

SPECIRUMSMASHES-WINIIR SPORIS/SABOIEUR/TOMAHAWK/TAU-C FII FARMCHT-THFCASTLEMAP/DROIDWARS-KILERLSTING GAMESREVIEWSOPROGRAMMINGOCHARTSOQLSOFTWARE GUIDE



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Find out how you can improve your ZX life!
TA1KK
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EDITOR Kevin Cox
PUBLISHER Stephen England SUBSCRIPTION Suzie Matthews O1-580 0504/631 1433
ADVERTISEMENT ENQUIRIES
David Baskerville/Neil Dyson Your Sinclair, Sportscene Specialist Press, 14 Rathbone Place, London W1P 1DE

## TAPE TROUBLES?

If your copy of Rasputin fails to load, here's what you do: Send the tape in a strong envelope to Rasputin Returns Dept, PO Box 320, London N21 2NB and make sure you enclose a similar self addressed envelope with at least 18p worth of stamps on it. And please don't phone the office as we can't deal with the problem here. The free copy of Rasputin is only available on copies of $Y S$ sold in the UK.

# THIBRR ONIT HOPR WA S YOUR PROMISE TO BRING THEM BACK ALIVE 

# BAACH-IIMAD II 



# BONYOUCAY ExDEII Specrivn ciaplics TOTL: URIMIIL. Withthe Graphics Suite from Print'n' Plotter. 

If you're interested in producing great graphics with your Spectrum, then these programs are designed with you in mind.

And you don't have to be an expert. Even with no programming knowledge the programs will enable you to produce fantastic graphics to use in every piece of software you write.

Or you can use them just for the fun of producing computer art.
Each of the programs are inter-active and together they form the most accomplished graphics toolkit you will find on the market today. But you can also use each of them separately, as cach are selfcontained and cover a specific area of graphics programming.

With Print 'n' Plotter's GRAPHICS SUITE', everything is made so simple you won't believe it.

## Justafew of the things you cando...

## PAINTPLUS (GRAPHICS SUITE 1)

If you want to produce fantastic screen graphics or UDG's on your Spectrum, then you will find PAINTPLUS not only a complete graphics toolkit .. . but also the simplest to use at every level.

Facilities include: DRAW, PLOT, ARC, CIRCLE, FILL IN SOLID OR PATTERNS, FILL IN OVER MODE, DRAW RADIALIY, ARC RADIALLY, ENLARGE TO EDIT, PAPER WASH, BOX DRAW and so on

As well as drawing, PAINTPLUS has a tremendous UDG section. It also has UDG "grabbing" from screen as well as full facilities for defining, saving and loading UDG sets.
The Organiser section of the program enables you to automatically store multiple screen graphics or multiple UDG banks.

PAINTPLUS comes with a demo of screens, animation and alternative character sets, plus a copy of Print ' $n$ ' Plotter PICTURE BOOK 100 pages of instructions, hints, tips, listings and related graphics information.

## SCREEN MACHINE (GRAPHICS SUITE 2)

SCREEN MACHINE is the graphics manipulator.

Use it when you want to take your graphics and turn them into professional machine coded data for use in BASIC or M/Code programs. For instance:
SCREEN MACHINE will compress the memory consumption of your graphics to cram even more into the computer's memory
As well as memory compression, SCREEN MACHINE allows you to put your graphics through a series of highly-sophisticated graphics manipulations.
These include ENLARGE, REDUCE,
RELOCATE TO OTHER PARTS OF THE SCREEN, STEP AND REPEAT, BLEND SCREENS TOGETHER, RECOLOUR SELECTIVELY OR GLOBALLY, FLIP SCREEN, etc.
And SCREEN MACHINE also has a dedicated Text Compiler - ideal for anyone who uses lots of text for instructions or menus on screen.

SCREEN MACHINE also comes with a copy of PICTURE BOOK and a demo that's so good you can't believe it.

ART-O-MATIC (GRAPHICS SUITE 3)
Ever wanted to produce screen graphics for Adventure Games, Educational, Training, or Scientific programs and run out of memory because the graphics handling consumed too much memory?
If so, you need ART-O-MATIC, Print'n'Plotter's great new graphics compiler.
With ART-O-MATIC you can draw, define and store an incredible number of screens or parts of screen in your programs as compiled instant machine code which is usable from BASIC or M/C
The exact amount of compression possible depends on your graphics, but up to $99 \%$ is possible and an average of $85 \%-90 \%$ is usual.

ART-O-MATIC is a complete graphics drawing program, so you can produce your works of art and compile at the same time.
The instruction book and demo that comes with the program show you everything you need to know about cramming great graphics into your Spectrum.

## SPRITE MACHINE (GRAPHICS SUITE 4)

There have been a number of programs called Sprite Generators. Most of these are selfcontained and not a great deal of use to people who want to use Sprites in their own programs.

SPRITE MACHINE is different. This program was written with you in mind - whether you are a professional, amateur or beginner

There's never been a simpler Sprite program to use. All you have to do is draw your Sprite and then choose from a fantastic range of options to get it doing what you want.

You can: animate your Sprites, choose any direction and starting position, adjust speed, adjust height, choose running time, decide on edge actions such as bounce, wraparound, reflect or stop, make intelligent decisions like strike and collision actions, colour your Sprites or take colour from the screen, trace or nontrace, etc.

The program comes complete with a cursoroperated Sprite drawing board and catalogue/ store function.
Instruction booklet and demo are included with the program.
Now you can have professional Sprites in every program you write.


- No, it's not just a careless whisper! Melbourne House has released Wham! The Music Box. It's a two-channel synth that needs no hardware - impressive, huh? Rather less than impressive are the five example tunes on the tape by none other than the pretty popsters themselves. Load 'em up before you go-go - and listen to Club Tropicana, Young Guns, Careless Whisper, Bad Boys and Freedom.
The Music Box has been used to develop commercial tunes - Fairlight frinstance. Give that a quick listen and you'll hear what The Box of tricks has on'offer - without having to suffer the desperate duo's warblings.

- Meet Sid. He's the guy who's starring in Alphabatim's new game Robot Messiah. And the company's so proud of Sid that it's given Frontlines two hundred signed Robot Messiah posters. Signed by who? We hear you cry. By authors Christian Urquart and Mike Smith, of course, - the ones with the worndown fingers.

And we're gonna dole out all those love-ely colourful piccies to you. All you've gotta do is solve the riddle below. We've even included a few clues for the hard-of-thinking brigade.
My first is my fourth, and also my last.
My second is in bang but not in blast.
My third and my fitth initial VAL/LEN.
My sixth and my seventh follow an ' $N$ :
My last is in true and also in love.
My whole can be found in the screen shot above.
Right, we're looking for an eight letter word and your best bet is to start at the bottom and work up. Simply fill in the answer with your name and address on a postcard and sent it to Mensa, sorry, Robot Messiah Compo, Your Sinclair, 14 Rathbone Place, London W1P 1DE. Get those entries in by 31st January or you won't stand a chance.



System 3 has ten freebie copies of its latest rave International Karate to give away. But if you want one you'll have to be quick! The buck doesn't stop there, though. System 3 is also offering a $£ 1.50$ discount on the game exclusively to $Y S$ readers.

How does it all work? Send off your five gold coins (Postal Order or cheque) to System 3 and if you're in the first ten orders your money'll be refunded and you'll get a copy of the game. Pretty mega eh?

For all those doubting Thomas's, Fred's, Dave's... there's no catch. All you've got to do for a discount is snip out this piece of prose and send it off with your readies to prove you're a dedicated YS reader. Post it to 'I'm a dedicated Your Sinclair reader' Dept, System 3 Software, Southbank House, Black Prince Road, London SE1 7JS. Now you too can travel the world kicking the living daylights out of anything that moves...

says zaa-nee programmer Stephen Cargill who's just written Fighting Warrior. The camel just came for the ride.

If you're the sort of person who quivers with fear, cowers behind the sofa and covers their face with their hands whenever there's a late night horror on the box then Domark's new game just ain't for you.

That little shop of horrors, Domark, has turned the gruesome film Friday The 13th into an arcade extravaganza that promises to be full of surprises. It's a shame that as you only get to play the good guy - boring! On the other hand, Jason, the resident psycho has all the fun tearing around a holiday camp brandishing a knife that's permanently attached to his arm. That arm starred in the film considerably more than the rest of his body. Sounds absolutely yummy!


It's a Christmas cracker from Virgin - Santa claws his way into the software charts with the first re-usable computerised Chrissie card. Perfect for those doddery dears who persist in sending you the same pair of socks year after year. Just load it in to see Santa delivering the pressies and supping his sherry. It even plays a merry Yuletide jingle bang goes those Silent Nights, eh?

Buy a Nightingale modem between now and February 1st and you could win an amazing return trip to the Big Apple. You'll get six nights of terror in a New York Hotel plus $£ 400$ to bribe the doorman to let you out. Wackee!

## EVERYONE'S A WALLIS

- Reduce speed and altitude... We're going in for the winners of our Dambusters compo of Your Spectrum issue 18! David Gilchrist, Basingstoke; C Hankins, Gwent: A Chambers, Preston: J Lowe, Blackpool: G S Tattersall, Cheadle: M Abid All Tattersail, Cheadie; $M$ Abid Khan, Sunderland; J Davies,
Chesterlield; Shyam Vyas, London Chesterlield; Shyam Vyas, Lond
NW2; Michael Monah, London NW2; Michael Monah, London
SE11; A Cooke, Cheselbourne; Mrs C Welsh, Glasgow; N J Sutton, Oxford; Andrew Geddes, Buckie; Mr L. Honeyman, Glasgow; L Braybrook, London E15; Jason Kiner, Camberley; David Noone, Warrington; Ian Munslow, Buxton; J Walsh, St Annes On Sea; Alexander Stivaros, East Didsbury; Sean McKenzie, Mid Glamorgan; June Wilson, Birkenhead: Neil McDonald, Aberdeen; M. O Sullivan, London Aberd
Right, de-briefing over. Back to normal duties...

- It seems Cheetah really is changing its spots 'cos it's slashing the price of its joystick interface to an amazing £9.95. Can you really miss such a bargain? No? Call 'em on 01-833 4909.

Fork out $£ 9.95$ on a copy of Level 9's new game Worm In Paradise and you'll get a poster free. You won't even have to worm it out of 'em! A-maze-ing!


##  <br> "Can you ..." Okay, l'll be with you in

 two ticks. "Pete, will you . . ." Look, I've got to write the column. "Over here, Pete . . ." Oh no, unless I get a moment to myself I'm not going to get the chance to write to you, tet alone have my afternoon doze.Phew, that's better - peace and quiet at last. No-one's going to think of looking for me here and it's another first for YS. Well, how many other columns have been written in the loo?

Things have been pretty hectic of late. I dunno whose idea it was to increase the size of the mag. All I know is that my comfy chair quotient has plummeted for the month - you could say the bottom's dropped out of that market.

But enough of the chatter. Let's look back to issue 20 of Your Spectrum where Tony 'Slim' Samuels' Samsynth program had some of you more than a little foxed - sort of Sam Foxed, eh? Okay, please yourselves. Not only did we hide the start address somewhere that you'd never ever think of looking for it but we also left the checksum
off altogether. Bit of a jolly wheeze, what? No! Well, the start address is 64750 and the checksum is 37771. Sorry 'bout that!

More aggro from Jill Hunney from Watford over lan Ravenscroft's POKEs for JSWil that appeared in Your Spectrum 20. She reckoned that they didn't work. Well, err, actually Jill, they do work. They're supposed to reset your Spectrum (Haw, haw!). Okay, it's not that funny but it's still the best thing we could think of doing to JSWII!

Sshhh! I hear footsteps outside. Time for a bit of quiet typing .

Off now to sunnier climes - if only! Israeli reader, Ram Dagan writes in to point out a problem with the Edit Key program published way back in the July ish. In line 10 you have to substitute 65133 with 65142 and in line 40, 11802 should be replaced by 12697. Without these changes, it seems that the last routine will crash the Speccy. Hmmm, back to the manuallads!
Oh no, I think I've been rumbled! "Peter, are you in there?" Right, out the window . . . stuck . . Oh Gawd
"C'mon out we've got you surrounded." Just time to tell you . . . bout what's happening to the column. Unfortunately, l'm just not going to have time to carry on with the phone-in helpline as I can't guarantee being in the office all the time - I might just be in the loo! So, if you have any programming problems or you've spotted BANG BANG something odd about a program in the mag, write to me at From The Hip, YS, 14 Rathbone Place, London W1P 1DE and I'll sort you out in the column - if you see what I mean. "Right, we're coming in." Top of the world, ma!
TROUBLESHOOTIN' PIERRE.


Eric is what we in the trade would call an anorak. Why? 'Cos he managed to swipe the skool rekords in Microsphere's Skool Daze and the dum dum is now after putting them back in the sekwel Back To Skool. And he's got to pit his wits against girls! Grooo! S'pose we'd better pool our poket money and kome up with the $£ 6.95$ to buy it.


- A quick shufti at Dean Electronics' new Super Champ joystick may give you the idea that the lead's not long enough to clear the user port. Not so. It's got one of the longest leads ever. Ten feet carefully wrapped up the joystick's own insides. But the biggest surprise about this new aide-de-high-score is the price - £6.95. More gen on (0344) 885661.

Fontivilic
Here's lan 'fame doesn't affect me, even though I'm about to be interviewed on the radio' Flory, collecting the 250 quid prize money from Print'n'Plotter who fronted our Castle Rathbone Compo in Your Spectrum 14. lan put £50 in the bank and, horror of horrors, spent the other £250 on a Commie 64 - well he won't get a very high interest rate on that!
That's the last time we go out of our way to organise a compo for you lot.


US Gold has just produced its own compilation tape featuring a bevy of Speccy hits, including Raid Over Moscow, Flak, Blue Max, Hunchback II and Rocco. Did you spot a few of these that aren't by US Gold? Funny, so did we!


Ain't he a little dahling, possums? Chris Smith of Saga is desperate to tell you about his combined printer/interface package. Can't talk right now, eh Chris? Well don't you worry your pretty little head about it, 'cos we'll tell 'em, won't we? Buy a Saga
LTR1 printer and Chris will give you $£ 10$ off the Kempston Centronics E interface. If you don't trust us you'll have to call him on (04862) 22977. What a little possum.

Saga Systems is boasting about its new Sound Boost, and why not? It stamps out Speccy whining by diverting the sound output to the TV as well as having a Save/Load switch and cassette connectors. This little art of noise will cost a cool £9.95 but it does save you strapping the Speccy to your lughole a la walkman style very uncool. Ring ( 04862 ) 22977 to sound out with Saga.

## - (2)


hat place your mother warned you about, St Bride's school for young 'ladies' has just installed a bit of high technology - a phone. Providing St Bride's receptionists have read the bit in the manual entitled 'How to answer' you should be able to suss out more of their Secrets if you ring them on 010 353 7542030 . Don't expect a serious answer though...


HIT-CAR CLOSING INI
Quick, for Pete's sake do a U-turn.
Yikes, the hit car's closing in, oh no... Can't explain too much at the moment except that it's Durell's new game, Turbo Esprit available soon.


Ding Dong! Fairlight II calling. It looks likely that the follow-up to The Edge's smash-hit Fairlight will come with a ROM attachment much like the one on MikroGen's Shadow Of The Unicorn. All that's certain is it won't be the Mikro-Plus. And if you were looking forward to playing Fairlight II, called A Trail of
Darkness, before Chrimble, brace yourself for a disappointment. Bo Jangeborg, its Swedish programmer (hurdie, hurdie, ho) is too busy putting the finishing touches to his updated version of The Artist, to get cracking on Fairlight II. You'll have to sit tight till January.

The follow-up to Ariolasoft's
Panzadrome is really wet - well it's called Aquadrome! The Ramjam Corporation's busy writing the game at the moment but the release date has yet to be announced. Still, it's a dead cert that itill slide down the slipway before Ramjam's long-awaited successor to Valkyrie 17. Three Days in Carpathia has already stretched into weeks and now months. Is a change of title imminent? Three Years In Carpathia!

Talking of the Carpathia complex, this month finally sees the release of Tomahawk, the chopper simulation that took eighteen months to get off the ground. Plus, shock horror news is now reaching us that Swords and Sorcery by PSS is due for imminent release, after only a couple of years in development Just hope it's not a rushed job!
Heh.guess what? I've seen the pre-production copy of Mother Of
Charlotte by System 3. It was going to be called Mother Of The Harlots until some not so bright spark realised what it meant. It's a 3D maze in space and the player has to rush around beating up snakes and the like whilst trying to avoid rampant women. We can't publish any piccies, though, 'cos we d get done under the obscene publications act. Beyond has been bought out by British Telecom much to Buzby's delight. It's beyond the pale as far as those magazine chaps at EMAP are concerned - I mean. how will they get to see all those games first?
Teresa Maughan

## Well toke you bey



## ond the Spectrum.

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Where can you get your hands on Ram's amazing Spectrum add-ons? You can see them at branches of Boots, Menzies, Spectrum Group computer centres, and good computer stores everywhere. Or return the coupon below.

To: Ram Electronics (Fleet) Ltd (Dept YS), Unit 8, Redfields Industrial Park, Redfield Lane, Church Crookham, Aldershot, Hants GU13 ORE Credit Card hot line: 0252 850085. (Access \& Visa).

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* The cursor can be moved on to start a new paragraph by a single keystroke. TAB key also available.
* The program works with cassette tape, Sinclair Microdrive, Opus and other disk systems.
$\star$ Texts can be printed out on any line length up to 128 characters.
$\star$ Text blocks of any length can be transposed, copied or deleted.
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## UTILITIES

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## GAMES

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Yaur Spectrumis lest friend!


YS takes a Quantum Leap into the world of the QL. Catch up on all that's new...

Rumours about the appearance of an upgraded QL have been rife in the computer industry over the last few months. Dubbed the QL Plus, some say it'll be a Macintosh clone while others reckon it'll have a colour monitor and $3.5^{\circ}$ disk drive to replace the existing microdrives.

Sinclair Research hotly denies all this, of course, and a spokesman told Frontlines, "The QL is a perfectly good machine and is selling like hot cakes." He went on "We've never had such a popular machine and you should pay no attention to current rumours." Even Frontlines had to smile - the QL more popular than the Spectrum?
Current rumours aside, Uncle Clive himself was recently collared at a business machine show and admitted that he was thinking about bringing out his own business unit. Shame he hasn't told anybody else at Sinclair Research as they all seem to be in the dark about any developments - or maybe it's a case of 'mum's the word'.
In fact, Sinclair Research doesn't seem to know the official line either. Another spokesman commented, "Nothing will be launched until next year." Hmmm, maybe Sir Clive's going to bring out a turbo driven C5 instead!
Believe what rumours you like but one thing's for certain you can never be sure until it happens.

## Digital Precision recently

 launched a bevy of software products for the Sinclair QL.Its major new release is Supercharge described as 'a state-of-the-art SuperBasic compiler'. It can translate any SuperBasic program automatically and directly into machine code and speeds up Basic by factors between 20
and 200. Supercharge comes complete with a 40,000 word manual and costs $£ 59.95$.

The QL Sprite Generator is a complete games design system that allows you to have up to 256 sprites and planes of movement, automatic sprite collision detection, sprite reversal and high speed action. Not only that, it also requires no machine code knowledge and costs $£ 24.95$.
Digital Precision's other releases include Super Astrologer, a computerised horoscope priced at $£ 24.95$, QL Super Arcadia, two action packed machine code programmed arcade games at only $£ 15.95$ and QL Super Backgammon also £15.95.
If you want any further information give Digital Precision a ring on 01-527 5493.

Master Blaster is the new offering from Compugem. Dreytus the dread, a galactic assassin has had to retire due to ill health and the position of Master Blaster is now up for grabs. You must successfully complete twenty levels in the game in order to become the Master Blaster supreme. Master Blaster costs £9.95.
Compugem is also working on a couple of other arcade extravaganzas for the QL that'll probably be available early on in 1986.
Microdeal is soon to hit the market with a pre-Christmas package of aerial games and peripherals.
The might of Flight will soon be winging its way to the shops. A realistic flight simulator - it's based on a single engined, nosewheeled light aircraft. Full instrumentation is provided and a comprehensive view from the cockpit. At £9.95 it sounds a goodie.
On wings of a different kind, Eagle is a very similar QL version of the arcade blockbuster Defender. In Eagle much mega-collection of objects and shoot 'em skills is required! At $£ 8.00$ Microdeal reckon it's top value and another feather in its QL cap. Its new $£ 4.95$ joystick interface might be just what you need to make the most of these games.

Sales manager Neil Struthers, when asked whether customers had problems loading microdrives, commented " 90 per cent of telephone queries concerning loading difficulties can be solved very easily. It's usually because they've not unplugged all peripherals."

## SUBBCABE TOOAY anemmanirnisu!

Are you having to go on a right royal walkabout in pursuit of your copy of YS? Well, now it's do or Di time. Simply fill in the coupon below and send it (by Royal Mail) to Your Sinclair Subs, 14 Rathbone Place, London W1P 1DE. Miss out and you could end up looking a right Charlie!


## SUBSCRIPTIONS: PRIORITY ORDER FORM

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## Hey, would it really freak you out to know which games are the bubblers, the breakers, the busters and the golden oldies? Well, freak out 'cos its all here in the YS Hit List.

## Chart Chat 1

This month's number one, Fairlight from The Edge, entered the chart five weeks ago and has soared through the weekly rankings from number eight, to number six and four, and has occupied the No. 1 slot for the past two weeks.

Set in a castle, Fairlight is an adventure game complete with stunning 3D graphics. The Land of Fairlight is smitten by plague, famine and pestilence (sounds like our office. Ed.) Your job is to rescue a magician from the castle Avars, whose Book of Light can restore Fairlight to a happier state.

The Edge plans to release the second part of the Fairlight Trilogy, The Trail of Darkness, early in 1986, we'll have to see how well this one does.
This Month's Top Ten Titles

| 1 8 5 | - Farmairlight/The Edge <br> 2 | 2 |
| :--- | :--- | :--- |
| 8 | - Way of the Exploding Fist/Melbourne |  |
| House |  |  |

## Slice of the Cake

The pie below shows how this month's 40 best sellers are split up. Honours are almost equally shared between sports, arcade and adventure games. Compared with the chart six months ago sports games have rocketed in popularity. The beginning of the sports games boom can be traced back to the Los Angeles Olympics in the summer of 1984. Programmers in this country have no doubt been spurred on by the success of Daley Thompson's Decathlon and Super Test games by Ocean. Currently in the Top 40 are snooker, soccer, athletics, cycling, cricket and several martial arts games including Melbourne House's
Way of The Exploding Fist and Fighting Warrior.

The Hit List is based on the MicroScope chart as compiled by Gallup.


| Last Six Months |  |
| :---: | :---: |
| Favourites |  |
| Poition | - Tite/Publisher |
| 1 | - Daley Thompson's Decathion Ocean |
| 2 | - Softaid Softaid |
| 3 | - Booty Firebird |
| 4 | - Ghostbusters Activision |
| $5=$ | - Starion Melbourne House |
| $5=$ | - Knightlore Ultimate |
| $7=$ | - Shadowfire Beyond |
| $7=$ | - Spy Hunter US Gold |
| $7=$ | - Way of the Exploding Fist Melbourne House |
| $7=$ | - Airwolf Elite |
|  | Months Ago |
| 1 | - Daley Thompson's Decathion Ocean |
| 2 | - Sherlock Melbourne House |
| 3 | - Beach Head US Gold |
| 4 | - Monty Mole Gremtin |
| 5 | - Kokotoni Wilf Elite |
| 6 | - Full Throttie Micromega |
| 7 | - Sabre Wulf Ultimate |
| 8 | - Match Point Psion |
| 9 | - Lords of Midnight Beyond |
| 10 | - Jet Set Willy Sottware Projects |
| 18 Months Ago |  |
| 1 | - Jet Set Willy Software Projects |
| 2 | - Fighter Pilot Digital Integration |
| 3 | - Chequered Flag Psion |
| 4 | - Manic Miner Software Projects/Bug-byte |
| 5 | - Bugaboo (the Flea) Quicksilva |
| 6 | - Hunchback Ocean |
| 7 | - Atic Atac Ultimate |
| 8 | - 3D Ant Attack Quicksilva |
| 9 | - Flight Psion |
| 10 | - Fred Quicksilva |

YOU ARE TRANSPOSED INTO A STRANGE COMPUTER GENERATED UNIVERSE. YOU MUST DO BATTLE WITH THE ROM ROBOT, TANKS AND RANDOMISERS IN YOUR MISSION TO REACH THE PROCESSORS OUTPUT PORT.


Check out your chance to fly on the world's favourite aircraft, flown by of the world's favourite add on $m$

Crikey, it's fantastique wonderfuel, a-maz-ing. thrilling and simply sooper! What is it? is it a bird, is it a plane? You got it in one - it's a plane and it's this month's MegaCompo that's what!
Now if you're a supersonic airline pilot this compo ain't for you Cos a ride in supersonic Concorde down to the Bay of Biscay and back wouldn't make you bat an eyelid. But ... if you're any normal human being you'd probably give your right arm to be on board

Just to spell it out, Saga Systems and Rarn Electronimenave but their respective heads together and come up with a magnificent prize for readers of Your Sinclair - yup, two tickets to fty on Concorde to the Bay of Biscay. You too can experience the thrill of travelling at twice the speed of sound, not to mention the big boom

Yippee, eh readers? Not only that, Saga and Fam, being generous to the last, are also providing a Saga 3 Elite
keyboard, a LTR1 letterquality printer, a Style grephics package ant a Saga Sound Roo the second prize inde five runners up will get a
Even the gecond prae is sike sticking your head cur winie Concordeg is Waht -iftimes your braith muay
 iecture herel) astan sound boost and a Styla Graahics packate.


Fiam turbo interlace and Quickshot II joystick. How's that for a compo? Now here's the toughie you've all been dreading Hit's interrogation timel


4 Don't go away now, there's morel Five runner-up prizes of a Ram Turbo plus Ouickshot oyslick are there for the taking

## ICCOUPO

the world's favourite airline, in the world's favourite magazine, courtesy $1 \mathrm{~m}_{\text {nufacturers. Now we're flying! }}$

- Concorde was bougin by two co-
operating airlines. British Airways was one of them, which was the other?
- How fast will you be flying when you break the sound barrier?
Fill in the coupon below stick it on a postcard and send it to Fly Me Compo,
Your 'we take more care of you'Sinclair, 14 Rathbone Place, London W1P 1DE. And make sure it drops into the Ed's lap by January 31 st.

WING COMMANDS

1. Employees of Saga Systerms. Ram Electronics and Sportscenc Specialist Press who try to enter specisust Press who try to enter
will be chucked out of the plane will be chucked out of
2 Entries must be on
postcard or sealed envelope, or weil get you to open the rotter whingst you to oper the roticn and of January or else? 4. Anyone found arguing with the Editor is either brave or stupid


Bounty Bob'TM returns in this new and exciting follow-up * COMMODORE 64/128-ATARIadventure to Miner 2049er.* This time around it's even tougher than before and Bob needs your help more than ever to guide him through the mine. The mutant organisms have multiplied and over-run the mine entirely, making it extremely difficult to survive the hazards of the underground passageways. Using the high-powered special equipment in the twenty-five new caverns is Bob's only hope of achieving his objective of securing the mine and defeating the plans of the evil Yukon Yohan!'m WAUSTRAD-BBC



## YOUR SINCLAIR, 14, RATHBONE PLACE LONDON W1P 1DE

## JEKYIL AND HYDE

Okay the game's up. Your little secret is out! You might as well admit it - the Editor and Troubleshootin' Pete are both the same person. I mean how else could Pete reply to one of the Ed's inserts in an article?

Hah, well you can't pull the wool over my eyes and if you don't want me to spill the beans you'd better make it worth my while to keep my mouth shut. And don't try to do anything silly like escape in your turbo driven C5, 'cos if you look out of the window of your cosy little office you'll see I have posted men with rayguns, ready to shoot at my command.

Don't say I didn't warn youl Mooney Wahooney The Intergalactic Trade Commission, Planet of Altair.
Hmmm, an interesting one, this. I don't think we're the same person but just to make sure l'd better check it out with Pete. What d'you think Pete? Ed. Hang on a tick while I have a look. Thigh bone's connected to the leg bone, leg bone's connected to the back bone I think I'm missing a bit in the middle. It's tricky to tell in this light what with working in an office that makes the black hole of Cirius Major seem like a summer's day in the South of France. Troubleshootin' Pete. It's okay, I've got your middle bitl But that means ... we are Troubleshootin' Ed.

## BOARDTALK

I'm writing to inform you of the opening of my Bulletin Board for Spectrum and BBC users. Here are the details:

## Spectrum Bulletin Board

## Name.

ARCNET
Tel... (0226) 292118

## Sysop.

Keith Burton
Baud. 1200 Half Duplex Times. .Mon, Thurs, Fri 9 pm till 10 pm Sunday 11.30 am to 12.30 and 4 pm to 5 pm

## Ring Back.

Yes
(Auto answer available soon)

## Password

Yes
(New users can use 12345)
This board is one of a number of boards being run on a Spectrum/microdrive set-up so
don't expect the rapid response that you get on disk based boards. At the moment the board is Speccy and BBC only and requires special software to access it. You can get this from Micronet:
Spectrum ........ Spectacular pages BBC ................ Page 810622321
The system has Prestel-like frames and uses full colour and graphics. The areas include CUG's Sig's, hints and tips, Chat mode, Message to board, Private mailbox (like Prestel mailbox) and several Autoupdating pages. Users can leave messages on these like a notice board that can be read by any other caller.

## K Burton

## Barnsley, 5 Yorkshire

The interest in Bulletin Boards has rocketed since lolo's article in Your Spectrum 20. If anyone else knows of any good BB's for Speccy owners, send us the info and we'll pass it on. Ed.

## FISTFUL OF BUGS?

Whilst playing Way Of The Exploding Fist my friend and I were happily beating the hell out of each other when we were returned to the demo mode. We tried again, thinking it was our fault when after another few seconds it happened again. After many games we found that if you press keys D, H, K and Break at the same time whilst on a two-player game, you'll be returned to the demo.

Now it could be our copy that's not up to scratch otherwise it's a genuine, first rate bug - yippee we've
found one. If so, how much do we get for spotting it and when will the Porsche arrive? From two members of the 'We also think Gollum deserved everything he got'

## Society.

## Chester

PS Who is Gollum anyway? PPS Don't let the Ed write silly little comments on the letter.

Oh goodie, does that mean it's my turn to write silly comments on your letter. Like, fancy not knowing who Gollum is! (Who is he then clever clogs? Ed). I shall ignore that. Also are you and your friend octopusses? How else can you reach all those keys at once? Your Porsche is in the post. Troubleshootin' Pete

## YOU CANT BEAT IT!

The Beat magazine (a freebie from HMV shops) announced that Frankie Goes To Hollywood (the game, that is) is now available for the 49 K Spectrum. So much for Sinclair's pledge of no new Spectrum before Christmas! James O'Neill Worthing, West Sussex.

## g - Frankie coes Th

OTHELONG-AWAITED Frank
computer game for the Commodore 64 and 49 k spectrum is finally available (Ocean Software, \&9.95). D Ward, director of Ocean

That'll teach you to nip off while our backs are turned and read these ill-informed rags. 'Ere Pete, what's a K? Ed.

## GET RATtED

I demand compensation. "Oh yeah, what for?" I hear you ask. Well, last month (Your Spectrum 20) I turned to the review of The Rats, having been enticed by the revblting picture on the front cover. Having read the blood-splattered-pages, telling the gruesome tale of 'rats gnawing at Ferris' body', 'gnawing at his bones' and 'ripping mouthfuls. 'Imused to myself, out loud, that I might buy the game. Oh, that I'd kept my big mouth shut.
The result of my innocent I thoroughly terrified Speccy into having a heart attack. Well, it blew its CPU actually. I blame this entirely on you. If you hadn't published such a gory review my poor ol' Speccy wouldn't be under some surgeon's screwdriver.

Right this is what I want. 1. A solemn promise that you won't publish anymore gore, like pictures of Troubleshootin' Pete.
2. Something that'll reassure my Speccy when it eventually returns to the land of the living - preferably nothing furry that eats human flesh and squeaks. And I don't mean one of T.P.'s socks.

## Stephen Fodder Southampton, Hants.

D'you know, I was wondering why l'd started taking a smaller and smaller shoe size. Nah, it couldn't be my socks - I washed 'em out at the end of last yeaaarghhh
Troubleshootin' Pete.

## MEGABRAIN

I'm amazed at the mentality of some of your readers. I am, of course, refering to the letter from Richard Relf in the November issue. If Mr Relf had more than half a brain he'd have realised that what Pete was trying to show was how the actual addresses for the display file were calculated.

There can hardly be a Speccy programmer in the


Cartoon by YS reader William Thompson.


# FREE COMPUTER PROGRAMS • INSTANT SPORTS RESULTS • CONSTANT TV. UPDATE ALL FREE FROM ANY T.N. VIA THE VOLEX TELETEXT - TELESOFTWARE ADAPTOR A WORLD OF INFORMATION AT YOUR FINGERTIPS 



## TELETEXT

is extra information available day or night whilst television transmitters are on air and without any charge and can now be enjoyed without the need of having a special Teletext T.V. set. All you need is to plug in your VOLEX TTX2000S Adaptor to receive 4-Tel from Channel 4, CEEFAX or ORACLE services.

## TELESOFTWARE

is the name for computer programs which are broadcast as Teletext. Thus they may be loaded "OFF-AIR" into your Spectrum instead of being loaded from, say, tape or microdrive. 4-Tel is Channel Four's Teletext magazine and they are now broadcasting FREE telesoftware. Because of the special nature of teletext these programs are frequently updated - so you will not see the same thing each time you run the program.

## EASY TO SET UP AND USE

As simple procedure tunes the VOLEX Adaptor to your local teletext channels. All loading of Telesoftware is via an index page on 4-Tel which the Adaptor will automatically find and display for you. Absolutely no modification is necessary to T.V. or computer. A comprehensive manual being supplied.

## STORING PAGES

With the Volex Adaptor it is possible to send received pages to your printer or to Microdrive for storage and later recovery.

## THE VOLEX TTX2000S

IS THE ADAPTOR APPROVED BY CHANNEL FOUR T.V.

not yet stating when The Artist II will appear, or even whether it will be a separate package, or run with Artist I. So watch this space . . . one thing we will guarantee though - we will see that everyone who buys The Artist will get full support on upgrades if they join the SoftTechnics Connections.

## SoffTechnics

## Customer Support Division

Hang on a sec, I'm the only one allowed to do commercials around herel What we now want to see is whether Bruce Everiss names names and tells us who at SoftTechnics spilled the proverbials. Is that person now dead? And was it of natural causes? Do people at SoftTechnics have names that can be named? It's time the world was told! Da-daalEd)


I claim a YS first. I believe I'm the first potato to write to you. As a resident of Easton-in-Gordano I was shocked that the Ed should accuse Matthew Exley (the amazing new Easton superstar since winning the Trainspotter Award in Your Spectrum 20) of making up the name of the villagel So, shocked was I that I had to go and tolk to Angus the Brick. Nuff said. (More than enoughl Ed). Sammy Spud Easton-in-Gordano
aark, ark, my name's T.P., what's your problem? What's come over me? Nowt. I've just (train) spotted the most classic printing error ever. Have a squint af From The Hip (ish 19). Now look at the two hundred and eighty-eighth word. Got it? Ha ho. (One hundred and sixty-five, one hundred and sixty-six, one hundred .T.P.)

## Ian Fisher

Barbourne, Worcestershire (saucey devil).

|  | you don't believe me, just | didn't you? |
| :--- | :--- | :--- |
| This would mean, of |  |  |

I'm an operator at Prontaprint and use a Spectrum to update a Lilliput Sales Ledger. After months of trouble-free working my microdrive has now decided not to Verify 25 per cent of the cartridges which is obviously causing a lot of problems. Why should this be? John Williams, Grimsby.

Well John, this usually occurs because the microd VOM doesn't completely erase the file header and reads the old header instead of the new one. The best remedy is to change the name of the file regularly and copy the results to a new microdrive so that the old one can be reformatted (which clears all the headers) before reuse. Apart from this, the only other person who can cure it is Sir Clive.

## I've just bought an

 Interface 1 and would like to know how to wire the RS232 socket to Save and Load like a network?A Blackmore, Boston.
The Interface 1 is fine if you directly connect the two computers together but it won't work with a modem. Use the 'B' channel to Save and Load and make sure tha 1 you have the RX and TX pairs correctly connected. The distant computer must have a CTS connected so that it doesn't send info when the Spectrum is busy doing it's own internal thing.

Sob Sob. I've blown up my ZX Spectrum by using an Interface 2 on it. What can I do?
R Capson, Dorset.
Sounds like you've blown up the ZTX 651 or 650 transistor. Try and get another one fitted and see if that brings your Speccy back to life. Be careful when connecting the Interface 2 as this might have a fault on it. Marshalls of Edgeware Road, London stock this transistor if you have problems getting one. If it still doesn't work I'm afraid i's going to need the old Red Cross treatment. Stick it in a jiffy bag and send it off to your local Speccy repair man for major surgery.

QMy poor old Spectrum has lost its voice and I miss it - help.
m Owenn, Dyfed.
:Try replacing the
loudspeaker with a 1 inch diameter speaker of about 8 ohms. If that doesn't work try
replacing the diodes - or get a hearing aid! Good luck.
$\%$ I've got two Spectrums, an Interface 1,
microdrives, printer interface and monitor connected up. A wonderful system you might think. Yes, but l'm getting a very noisy picture - can you help me?
Brian Davies, Aldershot.
Well, with all that lot connected up l'd say you need a better power supply. Your best bet would be to take the video connection from the modulator input and cut the track to the edge connector. This'd reduce the noise from the peripherals. Even better, put it through a 1000 uf capacitor as an additional filter.

I'd like to connect my Spectrum to a monitor that requires a composite video signal but how on earth do you do it?

## D Shotten, Belmont.

©This is actually covered in Your Spectrum 3 but for those who can't get their hands on a copy, here's how you do it! Connect the inner wire to pin 15B (underside counting from slot side) and the outer wire to pin 14B of the edge connector. If you've got an issue 1 or 2 machine, connect up the two soider spots marked 'VID' with a piece of wire inside the Spectrum first.
(1) Help Help Help! I can't use the ' $P$ ' and ' $Q$ ' keys on my Spectrum when my Alphacom printer is connected.
Chris Oliver, Staffs.

©Seems to me, Chris, that the printer is overloading the data line D0. I'd send it back to get it looked at.

8Ummmm . . . er . . . I've a slight problem . . . yer see. Well . . . it was like this. I took my tape recorder to pieces because I was having loading problems, and yes, I did know how to put it back together, but I lost the screws. I had a bright idea and super-glued it back together again but it still didn't work! I then bought a new recorder and it works fine on my friend's BBC but, you guessed it, it doesn't work with my ZX Spectrum. Help!
Pete Taffs, Luton.
Oh dear Pete, what have you done? Since you've checked everything inside the Spectrum there's unlikely

Does your hardware give you a bad case of heartburn? For fast action relief, Stephen Adams is your man . . .
to be a fault there but have you checked the tape leads to the Spectrum? Also don't forget to leave the Mic lead out when loading and if all else fails try reading Melbourne House's Spectrum Hardware Manual by Adrian Dickens, price £6.95, as it contains some useful circuit diagrams. And to think Pete advises other Speccy owners every Saturday in a shop!
$)^{2}$ How do I get A4 ( 80 characters) listing from my Interface 1 and how do I count the lines?
G Saunders, Hertford
The only way that I can think of, off the top of my head you understand, is to print the program to the screen (using PEEK in program area). Then use SCREENS to look at the line on the screen and LPRINT the resulting characters, counting them as you go. When you reach 80 Chr\$

or an Enter character send Chr\$ (13) to print a new line. You'll have to convert the line number's first two bytes to a four digit number. Any Chr\$(14) encountered indicates you skip the next five bytes. Counting the lines will be easy as you can make a note as each Chr\$ (13) is issued to the printer.

> 8
> What limitations are there on the number and type of peripherals that can be attached to my Spectrum? Jim Grimwood, London.

The limits on the Speccy's expansion port are roughly 300 ma on the 9 volt power supply and a max of two devices to pick up address and data lines. You'll need a larger power supply and a buffered motherboard if you want to add more - 1 don't know of any commercial supplier of these. Does anyone out there know better?
(1) My ZX printer spits out blank paper, though it still line feeds, and it won't stop until I pull the plug. What's wrong?
John Swan, Edinburgh.
It sounds as though the printer's writing okay but is having trouble reading its status, that is whether it's busy or not. Check the read connection and make sure the writing stylus is poking out of the printer slot as this could be causing the problem. If that doesn't work go see a specialist.

I I would like to use a home-built AY-3-8910 sound chip to imitate the Fuller sound box. How do I do it?

## Mark Robertson.

\%The addresses are Control port 95, data port 63. The clock frequency is between 1 and 2 MHz and can be generated from a stable 555 IC. Hope all that helps.

How can I print things which normally go to the screen to the printer without changing the print statements?
Carl Howes, Eastbourne.

:Well Carl, you can either COPY all the screen at various points in the program or change channel 2 to channel 3 (LPRINT instead of PRINT). If you aren't using Interface 1 you can do this by POKEing 23743,80. POKEing 23743,83 will restore printing to the screen.

$=$brought you a preview of Rasputinin the shape programmer Pat
bbarik Siantint
$\qquad$ the game in the shape of four playable screens. And, give or storyboard except for ant détail - Paul negrected nention how :"ll hard it
$\qquad$
$\qquad$
$\qquad$
Rasputin. the kind of guy gets
religion a baaad name, alive
Thie texuble is hiticien away If
he dimensions of the nether
world, a sort of supernatura
housing estate for assorted
nastiee, spreading off a main
courtyardand inked by spells
who crosey resembles the
masthead. So, as well as
dodiging the best selection of
odoballs seen this side of
Castle Rathbone, there are
secondary obiectives, such as
discovering the Eyes of
Heaven spetl thatill fotac
Rasputin's evil eyes as well as
opening further boxes contain-
ing magic to neutralise his
power.
lected. In many cases it's.a
good idea to clear a screen of
wandering mensters betorg
exploring properly. Be wamed
though - not only do the gree-
blies return when you re-enter
contact with them, or take a
fall, they 11 flock back too. And
talking of falls, at some stage
you're sure to find that the
netherworld is crulsing at
60,000 feet and you haven't
got a parachute. Luckily the
clouds act as lifts and whisk
you back at the cost of a life.
Once you've hacked and
$\Gamma$ crapere
Pinynollity
Value for Mon


end you get a new speil fo adg move off to spak ans at the tones engraved with a felter
of Basoutinis nome bin be warned, getting those makes Rasputin is not an عasy game to gel into and youll working out what can and ceanes behind some we the Seven
$\qquad$

Wis respectifis vertomuchulp fumats.prouturs - nevel cot the same sortifi SD view mough seen from a stghtl? lower angle which can cause problems. Take good.care of the squared floor and how rakes to cross one unitandvo So there's an unavoicalble Ulimate comparison but
tefore the boys at Frebird send me an vimatum, (Ho. fo) , musi say inat ins is a sprites and some ven smootb animation. There are some reanyatmusingorntursmuthere, nuisances pius the truly male: volent presence of the villain. All that umping, may remind you of piatform games but here the tandscape is solid and noreatbiy well reallsed. Jusi as the dimensions of the tethenworid spread from the central, circular highway the tente has great ceptins. This pne could take months to solve hearted. Eut most of vou now have the opoorturify to test your mette against the infamous mad monk. and if the Ghairenge of these four screens whets your appetite then rushoutand buy the comblete game because it's ten times as large and contains a whole host of nasty traps that'l

## Fax Box

Game.
Publisher
Price.
Joystick.

## Rasputin

Firebird
£7.95
Kempston.
Interface II, Cursor
Keys............ Turn Left/Right

- Q/Wi Walk - O

Jump - P

## Starry, Starry

KNUSUN
Last month, you saw the storyboard. This month, you've played the demo version. Now it's time to read the full review! Rachael Smith rights the wrongs of the mad Russian monk in Firebird's hot new. megagame, Rasputin.


Old soldiers never die they leave neat litile. graves insteat. And as contact's still deadly it's better to avoid combat altogether when you can.

It's the caped crusader! Control is by the (love it hate it) turn clockwise or vice versa. That takes some getting used to before he walks the way you want. And fighting really cails for careful timing if you're to slip in the fatal thrust.

These goggle eyed gargoyles won 't remain stony for long. Like ail good dragons they've got a breath problem that makes napaim look cool. Note how inconveniently they' re placed, making you wait till the heat's off.

They look like big trogs. hop around like fleas and have a grin you won't forget as they cause you to restart the screen and they re raither too short to hit easily at ground level.


Want to know how a
Wham record feels? The turntables move in steps not smoathly. The secret of jumping off is to wait till you're a quarter turn before your destination then leap.

Ignore this apparently innocuous box at your peril! As if by magic it'Il return you to where you entered the screen and at the same time diminish your lite force. Frustrating. eh?
tate of suspended animation because prefty soon hey il be marching up and down and indulging in a litile swordplay - with you as target.

The netherworld's main street is neatly paved, but hose parallel lines also help you steer a course through all the obstacles Don't fall off the edge though.

Nobody gets out of here alive - or at least not easily. Flashing boxes represent exits and even when a screen has five of them like this, it's obvious the inhabitants preter you to stay

The toflee apple with the eye is a cyclops, and though he's dumb he'll still diminish your life force it he collides with you in his aimless wanders.

"月,


Ladies and gentlemen. an emply box . . . but like all good magic boxes jumping on them makes things appear - like a monster from the dark side of Hasputin's mind. Kill it for a reward.

Look before you leap. Several screens have a gap immediately after the entrance so never charge straight in. This one's particularly bad - you'll have to perform an extended leap to clear it.


## From the black and white pages of a dusty book emerges the colourful and gripping adventure of



Save the world of "Fantasia" in this thrilling adventure. Cast as the hero Atreyu and aided by Falcor, the Luck Dragon, you face the trials and terrors of the ever consuming "Nothing". Enter the quest in this richly illustrated and highly imaginative computer movie.

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# HACKING AWAY 

Wanna POKE a little more fun into your games？Join Chris Wood for the hack of a lifetime as well as a damn good read．
 elcome one and all！As you＇ll have noticed－ wake up at the back－the mag has under－ gone a metamorfis．．．meti－ marfus．．．well，it＇s changed． And the good news is that I now have a whole page to fill with goodies，so keep ＇em coming！You never know，if you send in enough，the whole shebang may spill over onto two pages，then three．．．Today a page，tomorrow the world！ （Pass me the sedative please nurse！Ed）．
First a confession－last month I made a bit of a boob．I know，I know， doesn＇t sound possible but there it is．The program that I claimed was for Monty Mole was，in fact，for Mut－ ant Monty．Dunno how I missed that as I was the one who hacked Monty Mole back in Your Spec－ trum 15．Ah well，on with the show！

## NICHTSHADE

Yes，I know our very own Dave Nicholls－do you want your very own Dave Nicholls，yours for a few bob，guvnor－hacked this when he reviewed it but Mick Davey from some－ where in London has sent in a few extra POKEs：
10 LOAD＂CODE：LOAD＂＂ CODE：LOAD＂＂CODE
20 POKE 23453，201：PRINT USR 23424
30 REM PUT POKES HERE
40 REM AND HERE
50 REM AND HERE
60 POKE 23453，33：LOAD＊＂ CODE：LOAD＂CODE
70 PRINT USR 23453
And here are the POKEs that＇ll fill out lines 30， 40 and 50：POKE 52665，33： POKE 52668，52 for infinite lives POKE 49228，20 to run fast all the time POKE 52900，0：POKE 52901，0： POKE 52902 to see the final screen when you die．

Now put in all or some of them as you choose．Mick tells me that if you put in
the＇run fast＇POKE you should avoid picking up the winged boots as you＇ll then revert to normal speed．And it＇s not much cop if you put in the first and last POKEs －the final one won＇t work ＇cos you now can＇t die！

## ALIEN8

For an indestructible Alien 8 POKE 43735，201．For those without Your Spectrum 14， （shame on you！）add line 22 POKE 50085， 167 ：POKE 50084,178 ．This allows you to touch anything without dying－yippee！
Finally，$T$ Smyth of Mine－ head can＇t get Alien 8 to run with his XP memory expansion fitted．Sorry old chap Ultimate do some very peculiar＇OUT＇instructions when they＇re reading the keyboard which clashes with the XP．You＇ll just have to remove it to play the game，unless，of course， anybody out there knows of any POKEs to remedy this．

## FAIRLICHT

What＇s this you＇re saying？ Another ginormous listing for Fairlight．Didn＇t we have one of those last month？A touch of the old deja vus？ Well，yes but since then Bo Jangeborg，the program－ mer，has added the Kemp－ ston joystick option to the game and consequently moved parts of the program about．To overcome the problem I fed the new ver－ sion into the Hacking Com－ puter in the back room and good ol＇ZZKJ spat out another version．Ninety per cent of it＇s the same so if you typed in last month＇s， you＇ve done most of the grind already．
On top of this，ZZ has added a few POKEs sent in by Edmund Baby of Staines that＇ll stop the screen going blank each time you enter a new location．Now you＇ll be able to see how Bo＇s gra－ phics program，Grax，draws the screens．The 6 in line 350 is the new attribute for the screen and you can
change it if you like．For those of you with the new version of the game，wind the tape past the anti－piracy message（and no，this pro－ gram won＇t help the pirates） before running the pro－ gram．

> 1 REM FAIRLIGHT POKEIN
> B PROG
> 2 REM MODIFIED FOR FAI RLIEHT2
> 10 LET $T=0:$ FOR $N=18000$ TO 1B175: READ A\& LET T= $T+A_{1}$ POKE $\mathrm{N}_{3} A_{I}$ NEXT Ni RE AD AI IF T $\langle>A$ THEN PRINT
> "CHECKSUM ERROR": STOP
> 20 FOR $\mathrm{N}=20000$ TO 1E9:
> READ A: IF A<999 THEN PO KE $N$, A: NEXT N
> 30 RANDOMIZE USR 18000
> 100 DATA $221,33,203,92,1$ $7,93,5,62,255,55,205,86,5$,4日,241,6
> 110 DATA $20,33,130,94,24$ $3,49,0,91,205,195,70,33,6$ $6,96,17,21$
> 120 DATA $209,1,153,1,237$ $, 176,33,40,209,17,40,145$, $1,19,1,237$
> 130 DATA 176,235,54,201, $6,9,38,145,17,186,70,26,1$ $11,203,182,19$
> 140 DATA $16,249,205,40,1$ $45,33,174,210,6,120,62,12$ $\begin{aligned} & 45,33,174,210,6 \\ & , 50,176,92,205\end{aligned}$
> 150 DATA $195,70,62,195,5$ $0,198,220,33,181,70,34,19$ $9,220,62,55,50$
> 160 DATA $233,218,195,223$ $, 218,237,176,195,32,78,14$ $1,197,200,221$
> $\begin{aligned} & 1,197,200,221 \\ & 170 \text { DATA } 224,229,232,235\end{aligned}$ $\begin{aligned} & 170 \text { DATA } 224,229,232,235 \\ & , 247,197,229,62,32,237,17\end{aligned}$ $\begin{aligned} & , 247,197,229,62,32,237,17 \\ & 7,182,242,197,70,35,209,2\end{aligned}$ $\begin{aligned} & 7,16 \\ & 37\end{aligned}$
> 1日O DATA $82,235,66,75,17$ $, 246,70,237,176,229,235,5$ $4,237,35,54,95$
> 190 DATA $35,54,201,205,2$ $36,70,50,239,70,225,193,1$ $6,214,201,62$
> $\begin{gathered}6,214,201,62 \\ 200 \text { DATA } 5 \mathrm{E},\end{gathered}$
> 200 DATA 58,61,61,230,12 $7,237,79,184,146,147,129$, $129,236,244,225,247,208,2$ 2697
> 320 DATA $175,50,197,241:$ REM Infinite Lives 330 DATA $62,24,50,77,245$ REM No More Weight Limi
> 340 DATA $62,24,50,246,24$ 7: REM No More Locked Do ors
> 350 DATA $62,62,50,189,22$ $9,33,6,0,34,190,229$ : REM See Room draw
> 400 DATA 201,999: REM Da ta End Marker

## JET SET WILYYII

Aarrgg！They said it couldn＇t be done．No man，no hacker could do it！Until now．Yes，Peter Faas from the Netherlands armed with a soldering iron and an armadillo has come up with
a new POKE for JSWII．The POKEs we supplied for infi－ nite lives meant several of you were in grave danger of going batty because you couldn＇t turn the music off． Well，Peter has sent in a new improved POKE（gasp） －gor blimey he＇ll be after my job next！

For blissful silence whilst playing this game change line 90，in the small hacking program，and line 100，in the large progam，（both in Your Spectrum 18）to read：

## DATA 62，195，50，22，122

Silence really is golden！Oh， and while I＇m on the subject of JSWII it appears that some of you，namely P Vil－ lars of Essex，R Whitehead of Londonderry and Ste－ phen Dove of Stone，are having problems with the large program．Well，you＇ll notice，or you should do， that after each block of data each feature has a REMark above it－if you don＇t want that particular feature don＇t type in it．When you＇ve decided what you want， wind the tape past the first bit of Basic in JSWII before running and playing it．

For those of you who haven＇t fathomed how to use the Room Finder pro－ gram－it＇s easy．When you Run the first program put a blank cassette in before entering your pass code and press Record．You＇ll see a bit of on－screen activ－ ity followed by a block of code and then the Speccy will reset itself as the pro－ gram has been destroyed in producing the block of code．Type in the second program，Run it and play the block of code you＇ve just saved．It will then print out the rooms，their num－ bers and the numbers of rooms they exit to．Change LPRINT to PRINT in line 50 if you don＇t have a printer and want it to go to the screen．

## KOKOTON WILF

Charles Smith from Girdle Toll（where？）has sent in this piece of code for invin－ cibility against the nasties in the Softaid re－release．

10 POKE 23693，4：CLEAR 24100：LOAD＂＂CODE 20 LOAD＂CODE： RANDOMIZE USR 65100： LOAD＂ CODE
30 POKE 28929，8：POKE 28934，8：POKE 28939，8 40 RANDOMIZE USR 41712
Lots of programs nowadays are MERGE proof and that makes putting the POKEs in
a little difficult, as you have to make false headers. Chris Pile from Plymouth has provided a program which will Load in a Basic program and Save it out again tame - in other words it won't Auto-run.

> 1 REM DE-MERGE \& SAVE 10 CLEAR : FOR nw23296 TO 23357: READ as POKE $n$. a) NEXT $n$

> 20 PRINT AT 10,101 "LDAD BASIC"
> SO RANDOMIZE UBR 23296 40 DATA $62,3,50,54,91,2$ $05,32,91,58,62,91,167,192$ $, 33,0,128,34,75,91,175,50$ $, 54,91,211,254,62,254,210$ $254,31,56,249,17,17,0,22$ $1,33,62,91,175,205,53,91$ $1,33,62,91,175,205,53,91$, $237,91,73,91,221,33,168,9$ $7,62,255,24,3,195,194,4,5$ $5,195,86,5$

The program ignores CODE and will only work if you feed in Basic. Play your program and then use a blank tape to Record. Press the Caps/Shift key to save the tame version of the program.

## MANIC MINER

Whoops! Robert Hioms has sent in some corrections to the infinite air supply for Bug Byte's Manic Miner. These are:

## POKE 34798,0

POKE 34799,0
POKE 34800,0
Not only that, G Reynolds of Nottingham also noticed that the second three POKEs (Your Spectrum 18) stop the light beam in the solar power generator from decreasing your oxygen. Now you can escape from Amoebatron's revenge cavern.

## BOULDERDASH

Having trouble with Boulderdash? Never fear Martin Cleaver of Hull is here with a routine for infinite lives (what else?)
First wait until the second screen has loaded before stopping the tape and pulling the plug on your Speccy. Type in this natty piece of programming, run it and restart the tape.

10 FOR $N=50000$ TO 50022:READ A:POKE N,A: NEXT N
20 DATA $243,17,51,91,221$, 33,0,94,62,255,55
30 DATA $205,86,5,243,62$, $52,50,32,121,195,183$, 124
40 RANDOMIZE USR 50000

## Martin says he's not sure

 whether this will work on the Rockford's Riot/Boulderdash re-release but if it doesn't you know where to send your POKEs don't you?

> Now's your chance to join the programmers' task force, headed up
> by lan Hoare. He's counted all his small routines out and now he's counting them all back in again ...

Calling all programming geniuses everywhere - here's the page for you! Oh okay, you don't have to be a genius but you'll still find a good few things that'll add that extra zap to your programming. And I hope very much that it won't be too long before you see some of your programming hints'n'tips in these pages too - this is your chance to beam out your brainwaves to all your fellow YS readers. Plus, if you have any programming problems, this is where to turn to for help. Together we'll form the biggest task force in the country!

To launch you on the way, I'll start off with a few nifty snippets that took hours to work out but .

Well, you know the sort of thing - like this input routine that prints a message on the bottom of the screen and waits for a keypress. Just one keypress mind you. Type it in and try it out.


What's that? You know a better way? Great - write and tell me all about it.

While we're looking at input, just take a butchers at this and try to work out what it does. But don't type it in just yet.

## 40 REM **** 2??? RDUTIN **** 45 LET ER= (VAL I $\ddagger<I M I N$ IR VAL 1 \& $>$ IMAX) : RETURN

Have you cracked it yet? Nope! Well, don't look at me you're just gonna have to find out for yourself!
And now for something completely different. I often want to find the address of a particular memory area. Problem is, all those addresses are hidden in two bytes. This makes it hard to see where the program starts just by looking at the contents of the system variables. In fact, any whole number between 0 and 65535 can be stored in just two bytes. So this helps you recreate the number again.

Stick this at the start of each program you write.
10 DEF FN $P(X)$-PEEK $X+2$
$56 * P E E K(X+1)$ : DEF FN H(Y
$)=1 N T \quad(Y / 256)$ : DEF FN L $(Y$
$1=Y-256 * F N H(Y)$

The FN $h$ and FN 1 will split any number up to 65535 into the two bytes that you'd look for in FN p. Got it?

Now for a very useful snippet from a YS reader who lives in London, Kevin Cooke. A problem you may have experienced when using string arrays is that wasted spaces appear at the end. The best way to get round this is by storing the string's length in an extra character at the start. Use these lines to set up the string element:

> 10 REM CREATE STRING LE NGTH INDICATOR
> 20 INPUT B\$
> 30 LET B $=$ LEN B\$
> 40 LET B $\$=$ CHR $\$$ (B) $+\mathrm{B} \$$
> 50 LET A $\$(N)=B s$

In these lines $A \$()$ is the array you've manipulating and $N$ is the element in the array you want to fill. When you want to print the string, use this line:

## 60 PRINT AS (N, 2 TO CODE <br> A* $(N, 1)+1)$

A very clever bloke, that Kevin!
One problem you may have come across when writing machine code is passing information to the code routine. It's dead easy - when you know how! You can put the information into a string variable and search for it from the code. It's impossible to do any serious machine code programming without an assembler, so l'il give the assembler mnemonics for a routine that'll search for a particular variable - in this case q\$. Itll end with HL pointing at the first byte of the string and with BC containing the length of the string. 1 use the excellent Picturesque Assembler, but please don't feel obliged to do the same! live used the convention for
describing decimal and hex numbers. Decimal numbers appear as normal, hex numbers are followed by ' H ' and, if starting with a letter, are preceded by 'O'. Thus 255 (FF hex) appears as 'OFFH'.

| 0000 |  | ORG | 40000 |
| :---: | :---: | :---: | :---: |
| 0005 | STR | EQU | 81 (q is |
| 17th letter, $64+17=81$ ) |  |  |  |
| 0010 | NEXT1 | EGU | 19 BBH |
| 0015 | VARS | EOU | 23627 |
| 0020 | START | LD | HL, (VARS) |
| 0025 | LOOP | LD | A, (HL) |
| 0030 |  | CP | 8 OH |
| 0035 |  | JR | NZ,OK |
| 0040 |  | RST | 8 |
| 0045 |  | DEFB | 1 |
| 0050 | OK | $C P$ | STR |
| 0055 |  | JR | Z,GOTIT |
| 0060 |  | CALL | NEXT ${ }^{1}$ |
| 0065 |  | EX | HL, DE |
| 0070 |  | JR | Loop |

Now you can process the information in $q \$$ any way you want.

Use this little subroutine to perk up your printing for, say, pounds and pence. Go on, type it in and then call it with various values of 'money'.


Now you can print a whole series of numbers aligned by the decimal point - just like you have to do when you're dealing with cash.

## SO PRINT TAB (10-LEN Vs 1"\#"; V\$

Now a plea from across the water. Martin Fitzpatrick from Cork in Ireland asks if there's a way that text sent to the screen can easily be diverted to the printer without duplicating every line. Well, Martin, simply set a variable like, let me think, $p$ and make it equal to 2 . Then on every PRINT command use this formula:

湅 "p; "your message
Now, when you want to printon the printer simply set pequal to 3. Nifty eh? But perhaps you've got a better solution? Well, you know where to send it.

Right, that's it for this month. Now, you know the task that you've been set - to send in all your fave programming bits ' $n$ ' pieces. There's no point in sitting on all your short sharp subroutines when you could send them out into the world to make your name in YS.







## Insight／£7．95

Rick I haven＇t a buccan clue what is going on．It＇s a curious mish－mash of a jet fighter and space ship whizz－bang shoot＇em up arcade．This really is a cheapy in fairly expensive wolf＇s clothing．Your Buccaneer has up and down but no lateral movement during the early screens and a very slow fire response．But don＇t worry，the aliens are so moronic that often you can stay where you are and top＇em as they queue up．The
quicker you blast，the quicker you move through the remarkably similar screens．Even the most amateur of arcaders will have been this way before．

The Buccaneer is all but redundant as a modern day fighting plane－as is this game compared to many excellent alternatives．


## Artic/E6.95

Rachael After ditching their Terminal Tapes and crashing the Morbid Microdrives the contestants settled on Fatal Floppies, a game played by dodging the deadly discs of the title. Sound easy? The only problem is that you're standing on tiny platforms, so room to manoeuvre is limited to a step on either side.
It seems this somewhat surreal space duel is based on the movie Tron. It's certainly different from your average sport simulation, taking place in a checkerboard stadium obviously designed by Dali. Luckily, the computer takes care of your jumping so there's no slipping into space, but apart from that you're on your own. The rest of the memory has obviously gone to playability and providing a mean opponent. If you have time during all this frantic frisbee action try to pick up tips from his behaviour, firing off a volley of discs then jumping to one side while you're busy using your rapidly diminishing shield or taking evasive action.
A bit of strategy is called for to make sure all your discs aren't in

the air when you need them, but basically this is a test of reactions and moves so fast it's easy to get drawn in. It's just a disappointment that the third screen is like the first, only faster and with a guided disc that locks onto you bringing the game to a quick conclusion. And wrap your ears round the superb robotic soundtrack.
I was hooked for a time but I can't see myself returning often. If only there could have been a true player vs player option instead of just you and me against the micro. A trifle overpriced? Perhaps.



Electric Dreams/29.95
Alison Seb Coe's got nothing on our hero as he hurtles around a labyrinth of psychedelic corridors in breathless pursuit of bits of a dismembered robot's cadaver.

No, it's not a space-age Frankenstein travesty, but an above average maze game, embellished with stunning $3 D$

graphics.
A megalomaniac robot has been dismembered by world rulers to curb its yearning for universal power. As the hero of the piece, your aim is to flee the maze and become I, Of The Mask, by collecting the robot bits and reassembling this hapless heap of metal.
Battling against a remorseless

clock, you must head for the three crystals blocking the entrance to each of the maze's 32 universes. But, once you find the crystals, there's no time off for good behaviour. Using the laser on the front of your jet-suit, you must zap the crystal to activate it.
But don't panic and fritter away your ammo on any old crystal, cos each has its own function.
One will beam you to another part of the maze, one will transport you to the entrance of a nearby universe and the other will reveal a robot part, which must be zapped three times to render it harmless. This done, your score rockets, leaving you oodles of time to pursue your mission.
But, take heed! The robot must be collected in the correct order - from feet to Mask. If you collect the wrong bit at the wrong time, you'll lose a life. A pretty nerdish thing to do since you've only got three to play around with. But, still, it's worth risking one life just to give yourself a little more time.
I, Of The Mask takes a bit of getting into but, once you've got the hang of it, you'll be hooked. And don't waste time gawping at Sandy White's amazing 3D graphics - time's in short supply!


## T○MMA M A M K

Digital Integration/£9.95
Rachael It's been a long time since Fighter Pilot - the revolutionary flight simulator from Digital Integration that revived a whole genre by giving the opportunity of killing things. Well now it's the turn of the helicopter pilot to take off from the comfort of his own living room and keep the Western World free from whichever menace owns the bases, tanks, guns and other choppers that take pot shots at you.
Ignoring the militarism for a moment, this is a real treat for those of you who've only ever flown Cessnas with your Spectrum before. You won't believe how hi-tech the helicopter of today is. What with the chips that keep the nose level and the ones that tell you where the next target is, flying time before you arrive, when the pubs open . . . well, there's the equivalent of a couple of ZX 81 s here making flying a doddle.
I really enjoyed road-testing this machine, swooping low around the smooth 3 D vector graphics of the landscape, clipping the tree tops, swerving among the mountain peaks. But Uncle Sam has a mission for me so it's out of practice mode, a quick look at the map, and I align my heading with the target radar
dot - just time to check up on the combat mode before we encounter Ivan!

It should come as no surprise that you've hardly been short changed on weaponry. I was spoilt for choice between guns and missiles but finally plumped for a rocket to take out their field gun. After all, I could hardly keep them waiting while I hovered around making up my mind! Tilt nose down, target and fire. A satisfying explosion blows them into a thousand pixels and it's onto the next base. Of course I was on Trainee rating, flying
without crosswinds, by day, but one day it'll be a force nine gale with only infra-red sights and then I'll deserve the Ace rating. Clint Eastwood, watch out.

Yes, it looks like D.I. has done it again - I got a real kick out of Tomahawk. My only quibble was the Lenslock security system that it's using. It's like something dreamt up by the MoD to protect official secrets, and I'm sure Tomahawk isn't that accurate!




 －Robor Messiais＇creatorstetime in on the tact that the fere afa tbree
 apfory inatety internse
Alwestigation has only lódícó tinding tw a stages－－put whą stages，thexarel
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## FlREBIRDS

Insight／\＆7．95
Rachael No relation to either Firebird Software（unless it＇s a by－product of Don＇t Buy This）nor Star Birds，this is a recreation of an old arcade machine．A very competent recreation－but also a very old machine．
And it came to pass that Space Invaders begat Galaxians and Galaxians sort of begat Space Firebirds，who swoop around in various Red Arrows style flight patterns，dropping what the instructions say are bombs，though we all know what birds usually drop！
For protection your titchy little ship has got an umbrella． a cannon and a faulty warp which operates once only as and when it feels like it，wiping out everything you encounter in your race for the top．So you blast away at the birds shoot out the odd mega－bomb for bonus points，and finally take multiple pot－shots at the big red bird that swoops in at the end．All of which is so simple on the two easier levels that you＇ll soon be in a High Score Table that took umbrage to my name and crashed．The two higher levels are for speed freaks only！
So，the high scorers will love it， as will nostalgia buffs，and even I＇d play it for a hour or two of brainless pleasure but for one thing－$£ 7.95$ is an awful lot of ten pees down the arcade．At this price it＇s strictly for the birds！


## $\geq$ <br> $\square$ <br> $\square$ <br> $\square$

## Bug－Byte／E2．95

Sue Zoot＇s an ugly little sprite．But he＇s a darling compared to the horrors that he finds in the sewers on his search for his missing marbles（！）．
With four lives，Zoot starts off punching out his opponents－a selection of ghoulies and ghosties with silly names－but，on the second screen，he has to trap each of the ghosts on a separate ledge．Points are awarded throughout the game but it＇s the missing marbles that Zoot is really after．It＇s all very confusing，and extremely frustrating ．．．but it does have you screaming for more．

The program boasts 234 screens，but you＇ll be lucky to get past the fourth－so you may never find out if the company is making exaggerated claims or not！
Zoot is a very simple platform game－but one that＇s very addictive and a lot of fun．Shame it＇s made much too confusing by introducing a silly plot－line that really has little to do with the on－ screen action．




## TECHNICAL DETAILS

$3.5^{\prime \prime} 250 \mathrm{~K}$ disc drive

## Double density disc interface

Parallel printer interface
Joystick interface
Video monitor interface
Peripheral through connector
Built-in power supply
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## Melhourne House／£8．95

Alison If you get your kicks from those fairground rides that have you reaching for the nearest brown paper bag，then Melbourne House has got a treat for you．Cos，with Gyroscope， those nauseous thrills have been transported to your Speccy．

It all sounds very easy－guide a giddy gyrating gyroscope across 20 screens－just five courses of four screens．
But don＇t be fooled！The gyro＇s got a will of its own and you＇ll need to be quick witted if you＇re to stop it falling off an edge or hitting an alien，while manoeuvring steep slopes， slippery glass or directional magnets．Gulp！Pass that paper bag

In fact．I really thought I had it
racked after belting through the first course，but it＇s all downhill－ literally！－after that．Shame you can＇t pick a course at random to get a bit of practice on those stickier screens．
Melbourne House says a surprise awaits at the end of the game－getting to the end of the game would be surprise enough for me！

Gyroscope，with its stunning 3D graphics will have you hooked－especially if you＇re a devotee of Marbles Madness，its arcade twin．But remember to keep a bottle of aspirin by your side



Mikro－Gen／E14：95
Steve Psssir juey，kid，wapnå bunágafne ${ }^{2}$ Not＇ary＇aldgafné you yngéssfand，－＊whis ónégivés， youra yainey set of fins，that both， on the back of your speettuon：，
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 will spench bappy hours wandering acros＇s the Axtrà 16 K＇s ol かeàksànddesètsハンンン，


## ：WMON

Insight／\＆7．95
Sue Insight＇s Vectron＇s not a game for the faint－hearted．I＇d only recommend it to those of you with fingers that move like lightning and whose quick reactions haven＇t been dulled by playing too many adventure games．
Inside a massive computer， you control a fighting machine and it＇s your task to manoeuvre around a maze of corridors， blasting plasma bolts at the various nasties you find there． Movement around the corridors is conducted at a terrifying pace －it＇s an exhausting process lining up one of the enemy Randomizers or Tanx in your on－ screen sights in time to blast it to smithereens．More likely，you＇ll find that you＇ve bumped the fighting machine into a wall at the end of the corridor and you＇re careering off in the opposite direction！

To help you，there＇s the option to view the whole affair from
above－by pressing one of the keys from the＇$B$＇key to the Space bar－but this can be just as confusing as you can see the on－screen map from above superimposed over the view out of your fighting machine．The map depicts the Randomizers in red，the Tanx in magenta，the energy units in cyan，and your fighting machine in white－and try taking that lot in when you＇re shooting around the maze at what seems much faster than any sensible speed limit！The idea is that once you get near to one of the enemy，you quickly switch to the normal screen and zap them with your plasma blasters．


## ONE MAN \＆HIS DROID

## Mastertronic／£1．99

Steve Fancy a job as an intergalactic shepherd？－this is your game．Just round up the Ramboids and drive them into a teleport． But you＇ve only got twenty minutes to complete this tricky task．As you probably know，Rambos，sorry！Ramboids－are particularly stupid animals and you＇ll need megapersuasion to make them behave．Old hands at Mastertronic games will know that the plot often bears little resemblance to the surreal puzzle that sits on your TV screen，but，heck，they＇re great fun．
For starters your droid has to struggle through a horde of advancing Ramboids．It＇s a bit like driving the wrong way down a rush hour one－way street！
Any flush of success from scrapping your way to the teleport chamber is soon dissipated by the mediocrity of making the crittur Graphics behave．Only for those with a quiet temperament
you can get past the first stage －by destroying all the alien nasties－there are three more stages that look just as tricky as the first，especially if you have an aversion to killer robots，fireballs and all sorts of other traumas．

Overall，a great idea for a game，but it may prove to be just a little bit difficult to play．Still，if you reckon yourself as a hot arcade games player，Vectron might be the one you＇ve been waiting for－if this doesn＇t keep you quiet trying to finish all four stages，then nothing will！


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COMMODORE 64/128

## SPY HUNTER

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'Superb Arcade Gamo' Zrap! 64

TAPPER

- Entered UK Charis 10th January 1985 Weeks in Chats - 9
'Great Sound and graphics. fast and addictive Your Compituter

BLUE MAX

- Entered UK Charts

22ndi February 1985
Weeks in Charts - 12
Blue Max is certainly a great gume'

RAID!!

- Entered UX Charts

4hi April 1985
Weeks in Charts - 22
'Absorbing, addictive and fun
to play:
Crash Smash

## UP 'N' DOWN

- Entered UK Charts 2nd May 1985 Weeks in Charts - 7
'A curious, cute and highly addictive car game'
Computer Irade Weekly

AZTEC CHALLENGE

- Entered UK Charts 5th Aptil 1984 Weeks in Charts - 16
'It's gripping music and imaginative setting makes this seven screan thriller a cut above the rest Zrapt 64

BLUE MAX
Entered UK Charts 24th January 1985 Weeks in Charts - 10

A great game - highly enjoyable
Your Commodore

## SPECTRUM 48 K

Entered UK Charts 1st July 1985 Weeks in Charts - 0
Animation is great, if you want a good punch up - Roceo is the game for you'
Computer ar Video Gomoss

HUNCHBACK II

- Entered UK Charts

19th Becumber 1984
Weeks in Charts - 18
85\% Very playable and addistive long life in terms of appeat
Crash Smach


## THUNDERBIRDS

Firebird/£8.95
Rick Thunderbirds are Go! But not in the form Firebird (any relation?) have naughtily notched up in a lazy maze based on the puppet show that had no strings attached. Of course, I'm not old enough to remember the original, but the Ed tells me they've got the logo, the music and even Thunderbird One taking off from under the pool dead right. But after that it wouldn't raise a F.A.B from Parker, m'lady.
Back on earth Thunderbirds 1 and 2, flown by Scott and Virgil, have to rescue two Egyptologists trapped beneath a pyramid with air running out. Both ships have to be flown in concert around the maze to rescue the asphyxiated archeologists - using the loaded gear to overcome obstacles or pick up treasure.
The maze is made trickier by different blocks dropping fore and aft of your access. Instead of making the game more interesting, though, they basically slow the whole thing down.


## ROTHMANS FOOTBALL QUIZ

## Cassell/ 88.95

Rick How can it fail? With a picture of Reidy on the box, this game's bound for glory! But can even this compensate for all our resistance to quiz computer games? On the other hand, until the Beeb does a deal this might be the nearest you'll get to soccer on a TV screen.

The loading screen doesn't help the image of dumb footballers by having them totally faceless. Is it just coincidence they're all in quasi Arsenal strip? But of course the pleasure of games like this isn't in the power of the pixels or the groovy graphics. This really is a game for football freaks . . . and there are still some of us out here you know. Mind you, there's enough quiz thrill in-built to keep the nonAssociation afficionados

oEnemal outizix

## interested.

There are four quiz options. Assigned questions, three in a row, the race and the full quiz combining all elements. There's also a bonus system - so much barmy key bashing can go on. But be sure you've the correct answers. Ten points deducted for an own goal if you get it wrong!

The print is clear and the response swift, explanations full - and they'll often include clues
to the more arcane questions. Answers are multiple choice so intelligent guessing can count for a lot. The only minor quibble is the program is so long you can waste a lot of time on the re-wind button desperately seeking soccer questions on one of the eighteen available subjects. These are pleasantly varied from League (Scottish and English) through to European and World and even NonLeague. The emphasis is on contemporary soccer, not a lot of stuff pre-'80. What it won't tell you is who are the eleven players whose surnames ending in ' $y$ ' played for England between '67 and ' 81



## CBLIE7.95.

Rick Ón yér bikes, yoúráather' lovers' - 'ShL's, new, miotorcycling slululationt is a',
 not, as yournight think, a bigh ađ̛enaliir arcade butá stolid'
 Footpalt Manager than Yole; Positioni.,

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-Tha feal skils are off not on' théstraç, thé 'Nórrantiójoýstiok jugglinghere, indeed, so syiftly do the Supers zoom by, you'd be hardprès sedto see what s going. on. But domt worry, tace prderis' Sbown in 'ront of the grendstarid.'
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## NWIIRER <br> 

## Firebird/\&3.99

Steve Your first puzzle in this game is to decipher the instructions. What d'you reckon this means? "Each priming mechanism requires the completion of a multistage disablement of Artifacts (DDA) sequence." So, now you know, eh! Luckily, you'll find more comprehensible blurb once the game starts.
And quite a game it is too! It's along the lines of Alien 8 , both in appearance and gameplay. You control a little robot that wanders around the three dimensional objects in each of the rooms collecting useful items as he goes. You'll also have to steer well clear of the more awkward rooms where the nasties are holed up. There's radiation in them there rooms!
If you should fall foul of the radioactivity your food and drink supply starts to dry up - and carrying objects has the same effect. You can read all about it on your status message line. Luckily, there are extra supplies of grub for you to pick up, dotted around the maze.

Chimera looks as attractive as its Ultimate predecessors, though, maybe it's not quite as inventive. The only thing I missed out on was not being able to jump around. But at this price who am I to complain? Go out and buy it - it's a cracker!


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NEXT $n$
KEYWORDS can all be entered by typing them in fall, or by the single entry method, or $\frac{\text { both in the same line; e.z the line: }}{\text { Oprine thello }}$ 10print"hellotif $x=1$ THEN goto 100 will be recognised and listed normally.

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## Ariolasoft/£7.95

Rachael l'd like to say tanks for the memory but 1 can't remember if l've seen this in the arcades or not. It's not the sort of game l'd give my ROM ell for, but even if wandering round labyrinthine streets isn't totally a-maze-ing there could be enough nasty shocks to scare the panz off you. A tank game written by those wacky persons The RamJam Corporation, best known for Valkyrie 17, would hardly be expected to clone Tank Battle. No namby pamby 3D graphics or planet surface shoot 'em ups for Ramdam. Instead a bird's eye view of the holiday island of Panzadrome where happy little two tracks go to blast the scenery, each other ... and just about everything else.

Gunning for a good time you take your Panza out for a spin but compared with the beach bullies you're a mere pansy - a veritable C5 of a vehicle. Still, the island is well equipped with garages just waiting to re-equip you with mortars, mines, mend your shields and replenish your Polycrete, a building material made from dead parrots and


Actually procuring the Polycrete is your first aim because until then any enemies you wreck in narrow streets leave uncrossable craters. Run into one at either end of the alley and you're a sitting panther for the dreaded red tanks whose mortars'll make you just another brick in the wall. Never mined (yes, you'll need to collect those too, to leave your own calling cards) if you get to grow up into a big tank you too can hurl shells long range instead of only packing a punch in the clinches. Meanwhile your scanner warns you of impending encounters with the exploding cow pats.

That's not to mention the automatic gun towers, so I won't. After all, if you knew about them it may put you off mapping Panzadrome, and until you've done that and found your first garage your game of hide and seek through the narrow streets is distinctly nervy. It's a novel variation on maze games with some simple but neat graphics and lots of destroy.

used to repair road damage.

## XCEL

## Program Techniques/E7.95

Steve Ain't it always the same? Every time you go to load up a new game there's someone looking over your shoulder. This time, he said to me wistfully, "You know what I'd really like to see is a souped-up version of Galaxians. " I'd only been playing Xcel for a matter of moments when he started jumping up'n'down yelling, "That's it, that's it!"

But first the story so far - it
seems that the Sentinels have muscled in on our galaxy and it's your job to muscle 'em back out again by destroying their thirty or so planets.
The game initially looks like an Elite clone. There you are orbiting a planet with the option of choosing your next
destination. But pressing the fire button sends you off into a Xaivor-type game - just dodge the obstacles and shoot the aliens. Okay, I suppose, but it's a bit slow though never fear it's just for openers.
Next comes the bit when my mate had to be sedated. And for once the programmer's taken trouble over movements and formations. He's taken his cue from all those old westerns - the aliens form up into a circle. Tricky!

The graphics didn't quite live up to their original promise but
 you won't have time to take in the scenery as you're locked into a life-and-death shoot'em up! A treat for arcade addicts.



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Hex Loader, the six billion dollar computer generated whizz with an ego to match is back with all your hints'n'tips for fast, hack free action.

Buzzzzzz... Clickl Errr. Hi There! Bzzzt. Ppppttt. Toing! Ouch! Hi There! God, I hate waking up, don't you? I'm in a good mood today. No, really I am. Pete has fixed my plug and my circuits are buzzing with life - not to mention my mailbox buzzing with mail. Y'know, its people like you who make a young computer generated columnist like me very happy.
Hey, how d'you like the new spread? Puh-retty bozzy, huh? I told you, my little potato, that I could wind dear old Ed round my littlest tentacle, and so here I am. Ta-dah! The Big Time!
Gosh. What's this? Do my optical pickups deceive me? (Give 'em a quick polish, Pete, there's a good lad.) A letter from Keith Gronneberg of Scalloway, Shetland. (Y'know that I'm a bit of a young Scalloway m'self) He says "I've completed Fairlight - I think! I found the key, which I presumed
was for the Castle gate, and walked into the gate. I was then told that l'd failed in my quest, the Wizard is free, the quest continues in A Trail of Darkness (Fairlight II presumably). The man from The Edge told me I could be successful in my quest, so I must battle on.
"Anyway, here are some tips to help others get at least as far as l've got. (Hopefully no further!)
Collect the two stoppered bottles mentioned in the article Gothic Horrors, Your Spectrum 20, but don't use them to increase your life force as it says there - you cannot complete the game without them. Take the Crown standing on the top of the pillared doorway over the drawbridge. In the caved area, using the crown, you should find a secret room. Here you'll find the dead King and a book The Book of Light? Oh no, this is a very clever deception. Slide the body off the platform. The platform is divided in three, slide off the nearest section from right to left and jump inside. You fall into a room containing the real Book of Light!"

What happens next? Hah! You'll have to wait till next time to find out. Oh yes you will! (Oh no we won't) Look here mate, this isn't a school Panto, you'll wait when I say so.
Bryan Charlewood (aka Harry the Halfling) sent me this note about Avalon. "Jerry Tattum's letter Your Spectrum 19 was virtually useless to newcomers to Avalon, so l've sent you these tips.
"To find the Cup (chalice) go to the Goblin Warrens and find the unopenable door. Use the Open spell from under the sack in the mines, and enter. Take the Reveal spell from the skeleton's ribs and open the right hand door. Use the Reveal spell to find the Cup. It's in the middle of the wall around the top.
"Next the sword Caliburn. Find the lady's picture on the Labyrinth Level (from the spell Message) then go to the door on her left then on to the Scorpion room. Missile it, and use the find spell from the same level."

Voila! (pro. Waller!)
Now, Yours Unpokingly (shouldn't that be POKElessly?) Matthew Davies of Blackpool, Lancs. "I have just one tip for Mikro-Gen's Dummy Run. To get to Lost and Found,
get the tennis racket and go into the room on the 4th Floor. You must play like Breakout and get all the blocks away then the Glove will drop. Then go to the 1st Floor and get to the Glove room, jump at the middle of the door and you're in Lost and Found!" Voila II! "I haven't managed to switch on the elevator yet." Any clues, you guys? Or gels no sexism in this column.
Yours skilfully (!) Jonathon Leach of Sidmouth, Devon has this to say about PSS's The Covenant.
"I completed this great game on the 8th of July..." What kept you? "... after three days of solid playing. I was rewarded with a box of goodies from PSS worth fifty quid, for being the second person to complete the game. Here goes with my tips:
Number one: Use the Save facility.
Number two: Practice makes perfect when controlling the globe. Number three: Energy points that look a bit like shining lamps drain away your energy, whilst energy points that look like round canisters on four legs replenish your energy.

Just for the record, I scored 65464 points. The scroll when complete reads 'Then and now, All as one, Xaviours task, Will be done.' Once completed I was met with the message 'Xaviour Triumphs!'"

Wait! Hold everything! Nobody move! You sent me your tips, and you told me your Hi-scores... but you didn't send me a piccy of yourself. If you had, you could be one of Hex's Heroes. If having your name in print isn't enough for you, then this could be your chance to plant your mush on my illustrious column. There's something big brewing and I'm not telling you what it is... yet. Stay tuned. Ok, you can carry on reading now. Fffffrrrp, zzt!
Okay, all you carbon based folks out there, get weaving. I want to see your name on the Hex's Heroes Chart (the only chart that matters!) next month. Type, write, telex, carrier pigeon, message in a bottle (Yo-yo-yo), paper aeroplane, I don't care. I want your hints'n'tips! You know my address. There's no time to lose. Be in on the biggest pool of arcade intelligence since... the Pacific Ocean!

I'm waiting.
(Click! Bzzzzzzzzzzzzzz...)

## LOADS MORE HEX!

 Now's the time to switch on to Hex. But if he's to be switched on again next month, you're gonna have to send him your arcade tricks'n tactics. Okay, so he'll probably pass them off as all his own work but he is a megastar. Write to him at Hack Free Zone, Your Sinclair, 14 Rathbone Place, London W1P 1DE.
## HEXS HEROES

Phhhhzzztttt.... Hi again! Now's the time to introduce my fab fave games players of the month. Firstly we have Scott Donaldson from Hamilton in Scotland. Scott's been working really hard on Frankie. But then he needed to to end up with a score of 83,250 ! Following Scott, there's weirdo Jonathan Meller (I have a feeling Jonathan would prefer to stay anonymous!), who's been playing Nodes Of Yesod and come up with a score of $39 \%$. Pretty good Jonathan, so why are you too ashamed to flash your fizog? Anyway, last but not least on this list of Hex's Heros is Valetin Kressler from far-off (far out?) Switzerland. Hmmm, do they have electricity over there? Well, Valetin seems to have plugged in, 'cos he's got a score of 198710 in Daley Thompson's Supertest. Well done my little Hexophiles!


## WIZARD'S LAR

Tips supplied by John O'Connor, Cheshire.

A good ploy when entering a new room is to pause the game right away. This allows you to survey the territory at your leisure, without being hassied. Snee-key!


Spell scrolls shouldn't be collected unles you have some gold to transtorm into 'keys'. Don't waste them. You can always remember where they are and come back to them. Good reason to make a map, eh?

Watch carefully where the animals come from. There may be a secret passage in the room. Some passages may surprise you, by being fronted by fireplaces, and cabinets and the like.

Don't shoot animals - they prevent your energy decreasing. The only exception is the hooded monks, and axe-wielding homicidal knights. They'll kill you with one swipe.

## FIGHING WARRIOR

Hints ' $\boldsymbol{n}$ ' tips sent in by Alan Charles of West Yorkshire.

The backgrounds give you a clue as to how far into the game you are. They go like this: start screen, desert, desert Cleopatra's Needle, desert, desert, Cleopatra's Needie. On the second needie scene, an extra vase appears, bigger than the rest. Strike it and the temple door appears. Once inside you must fight to the death with a winged creature, who's delending the Princess. Make sure you've got lots of stamina though, 'cos every strike you make will cost you a point. To release her you must strike her bandages with an upper cut. Then she's all yours.

Always go for the mid-strike when you're attacking the current enemy - it seems to take less time than the other strokes on offer. Yep, It makes your fingers hurt but hang in there. The real key to the game is


Arrows are a real pain in the neck. And the groin and the knee... But don't bother about 'em too much as they'll only strike once whereas the enemy may get two in while you take avoiding action. The only time this doesn't apply is when you have the protection of a shield spell from vase five. Avoid them at all costs or lose the spell.

## MARSPORT

## Intelligence comes from James Winnard, Normanby, Cleveland.

- To open the Bakery, you must put water, flour, and a baking tin into the factor. The resultant cake must then be placed in the key slot. (Urgh!)

When you've cleared the area of Sept Warriors, you can use the auto feature (key 4) to search round for you, saving wear 'n' tear on the old fingertips. Just toggle it off when you come to an interesting doorway, or locker.

It's essential that you arm yourself as soon as possible, unless you're a very fast runner. The Sept Warriors will tear you to bits in two shakes of a tentacle. Get the gun permit out of the supply locker on Elis level, put in the key slot on Daly level, and pick up your gun from the locker to your left. Put it into a charge point to power it up, or you won't get anywhere. Happy Zapping!


To get past the gas bomb, make a gasmask in the factor by putting charcoal and a gauze in it. You may leave the finished gasmask in a locker until you need it.

PssstI Hey, buddy. If you want a piece of top secret intelligence, the first key to M Central is in the director's room on Alba level. It's not easy to get there, but it's handy to know this in advance.

- Ah, the music room! No tunes here, until you place the comet from the ice cream room into the waiting key slot.


## There's never beena better reason forlooking forward to Winter!

## WTVIER GAMIES



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# $\begin{array}{lllllllllll}Y & S & S & P & E & A & K & E & A & S & Y\end{array}$ 

What does the name David Crane mean to you? How about Pitfall? Or Space Shuttle? And, of course, there's always Ghostbusters. Alison Hjul was ushered in to his (ghostly) presence to meet the man behind the machine code

David Crane's not your average programmer. Firstly, he doesn't even look like a computer programmer. You know the stereotype - young spotty and scrawny due to devotion to his Speccy beyond the call of nature. Well, Crane's even older than the Ed (gasp!), hairy and very, very big -6 ft $6^{\prime \prime}$ in his trainers.

Secondly, as Activision's foremost 'games designer', he turns his rather large nose up at the 'programmer' tag. Since he joined Activision as a founder member in 1981, more than six million of his titles have been sold worldwide. Ghostbusters has notched up over 100,000 UK sales on the Speccy alone.

He paid a fleeting visit to the UK at the end of October, to attend the British launch of his latest creation, The Little Computer People, which should be available on the Speccy sometime soon.

## Okay, so you're called a 'games

 designer' - but isn't that just a fancy way of saying you're a programmer? No, it's not. Anyway, I'm really a 'generalist'. I come up with the ideas, design the game and get involved in the programming. But it's really all down to teamwork. I head a team of technical people who're the best in the industry. A real good game requires good team concept - there's a lot of mutual respect.Your games are all bestsellers, but how do you suss out what's going to be a megahit?
We play a lot of games as games designers. We know what people are playing today, why they're enjoying them. We must design games people will enjoy a year from now. For example, when the market was flooded with space games, I did Pitfall. People obviously wanted it, it's been incredibly successful. Basically, I watch what other people are doing - and try to do something different.

## Do you personally research all your

 games?When I was doing Ghostbusters, I spent a lot of time on research. I got hold of a video of the film and watched parts of it over and over again. Real spooky.

Didn't you get bored with the film? No, I loved it.
How did you get involved in Ghostbusters?
Columbia and Activision approached
one another to see how the film might lend itself to a good computer game. Discussions were underway before I got involved. When I was asked if I'd like to do Ghostbusters, I'd just seen the movie the night before so I went back the next day to see it again. I wanted to see how an original game might be designed based on the film.
Who's your favourite character in Ghostbusters?
The Marshmallow man ... no, not really. I don't think I have one - I just like the interaction between all the characters.

## Do you believe in ghosts?

I don't actively believe in ghosts, although people have reported seeing them. I think there may be little computer ghosts.
Are you obsessed with little people because you're so tall? No, it's not because I'm so tall... never really thought of it like that.

About a year ago my research team and I decided that little people inside computers were to blame for unexplained hardware and software performance. We decided to design a comfy environment to entice the little people out. The result was a $21 / 2$ storey house where the little people go about their daily business, eating, sleeping, listening to music and playing the piano. Each little person has a name and is slightly different to the next, but all share basic traits such as responding to love and attention - a pat on the head works wonders!
Isn't it all a bit daft?
Heck no. Back in the States there's a woman who bought three extra Commodore 64s just so her whole family could each have their own little person.
Hmmm, buying Commie 64s in the first place sounds a bit daft to me! Have you got any favourite little person? And is it true that some of them are transvestites?
Well, Wallace and I had a good time, and Zeke baked cookies once. As for the transvestites, I've never met one, but I guess there's all kinds living in these computers.
What are your plans for the future? Nothing at the moment. I've just finished this one so I'm taking time off at the moment. I tend to limp along and then something suddenly hits me and an idea comes.
Are you a trainspotter?
What's one of them?


## If only Rambo had the power of speech. Just what is he trying to tell us? If you know, tell us and you could win one of ten snazzy sweatshirts or a copy of his new game. We've got $\mathbf{5 0}$ to give away! Read on...

You know it's that time of the year when you wake up and find Jack Frost's autograph on the window pane and icicles hanging from Grandma's nose. When Dad brings out that poor excuse for a Christmas tree and Mum starts complaining that the local newsagent is already selling Cadbury's cream eggs.
Yup, it's winter again, so it's a wonder that shirtless ol' Johnny Rambo here doesn't catch his death. What he needs is a nice warm 100 per cent cotton, mega-thick American sweatshirt with the Ocean logo emblazened across his left nipple.
Funnily enough, we just happen to have ten of these Rambo-cosies tucked away within the confines of Castle Rathbone. And what's more we're gonna give you lot the chance to win one - that's if we can prise off the five the Ed's wearing. Even if you're not lucky enough to win a stylish winter-warmer, you can still pass the Yuletide hols with one
of the fifty runners-up prizes. You guessed it, they just happen to be copies of the racy Rambo game from Ocean. Faberoonies!
All you have to do to get your frost-bitten paws on one of these groovy prizes is come up with a caption most fitting to the posing Sylvester 'bulging biceps' Stallone. Fill in the speech bubble, clip out the coupon (or a photocopy) and send it off to Rambo 'Can-he-say-anything-but-urrgh-anyway?' Compo, Your Sinclair, 14 Rathbone Place, London W1P 1DE

## RAMBO RULES OK

- Entries should reach us by no later than January 31st 1986.
- Each entry must include your caption written inside the grunt bubble.
-The Editor's decision is final so no correspondence will be entered into - well, he's not much better at writing than Rambo!

Name
Address

## SABOIEllit

DUREM<br>sofitware getting harder




 break on the other side of the wall. But it's
not long before you'll be in the thick of it
 A bridge too far for Commando
STATE OF SIEGE Now you've done your impression of reached the final frame, it's time to try out some real SAS tactics. Lay siege to the enemy's stronghold, taking care to avoid
 the flames shooting out of the windows, you'll know that you've made it as a fully-

 - uie6e dn noК syगd mou'suiuu! 'eq eчt only to deposit you in the middle of more mayhem. The second time around, the
 come face to face with even greater numbers of enemy grenadiers. DAWN RAID When I visited Elite's offices in Walsall for a sneak preview of Commando, the game was still some doubt about whether the programmers would have enough memory was more or less there. And the game is as exact a copy of the arcade original as it's possible to get on the Speccy. And so it copying straight from an arcade machine in the office - when they can drag themselves away from playing it!



## OPPORTUNITYKNOCKS！

Opportunity has knocked this month for yet another brilliant programmer－and we think you＇ll agree that Chopper Mission has every chance of walking off with the number one spot as program of the year．If you＇re new to the mag（Shame on youl Ed），let＇s just fill you in on the details．We＇re looking for the six best programs for the Speccy that are under 5K．They can be Basic or machine code，games or utilities，just so long as they reach the peak of excellence．The compo is now nearing its last knockings－next month we print the final contender so if you still want to have a crack at it，put your program in the post now． So，who＇s going to do the judging then？You are！When all the programs have been printed，we＇ll remind you of how good each one was and ask for your votes．If you＇ve missed out on any of the entries，you＇ll find them in the Your Spectrum back issues or on previous Digi＇T＇apes．Phew，just feel that tension mount！

# CHOPDED IISSOON <br> by M Rai 

Prepare for take－off，chaps！This six screen＇copter game has all the makings of an arcade classic－manoeuvre round the moving barriers，dodge the alien swarms and rescue your stranded compatriots．And no we can＇t say it makes Airwolf look like Z81 Space Invaders－even if it does！

In each of the first five screens you have five men to rescue and on the sixth it＇s just a matter of making a safe landing on the red pad at the bottom of the screen．Simple eh？Not so fast．If you reckon this is going to be a walk over，then you＇ve reckoned without a thing or two．．．or three．．．

You＇ll start out with seven＇copters and receive a bonus one， every time you complete the sixth screen．It＇s at this stage that you really have to hang onto your hats＇cos everything starts to speed up－and the faster your times，the higher your score．

You can define all the keys at the start of the game and you must press Enter to restart a game after a pause．Right，helmets on and give it a whirl．

## The Basic Loader

Type in this loader and save it at the start of your master tape of Chopper Mission with SAVE ＂Chopper＂LINE 1.

1 CLEAR 32767
2 PDKE 23693，64：BDRDER OI CL 3 PRINT AT 10，3；FLASH is INK 7：＂CHOPPER MISSION IS LDADING＂ 4 LOAD＂＂CODE ：RANDOMIZE USR 32768

## The Hex Loader

Well，look who it ain＇t．It＇s our old friend Hex Loader．Type it in and use it to enter the Hex code remembering not to leave spaces between each set of eight bytes．You may stop in the middle of a program by entering STOP（Sym＋S）instead of the eight hex bytes，then enter $Y$ to the Save Code option．This＇ll save the code so far．When you run the Hex loader again，enter $Y$ to the LOAD CODE option and then enter the address from where you left off．

```
2 CLEAR 32767
4 POKE 23658,日
6 INPUT "LOAD CODE (Y/N)":A%
日 IF A$""Y" THEN LQAD ""CODE
```


## 10 LET ADD＝32768

12 INPUT＂Address you wish to start at？＂I

14 LET BYTES＝I－ADD
16 LET CS＝0
18 PRINT AT 0,0 ：＂Addressi＂I I
20 INPUT＂ B Hex bytes＂IA＊
22 IF A\＄＝＂．＂THEN GO TO 58
24 IF A\＄（1）＝＂STOP＂THEN GO TO 60

26 IF LEN A＊＜$>16$ THEN GO TO 5日

28 FOR B＝1 TO 16
30 IF（ $A *(B)<" O^{\prime \prime}$ OR $\left.A \leqslant(B)>" 9 "\right)$ AND（ $A$ 丰 $(B)<" A "$ DR $A *(B)>" F "$ ）TH EN GO TO 58

32 NEXT B
34 FDR $\mathrm{N}=0$ TO 7
36 LET $Y=C O D E A \$(1)-4 B$ ：IF $Y>9$ THEN LET $Y=Y-7$
38 LET $Z=C O D E$ A $(2)-48$ ：IF $z>9$ THEN LET $\mathrm{Z}=\mathrm{Z}-7$
40 LET $V A=16 * Y+Z$ I LET $C S=C S+V A$ 42 POKE I +N ，VA

46 LET A $\$=A \leqslant$（ 3 TO）
48 NEXT N
50 INPUT＂CHECKSUM＇＂；CS1
52 PRINT AT 2，25，CS1
54 IF CSI＜＞CS THEN GO TO 58
56 LET $I=1+8:$ CLS ：GO TO 14
58 BEEP ．1，10：PRINT AT 10，11； ＂ERROR＂：PAUSE 50：CLS ：GO TO I 4

60 INPUT＂Save to tape（Y／N）＂ 15\％

62 IF 8 \＄m＂Y＂THEN SAVE＂code＂ CODE 32768 ，BYTES


The Hex Code
＇Way you go then．And as soon as the code＇s in，save it with SAVE＂chopcode＂CODE 32768，5120．

32768 C3 $09880000248000=504$ $32776000160004303030=170$
 327923900 ØA 00 ø0 00 00 00＝67

 32816 1E CF CF BF OO FB D $0=835$ 3282400081 FF FF C1 0000032 328320000000000 328400404 FF 0065 FD 3F DE $=694$


328480101 0F 00 00 DF 00 03 $=35$ 32856 ØC 193124 日0 FF 50 FC $=709$ 328641 E CF CF 日F $\emptyset$ 日 $0 \|=715$ 32872 ø0 00 81 FF FF C1 $0000=832$
 $328880404 \mathrm{FF} 0067 \mathrm{FD} 3 F$ DE $=696$ 3289601 ण1 णF 00 ض0 1F D0 ø0 $=48$ 32904 Ø0 00 B1 FF Ø0 FF ØE $3 F=716$ 3291278 FJ FS F1 DD FF © CD $=1294$ 329203098 BC 64 Ab BF FC $70=1161$ $329288080 \mathrm{~F} 00 \mathrm{FS} \mathrm{FB} F \mathrm{FF} 5 \mathrm{~F}=1340$ 329362020 FF Ø0 FF $830000=705$

 3296078 FS FS F1 OD FD OD C0 $=1279$ 329683098 8C 24 E6 BF FC $70=1161$ 329768080 FD 00 FS FB FF $5 \mathrm{FF}=1340$ $329842020 \mathrm{FF} 00 \mathrm{FF} 830000=705$
 330002 F 5739 SE 03 A6 FD 7B $=830$ 33008 F7 F7 EF FF DE BD FF F6 $=1692$ 33016 EC D9 5C FE ES DB $3 F \mathrm{FE}=1564$ 33024 ES FD F2 64 FF FF B7 DE $=1729$ 33032 BF DB DC AD BF DF 7F $3 F=1407$
 $330480001090204000014=36$ 33056 C6 AF F7 FE 00 00 08 $20=914$ 33064 C0 AB 50 FA EB DC FB B4 $=1570$ 33072 CB 004077 FB DB 6D 964 33080 DE BD 18 Ø0 17 BA 17 ØF $=634$ $\begin{array}{lllllll}33088 & 07 & 25 & 03 & 00 & D A & 48 \\ \text { FD } 89 & =727\end{array}$ 33096 01 4 F 00 $40 \quad 2001 \quad 014 \mathrm{~F}=257$ $33104 \mathrm{ED} 502001014 \mathrm{~F} 2040=513$ $331120116014 F$ 3F $400116=253$ $33120017 A \quad 2140 \quad 09 \quad 061 A \quad 47=332$ 3312 A3 $40 \quad 05$ 日2 $017 A \quad 3340=472$ 33136 ØC D6 1A 47 B5 40 DE $02=370$ $3314401 \quad 4 \mathrm{~F} \quad 2 \mathrm{~A} 40 \quad 030 \mathrm{~B} \quad 03 \quad 4 \mathrm{~F}=279$ 33152 2D 40 Ø3 Ø8 01 4 F 30 $40=312$ $\begin{array}{llllll}33160 & 03 & 08 & 01 & 4 F & C A \\ 38 & 03 & 09 & =377\end{array}$ $3316803 \quad 4 \mathrm{~F} C D \quad 48030901 \quad 4 \mathrm{~F}=451$ 33176 D $04803090645 \quad 33 \quad 50=498$
 331920545 3D $5001010445=290$ 33200 उE $50010106450150=300$



 $332400246 \quad 5 C 4801 \quad 01 \quad 0246=310$ 33248 C2 5001010246 DB $50=644$
 33264 ص2 46 AE 4B ص1 01 1A $45=415$ $33272 \mathrm{CB} 48 \quad 01 \quad \emptyset 1 \quad 1 A \quad 45$ D1 $48=653$ $332800_{1} 01$ ØE $07 \mathrm{BA} 400_{0} 01=275$ 33288 of $075 A 48 \quad 01$ D1 øC $\quad 07=207$ 33296 A5 $400_{1} 01$ 01 OF $07 \quad 25 \quad 48=362$ $3330401010021402 A$ BA 01 0280 $333127 A 002001017 A \mathrm{ED}=566$ $3332050200_{1} 01$ D1 $7 A 20400_{1}=333$

 33344400 D 02014 F BA $4005=414$ 3335201014 F DA $40 \quad 030301=370$ 333604 F B2 40 05 01 01 4F D2 $=617$ 3336840 Ø2 D1 01 4 F D5 $40 \quad$ D2 $=426$ 33376 Ø1 Ø1 4F 6F 40 Ø3 Ø1 $0_{1}=261$ $333844 F$ BF $40 \quad 02 \quad 01 \quad 014 F \quad 66=471$ $33392400502014 F A 640$ D3 $=384$ $334000_{1} \emptyset_{1} 4 \mathrm{~F} C 840 D_{1} \emptyset_{1} \emptyset_{1}=348$ 33408 4F C6 $501901014 \mathrm{~F} 46=533$ 33416 50 Ø3 日4 ण1 $4 \mathrm{~F} \quad 26 \quad 50$ Ø2 $=287$ 3342401 01 4F A9 $50080101=340$ 334324 F BB $500601014 \mathrm{~F} \quad 2 \mathrm{E}=431$ 33440 50 02 03 01 4F B3 50 0C $=436$ 33448 01 01 4 F 3A $50030401=227$ $334564 F 9 D \quad 50 \quad 02 \quad 01 \quad 01 \quad 4 \mathrm{~F} 94=547$ $334645004 \quad 01 \quad 01 \quad 4 \mathrm{~F} \quad 35 \quad 50 \quad 02=300$ 33472 Ø3 0246 C3 50 01 $01 \quad 02=354$ $\begin{array}{lllllllllllllllllll}33480 & 46 & 07 & 50 & 01 & 01 & 02 & 46 & 15 & =252\end{array}$ $334885001010246105001=263$
 $33504 \quad 46 \quad 8140 \quad 01011146$ 日5 $=485$ 3351240 D1 D1 DE 46 GE 40 D1 $=325$ 33520 O1 ØF 46 बE 50 Ø1 O1 $10=198$ $\begin{array}{llllllllllll}33528 & 46 & 81 & 50 & 01 & 01 & 11 & 46 & 85 & =501\end{array}$ $3353650010100 \mathrm{C1} 4063 \mathrm{BA}=576$ $33544015700402001014 \mathrm{D}=263$ $33552 \quad 2040 \quad 20$ Ø5 014 D CD $40=467$ 33560 01 ØC 014 D DF 4001 ØC $=391$ $33568014 \mathrm{AD} 4050 \quad 0506014 \mathrm{D}=311$ 33576 E5 50 1B 01 01 4D 48 50 $=567$ 33584 18 01 01 4D $7 E 50$ 02 02 $\quad 313$ 33592014 D BF 50 01 $02014 \mathrm{D}=430$
 $33608 \quad 030102442250 \quad 01 \quad 01=190$ 33616 02 $44 \mathrm{DE} 50 \quad 01 \quad 01 \quad 02 \quad 44=444$ $336241348010102449748=396$ $33632 \quad 0_{1} 0_{1} 0244 \quad 3 C \quad 50 \quad 01 \quad 01=214$ 336401046 D1 50 01 $011146=256$
$336481 E$ S0 01 01 0E 46 C5 $40=457$ 33656 D1 01 ©F 46 ES 48 01 01 $=390$ 33664 DE 46 DA 40 01 01 0F $46=453$ 33672 FA $4801010081408 A=655$ $336808 A 017 A$ ø0 $40200201=360$ $33688 \quad 7 A \quad 40 \quad 40 \quad 01 \quad 16 \quad 017 A \quad 5 F=491$ 3369640.0116 Ø1 7A C1 $501 \mathrm{E}=513$ $33 / 0402$ Ø1 $7 A 4 B 50$ ØA Ø4 01 $=295$ $337127 A 41500204017 A 5 D=489$ $33720500204016 D$ DA $4001=479$ $337280100456350010105=263$
 $3374450 \quad 010111451 E \quad 50 \quad 01=279$ 33752011145 EE $50010110=199$ 337604511500101016 D 0F $=293$


 337925001010247 B6 $50 \quad 01=418$ $33800010247 \mathrm{FD} 48 \quad 01 \quad 01 \quad 02=390$ 3380 B 47 ØF 48 01 01 02 $47 \mathrm{BA}=419$ $33816400101002750 \mathrm{C9} 8 \mathrm{OA}=524$ $33824014 \mathrm{~F} 00402002014 \mathrm{~F}=258$ 338325340 ØD Ø1 Ø1 $4 F$ 7E $40=431$ 338400214014 F EØ $502001=439$ $33848014 \mathrm{~F} \quad 60500104014 \mathrm{~F}=341$ 33856 C0 481905 01 4F $7148=559$ 33864 ø日 ø3 01 $4 \mathrm{~F} \quad 4048$ Ø1 $04=232$ 33872 Ø1 $4 \mathrm{~F} \quad 40 \quad 40$ Ø． 408 01 $4 \mathrm{~F}=300$ $\begin{array}{lllllllll}33880 & A 4 & 40 & 05 & 05 & \text { D1 } & 4 F & E 9 & 40=615\end{array}$ $\begin{array}{llllllllll}33888 & 01 & 01 & 1 A & 46 & 24 & 48 & 01 & 0_{1} & =20 日\end{array}$ 33896 ØE 076450 01 01 ØF $07=225$ 33904 C4 50 Ø1 01 10 Ø7 F9 $48=622$ 3391201011107 FD 48 01 $01=353$ 33920 बE 074940 Ø1 01 बF Ø7 $=182$
 33936 01 $01 \quad 0244$ C1 $500101=347$ $339440244554801010244=299$ $33952 A D 480101$ 02 44 A1 $48=550$ $339600101024484400101=270$ 33968 ØD 5 A 40 FC BA Ø1 4F ØØ $=624$ $33976402001014 \mathrm{~F} \quad 204002=275$
 33992 4F E2 50 1C 01 01 4F $25=531$ 34000501902 01 4F $624814=377$
 340164 F C9 40 0B $02014 \mathrm{~F} \quad \mathrm{D} 6=651$ $340244008020545 \mathrm{CB} 4001=413$ 3403201 ØE 4439400101 0F $=221$ $3404044 \mathrm{B9} 40$ 01 D1 ØE 44 2E $=447$ 34048400101 OF 44 AE 40 01 $0=388$ $340560_{1}$ 0E 44 E9 4001 01 0F $=397$ $\begin{array}{llllllllllll}34064 & 44 & 49 & 48 & 01 & 01 & 10 & 44 \quad 96=449\end{array}$
 34080011044 A2 $50010111=346$ 3408844 BD 5001 U1 00 00 $\mathrm{E}=569$ 34096 C7 $5006068500 \mathrm{E6}$ C8 $=854$ 3410456 a6 06 85 00 78 3C $50=485$
 $341200600000 \mathrm{~EB} 400006=446$ $3412800000100190030 \mathrm{DA}=292$ 341364004 Ø0 01 00 1E Ø0 $3 C=159$ 34144 C5 $40030003001 E 00=297$


 34176 C6 40 Ø0 09 00 00 C8 $08=479$ 341845009090500 FF FS $40=665$ $34192000500 \mathrm{FF} 735005=460$ 34200050500 FFF6 $400008=583$
 34216000300 3C 00 5A 02 50＝235 342241 C Ø0 01 Ø1 1E $0.32 \mathrm{ES}=33 \mathrm{~B}$ 3423240 घ8 Ø0 01 00 1C 00 $32=151$ 34240 FA 40 0B 00 78 CD 40 Ø0 $=711$ $342480980008290500000=503$
 34264001 E 00320250 0C $00=174$ 34272 ØЗ 01 E 00321250 ØC $=193$ 34280 Ø0 E1 9B 50 9B 95 Ø0 Ø0 $=764$
 $342964 C 40$ ØD 0 D 80 $0 \mathrm{CD} 53=424$ $3430440 \emptyset 00080$ Ø0 $784440=457$ 3431200 DE 4440 Ø0 $6 E 4840=392$ 34320 Ø0 0E 484000 B4 $5540=479$ 34328 00 0E 5540 00 64 SD $40=420$ 3433600 बE SD $40000101 \mathrm{DE}=202$
 34352 1C $0.32 \mathrm{FA} 48030001=404$ 34360 Ø0 1E 00 $3269400300=252$ 34368 BC BC 500000 BC $5240=694$

 34392 05 ø0 BE C4 4B 05 05 85 $=606$ 34400 ø0 01 00 1C $0.315940=231$ $3440803000101000304 E=159$ $3441640030001001 \mathrm{E} 0032=148$
 $344323097480600030063=379$ 34440 Ø0 63 A3 $501 A$ Ø0 B4 $34=600$

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 34456 C7 C2 DO DO FF 6F 4 B Ø3 $=834$ 34464 03 85 Ø0 FF AF 48 D0 Ø3 $=641$ 34477 日0 00 FF 日3 $48000700=593$ $34480 \quad 00 \mathrm{FF}$ C2 50 01 16 D2 08 $=1662$ $\begin{array}{llllllllllll}34488 & 12 & 00 & 11 & 01 & 10 & 07 & 13 & 01 & =79\end{array}$ $\begin{array}{llllllllllll}34496 & 43 & 48 & 4 \mathrm{~F} & 50 & 50 & 45 & 52 & 20 & =561\end{array}$ $\begin{array}{lllllllllll}34504 & 4 \mathrm{D} & 49 & 53 & 53 & 49 & 4 \mathrm{~F} & 4 \mathrm{E} & 16 & =56 \mathrm{~B}\end{array}$ $\begin{array}{lllllllll}34512 & 0 B & 45 & 11 & 00 & 10 & 07 & 27 & 44 \\ 3 & =163\end{array}$ $\begin{array}{llllllllll}34520 & 27 & 20 & 54 & 4 F & 20 & 44 & 45 & 46 & =473\end{array}$ $\begin{array}{llllllllllllllll}3452 日 & 49 & 4 E & 45 & 20 & 4 \mathrm{~B} & 45 & 59 & 53 & =568\end{array}$ $\begin{array}{llllllllll}34536 & 16 & \text { OE } & 05 & 27 & 53 & 27 & 20 & 54 & =318\end{array}$ $\begin{array}{llllllllll}34544 & 4 \mathrm{~F} & 20 & 53 & 54 & 41 & 52 & 54 & 16 & =531\end{array}$ $\begin{array}{llllllllll}34552 & 15 & 02 & 10 & 06 & 48 & 69 & 67 & 68 & =429\end{array}$ $\begin{array}{lllllllllllll}34560 & 65 & 73 & 74 & 20 & 53 & 63 & 6 F & 72 & =771\end{array}$ $34568 \quad 65 \quad 20303030303030=421$ $\begin{array}{llllllllll}34576 & 20 & 62 & 79 & 20 & 41 & 41 & 41 & 16 & =500 \\ 34584 & 00 & 01 & 53 & 43 & 3 A & 16 & 00 & 00 & =244\end{array}$ $\begin{array}{lllllllll}34584 & 00 & 01 & 53 & 43 & 3 A & 16 & 00 & 0 D \\ 34592 & 54 & 49 & 4 D & 45 & 3 A & 16 & 00 & 18\end{array}$ $34600 \quad 4 \mathrm{C} \quad 49 \quad 56 \quad 45 \quad 53 \quad 3 A$ D0 $16=467$
 $\begin{array}{lllllllll}346 & 16 & 47 & 41 & 4 D & 45 & 20 & 4 F & 56 \\ 3 & 45 & =548\end{array}$

 $\begin{array}{lllllllll}34640 & 52 & 41 & 54 & 55 & 4 C & 41 & 54 & 49\end{array}=614$
 $\begin{array}{lllllllll}34656 & 11 & 0 & 10 & 07 & 54 & 49 & 4 \mathrm{D} & 45 \\ 346 & =343\end{array}$
 3467211 00 $1007 \quad 42 \quad 4 \mathrm{~F} \quad 4 \mathrm{E} \quad 55=34 \mathrm{~B}$ $\begin{array}{llllllllll}34680 & 53 & 20 & 31 & 30 & 30 & 30 & 24 & 25 & =381 \\ 34689 & 18 & 23 & 01 & 50 & 41 & 55 & 53 & 45 & =445\end{array}$ $\begin{array}{lllllllll}34688 & 18 & 23 & 01 & 50 & 41 & 55 & 53 & 45\end{array}=445$ $\begin{array}{llllllllll}34696 & 52 & 49 & 47 & 48 & 54 & 4 C & 45 & 46 & =597\end{array}$ $\begin{array}{llllllllll}34704 & 54 & 20 & 44 & 4 \mathrm{~F} & 57 & 4 \mathrm{E} & 20 & 55 & =545 \\ 34712 & 50 & 20 & 20 & 20 & 16 & 0 \mathrm{~B} & 08 & 12 & =235\end{array}$ $\begin{array}{lllllllllll}34720 & 00 & 10 & 07 & 50 & 52 & 45 & 53 & 53 & =420\end{array}$ $\begin{array}{llllllllllll}34728 & 16 & 0 B & 14 & 4 \mathrm{~B} & 45 & 59 & 16 & 08 & =319\end{array}$ $\begin{array}{lllllllllllllllll}34736 & 0 E & 12 & 01 & 16 & 02 & 09 & 10 & 05 & =87\end{array}$ $\begin{array}{lllllllll}34744 & 12 & 00 & 11 & 00 & 4 \mathrm{E} & 45 & 57 & 20\end{array}=301$ $\begin{array}{llllllllll}34752 & 48 & 49 & 47 & 4 \mathrm{~B} & 20 & 53 & 43 & 4 \mathrm{~F} & =549\end{array}$ $\begin{array}{lllllllll}34760 & 52 & 45 & 16 & 05 & 05 & 55 & 73 & 65\end{array}=484$ $\begin{array}{llllllllll}34768 & 20 & 35 & 26 & 38 & 20 & 74 & 6 F & 20 & =470\end{array}$
 $\begin{array}{lllllllllll}34784 & 65 & 74 & 74 & 65 & 72 & 2 E & 16 & 07 & =623\end{array}$ $34792 \quad 07 \quad 3020 \quad 74 \quad 6 \mathrm{~F} 20 \quad 65 \quad 6 \mathrm{E}=557$ $\begin{array}{lllllllllll}34800 & 74 & 65 & 72 & 20 & 6 C & 65 & 74 & 74 & =804\end{array}$ $\begin{array}{lllllllllllllll}34808 & 65 & 72 & 2 E & 16 & 0 A & O D & 10 & 07 & =329\end{array}$
 $348240 D 21$ FF 9311 ØD $94 \quad 01=614$ 34832 उD DD ED B0 AF 32 3C SC $=838$
 34848 DO CD $3 \mathrm{C} \quad 20 \mathrm{CD} \quad \mathrm{BE} \quad 02 \quad 7 \mathrm{~B}=769$ $34856 \mathrm{FE} 1 \mathrm{E} \quad 28$ Ø7 FE $16 \mathrm{CA} 7 \mathrm{~B}=932$ $3486490 \quad 18$ F1 21 OD B0 D6 06 $\quad 9695$ 34872 उE $3077 \quad 2310$ FC $3 E$ D $06=600$

 3489610 FB CD 7B 92 CD $96 \quad 92=1242$ $\begin{array}{llllllllll}34904 & 21 & 24 & 80 & 22 & 05 & \mathrm{BD} & \mathrm{AF} & 21 & =572\end{array}$
 34920 ED 5 D 日S 802 A ＠3 $\mathrm{BD} \mathrm{CD}=839$ $\begin{array}{lllllllllll}34928 & 26 & 92 & 06 & 47 & C D & 02 & 92 & C D & =819\end{array}$ 34936 DA 91 CD $9691 \quad 21 \quad 16 \quad 80=1046$
 3495210 FB C3 $21 \mathrm{BF} 2 \mathrm{~A} \quad 1 \mathrm{~B}$ 日0 $=832$ 34960 E9 उA IF 日0 E6 D1 C2 D6，$=1089$ 34968 BE उA 1F 日0 E6 02 C4 63．$=886$ 34976 BF 2122 Bø 34 7E FE 05 $=775$ 3498420 DO 3600 D 20 $002 \mathrm{~A}=385$ 3499205 BD उA 1F B0 EE 04 $32=642$ 35000 IF 80 CB $57 \quad 20 \quad 04$ ED $42=788$ 3500 $1801 \quad 09 \quad 220580 \quad 21 \quad 21=267$
 $3502400 \mathrm{CD} \mathrm{BE} \quad 0214 \quad 2091 \quad 7 \mathrm{~B}=669$ 35032 21 7 EE 日7 BE $28 \quad 1 \mathrm{~F} \quad 23 \mathrm{BE}=780$ $\begin{array}{llllllll}35040 & 28 & 54 & 23 & B E & C A & 6 F & 89 \\ 23 & =834\end{array}$ 35048 BE CA B1 $89 \quad 23 \mathrm{BE}$ CC F4 $=1379$ 35056 B8 CЗ 68 B8 CD BE $027 B=1043$ 35064 FE 21 CB 18 F7 2A OJ 日0 $=931$ 35072 ES CD 5692 ES D6 DS CS $=1101$ $350807 \mathrm{FE} 38 \quad 2006 \mathrm{CD}$ D4 $91=1036$
 35096 18 FG 23 C1 10 E9 E1 $22=1006$ $351040380 \mathrm{E} 11 \mathrm{FF} 93 \mathrm{CD} 4 \mathrm{~B}=1055$ $\begin{array}{llllllllll}3511292 & 96 & 03 & \text { C5 CD } 40 & 92 & 23 & =802\end{array}$ $\begin{array}{lllllllllll}35120 & \text { C1 } & 10 & \text { FB CS } & 68 & \text { 日B } & 2 A & 03 & =937\end{array}$ 35128 B0 ES CD 4B 92 ES CD $4 \mathrm{~B}=1292$
 35144 06 CD D4 91 C1 18 OB CD $=1001$ 35152 F3 89 2802 18 F6 23 C1 $=920$ 3516010 E9 E1 2203 80 E1 $11=881$

35168 FF 930603 CS CD $40 \quad 92=1023$ $\begin{array}{llllllll}35176 & 23 & C 1 & 10 & F 8 & C 3 & 68 & \text { 日B } \\ 35184 & 2 A & \text { A } & 969\end{array}$ 35184 Ø3 80 ES 2B ES D6 Ø2 C5 $=837$ 35192 7E FE 3820 06 CD D4 $91=1036$
 3520818 F6 CD $4 \mathrm{~B} 92 \mathrm{C} 1 \quad 10 \mathrm{E7}=1136$ $\begin{array}{llllllll}35216 & \mathrm{E} 1 & 22 & 03 & 80 & 21 & 24 & 80 \\ 3522=621\end{array}$ 35224 05 8021 FF B0 CB $96 \mathrm{E} 1=903$ $\begin{array}{llllll}35232 & 23 & 23 & 11 & \mathrm{FF} & 93 \\ \mathrm{CD} & 40 & 92 & =904\end{array}$ $35240 \mathrm{CD} 4 \mathrm{~B} 92 \mathrm{CD} 4092 \mathrm{CJ} 6 \mathrm{~B}=1140$ $\begin{array}{lllllll}35248 & 88 & 2 A & \text { ब3 BO ES } 23 & \text { ES } & 23 & =837\end{array}$ 3525623 06 D2 CS TE FE $38 \quad 20=708$ 35264 D6 CD D4 91 C1 18 OD CD $=1003$ 35272 FS B9 280218 F6 CD $4 B=972$ 35280 92 C1 10 E7 E1 22 03 $80=976$
 35296 80 CB 96 E1 11 FF $93 \mathrm{CD}=1330$ 353044092 CD 4 B 92 CD $40 \quad 92=1051$ 35312 C 368 BB CD C1 91 FE Ø日 $=1232$ 35320 CB CD CC 91 C9 21 2E $85=1167$ 35328 CD CC $8 \mathrm{BB} 2135 \mathrm{BS} \mathrm{CD} C \mathrm{CC}=1176$ 35336 日B $21 \quad 3 \mathrm{C} \quad 85 \mathrm{CD} 49 \mathrm{BB} \quad 21=815$ 353444385 CD CC 8B 214 A B5 $=988$ 35352 CD CC BB 2151 85 CD CB $=1200$ 353608 CD 215 A 8 CD CB BC C3 $=1136$ 3536891 88 216385 CD C8 $8 \mathrm{C}=1091$ $35376216 C$ B5 CD CB BC $217 E=978$ $3538485 \mathrm{CD} C \mathrm{CC} 8 \mathrm{BB} 2185 \quad 85 \mathrm{CD}=1185$ 35392 CC 8B 218 BC 85 CD CC BB $=1197$ $\begin{array}{llllllllll}35400 & 21 & 93 & 85 & C D & C C & 8 B & 21 & 9 A & =1048\end{array}$ $35408 \quad 85 C D C C \quad 8 B \quad 2175 \quad 85 C D=1169$ 35416 C8 8C 21 A1 $85 \mathrm{CD} C \mathrm{CC} 8 \mathrm{BB}=1215$


35424 CB 918821 AB BS CD CB $=1215$ 35432 BC 21 B1 85 CD C8 BC $21=1061$ 35440 BA BS CD CB BC 21 C3 $85=1225$ 35448 CD CC $8 B 21 C A 85 C D 2 C=1165$ 35456 BD 21 CF B5 CD 83 BD CJ $=1186$ 35464918821 D6 $85 \mathrm{CD} \mathrm{CB} 8 \mathrm{CB}=1206$ 35：72 21 DF 日S CD C8 8C $21 \mathrm{~EB}=1199$ $3548085 C D 49$ BB 21 EF $85 C D=1160$ 3548849 BB 21 FG 85 CD CC BB $=1172$
 3550486 CD E9 BD 21 ØC 86；CD $=1097$ $35512 \mathrm{E9}$ BD $211486 \mathrm{CD} E 9 \mathrm{BD}=1140$ 3552021 1C B6 CD E9 BD C3 $91=1114$ $\begin{array}{llllllll}35528 & 88 & 21 & 24 & 86 & C D & C B & B C \\ 21 & =917\end{array}$ 35536 2D 86 CD C8 日C $21 \quad 36 \quad 86=945$ 35544 CD CB BC 21 SF B6 CD $2 \mathrm{C}=1024$ 35552 BD 214486 CD CC $8 \mathrm{BB} \quad 21=957$ 355604 B 86 CD CC $8 \mathrm{BB} 215286=1006$ 35568 CD 49 8B $215986 C D C C=1082$ 35576 BB C3 $9188 \quad 216086 C D=1083$ 35584 CB OC $21 \quad 69 \mathrm{B6} \mathrm{CD} \mathrm{CB} \quad 8 \mathrm{C}=1157$

 35608 CB BC $2194 \mathrm{B6} \mathrm{CD} 49 \mathrm{BB}=1072$ $35616219 B \quad 86 C D C C$ 日B 21 A2 $=1065$ 35624 B6 CD CC BB 21 A9 B6 CD $=1223$ 35632 CC BB $218 \mathrm{BD} 86 \mathrm{CD} 83 \mathrm{BD}=1128$ 3564021 B0 86 CD 2 C 8E $21 \quad 1 \mathrm{~F}=79 \mathrm{~B}$ 35648 日0 CB 7E C2 FD 8F C3 $91=1374$ 35656 88 $347 E \quad 23 \mathrm{BE} C 02 \mathrm{BC} 36=828$ 35664 Ø0 2323 ES SE 2356 DS $=727$ $\begin{array}{llllllllll}35672 & 23 & 23 & 23 & E S & 4 E & E B & C B & 41 & =915 \\ 35680 & 28 & \text { ØE } & C B & 51 & 28 & \text { ØS } & 11 & \mathrm{FF} & =655\end{array}$
$\begin{array}{llllllllllllll}35688 & 93 & 18 & 11 & 11 & 6 F & 93 & 18 & 0 C=499\end{array}$ $35696 \mathrm{CB} 51 \quad 28$ 0S 11 6F $93 \quad 18=628$ $357040311 \mathrm{FF} 93 \mathrm{CD} 4092 \mathrm{ES}=1066$ 35712 CD 71923646 E1 7D E1 $=1163$ $35720 \mathrm{CB} \quad 4 \mathrm{E} \quad 28 \quad 05 \mathrm{CB}$ BE $2 \mathrm{BE} 18=738$ $\begin{array}{llllllllll}35728 & 18 & 2 \mathrm{~B} & 2 \mathrm{~B} & \mathrm{BE} & 20 & 09 & 23 & 23 & =411\end{array}$ 35736 CB C6 CB CE 2B 18 ØA $23=922$ 35744 BE 20 D6 23 CB B6 CB CE $=1009$ 35752 2B 23 CB 4E D1 $28 \quad 02$ E1 $=835$ 35760 C9 CB 46 AE EB $28 \quad \emptyset A \quad 2 D=882$ $\begin{array}{lllllll}35768 & C B & 51 & 20 & \text { DA CD F } & \text { F } & 18 \\ 39 & 18 & =935\end{array}$ $35776 \quad 05 \quad 2 \mathrm{CB} 5120 \mathrm{F6}$ EB E1 $=1071$
 $35792 \mathrm{CO} 2 \mathrm{CB} 360023 \quad 23 \mathrm{ES} 5 \mathrm{EE}=682$ 3580023 S6 DS 23 ES $23 \quad 23$ CB $=871$ 3580846 4E EB CS ES 28 SA CB $=1110$
 $35824 \mathrm{FF} 93180311 \mathrm{BF} 93 \mathrm{CD}=989$ 35832409218 SD C5 CB $5128=848$ 35840 05 11 FF 9318 Ø3 $11 \quad 77=587$ $3584893 \mathrm{CD} 4092 \mathrm{CD} 4 \mathrm{~B} 92 \mathrm{C1}=1181$
 $3586403117 \mathrm{~F} 93 \mathrm{CD} 409218=733$ $\begin{array}{llllllllll}35872 & 38 & C B & 79 & 28 & 11 & C B & 51 & 28 & =761\end{array}$ 35880 ø5 11 BF 9318 Ø3 $11 \mathrm{FF}=659$ $3588893 \mathrm{CD} 40921823 \mathrm{CL} C B=1021$
 3590411 7F 93 CD $4092 \mathrm{CD} 4 \mathrm{~B}=986$
 359209318 03 11 FF 93 CD $40=862$ 3592892 E1 CD 7192 C1 CB $79=1352$
 35944003645093645 E1 $7 E=606$
 35960 EE 1818 FE Ø0 20 Ø6 $\mathrm{CB}=685$ 35968 C6 CB CE 1807 B8 $20 \quad 04=858$ 35976 CB B6 CB CE CB $4 \mathrm{E} \quad 28$ 03 $=1070$ 35984 E1 E1 C9 CB $46 \quad 56 \quad 2 B \quad 2 B=1096$ 35992 28 1C 34 E1 CD $4 \mathrm{~B} 92 \mathrm{CB}=974$ 3600052 20 1F CB $7 A \quad 28$ O5 CD $=720$ 3600 B F3 $8918 \quad 16 \mathrm{ES}$ CD $4 \mathrm{~B} \quad 92=1081$ 36016 CD F3 $89 \mathrm{ED}_{1} 18$ øC $35 \mathrm{E}=1124$ $36024 C D \quad 5692 \mathrm{CB} 52 \quad 28 \quad 03 \mathrm{CD}=970$ 36032 F3 89 EB E1 732372 C9 $=1305$ $36040347 E$ FE 32 C0 36 00 $23=763$ 36048 CB 46 ES D1 $2803 \quad 2318=813$
 $36064 \mathrm{CD} 2 \mathrm{~B} 3600 \mathrm{~EB} 4 \mathrm{ECB} 41=870$

 3608846 EB CB 4128 णE CB $49=903$ $\begin{array}{lllllllllllll}36096 & 28 & 05 & 11 & 97 & 93 & 18 & 08 & 11 & =409 \\ 36104 & \text { 日F } & 93 & 18 & 03 & 11 & \mathrm{FF} & 93 & 15 & =933\end{array}$ 36104 8F 9318 03 11 FF 93 C5 $=933$ 36112 D5 CB 41 CS 28 OJ CD FS $=1169$ 3612089 CD 4092 C1 CB $49 \quad 28=1061$
 36136 C1 10 E4 C9 34 TE $23 \mathrm{BE}=1041$ 36144 CO 2 ZB 36 De $23 \quad 23 \mathrm{ES}$ SE $=682$ $\begin{array}{llllllll}36152 & 23 & 56 & 23 & \text { ES EB } & 11 & \mathrm{FF} & 93 \\ 3 & =1039\end{array}$ 36160 CD $409223 \mathrm{CD} 4092 \quad 2 \mathrm{~B}=908$ 36168 EB E1 34 TE FE $17 \quad 28 \quad 04=959$ $\begin{array}{lllllllllll}36176 & \mathrm{~EB} & 2 \mathrm{D} & 18 & 13 & 36 & 00 & 21 & 7 C & =534\end{array}$ 3618450 ED 5F E6 0328 øB $47=764$ $36192 \mathrm{C5}$ CD $4 \mathrm{~B} 92 \mathrm{C1} 10 \mathrm{F9} \mathrm{CD}=1286$ 36200 FS 日9 EB E1 $732372 \mathrm{~EB}=1339$ 3620811 CF $93 \mathrm{CD} 409223 \mathrm{CD}=1026$ $362164092 \mathrm{CD} 71 \quad 92 \quad 36 \quad 46 \quad 2 \mathrm{~B}=841$ 362243646 C9 34 7E 23 BE CD $=920$ 36232 2B 36 00 $23 \quad 23$ E5 5E $23=525$ 36240 56 DS 23 ES EB $11 \mathrm{FF} 93=1217$ $36248 \mathrm{CD} 40 \quad 92 \quad 23 \mathrm{CD} 40 \quad 92 \mathrm{E}=1090$ 36256 D1 TE FE ø0 $2007 \quad 23 \quad 23=698$ 36264 CB C6 $2 \mathrm{~B} \quad 18 \quad 08 \quad 23 \mathrm{BE} 20=733$ $36272 \quad 04 \quad 23 \mathrm{CB} 86 \quad 2 \mathrm{~B} \quad 2 \mathrm{~S}^{\mathrm{C}} \mathrm{CB} \quad 46=727$ $36280 \quad 2 \mathrm{BE} \quad 28 \quad 07 \quad 34 \mathrm{~EB} \mathrm{CD} 4 \mathrm{~B}=700$ $\begin{array}{llllll}36288 & 92 & 18 & \text { o5 } & 35 & \mathrm{~EB} \\ \mathrm{CD} & 56 \quad 92=900\end{array}$ 36296 CD F3 8923 CD FS $892 \mathrm{CB}=1248$ 36304 EB E1 732372 EB 11 E7 $=1207$ 3631293 CD 409223 CD $4092=1012$ 36320 CD $71 \quad 92 \quad 3645 \quad 2 B \quad 36 \quad 45=753$ $36328 \mathrm{C9} 347 E \quad 23 \mathrm{BE} \mathrm{C0} 2 \mathrm{BB} 36=893$ $363360023 \quad 23$ E5 SE $235623=549$ 36344 ES EB $11 \mathrm{FF} 93 \mathrm{CD} 4092=1298$ 36352 EB E1 34 TE $23 \mathrm{BE} 200 \mathrm{~B}=906$ $363602 B 36$ 00 $23 \quad 23$ SE $2356=382$ $36368 \mathrm{~EB} 1804 \mathrm{~EB} \mathrm{CD} 4 \mathrm{~B} \quad 92 \mathrm{CD}=1129$ 36376 FS 89 EB E1 $73 \quad 2372 \mathrm{~EB}=1339$ 3638411 DF 93 CD 4092 CD $71=1120$ $\begin{array}{llllllllllll}36392 & 92 & 36 & 07 & C 9 & 34 & 7 E & 23 & B E & =811\end{array}$ $36400 \mathrm{CD} 2 \mathrm{~B} \quad 360023 \quad 23 \mathrm{ES} 5 \mathrm{EE}=682$ $36408 \quad 23 \quad 56 \quad 237 B$ FE C2 $20 \quad 02=761$ 36416 CB C6 FE D9 20 D2 CB $86=1243$ 36424 CB $46 \quad 28$ DA DS E1 CD $71=1079$
 $3644001040009 C D 7192 \quad 36=532$ 3644847 1B DS E1 ES 7E A7 $28=1098$ 36456 ＂ 06 ＇CD CC 91 E1 $1819 \quad 01=835$ $364640400097 E$ A7 28 06 CD $=557$ 36472 CC 91 E 18 DB E1 $23 \mathrm{FE}=995$ 36480 A7 28 os 21 1F $80 \mathrm{CB} \mathrm{FE}=861$

36488 E1 732372 EB CD $7192=1188$ $\begin{array}{lllllllll}36496 & 36 & 68 & 23 & 36 & 50 & 23 & 36 & 50\end{array}=496$ $\begin{array}{lllllllll}36504 & 23 & 36 & 50 & 23 & 36 & 69 & \text { C9 C5 } & =760\end{array}$ 36512 DS ES DD ES CD BS ØS DD $=1502$ 36520 E1 DD ES E1 06 01 CD $63=1211$ 3652892 E1 D1 O1 1 A Ø0 $09 \mathrm{C1}=809$ 3653610 E5 C9 06 FF $210005=745$ 66544 CS 7E DJ FE 23 ES $21 \quad 27=1124$ 36552 øض D6 D1 CD 6392 E1 C1 $=875$ 36560 10 EE AF DS FE C9 DG ض6 $=1107$ 36568 CS $0647 \mathrm{CD} 0292 \quad 2 \mathrm{~A} \quad 03=672$ 36576 B0 ES 11 E4 80 CD $2692=1119$ 36584 CD BB BE E1 $1114 \mathrm{~B} 1 \mathrm{CD}=1130$ 165922692 CD BB BE C1 $10 \mathrm{ED}=1151$ 3660ø 21 Ø9 80 35 FA DA BF D6 $=632$
 3661648 B8 $3 E 4 F C D 89 \quad 9211=854$ 36624 2F 87011200 CD $3 C 20=498$ 36632 CD 4D BF CD D＠90 C3 $14=1197$ 36640 B8 Ø6 OA C5 ED SF E6 7D $=1036$ 36648 CD $89 \quad 92 \quad 06$ D1 $21204 \mathrm{E}=63 \mathrm{~B}$ 36656 CD 6392 C1 10 ED $3 E 60=1054$ 36664 CD $89 \quad 92115 B 87 \quad 0110=748$ 36672 00 CD 3 C 20 CD 4 D 8F CD $=927$ 36680 D0 90 C3 1488 D6 OF C5 $=921$
 36696 DD 21 ण1 øض CD 9F BE C1 $=954$ 3670410 ED C9 $2160001101=601$
 36720 9F 日E 21 1E B0 $347 \mathrm{EFE}=924$ $36728 \quad 05 \quad 28 \quad 06 \quad 21 \quad 1 F \quad 80 \mathrm{CB} \quad \mathrm{BE}=588$ 36736 C9 D6 OC C5 2150 00 $11=546$
 36752 CD 9F 日E C1 10 ED $3 \mathrm{E} \quad 57=1101$ 36760 CD $89921141 \quad 87 \quad 01 \quad 1 A=732$ $3676800 \mathrm{CD} 3 \mathrm{CD} 202118 \quad 807 E=608$ 36776 D6 30 A7 28 D6 47 3E D1 $=609$ $36784 C D$ DC BF 2B 7E D6 30 A7 $=1166$ 36792 28 Ø6 47 उE ØA CD DC BF $=757$ $\begin{array}{llll}3680 . ~ 2 B ~ 7 E ~ D G ~ & 30 & A 7 & 28 \text {＠D } 4 F=730\end{array}$ 3680806 DA AF B1 10 FD 47 3E $=722$ 36816 OA CD DC BF F1 $211980=1005$ 3682434 C3 48 88 ES C5 FS CD $=1331$ $368327691 \quad 06 \quad 01211 \mathrm{C} \quad 25 \mathrm{CD}=573$ 368406392 F1 C1 10 EF E1 C9 $=1360$
 $368562006 \quad 64$ C5 2140 00 $11=449$ 3686402000620 DD 2101 01 $=296$ 36872 CD OF BE 3E DA CD $76 \quad 91=1046$ 36880 C1 10 E0 $2403023 \quad 23=69$
 6888 23，ES CD 71923646 E1 91077 36896 －6． 19 CS ES 11 F7 93 CD $=1073$ $36904409206 \quad 0121204 \mathrm{EDCD}=565$ 369126392 E1 11 3F 93 CD $40=966$ 3692092 ES D6 01 $21204 \mathrm{E} C D=730$ 3692863 92 E1 C1 $10 \mathrm{DC} 2109=941$ $36936 \mathrm{BD} 34 \mathrm{CD} 5090 \mathrm{CJ} 43 \mathrm{BB}=1007$ 3694421 3D B5 7E D6 OA $7721=729$ $3695244 \quad 85$ 7E D6 DA 7721 A2 $=865$

36960 85 7E D6 ©A 7721 E9 $85=1001$ 36968 7E D6 $147721 \mathrm{FO} 857 \mathrm{E}=101$ 36976 D6 $0 A 772140$ B6 7E D6 $=914$ 36984 OS 77 C9 CD $7 \mathrm{~B} \quad 92 \quad 11$ 9C $=972$ 36904 OS $\begin{array}{lllllllll}36992 & 87 & 01 & 12 & 00 & C D & 3 C & 20 & 06\end{array}=457$ $3700005217 E \quad 87 \mathrm{CS}$ ES CD B4 $=111$ 370089006012150 C3 CD $63=763$ 3701692 CD BE 02 1C 28 FA $1 \mathrm{D}=842$ 37024 D5 2196 01 11 日A ØØ CD $=629$ 37932 BS 03 D1 E1 $73 \quad 23$ C1 $10=977$ 37040 DB C3 14 C8 11 AE B7 $=109$ 37040 DE C3 14 88 C5 11 AE $87=109$ $37048010500 \mathrm{CD} 3 \mathrm{C} 20 \mathrm{C1} 21=529$ 37056 7E $871105001910 \mathrm{FD}=577$ 37064 D6 05 7E D7 2310 FB C9 $=855$ 3707211 DD 日も 21 ØA 87 Ø6 $06=348$ $370891 A$ BE DB 29 02 $18 \quad 05 \quad 13=522$ 3708023 F5 C9 CD $7 B$ 92 $11=998$ $\begin{array}{llllllll}37088 & 23 & 10 & F 5 & C 9 & C D & 7 B & 92 \\ 37096 & \text { BJ } & \text { B7 } & 01 & 53 & \text { 日0 } & \text { CD } & 3 C \\ 30 & 20 & =695\end{array}$
 37104 D6 1A $3 E 5 B 90$ D7 10 FA $=810$ $\begin{array}{llllllllll}37112 & 11 & 06 & 88 & 01 & 03 & 00 & C D & 3 C & =428\end{array}$ 3712020 Ø6 Ø3 2114 日7 C5 E5 $=655$ 37128 ØE 78 CD 6891 D6 D1 $21=628$ 37136401 F CD 6392 CD 日E $\quad 02=894$ 371447 BFE D4 20 10 21 1A $\mathrm{BO}=616$ 371527 E FE 0128 EB ØE $47 \mathrm{CD}=943$ $371606891 \quad 3518$ DB FE $1320=850$ 371681021 1A 日 210 FE $1 \mathrm{~A} 28=649$ 37176 D4 OE 47 CD $68 \quad 91 \quad 34 \quad 18=827$ 37184 C7 FE 2320 C8 $211 \mathrm{~A} 80=907$ 37192 4E उE 40 81 SF D7 D6 $01=650$ 372002150 C3 CD 6392 E1 $73=1098$ $37208 \quad 23$ C1 10 AA 21 ØD 80 $11=605$ 37216 ØA 87 01 Ø6 Ø0 ED BØ C9 $=766$ 37224 ES 3 A 1 A 8021 C2 $5916=779$ 37232 Ø0 SF 1971 E1 C9 $2112=710$ 37240 O6 FE 3 A 38 日B D6 $0 \mathrm{~A}=062$ 3724877 2B 7E 3C 18 F4 77 3E $=797$ $3725657 \quad 32$ 8F $5 C 11$ DA． $8001=528$ 3726409 D0 CD 3C 20 C9 $2120=572$ 37272 日ी 34 TE FE 78 CD 36 00 $=926$ 37280 21 19 50 7E 3D FE $30-70=722$ 7289 OG 77 2B 7E $3 D$ 18 $=529$ 37296 F4 77 3E 57 32 BF SC $11=814$ 373041380 01 Ø6 øø CD $3 C 20=451$ 37312 C9 AF ES D6 ©B 4E B1 $24=862$ 7320 10 FB E1 C9 ES 21 1F 日0 $=1114$ 37320 10 FB E1 C9 ES 21 1F 日0 $=1114$ 37328 CB C6 E1 C9 $21 \quad 1 \mathrm{~F}$ 80 CB $=1222$ 37336 CE C9 21238034 7E FE $=1035$ 373441 ECO 36003 A 1 F B0 EE $=731$ 37352 08 32 1F 80 CB 5 F 28 08 $=563$ $373601100001 \mathrm{FF} 001806=335$ 373681104 00 2120 OD CD B5 $=472$ 37376 03 C9 24 O3 80
 37392000977 2B 77 2B 77 C9 $=653$ 37400 CB 1C CB 1C CB 1C C9 CB $=1097$
 $37416 \quad 9223$ CD $40 \quad 92 \quad 23 \mathrm{CD} 40 \mathrm{j}=900$ $3742492 \mathrm{CD} 4 \mathrm{~B} 92 \mathrm{CD} 40 \quad 92 \quad 2 \mathrm{~B}=1030$

37432 CD 40922 B CD 4092 C9 $=1074$ 37440 D6 OB ES $1 A \quad 7713 \quad 24 \quad 10=459$ 37448 FA E1 C9 CD 1892 Ø1 $20=1084$ 374560009 CD 1F 92 C9 CD $18=821$ 3746492012000 A7 ED $42 \mathrm{CD}=354$ 37472 1F 92 C9 C5 E5 01 01 00 $=806$ 37480 A7 ED 4220 FB E1 C1 $10=1187$ 37408 F2 7 C OF OF OF E6 G3 F6 $=890$ 37488 F2 7C © 21 FO $37496 \quad 58 \quad 67 \mathrm{C9} 2100400100=490$ $3750418 \quad 75541 \mathrm{E} \quad \mathrm{D}_{1} \mathrm{ED} \mathrm{BD} \quad 3 \mathrm{E}=731$
 37520 FF 0277 ED B0 C9 3 A $19=1073$ $37528 \mathrm{B0} \mathrm{FE} 01 \quad 20$ 03 $2144 \quad 81=64 \mathrm{~B}$ 37536 FE Ø2 20 Ø3 21 1B $82 \mathrm{FE}=735$ 37544 Ø了 20 Ø3 21 Ø4 日3 FE $04=464$ 3755220 Ø3 21 8D 日3 FE OS $20=631$ 37560 Ø3 21 1C 84 FE 0620 03 $=491$ 3756821 B1 $845 E \quad 23$ S6 ED $53=877$ 37576 Ø3 日0 23 5E 2356 ED $53=701$ 37584 O 23 7E A7 $28 \quad 42 \quad 47=660$ 37584 1B BD 23 FE A7 $28 \quad 42 \quad 47=660$ 3759223 ES 11 日8 00 $212 \mathrm{~F} 93=516$ 376001910 FD EB E1 7E $3210=959$

 37624 ES C5 D5 CD 4092 E5 CD $=1488$ 376327192 3A 1D 8077 E1 $23=853$ 37640 D1 C1 10 ED E1 CD $4 \mathrm{~B} \quad 92=1306$ 3764 C C1 $0 \mathrm{D} \quad 20$ E3 $2 \mathrm{~A} \quad 07$ 日0 $18=666$ 37656 BA $3 A 0980 \mathrm{C} 630212 \mathrm{E}=706$ 37664 日7 77 3E $57328 F$ SC $11=705$ 376721787011800 CD $3 C 20=480$ 37680 CD B2 91 CD 87 91 C9 $55=1290$ 37688 AA 55 AA 55 AA 55 AA $38=991$ 37696 BA $54 \quad 38 \quad 10 \quad 38 \quad 28 \quad 6 C 7 F=673$ 37704 BF 7 FF BF 7F BF 7F BF FF $=1400$ 37712 FF 3 FFB ■7 FB Ø．Ø0 FF $=1076$ 37720 FF 7 F DE 4033 DC $00 \mathrm{FF}=986$ 77728 FF FC 1 F Eの 1 F Ø0 ØO $\mathrm{FF}=1048$ 37736 FF FE 7B Ø2 CC 3 BB D0 FF $=1149$
 37752 D1 A1 D1 A1 D1 A1 D1 A1 $=1480$ 37760 D1 A1 D1 AB D5 6A 3C 3C $=1189$ 377686 A D5 AB D1 A1 D1 A1 $30=1278$
 37784 日0 日1 C3 66 2C 18 10 FF $=765$ 37792 BF DF 6E 3C 18 18 $30 \quad 30=728$ 37800 18 18 3 C 76 FB FD FF E0 $=1209$ 37808 FD FB FF EF DG BD E0 $07=1605$ 37816 OD 1B F7 FF 1F OF $07 \mathrm{DF}=818$ 37824 AF DF AF DF AF DF AF D0 $=1369$
 37840 Ø0 7D FC 7D Øø Øø øø 01 $=503$ $37848 \quad 03$ B7 37 B7 03 D1 00 $3 \mathrm{Cl}=488$ 3785656 AB D7 AE D7 $6 E 34$ Ø0 $=1023$
 37972 FC FE $46 \quad 38=1000$ 37872000 E0 90 FC FE $4638=1000$ $378803810 \mathrm{FE} 1038286 \mathrm{C} 00=54$
 stop


If ever you find yourself in a dinghy up to your wellies in water in the middle of the Atlantic Ocean，that＇s the time you＇ll regret not typing in this program．Is it dot，dot，dot，dash，dash，dash or dash，dash， dash，dot，dot，dot？Well，it＇s glug，glug，glug for you shipmates！

Unless you learn to crack the code－morse code，that is．This program has two modes．Firstly，messages－type in a message and your Speccy will blip it back to you．Secondly，letters－your Speccy will blip out a letter and you have to type it in．If you haven＇t a clue where to start，panic not＇cos you＇ll find a table of the morse codes in the program．
Right，dash it off if you don＇t want to go dotty－or end up at the bottom of Davy Jones＇s locker！

1 POKE 23658，B：REM caps lock 2 CLS ：PRINT AT $0, B ;$＂MORSE C ODE TUTOR＂ 4 PRINT DVER $1 ; A T O, B ;$

6 PRINT AT 2，0；＂Written by Du ane A．Moore 1995＂日 PRINT AT 4，2；＂$(0)$ LISTEN TO YOUR MESSAGES．

9 PRINT AT 6,$2 ;$＂（2）HORK DUT MORSE GIVEN．

10 PRINT AT 5，2；＂（1）PRINT MOR SE AND LETTERS．

18 PRINT AT 7，2；＂（3）ABORT TO BASIC．

19 REM get what you want
20 INPUT＂CHOICE＂sa
22 IF $9=0$ THEN GO TO 34
24 IF $a=1$ THEN 60 TO 66
$\begin{array}{lll}26 & \text { IF } & a=2 \\ \text { THEN GO TO } \\ 28 & \text { IF } & a=3 \\ \text { THEN STOP }\end{array}$
34 CLS ：PRINT AT 0,4 ：＂LISTEN

## TO YOUR MESSAGES．

36 PRINT AT 1,4, ＂ENTER TO RETJ RN TO MENU．

38 INPUT＂MESSAGE＂；a＊
39 IF A＊＝＂＂THEN GO TO 2
40 PRINT AT 3，0；＂MESSAGE IS＂；
LEN a\＄；＂CHARACTERS LONG＂
42 PRINT AT 5，0，＂MESSAGE：－＂ 1 a\％ PRINT
44 FDR b＝1 TD LEN a＊
46 PRINT BRIGHT 1；a＊（b）
48 IF $a(b)="$＂THEN PAUSE 6： ©0 TO 62

50 LET dm9908＋CODE a＊（b）
51 IF d＜9973 OR d＞999日 THEN O
TO 62
52 RESTORE di READ c＊：READ e 53 FOR $f=1$ TO
54 READ 9
 AUSE 3
58 IF $\mathrm{g}=2$ THEN BEEP $.2,201$ PA
USE 3
60 NEXT $f$
62 NEXT b
64 GO SUB 9972：вO TO 34
66 CLS ：PRINT AT 0,3 ，＂MORSE C
ODE AND THE LETTERS＂
68 PRINT AT 2,2, ＂A $\quad-{ }^{\prime \prime} 1$ AT 3,2
 , $2 ; " D-, " A A T \quad 6,2, " E=" ; A T=2$


$1,2, " J$
$T$
$13,2, n i$
13,$2 ;$＂L..$- " ; A T \quad 14,2 ; M_{M}$
70 PRINT AT 2,$23 ;$＂N - ＂${ }^{2}$ AT 3 ，




＂X 14,$23 ;$ ．＂－＂：AT 13,$23 ;$＂Y－．＿－＂；
14，23，＂z－－．．＂
72 B0 BUB 9972ı RUN
74 CLS ：PRINT AT 0,4 ，＂WORK OU T THE CODE GIVEN＂
76 PRINT AT 1，4；＂ENTER TO RETU RN TO MENU＂
78 PRINT AT 3,$2 ;$＂THE COMPUTER
WILL PICK A LETTER AT RANDO
M，THEN BEEP IT．YOU MUST GUESS
THE LETTER，＂
B0 LET a＝9973＋（RND＊26）
日2 RESTORE aI READ b $⿻ 肀$
84 FOR $d=1$ TO c
B6 READ e
日8 IF $=1$ THEN BEEP ．05，20：$P$
ause 3
90 IF $0=2$ THEN BEEP ． 2,20 ：PA USE 3

92 NEXT d
96 INPUT＂YOUR ANSWER＂if＊
98 IF f末＝＂＂THEN RUN
100 IF b $*=f=$ THEN PRINT FLASH
1；AT 11，6；＂CORRECT－WELL DONE＂：
FOR a＝0 TO 30：BEEP ．O5，at NEXT a）GO TO 74
102 PRINT FLASH 1；AT 11，5，＂WRD
NG－THE ANSWER WAS＂；b\＆FOR $\mathrm{a}=0$
TO 30：BEEP ．05，a：NEXT a：CO TO 74
9972 PRINT 11；＂PRESS ANY KEY
TO CONTINUE．＂：PAUSE O：RETUR
N
9973 DATA＂A＂，2，1，2
9974 DATA＂B＂， $4,2,1,1,1$
9975 DATA＂C＂，3，1，2，1
9976 DATA＂D＂，3，2，1，1
9977 DATA＂E＂，1， 1
9978 DATA＂F＂，4，1，1，2， 1
9979 DATA＂ G ＂，3，2，2，1
9980 DATA＂H＂，4，1，1，1，
9981 DATA＂I＂，2，1，1
9982 DATA＂J＂，4，1，2，2，2
9983 DATA＂K＂，3，2，1，2
9984 DATA＂L＂，4，1，2，1，
9985 DATA＂M＂，2，2，2
9986 DATA＂N＂，2，2，1
9987 DATA＂ O ＂，3，2，2，2
998 DATA ＂P＂， $4,1,2,2,1$
9989 DATA＂$Q$＂ $4,4,2,2,1,2$
9990 DATA＂R＂，3，1，2，1
9991 DATA＂ B ＂，3， $3,1,1$
9992 DATA＂T＂，1，2
9993 DATA＂U＂，3，1，1，
9994 DATA＂U＂，4，1，1，1，2
9995 DATA＂ W ＂$, 3,1,2,2$
9996 DATA＂ X ＂， $4,2,1,1,2$
9997 DATA＂Y＂，4，2，1，2，2
999 DATA＂Z＂，4，2，2，1，1
9999 REM END OF DATA

W

0

## by Robert Stockton

The worm has turned！Or rather it＇s your turn to guide him through the garden so he can eat the flowers and grow．The game features multiple screens with a bonus＇eat the pie＇screen after you＇ve cleared the three previous ones．You＇ll find full instructions in the game－if you look at lines 3155 to $\mathbf{3 2 3 0}$ you＇ll see the neat way tha they＇re printed to the screen．
Now if you think that games in Basic are pretty worm－eaten，think again．This beats all the machine code versions of the same game that we＇ve seen at YS and just goes to show that you can still write games in good ol＇Basic and not have to say you＇re sorry．

0）REM SINAKE

BY RUGERT
STOLK TUN 1965
1 GO SUB 6000
2 GO TO 3000
4 POKE 2365日，0
10 REM＊＊＊＊SET UP VARS＊＊＊＊
40 LET LEV
40 LET LEV＝0
60 LET $S=0$
65 REM＊＊SET UP SCREEN VARS＊＊
70 LET AS＝CHR＊ $10+$ CHR $\$ 2+$ CHR
$9+$ CHR： 2
80 LET $\mathrm{X}=10$ ：LET $\mathrm{Y}=2$
90 LET AM＝INT $(S / 100)+10$
100 LET $H=0$ ：LET $\quad V=-1$
110 LET CX＝2：LET CY＝1
120 LET LEV＝LEV＋1
125 LET START＝LEV
130 IF LEV／3＝INT（LEV／3）THEN GO TO 4500

150 LET C未＝＂63 2636 2＂
160 IF LEV $>10$ THEN LET LEV $=1$
165 REM＊＊＊＊PRINT SCREEN＊＊＊＊＊
166 INK 4：PAPER OI BORDER O： Ls

## 170 LET X＊＊

```
        "+B$(LEV) +"
```



180 FOR $A=1$ TO LEN $X *-31$ ：PRINT AT 10， $0 ;$ X A／2：NEXT A
206 LET E＝0
210 PRINT AT 21，0；INVERSE 1；＂S
CORE＝＂；S；AT 21，15；＂LEVEL＝＂；LEV
212 RANDOMIZE USR 3582
215 IF LEV $>60$ THEN LET LEV $=60$
220 PRINT AT 21，0；INK 5；＂sevirsemsee
225 RANDOMI TE
225 RANDOMIZE USR 3582
227 PRINT AT 21，03＂
230 FOR $A=2$ TO 20
240 PRINT INK 5IAT 21，01＂sera＂$; A$
21，30；＂tsxy＂
245 RANDDMIZE USR 3582
250 BEEP ：O1，A
255 NEXT A
260 PRINT AT 21，0；INK $5 ;$＂iowaberyte
310 FOR A＝1 TO AM
310 FOR $A=1$ TO AM
320 PRINT AT RND＊ $17+3$ ，RND＊ $28+3$ ；
INK 5 ；＂ays＂
330 IF A＞59 THEN GO TO 350
335 BEEP ． $1, \mathrm{~A}$
340 NEXT A
350 FOR $A=1$ TO AM
360 LET R＝RND＊ $17+3$ ：LET $T=R N D * 2$ $7+3$
364 IF ATTR（R，T）＝VAL（C $\%$（LEV））
THEN GO TO 360
366 PRINT AT R，TI INK VAL（CF（L EV）；B
370 IF A＞59 THEN GO TO 400
375 BEEP ： $1,-A$
380 NEXT A
400 REM＊＊PRINT AND MOVE MAN＊ 410 PRINT INK 7 ；BRIGHT 1；AT $X$ ， $\mathrm{H}^{\prime \prime}$（2）＂INK 4；BRIGHT O；AT CODE A＊（1），CODE A\＄（2）；＂
440 IF INKEY $*=$＂$p$＂THEN LET $V=0$ LET $\mathrm{H}=1$
450 IF INKEY $*=$＂ 0 ＂THEN LET $V=0$ LET $H=-1$
460 IF INKEY $\$=$＂$q$＂THEN LET $V=-$
470 IF INK
：LET $\mathrm{H}=0$
480 LET A＊＝A＊＋CHR＊$X+$ CHR ${ }^{3} \quad Y_{I}$ LE T $x=x+V_{i}$ LET $Y=Y+H_{1}$ BEEP． 002 ，LE

510 IF ATTR $(X, Y)\rangle 5$ AND ATTR（
$X, Y)<>4$ THEN LET $\mathrm{S}=\mathrm{S}+10$ ：LET E＝
$\mathrm{E}+1$ ：BEEP $: 1,-201$ PRINT AT $0,6, \mathrm{~S}$
520 IF ATE THEN GO SUB 1500
520 IF ATTR $(X, Y)=4$ AND START $\angle O$ THEN LET A $5=A *$（ 3 TO）
525 LET START＝START－1
530 IF ATTR $(x, y)=5$ OR ATTR $(x$ ，
$Y)=7$ THEN GO TO 1000
540 IF $X>=21$ AND $(Y=16 \quad$ OR $\quad Y=17)$ THEN BO TO 4000
560 PRINT AT CODE A＊（LEN A\＄－1），
CODE A＊（LEN A＊）；INK 7 ；${ }^{\prime \prime}$ ） 570 GO TO 400
1000 REM＊＊＊＊＊＊＊THE END＊＊＊＊＊＊＊
1010 PRINT AT 10,11 ；INK 2；PAPE
R b；BRIGHT 1；＂GAME OVER＂
1025 BEEP 2，－20
1040 FOR $A=1$ TO 500：IF INKEY\＆＜＞
：＂THEN GO TO 2000：NEXT A
1050 PRINT AT $10,101^{\prime \prime}$（I）NSTRUCTI
ONS＂；AT 12，10；＂（P）LAY＂
1060 BEEP ．O1， 1
1070 IF INKEY $\%=$＂$p$＂THEN GO TO 1
10
10日O IF INKEY象＂ 14 ＂THEN GO TO 3
1090
1090 GO TD 1070
1500 REM＊＊＊＊PRINT HOLE＊＊＊＊＊＊
1510 PRINT，O；AT O，O；INK 6；＂THI
5 WAY $>$
＜THIS WAY＂
1520 PRINT AT 21，16；＂
1530 LET E－E－1
1540 RETURN
3000 REM＊＊＊＊＊＊INSTRUCTIONS＊＊＊＊＊
3020 INK b：PAPER O：BORDER O：C 3030 DATA＂
beveryowy＂
3040 DATA＂＂，＂BY ROBERT STOCKTO
3050 DATA＂THE OBJECT OF THE GAM E IS TO EAT＂
3060 DATA＂ALL THE FOOD ON EACH GREEN＂
3070 DATA＂BUT IF YOU HIT YOUR T AIL＂${ }^{\circ}$＂OR＂，＂THE NASTIES YOU DIE

3OBO DATA＂AS YOUR TAIL GETS LON GER THE＂，＂GAME GETS HARDER＂
3100 DATA＂THE KEYBDARD CONTROLS
ARE＂ ARE＂
3110 DATA＂＂＂
3120 DATA＂O－LEFT Q－UP＂，＂
3130 DATA＂O－LEFT P－RIBHT＂
3130 DATA＂＂．＂A－DOWN＂
3150 DATA＂GOÓD LUCK＂
3155 RESTORE 3000
Lines 3155－3230 These lines print up the
instructions．But note the novel way it＇s done－by
POKEing the system variable CHARS to make them appear pixel line by pixel line．
3160 FOR $A=0$ TO 19
3170 READ A\＄
3180 FOR $x=8$ TO 0 STEP -1
3190 POKE 23606，$X_{1}$ PRINT AT $A, O ;$
At
3200 NEXT $X$
3210 NEXT A
3220 IF INKEY\＆＜＞＂＊THEN GO TO 1
3230 GO TO 3220


4000 REM ****FINISH SCREEN****
4010 FOR A=1 TO 20
4020 RANDOMIZE USR 3592 4030 NEXT A
4040 PRINT AT 0,17;"
4060 PRINT AT $A, 16 ;$ INK $7!$ " " $\ddagger$ AT
$A+1,16 ;$ " C
4080 PRINT AT 11,$16 ;$ INK bi " $1 \mathrm{l}=$
BONUS 200"
4090 BEEP . 004 ,LEV
4100 FOR $A=1$ TO 60 STEP 3
4110 BEEP . 01, A
4130 LET $\mathrm{S}=5+200$
4135 PAUSE 1: PAUSE 40
4500 REM ****BDNUS SHEET*****
4510 CLS
4515 PRINT AT 10,3 ; INVERSE $1 ;$ "P
5,1: PAUSE
4520 PRINT AT 0,0 ; INK 5 ; " menifuryes
4530 PRINT AT 21,0; INK 51 "ncrowive

4540 FOR $A=1$ TO 20
A,30; "
4570 PRINT AT 10,3;"
4700 LET $T=25$
4710 LET $Y=5$
4720 LET $T=T-1$ : LET $Y=Y+1$
4730 IF $Y=27$ THEN LET $Y=3$ : PRIN
$4>40$ IF $T<2$ THEN LEI $T=25$ PRIN
T AT $20,21^{\prime \prime}$
4750 PRINT AT $1, Y_{1}$ INK $73^{\prime \prime}, \ldots, *$
4760 PRINT AT 20, T: INK $33^{\prime \prime} \mathrm{L}$
4770 IF INKEY $=$ "a" THEN GO TO 4
800
4775 BEEP. 002, 2
4780 BO TO 4720
4890 PRINT AT 1,Y;"
4900 FOR $A=1$ REEP. 005,1
4910 PRINT AT $A, Y+2 ;$ INK $7 ;$ " " $A$
$A+1, Y+2 ;$; $A T A+2, Y+2 ; " ; A T$ $A+3, Y+2\}^{\prime \prime} g$
4930 IF $Y>T-2$ AND $\mathrm{Y}\langle\mathrm{T}+2$ THEN TO TO 4970
4940 PRINT AT 10,10 ; "HARD LUCK"
4950 BEEP 1,-20
4960 GO TO 70
4970 PRINT AT 10,9!"WELL DONE BO NUS ${ }^{1}$
4980 FOR $A=1$ TO 60 STEP 5
4990 BEEP . 1, A
3000 NEXT A
SOT $\mathrm{S}=\mathrm{S}+500$
5010 GO TO 70
6000 REM POKE IN UDG' $s$
6005 PRINT AT 10,10; "PLEASE WAIT
6010 RESTORE 9500
6020 FOR $A=0$ TO 15*Bi READ KI PO
KE USR " $a$ " $+a, x$ NEXT a: RETURN 9000 POKE 235日2,11
9010 LET $x=$ USR 580 B
9015 PRINT 14;"9640 DATA O"
9020 FOR $a=$ USR, " $q$ " TO USR " $p$ "-1 O30 PRINT ) 4;","iPEEK a! 9040 NEXT
9050 LET $1=$ URR 4788
9500 DATA $60,106,213,171,213,171$ ,86,60
9510 DATA $60,126,223,159,191,191$
9520 DATA $60,126,219,255,153,195$ ,126,60
9530 DATA $0,0,128,64,252,246,27$,
9540 DATA $0,3,7,15,14,6,3,1$
9550 DATA $62,255,255,248,192,0,2$ 55,255
9560 DATA $0,128,224,240,112,48,2$
9570 DATA $0,118,255,239,127,219$, 252,103
9580 DATA $0,108,186,254,206,246$,
9590 DATA $96,247,157,251,46,255$, 189,247
9600 DATA $16,16,16,16,214,254,12$
9,56 DATA $16,40,68,136,144,184,7$
6,4 DATA $8,62,8,127,8,62,8,20$
9630 DATA $228,120,60,118,250,250$ , 254, 124
9640 DATA $0,0,0,4,40,152,74,44,2$



It's a race against the clock, as you take on some of the fiercest Kung Fu fighting Ninjas the Spectrum has ever seen. Would-be anarchist Sue Denham dons her fighting togs and battles through the endless maze of Durell Software's smash game Saboteur.

There have been a fair few martial arts games released or due for imminent release on the Spectrum of late - System 3's International Karate, Melbourne House's The Way Of The Exploding Fist, Imagine's Yie Ar Kung Fu and US Gold's Bruce Lee to name but a few! But none is quite like the latest offering from Durell Software.
The scenario for Saboteur thrusts you into the part of a sabotaging Ninja warrior, sneaking around an enemy warehouse that's much more than it seems at first sight. Your task is to search out a floppy disk from one of the many computer terminals scattered around the computer complex and escape with it. But before you go, you've got to leave a little present for your pursuers - a time bomb. Which doesn't leave you too much room to negotiate a safe path home!
The game itself comprises 118 different screens, which all go to make up the four-level warehouse - there is the warehouse itself, a computer complex, and two layers of labyrinth-like sewers; the latter areas have a tendency to look the same, which can be a great problem for those who have an aversion to making maps of the best route to safety. All the weapons a self-respecting. Ninja could want, can be found by stumbling across them on your adventures. But you can only hold one weapon at a time and, once you've used it, you'll have to search round for another. Points are awarded for killing the guards - by weapons or skilful use of martial arts - but your real adversary is time ... and the final objective of stealing the floppy disk and getting clear of the warehouse before the fuse burns down.
Overall, the game is addictive and great fun. There are nine levels of difficulty - but on the easiest level, you can work out the structure of the game and prepare yourself for the terrors of playing at the higher levels. Map-makers will be in their element when they first start playing the game, but it will be the rugged Kung Fu fighters who will out in the end.
Saboteur manages to combine the good graphical representations of the other Kung Fu games with the solid background of an action-packed story. One to be recommended.
66

These items look a bit like the cameras that follow you round in supermarkets making sure - you don't steal the wares. But, don't be fooled - they're actually quite deadly laser guns that fire at you should you hesitate in your mission.

This box tells you how much time you've got left to find the disk and, once found and the bomb set, how Ilitle time you've got to escape! Your time limit is linked to which of the nine playing levels you choose at the beginning of the quest.

This box gives you an indication of your life energy when it turns completely blue, you're dead! Stand still for a few moments and, gradually, your energy is built up to normal - but keep an eye on the clock, as well as any enemy guards and dogs that may be in the vicinity.

Here you can see how much blood money you've earned from your death-dealing antics. Killing a guard with a weapon will up your cash flow by $\$ 100$ - but using a few Bruce Lee kicks to do the same job will get you $\$ 500$.

The weapon you are holding be it a dagger, grenade, pipe, shuriken or whatever - is shown here. It doesn't seem to matter what weapon you use to kill the guards as they all seem to have the desired effect.

The enemy guards (although looking like rejects from the Village People!) not only carry an endless supply of weapons, but also are keen Kung Fu adepts.

- Martial arts enthusiasts may hang around for a friendly bout, but for your first few games it's recommended that you dispatch them as quickly as possible.















NDTHINTE ルERF

The Ninja is able to climb up the ladders, which is quite useful as your adversaries are limited to patrolling the flat. You do not, however, build up your life energy when you are on a ladder, and you're not completely out of danger from attack by one of the warehouse's defenders.

Keep your eyes on this box as it'll flick up the icon of a weapon when one is in the vicinity. But if, as is often the case, you're in a hurry you may miss finding the all-important bomb which you'll need if you're going to put paid to the enemy warehouse. Picking up or exchanging a weapon is done by pressing the 'Fire' button.

As the lead character in this story, you can move up and down ladders with ease, duck down, jump and crouch, kick and punch your opponents, and throw weapons with surprising accuracy. Not bad for a beginner, eh?

On the easier playing levels, all the doors around the warehouse are kept open. Once you opt for the more difficul! piaying levels you will find many areas are closed off to you until you unlock the doors using the computer terminals.

The Ninja has no problems falling any distance from a ledge or a hidden hole in the floor - except for the fact that you don't know what sort of trouble you might be falling into!

It is possible to kill the dogs by firing off your weapon and ducking at the same time but the programmers frown on this activity and you won't get a penny for carrying out this dastardly deed. But you might live a bit longer...

Travelling around between the different areas of the game is done by shuttle which is reminiscent of the vehicles used at most modern airports. The Ninja merely walks inside to start the journey and
strolls off at the
destination point and not a ticketcollector in sight!


The sewers are dark and unfriendly, especially when a guard or dog comes bounding out of the gloom intending you no good at all. If you
are going to make a are going to make an any area of Saboteur, you could do worse than start with the sewers.


Name your team, choose your colours, lace up and run'em off the court pass ... fake ... jump ... shoot in off the backboard ... GREAT BASKET! Simulating all the excitement (including FOULS!) of the Basketball Challenge. Play head to head or against the computer - REACH FOR ITI Imagine Software is avallable from: WHSMITH, V/ammerres. woouwormw, LaskY, Rumbelows. Greene, Spectrum Shops and all good deaters



I THINK ILL SEE
WHAT LONDON LOOKS
LIKE, IN... ONE HLINDRED
YEARS TIME.
Pragram: Time Travel Load: H: G. Wells
Load: H:G. Wells
$>$



Isn't it about time you stopped fighting ZX Basic? So, alright, it's got some superb features and it's a doddle to use. But there's still times when you can't quite squeeze what you want from it and there's even more times when the daunting task of changing and correcting your programs makes you want to tear your hair out. Now there's an alternative - Mike Leaman's YS MegaBasic gives you everything you've ever wanted in addition to all the standard features of your Spectrum!
YS MegaBasic is no ordinary extension to ZX Basic - it completely transforms your computer! All the old ZX Basic features are still there but with YS MegaBasic loaded, you've got an extra fifty commands at your disposal as well as improved editing facilities and a machine code 'front-panel' for testing any machine code subroutines you're using. Obviously, YS MegaBasic uses up RAM normally available for your programs - but even with it loaded, you've still got a hefty 22 K free to play around with and it's not everyday that you write Basic programs that big! Besides, with the added capabilities of YS MegaBasic, your programs will be able to do more in fewer lines.

## GET A LOAD OF THIS!

YS MegaBasic does away with ZX Basic's keyword system - keywords are typed letter by letter though, of course, you can use abbreviations. There is a full screen editor to make alterations much simpler and allow you to copy and move statements between lines!

The Spectrum's screen is transformed by up to ten separate on-screen windows - each of which can be scrolled, panned, inverted and recoloured independently. You can choose from three different fonts and fit

## SEE WHAT YOU GET!

Here are just some of the features YS MegaBasic adds to ZX Basic. Remember you still have everything ZX Basic has - YS MegaBasic has all that and more ...

```
O ZX Basic - MegaBasic
PROGRAM DEVELOPMENT
o Single keypress keywords - Keywords typed in full but abbreviations possible.
O In-Line Editor
- LIST, LIST
- Keywords typed in full but abbreviations possible.
- EDIT Activates improved line editor. The new control
keys allow full screen editing.
- DELETE Delete block of lines.
- AUTO Automatic line numbering.
- TRON Trace program execution.
- TROFF Turns Trace off.
- SPEED Set tracing speed.
- KEY Program function keys.
-When a program is running, control keys call up the front panel, reset YS MegaBasic without losing the program and halt the program.
```


## SCREEN HANDLING

- $32 \times 20$ characters
- 1 font
- 1 direction

01 size

- 1 window
- 8 colours

```
- MODE Selects character size 64\times20,32\times20,16\times10 characters.
- FONT Selects from 3 character fonts.
- DOWN Print down the screen
- SPRINT Print in any magnification.
- WINDOW Define up to 10 windows.
- STIPPLE Patterns large characters
- VDU PRINT character codes to screen.
- PRINTER Redirect screen output to printer or user-supplied routine.
```


## GRAPHICS

| - PLOT | - CHANGE Manipulate attributes. |
| :--- | :--- |
| - DRAW | SWAP |
| - CIRCLE | FADE |
| O INVERSE | - GET Move screen display |
| - OVER | - PUT to and from memory. |
| O BRIGHT | - SPRON Control up to 8 on-screen |
| - POINT | sprites - each sprite has its own shape, colour, |
| O ATTR | direction and speed. |
|  | - PAN Scroll windows in any direction |
|  | - SCROLL |
|  | - INVERT Invert whole screen or window. |
|  | - DEFG Define UDG. |

## PROGRAM CONTROL

| - FOR . . . NEXT GOSUB . . . RETURN IF... THEN GOTO | - REPEAT . . UNTIL <br> Named procedures with parameters. <br> - POP Drop last REPEAT or ENDPROC address. <br> - PUSH Place an address on the REPEAT/procedure stack. <br> - BRANCH GOSUB at end of every line. <br> - MTASK Alternate between two sections of program. <br> - RSTART Trap Basic errors. <br> - BRON Disable/Enable BREAK key. <br> - BROFF Turns above command off. |
| :---: | :---: |
| SOUND |  |
| - BEEP | - PLAY Play notes or white noise. <br> - SON Play sound in background while the program continues to run! <br> - SREP Repeat sound continuously. |
| MACHINE CODE INTERFACE |  |
| - PEEK | - DOKE POKE 16 -bit value. <br> - CALL Call machine code and pass Basic variables to Z80 stack. <br> - MON Activate machine-code front-panel where you can examine and alter memory and $Z 80$ registers, fill and run machine code programs. |



Software designed in conjunction with Sinclair Research

## Draw straight on to your screen!

The Spectrum Doodler is a lightpen that enables you to draw straight on to your own tv or monitor screen. Pen reaction is instant and requires no programming knowledge. Software is displayed on 'pull-down' menus with icon symbols so that you can easily select the feature you require by simply pressing the pen against the screen.

## 16 colour palette with flashing option!

Using a palette of sixteen colours you can choose the line thickness most suitable for your work.

## 14 options including text!

Besides line thickness, there are modes to enable you to create instant squares, circles and triangles. You can fill in areas with colour

textures, repeat stock patterns or make your own design using a special layout grid. Draw free hand - point to point or continuous line ribboning. There is also the facility to add text to your design.
Store your work on cassetteor microdrive!


The Doodler Software allows you to save complete or incomplete pictures for rework or for use with your own programs at a later date.

## Auto trim feature!

The pen has a trim feature that automatically sets the pen's accuracy to the tv or monitor screen you are using.

Robustly made, fun to use!
The lightpen is robust and comes complete with software on cassette which can be duplicated on to microdrive cassette. There is an instruction manual that's simple and easy to understand and an interface box for connection to your Spectrum computer. You can even write your own software for the Doodler if you wish.

To get your own Spectrum Doodler just send a cheque or postal order for $£ 29.90$ with the completed coupon. Free post and packing in UK only.

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## YOUR SINCAAR ADVERTISEMENTHEATURE

64,32 or 16 columns on each line as well as magnify characters and print down the screen. YS MegaBasic makes special effects really easy - you can manipulate colour independently of the graphics on screen and save sections of the screen display to and from memory.

YS MegaBasic provides software sprites - predefined graphic shapes that move smoothly by themselves while your program is running. Yes, you can write arcade games and animated programs in Basic! And because designing sprites can be a chore, the YS MegaBasic package includes a free Sprite Designer utility to make it easy!

Your programs are also neater and easier to maintain - MegaBasic provides REPEAT . . . UNTIL loops, named procedures, proper CALLs to machine code routines, error trapping


Here, YS MegaBasic is showing off its multifarious character sizes and fonts. Each window contains text in three different sizes: double height, normal height and that used for 64-columns; double height and standard text can be output in three different fonts.
and, believe it or not, simple multitasking! You can set up a procedure which is called when each line of the program has been executed or you can use the MTASK command to alternate execution between two sections of the program.
And that's just a taste of $Y S$ MegaBasic magic - there's more to come. To get hold of your own copy complete the coupon opposite and rush it with payment to the address given. We'll deliver within 28 days. And before you ask, YS MegaBasic is microdrive compatible and can be transferred onto cartridge! C'mon, do yourself and your Spectrum a favour - one day you're gonna wish you had!

Available Only By Mail-Order
From Your Sinclair Magazine.


## 200 PAPER 0: CLS

210 PAPER 21 INK 7aMODE_2,41STI PPLE 255 : PRINT AT $0,01^{\prime \prime}$ YS MEG ABASIC "।

Set double-height, double-width size with fully inked characters.
220 PAPER 1,MODE 2 , 2i FOR $I=0$ T O 2ıFONT_1: PRINT "FONT "i It" " 1 FOR J=40 TO 96iVDU_Ji NEXT Ji NEXT 1

Return to normal size and use the FONT command to select between the three different fonts. VDU is a useful shorthand for PRINT CHRS.

230 PAPER O\&MODE_2,1: FOR $I=1$ T 04 : PRINT " 64 column text 64 co lumn text 64 column text 64 colu mn text": NEXT IsMODE_2,2

Go into 64 column mode . . . great for adventures and other textual programs!
260 INK $2 \pm$ SPRINT $-0,96,2,2, " B i g "$
270 INK $3:$ SPRINT $-72,96,3,3, " B i g$
ger!"
Use the sized-print (SPRINT) command to generate huge letters.

## 2日0 INK 4iDOWN_9,62, "DDWNPRINT"

You can also print downwards - great for labelling graphics!
290 INK 6:SPRINT_0,114,1,6,"THI 300 INK 5rGPRINT_72,14日,5,1,"WI

SPRINT again - this time by varying the $X$ and $Y$ magnification, the proportions of the printing can be changed - thin or fat, there's no problem.

## 310 PAPER 6: INK 2ıMDDE_2,4×8TI PPLE_170: PRINT AT 16,181 " $9 T 1 P P L$ EST"

By using MODE 4 characters, you can create stipple effects - only certain pixels in the characters are inked. In this line, a stipple of 170 and the colours red and yellow create the effect of orange lettering!

[^1]What does the fade command do? To find out, you're gonna need your own copy of YS MegaBasic!

## YS MEGABASIC PRIORITY ORDER FORM

YS MegaBasic is only available direct from the Your Sinclair Mail Order department. Simply fill in this coupon and mail it with your cheque or postal order to YS MEGABASIC OFFER, PO BOX 320, LONDON, N21 2NB.

| QTY | ITEM | PRICE |
| :--- | :---: | :---: | :---: |
| ...... YS MEGABASIC | $£ 9.95$ | TOTAL |

Name.
$\qquad$
$\qquad$

Postcode
The screen format for the input/output of YS MegaBasic. Three windows are provided for input, LiSTing and RUNning programs; under software control, each window's size and purpose can be changed to suit individual requirements.

# ROLLING STONE AGE 

## If you're on the look out for a simple, unsophisticated slice of arcade action, BC's Quest For Tires may be the game for you. Steve Malone gathers very little moss in his review of Software Project's new Neandertale!

Next time you get a puncture, don't blow your top. Just think what it must've been like One Million Years BD - Before Dunlop. You'll get some idea from playing BC's Quest For Tires, the prehistoric program from Software Projects. So, prepare for a distinctly bumpy ride.
The first thing that'll strike you about the game is that the graphics have a distinctly cartoonish feel about them.

In the first stage of the game, you must jump the divots and casuallystrewn rocks. It's not too tricky at the minimum speed but the objects have a habit of bunching logether so prepare for some tight joystick manoeuvres. There's always one sod around just waiting to trip you up!

To traverse the pond, underneath the air/se: rescue bird that's beet shadowing you since: reached the plateau. $h$ soon as you see the water, jump up and he carry you across to sat

Looks just like the mother-in-law. Waiting on the other side of the water is a cavewoman weilding Jurassic baseball bat il your timing's out, you can knock another life on the head.

## * SPECTRUM WORD-PROCESSOR *

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Hardly surprising really as our stoneage superstar is the hero of Johnny Hart's BC newspaper comic strip. Here our hero sets out on his rolling stone to rescue his loved one, jumping and ducking according to the hazards that are thrown at him.

All in all this is a good, competently programmed arcade game. And it'll have you throwing the joystick around
the room with frustration as Thor the hero falls flat on his face for the umpteenth time.
Where the game falls down is in the fact that there's just not enough of it. Two days of frantic joystick-jiggling or keyboard bashing (and it's addictive enough to keep you at it that long!) will allow most of you to get to the end. And once you've cracked it, it's back to the
beginning again - only this time it's just that bit faster. The only trouble is that once you've been in at the finish, it doesn't have quite the same air of mystery about it-and then it's on to racking up the points.
Having said all that, this is pure and unadulterated (no added colour, no preservatives) arcade action - and it's still got plenty of natural fizz!

You've made it - and
though the course of true though the course of true love wasn't exactly Straight into the cave now smooth you've saved your with not even a moment sweetheart. So, after a to get your eyes quick on-screen kiss'n'cuddle, it's back to the beginning again when the pace hots up even more.

Just to spur you on, a speech bubble pops up now and again to remind you that your cute cavewife is still in danger.

aL Monitor
QJump
£24.95
With only three disassembler/debuggers on the market, HiSoft comes out tops with MonOL on EPROM but the others are expected to follow suit shortly.

| QL Monitor | Digital Precision | $£ 18.05$ | 2 |
| :--- | :--- | :--- | :--- |

This is a very simple package and suffers greatly from a severe lack of features - not one l'd recommend.

| C Compiler | GST | E59.95 | 7 |
| :--- | :--- | :--- | :--- |

This isn't a complete implementation of the language but it's well suited to the beginner.
Supercharge (compiler) Digital Precision £59.95
I haven't yet seen the finished version of this compiler but it promises to be a product that everyone can make use of. It's written by Simon Goodwin of Zip compiler fame (take a look at Your Spectrum 3) and it claims to convert almost every SuperBasic program into fully multi-tasking 68008 code.

| SuperBasic extension | QJump <br> (via Sinclair) | $£ 24.95$ | 9 |
| :--- | :--- | :--- | :--- |
| SEE (EPROM) | HiSoft | $£ 39.95$ | 9 |

Of these two SuperBasic extensions, QJump's leads the way but HiSoff's SEE has some very useful facilities. It gives the QL true windowing capabilities and as it's on ROM you don't have to keep loading it in.

| Microdrive Toolkit | Compware | $£ 9.99$ | 5 |
| :--- | :--- | :--- | :--- |
| Microdrive Toolkit <br> (with source code) | Compware | $£ 34.99$ | 5 |

The toolkits change the QL's microdrive commands into functions so that values can be returned and errors such as 'drive full' trapped.

| Keydefine | Psientific Software $£ 9.95$ | 10 |
| :--- | :--- | :--- |

This is a complete key redefinition package that'll let you use the redefined keys in almost every QL package. You could, for example, define the $P$ key so that when you press it with the Caps Lock held down, the current document from within Quill could be saved and then printed. Freebie programs provided are a fast copier (a multi-tasking directory lister that lists directories from within other programs) and a printer spooler.
ICE (EPROM)
Eidersoft
£49.95
9

ICE (Icon Controlled Environment) gives the QL a full Icon based Desktop Manager and Front End to ODOS. It removes most mundane file handling tasks and I can thoroughly recommend it.

| WD Utilities | WDSoftware |  | 6 |
| :--- | :--- | :--- | :--- |
| (Microdrive) | $£ 7.50$ |  |  |
| $\left(5 L^{\circ}\right)$ | $£ 10.00$ |  |  |
| $\left(31_{2}\right)$ | $£ 12.00$ |  |  |
|  |  |  |  |

WD Utilities are a complete set of SuperBasic procedures providing a menu driven system to manoeuvre files.
Cartridge Doctor Talent $\quad$ £14.95 9

If you're frequently visited by the 'Bad or Changed Medium' error message, you'll welcome this program. It's a fully automatic set of routines to recover corrupted and deleted files.

| Q Doctor | Adder | ¢14.95 | 5 |
| :---: | :---: | :---: | :---: |
| If you prefer doing things the hard way, $Q$ Doctor only allows you to load and ed sectors from the microdrive. Unfortunately, there are no similar products yet available for disk users. |  |  |  |
| Graphiot |  | ¢34.95 | 6 |
| M-Paint | Medic | £49.95 | 8 |
| Paint Master | Shadow Games | £14.95 | 7 |
| Tascopy | Tasman | ¢12.90 | 8 |
| Sprite Generator | Digital Precision | £24.95 | 6 |

Graphic printers are a personal choice. GraphiQL suits highly detailed work but is extremely difficult to use. For dedicated artists only! M-Paint is a coloured clone of Apple's MacPaint. Simpler to use but a shade less accurate on detailed work. Least sophisticated of all, Paint Master is none the less the most appropriate for your average QL user. Its ability to compile a drawing into a SuperBasic program that then copies it makes it practical if you want simple illustrations within your program. All have simple screen dump programs but Tascopy copies all or part of the screen in a variety of shades. Sprite Generator does just that but it's a complex to use package that isn't worth the asking price.

## DOWN TO BUSINESS

The high reputation of Archive, Abacus, Quill and Easel is based on their quality - it's not just that they come with the QL. Other companies haven't released similar packages because most people are happy with what they've got. Doubtless improvements could be made but I expect

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reviewers sums up his personal favourites of the month.

## Mr Software's magazine

 is excellent value. Each issue contains twenty or thirty reviews of the latest software releases and on first joining you also receive a twenty-four page supplement review. ing a range of hardware and utility products. In every issue there is a competition to enter, a summary of how other magazines rate the new releases, game play ing tips from our members, and one of our
## HOW TO ORDER

 payment details and your name and address and post the form to us. By return you will receive your copy of "48K", followed shortly by the games you ordered. Hurry, though, the introductory offer expires 60 days from the publication date of this magazine.


these'll come from Psion rather than an independent house.

| TITLE | PUBLISHER | PRICE | RATING |
| :--- | :--- | :--- | :--- |
| Q-Spell | Eidersoft | $£ 19.95$ | 8 |

Pore spillars will welcome $Q$-Spell - a full-spec spelling checker for Quill. But be warned! Extra memory's needed to check your document with Quill still in memory.

| Home Finance | Buzzz (via Sinclair) | $£ 24.95$ | 8 |
| :--- | :--- | :--- | :--- |
| Self Employed and <br> Cash trader | Quest | $£ 69.95$ | 7 |
| Small business and <br> Accounts | Sagesoft | $£ 89.95$ | 8 |
| Payroll | TR |  | 8 |

Of the accounting packages aimed at home users Smallbusiness is the most professional. It has Integrated Purchase, Sales, and Nominal Ledgers.
Transferred from the IBM PC it just goes to show that the QL can compete in the business world. Payroll provides a perfect complement and deals with data for up to 75 employees.

| Decision Maker | Triptych | $£ 39.95$ | 8 |
| :--- | :--- | :---: | :---: |
| Entrepreneur | Triptych | $£ 39.95$ | 8 |
| Project Planner | Triptych | $£ 39.95$ | 8 |

The Triptych products help solve various problems and educate you in the process.

| Equate |  |  |  |
| :--- | :--- | :--- | :--- |
| (Microdrive and disk) | Flite | $£ 39.95$ | 7 |

For mathematicians, Equate can solve most problems - polynomial, linear, simultaneous equations, differentiation, integration, curve fitting and various graphical problems.

QL. Gardener | Gordian Computing |
| :--- |
| Services |

| QL. Gardener is a database with information on over 1100 plants. Just a shame |
| :--- |
| that the package won't dig or even weed your garden for you! |

OH ADMENTHRES
When you consider the QL's large memory and excellent graphics you'd expect plenty of adventures. But only three quality games exist, and they're all text only.

| TITLE | PUBLISHER | PRICE | RATING |
| :--- | :--- | :--- | :--- | :--- |
| Lost Kingdom of Zkul | Talent | $£ 19.95$ | 8 |
| West | Talent | $£ 19.95$ | 6 |
| The Pawn | Mannetic Scroll <br> coming soon |  | 10 |

The Talents were released early on in the QL's history and they're still looking good. Zkul is based on the popular Dungeons and Dragons format and plays very well. West is set in the desert wilds - complete with menacing Indians. Few reservations about this one! The Pawn is extremely high quality, similar to that of the Level 9 adventures. It's set in the magical world of Kerovnia during a period of social upheaval and includes a very complex command interpreter that can understand commands as complex as "Get all except the cases but not the violin case then kill the man eating shrew with the contents of the violin case. Remove the shrew's tail and use it to tie the pole and the noose together!" See what I mean? This game's by far the QL's best adventure yet.

## A WINNING STRATEGY

If you compare this list of strategy games for the QL with the selection for the Speccy, it looks pretty paltry. Still, there are some good 'uns here.

| TITLE | PUBLISHER | PRICE | RATING |
| :--- | :--- | :--- | :--- |
| Chess | Psion | $£ 19.95$ | 9 |

Computer chess takes on a new dimension with a full 3D board display that makes impressive use of the QL's graphics.

## Match Point

Psion
$£ 14.95$
Match Point is converted from the Spectrum and improved graphics make the game more playable.

## Area Radar Controller Shadow Games $£ 14.95 \quad 2$

This is a very poor aircraft control simulation written in SuperBasic.

| Bridge Player | CP Software | $£ 14.95$ | 5 |
| :--- | :--- | :--- | :--- |
| Backgammon | Digital Precision | $£ 12.95$ | 5 |
| Reversi | Games of Skill | $£ 12.95$ | (Coming Soon) |

Aimed at novices, Bridge Player and Backgammon are of little value to the experienced. Coming soon is Reversi - a full version of Othello.

## Cosmos

Talent
$£ 14.95$
7
Patrick Moores, stand by your QLs. This is an astronomy package that allows you to display star and solar patterns as seen from any place on Earth at any point in time. From the star map you can choose any star with the cursor to find out extra data.

## ARCADE ACTION

This list of arcade games for the QL may produce a snigger from Speccy owners - it doesn't exactly rival the selection on offer to them. Still, it's growing all the time!

| TITLE | PUBLISHER | PRICE | RATING |
| :--- | :--- | :--- | :--- |
| OL. Cavern | JMF (via Sinclair) | $£ 12.95$ | 7 |

A massive 50 screen Jet Set Willy clone with 395 gems to collect. Good value, with a good many improvements over the standard platform game.

| Meteor Storm | Arrakia <br> (via Sinclair) | $£ 12.95$ | 4 |
| :--- | :--- | :--- | :--- |

## A bog standard version of Asteroids.

| Booty $\quad$ Firebird $\quad$ £9.95 |
| :--- |
| A locks and doors classic on the Speccy that sells for $£ 2.50$. Microdrive <br> problems push up the price on the QL. Looks impressive! |


| EVA | Westway | £12.95 | 9 |
| :--- | :--- | :--- | :--- |

A Jetpack-style game with very large sprite graphics. The most annoying feature is the almost continuous sound.

| Star Guard | Shadow Games | $£ 14.95$ | 5 |
| :--- | :--- | :--- | :--- |
| Galactic Invaders | Shadow Games | 5 |  |

Shadow Games range from the reasonable to the pathetic. This pair come on the one cartridge and are just copies of Arcadia/Invaders.

\section*{| Night Nurse | Shadow Games | $£ 12.95$ | 3 |
| :--- | :--- | :--- | :--- | <br> This uses Digital Precision's Sprite Package (see The Language Barrier) and it} just goes to show that commercial games cannot be produced with it. Shame.


| Quazimodo | Shadow Games | $£ 12.95$ | 7 |
| :--- | :--- | :--- | :--- |

Reasonable I suppose, very colourful and should satisfy if this is your thing. I'd back it!
Space Paranoids Shadow Games $£ 12.95 \quad 4$

Another Arcadia style game - hardly worth loading up.

| Zapper | Eidersoft | £10.95 | 6 |
| :--- | :--- | :--- | :--- |

Similar theme to Paranoids but slightly better value.

| Master Blaster Compugem | £9.95 | 8 |
| :--- | :--- | :--- | :--- |

Excellent shoot 'em up that puts the rest to shame. Very smooth animated graphics and a wide range of aliens.
$\begin{array}{llll}\text { Cuthbert In Space } & \text { Microdeal } & £ 14.95 & 7\end{array}$
Microdeal has a very varied quality range. Cuthberf's aimed at the younger game's player and the hidden strategic elements make it more than a quick shoot out.

| Lands of Havoc | Microdeal | $£ 19.95$ | 8 |
| :--- | :--- | :--- | :--- |

A well packaged 2,000 screen arcade that plays very well but could've made better use of colour.

| Crazy Painter | Microdeal | $£ 12.95$ | 8 |
| :--- | :--- | :--- | :--- |

You can hardly call this an Arcade copy - it's so different. Crazeee!

| Hopper | Microdeal | £14.95 | 7 |
| :--- | :--- | :--- | :--- |

Standard version of Frogger - as good as any. 'Bout time it hopped it.

| QL. Flight Microdeal | $£ 19.95$ | (Coming Soon) |
| :--- | :--- | :--- | :--- |

A flight simulator that's due for release soon.

| Hyperdrive | English Software | $£ 14.95$ | 8 |
| :--- | :--- | :--- | :--- |

The QL's official Pole Position - rather disappointing considering what could've been achieved. It's on a par with the Spectrum version.

## LET US KNOW...

We've tried to make this guide as comprehensive as possible but a list like this can never truly be complete. If you own a piece of software, or if you produce one, that's not included here, tell us about it and we'll pass the info on to Your Sinclair's software hungry QL readers. The address to write to is Your Sinclair, 14 Rathbone Place, London W1P 1DE.

Bit of a turn up for the books this - two new Speccy wordpros both claiming to be so good, users will junk their faithful Taswords and pay out for the upgrade. Tasword has been the top Speccy word processor since it came out and, since it's given away in the Sinclair microdrive kits, most microdrive owners already have a copy. But Tasword is far from perfect - it operates at near comatose speeds and simple things like inserting text are quite awkward! So the opportunity to do something better has always been there and Softechnics and OCP's challengers have been a long time coming ...

## THE WRITE APROACH

Let's look at The Writer first, simply because I like talking about well written, professional programs - and this is, quite simply, one of the most professionally produced business programs ever to load into a Spectrum. The Writer's writer has taken a serious look at wordpros on business micros and brought a lot of their features and style to the Spectrum. In particular, it owes a lot to the number one wordprocessor in the world - WordStar, a long-running package, for CP/M and MS DOS micros, that'll set you back more than the price of a Spectrum with Interface 1 and two microdrives!
The Writer uses a quite pleasant 64 column display with a status line at the top which tells you your document name, the page, line and column you're on, the state of the Speccy's shift keys and whether you're in insert or overtype mode. Underneath this is a 'ruler line' showing the current margins and tab stops. As you enter text, it's formatted according to your current settings - justified, centred or whatever. If you edit a paragraph, it'll remain untidy until you use the reform key (Sym-bol-Shift/Y) to replay it out according to the current settings. If that ain't straight out of WordStar, what is?
While most common editing commands are on Symbol-Shift and Extend mode keys, all the complex editing functions are called up by pressing EDIT. A menú appears at the top line and you can move a little arrow using the cursor keys to select the item you want. A dialog box' will pop up over your text where you can choose the commands you want or enter new settings using the little arrow and the Enter key. This system is a doddle - you nardly need the complete help screens that can be called up off microdrive while you're editing! However, once you know the package, there's no quick way to execute these commands. The little arrow always reappears where it was last time you finished with a menu, so you spend a lot of your time driving it around the screen!
All these programs have around 20 K free for text - about 3000 words. The Writer manages to keep its speed up admirably with all but the longest documents. One nice touch is a proper keyboard buffer - the Speccy remembers your keystrokes even while the program is busy so it doesn't matter if things slow down a bit.

## PRINTS AND THE ROYAL MAIL

But The Writer really gets good when you come to print your documents. It offers a

is an everyday thing in business computing but since there aren't many officebound Speccys, its appeal will be limiteo to people with such pastimes as running a business from home, running a club and so on. More useful for most of us is true background printing - you can continue to work (at full speed) while printing out a finished document.

The Writer also has a communication program to allow files to be moved between tape, microdrive and other computers connected to Interface 1 RS232. The files can be in The Writerformat, plain ASCII text or in WordStarformat. This'll let you move documents between other word processors and micros. Unfortunately, the program is more awkward to use than The Writer and the so-called 'WordStar compatible' option is a bit of a con.

Although it handles the basic conversion, it doesn't translate WordStar formatting information such as page breaks and underlining into the relevant The Writer codes. And if you follow Softechnics's manual and use CP/M's PIP program to send the WordStar file to the Speccy, you can get the conversion done anyway by adding [Z to the PIP command (read your manuals guys!). Going the other way, The Writer sends the wrong sort of carriage returns to the WordStar machine. So, either way, you've got to reedit the file once it's been transmitted. You might as well do the job yourself using ordinary microdrive commands - The Writeris about as WordStar compatible as Tasword and Word Manager!
The other utility you get is a program to convert Tasword II files to The Writer format - it's about as awkward as the communication program although it does do its job.

The Writer is damn impressive - our pre-release version shows only one serious bug - if you hold the down arrow down all the way to the end of the document and keep it down, the keyboard buffer packs up and you'll have to switch off. There are others - try replacing ' $a$ ' with 'aaaaa' - but nothing you can't work around. However, for all its features, it has one major flaw - you can't alter the line spacing of your text! Softechnics swears blind that you'll be able to before it's released - so it might be a while before it hits the streets!

## THE LAST WORD?

Meanwhile, OCP must be kicking itself over Word Manager. True, it has some welcome features - it's the only one of the three that doesn't seem to slow down at all with very long documents and there's a word count and a 'swap words


The Writer uses pop-up 'dialog boxes' for more editing operations. These are very easy to use at first but get tiring once you know what you're doing.
over' command. But, even ignoring the bugs in the review version, it just doesn't compare with Softechnics's offering. It gets off to a bad start with a poorly designed 64 column character set and a flaky keyboard reading routine. There's no on-screen info apart from symbols in the left margin which indicate the formatting of the text on that line - although the border changes when you set Caps Lock or whatever. Unlike The Writer, which gracefully scrolls sideways to show you lines up to 127 characters in length, Word Manager wraps long lines round onto the screen, making the first 64 characters brighter than the rest of the line. Yuk!
All the commands are either the top key row (there's a Figs Lock so you don't have to hold Caps Shift down to use the cursor keys and so on), Symbol-Shift keys or Extend Mode keys.,Their layout is confusing and you have to leave your text and return to the main menu to see the help screens! Word Manager's menus are fussy about capital and lower case letters even though you can't tell if Caps Lock is on or off and so on.
Text formatting is peculiar to say the least - paragraphs aren't formatted until you press Return at the end. To reformat after editing, you have to reformat the whole document from the main menu. If you don't want particular bits reformatted, you have to enter ' $T$ ' at the start of the paragraph you want left alone before you 'justify' the text. And while we're talking about silly things, the word count is only reliable if you first 'de-justify' the text from the menu, look at the word count and then 'justify' it again!
When it comes to printing, Word Manager can manage page numbers but not headers and footers like WordStar. There's a limited mail-merger option that works with OCP's Mailing List Manager and Address Manager. You can also 'slow print' text while you're editing another document. This will only work if you're printing a short document (it's kept in memory along with whatever else you're working on) although it failed to work at all on our version.

## FINAL WORD

The best thing about these two new packages is seeing properly presented business programs on the Speccy. Both of them have all the basic facilities of real word processors and, like Tasword, can be installed for virtually any interface/ printer combination. Both have proper length manuals although the copies we saw needed a fair bit of work before they were easy to read and use. If anything, the only thing that lets them down is that they've not been completely designed from the point of view of being easy and quick to use in anger. The Writer is very good but it isn't quite there yet!

When it comes to choosing, I've no doubt that The Writer will take over from Tasword as the best Speccy wordpro. Indeed, some of you old Tasworders should wander down to your dealer and take it for a test drive. However, since it needs a bit of sorting out, it may be a while before you have the opportunity. Word Manager has little appeal in comparison unless you already use OCP's database products. So, sorry about the claims guys, but for the meantime at least, Tasword/lis King!

BIG THREE AT A GLANCE

|  | Tasword II Tasman Software (0532) 438301 | The Writer Softechnics 01-240 1422 | Word Manager OCP <br> (0753) 888866 |
| :---: | :---: | :---: | :---: |
| Tape Microdrive Opus disk | $\begin{aligned} & £ 13.90 \\ & \text { £15.40 } \\ & \text { Can transfer } \end{aligned}$ | £12.95 Can transfer £19.95 | £12.95 Can transfer Can transfer |

- BASIC FEATURES

| Max. text length | 20480 bytes | 20290 bytes | 22782 bytes |
| :--- | :--- | :--- | :--- |
| Max. line width | 64 | 127 | 128 |
| Insert/Overtype | YES, open up text, <br> insert then reform | MANUAL | MANUAL (on whole <br> document only) |
| Text reform | MANUAL | Mal |  |

ON-SCREEN INFO

| Formatting | $\bullet$ | $\bullet$ | $\bullet$ |
| :--- | :--- | :--- | :--- | :--- |
| Column | $\bullet$ | $\bullet$ |  |
| Line | $\bullet$ | $\bullet$ |  |
| Page |  | $\bullet$ |  |
| Word Count |  |  | $\bullet$ |
| $64 / 32$ column switch | $\bullet$ |  | $\bullet$ |

- CURSOR MOVEMENT

| Character | $\bullet$ | $\bullet$ | $\bullet$ |
| :--- | :---: | :---: | :---: |
| Word | $\bullet$ | $\bullet$ | $\bullet$ |
| Paragraph |  | $\bullet$ | $\bullet$ |
| Top/bottom of text | $\bullet$ | $\bullet$ |  |
| Page |  | $\bullet$ |  |
| Start of line | $\bullet$ | $\bullet$ |  |
| End of line | $\bullet$ |  |  |

- DELETION

| Character | Left | Left |
| :--- | :--- | :--- |
| Word | $\bullet$ | $\bullet$ |
| Left or right, |  |  |
| switchable |  |  |$|$

- BLOCK COMMANDS

| Copy | $\bullet$ | $\bullet$ | NO (can copy then <br> deletel) |
| :--- | :--- | :--- | :--- |
| Move | $\bullet$ | $\bullet$ |  |
| Delete | $\bullet$ | $\bullet$ |  |
| Write to storage |  | $\bullet$ | No (can merge text <br> then block move!) |
| Include from storage |  |  |  |

- SEARCH/REPLACE

| Search | $\bullet$ | $\bullet$ | $\bullet$ |
| :--- | :---: | :---: | :---: |
| Ignore case |  | $\bullet$ |  |
| Whole word only | $\bullet$ | $\bullet$ |  |
| Auto replace | $\bullet$ | $\bullet$ |  |
| Manual replace |  | $\bullet$ |  |

- FORMATTING

| Full justify | $\bullet$ | - | $\bullet$ |
| :---: | :---: | :---: | :---: |
| Ranged Left |  |  |  |
| Ranged Right | $\bullet$ | $\bullet$ | - |
| Centred | $\bullet$ | $\bullet$ | $\bullet$ |
| Bold | - | $\bullet$ | - |
| Underlined | $\bullet$ | $\bullet$ | - |
| Auto-indent |  | - | - |
| Margin Release | $\bullet$ | Left-only |  |
| Line Spacing | $\bullet$ |  | Single or Double |
| Variable Tabs | No tabs | $\bullet$ | Only 1 tab |
| Right tabs |  | $\bullet$ |  |
| Decimal tabs |  | $\bullet$ |  |
| Access to other printer functions | 8 | 14 |  |
| Force Page break |  | - | $\bullet$ |
| Header/Footers |  | Left, right, centre alternate |  |
| Page numbers |  | Arab, Roman, alpha, anywhere in header or footer | Arab, top or bottom of page |


| - PRINTING |  |  |  |
| :--- | :--- | :--- | :--- |
| No of coples | 1 only | Can set | Can set |
| Draft print |  | $\bullet$ |  |
| Partial print | Start line <br> End line | Start page - <br> End page | Cursor - Marker |
| Background Print |  | $\bullet$ (not tape) | YES |



## SEAS OF BLOOD

Adventure International/ £9.95
Yessir! Seas Of Blood is just the sort of thing a depraved, bloodthirsty cavalier like myself is looking for! When you get this one slotted into your tape deck, the first thing that comes up on the screen is 'found blood!' More! Give us more!

And more you'll certainly get. Forget the goody-goody nonsense, and get stuck into this meganumber from Messrs Livingston and Jackson of Fighting Fantasy book fame. You take the part of a vile, blood-spilling pirate who has nothing better to do than sail the Inland Sea getting into scrapes and pinching other people's riches.

You start off on board your good ship the Banshee with your evil smelling crew, You must 'Sail North' (or 'South', or wherever the fancy takes you) until you come across a port or another ship. You'll have more fun meeting a ship, though, 'cos it's tally ho and into the fray!

The combat routines are great fun and quite similar to those used in the original books. Whenever you encounter the enemy, two sets of die (one for you and one for the opposition) start spinning on the screen to determine the outcome. After a few throws one or other of you will end up as, food for the sharks!

When you come across a port, you can 'Go ashore' or 'Go (name of port) ${ }^{\prime}$ and engage the natives in a battle of the die, or should that
be a battle to the death? At the start of the game most of them give up without much of a struggle, but later on you'll find they're very unwilling to give up their gold!

As far as the pics and descriptions are concerned, this game's pretty standard Adventure International fare. It's programmed by Gremlin's Mike Woodroffe and Brian Howarth and looks very similar to their earlier creations - Robin Of Sherwood in particular. Remember how you found your way around Sherwood Forest by keeping a close eye on the display? Well, you can do the same thing here, should you find yourself lost in the inevitable jungle.

The trouble with this game though, is that it ignores everything it doesn't understand - that wouldn't be too bad, but it also ignores some things that it does understand! For example, if you type 'Wear helmet' (and you haven't picked it up), the program replies 'You can't do that yet', so you 'Get helmet' and then find that 'Wear helmet' is ignored! If you check the inventory you'll find you're actually wearing it.
This is a real bloodthirsty megaromp that no pirate should be without. The blurb claims 300 graphic locations but a lot of these are just stretches of empty ocean. By the way - you certainly ain't gonna find it easy to map. Stick to the shore till you've found your way about. Stick to this game me hearties and you'll have a ho, ho, ho and a bundle of fun.


## QUEST FOR THE HOLY GRAIL

Mastertronic/ 11.99
Himmmm! Haven't I seen this game somewhere before? Wasn't it back in 1905 or thereabouts? Well, at least it'll probably be cheaper now it's being distributed by Mastertronic.

Cheaper it may be but good it's not. It's full of naff jokes and everytime you make a move you're a gonner. I mean, what's so funny about being cut off in your prime by being shot at with great green lumps of snot! Ugh!

You play the part of Sir Tappin who's in search of the Holy Grail but I reckon you'll soon get tired of tappin' those keys. The graphics aren't that hot either, and they're even the same for different locations occasionally.

It'll take you ages to get anywhere in the game 'cos the program kills you off at every opportunity. Still, it is cheap. Perhaps that's all that matters perhaps!

## RUNESTONE <br> Firebird/f7.50

Runestone's a Lords Of Midnight clone - it's got sleepless nights and aching fingers written all over it. In some respects it's better than its predecessor in others it's not.

What about the story? Yes, you guessed it - nasty orcs are marching down from the north (they always come down from the north) and knocking the stuffing out of the friendly, heroic folk they come across. As usual, there's a mega-nasty looming in the background called Kodimir and you've got to get out there and give him what for!

You control three heroes, an elf called Eliador, Rorthron - oops! sorry, I mean Greymarel the wizard and a warrior called Morval. These three must sally forth and discover the Runestone, a mystical gem that'll help you to destroy the evil Kodimir.
Know what 1 mean when I say it's a Lords Of Midnight clone? But although Runestone only allows you to control three characters it does offer you all the usual text input facilities you'd expect from a rip-roaring adventure.

While you're busy typing in commands like 'Tell Skrimnal to
get lost', something you'll want to do pretty often, 'cos he's a right pain in the hauberk, the graphics will depict the landscape in the direction you're facing. You can only move in four directions, though, but at least the movements are smooth.

The piccies aren't as pretty as Mike Singelton's ones but they do the trick, and, if you want to treasure them forever you can always use the COPY command to dump them to your ZX printer. That's if you haven't already donated it to the local museum.

You can even have a quick natter with the characters and better than that you can give 'em a poke in the eye. There are some great combat sequences and you'll have even more fun if you rush on in there without a weapon. I had a great round of fisticuffs with Skrimnal the Sly, who deserved everything he got!
All this and you can cast spells! Or rather Greymarel can. One slight problem - he forgets the spells at the start of the game. Maybe a quick box round the lughole will jog his memory!
There ain't no doubt about it, Runestone's a smasher - you'll get to plaster a load of nasties and see the countryside. That can't be bad for only $£ 7.50$.

WnyJDEdS dIVTDNIS Y8\%
off against this backdrop. Every so often, you're treated to a snap-shot of Bastian in his attic, reading his Fantasia book.
And if you're wondering what The

'Tis a dark and stormy night and all around is gloomy as you curlup to read your copy of YS. Strange things begin to happen when suddenly you're plunged into a world where . . . Read on and leave the real world behind.


## MORLA



Morla squats in the heart of the swamp country, a cross between a tortoise and Mount Everest. He's a slow coach so you won't really find him that useful - still, he taught us a lot! Pay him a visit and he'll pass you a hint too.

he Never Ending Story is the never ending success that grew from a best-selling book into a blockbuster film and finally into Ocean's latest adventure. And what a mega-game it is too - it loads in four separate parts, has windowing graphics, over a hundred locations, and some very strange characters.

Our epic hero spends his time hiding away in the attic. Well, wouldn't you if your parents christened you Bastian Balthazar Bux. But Bastian doesn't just run away and hide up there - he skips off to another universe. There he finds Fantasia, a world facing extinction. Predictably, the job sorting out the mess falls to him ...

Thing is, bits of Fantasia keep disappearing, swallowed by 'The All Consuming Nothing'. At the start, a lad from the plains, Atreyu, is chosen by his people to dash off and face all manner of danger and devilry in the search for someone who can save the world. That someone, of course, is Bastian, sitting in his attic reading all about Fantasia and its inhabitants. How Atreyu manages to track him down is up to you.

The display is one of the game's main attractions. On loading, a horizontal format picture of a vast plain beneath an evening sky appears across the top of the screen. Other images, such as little illustrations of what you're carrying and cameo pictures of your location, flash on and Fantasians look like, well, take a look at their piccies on the screen. There are plenty of them - some

pretty weird! You'll encounter rockbiter, Teenweeny, and Nighthob at the start but they'll promptly disappear for the duration of the first episode. There're also Gnomes, Giant Tortoises, and Sphinxes not to mention your faithful steeds, Artax and Falkor the Luckdragon. All the characters have a significant game role, though you won't get much chance to talk to them.
Mind you, the lack of an 'Examine' option is a far more serious loss. Even if everything you carry is illustrated, attribute problems and limited graphics resolution make some things unrecognisable it'd certainly help if you could call up descriptions of the more obscure objects.

This drawback apart, the game's well designed and gets the best from the words it does understand. The responses are helpful, specifying

any unacceptable words rather than just saying 'You can't do that'. You won't need to enter anything complex to solve the puzzle either though that doesn't mean they're easy. You'll find yourself having to tie objects and problems together that occur at quite distant locations. This exercises the fingers as well as the brain cells!

Never Ending Story's opening puzzles me - it's just so easy! You're unlikely to die unless you're dogged with real bad luck. Don't be put off, though. As time goes by you'll find yourself more and more up against it. Spook City, for example, has death waiting around every corner, so make sure you save the game at every opportunity - unless you want to keep going back to square one!
This is definitely a hot-shot Christmas bonus if you're tired of sitting in the attic all day!

## ENGYNOOK



Weird name, but then these Fantasian gnomes are pretty weird! This one spends his time peering through a telescope at the Southern Oracle perhaps she sunbathes topless or something!

Guess who! Bastian Balthazar Bux - reading This is A uryn, the medallion, - if you're going to get anywhere in the game, you'd better make sure you keep your grabby mitts on it.


- Auryn and Falkor, the Luckdragon, aren't at the start of the game's second section. Well at least you won't be taken for a ride! Things start to get pretty tricky now!

Here are the objects you're carrying. There's a limit to how much you can lug about, so make sure you have the right things at the right time.


## Omnipotent Objects

Without giving too much away, here's a quick guide to some of the objects you'll need if you're going to save Fantasia and escape from the attic.


Auryn. This silver and gold medallion symbolises the lifeenergy of Fantasia. You'll stumble across it right at the beginning of the game, which is just as well as you'll need it to command Falkor the Luckdragon.


Horn. Another essential item and again it's a doddle to discover it. Give it a good blow, but try not to get carried away think of the neighbours!


Crystal. Engynook the Gnome badly wants one for his telescope but don't expect to find it lying around in the open.


Leather. You'll spend Ancient Book. Some quite a while wondering what this is for. You can't wear it, cut it, or do anything exciting with it.



Apple. Well? Should you eat it with all that talk of poisoned apples? One thing's certain - you won't get a good nights sleep until you find out!

## objects aren't in

 themselves useful but can still help solve other puzzles. The book tells you how to enter the Ivory Tower - though with a little bit of brain-power you could figure it out for yourself.

The return of the legendary crusader - skilfully fencing his way through twenty screens of mystery and danger!


## Datasoft

## II all weath - in all pout adventures I sum with yout.

## Iam there mfien pout come to a dead end - and wfen someone deals wou a beaff boun. for a mfile I shlall belp you but pou must send me vour binits and tips. 



## D 14 <br>  <br> <br> S <br> <br> S  <br> How long does it take you to crack an adventure? And just how much truth is there in the blurb on the cassette inlays that says things <br> scream of despair followed by some very Ancient Celtic incantations - none of them over four letters!

like, 'This adventure could take you months to solve!' and 'A year's worth of entertainment for only £15!'? Well, Martin Mulrany of Grangemouth writes in to say, "I'd just like to comment on your statement in Your Spectrum 20 about Graeme Smith completing Red Moon in only one week - 'a record for Level 9 adventures'. I completed Lords Of Time in well under a week after its release!" Hmmm ... so, what's your quickest completion time on a game? And did you feel cheated when you'd done it?
Talking of the shortest time that you've ever completed an adventure in, write in and tell me just how many you've finished. Are you up there with John and Patricia Black who've completed no less than twenty on their overheated Speccy - including Robin of Sherwood and Valkyrie 17, one of my all-time faves. Or perhaps like last month's El Supremo, John Wilson of Rochdale, you find it easier to tot up the games you haven't yet completed! Are there any games you get stuck on, John?
Following last month's
shenanigans with the characters from Sherlock, David Graham has spotted some very odd goings on in the game. He writes, "I was in Basil's house in Leatherhead, I opened the safe in the presence of Chief Inspector Straker and Doctor Watson. I'd brought them along as a safeguard 'cos the last time I tried it alone Basil shot me. This time he still shot me - with a policeman present! Now who in his right mind would shoot someone if he was trying to prove that he didn't kill Mrs Jones or Mrs Brown. It's all a bit strange, methinks!" Methinks so too. And how many of you have one of the early versions of the game in which Dr Watson got a trifle overchummy with Holmes and kept sitting on top of him.

Mind you, if you think that's bad what about the infamous bug that appeared in Legion, a game from Software Projects. It was in this immortal classic that you could go UP but you couldn't get back DOWN again. When I rang the company for help all I heard on the end of the line was a

## A SNOWBALL'S

## CHANCE

The illustrious Harvey Lodder has written in with umpteen clues but we'll start with his tip on Snowball. To put out the fire in the control room, he says, you need the fire extinguisher from the snowplough. And if you're in trouble with the sharks in Waxworks, just try SWIM sounds easy, doesn't it? (Sounds flippin' obvious! Ed)
Gregory Timmis is crying out for help with Sherlock so look him up in the list and drop him a life-line. Even better if you're incarcerated in the Goblin's Dungeon in The Hobbit as he'll be able to help you. That must surely be one of the biggest prisons in the world if you can judge by the number of people still stuck there. Well, for all those of you doing porridge, Greg has your free pardon. Before you go, try breaking the trapdoor that you'll find underneath the sand. If you enter Break Trapdoor and then press Symbol/Shift 2 repeatedly, you'll be presented with Thrain's Key that unlocks the side door in the Lonely Mountain.
Calling Spidermen everywhere - Stuart Galt'll get you out of a sticky situation. Try ripping the picture in the penthouse and taking the paper. Then take the exotic chemicals, go to the lab and MAKE WEB. Then use the web to stop the fan.
Alexander Kruczkowski has some very bizarre clues for Erik The Viking - buy the tabby cat for 2 oz of gold/silver then tie the bell to it, open the slab door and cut the beard with the clippers. Hmmm, come back Monty Python, all is forgiven!
Finally, when you come to scour the lists of names, pay special attention to poor old K R Hill - he's stuck fast in Wrath Of Magra. Now I rate this game but we never seem to receive any letters about it. Is there anyone out there who's been playing it and would like to spill the beans? Just drop me a parchment at Your Sinclair,
14 Rathbone Place,
London W1P 1DE.

## KINGSOF THECASTLE...

Knight's Quess, Planet of Death, Magic Castle Christer Andersen, Rorlokken 49, 2730 Herlev, Denmark

Final Mission, Mountains Of Ket, Temple Of Vran, The Castle, The Prisoner, Tower Of Despair, Twin Kingdom Valley James Wilson, 26 SpotlandTops, Cutgate, Rochdale, Lancashire, OL12 7NX

System 15000, The Hobbit, Snowball, Inca Curse, Waxworks, Urban Upstart, Super Spy Espionage Island, Planer of Dearh, Velnors Lair and many more
Harvey Lodder, 35 Shelley Avenue.
Bullbrook, Bracknell, Berkshire, RG12 2RP

Inca Curse, The Thompson Twins Adventure Toby Blake, 25 Holm Park, Inverness, Scotland, IV2 4XT

Final Mission, Temple Of Vran, Planer Of Death, Kentilla, Sherlock, The Hobbir, Urban Upstarn, Valhalla, Subsunk, Golden Apple and many more John and Patricia Black, 137 Legahory Court Craigavon, N Ireland, BT65 5DF

Planer Of Death, Spiderman, Gremlins Pyjamanama, The Hobbit, Sherlack Stuart Galt, Tigh-Na-Creag, Pier Road, Rhu. Dumbatonshire, G84 8LH

## ONTHERDEATHBEDS...

Spiderman - Help!!
Christer Andersen, Rorlokken 49, 2730 Herlev, Denmark

Eureka- How do I get the hollow log out of Eurek-- Row dou get the hollow log our of
the swamp without being trodden on? Erik The Viking - any help appreciated C Southouse, 32 Chestnut Drive, Polegate, East Sussex, BN26 5AN

Final Mission - 1 would welcome any help and advice.
Carl Barker, The Post House, Sparsholt, Winchester, Hants, SO21 2NR

Quest-How do I get in the castle? Simply Desperate G A Tillins, 15 Gloucester Road, RAF Wyton, Huntingdon, Cambs, PE17 2HD

Sherlock - How do I get past Tricia's door and get to Old Mill Road?
David Walton, 22 Green Lane, Lower Kingswood, Tadworth, Surrey, KT20 6 TB

Mission 1. Project Volcano - How do I get past the droid in the lift on floor 1 ? Michael Williams, 15 Hardwick Ave. Chepstow, Gwent, NP6 5DJ

Ship Of Doom, Valhalla - Helppppp!! Benjamin Ellis, 7 Wallace Street, Dumbarton Scotland, G82 1HH
Hunt For The Sun God - 1 can't cross the river or enter the temple.
Andrew Melvin, 44 The Causeway, Burwell, CB5 0DU
Spiderman - How do you clear the mist, Kill Electro, and take the gem from Sandman? Edgar Wright, 40 Southover, Wells. Somerset, BAS IUH
Heroes Of Karn - Too many questions to print!
Andrew Gordon, 5 Cairnlee Terrace. Beildside, Aberdeen, Scotland, AB1 9DE

Kentilla - How do 1 get into Tylons Castle What use is the Conch?
AN Manson, 13 Riselaw Terrace. Edinburgh, EH 10 6HW

Et Dorado - Any help appreciated. Stephen Martin, 21 India Drive, Inchinnan. Renfrew, PA4 9LF.

Final Mission - I can't pass the guardians of gates 2 or 4
Andrew McCubbin, 3 Kenilworth Drive, Airdire, Lanarkshire, Scotland, ML6 7EY

Mordon's Quest, Eureka - Any help appreciated.
appreciated, 14 Kensal House, Ladbroke
Susan Kinsey,
Grove, London, W10
Urban Upstart - 1 cannot get in the Town Hall, and what do I do when I 'm in there? Alan Pitt, Church View, Ormesby St. Margaret, Gt. Yarmouth, Norfolk, NR29 3P2
Spiderman - 1 can'' get Mysterio John James, 4 IC Barras Lanc, Spoon End. Coventry. CV1 3BU

Twin Kingdom Valley - Lost in the little twisty passages.
Stewart Robins
Stewart Robinson. 184 Nuncargate Road.
Kirkby-in-Asfield, Nom Kirkby-in-Ashfield, Notts, NG17 9EA

Hampstead - I keep getting mugged. Mr G A Harris, 11 Woburn Drive, Hale, Altrincham, Cheshire, WA15 8LL

Eureka - Help, help, help, help!! James Webb, 21 Ballycraggan, Puckane, Co Tipperary, Ireland

Hampstead, The Planet of Death - Any help appreciated with Lord Fish and the apprecialed
Toby Blake. 25 Holm Park, Inverness. Sootland. IV2 4XT

The Fourth Prorocol - Cannot answer Plumb's questions correctly. Cive Lemon, 14 Greenfield Close, The

The Hobbit - Stuck in the Goblin's Dungeon.
Christopher Coventy. 28 Woodlea Close. Bromborough, Wirral, L.62 6DL

The Hobbir - How do I Kill the Dragon? Richard Weeber, 20 Barry Close Richard Weeber, 20 Barry Close.

The Wrach of Magra - How do I get out of he Valley (stage 1)? K R Hill. I Lake Cottages, Lake Lane. Barnham, W Sussex. PO220AJ

Sheriock - How do I stop Lestrade arresting the Major?
David Graham. 34 Maryfell, Sedbergh Cumbria, LA 10 SAW

Sherlock - Can't get to Old Mill Road. Gregory Timmis, 129 Sunnycroff, Burton Stoke-on-Trent, ST3 4BB

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 Criminal Network. TALOS and at its head the evil CYRUS T. GROSS. A last ditch aftempt by the Free Worlds to rid the Universe of this seemingly unstoppable force has called on the services of the NEMISIS ORGANISAIION, a hardened cadre of humanoid and robitic free booters who have assigned NOMAD (Nemisis Organisation Mobile Attack Droid) to penetrate GROSS's heavily armed homewortd and destroy this vile despot once and for all.

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Get your skates on for Electric Dreams' gaggle of games that came in from the cold. Our own Highland games expert Dougie Bern flexes his frost bitten fingers to report on Winter Sports.

## ICE HOCKEY

You can ping the puck against the computer or a friend. Try and find a friend - the computer plays a tough game! Each game is split over three five minute periods. The player graphics aren't hot - about ice temperature in fact. The teams come out more like the chorus from Holiday on Ice than a bunch of Paul Newmans in Slapshot. The pace is fairly genteel, but a basic simulation is provided - passing, rebounds and interceptions - but no bust-ups! Funny, that's what I remember ice-
hockey for!

A bird's eye view of the rink shows player locatio and movement. Whether it's really useful to plan your tactics in the middle of a game is questionable.


Team scores shown here. When I played, it looked more like a cricket scoreboard - in favour of the computer! What a rinky dinky box of chips!

Playing the game's really simple. The computer automatic-
ally switches the player you're controlling to the one with, or closest to, the puck.

- You only see part of the rink at a time. Not quite as tad as only being able to see the corner post at the Park Lane end.


## BOBSLED

Try this wall of death and you'll soon be out of breath! Like other elements in this package simultaneous screens give you different perspectives on your best game tactics. A combination of speed and control is your best bet. Now load up and bob's your uncle!

Speeding down the bobsled track you'll see the walls whizzing by. Don't go too fast though, 'cos even if you don't tip the sled over you'll probably crash into the wall.

The steering controls let you put a bit of swerve on the sled and help you wind your way down the course. Keep off the Winter Warmer if you want to make it to the bottom in one piece.

fast flash guys usually come to grief.
Mind you in this frosty weather a fast flash is probably the best!

The faster you travel the further you go. And combining speed with accurate steering gives you the best chance of winning.

This overall view lets you stay on the straight and narrow or, in this case, the bend and curve. As you can see the course doesn't meander too much - probably a good job!

## SKI-JUMP

Hardly a giant leap for mankind or computer games. But this one's not as easy as it looks. Speed and control are what you need to score those winning points for distance and style. To fly through the air with the greatest of ease ain't the simplest thing on a pair of skis. Get it wrong and the graphics tell a gruesome tale.
Ir'll take a while to master
the jumping art. At first
you'll be mainly wiping
out and kissing the
crystals - but don't
despair! The distance
Indicator shows how far
you've flown.
If the real thing's like this,
lef's leave it to the
experts. I go more
clammy than Klammer. A
main thrill skill is to make
sure you don't fall off
before you get to the
boftom! bottom!

| FAX BOX |  |
| :--- | :--- |
| Game | Winter Sports |
| Publisher | Electric Dreams |
| Price | £9.95 |
| Joystick | Kempston |
| Keys | Define your own |

The ski control shows you which way you're pointing those big bits of wood on your legs.

Points for style depend on how well you hoid your airborne position. You should use this display to maintain the smoothest of flights. Littie bags are not provided for bumpy ones.

The faster you go the easier it is to fall so take it slowly at first. Optimise speed and control else it could be downhill all the way - in more ways than one!


A compendium of eight games for Damart wearers, Winter Sports comprises of Slalom, Giant Slalom'and Downhill Skiing, Ice Hockey, Bobsled, Biathlon, Ski Jump and Speed Skating. All will test you at the va-ijus skills, either against a mate or the computer through individual to team skills. So if you thought ski gear was just for breakdancing, think again. Settle down with a hot toddy and let's get on the piste.

## SKI-ING EVENTS

This part of the game gives you a trio of trips down the snowy sward. All the events, Slalom, Giant Slalom and the Downhill are basically the same. Different degrees of difficulty and slight variations in objective sort out one slope from another.
Essentially, though, they're all downhill obstacle courses with poles and gates to be threaded with skill, speed and style.
You're going against the clock to get into the Highscore Hall of Fame - so keep your turns as tight as those ski-pants! Alternative views are provided of your progress. There's also a control indicator - used with the speed indicator you can plan your shortest route.

## BIATHLON

This is all about cross country cruisin' on slippery snow with the added delight of shooting targets. Basically you have to cover the kilometres against the clock but to be a winner, speed and accuracy of shot are necessary. And you can't fire your rifle unless it's loaded - but a quick flick of the fingers will immediately re-arm you. The other variation to this game is that stamina, rather than adrenalin and bravery, is the key resource. One for slow-blooded Swedes!

## SPEED SKATING

If all these Jean-Paul Killys give you the willys and the power surge of pumping thighs is more your scene then this section could be the one for you. It's against the clock, and you've got to skate - either against the computer or a slippery pal. Simultaneous views give you front and back elevation - but as the track is virtually circular with no obstacles or slopes then you could play this with one hand behind your back! The racers on the screen manage to skate like that. You can choose between five race distances ranging from 500 to 10,000 metres - each thigh sapping click is ticked off on the screen alongside the clock.



Imagine Software is available from: WHSMITH, //Sohnemzes, wOOLWORTH, LASKYS, Rumbelows, Greens Spectrum Shops and all good dealers.

# OUT enit COUNT 

## We're hand in boxing glove with Activision on this great compo.

 There are 60 copies of Activision's latest and greatest up for grabs but you won't need the luck of the Irish to win a prize - just a steady eye and a second class stamp.Enter Barry McGuigan, hero of all Ireland, lightweight champion of the world, one of the niftiest boxers ever to throw a punch and hacker extraordinaire. Hold on - hacker? Surely some mistake! Shouldn't that be hooker?
Well, perhaps so but that's not the only mistake in our piccy of Barry bashing away at his Speccy. Take a look at the two cartoons and you'll soon come up with a fair few differences between them. Just how many is what we want you to tell us! Put a ring round each of the spots where the two piccies don't match up, fill in the coupon and pack it off to us pronto at Barry's Boxing Compo, Your Sinclair, 14 Rathbone Place, London W1P 1DE.
And the reason for all this haste? Firstly, a chance to go a couple of rounds in the ring with Barry. Fortunately for you though, you won't have to don the gloves and cross the canvas 'cos you can trade punches with him in Activision's new blockbuster, Barry McGuigan's Boxing. The company has come up with thirty copies of the game to give away plus thirty copies of their other latest sensation, Hacker. Now's your chance to

win one of each without getting completely duffed over. No wonder poor old Barry's got his wires crossed.
In fact, Hacker is the ideal game for every YS reader. Now there's no need to drag yourself away from the mag to read all those boring old game inlay cards. Hacker comes with no
instructions - whatsoever nothing, nowt, zilcho! Just load it up and you're thrown straight into a world of intrigue, power struggles and impending catastrophe - all at the other end of your phone line.
That's the challenge - now go for it. What are you - chump or champ?

## Queensbury Rules

Entries should reach us by no later than January 31st 1986. It's no good saying you coulda been a contender if you didn't get your entry in on time.
Each entry must have all the differences marked on the picture and the total should be written on the outside of the envelope.
The Editor's decision is final and no correspondence will be entered into.

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# DROID 

The far flung colony planet Alioth, a tiny unwanted outcrop in the 4th Spiral of the Nebula, has no place in galactic history. Save for one little known event - it was here that the settlers, tired of the tedium of endlessly nurturing the barren planet, first armed their farm droids and let them fight to the death in the very fields they'd created.
What should have been an isolated incident spread
through the colonies like the hundred year plague. Watching the barely intelligent droids fight it out was a new excitement - there was a crazy, mindless freedom about it. One that provided a release for the tension and bitterness many felt on finding their promised Edens were to become endless hells. Droid fighting became regular village entertainment and tradeships carried the craze throughout the outer worlds. Very soon, settlers exchanged the meagre living of their farmsets and were touring the planets, polishing up their own metal gladi-

They slammed it ... they banned it ... but they couldn't stop the galaxy's most evil sport. Max Phillips gives you the chance to try it for yourself ...
ators and preparing for the big fights.
By the time lawships arrived on Alioth, the craze was unstoppable. Within a year, huge stadia accommodated megacrowds, all willing to spend their last credits, to give up their homes, to travel across star systems, to fight
and bribe their way to the games just to witness the spectacle. Ask CENTRA now and it will tell you the Droid Wars were a long time ago, the sportlong since banned and its exponents jailed. But the government well knows that in the far, distant reaches of the galaxy, crowds gather in secret and poorly armed, low intelligence droids are walled in the arena and forced to fight for their lives. And Droid Wars have no mercy - adroid's only prize is the chance to fight again..

DROID WARS!
DESIGNING YOUR DROIDS.


- Vanity Spot: All fighting droids have names - either that of their master or one of their own!
- The Plasma Bolt is the most dangerous and effective weapon available - it's so heavy droids rarely carry more than one but the results can be very effective! Range: 60, Weight: $5+80$ per round.
- A Laser Cannon is the basic weapon of fighting droids the short, rapid blasts of laser fire are both nasty enough and light enough to be a very effective weapon. Range: 40, Weight: $5+5$ per round.
- Shock Bombs are a hit and miss weapon. Hurling them at your opponent often misses but is pretty unpleasant when it hits! Range: 25, Weight $3+5$ per round.
- The Energy Lance is the only hand-to-hand weapon allowed - a drill is extended into the body of the opponent which is then energised. The results, on droids at least, depend quite where the lance hits. Range: 2 , Weight 30.
- Long Range Trackers are the most effective vision system available and they provide extremely accurate targetting. Range: 100, Weight 20.
- Local Radar is the most popular vision system as it is reasonably capable while being quite light. Range: 50 , Weight 10.
- Thermic eyes provide very limited if reliable vision. Range 30, Weight 5.
- Motive Unit. This is the most important element of your droid as it provides the basic framework for all other features. It's usual to pick this first and then set your other choices. There are four types available as shown below:


Here's the commentary box - a complete blow-by-blow guide to what is happening duriny the fight.

The scanner shows you the relative position of the two droids as they pursue each other around the arena.


102

## NEW RELEASES FROM "THE HOUSE"



## DISCS OF

DEATH
Can you retain the title of Disc Warrior Champion? Or will you, like so many before you, die by the disc. Excellent 3dimensional graphics test your skill to the limit.
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In this exciting arcade/ adventure you must overcome the evil wizard by collecting objects and spells which allow you to transform into different lifeforms. Explore the strange caverns in your various bodytorms; as a man, a bird, a dolphin, a monkey or even a genie.
SPECTRUM 29.5 AMSTRAD 97.95

## BIG BEN STRIKES

 AGAINThe world-famous reporter, Ben of the Chronicle, has been sent to the Houses of Parliament to piece together a big story that is about to break. To obtain his story he must approach the politicians, exhanging gifts for the leaked information. Can you recognise Maggie lurking in 'the house', or Geoftrey Howe, or the many ofyer celelgities here to häunt you the game includes a screen kit with which you ean totally redesign your own screens! SPECTRUM 9655
48 K

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## PLNGPIONG

The officially endorsed version of the No. 1 arcade game by Konami.
 Manchester M2 5NS. Tel: 061-834 3939. Telex: 669977

You can almost feel the tension of the big match breaking through the screen . . . the expectant crowd is almost on top of you! You return the service with a Top-spin Backhand, then a Forehand Back-spin, the ball bounces high from your opponent's looping, defensive lob . . SMASH! . . . a great shot opens the score but this is only your first point! Play head to head or against the computer in this, Konami's first and best

# 3. CentreSoft presents 

With over four years experience of providing practical software solutions for business and home applications, Gemini have put together their entire range of famous titles for the Spectrum and Spectrum Plus in ONE special pack, at a VERY SPECIAL price. Whether you're a cassette or microdrive user, this super value pack contains all the serious application software you're ever likely to need for your Spectrum, from home accounts and database management to a complete professional business accounting system.
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- Cash Book
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Each pack contains ALL 8 programs, demonstration data files, and clear and comprehensive manuals for EACH program. Gemini's previous retail price for all these programs individually was $£ 179.60$. Now they're all together in ONE COMPREHENSIVE PROGRAM PACK.

## OFFICE MASTER

Tape: £15 Microdrive: £17.50
includes P\&P and VAT.

## Database



Use this program for storing all types of information just the way YOU want to store it. You set up a computerised 'card index' system and add records and data to the file in the format that you choose. Advanced features include sorting and searching for specific records, mathematical calculations, printer routines, data summaries, etc. If you don't have a database, you certainly should!

## Mailist



This is a specially designed database for storing names and addresses, and printing out in label format. Special search routines are included for selecting only names and addresses that conform to your criteria. The famous Gemini 'Searchkey' facility is included with this program, and data entry is simplified by an on screen label painting system. Just type in those names and addresses as though you were using a typewriter!

## Stock Control



One of Gemini's speciality programs, this software will take the drudgery out of keeping stock records. Enter details of part number, description, unit quantity, cost price, selling price, minimum stock level, units in stock, order quantity and supplier details. Detailed reports include totals of stock at cost and sale price, cost of bringing stock up to level specified, gross margin, understocked items, etc. Full browsing facilities to make inventory management a pleasure!

## Cash Book

This is a full and comprehensive cash book accounts system designed to REPLACE your manual ledger entirely. It will take you from the 'shoebox' situation of sheaves of invoices, cheque book stubs, petty cash vouchers and bank statements etc. to a properly constituted trial balance. You may then take your FINAL. ACCOUNTS package and produce profit and loss account and balance sheet ready for audit. A REAL money saver when it comes to your accountancy bill!

## Final Accounts

Using the data file on microdrive or cassette prepared by the cash book program, this software will produce comprehensive end-of-year reports ready for audit by your professional adviser. The Gemini cash book and final accounts system is now in use by many thousands of businesses and as a 'classic' professional program has been translated for a wide variety of micros. Cash book and final accounts alone warrant the purchase of this OFFICE MASTER program pack.

## Home Accounts

Designed as a complete financial and budgeting package for home affairs, this program allows the user to set up a budget for items of household and family expenditure and compare actual expenditure with budget as often as required. A running total of surpluses and deficits is available both numerically and in bar graph form. A complete bank account routine is included, together with suggested expenditure categories which may be simply altered as required.

## Easiledger

Consists of invaluable routines to allow the creation of any type of financial ledger system. Its usefulness lies in its ability to produce account balances instantly for debtors and creditors together with an audittrail of all entered transactions, with dates and references. A year-to-date summary is included of sales, purchases, receipts and payments over a 12 month period, and most importantly, a completely interactive bank account database is featured.

## Graph Plot

At last, superb graphs, bar charts and pie charts on your Spectrum! With a complete data entry section and the ability to load and save files, this is really one of the fun programs to use. Represent numbers and data in clear diagrams with this package, and print them out on your printer to accompany reports, budgets, etc. Very highly recommended for the office, home and school. Also includes capability to provide mathematical function plotting.


Spectrum Shops and all good software dealers. Trade enquiries welcome.

# DROID WARS！ 

ENTER THE LISTS
Here＇s the Droid Wars listing－ $\mathbf{1 0 0}$ per cent Basic action with no hex or Basic loaders to get in the way．Remember to save it in stages as you go in case you＇re attacked．．．

## 20 EO 108001 <br> 140 REM kevinometer <br> 150 LET w＝0：FOR $j=1$ TO 15：LET $W=w+C O D E$ $r *(j) * V(1,5)+V(5,4) * C C$ ODE（r＊（p））＜＞0）：NEXT \＆2 LET a＊＝ STR w w LET ak＝＂＂？TO S－LEN a＊）＋a末：PRINT AT 18，11；as：LET a＊＝STR\＆M（CODE r＊（B），1）：LET a＊＝ i－＂（TO 3－LEN a $\ddagger$ ）+ at：PRINT AT 18，29；a末：RETURN

Lines $140-150$ Check \＆display weight of droid．
200 REM Scralling Wiridow
210 LET $\mathrm{ss}^{-11}$ LET a ）＝bs：GO su B 220： 00 SUB 220：GO SUB 220 220 LET 1＊（5s）$=$ CHR $16+$ CHR \＆$r+a$ ＊）LET us＝ss＋1－4＊（ss＝4）：PRINT A T 18,$0 ; 1$ LET SC＝Ss：FOR $z=1$ TO 4 T 18，0；：LET SCessi for
；PRINT INUERSE $1 ; 1 \ddagger(\mathrm{sc}) ; 1$ LET $\mathrm{sc}=\mathrm{sc}+1-4 *(\mathrm{sc}=4)$ ：NEXT $z$ ：RETURN

Lines 200－220 Scrolling window．GOSUB 210 to clear， 220 to write new message．

```
230 REM Move Droid & Display
2 4 0 ~ I F ~ E N = O ~ T H E N ~ R E T U R N ~
250 IF FN h()+M(CODE r $ (B),3)
dam THEN LET af="Motive unit fa
llure1": BO TO 220
11ure LET Spd=M(CODE r&(8),1)*M(s
```

CODE $r \$(8), 2) /$ CODE $r *(20):$ IF di $r=-1$ AND spd＞ABS（ $p$－op）THEN LE $T \equiv p d=A B S$（ $p-0 p$ ）
270 LET $m v=S G N(p-o p) * d i r:$ IF $m$ $v=0$ AND oi $r=+1$ THEN LET $m v=1-2 *$ V＝0 AND
（RND） .5 ）
280 LET $p=p+s p d * a v=$ LET $p=p-p *$ （ $p<0$ ）：IF $p>255$ THEN LET $p=255$ 300 LET enwen－1：LET $w=w-1$ ：LE T $n p=1 N T$（ $p / B$ ）：iF $n p=o l o$ THEN LET $n p=n p+(n p<>31)-(n p=31)$
302 IF $\mathrm{np}=01 \mathrm{P}$ THEN RETURN
310 IF olp $<>010$ THEN PRINT AT 16，olpt＂＂；
$16,01 p ;$
320 PRINT AT 16, nP：INK riCHRs 144：LET O1p＝hp：RETURN
Lines 230－320 Move a droid \＆update scanner．

> उ45 REM Scan arena
> 350 LET ran $=999$ ：IF CODE $r$（ $\$(7)$ AND FN $h(3+30>$ dan THEN LET ran $-30$
> 355 IF CODE $r$（ $\ddagger$（ 6$)$ AND FN h()$+\mathrm{S}$ $5>$ dam THEN LET ran $=50$
> 360 IF CODE $r \$(5)$ AND FN $h()+5$ $0>d a m$ THEN LET ran $=100$
> 370 IF ran＝999 THEN LET $a \leqslant=$＂B lind：＂：GO TO 220
> 380 LET en＝en－1：LET $w=w-1$ ：LE $T$ $a=A B S$（ $p-O p$ ）：IF arran THEN LET $\mathrm{a}=999$
> 390 LET ran＝a：RETURN

Lines 345－390 Scan arena for opponent．

## 1100 REM Draw arena

1110 INK 0 ：PAPER 4 ：BORDER 4： CLS ；PRINT TAB 11；＂DROID WARS＂ ＇ 1 LET $a=5$ ：FOR $i=175$ TO 169 STE P -2 ：PLOT a，1：DRAW B7－PEEK 236 77，0：PLOT 168，i：DRAW 日7－a，0：L ET $a=a+5:-$ NEXT $i$

1120 PRINT INK $1 ;$＂＂$; n ⿻(f) ; "$ R EADY＂INK 0：＂Energy＂．＂．Damage ．．．．INK 2s＂＂sn末（s）；＂READY＂I NK O；＂Energy＂．．＂Damage＂；AT 14， 12；＂SCANNER＂
1125 PLOT 0，161：DRAW 255，0：DR AW 0， 45 ：DRAW $-255,0$ ：DRAW 0,45 ：PLOT 0，1121 DRAW 255，01 DRAW O ， 45 ：DRAW－255，0：DRAW 0，45：PL OT 0，59：DRAW 95，0：PLOT 152，59： DRAW 103，0：PLOT 0，37：DRAW 255 .0
1130 EO SUB 210：IF mnU THEN GO TO 2010

## Lines 1100－1130 Draw arena

1200 REM Init robots
1210 LET $f \leqslant=d \leqslant(f)$ ：LET $s *=d *(s)$ ：FOR $1=22$ TO 27：LET $f=(i)=$ CHR O：LET s \＆$(1)=$ CHR：OI NEXT i：LE T $f=(21)=$ CHR 190 ：LET $5 \$(21)=$ CHR ＊150：LET $s *(23)=$ CHR 5 1：LET f＊ $(23)=$ CHRF $1:$ LET ef＝CODE $f 5(11)$ ： LET eg＝CODE Ef（11）
1220 FQR $j=0$ TO 2：INK 1：PLOT 8 ，$j+138$ ：DRAW CODE $f \$(11), 0:$ INK （2：PLOT $\mathrm{B}, j+91$ ：DRAW CODE s：$(11)$ ，OI NEXT 3
1230 LET OI $f=$ INT（CODE $f=(21) / 8)$ ：LET ol $s=$ INT（CODE $s+(21) / B): F$ RINT AT 16，olf；INK 1；CHRE 144；A T 16，01s；INK 2；CHR 144 ；
1250 GO SUB 210：LET a 1250 GO SUB 210：LET asibli GO 5
UB 220：LET aFw＂r MORITURI T E SALUTANT＂：GO SUB 220：LET a末＝ b⿻丷木：GO SUB 220：LET a丰＝＂ENTER to begin，M for mercy＂：ECO SUB 2 20
1255 FOR $i=1$ TO 10 ：LET $r=5$ ：IF RND $>.5$ THEN LET $r=f$
1256 NEXT 1
1260 LET as．INKEY\＄：IF aswni THE N LET $r=f$ ：IF RND $>.5$ THEN LET ras 1270 －IF a\＆＂＂M＂QR a $==" \mathrm{~m}$＂THEN $0070-2010$
1280 IF asく 12 CHR 13 THEN GO TO 1260
1290 GO SUB 210
Lines 1200－1290 Initialise droids，place them in their starting positions and select who goes first！

1300 REM Swap over \％unpack
1310 IF $r=s$ THEN LET $r=f$ ：LET $r \boldsymbol{r}=\mathrm{f} \mathrm{t}$ ：LET or $=138$ ：LET oo $=91$ ：LE T $0=5$ ：LET $0 \$=5$ \％：LET en＝ef：LET olp＝olf：LET olomols：GO TO 134
 91：LET oon 138 ：LET $0=f$ ：LET $\mathrm{O}=\mathrm{F}=$ f＊：LET en＝es：LET olp＝ols：LET olo＝ol f
1340 LET mod－CODE $r *(23)$ ：LET $p=$ CODE $r *(21)$ ：LET dam＝CODE $r$（24） 1345 LET op＝CODE OF（21）：LET $w=C$ ODE $r$ F $(20)$ ：LET $a r=$ CODE $r$ $\$(10) / b$ I INK $r$ I RANDDMIZE

Lines 1300－1345 Swop over from one droid to the other and unpack array．
1350 REM＊＊ist decisions
1360 IF en＝0 THEN LET az＝＂Exhau
sted：＂：GO SUB 220：LET mod＝3：L
ET $r$ F $(26)=r=(15)$
1370 IF r＊$(25)>$（ $\ddagger(13)$ AND mod
© 3 THEN LET mod $=3$ ：LET $r \$(26)=r$
＊（15）：LET a $=$＝＂Breaking off1＂：G
D SUB 220
1380 IF $r \leqslant(24)>r \equiv(22)$ AND mod $=1$
THEN IF FN $h()<=C O D E \quad r=(12)$ TH
EN LET mod＂ 2 ：LET a＊＝＂Provoked！
＂：GO SUB 220
1390 PRINT AT $2+(r=5) * 6,13 ; M *$（ mo
$d)$ ：GO TO $1300+100 *$ mad

Lines 1360－1390 A bit of thinking at the start of each turn！

```
1395 REM Hunt mode
1400 LET dir=-1: GO SUB 240: GO
SUE 350: IF ran-999 THEN GO TO
1710
1410 LET ef="Enemy sighted." : I
F ran<wCODE r*(14) THEN LET mod
=2: LET r&(25)=CHR= O: LET af="B
```

1420 GO SUB 220：GO TO 1910
Lines 1395－1420 Hunt Mode：Close in on enemy until within attack range．

1495 REM Attack mode
1500 GO SUB 350：IF ran＝999 THEN LET mod＝1：GO TO 1910
1505 LET win $=0$ ：IF CODE $r$（ $⿻$（4）AN D FN $h()$ dam THEN LET $w n=4$
1510 IF CODE $r(3)$ AND FN h（）da in THEN LET wn＝3
1515 IF CODE rec（2）AND FN h（）$>d$ da ai THEN LET wn＝2
1520 IF CODE $r(1)$ AND FN $h()>d a$ in THEN LET $w n=1$
1530 IF wn＝0 THEN LET $a=$＝＂Weapc ns failure！＂：GO SUB 220：GD TO 1910
1535 IF ran $>W(w n, 1)$ THEN LET a \＄＝＂Out of range．＂：GO SUB 220：L ET $\bmod =1$ ：GO TO 1910
1540 LET $a *=" F i r i n g{ }^{*}+W \xi(w n): G$ －SUB 220
1545 LET en＝en－1：LET $w=w-v$（wn， 5 ）－1：LET $r *(w n)=$ CHR ）－w（wn，5）
1550 LET acc＝W（wn ，2）：IF $r \neq(5)=$ CHR＊ 1 AND FN h（）＞dam THEN LET acc $=7000$
1555 PRINT AT $16,01 \mathrm{P}:$ INVEREE 13 CHR 144；AT 16，01P；INVERSE O；CH R使 144
1560 IF FN h（）＞acc／（ran＋1）THEN LET a末＝＂Missed！＂：GO SUB 220： GO $10 \quad 1910$
1565 PRINT AT 16，010；OVER 1；FL ASH 1；＂
1570 LET $p d=W(w n, 3)+R N D *(W$（wn, 4 ）－w（wn，3））
1580 LET esr $=$ CODE $\quad$ o $\$(9) *(100-\mathrm{CO}$ $D E$ OF $(24)) / 100$
1595 LET pd＝5＋pd＊（100－esr）／100：
LET $p d=I N T$ pd
1586 FOR $i=1$ TO pd＊2：OUT 254,17 0：OUT 254，85：NEXT i ：BORDER 4 ：PRINT AT 16，010；INK O：CHRF 14 4；：LET af＝STR pd＋＂unit hit！＂： BO SUB 220
1587 LET z＝CDDE O＊（24）：LET O\＄（2 5）＝CHRF（CODE OF（25）＋pd）：LET OF （24）$=$ CHR $\$($ CODE o $\$(24)+$ pd）
1590 IF OF（24）＞CHR 100 THEN GO
 ed！＂：GO SUB 220：LET a $\ddagger=n \neq(r)+"$ Is The Victor！＇：GO SUB 220：GO T0 2010
1592 FDR $\mathrm{j}=00-17$ TO OO－15：PLOT INK $0 ; z+8$, j：DRAW INK oipd， 0 ：
NEXT $j$ ：GO TO 1910
Lines 1495－1592 Attack Mode：Pick the best weapon available and have a go at him！

```
1595 REM Chicken mode
1600 LET dir }=+1\mathrm{ ; GO SUB 240: IF
r$(26)=CHR& O THEN LET mod=1:
LET r$(25) =CHR& O: GO TO 1910
1610 LET r* (26)=CHR# (CODE r*<2
b)-1): LET dam=dam-ar: IF dam<0
THEN LET dam=0
1615 FOR j=or-17 TO or-15: PLOT
INVERSE 1;dam+B,j: DRAW INVERS
E 1;ar,O: NEXT j
1620 IF dammo AND w+ar<M<CODE r$
(B), 1) THEN LET en=en+ar: LET w
(8),1
```

Lines 1595－1620 Break－Off Mode：Run Away，make repairs and don＇t stop until break－off period is over．

[^2]1930 IF $r=s$ THEN LET $s \$=r *:$ LET fi＝0＊：LET eswens LET olswolp 1940 IF $r=f$ THEN LET $f=\begin{gathered}\text { क } \\ 1 \\ \text { LET }\end{gathered}$
 1950 LET aま＝INKEY年：IF aまく〉＂$m$＂ AND a＊＜＞＂＂M＂THEN GO TO 1310 1960 BO SUB 210：LET as＝b＊： 80 SUB 220：LET a末＝＂SAVED BY YOUR MERCY！＂：GD SUB 220：GO TO 2010
Lines 1900－1960 Update arrays and energy bar and loop again．

## 2000 REM＊＊＊Menu

2010 LET mnuw 1：LET aま＝b $\ddagger$ ：GO S UB 220：LET a $=$＝p $⿻$ ：GO SUB 220
 N GO TO 2110
2120 IF as＞＝＂a＂AND $a \xi\left\langle={ }^{\prime \prime} z\right.$＂THEN LET a $=$ CHR（CODE a $\$-32$ ）
2130 IF $a *=$＂$B$＂THEN LET $r=f$ ：GO TO 3010
2140 IF a $\$=$＂$R$＂THEN LET $r=s$ ：GD TO 3010
2150 IF a $\mathbf{*}=$＂F＂THEN LET mnu $=0$ ： GO TO 1110
2200 IF a未＜＞＂Q＂THEN GO TO 2110 2210 PAPER 7：INK O：BORDER 7：C LS ：GO TO 9999

Lines 2000－2210 Stick the menu in the window and fetch a command．
3000 REM＊＊Create／edit Droid
3010 INK o：PAPER bi BORDER o： 3010 INK O：PAPER b：BORDER 6：$C$
LS：PRINT TAB 5；＂DROID DESIGN WORKSHOP＂．．＂Droid：＂ins（r）．INK $r$ ；＂WEAPON SYSTEMS GENERAL 3020 PRINT INK O；＂Plasma Bolt XXX Motive type X＂＇＂Laser cann on $x x x$ Shielding $x x x^{\prime \prime}$＂Shock $B$ ombs XXX Autorepair xxx ＂；＂Ener gy Lance $x$ Fuel $x \times x$＂ 3030 PRINT INK r；＂VISION SYSTE MS PROGRAMMING＂．．．INK O；＂Rang e Tracker $x$ Aggro $\quad x \times x$＂＂＂L ocal Radar $x$ Pain $x x x^{\prime \prime}$ －＂Thermic Eyes $x$ Attack
$x x x$
 ight $x \times x$ Maximum $X x \times$＂ 3040 PRINT ：PRINT＂Press just E nter for next item．Enter $Q$ when you ve finished．
3170 LET $r=d \equiv(r)$ ：FOR $i=1$ TO 15
 ＝＂＂（1 TO（3－LEN a＊）＊（V（1，3）＞9） ）＋at：PRINT AT V（i，2），V（i，1）；aま； ：NEXT 1：GO SUB 150

## Lines 3000－3170 Draw editor screen



3270 PRINT AT V（i，2），V（i，1）：V： 3290 LET $i=i+1$ ：IF $i>15$ THEN LE T $\mathrm{i}=0$
3295 G0 TO 3190
Lines 3180－3295 Collect a value，validate it and alter array if necessary．Quit to menu with the Q command．
B000 REM Init it bit
BOO1 PAPER 7：BORDER 7：INK O：$C$ LS
8002 PRINT＂YS Droid Wars＂．．＂Ple ase Wait：＂；AT 21，10；1985 Stran ge Software＂
Lines 8000－8002 Well，initialisation takes so long． there ought to be something to look at！


Lines 8010－8050 Set up sundry items．
8100 REM Droid Array
日110 DIM dF（2，30）：DIM n＊$(2,11$ 8120 LET $a \leqslant=* "$ ：FOR $i=1$ TO $30:$ LET afwas＋CHR末 0：NEXT is LET as （8）＝CHR $\ddagger$ 1：LET e末 $(20)=$ CHR $\equiv 30$ 8130 FQR $1=1$ TO 2：LET $d \$(i)=a \$$ ：LET $n 末(1)="$－no name－＂：NEXT $\stackrel{1}{8}$ 8140 REM Awful Droid UDG 8145 FOR $i=0$ TO 7：READ a：POKE USR＂A＂＋i，a：NEXT i：DATA 60，36 ，126，60，255，60，126，126

Lines 8100－8145 Set up droid arrays and awful UDG character！
8150 REM MPD Visit
$8160 \mathrm{DIM} M(4,3):$ FOR $1=1$ TO $4:$ F QR $j=1$ TO 3：READ $M(i, j)$ ：NEXT $j$ ：NEXT i
8170 DATA $180,12,30,220,8,50,20$ $0,8,50,240,6,65$

Lines 8160－8170 Set up Motive Unit table．
日200 REM Designer Table
8210 DIM V 15,5 ）：FOR $i=1$ TO 15 ：FOR $j=1$ TO 5：READ $V(1, j)$ ：NEX T j：NEXT 1 8220 DATA $13,6,255,5,50$ 8230 DATA $13,7,255,5,5$ 8240 DATA $13,8,255,3,5$ 8250 DATA $15,9,1,30,0$ 8260 DATA $15,13,1,20,0$ 8270 DATA $15,14,1,10,0$ 8280 DATA $15,15,1,5,0$ 8290 DATA $31,6,4,0,5$ 9300 DATA $29,7,100,0$, 8310 DATA $29,8,100,0,1$ 8320 DATA $29,9,255,0,1$ 8330 DATA $29,13,100,0,0$ E340 DATA $29,14,100,0,0$ 8350 DATA $29,15,100,0,0$ B360 DATA $29,16,100,0,0$

Lines 8200－8360 Designer Table－－this holds all the validation stuff needed by the designer as well as the weights of each element
8400 REM Weapons table
B410 DIM $W(4,5)$ ：FOR $i=1$ TU $4: F$ OR $j=1$ TO 5：READ $W(i, j)$ ：NEXT $j$ ：NEXT 1
8420 DATA $60,2000,40,50,1$
8430 DATA $40,1800,10,20,1$ 8440 DATA $25,1600,15,30,1$ 8450 DATA $2,7000,5,15,0$ B500 GO TO 1100

Lines 8410－8500 Set up Weapons Table．What would happen if you changed that 60 into ．．．？

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Christmas, I How are you Paul? Happy will be close to Xmas, Write soon! My regards to your family, Skip and Robin regards
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## PEN PALS

al 14 and want a male or lemale pen
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## Fighting Talk - Iolo Davidson backs the winners.

You probably think that computers are new and exciting, right? You think it all started a couple of years ago and anyone not brought up on the new maths hasn't a hope of evading the scorn of fifteen year old whizz-kids should they dare sit down at the keyboard. Hah.

I have a friend, an ageing hippy, who knows no more about computing than what he once read in an old Fortran manual dug out of a trashcan behind UCLA at Berkeley, but he can impress the socks off any sub-teen arcade hero. He can't add on his fingers, but he has vision, he has depth of experience, and he knows how to lie. He's now revealed some of his methods to me which I'm gonna pass on to you - in translation!
Impressing people is easy if you remember the rules. The first is: conceal your real abilities. It's no good going on about how you used to program a Nascom in hex before it had a Basic, even if true. No one old enough to remember the Nascom will admire this achievement, and everyone else will think you're talking about some United Nations agency. Booooring!

You must gauge the level of sophistication of your target audience before you can employ an effective gambit, so the second rule is: let the others talk first.
Then, if the discussion turns out to be about rugby you can make good your escape. Let the targets choose the topic of conversation, and it'll show you what's most likely to impress them. Fortunately, nowadays you can rely on any such conversation being dominated by computer games. That
simplifies things.
Arcade gamers are inordinately competitive about their high scores, and conversation with them is littered with losing opportunities. It's vital that you never reveal your personal best score on any computer game. To do so is instant defeat, as there's bound to be someone who's done better, or knows someone who's done better, or who's prepared simply to lie. It's no good lying outright yourself, as that'Il only lead to eventual stalemate. The escalation becomes obvious the sixth or seventh time round.
If you're pressed to make such a revelation you must avoid the question, while at the same time subtly revealing a hint of your underlying superiority. Here's a few sample phrases that'll help you skirt the issue:
"I played that for weeks in the arcades last year. I think the computer version is pathetic."
"YS published a POKE for that one that lets you score forty-two million without actually having to play."
"Isn't that the one with the bug that lets you score forever as long as you stand in the right place?"

## "That game isn't available for my Macintosh."

Note that avoiding a direct answer is only part of winning. It's no good saying, 'My brother never lets me have a go,' nor yet, 'I don't think you can get that game on the unexpanded Vic.' These are the things that genuine losers say. Third rule: be subtle. Your average whizz-kid can deal with boasting, but is
helpless when faced with intimation.

If trapped in the company of adventure gamers, the problem is similar. There's still no chance of making a favourable impression by simply revealing the extent of your ability at negotiating various dungeons, but it's also very difficult to lie without being exposed by someone who really knows the answers.

The best strategy here is to embrace the attitude that telling the details of your travels will spoil the game for those who've not yet finished it. You can, however, if coaxed persuasively, reveal an arcanely worded clue. This will fool even those who should know better, provided you're vague enough. This is the fourth rule: be vague, but have an excuse for it. A few samples that won't reveal overmuch:
'I think you'll find that you haven't been to all the rooms yet.' (Who has? Can they prove it?)
'If you ask the dwarf for the key, he doesn't seem to do anything, but it helps later on.' (Gets you credit for any random good luck.)
'Have you tried examining the ceiling in every location?' (Bet they miss one!)
'Not all of the objects are necessarily good things to have with you.'
(Often true, hard to test.)
The one thing that you must never say is, 'I have better uses for my computer than playing games.' An instant loss of all credibility would result. This phrase is dangerous even in classroom situations unless
you're certain that only the teacher can hear, and it'Il do you little good with him. If you are the teacher, then I'm too late. You'll already have said this.
While you mustn't give the impression that you ignore games, you may affect to be so busy that you don't get to play as often as you wish. This is only a winning strategy if what makes you so busy is programming.

Never say you've just completed a program, because your interlocutors will want to know how it's doing in the charts. It's much easier to generate a great future for a program that you've only half finished. Plus, any gaps in your story can be attributed to groggyness brought on by all-night coding sessions (fourth rule).
If you're unsure of your ability to impress as a programmer (remember, Cobol doesn't count), then the next best bet is to let slip that you're working on an article for a computer magazine. You're not supposed to talk about it yet though, because the Ed is hoping to keep it exclusive.
Your audience may want to know what you've written before, which could be tricky, but luckily the pages of the computer press are known to be littered with pseudonyms. Just explain that your contract with Ocean means that your other published work has to go out under the name of Hugo Cornwall. Last rule: when you can't be caught, lie big.

My friend has allowed me to print these invaluable tips on condition that I plug his forthcoming book, You Don't Have To Be A Kid To Be A Smartass, due out real soon. He hasn't yet chosen the name of the author.

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