is called Animal Magic, and concerns your quest for the baby, which has been grabbed from the nursery by a passing golden eagle – an everyday story, you'll agree. Peter has aimed for 'quality rather than quantity', so has adopted the verb/noun form of input. There are some 40 locations and 64 objects.

The author has ensured that there is a problem to be solved in just about every

location, and objects to be found in every room, the uses for which must be puzzled out. This type of adventure is completely devoid of any distractions like character inter-reaction, or humorous remarks from the computer – Animal Magic is pure puzzle, and very enjoyable it is.

The adventure looks attractive, making much use of bit-mapped graphics and the odd bit of sound (the baby has a particularly life-like wail as it is carrried away). At many locations a well-drawn graphic pops up depicting a creature or object present at the location, and these provide not only a bit of colour but also a bit of atmosphere that is, frankly, missing from the rest of the game.

However, puzzle aventures such as this do not, really, need much atmosphere, as the puzzle is the thing.

Animal Magic is one of those wonderful games in which the player progresses steadily through the puzzles, finding an object and actions which will solve the problem in order to get on to the next one – and then, given the next problem, the player finds an object is needed that was discarded 20 locations ago . . . A very enjoyable and uncomplicated adventure, and great value at just £5.00 from Richard Sleep, 275 St Margaret's Road, Twickenham, Middx.

State of the art parser

Infocom Inc cannot be said to favour the two word, verb/noun imput - in fact, just the opposite, as their parser is just about state-of-the-art (though not as good as that in The Pawn). Although the player has to be more wary of typing errors and logical non sequiturs, nevertheless, complex sentences can certainly get round those awkward moments when you are trying something a little out of the ordinary that may not be covered by any easily-discovered combination of verb/noun. Infocom adventures of course have the added advantage of being exclusively disc based, so that memory constraints are not a problem; you want another page full of description? Then just fire up the disc drive and load in a few hundred bytes of text.

Infocom has called its new adventure, Wishbringer, an Introductory Level program. This may mean beginner to most people, but Infocom are certainly not

going to let you get away as easily as that! The usual Infocom packaging (25-page instruction manual, playing map, letter – not to be opened until instructed – and the Wishbringer stone, which glows in the dark) accompanies an adventure which, like Animal Magic, will certainly be enjoyed by the novice, but which will also give joy to the more experienced.

In Wishbringer, you're a postal clerk in a small seaside village called Festeron. You deliver a strange envelope to a magic shop (you are given a certain amount of time for this), and discover that an old woman's black cat has been kidnapped by the 'Evil One'. The old woman asks for your help, and when you leave the magic shop, you find yourself trapped in a nightmare world. Your once-quiet town is now full of nasty trolls, vultures, fortress-like towers and assorted wickedness. You become entangled in the struggle between Good and Evil; extraordinary help is found only in unusual places.

Spell casting

The map supplied is comprehensive and helpful in the first stages, but can be cold comfort - there are more things to be done in the first stage than would be apparent at first. In fact, the magic shop is a watershed. It is easily found, but once visited, there is no way back, the player has to go forward to the second stage, and some objects from the first stage are necessary in the second. These objects are mostly to do with spell casting, which forms a large part of Wishbringer and which become essential. For example, soon after leaving the magic shop, you maybe thrown into jail as far as I could see, there is no way out short of casting the freedom spell. However, to cast this spell, you must be in possession of the candy.

So, a lot of thought is required, and much use of the Save facility. But the problems are logical and not too hard to overcome with a bit of thought - and the storvline, as usual with Infocom, is wonderful. Written by Brian Moriarty, it is the usual mix of exquisite prose and infuriating (though not impossible in this case!) problems. The usual Infocom humour is in full swing top - at some point you will meet a troll, and the program goes on to say: "A less original story would probably refer to an ugly, gnomelike creature as a troll" - you'll come across this troll asking for a toll at a bridge, and the program is just dying to say: 'ask not for whom the troll tolls'. The author seems to be able to anticipate your every command, as I have found with all Infocom adventures.

Wishbringer is a world away from Animal Magic – the packaging is superb and the adventure itself is much more sophisticated.

Adventure Helpline

Going bananas? If you are stuck in an Adventure with nowhere to turn do not despair - help is at hand.

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lem, send it to us, and a fellow adventurer may be able to help.

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Top Twenty

1	(1)	Way of the Exploding Fist (Spectrum C64 Amstrad) Melbourne Ho Frank Bruno's Boxing (Spectrum C64 Amstrad)	use
3	(2)	Fairlight (Spectrum) The E	
	(4)		ean
5	(7)	Date Intellipsent a superiost (speed and)	rgin
6	(5)	Fighting Warrior (Spectrum) Melbourne Ho	
7	(8)	1.9	ond
8	(-)	Terrormolinos (Spectrum C64 BBC) Melbourne Ho	
9	(-)	Shadow of the Unicorn (Spectrum) Mikro-	Gen
10	(6)	Hacker (Spectrum C64 Atari) Activi	sion
11	(-)	Bored of the Rings (Spectrum BBC) Silver	rsoft
12	(18)	Finders Keepers (Spectrum C64 Amstrad MSX) Mastertre	
13	(14)		Gold
14	(9)	Graham Gooch's Test Cricket (Spectrum C64) Audiog	enic
15	(11)	Action Biker (Spectrum C64) Mastertr	onic
16	(17)	Hypersports (Spectrum C64 Amstrad) Ima	gine
17	(-)		
18	(-)	Karateka (C64) Broderbund/Ariola	soft
19	(-)	Formula 1 Simulator (Spectrum C64 C16) Mastertr	onic
20	(20)	Sky Fox (C64) Electronic Arts/Ariola	soft
Fig	ures c	compiled by Gallup/Leisurescope	

Readers' Chart No 47

1	(1)	Way of the Exploding Fist (Spectrum/C64/Amstrad)Me	elbourne House
2	(3)	Daley Thompson's Supertest (Spectrum)	Ocean
3	(8)	Hypersports (Spectrum/C64)	Imagine
4	(-)	Now Games (Spectrum/C64)	Virgin
5	(2)	Fairlight (Spectrum)	The Edge
6	(5)	Summer Games II (C64)	Epyx/US Gold
7	(4)	Frank Bruno's Boxing (Spectrum/C64/Amstrad)	Elite
8	(-)	Soft Aid (Spectrum/C64)	Various Artists
9	(6)	Spy vs Spy (Spectrum/C64)	Beyond
10	(7)	Barry McGuigan's World Championship Boxing (C64)	Activision
=	(-)	Bored of the Rings (Spectrum/BBC)	Silversoft

Winning phrase No 47: "Wogan goes AWOL, riots reported" from Darren Gregory of Blackpool, who receives £25. Runners up: "The Iron Lady spoke of lower taxes – flying pigs spotted!" from Ian Rockett of Leeds and "Daley has worn the keys down to the floor" from Philip Bastable of

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You can still vote in the chart without making up a slogan - but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 49 closes at 2pm on Wednesday October 30 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name	My top 3: Voting Week 49
Address	1
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My phrase is:	

24-30 OCTOBER 1985

CURIOUS

The Secret Diary of Adrian Mole is a curious affair. The book/radio program/television program featured gentle, reflective humour and accurate observation of the quirks of parents and children. Not the sort of stuff you expect to see translated into a computer program.

Hard to describe exactly what this program is, for an adventure game it lacks complex puzzles and text input. for the sake of simplicity the vague term interactive fiction will have to do.

The screen looks like an graphics adventure - a series of simple graphics at the top of the screen illustrate the current situation, eg, when Adrian is wondering about paint you get a paint pot at the top of the screen. However, whilst a great wadge of text scrolls past in the bottom two thirds of the screen, your interaction is limited to choosing between three options. Options are selected simply by pressing a number key.



And so it goes really; lots of moderately wacky text based around the books which occasionally stops to ask you between three options for what happens next, the end objective being to become a model schoolboy liked everyone.

I must admit I found the whole thing rather pointless. Restricting course of action so much may mean more room for text but it greatly reduces any real sense of involvement or challenge. Perhaps this is the view of someone expecting an adventure, but I find it hard to imagine that anyone could find the program involving. Perhaps the format would make it suitable for very young children but then I'm not sure they would appreciate the subtleties of the text. A curious release.

Program Secret Diary of Adrian Mole £9.95 Price Micro Various Supplier Mosaic Publishing 187 Upper Street Islington London

SYMBOLIC

NI IRQ

The Commodore 64 can now run Prologue (or rather Micro Prologue), a computer language for which much is claimed. It has been chosen by the Japanese as the basis of the Japanese Fifth Generation computer project.

This Commodore implementation of Micro Prologue comes on disc with a spiral bound manual which concerns itself with the basic commands available to Proloque and their use in simple the week

MERGED PICTURES

Incentive Software will shortly release a complete graphic adventure authoring system for the Amstrad. With the Quill rock-like in its pre-eminant position it's a brave step to make.

The Graphic Adventure Creator costs £22.95 - not cheap but if you compare that to Quill plus Illustrator it is actually less. But are the two systems comparable?

In the end I think the Graphic Adventure Creator is the better program. It combines greater power with much greater ease of use. Both graphics designer and text organiser are in memory at the same time and the logic is much easier to master.

The text element works in similar way to Quill, Rooms are numbered, described, exits arranged and have pictures assigned to them. Similarly objects are numbered and placed. Synonyms are catered for merely by assigning them all with the same number. eg, Take, Get, Grasp, and Hold could all be numbered five and any one would be equally acceptable to the computer.

The computer can be made to understand multistatement instructions divided by commas, dots, and or anything you wish and because the words are held in Micro full you are not restricted at Supplier Incentive all - even words like River and Rivet with the same four letters will be distinguished.

The graphics element is



similarly easy to use. You get the usual cursor which may be moved in large or small steps. In-built facilities include squares, rectangles and arcs, all of which work on a rubber banding basis, and so are easily varied in

Colours may be mixed together and used to fill any enclosed shape, etc. etc. You may also merge one picture with another and then subtly alter it.

It's a beautifully designed package and does take the Quill a good few stages on; if you have an Amstrad you're lucky - force someone to buy it for you for Christmas.

Program The Graphic Adventure Creator \$22.95

Amstrad Software

54 London Street Reading RG1 4SO

This Week

Program Dynamite Dan Soul of a Robot Hercule Satellite Warrior Spittire 40 Graphic Adv Creator Small Traders Pack Dynamite Dan Mediator Lucifer's Realm	Type Arc Arc Ed S S Ut Ut Arc Arc Adv	Micro Amstrad (disc) Amstrad Atari (disc)	Price £8.95 £1.99 £8.95 £8.95 £9.95 £22.95 £22.95 £8.95 £8.95 £14.95	Supplier Mirrorsoft Mastertronic Kuma Amsoft Mirrorsoft Incentive S D Micro-Systems Mirrorsoft English Software All American Adventures	Harvey Smith Showjumping Journey Who Dares Wins II Winnie the Pooh Electrosound 64 Soft Screen Hit and Miss Hit and Miss Lucifer's Realm	Arc Arc Arc Ed Ut Ut S S Adv	Commodore 64 Commodore 64 Commodore 64 Commodore 64 Commodore 64 Commodore 70 Commodore 10 Commodore 16 Commodore 64	£7.95 £7.95 £7.95 £9.95 £14.95 £10.95 £7.99 £7.99 £14.95	Software Projects CRL Alligata US Gold Orpheus Dynamic Software Venturegate Venturegate All American Adventures
K-Seka Assembler Arcade Hall of Fame Codename Mat II Crazy Comets Dynamite Dan	Arc Arc Arc Arc	Atari 520ST Commodore 64 Commodore 64 Commodore 64 Commodore 64	£49.95 £9.95 £8.95 £7.95 £8.95	Kuma US Gold Domark Martech Mirrorsoft	Showjumping QL Super Arcadia Super Backgammon Super Astrologer Super Monitor/Diss	Arc Arc S Ut Ut	MSX QL QL QL QL QL	£7.95 £15.95 £15.95 £24.95 £24.95	Software Projects Digital Precision Digital Precision Digital Precision Digital Precision

New Releases

programs. You are also supplied with a book, Start Problem Solving with Prologue, which shows in greater detail how flexible the language can be.

What Prologue reminds me of, more than anything else, is symbolic logic. Symbolic logic is the formal way of expressing all those mad sentences like: all fish swim, Socrates can swim (and do so many other things) therefore Socrates is a fish.

Micro Prologue is a computer language that similarly allows you to express things about the world in a series of statements linked by If then, If then not, type structures. This implementation of the language is impressive and even at a massive £79.93 for the package is of great interest to those interested in programming and the business of making computer 'thought' processes more like human ones.

Program Micro Prologue
Price £79.93
Micro Commodore 64
Supplier Logic
Programming
Associates
The Royal Victoria
Patriotic Building
Trinity Road

SERIOUS USE

London SW18 3SX

Intersheet forms part of a suite of programs for the BBC planned by Computer Concepts over the next few months. All are serious business utilities which link together sharing and freely transferring data.

Intersheet is a spreadsheet of Rom and on paper at least it

beats rivals like View sheet and Ultra Calc 2 hands down. The biggest single advantage is that you get 8400 bytes free for data storage; it also costs £56.35, which makes it a few quid cheaper as well.

The packaging and presentation is excellent – a concise manual, a Wordstar style reference card of commands, a short booklet explaining the point and use of spreadsheets and a card to lay over the top of your computer indicating function key use. Oh, and a couple of leaflets on fitting the Rom into your BBC.

It looks very good indeed but I won't pretend to give it the intensive review it deserves here. With compatible graph drawing program Inter Chart (£36.80) already available and the promise of a database and 80 column word processor next year, it looks like a very useful package.



Program Intersheet
Price \$56.35
Micro BBC
Supplier Computer
Concepts
Gaddesden Place
Hemel Hempstead
Herts HP2 5EX

ADVANTAGES

Head Alignment programs have been coming thick and fast recently; too many to review really.

Robcom get a mention here, though, because it has produced a single tape which will work on almost any micro (except, it seems, the Commodore 64).

Actually it isn't a program at all, you don't actually need your computer to hand. The Robcom tape has been designed to simply produce a pitch that varies according to the tape alignment – the higher the better.

The package includes alignment tape, head cleaner and small screwdriver and has two main virtues over the other packages intended to do the same job. First it's cheap, £4.95, and secondly if you have more than one computer you don't need to use two separate packages. Very useful.

Program Head Alignment

Kit
Price £4.95
Micro various
Supplier Robcom

36 Market Place Falloden Way London NW11 6JP

BIZARRE IDEAS

With a name like Grumpy Gumphrey Supersleuth it doesn't take much to realise that Gremlin Graphics' latest game is not exactly po-faced and doom-laden.

Actually it reminds me, more than anything else, of the Wally games from Mikro-Gen, which is not to say it doesn't have many positive features of its own. In fact it's very inventive.

The idea is that you are a store detective mole and over the course of your day in the store a number of different tasks must be accomplished.

These range from taking Sir his tea to shooting a team of ducks that have invaded the ground floor - this, when you come to think of it, is fairly bizarre.

To kill the ducks you need the gun which is in the manager's office, but whenever you enter it he kicks you out. Each task therefore consists of a number of subobjectives.

Graphically it has exactly the same strengths and failings as the Wally games nice big colourful graphics, slightly ropey animation and a complete disregard to attribute problems (in practice they didn't bother me all that much, however).

It is a very ingenious game indeed, and the humour comes easily from the genuine lunacy of some of the ideas rather than a heavy handed self-conscious attempt to be wacky.

The cry of "Hey man, ducks on the shop ground floor", which opens the game, ought to become a cult catchphrase soon.

Program Grumpy

Price

Gumphrey Supersleuth £7.95

Micro Spectrum Supplier Gremlin Graphics

Alpha House 10 Carver Street Sheffield S Yorks S1 4FS

This Week

£24.95 Digital Precision Super Sprite Gen LI OL QL 259.95 Digital Precision Supercharge Ut LIt €29.95 Digital Precision OL One Man and his Droid Mastertronic Spectrum £1.99 World Series Basketball Arc Spectrum 67.95 Imagine Spitfire 40 Spectrum 29.95 Mirrorsoft Halley's Comet Ut Spectrum €6.95 Eclipse

Spectrum

Personal Bank Account

Key: Ad – adventure

Arc – arcade

Sound Boost

S - strategy-simulation Ut - Utility

Ut

Ed-education

Saga Systems

29.95

A & JS, 92 Marshfield Way, Fairfield Park, Bath BA1 6HO. All American Adventures, Unit 10, The Parkway Ind Est, Heneage Street, Birmingham B7 4LY, 021 359 3020. Alligata, 1 Orange Street, Sheffield S1 4DW, 0742 755796. Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex, 0277 230222. CRL, CRL House, 9 Kings Yard, Carpenter's Road, London E15 2HD, 01-533 2918. Digital Precision, 91 Manor Rd, Higham Hill, London E17 5RV, 01-572 5493. Domark, 204 Worple Road, London SW20 8PN, 01-947 5624. Dynamic Software, 32 Ludford Park, Ballinteer, Dublin 16, Ireland. Eclipse, 79 Ardrossen Gardens, Worcester Park, Surrey KT4 7AX, 01-330 3116. English Software, 1 North Parade, Parsonage Gardens, Manchester M60 1BX, 061 835 1358. Imagine, Imagine Software, 6 Central Street, Manchester, M2 5NS. Incentive, 54 London Street, Reading RG1 4SQ, 0734 591678. Kuma, Kuma Computers, 12 Horseshoe Park, Pangbourne RG8 7JW, 07357 4335. Martech, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE, 0323 768456. Mastertronic, Park Lorne, 111 Park Road, London NW8 7JL, 01-402 3316. Mirrorsoft, Mirror Group, Holborn Circus, London ECIP 1DQ, 01-335 0246. Orpheus, The Smithy, Unit 1, Church Farm, Hatley St George, Nr Sandy, Berks, S D Micro-Systems, PO Box 24, Hitchin, Herts SG4 0AE, Saga Systems, 2 Eve Road, Woking, Surrey GU21 4JT, 04862 22977. Software Projects, Bearbrand Complex, Alferton Road, Woolton, Liverpool L25 7SF, 051 428 3393. US Gold, Unit 10, The Parkway Ind Centre, Heneage Street, Briminjaham B7 4LV, 021 359 3020. Venturegate Ltd, 17 Harold Road, Leeds, LS6 1PR, 0532 568252.



Standard bearers

here is an old joke that the Isle of Man government has decided to change over to driving on the right hand side of the road. This brings them into line with the majority of EEC members. The government researched the Swedish change-over from left-to right-hand drive which happened on the stroke of midnight. This they feel was too much of a shock to the system. So they decided to change over gradually, starting with bicycles and cars and swapping the lorries and buses over later.

The tale demonstrates quite vividly the importance of standards.

Standards are no less important in the microcomputer industry than in any other. It's just that their importance is often underestimated and misunderstood.

The Apple II was designed in 1977, yet is still one of the world's best selling computer. It was the first true personal computers and thus became a standard. As such it attracted vast numbers of software packages covering a diversity of applications. The people needing these applications are therefore locked into Apple II hardware.

The IBM PC was the first business computer acceptable to the business community, if for all the wrong reasons. As such it also became a standard.

The Sinclair Spectrum was the first full specification home computer. Full specification means colour, sound, ample memory and decent Basic. Home computer means affordable within the average credit card limit. The Spectrum be-

came a standard, there is more software for it than any other home computer and the standard will go on for ever.

Apple, uniquely has two standards. In addition to the Apple II it has the Macintosh, the world's first user-friendly personal computer. It is a testament to the sheer intellect of Steve Jobs that Apple have achieved this amazing double.

These are the established standards. Yet some standards are still waiting to be established. The two most obvious being the lap-held and the second generation (as a mass consumer durable) home computer. Lap-helds are waiting for technology in displays and magnetic media. It is just that no-one yet has put all the bits together at the right price.

Second generation home computing needs windows, icons, mice, pull down menus – obviously. The QL doesn't qualify here yet. The price needs to be within credit card spend, which rules out the \$20ST and the Amiga. State of the art processing power is essential. A 68000, 16032 or 80286 at least which removes Amstrad from the equation for now.

If the Amiga and the ST are instead aimed at the Mac, the existing standard, then they will fail no matter what the specification. It is only by identifying a different niche and then marketing into it that they will succeed.

The prime egg-on-face division at the moment is those self-styled experts who say that Mac software will be ported over to the Amiga and the ST. They reason that all three use the same 68000 processor.

What they aren't allowing for is the unique architecture of the Mac. The design is such that the Rom effectively runs at twice the speed of the Ram. The Rom also contains most things a programmer will ever need. It is not surprising, therefore, that all the best Mac software has to be largely a succession of Rom calls. Try porting that over.

The Spectrum, C64, Apple II, IBM and Macintosh will continue on regardless, because of their software bases and where do the Enterprises, STs, QLs and Amigas fit in? Nowhere.

Bruce Everiss

High temperature

Puzzle No 180

In the diagram of the thermometer below, we have marked in the value of minus 40 degrees which is the only value which is the same on both the Fahrenheit and Centigrade scales.



However, the other four graduations are for pairs of values which, although not the same in both of the scales, consist of the same digits differently arranged. They are for the next four smallest values, although it should be stated that such values would not necessarily be found on a thermometer. In each case the temperatures are whole numbers.

Solution to Puzzle No 175

A starting value of 7406 will, if the given instructions are carried out, result in a final value of 66666.

18 FDR N=1000 TD 9999
20 X=N
30 X=M83|X=X+2
40 X=X83|X=X+5
50 X=0TR0(X)|X0=MIDS(X0,2)
60 FDR N=2 TO LEN(X0)
20 XEXTER (X) X = MIDS(X0,2)
20 XEXTER (X) X = MIDS(X0,2)
20 XEXTER (X) X = MIDS(X0,2)
20 YEXTER (X) Y = MIDS(X

The program uses the For/Next loop (X) to test all integers from one thousand to ten thousand. The resulting number is then converted to a string variable and is checked to determine if it consists of the same digit repeated (by comparing the first character with the second, third, and so on).

From this only one number, 7406 will result in such a sum.

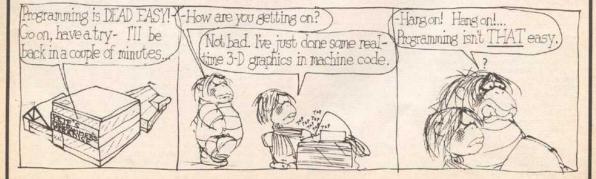
Winner of Puzzle 175

The winner is Steve Williamson of Dronfield, Derbyshire, who receives £10.

Rules

The closing date for Puzzle No 180 is November 20.

The Hackers





DATA STORAGE

SOUND AND MUSIC

MONITOR

SOFTWARE

APPLE APRICOT ATARI

PEATURES OF BASIC STRIEM	MACHITORN	Pia	82987
Price Includes B/W Monitor	YES	NO - extra 6200	YES
Reyboard size mm (LxDxH)	330×147×50	450 x 167 x 28	470×240×60
Keyboard sign ins (LxDxH)	12×5%×2	1739265043	181/281/221
3'/o" D/Drive (Unformatted)	500K	560K	586K
D'D' D'Drive (Formatted)	2000	315K	345K
WIMP (Window, lear, Minute)	Apple	ACT - Activity	GEM
Real-time Clock	YES	YES	YES
Polyphonic Sound Generator	YES	NO.	VES
RS232 Seriai Port	YES	YES	VES
Centronics Parallel Printer Fort	NO.	YES	YES
Dedicated Floppy Disk Controller	NO	YES	YER
Hard Drak DMA Interface	NO	YES	YES
Full stroke keytroard	YES	YES	YES
Number of keys on keyboord	59	92	95
Numeric Keypad	NO	YES (10 Keys)	
Cursor Control Keypad	NO.	YES	YES
Function keys	NO	10	10
16-bit processor	88008	inher 8086	68000
Processor running speed	SMHZ	4.77MHz	SMHz
FIAM size	512K	256K	512K
Number of graphics modes	1	4	3
Number of colours	Monochromw	16	512
Max Screen Resolution (pixels)	512 x 342	640 x 256	640 x 400
Mouse included	Single Button	NO - tatin 595	Two Button
Replaceable External Power Plok	NO	NO:	YES
Cartridge Socket	NO	NO:	YES
Joyston Forts	NO	NO.	YES (two)
MIDI Synthesiser Inderface	- 200	NO NO	YES
Monttor Size	9	9" - extra (200	121
RGB Video Cutput	NO.	YES	YES

System Cost with: Mouse - Monochrome Monitor - \$12K RAM - \$00K Disk Drive					
Price of basic system like VAT)	AUSSIS-VAT	£395-VAT.	E652-VAT		
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- Expansion to 512K RAM	Included	E295-VAT	Included		
Price of complete system rave VAT	EBSBS-VAT	E11854VAT	C652-VAT		

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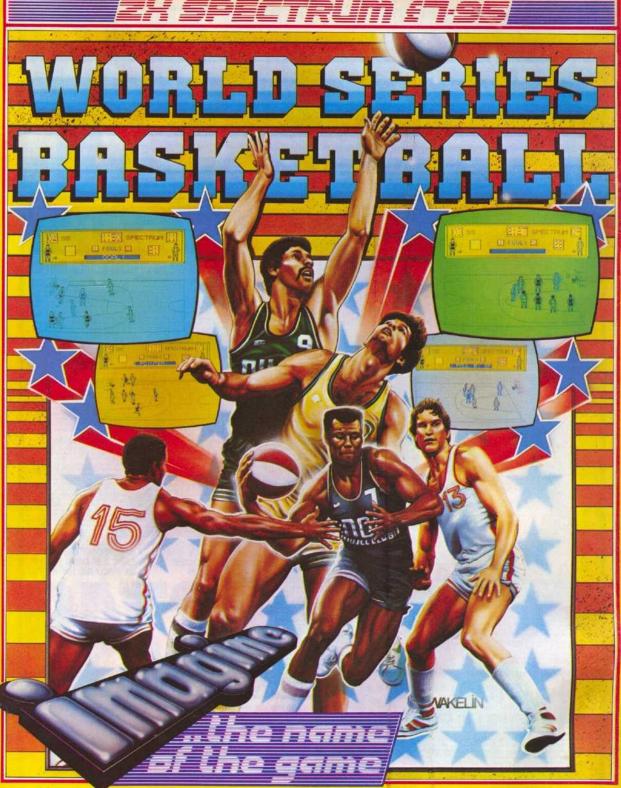
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