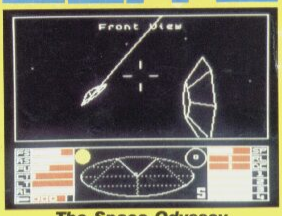
WIN A STAR PRIZE IN OUR £1500 PRINTER COMPO!

YOUR SPECTRUM

No. 20 November 95p *Byte High, No Limit*

TEST FLIGHT

ELITE



The Space Odyssey

BULLETIN BOARDS

BUZZWORDS

Talking On The Telephone

LONDON CRAWLING...

DOOMTOWN RATS

The Rats — A Blood-Curdling Review!

MEGAGAME REVIEWS

GOTHIC HORRORS

Fairlight and Nightshade

BRAHMS'N'LISTING

MELODY MAKER

Synthesize Your Spectrum

See us at Compec
Stand Nos. 9024 and 8185

At last, the big performance printer at the lowest ever price



You only have to shop around to see that the Seikosha GP50S offers a totally new concept in value for money.

Designed specifically to be compatible with the Sinclair Spectrum and the ZX81, its compact body, unique uni-hammer printing system, wide range of features and surprisingly low cost, make the Seikosha GP50S a printer not to be missed.

The Seikosha GP50S features:

- Total Sinclair Spectrum and ZX81 compatibility
- Compact body, ideal for home use
- A print speed of 40 cps
- 46 column width
- Dot addressable graphics
- Printing of graphics image can be repeated
- Friction feed for roll or cut-sheet paper
- Takes plain paper up to 5" wide

You'll find the Seikosha GP50S at your local computer dealer.

DDL
THE FORCE IN DISTRIBUTION

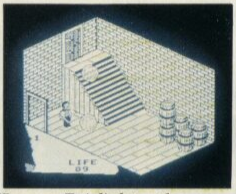
5 King's Ride Park,
Ascot, Berks. SL5 8BP
Tel: 0990 28921
Telex: 846303 DD LTD G.

INSIDE YS

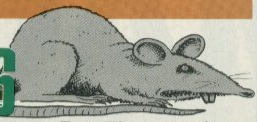
MEGAGAMES



28 **Elitism** Book your seat on the shuttle to the stars. Join the *Elite* from Firebird.



40 **Gothic Horror** *Fairlight* — the game of the year? We've taken it to the edge!



36 **Doomtown Rats** They came from the depths, clawing, gnawing, gnashing . . . *The Rats* is reviewed in cold blood.



45 **Deadly Nightshade** You'll be sick if you miss out on our full review of the new Ultimate megagame, *Nightshade.*

FEATURES

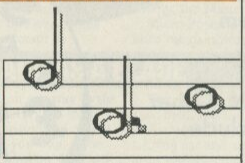
32 **Buzzwords** Don't miss the connection — get on-line to our very own Bulletin Board.

51 **Joystick Jury** Bone up on all the latest arcade raves, including *Bounty Bob, Macadam Bumper* and *Daley Thompson's Supertest!*

PROGRAM POWER

59 **Shoot Out** We're not Billy the Kidding. Here's a real humdinger of a game down at the OK Corral. OK?

PROGRAMMING



25 **Play It Again, Sam** Here's looking at the hottest synthesiser software your Speccy's ever heard.

31 **Shrink Wrapped** Small is beautiful, especially with this *YS MegaBasic* program.

46 **Out Of All Proportion** If proportional printing spaces you out, we'll fill in the gaps.

GAMES EXTRA

GO FOR GOLD.....20
Send in your pot shot for the hot slot, the *YS* high score chart.
SPECTRUM ADVENTURES.....35
Adventure hints'n'tips plus reviews of *Robin of Sherwood* and *The Secrets of St Brides!*
HACK FREE ZONE.....72
Hacked off with the hackers? Hex Loader's here to help!

COMPETITION



STAR COMPO.....24
If you're seeing stars before your eyes, count 'em and win a new Star printer.

REGULARS

FRONTLINES.....3
New stories, new games, new faces, news . . . Plus *Microdrivin', From The Hip* and *Hacking Away.*
FORUM.....19
Go on, write us a letter. It's what your right arm's for — unless your left-handed, of course!
BACK ISSUES.....58
SUBSCRIPTIONS.....66
INPUT/OUTPUT.....67
Selling or swopping Speccy stuff? It's free in *YS.*
BINDERS.....68
Get it together — with a *YS* binder!

CONTACT

01-631 1433
PUBLISHING ENQUIRIES
Stephen England
SUBSCRIPTION ENQUIRIES
Suzie Matthews
01-580 0504/ 631 1433
ADVERTISEMENT ENQUIRIES
David Baskerville
01-636 2416
YS HELPLINE
Peter Shaw
(*YS* Helpline enquiries between 10am-1pm and 2-5pm, Wednesdays and Fridays *only*!)
Your Spectrum, Sportscene Specialist Press, 14 Rathbone Place, London W1P 1DE.

ABC **55,126**

Cover Illustration by Bob Venables

THE MAGIC BUTTON

OF BETA-PLUS DISK INTERFACE FOR THE SPECTRUM

AT A MAGIC PRICE

SPECIAL PACKAGE From £199

The latest **BETA-PLUS** Disk Interface has a unique feature - the **MAGIC BUTTON.** It transfers tape based programs to disk system with speed, simply by one touch of the **MAGIC BUTTON**. Other new features include:

- Auto Check on Disk Drive
- Auto Boot
- Random Access File Handling
- Sequential File Handling
- Reset Button

	Drive and Beta-Plus
Single Drive	
5¼" disk drive (400K) 40 track double sided	£199
3½" disk drive (800K) 80 track double sided	£229
Twin Drive	
3½" disk drive (1.6Mb) 80 track double sided	£329

Cut out this coupon and send with cheque or Postal Order to the address above

PLEASE SEND ME:

		Qty	P & P
Beta-Plus Disk Interface	@£109.25		£4.00
Beta-Plus & 5¼" Single disk drive (40 track double sided)	@£199.00		£8.00
Beta-Plus & 3½" Single disk drive (80 track double sided)	@£229.00		£8.00
Beta-Plus & 3½" Twin disk drive (80 track double sided)	@£329.00		£8.00
Total			

All prices include VAT and apply to UK only

Name

Address

Technology Research Limited

Unit 18, Central Trading Estate, Staines, Middlesex TW18 4XE Tel: 0784 63547 Telex: 896691 TLXIR G

FRONTLINES

D'you want to settle an *Old Score*? Have you won a grand day at the races? Will *The Lord Of The Rings* be *Hobbit* forming? Who's the man behind the *Mask*? A Dumbo game? *Rambo*, cloth-ears! Then again . . . it's all in Frontlines!

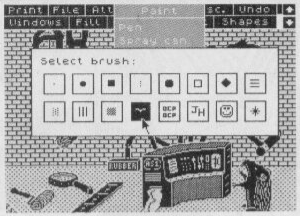
I SAW A MOUSE, WHERE?

Artists are renowned for their fierce rivalry but now it's spread to software houses producing artist packages. On the one hand, meet OCP and its new graphics design program, *Art Studio* about which they claim 'even Softek admit it's better'. Better than Softek's recently released program, *The Artist*, that is. Softek retorts, 'they haven't seen *Artist II* yet . . .'. Watch that paint fly!

And there's still more gossip. It seems there may be a mouse in both houses. At the PCW Show OCP was using an AMX mouse in conjunction with a Kempston mouse interface. Unfortunately, Kempston is being very cagey about whether the interface exists at all, let alone when it'll appear. Fear not, we'll trap a release date out of them.

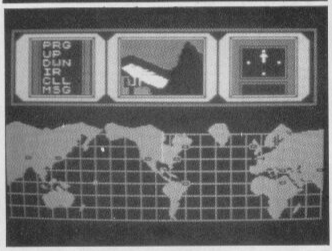
Softek's *Artist II* may also be bundled with a rodent of some kind — but for all we know at the moment, it could be eight foot tall with big floppy ears. They are saying, however, that they intend to undercut considerably OCP's mouse and package price of £70-80. Looks like it's hard cheese for one of 'em!

If you want to go mouseing, Softek hole out on 01-240 1422 and you'll trap OCP on (0753) 88866. The best laid plans of mice and men, eh?. . .



Yikes, it's a mouse! No art package is complete without one.

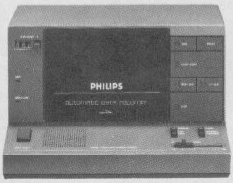
HACK ATTACK



Activision is not going to tell you what its new game's about even *after* the release.

Hacker has no instructions, no clues, no nothing. When the game's loaded, you're faced with the prompt, 'Logon Please'. After that, you're on your own. We can reveal that the game involves travelling by undergound travelators, collecting information from your spies, and eventually saving the world. (*Just for a change. Ed*). One interesting touch is that your spies will natter away to you in their native tongues.

If you want more details, you don't have to hack the system, just ring (0628) 75171.



Philips prefers doing it standing up and now you *can* too. The new upright automatic data recorder has plenty of flash lights and touch sensitive buttons — can't be bad at £38. If you want to go up in the world, give Philips a ring on 01-499 0414.

WHAT? WHERE? WHEN?

Who'd have thought it? Cliff Richard clone, *Dr. Who*, immortalised on silicon? Yeti is — in a new Speccy game from Micro Power. But exterminate all thoughts of getting it in your hot little hands el prompto — 'cos Micro Power says it's a long way off

The biggest horror awaiting you in the game, called *Dr. Who — Mines of Terror*, must be its attempt to emulate the *View To A Kill* scrolling window. I'm afraid to say, Who's old mates, the Daleks, don't appear to get a beep in!

The game's all about the good doctor's efforts to destroy the *Tiru* (Time Instant Replay Unit) and nab the plans for the machine from the clutches of arch-enemy, the Master.

Micro Power's Time Lord seems powerless to



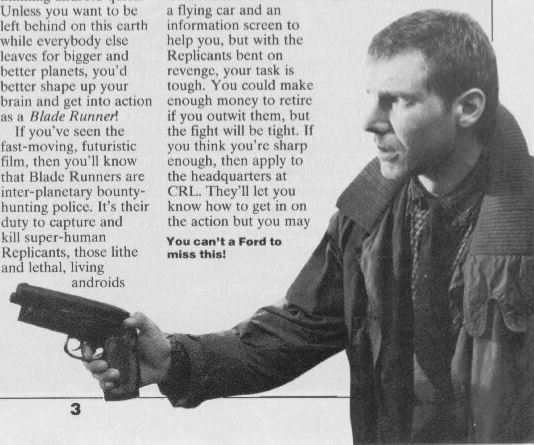
We're not in the Who game? Exterminate... reveal a release date for the game, but it should be some time before Christmas and at a price of £14.95. Phone (0532) 4588 00 for more info.

SHARP AS A BLADE

We're on our way to the 21st century, so start thinking android quick! Unless you want to be left behind on this earth while everybody else leaves for bigger and better planets, you'd better shape up your brain and get into action as a *Blade Runner*!

If you've seen the fast-moving, futuristic film, then you'll know that Blade Runners are inter-planetary bounty-hunting police. It's their duty to capture and kill super-human Replicants, those lithe and lethal, living androids

This mission isn't execution, but 'retirement'. You'll have a flying car and an information screen to help you, but with the Replicants bent on revenge, your task is tough. You could make enough money to retire if you outwit them, but the fight will be tight. If you think you're sharp enough, then apply to the headquarters at CRL. They'll let you know how to get in on the action but you may have to wait. Tel. 01-533 2918 and prepare for the future . . .



You can't a Ford to miss this!

Try beating our SpecDrum!



Spec Drum

Digital Drum System for the Spectrum

£29.95

- 8 DIGITALLY RECORDED REAL DRUM SOUNDS
- SIMPLE TO USE — UP AND RUNNING IN ONLY MINUTES
- A TRUE DIGITAL DRUM MACHINE
- 'REAL TIME' OR ON-SCREEN PROGRAMMING
- COMPLETE WITH SOFTWARE
- EXTRA SOUNDS CAN BE LOADED FROM TAPE
- CREATIVE, EDUCATIONAL AND FUN
- THE MOST EXCITING PERIPHERAL EVER DEVELOPED
- DYNAMIC FILING SYSTEM — STORE OVER 1000 PROGRAMMED RYTHMS
- TAPE SYNC FACILITY
- SONGS CAN BE SAVED ON TAPE
- POLYPHONIC
- COMPREHENSIVE MANUAL
- JUST PLUG INTO YOUR HI FI

Exclusively available from Boots

Cheetah Marketing

1 WILLOWBROOK SCIENCE PARK, CRICKHOWELL ROAD, ST MELLONS, CARDIFF
TELEPHONE: CARDIFF (0222) 777337 TELEX: 497455
(Export enquiries – contact Cheetah direct)

FROM THE H/P



Wow, wotta hectic month on the phones I've had. Not much lollin' about on the lilo for me! (*No rest for the wicked, eh? Ed*). It must've been the Summer hols combined with the Winter weather that kept y'all in.

Steve Bird from Glastonbury called in about a Basic program he's writing that involves moving UDGs around the screen. Now, Steve's problem cropped up when the UDGs took it upon themselves to bump into each other. As you may know, the Screen$ routine in the Speccy can't 'see' UDGs, so finding out where they are on the screen at any one time is very difficult — and trying to use the Point instruction is flippin' impossible. Well Steve, here's the simplest method of getting round the problem I know. You'll have to use a bit of deviousness to trick the Speccy into thinking that it isn't looking at a UDG. As soon as you've looked at the area of the screen you want to check with the Screen$ function, you'll need to re-set the character set pointer.

Right, let's hit you with the POKEs you're going to need. Before performing your Screen$ check: POKE 23606, PEEK 23675-8: POKE 23607, PEEK 23676-2. Then, use the Screen$ function to look at the coordinates of the area where your graphics keep crashing into each other. Next, you'll need to reset the pointer with POKE 23606,0: POKE 23607,60. The character that the Screen$ function returns should be the upper case letter that corresponds with the UDG's own label. So, for a UDG 'a', though it might look like a bucket at the time the Screen$ routine will return the string 'A'. Top hole, what?

Getting back to Steve's collision detection problem, you'll find this method of checking the screen around the object you've marked out for collision, has a double bonus. You'll not only be able to find out if the object has banged into something but you'll also be able to suss out just what the obstacle is. Phew, I think I'll have a little sit down. (*You* are *sitting down. Ed.*) OK, OK. An' I thought they'd abolished slavery!

Simon Hepworth called from Sunbury in Middlesex about that ever-popular subject of cassette headers. He wants to investigate where programs are installed when loaded. And what's more, he wants to do it from within one of his programs that transfers from tape to Microdrive.

Fasten your seat belts for a quick run through! The header is made from seventeen bytes of information loaded into the workspace area above RAMtop. As the workspace moves around quite unpredictably, you can never be too sure just where the header will load in. If all you're interested in, is reading the header, then you load it in anywhere, anyway. Just use the headerless file loader I described in issues 15 and 17. Load the header in at about 40000.

The info that's contained in the header comes in five sections. Firstly, there's a solitary byte that describes the file following it. A zero indicates a Basic program, as 1 means that there's a numeric array, 2 prepares for a character array and 3 means that the next file is a code block. The following ten bytes contain the name of the file in ASCII form. Next up are two bytes containing the length of the code block, or for Basic, the length of the Basic program. Another two follow, for the start line in Basic, or for code start in code block files. The last two bytes contain the length of the Basic program area.

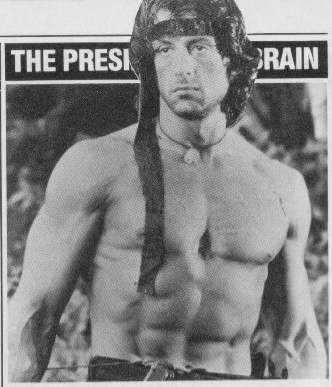
I'll try and pack a lot more of your calls in next month — or the Ed'll think I'm only gettin' two a month and cut me off in my .... (*Snip! Ed*).

Catch you on the phones!

Troubleshootin' Pete

Pete's lines are open Wednesdays and Fridays between 10am-1pm and 2-5pm on 01-636 2416.

THE PRESI[illegible]RAIN



FRONTLINES

Nancy get yer mum . . .cos Ronnie's fave film, *Rambo*, is about to be given the Ocean treatment and be transformed into the all-singing, all-dancing computer-game-of-the-film!

Rambo, the film, is a jolly little story about an ex-Vietnam killing-machine traipsing around some south-east Asian jungle freeing good ol' Yankie POWs.

As for the game, Ocean's ideas centre around the *'Raiders of the Lost Ark'* type adventures that *Rocky-Rambo* gets embroiled in. Slime pits seem to feature strongly in the game — could this be *Pitfall* take three?

So, if you wanna relive the film's mindless violence on your li'l ol' computer screen, sock it to Ocean on 061-832 6633.

NO SCORE DRAW

It's the eighth of September, it's London's Southbank, it's hot, and it's crowded. It's the last of the GLC's Thamesday festivals before it's abolished next year. The start of someone's latest adventure?

Global Software has hired the Festival Pier to launch its latest Hobbit-style adventures. Shame that the programs aren't ready. Bemused, *YS*'s mobile unit has to sit down, eat the food, drink the champers and watch the best fireworks in Europe. Why here? Why now?

The answer is *Old Scores*. Bored with-dwarfs and dragons, *Old Scores* is set in the *real* world. You start off at a pub in Charing Cross — yourself and the inspector in the dog house for fluffing your last case. A copy of *The Standard* reveals a fab Mozart gig on the South Bank but someone has stolen the score. Hi-res graphics, genuine locations, some vaguely familiar faces and a few old scores to settle — so save up £6.95 before the end of September and it's all yours!

BEAT THIS!



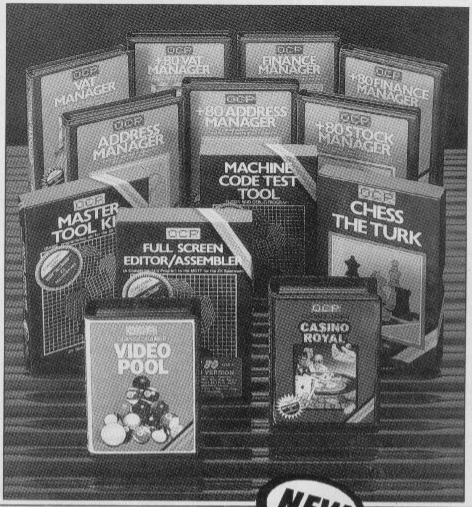
The neighbours are gonna love you!

You'll soon be beating the latest offering from Cheetah! Why? . . . Is it a record? . . . is it a contest? . . . No, it's a drum machine, a SpecDrum, geddit? I know what you're thinking, it must be really, really expensive or just plain tinny. Well, think again. This device is only £29.95 and it makes proper drum sounds. It may not be a recording studio job, but for music made the Speccy way, it deserves to be a hit! Just plug it into your Speccy

The SpecDrum won't be hitting the streets, but the shelves in branches of Boots. It's an exclusive, so you'll have to beat the High Street trail for your drumming, chum. You can get in on the beat now, so if you're the computing world's answer to Cozy Powell, give Cheetah a roll call on (0222) 777 337.

Are You Taking Your Spectrum Seriously?

Your Sinclair Spectrum is a powerful computer, not just a games console. Oxford Computer Publishing unleash that power to make your Spectrum useful and help you perform important tasks. The Manager series of business programs has thousands of satisfied customers over the last three years. Your Spectrum can do jobs normally associated with business computers many times the price. The Utilities were written to create our own application software. They are offered to you as proven reliable programs that have stood the test of our own usage and become industry standards. The classical games are realistic simulations of proven widely played "real" games.



See your local dealer or order direct by indicating the items required, by ticking boxes, complete the coupon and return the advertisement. Alternatively, phone the OCP Hotline on (0753) 888866, stating your Access or Barclaycard Number.

BUSINESS PROGRAMS

ADDRESS MANAGER

A professional address, filing and retrieval system, with full screen editing. Stores up to 350 addresses on cassette and up to 6000 addresses on floppy disk. (In separate files) 32 column format – £8.95 ☐ 80 column format – £19.95 ☐ **NEW** K-DOS tape/disk cassette – £29.95 ☐ SP-DOS floppy disk – £29.95 ☐

FINANCE MANAGER

Stores and reviews practically all business and domestic accounts. Completely menu driven for ease of use. Stores up to 250 names on cassette and up to 6000 on floppy disk. (In separate files) 32 column format – £8.95 ☐ 80 column format – £19.95 ☐ **NEW** K-DOS tape/disk cassette – £29.95 ☐ SP-DOS floppy disk – £29.95 ☐

STOCK MANAGER

Features full invoicing, sales totals, price lists and re-order requirements and comprehensive Master File with full breakdown of stock and VAT. Stores up to 600 product lines on cassette and up to 6000 on floppy disk. 80 column format – £19.95 ☐ **NEW** K-DOS tape/disk cassette – £29.95 ☐ SP-DOS floppy disk – £29.95 ☐

VAT MANAGER

Will check gross and nett values of a period's sales plus exempt totals and up to 8 classes of transaction e.g. standard rate, import/export etc. Calculates VAT paid and received and hence the nett tax payable/receivable.
32 column format – £8.95 ☐ 80 column format – £19.95 ☐ **NEW** K-DOS tape/disk cassette – £29.95 ☐ SP-DOS floppy disk – £29.95 ☐

WORD MANAGER

NEW

This word processor has been designed for "user friendliness". The following features should particularly appeal to users of the "Tasword II" program, with which it is text compatible. The software includes an address filing supplement with screen editing. Extra features include:

- ★ **Simple "single keystroke" insertion facility.**
- ★ **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.**
- ★ **Texts can be printed out on any line length up to 128 characters.**
- ★ **Text blocks of any length can be transposed, copied or deleted.**
- ★ **The OCP program can print out text while another is being written or edited.**

The Word Manager – £12.95 ☐
Disk Versions – £19.95 ☐

UTILITIES

MASTER TOOL KIT

This versatile program gives you a re-number feature, string – search, a real time clock, a graphics generator and alarm plus many other features that'll change your Spectrum into a 'full spec. machine'.
Master Tool Kit – £9.95 ☐

FULL SCREEN EDITOR/ASSEMBLER

An essential tool for writing Machine Code whether you're a beginner or an expert. Includes full screen input, comprehensive documentation, sophisticated expression evaluator, SNAKE demonstration mode, extra microdrive facility etc. It also drives 32 and 80 column printer interfaces from the same cassette.
Full Screen Editor/Assembler – £12.95 ☐ **NEW** K-DOS tape/disk cassette – £29.95 ☐ SP-DOS floppy disk – £29.95 ☐

MACHINE CODE TEST TOOL

Test and Display Machine Code instructions as they're written. This versatile program can co-reside in your Spectrum with the Full Screen Editor/Assembler to provide a complete Machine Code environment. Features Hex: Decimal conversion routine, character generator, etc. etc.
Machine Code Test Tool – £9.95 ☐

GAMES

CHESS-THE-TURK

The ultimate chess challenge. 6 levels of play, 'Blitz' chess, printer output, plus real time clock and alarm. Chess-the-Turk – £5.95 ☐

CASINO ROYAL

Two way program featuring Roulette and Pontoon. You're allocated money to win – or lose – a fortune. Plug in Microspeech adds realism and both games are fully explained through a comprehensive on-screen menu.
Casino Royal – £5.95 ☐

VIDEO POOL

All the fun and challenge of pool at your fingertips. 1 or 2 people play using joysticks or keyboard. Excellent graphics, sound and colour add to the game's reality.
Video Pool – £5.95 (**Not** Microdrive compatible) ☐

Please send your order to:
Oxford Computer Publishing Limited
77a Packhorse Road
Gerrards Cross Buck. SL9 8PQ

Access BARCLAYCARD VISA

If you would like a copy of our full colour detailed catalogue – please tick box. ☐

Name _____

Address _____

_____

_____

Amount payable £ _____

Please make cheques/postal orders payable to OCP Ltd

Cheque/PO Number _____

Access/Barclaycard number (please delete) _____

Signature _____

OCP

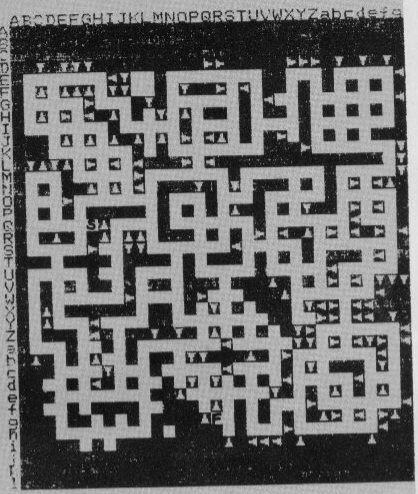
Simply The Best

Wafadrive, Opus and other media versions of our programs will be available in the near future. Contact us for further information on 0753 888866.

TEAR OUT

hacking away

Welcome to the column where hacking's the name of the game. If you're into POKEing more fun into your games, then stick around and get hacking, *Chris Wood* style.



Hi there hackers! As you know, Andy Pennell is far too busy microdrivin' to continue the column on hacking, so I've slipped into his slot instead. I may not be as famous as Andy (yet!), but I, and the rest of the *YS* readers, are just as interested in your POKEs, so keep them rolling in! Let me know of any problems you're having with games too. If I can't help, then I'll throw the challenge open to the rest of you!

OK, so let's get POKEing. It's too late to be the first to complete *Gyron*, but if you want to be in the running for the play off then here are a few POKEs to help you practice! There's no cheating though, because although you might finish the game, the code you see at the end depends on whether you took the correct route or not, and whether the program has been tampered with! You've only got until the 6th of November to get there, so send your entry to Firebird pronto!

Start with CLEAR 65535: LOAD""CODE. For infinite viability (energy) to you and me, POKE 299552,201 and 29089,0. You can then ram the wall without fear. Type this in for immunity against Tower flak and Sphere contact.

```
10 FOR n=24781 TO
24786:READ a: POKE n,a: NEXT
n
20 DATA 49,255,255,
195,176,96
```

To blast yourself through walls POKE 61498,195. RANDOMIZE USR 24580 will start the game. Try not to wander off the top or bottom of the playing area, and use the map.

Now for a hacking 'bug-fix'! Apparently the POKEs for infinite *Jetpacs* didn't work so try POKE 25018,0.

Paul Hargreaves from Brentford has come up with a mean-screen-scam for *Monty Mole*! His little program allows you to start at any screen you like, and he reckons number 18 is a good one to try.

```
10 BORDER 0: PAPER 0: INK 0: C
LEAR 32767
20 LOAD ""SCREEN$ : LOAD ""COD
E
30 INPUT "LEVEL (1-39)";LEVEL
40 LET LEVEL=LEVEL-1: FOR I=30
000 TO 30011
50 READ A: POKE I,A: NEXT I
60 POKE 54951,205: POKE 54952,
48: POKE 54953,117
70 RANDOMIZE USR 54370
80 DATA 50,0,91,62,LEVEL,50,17
2,228,58,0,91,201
```

Do you want to kill the aliens in *Cosmic Cruiser* really dead! Try POKE 25373,0, that should settle their hash.

K Gillan of Leeds wasn't taking any chances when he sent in a mammoth list of POKEs — he's determined to see his name in print. They're easy to get in with MERGE"". Here are a few to start with: *Digger Dan*: Infinite lives, POKE 25559,0. Infinite energy. POKE 26363,0. RANDOMIZE USR 24576 to start.

POKE 28522,0 will give you infinite lives on *Spectral Panic*. You can have infinite lives in *Sam Spade* with POKE 25215,0 and infinite oxygen with POKE 26381,0. Finally *Push Off ('Bout time too — Ed.)* can be improved with infinite lives, POKE 26862,167, and infinite alarm time, POKE 27136,0.

Not to be outdone, **Barry Start** of Merseyside has sent in one large program instead of lots of small ones! This one's for *Wriggler*.

```
10 BORDER 0: LET CS=0
20 FOR I=23296 TO 23340: READ
A: POKE I,A: LET CS=CS+A: NEXT I
30 IF CS<>5994 THEN PRINT "DA
TA ERROR": STOP
40 PRINT "START WRIGGLER TAPE
AND PRESS A KEY": PAUSE 0
50 FOR I=1 TO 7000: NEXT I
60 RANDOMIZE USR 23296
70 DATA 49,255,255,221,33,0,64
,17,0,27,205,31,91,221,33,200,92
80 DATA 17,40,163,205,31,91,33
,253,195,54,0,195,92,195,175,55
90 DATA 20,8,21,243,62,15,211,
254,219,254,31,230,20,246,1,79
100 DATA 185,195,107,5
```

Play your fully rewound *Wriggler* tape, and voilá, infinite lives will be yours! Alternatively, if you have the Mirage Microdriver you can try 50173,0 in POKE mode. Get wrigglin'!

Maxwell Clark of Tyne & Wear has a clever little trick for *Manic Miner*. POKE 36123,0 to make some of the nasties go faster than normal and some slower. If you're good at the game, it'll make it more manic than ever ... and Maxwell is only ten so I daren't think what he'll be doing when he grows up!

Two quickies from **Martin Barrio** of Clywyd. Try for infinite lives on Thor's *Jack and the Beanstalk* with POKE 56110,0 and for the same on *Road Racer*, the magic numbers are 27150,0.

FRONTLINES

CAPITAL FORCE

Those of you who *still* haven't rushed out and bought *The Capital Radio Book of Computers and Simple Programming* are going to have no excuse after this month. Why not?, I hear you cry from behind the sofa. Well, Interface Publications is kindly giving away copies of the aforementioned book to the first 25 readers who can come up with the answers to the following:

1. *Capital Radio is:*
   a. An independent radio station.
   b. A new portable radio designed for the London commuter.
   c. A flavour of ice cream.
3. *Capital Radio serves;*
   a. Birmingham
   b. London
   c. New York
3. *The Capital Radio book was co-written by which of these people;*
   a. Ronald Reagan
   b. George Bernard Shaw
   c. Troubleshootin' Pete

Now, just write down your answers on a postcard or on the back of a sealed envelope, and send it to Capital Book Compo, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE. Do this and you could be one of the lucky ones to get hold of a copy free, gratis and for nothing!! If you don't get one, then fear not, you can still get copies at £3.95 each from Interface Publications, 9-11 Kensington High Street, London W8.

We'll take you bey



...yond the Spectrum.



Four great new add-ons from Ram, Number One in everything for the Spectrum...

TURBO INTERFACE

Our unique Turbo Interface outperforms any Spectrum interface – it works with ROM cartridges, 2 standard joysticks, and there's a full expansion bus at the rear. The Turbo supports Kempston, Protek and Interface 2 software and loads from cassette – or instantly from a ROM cartridge. It really makes the most of the Quickshot II's rapid-fire action, and with a unique built-in power safety device, it's amazing value at just £22.95.

QUICKSHOT II AUTO RAPID-FIRE JOYSTICK

The famous Quickshot II is the top games joystick, with a sleek trigger fire button for quick reactions, an auto fire switch for continuous shooting and a new, improved grip. Revolutionary built-in stabilising suction cups mean a sure, firm grip – a snip at £9.95.

SPECTRUM INTERFACE

Boost the power of your Spectrum, or Spectrum +. This Kempston-compatible interface gets the most from your games – electrify your enemies with real power and lightning-fast reactions right under your fingertips. Costs just £9.95.

SPECTRUM UPGRADE KIT

If you've a 16K Spectrum micro, this handy and inexpensive add-in kit boosts the RAM memory to a powerful 48K, so you can run the latest and greatest software, the most exciting games around – and expand your own programming possibilities! Only £21.95.

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), 106 Fleet Road, Fleet, Hampshire GU13 8PA.

Credit Card hot line: 02514 25252. (Access & Visa).

Please send me

_____ Spectrum Turbo Interface(s) at £22.95.

_____ Quickshot II Joystick(s) at £9.95.

_____ Spectrum Interface(s) at £9.95.

_____ Spectrum Upgrade Kit(s) at £21.95.
(Please state issue 2 ☐ or 3 ☐)

+£1 per order P+P (£3 Overseas) **TOTAL £**

☐ I enclose cheque/postal order ☐ charge my Access/Visa

Expiry Date____/____/____

Name_____

Address_____

_____Postcode_____

Telephone_____

24 Hour despatch for credit cards and postal orders (7 days for cheques.) All products are fully compatible with the Spectrum, Spectrum + and Sinclair Microdrives.

Ram Electronics (Fleet) Ltd (Dept YS), 106 Fleet Road, Fleet, Hampshire GU13 8PA.

RAM

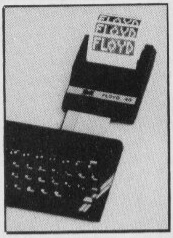
Trade and export enquiries welcome

New

TEAM UP WITH FLOYD!

FLOYD 40

BUILT IN INTELLIGENCE FOR YOUR SPECTRUM PRINTER SPECIAL OFFER £69.95



Features
Clear easy to read print ● No split words ● Indented printing ● 32 or 40 characters-software selectable ● Firmware program — no loading from tape % Comprehensive instruction manual supplied ● Interface 1 & 2 compatible ● Spectrum + compatible ● No interface required

The printer comes in a slim plastic case which will compliment your spectrum. It connects with the spectrum via a 56-way ribbon cable and all connections are brought through to the back of the printer. The printer has two switches — one for paper feed and one for on/off line. A roll of paper is included in the price.

```
          1. GRAPHICS MODE

FULL GRAPHICS CAPABILITY-
NORMAL 32 CHARACTERS PER LINE.

          2. ADJUST MODE

THIS IS A HIGH QUALITY THERMAL PRINTER
FOR THE SINCLAIR SPECTRUM. IT HAS THREE
MODES OF OPERATION:
   -THE GRAPHICS MODE
   -THE ADJUST MODE
   -THE LIST MODE
AND THREE SPECIAL FEATURES:
   -DOUBLE HEIGHT
   -DOUBLE WIDTH
   -INVERTED PRINTING
IN THE ADJUST MODE THE PRINTING IS SUCH
THAT NO SPLIT WORDS OCCUR, AND PRINTING
IS DONE WITH UP TO 40 CHARACTERS PER
LINE.
IT IS POSSIBLE TO MIX THE DOUBLE HEIGHT
AND DOUBLE WIDTH
INVERTED PRINTING IS
ALSO POSSIBLE!

          3. LIST MODE
THE LIST MODE ALLOWS BASIC PROGRAMS TO
BE MORE EASILY READ BY INDENTING THE
PROGRAM STATEMENTS FROM THE
CORRESPONDING LINE NUMBERS.
340 REM THIS IS AN EXAMPLE OF THE LIST
    MODE WHICH INDENTS STATEMENTS AND
    PREVENTS WORDS BEING SPLIT
345 DATA 10,38,42,22,65,2,43,54,67,75,8
    9,78
350 LPRINT "
360 LLIST
370 LPRINT "
```

£69.95 (+£4.95 P&P)

To: FLOYD, PO BOX 76, PLYMOUTH, DEVON PL1 1SQ

I enclose cheque/p.o. for £ made out to FLOYD —

.....printers @ £74.90 EACH (incl p&p) =

.....boxes of 10 rolls of paper @ £15.00 =

.....rolls of paper @ £2.50 each =

TOTAL =

DON'T JUST PLAY GAMES!

EDUCATIONAL SOFTWARE

FOR ANY SPECTRUM 16K or 48K

Physics	O level/CSE Revision Aid
Biology	O Level/CSE Revision Aid
Maths	CSE Revision
Computer Studies	O Level/CSE Revision Aid
Science	Revision 12/14 Years
Maths	Revision 12/14 Years
Mathematics	Revision 8/11 Years
Arithmetic	Revision 7/10 Years
Reasoning	11+ Revision
Knowledge	Quiz 9/99 Years

Exceptional value at just £4.95 each post free

IMMEDIATE DELIVERY BY FIRST CLASS POST

Cheques/PO to:

Micro-De-Bug Consultancy
Dept YS, 60 Sir John's Road
Selly Park, Birmingham, B29 7ER
Tel: 021 472 7610

DEALER ENQUIRIES WELCOME

EXPERT SYSTEMS ON YOUR MICRO!



Now you can explore the exciting world of Artificial Intelligence in action, with the latest book from top-selling computer author, Tim Hartnell.

Exploring Expert Systems on your Microcomputer makes Expert Systems accessible to you in a way which has never been done before. With machine-specific listings for SPECTRUM + and SPECTRUM, AMSTRAD, BBC MICRO, COMMODORE 64, and all MSX machines, plus any machine furnished with Microsoft BASIC, Tim's new book opens up the world of Expert Systems in a direct, practical way.

The book discusses, in some detail, the most successful Expert Systems developed to date (including PROSPECTOR, MYCIN and DENDARL) and shows how the field has developed over the past decade. Ready-to-run Expert Systems programs in the book include AUTO MECHANIC and MEDIC! (to give yourself a quick 'stress check'). The major Expert System in the book delights in the name of FUZZY RITA. This program uses fuzzy logic within the framework of an Expert System shell to produce a genuinely useful expert on just about any subject you choose, from chicken sexing through to medical diagnosis and weather forecasting. You'll also be given the chance to explore the languages which dominate the Artificial Intelligence and Expert Systems worlds. The book contains BASIC emulators of PROLOG and LISP so you can get them up and running on your computer, without having to actually buy the languages.

Exploring Expert Systems on your Microcomputer, by Tim Hartnell (ISBN 0 907563 74 0), is £7.95, and is available from most book and computer stores, or you can get it direct by mail, post free, from the publishers:

Interface Publications Ltd., Dept YS,
9-11 Kensington High Street,
London W8 5NP

(Trade only: WHSD Leicester)

Interface

FRONTLINES

LONDON CALLING!

How d'ya fancy a freebi tour through London town? Whether you're a townie or a country bumpkin, Friday Soft's offering you the trip of a lunchtime!

And you won't even have to cough up so much as a Luncheon Voucher to revel in the sights of the big smoke 'cos those kind people at Friday Soft are offering *YS* readers 20 copies of their topical adventure, *The London Game* . . . absolutely free!

OK, so Friday Soft may have hearts paved with gold . . . but Ed's a bit more stingy about dishing out freebies. He knows only too well that if anything's going for free, there'll be more than 20 of you clambering for it! That's why he's knocked up these three paltry questions about some of the more famous residents of our capital city . . .

1. *Where does the Queen live?*
   a. Buck House
   b. Castle Rathbone
   c. Buckingham Palace

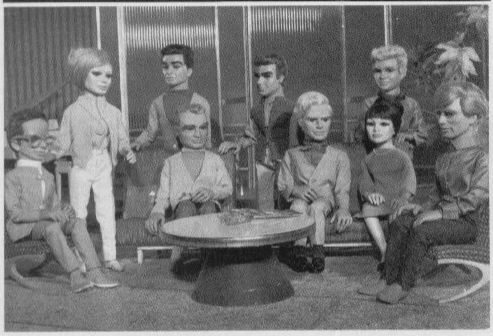


2. *What is Margaret Thatcher's job?*
   a. Editor of *YS*
   b. Prime Minister
   c. Roofing contractor

3. *Where did Prince Charles marry Lady Di?*
   a. St. Paul's Cathedral
   b. Pinewood Studios
   c. Hackney Registry Office

Just write your answers on the back of an envelope or postcard and send it to The London Game Compo, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE, and you could be getting a copy soon!

FIREBIRDS ARE GO



Phew, it's all go for the *YS* team!

Mr Tracey: "Well boys, it looks like it's time to crank up Thunderbird 1 and 2. Our creators have flogged the rights to a game based on us to Firebird."

Scott & Virgil: Firebird?. I hope . . .

Mr Tracey: "Now, don't get hysterical *Virgil*, I'm sure Firebird wouldn't dream of doing us as a silver range game."

Mr Tracey: "Well boys, first of all you'll need to get out the Three-In-One and oil down T2's launch pad. It'll never get off the moss on that track."

Virgil: "Okay Mr Tracey"

Scott: "What's happening then, *Mr Tracey?*"

Mr Tracey: "It seems, boys, that a group of Egyptologists have got themselves trapped in an ancient maze-tomb."

Scott: "You mean we've got to take out each stone, block by block to save them?"

Mr Tracey: "Exactly."

Scott & Tracey: "Okay"

Mr Tracey: "Right boys, if you have any problems then don't bother to ring me — I'll probably be tied up with Penelope all weekend. Ring 01-379 6755 if you want more information, and remember, anything can happen in the next 48K."

GRAND PRIZE

Did you drive yourself round the bend trying to answer the questions in our crazy *Kempston Chicane Compo* back in issue 17? Well, the race is over now, so put away your Guinness Book of Records as we announce the lucky winners!

Paul Ratcliffe of Lowestoft and **John Hymns** of Ilford were the lucky two that made it to the European Grand Prix at Brand's Hatch.

The next five hopefuls to make the chequered flag with their winning question formulas will be receiving a Kempston Formula II joystick and Interface each. Are you a racing-ace? Read on . .

Michael Woolley, of Kirkbymoorside, **Keith Jackson** of Cannock, **Richard Carver** of Aston, **Luke Hutchinson** of Burton and **L D Clough** of Cheadle. It's not quite the glory of the Grand Prix, but a small prize is still an honour. Well done!

PAPER DATA



Z80 Reference Guide
by Alan Tully
Melbourne House/£9.95

Learning and then understanding machine language is not so very different from learning any other language — English,for instance. The only difference being that English is far more tricky — but you learnt that OK, so why all the fuss about learning another one?

When you set out to learn a language the first two things you'll need are a tutorial and a dictionary. This book is quite simply a Z80 dictionary. Inside you'll find a detailed description of each instruction just as a dictionary defines words. There are tabulated lists of them all with their timings and the effect they have on each flag. A whole page and sometimes more is dedicated to each so they can be covered in full, including a table of their object codes in both Dec and Hex.

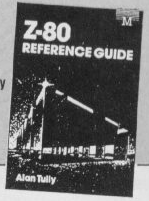
More than this, though, the same instructions occur in other parts of the book in different formats according to the different but relevant types of information that surround them. Perhaps a closer analogy is of a dictionary combined with a thesaurus as well.

Moving through the book, you'll first come across a chapter on the three types of Z80 registers — general, specific purpose and the flag register. Most room is devoted to the flag register for the simple reason that it's the most important of them. There's also a useful table showing which instruction affects which flag.

Now, very few books highlight the importance of timing in machine language and how crucial this is to games programming. Well, this one does! So, if you've no idea what a T or an M cycle is, or more to the point, if you've forgotten, then you can look it up here.

But be warned, this book is not bedtime reading — unless you're in the habit of taking your dictionary to bed with you. As its title tells you, it's a reference work and as such it won't even teach you machine language — for that you will need a tutorial. What it will provide is a solid back-up to your language learning and it'll prove a handy memory jogger for even the most hardened machine code programmer.

Tony Samuels



FRONTLINES

LETTERS

PAY

Saga Systems, has added a low-cost, high-quality printer to its range of add-ons.

The LTR-1 is a new style of letter-quality printer that uses an impact band rather than the daisywheel. A what, you cry! Well, it's a rubber strip, five characters wide, that moves round hitting the paper with a hammer action.

The LTR-1 has both RS232 and Centronics interfaces, so you shouldn't have any problems linking it up to your Spectrum. Its only drawback is its speed — 12 characters per second. Now that's fairly normal for letter quality and anyway a good night's sleep'll do you good while you're waiting. Still, at only £119.95 it's not just the rich kids who can buy a cheapo thermal printer for listings and save the LTR-1 for letters.

The clever print-head is also bi-directional and logic seeking. It uses a permanent Elite-style head and can accept A4 size paper. If you can't get it together to write to 'em (no printer?), give Saga a ring on (04862) 22977.



FULL HOUSE

Melbourne House has certainly got its hands full. Apart from the new Spanish-set, seaside-and-suntan oil adventure, *Terrormolinos*, there are five more megagames in the pipeline for a Christmas release.

First, ask your mummy about *Fighting Warrior*, an arcade adventure set in Egyptian times. It's the old, old story . . . our hero has fallen for a girl about to be buried alive with her master. Tomb much!

Next, is a sailing simulation, *The Whitbread Round The World Yacht Race*. it's like this . . . you've got a yacht and you have to sail round the world, but then you'd probably sussed that already. But where does the Whitbread come in? (*Answers in a pint pot please! Ed*).

Da boys are back. Mugsy is in town and he's out for revenge. Dat's why dis sequalled hoodlum hokum is called *Mugsy's Revenge*. Can you refuse de offer?

Now for some galling news. *Asterix The Gaul* has a new 3D software slanging session with soldiers, pirates, and even killer boats. (*What no gallstones? Ed*).

And finally, the bad news for all of you trying to kick *The Hobbit*, you'll now have to face up to *Lord of The Rings*. Yes, the long-promised follow-up is almost with us and with it comes the sleepless nights . . .

If you want someone to ring, try Melbourne House on 01-940 6064.



Lord of the Rings under the eyes.

MORE PLUS

Mikro-Gen has two more games using the Mikro-Plus interface in the offing.

The latest Wally game, *Three 'Weeks' In Paradise*, uses advanced graphic techniques and all the available features of the Mikro-Plus. The other game, *The Battle Of The Planets*, is based on the tacky cartoon of the same name. Both titles join *Shadow Of The Unicorn* as the first batch of what seems to be a whole series of Mikro-Plus software.

The Mikro-Plus is certainly a meaty bit of gear. Lurking inside its ROM is a whole chunk of troubleshootin' routines to test not only your Spectrum but the tape and tape recorder too. Thus you'll be able to suss out what's wrong with your Speccy before sending back the tape. Also, some of the standard graphic sets are in ROM and should be rearing their squiggly heads in future Mikro-Plus games.

For more details, give Mikro-Gen a bell on (0344) 427317.

hard facts

Hung up with hardware hassles? Then hand them over to *Stephen Adams* at Hard Facts, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE. He's the man with the answers!

Are you lucky enough to own so much Speccy hardware that you daren't try to connect it all at once! **Sgt. A H Bennett BFPO 41** has this problem! He wants to buy a Brother HR5 printer to use with his Spectrum+, Interface 1 and his Microdrive. This should be fine as the HR5 can connect to the Interface 1 via the RS232 socket, but you mentioned getting a VTX5000 modem too. Well, I think maybe you're being a little bit hopeful with that one!

He also wants to know if extra software was necessary to enable the HR5 to COPY. The best thing is to base COPY software on Andy Pennell's *Dumps of Distinction* in *YS* issue 4, OK?

Still thinking about printers, this time **R Stephenson** has a GP 50S printer and would like to make use of the whole width of the paper. Unfortunately, although this printer was designed to work to a full 40 columns, it's been restricted to 32 for use with the Spectrum. There's not a lot you can do, as it's controlled by the ROM inside the printer (unless you disassemble and 'blow' a new EPROM). So maybe you should stick to the small... I mean narrow print!

V. Acton has raised a question about the XK System 1 he's attached to his Speccy. As you suggest, the 32K Cheetah RAM pack will work as an extra page on the XK system, and a diagram can be supplied by TV Services, the people who provide the system. The problem is that, like normal Spectrum memory, it must have continuous memory from the bottom to work, and your particular RAM pack has faulty lower memory locations which will no doubt cause difficulties. You could patch this up by using Spectrum Basic for a data store, but XK Basic won't recognise it as a working page as it will not have more than 2K of good memory from 32767 up. Treat yourself to a new RAM pack, it'll be worth it!

Ian D Grimsley asks the same question about a 16K ZX81 RAM pack. Well, yes you can use it as an extra page with the XK system, but I don't know of any boards available for the job! I could supply you with a PCB that might help, but you'd have to add the decoder on a piece of vero board. It's up to you!

It seems that even in idyllic Thailand, you can't escape the problems that occur with Microdrives. However, **J F Osborne** took his case to the Department of Trade, and things worked! A replacement was provided *and* he was offered spares and service! So, be brave, follow his example and take action, your case is as valid as any!

Maybe **G Ross** should've used this tactic. He's changed his Microdrive *twice*, and is still having problems with both the tape and the Microdrive. From what I can gather, the problem may be due to the positioning of your equipment. You say your telly sits above your Spectrum. Well, as TVs tend to give out magnetic waves which can affect unshielded leads, tapes, Microdrive cartridges and even ICs, you can either shield the whole lot by wrapping them in foil and then earthing the foil, or simply move them as far away from the TV as possible.

Finally, let's go over to a budding inventor. **James Hanks** has built a reset switch for his Spectrum and now wants to try something more adventurous like an amplifier with volume control and loud speaker. I suggest you buy a Maplins catalogue and look up a device called an LM380 in the Semiconductor section. This usually comes with an example amplifier circuit, which would seem to be what you need! You'll find this can be plugged straight into the EAR socket, so away you go an' get building!

Here's hoping that you've all learned something and that some of you will soon be smoothing over your hardware troubles! Don't forget, if your Speccy equipment is letting you down, let me know at Hard Facts, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE, and I'll do my best to help.

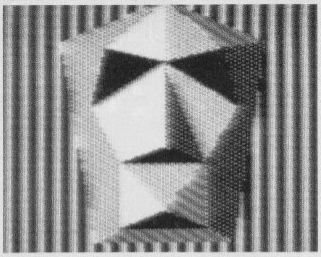
ELECTRIC SCREAMS

Activision has launched a new company headed by ex-Quicksilva MD, Rod Cousens.

Electric Dreams as the company's tagged, has kicked off with two new games for the Speccy. In *Riddler's Den*, you're a man-elephant on a quest to steal the goldentusk from a golden god called Gregogo. It looks rather like a cross between *Sabre Wulf*, *Paws* and all other games of that ilk.

But, fret not, 'cos Electric Dreams' second release, *I, Of The Mask*, saves the day. It's written by *Ant Attack* author, Sandy White and boasts stunning 3D graphics. Seeing is certainly believing!

The plot revolves around a super-computer, dismantled by world rulers because of its yearning for world power. You, as an aspiring megalomaniac, must collect the bits of robot and assemble it for your own no-good.



Electric Dreams' new Masking tape.

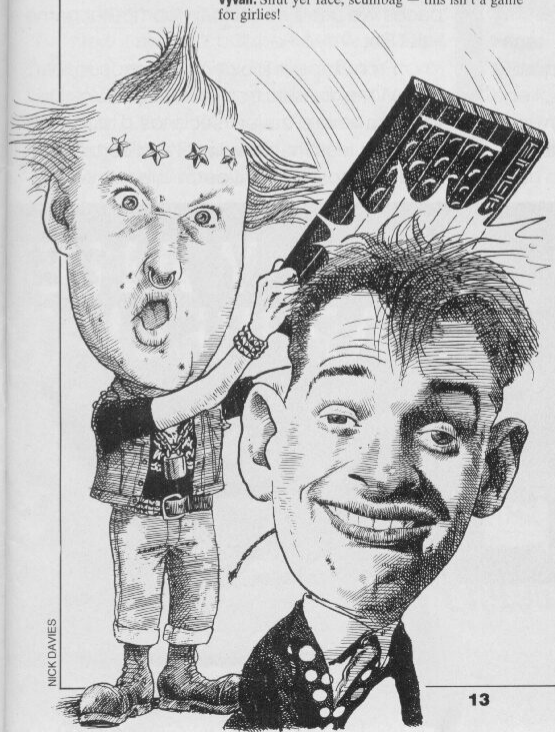
Both games should be available at the end of September. *I, Of The Mask* will cost £9.95 and *Riddler's Den* £7.95.

Future plans for Speccy software from Electric Dreams include *Winter Sports*, using 3D Bio-vision. Yummy!

For more details, ring Electric Dreams on (0703) 225 282.

Rick: Cqwikey, I'm in the new *Young Ones* game by Orpheus. It's berilliant, crazee and zany — just like me!

Vyvan: Shut yer face, scumbag — this isn't a game for girlies!



NICK DAVIES

microdrivin'

Do you still have the 'L' plates on your Microdrive? Are you having problems running it in?... Whatever your microdrivin' difficulties, *Andy Pennell*'s here to help you pass your test!

Welcome to another spot of microdrivin'.

Way back in *YS*, when describing the IFI version of the perennial *Dumps of Distinction*, I mentioned a difficulty I'd found when trying to do the graphics dump on my Epson RX80 — the printer seemed to 'crash' during printing. Well, it wasn't long before a trusty *YS* reader came to my rescue. He went to a lot of trouble to explain that the problem was caused by the IFI sending spikes down the serial line, causing the Epson serial port to simply lock up. Unfortunately, as I wasn't using the IFI for printing at that time, I filed the letter under 'later' and promptly lost it! Now I have a problem with my parallel interface, and could do with that helpful piece of advice about putting a capacitor between two lines. So, if it was you, or you can supply the answer to help me out, then please drop me a line!

Back to other people's problems. **David Cartwright** is having sticky situations using his Cambridge Computing Intelligent Joystick with his Interface 1. In case you don't already know, the Cambridge was one of the first programmable types, and I discovered the incompatibility problem when I reviewed it for *YS* issue 1! Cambridge have since revised the design, so I suggest you contact them about the possibility of an upgrade.

This seems like a good point to discuss hardware compatibility with the Interface 1. There are three areas, RAMs, ports and software. The Interface 1 has its own 8K ROM, and this can be overridden by ROMs in external boxes, such as printer interfaces. It also uses certain I/O ports, defined in the original version of the Spectrum manual, which hardware add-on manufacturers should not really use. If they do, it means the device will not work with the Interface connected.

The final problem is with software. If a Read operation is done on an Interface 1 I/O port, the Z80 can literally Halt, and you can't do a thing with it! The usual way programmers overcome this is with a bit of sloppy programming — reading port 0 for the keyboard. No new software does this now, but a lot of the older stuff tends to. That's why *Jet Set Willy* crashes when you do a Pause with an Interface 1 connected. To demonstrate, do any Microdrive command, then do PRINT IN 0. The machine will instantly lock, and as a 'bonus', with certain Spectrums, you can get funny patterns on the screen by holding down different keys! Unlike the other two categories of problems, this one has a solution — if you have an offending program, you should completely disconnect the power before loading from cassette. This works because the Interface 1 will not crash as long as it never gets initialised after a power-on. Any error, or Microdrive access *will* initialise it however, and it will crash with an IN 0. A Reset won't rectify this, only a power down will un-initialise it.

Now for a confession. Remember in my *New Rom Antics* article in *YS* 18, I asked you to type in a program that lets you know which version of the Interface 1 ROM you've got? And then I asked you to let me know if you found a new one? Well, I was flooded with your letters — which is not surprising really. Yep, you guessed, one of us boobed and this time it was me! To put you out of your misery, here's the program as it should have appeared:

```
10 SAVE *"m";1;"rom"CODE 236,1
20 LOAD *"m";1;"rom"CODE 16384
30 LET a=PEEK 16384: LET z=0
40 IF a>25 THEN LET z=1
50 IF a=113 THEN LET z=2
60 IF a=115 THEN LET z=3
70 IF z THEN PRINT "ROM version "; z
80 IF z=0 THEN PRINT "Hey Wow - another ROM!"
90 ERASE "m";1;"rom"
```

Now, if anyone really has a new ROM, please let me know. What more can I say? Oops?

I'm sure that you must have plenty more Microdrive breakdown stories to report! Write to me, at Microdrivin', *Your Spectrum*, 14 Rathbone Place, London W1P 1DE and I'll smooth over your microdrivin' problems for you.



Since the dawn of the computer age the prices of home computers have been steadily falling.

But, remarkably, the price of a genuine, full-blooded disk drive has remained almost constant.

Constantly expensive.

You'll be lucky to pick up a decent one for less than £200 in the shops.

Now, however, you can have one delivered to your doorstep for only £119.95 (including VAT and postage and packing).

The new Triton Quick Disk from Radofin.

Its specifications are every bit the equal of a £200 disk drive, as a glance at our card above will confirm.

Quick Disk uses the very latest technology to store up to 100K on high quality Hitachi Maxell double-sided 2.8" disks.

Its disk operating system (DOS) uses standard commands so it is truly easy to use, as any computer novice will be glad to hear.

While the price will be compatible with most wallets, there is a Triton Quick Disk compatible with most computers – Commodore 64, Spectrum (16K, 48K and Spectrum plus), Aquarius, Dragon 64 and all MSX Systems.

And, naturally, included is an interface box plus all connecting cables and instructions.

In short, what we deliver is a complete, genuine disk drive. Not a tape or wafer in sight. All for only £119.95.

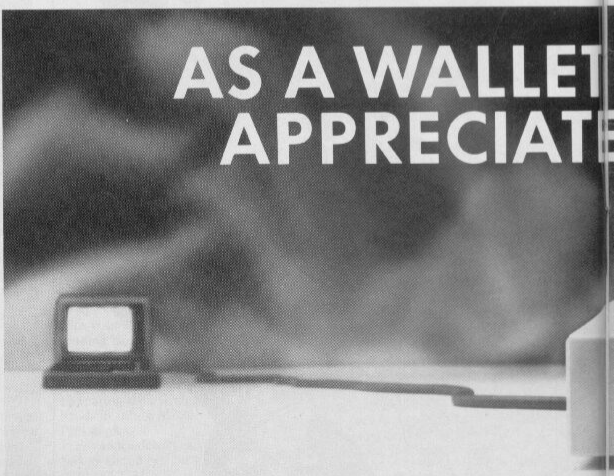
And when it comes to speed of loading, the Triton Quick Disk more than lives up to its name.

FROM 0 TO READY IN 7 SECONDS.

To put the Triton Quick Drive through its paces we used an ordinary computer game – Jet Set Willy.

From tape it took 170 seconds to load.

When loaded from the Triton Quick Disk it took a mere seven seconds. That is 163 seconds less than the tape and certainly as quick as most disk drives on the market.





impressed by the Quick Disk. Not only is it very quick, and both smaller and neater than other drives, but it's easier to use as well...the Quick Drive performed faultlessly.

It's easy to use and at around £120 is probably the best buy for the first time user."

High praise indeed for any disk drive.

For one costing £80 less than any comparable piece of equipment it's exceptional.

HOW TO BUY YOUR TRITON QUICK DISK.

As yet you won't find the Triton Disk Drive in any shop. You can only lay your hands on one by filling in the coupon below.

Send it, along with a cheque or P/O for £119.95 to, Radofin Electronics (UK) Ltd., Hyde House, The Hyde, London NW9 6LG. (Postage free in the UK. Add additional postage for outside the UK.)

In the unlikely event of you being in any way dissatisfied, simply return the disk drive and we'll happily return your money.

Proof indeed that the Triton has all the capabilities of its more expensive rivals.

AS TEST DRIVEN BY THE EXPERTS.

New it may be, but the Triton Quick Disk is already receiving rave reviews in the computer press. For example, in a recent Home Computing Weekly article it picked up their much coveted "Flipped" award.

As their journalist said ".... I am very



TRITON
QUICK DISK.

Please send me a Triton Quick Disk for £119.95.

My computer is a_____

_____

Please include_____ 2.8" Diskettes at £2.99 each.

I enclose a cheque/postal order for

Total_____

Make cheques payable to:–
Radofin Electronics (UK) Ltd.,
and post to us at Hyde House, The Hyde, London NW9 6LG. Tel: 01-205 0044.

Name_____

Address_____

_____

_____

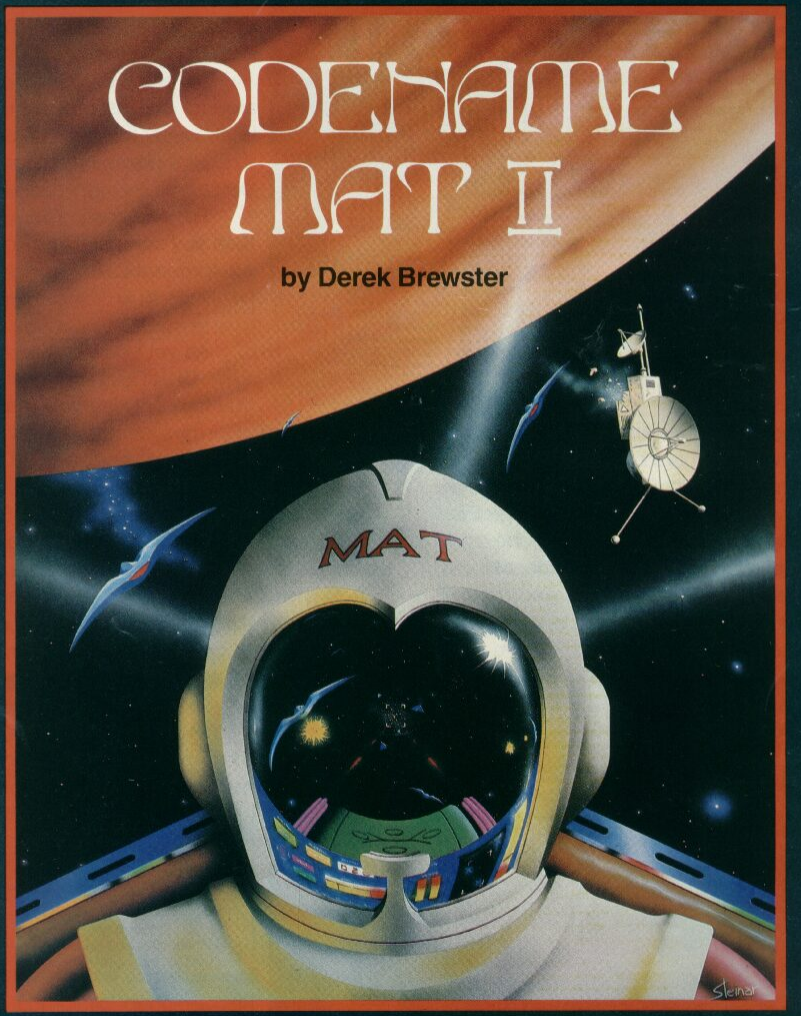
Tel No._____ YS11

Please allow 28 days for delivery.

DOMARK

CODENAME MAT II

by Derek Brewster



GAME TYPE : YOU'LL NEED A KEEN SENSE OF STRATEGY AND AN ACCURATE FIRE BUTTON FINGER

HOOKABILITY : COMPULSIVE

LASTABILITY : INFINITE

GRAPHICS : COSMIC

RESPONSE : LIGHTNING

COMPETITION : HI-SCORE PRIZES

NOW ON : SPECTRUM 48K
AMSTRAD

AVAILABLE AT ALL GOOD SOFTWARE RETAILERS AT **£8.95**
OR SEND A CHEQUE/PO TO
DOMARK LTD, FREEPOST, LONDON SW20 8BR
OR ORDER BY CREDIT CARD ON 01-947 5624

FORUM

If you've got something to say for yourself, then speak out! The star letter writer is in for a bundle of free software! Mail us a missive to Forum, Your Spectrum, 14 Rathbone Place, London W1P 1DE.

THE SAGA CONTINUES

Good news. I've got both the Saga 1 keyboard and a copy of *YS MegaBasic (Whoopee! Ed).* The keyboard is good, very good and with it the Speccy's a very effective word processor. Trouble is *MegaBasic* just didn't work. So, following your advice in *YS* 18, I contacted Saga for their free add-on that remedies the problem. I am shaken and delighted to report that by return of post the bit arrived and it worked first time. *(Whoooopeeee! Ed).* This is rare and very impressive. Thank you Saga and *YS.*

Barrie Fairest
St Mary's, Isles of Scilly

Oh, it was nothing really — nice of you to mention it. Bask, bask. Not that we can take all the credit (Oh, yes we ruddy well can! Ed). *OK, we're taking all the credit but if anyone wants to thank Saga or acquire their own free and gratis add-on, give 'em a ring on (04862) 22777. Troubleshootin' Pete.*

KEYBOARD KLUTZ

If you've got a 'real' Speccy keyboard, here are a couple of tips. If you want the dull thud of an IBM rather than the cheap klack as you hit each key, try the draught excluder method. This involves carefully prising off each key and laying strips of rubber draught excluder under each line of keys so that they hit it just at the end of its travels. You'll find this method works well with the Dk'tronics, Fuller, FDS, Transform and the new LMT.

Another trick to make the keys feel more solid is to invert each individual key and fill them with plasticene or hot candle wax!

Andrew Tisdall
Swords, Co. Dublin

And if you come over here, boys and girls, I've got one that we prepared earlier. What d'you mean, it's dripping candle wax all over the floor? How was I to know you were going to switch it on and use it? You know how hot they get! Hahem, on to the next item, kiddies... Ed.

DOUBLE TROUBLE

Hellooo. I'm writing on two matters of intergalactic importance. First, referring to ish 18, I have not, nor wish to have any connection with this Rump Numbrain person who is just an unoriginal wally. *(Phew, I'm glad we got that one straight. People were starting to talk. Ed)*

Secondly, I'm appealing to the squillions of people who read your purely incredible (kereeep!) mag. Does anyone have a Brother HR-5 printer and a Kempston 'E' Centronics interface? How do I get hi-res copy to work properly on it? Oh, come on, there must be *someone*? Anyway, until someone writes in, I'll keep headbanging my brick wall. S'long!

Thomas 'The Original Erauqs' Smith
Lewisham

No, tell me it's not true. (It's not true. T.P.) *Tell me there can't be two of them.* (There can't be two of them. T.P.) *I couldn't stand it if they both kept writing in repeating each other.* (...repeating each other. T.P.) *Aaargh! Ed.*

NOT KNOWN AT THIS ADDRESS

Finally, you've driven me to dig out my copy of *Tasword Two* and pen this letter of complaint. Well, not a real complaint but a slap in the face for T.P. Take that. *(Ouch, that hurt! T.P.)* In *YS* 18, he came up with a method of using the screen by addressing it directly. Could he have made it any more long-winded or more difficult? *(Probably. Ed)* Now, here comes my program. Just type in this code using an assembler or hex loader — aaaargh! *(Well, he hit me first! T.P.)*

```
LD B,N      06 N     load y co-ord
                     into B
LD C,N      0E N     load x co-ord
                     into C
CALL 22AAH  CD AA 22 call ROM
                     routine
LD (NN), HL 22 NN    save HL
LD (NN), A  32 NN    save A
RET         C9       return
```

All numbers are in hex.

Now to use the program, POKE the two co-ordinates and run the code then PEEK the address and bit number. The address is contained in the location where the HL registers were saved. So, why couldn't T.P. do that? *(Where shall I start? Ed)*

Please note that I haven't done any crawling. I've also not asked for a Trainspotter Award though one would be nice to fill the space left on the wall where my last poster fell down. *(I'll pop a life-size piccy of Tony 'Slim' Samuels in the post to you — that should cover most of your bedroom walls and some of the ceiling as well! Ed)*

Richard Relf
Epsom, Surrey.

Bet you think you're really clever don't you? But your solution hasn't got any pretty diagrams, has it? Na nardy na. Troubleshootin' Pete.

FROM BAD TO VERSE

In computing circles (so I've heard it said)
There's a growing concern for a
fellow called Ed.
He writes weird little
comments on letters he's read
And we think that he isn't quite
right in the head!

To add to the problem he's
joined by a freak
With the terrible title of
Troubleshootin' Pete
(Poetic licence, that bit) *(Huh, off licence, you mean! T.P.)*
We've tried to decide which
one is the worse —
But they're neither as bad as
this horrible verse!

Miss J R Wood
Altrincham, Cheshire

Well, J R, what can I say?
Your verse quite takes my breath away,
T.P.'s a freak, I must agree,
But what's this rot you say about me?
Writing here does take some guts
'Cos reading your letters just drives me nuts! Ed.

SHAW THING

Cast your minds back to Hacking Away, *YS* 18 and you'll remember J Eagleson's cries for help in escaping from machine code programs. Well, there's a simpler solution to the problem than using EI followed by RST 8. And what is this magical instruction? Why, 'tis JP 11B7h. *(Tip o'me tongue! Ed).* It jumps to the Speccy ROM routine that performs a NEW command.

This command gets around the problems involved in a 'crash set' ERR_SP by resetting this system variable. Also, there's no need for an EI, as this command is automatically executed at the end of the routine. Plus, the RST 8 is now redundant as NEW eventually drops back into Basic anyway.

If all this sounds too good to be true, let me admit now that there is one disadvantage. You'll find that the system variables RAMTOP, P_RAMT, RASP, PIP and UDG are preserved by the routine but you can skirt round this with a bit of judicious POKEing (or LDing).

The only other minor annoyance is that any screen display is erased and you can't get round this with any amount of POKEs. But if all you're after is a spot of hacking, then this shouldn't have you tearing your hair out.

Now this really was an obvious piece of coding, so come on Ed, give Pennell a POKE up the user prot.

David Shaw
Walsall
Founder member of the 'I think Gollum deserved everything he got' society.

I've consulted all the major medical dictionaries but as yet no luck on locating Andy's prot. If this is another sordid example of the Shaw family sending each other coded messages in their fiendish bid to take over this letters paaagh... Ed. Now he knows where his prot is! Well, we Shaws have got to stick together. T.P. Grrr...pass the superglue... Ed.

SPACE INVADER

Now look here Mr so-called Editor, I am a v. annoyed Speccy owner from Caversham, somewhere on the third moon of Jupiter and I have several problems. *(You're telling me! So-called Ed).* OK, insanity is one of them.

1 Why do I pay a six horned paper thing that rode all the way to your planet and back to fetch me *YS* only to find that they do not accept Mega noodles as currency in your mangey newsagents?

2 When I got *YS* 18 in my scaly paw I typed in the *JSWII* POKEs only to find that Eddie, my computer, NEWed. Is it me, is it Eddie or is the management prepared to accept responsibility?

3 There's no Star Letter in the August ish. Now come on, the drink can't affect you boys and girls at Castle Rathbone that much, can it?

4 If you don't print this I'll

GREAT GRAPHICS. NO GIMMICKS.

SPRITE MACHINE.
The latest from Print'n' Plotter. The simplest sprite program to use. Available November. Send for details now.

ART-O-MATIC.
New great from Print'n' Plotter. If you want the ultimate in memory saving *and* fantastic graphics, you need ART-O-MATIC. Fully documented instruction book. Available November.



SCREEN MACHINE.
The graphics manipulator. Instant machine code techniques to improve graphics and save memory, including text compi *100 page instruction boo

PAINT PLUS.
Every facility to produce great screen graphics to use in your own BASIC or M/C programs. No gimmicks. 100 page instruction book.

For years we have been leading the way while others have tried to follow. If you know anything at all about the graphics programs for the ZX Spectrum, you'll certainly already know about PAINTPLUS and SCREEN MACHINE. These two programs have helped thousands of frustrated graphics programmers become computer artists practically overnight.

Now, we are introducing two new programs that will make your graphics even more professional: ART-O-MATIC and SPRITE MACHINE.

ART-O-MATIC is for the programmer who wants superb graphics but insists on the minimum of memory consumption. It's a graphic compiler with facilities to produce all the graphics *and* compile, disassemble, relocate, insert, delete, and save to use in your own programs. If you write complex games like adventures, or if you want to cram hundreds of graphics into a program, this is the program for you.

SPRITE MACHINE is the most exciting graphics program for years. Now *you* can program fast moving graphics simply, easily and professionally. Everything you produce can be located in your own programs (not like some "games" programs), and the facilities are enormous.

Sprite shape and form, motion pattern, speed, colour, trace, collision detection, animation, animation speed, four variations of edge action and animation windows — this is only part of what's available.

Post to Dept YS, Print'n'Plotter Products Ltd., 19 Borough High Street, London SE1 9SE or phone 01-403 3622 with your credit card order.

( ) Please send me the following:

. . . Paint Plus @ £9.95 . . . Art-o-Matic @ £8.25
. . . Screen Machine @ £8.25 . . . Sprite Machine @ £9.95

( ) Please send me details, I enclose a 17p postage stamp.

Name_____

Address_____

( ) I enclose remittance in full.
( ) Please bill my Access/Barclaycard/Mastercard/Visa Number.

Prices quoted are for UK delivery. Overseas orders please add 20% on quoted price for additional handling (surface rate only).

Print'n'Plotter Products

keep phoning T.P. and tell him how mega amazing he is and what a good editor he'd make until he's unbearable.
From just your normal average one horned, three eyed guy,
Caversham, Jupiter

1 Change your newsagent, or better still take out a subscription.
2 The management admits nuzzing. It's you but it could be Eddie. Have you tried using a Spectrum?
3 Hic!
4 More unbearable? Impossible! Ed

CUT UP ROUGH

Yahoo! Yippee! Ha haa! Whoop! Wahoo! *(Pass the scissors, Pete, I'm gonna have to exercise my editorial prerogative. Snip! Ed).* Whoo-eee! Whahoo! Eureka! *(Still there, eh? Snip, snip. Ed).* Burp, yeuch. *(SNIP! Ed).* I've found it, I've found it, I've *(OK, wise guy, you were warned, here comes the editorial red pen. Take that. Ed).* Say, those *JSWII* POKEs sure are good. Of course, I could've told you how to crack it but I didn't want to show you up in front of your fan. *(Careful. The pen is on standby. Ed).*

Finally, I know who this month's trainspotter is. Yep, it's yours truly! *(Well, it's not — so all you're getting is an editorial short back and sides. Ed).*
John Hawke
Roy Bridge, Bonnie Scotland
P.S. I'm a Devonian by birth.

I knew there had to be an explanation. T.P. went to Devon on his hols this year and he's never been the same since. Not that he was the same before, of course. Ed.

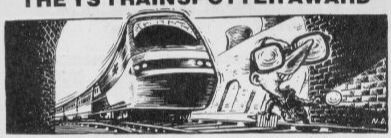
YOU CAN 'AVE 'IM...

I have kidnapped Dave Nicholls. Unless you send me a Porsche 924, a Trainspotter Award, a Discovery 1 disk drive, a VTX 5000 modem and £1 million worth of Speccy software, he will be *released.*

Anyway back to semi-sanity. You made a right cock-up of last month's *YS*, didn't you? *(There now follows a string of falsehoods, libellous accusations and perfidious pretences that won't make it to the page, as no Trainspotter Award is forthcoming. Ed).* Were you so gobsmacked at the disappearance of the hairy Hacker? If not, why not? If you give me the aforementioned objects, I may persevere in perusing your puny pamphlet. If not, I'll tell all my mates *(Think of a number less than two and then halve it! Ed)* not to read your mag. OK? *(OK! Ed).*
P.S. Hurry up with the ransom, he's getting up my nose.
Brian 'Wimpo' Hitch
Grimsby, 5th Humberside

OK, OK you win — the goodies are in the post. All except the Trainspotter Award — you must know by now that no-one has ever managed to beg, borrow, steal or blackmail one of these coveted awards. And may his Hairyness forever moult over your carpet. Ed.

THE YS TRAINSPOTTER AWARD



Ah-ha! think you can catch all of us mere mortals out by changing the piccies round, eh?

OK, it's just because I don't work at YS and I don't get sudden urges to start rambling on about large amounts of Hex — my simple computer logic is: IF object = game THEN PLAY object, ELSE leave for someone else to explain it.

Rambling again. This letter's about my amazing bit of trainspotting in *YS* 18. Correct me if I'm wrong *(Don't worry, we will. Ed)* — I mean I only have *Quackshot* — but, you appear to have swopped the screen shot with some unknown game called *Metabolis.*

Please can I have a Trainspotter Award, nice Mr Headman, he whose shining armpits are the very substance of life to so many *YS* underlings (T.P. included). *(That's what you think, matey. I wouldn't like to tell you what sustains me through the long hard grind that is YS, but it's certainly not his lordship's armpits. T.P.)*
Peter Plumbley, but to all sane people, Matthew Exley, 14 + 2 weeks.
Easton-in-Gordano, Bristol

C'mon, made-up name, made-up town, in-Gordano my foot. But you're still this month's trainspotter. And for why, you ask? Well, just look at what I had to wade through. Threats from Crispin 'Hawkeyes' Tucker — 'this is voted Trainspotter Award by my gerbils, Harry and Angus, who'll bite your ankles if it isn't'. Oh no, not the gerbils. Or this from a Vogon called D B Edwards, 'So, Earthlings, I present you with a simple choice, either die in the vacuum of space ... or tell me I've won the award.' Such is the hoover of life, eh? Then there are jokes like this one from Paul Edwards — 'I went to the Costa del Sol for my holiday this year, does this make me worthy of the Spain Trotter award?' Did I say jokes? And then there's Chris Richardson going for the sympathy vote, 'Just send the award to the above address and I'll be happy. If you don't ... I shall cry.' You're all gonna have to do better than this next month! Ed.

SPLASH IT ALL OVER!

Through rain and shine, I battled my way through *Frank Bruno's Boxing.* My head was smashed in by the Canadian Crusher and my ribs were dessimated by Fling Long Chop. But finally I came through and KOed Peter Perfect — and for what I ask? I'll tell you what — a bit of cheap advertising for *Scooby Doo* and a line about extra boxers on a new tape! So now my thoughts are so rebellious to good ol' Franky and the Elite mob that I've negotiated with my pet dog to dish out the vibes to all the wimps who can't play the big fist on their own. First though, you'll have to use my game name JAY, before entering the following EVBA membership codes:

Fling Long Chop	**A9SINBD9A**
Andra Puncheredov	**F3WIOLBAB**
Tribal Trouble	**07QIOIJC5**
Frenchie	**91UIIAHL9**
Ravioli Mafiosi	**B4XIONFC7**
Antipodean Andy	**ABRINMD07**
Peter Perfect	**92VIICBAA**
Scooby Doo	**M3VIIBEI4**

Yours forever brain damaged
Jason Hinney
Borehamwood, Herts

Right then, better get the gloves on and get out there — into the black 'n' blue corner. Take that! Ed.

MORE INTERRUPTIONS

Toni Baker's Interrupt Manager in *YS* 16 worked wonderfully until I tried it with a Kempston interface attached, when it NEWed. That's because the value on the data bus when an interrupt occurs can be any number from 0 to FFH, so the way in which the interrupt vector routine was initialised meant that the program couldn't work.

This is where yours truly comes to the rescue. First, load the Interrupt Manager and type in this program carefully:

```
10 CLEAR 61419
20 FOR A=61420 TO 61460
30 READ B : POKE A,B: NEXT A
40 SAVE "intruptmng" CODE
61420,123
50 DATA 33, 253, 253, 54, 195, 35,
54, 21, 35, 54, 240, 33, 103, 240, 17,
104, 240, 1, 80, 0, 113, 237, 176, 33,
0, 254, 1, 253, 0, 113, 35, 16, 252,
113, 62, 254, 237, 71, 237, 94, 201
```

Save the new version of the program and call the routine with RAND USR 61420. The only drawback is that you can't store anything from 65021 to 65281.
Richard Chaney
Hull, North Humberside

Now why didn't I think of that? Troubleshootin' Pete. Answers on a postcard please! Ed.

NEW POKE SENSATION?

You asked for it. Here's the most useful modification to *JSW II* that I can think of. And this is what you do. First, load in the Basic and find the RAND USR start address. Set the variable A equal to this value, then enter the following line of Basic:

```
POKE A,195 : POKE A + 1,0 : POKE A
+ 2,0
```

Needless to say that this works on *JSW* and *JSWII* as well as a lot of other games that are on sale in the shops at the moment.

Since the only letters that appear in Forum have a creep in them, I suppose that mine had better have one. I can honestly say — with my fingers crossed — *(Worra creep you are. I'm not gonna print that! Ed)*
Ian Ravenscroft
Stoke-on-Trent

I can honestly say (without my fingers crossed) that your amendment to JSW is the most mega I've yet come across. And no, I'm certainly not letting you lot into the secret of what it does So, don't come creepin' round me. Troubleshootin' Pete.

For Your

AUTUMN SAVERS
SPECTRUM/PLUS

QuickShot™ II



INCLUDING INTERFACE
PLUGS STRAIGHT INTO SPECTRUM/PLUS

ONLY **£15.99** POST FREE

- TOP + TRIGGER FIRE BUTTON
- AUTO FIRE MODE
- KEMPSTON COMPATIBLE
- STABILIZING SUCTION CUPS
- SPECTRUM OR PLUS • UNBEATABLE OFFER

SEND FOR INSTANT DESPATCH

PRICE BREAKTHROUGH

SWITCHABLE JOYSTICK INTERFACE



ONLY **£12.99** POST FREE

- ALL THREE SYSTEMS AT THE FLICK OF A SWITCH
- 'KEMPSTON'—'CURSOR'—'INTERFACE II'
- ACCEPTS ANY 9 PIN JOYSTICK—INCLUDING RAPID FIRE MODELS • SPECIAL OFFER!!

Buy with QUICKSHOT II complete for only **£19.99**

SEND NOW

Now you can create Superb Graphics easily with

the New Lightwriter



ONLY
£16.99
POST FREE

Lightpen comes complete with Interface & Software

• Just plug in the Datel Lightwriter and draw circles, squares, rectangles, make superb hand drawings, paint, fill, erase, choose inks, paper, colours. • Save your results into memory (48K) and use in animation or save onto tape to use in your own games. • All functions selected from screen menu with the lightpen. • Unbeatable value. • Nothing more to buy.

SEND NOW AVAILABLE FOR IMMEDIATE DELIVERY

Digital Sound Sampling Technology.



NOW Available on your Spectrum

Complete unit and Software Package

£49.99 *POST FREE*

• Digital Sound Sampling has only previously been available for large money and costing at least 10 times the amount. • The Sound Sampler allows you to record Digitally any sound into memory and instantly replay it at any pitch, forwards, backwards, ascending scale, compressed, expanded, with echo, endlessly looped etc. • Supplied complete with Software package to facilitate the above operations, plus on screen 'Voice Photo' + Frequency Plotting. • With on screen keyboard + drum kit a whole symphony could be produced from a single Sample Sound. • This is a professional unit featuring 8 Bit D to ADC converters as used in Digital equipment now sweeping the music world. • Although the unit is not a toy, giving truly astounding results for the musically inclined, we have incorporated a games interface to allow you to use Sound Sampling in your own games etc., so the Sound Sampler would be of interest to everyone.



HOW ABOUT WITH SOUND?

UNBEATABLE OFFERS!!

WHILE STOCKS LAST



POST FREE

Games Ace features:
KEMPSTON COMPATIBLE • JOYSTICK INTERFACE ACCEPTS ANY 9 PIN JOYSTICK INCLUDING RAPID FIRE MODELS
PLUS DELIVERS THE SOUND FROM YOUR GAMES THROUGH TV SPEAKER. (Fully controllable)
ONLY *£10.99* or complete with QuickShot II only *£17.99*

Turbo Ace features:
ALL THREE SYSTEMS AT THE FLICK OF A SWITCH KEMPSTON • CURSOR • INTERFACE II • ACCEPTS ANY 9 PIN JOYSTICK • INCLUDING RAPID FIRE MODELS • 'ON SCREEN SOUND' AS 'GAMES ACE'
ONLY *£15.99* or complete with QuickShot II only *£22.99*

GUARANTEED SAME DAY DESPATCH ON ALL ORDERS
TRADE ENQUIRIES WELCOME

24 HR CREDIT CARD LINE

ACCESS | BARCLAYCARD VISA

DATEL ELECTRONICS

UNIT 8, FENTON INDUSTRIAL ESTATE, DEWSBURY ROAD, FENTON, STOKE-ON-TRENT
TEL: 0782 273815

YOUR SPECTRUM GO FOR GOLD

Could you be a champion gamesplayer, a *YS* Gold Medallist? Join in the fun and *Gold For Gold*, you could be in the running to win!

Now's the time to meet another of our high-scoring-fast-playing-games aces. Catch his hot tips, and learn to play *Daley's Decathlon* the winning way!

If you haven't already tried to Go For Gold, then it's about time you did! We know there must be hundreds of brill games-players out there, so don't hide your skill, enter the *YS* Gold Medallists' Challenge, and you could be our champ. If your scores aren't quite up to scratch, don't give up, you could still be the lucky winner of three free pieces of software if your name gets pulled out of the Ed's hat! This month the surprise package is on it's way to **Gavin Mackenzie** of Romford.

Follow his example, go ahead and play the **YS** game, fill in the coupon and send a photie, you've got nothing to lose and plenty to win! Go to it!

YS GO FOR GOLD

My top 5 all-time greats are:

1 .....
2 .....
3 .....
4 .....
5 .....

My top scores are*:

1 .....
2 .....
3 .....
4 .....
5 .....

The next games I'm gonna rush out and buy are:

1 .....
2 .....
3 .....
4 .....
5 .....

If you're going for gold, stick your mugshot here

*You don't have to fill it all in but make sure you specify the level of difficulty for your scores.

Make sure you send us a black and white photo of yourself if you've filled in your high scores.

I'm going for gold! My name is:

.....

Address.....

.....

..... **Postcode** .....

Now ask an independent witness to sign the coupon

Independent Witness

Name .....

Address .....

.....

..... **Postcode** .....

Complete this coupon and send it to Go For Gold, Your Spectrum, 14 Rathbone Place, London W1P 1DE.

YOUR SPECTRUM

ALL·TIME·TOP·TEN



Craig Boddy 1314,865



David Bass 1202,403



Sergio Tavares 988,971

1 DALEY THOMPSON'S DECATHLON — OCEAN

2 SPY HUNTER — BALLY/MIDWAY



John Marriot 2032,375



Ian Rogerson 682,025



Matt Humpreys 316,415



Mark Brown 1512,000



Graham Conner 1500,175



David Morris 1362,175

3 BRUCE LEE — US GOLD (ENTRY)

4 GHOSTBUSTERS — ACTIVISION (6)



Alan Maber 310,900



Paul Golder 97,100



Noel Wallace 73,100



André Elias 18-0



Paul Golder 18-0



Chris Robinson 18-0

5 MATCH DAY — OCEAN (2)

6 HYPERSPORTS — KONAMI (NEW!)



Craig Boddy 470,693



Scott Donaldson 465,871



Sean Rowe 413,237



Ian Hiller 67%



Daniel Clegg 51%



Valentin Kressler 36%

7 UNDERWURLDE — ULTIMATE (RE-ENTRY)

8 ATIC ATAC — ULTIMATE (4)



Gavin Thompson 99%



John Roberts 99%



David Harewood 99%



Claudie Jeffries 100 items



John Kitts 91 items



David Ferguson 54 items

9 JET SET WILLY II — SOFTWARE PROJECTS (NEW!)

10 KNIGHTLORE — ULTIMATE (5)



Joh Hudspith 100%



Thomas Pedersen 78%

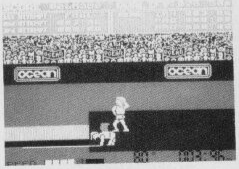


John Kitts 75%

YS GOLD MEDALLIST



Name: Craig Boddy
Town: Hayes, Middlesex
Age: 16
School: Harlington Upper
Hobbies: Mastering games that tax my ability (Wot? Ed.)
Fave Game: Spy Hunter
Fave Music: Current chart hits



Day one tips; In the hundred metres, speed is the only necessity. For the long jump, speed is again vital, but the take off angle must also be somewhere between 44-46. When going for the shot putt, make sure that the angle is between 44 and 47 and that there's a lot of force behind the push. In the High Jump, jump as close to the bar as possible and then let Daley reach an angle of 90 degrees before bringing him down to the crash mat. With the 400 metres, it's good rythmn that's required. **Day two tips;** Taking off into the 110 metre hurdles, pace yourself so that you take only two steps between the jumps. To do this you're going to need some speed. With the pole vault, try at first to get the pole in between the uprights, then when the height goes up to 4.4m, try to position the pole just a little further back. The ultimate aim in the discus is to get the angle of attack at 45 degrees — do this and you should get 75,90m. In the javelin, use the maximum speed possible and throw the pole at an angle of between 47-49 degrees to get a distance of over 100m. The 1500m requires you to run quite fast for the first 700m, and then to slow down so that you can regain your energy.

MANCOMP SPECTRUM MANCOMP BBC MANCOMP

EXPRESS SPECTRUM & BBC REPAIRS!!

Repairs between £9 and £20

First company in all U.K. to introduce while-u-wait service. Now first to offer an international repair service!

"I have come across a firm that will be more than willing to advise you as to how to remedy your problem. They are called MANCOMP, and as well as repairing faulty Spectrums, are also quite willing to discuss your problems with you, and offer reasonably cheap, and (MORE IMPORTANTLY) correct cures."
Phil Rogers 'Peek & Poke', "Popular Computing Weekly" Jan. 1985 (Vol.IV, No.1)

"My Spectrum blew recently. I took it to MANCOMP, who fixed it in 8 minutes! And for less than £10. They are local, clued up, and blindingly efficient."
Computer column, "4 Heatons Digest" (Vol.I, No.11)

"One firm, at least, can usually effect any necessary repair over the counter in 45 minutes. Based in Manchester, MANCOMP can offer what is arguably the fastest turnaround in the business, to personal callers." **"Crash Magazine", June 1985**

"Of all the repair companies *'Sinclair User'* spoke to, MANCOMP seemed the most professional when it came to advice and a helpful attitude". **August 1985**

- Send Spectrum encl. £1.80 return postage (U.K.), £2.50 (Europe), £6.50 (Middle East, Africa). • Or phone/bring Spectrum for free, no obligation estimate. • We repair most Spectrums in minutes.
- Every Spectrum sent insured and by receipted parcel post (U.K.), registered air mail if overseas. • No hidden costs.

MANCOMP LTD. (Dept. SY/11), Printworks Lane, Manchester M19 3JP.

Phone **061-224 1888/9888**

Open 9a.m. till 7p.m. Mon. to Sat.

We also design hardware and software from idea through to manufacture.

SPECTRUM MANCOMP BBC MANCOMP SPECTRUM MANCOMP

MANCOMP SPECTRUM MANCOMP BBC MANCOMP

O'LEVELS

not just revision but also tuition for the spectrum 48k

Mathematics 8 programs TOTAL 150k	fractions, square roots, decimals, logarithms, sines, sets, accuracy, bases, interest, volumes, indices, standard form, modulo, number sets, pie charts, histograms, simultaneous equations, bar charts, averages, probability, algebraic laws, quadratics, matrices, vectors, transformational geometry, trigonometry, differentiation, integration, factors, angles.
Physics 7 programs TOTAL 140k	reflection, wavelength and frequency, refraction, lenses, the eye and its defects, diffraction, colour, magnetism, motors, Ohm's law, amps, volts, series, parallel, electronics, heat, gas laws, energy forms, specific heat, kinetic energy, half-lives, atomic structure, radiation, isotopes, Newton's laws.
Electronics 8 programs TOTAL 150k	Energy and its sources, power distribution, e.m.f, p.d., charge, current, power, r.m.s. values, resistors, series and parallel, capacitors, time constants, inductors, transformers, resonance, microphones, loudspeakers, heat and light sensitive devices, diodes, transistors, logic circuits, multivibrators, meters, CRO, amplifiers, feedback.
Computer Studies 7 programs TOTAL 140k	data collection, coding, storage, processing, presentation, validation, d.p. systems, privacy, security, hardware, I/O devices, software, low and high level languages, machine-code, assemblers, interpreters, compilers, errors in programming, aids to debugging, microcode, machine organisation.

each subject only £5.00 inc p/p

GCE TUTORING GCE

quality educational software

HILLSIDE, KIRSTEAD, NORWICH, NORFOLK NR15 1EB

please send me:

my name and address:

my computer is a:

I enclose a cheque / P.O. for £.....

made payable to G.C.E. Tutoring

HISOFT

High Quality Microcomputer Software

Product Price Table

Machine Product	Spectrum	Amstrad	MSX	CP/M	QL
Pascal	25.00	29.95	29.95	39.95	
Devpac	14.00	21.95	19.95	39.95	19.95 (MON QL)
C	25.00	34.95		*	
Ultrakit	9.45				
Font64		7.95	(Font designer/screen dump)		
The Knife		12.95	(CP/M disc editor)		
The Torch		12.95	(CP/M disc Tutorial)		

All prices in £ sterling. *Coming soon!

Here's what other people say about HiSoft Software:

Our Customers:

C "more addictive than any arcade game" *R. Walker*

Devpac80 "a brilliant piece of software" *A. Brown*

Ultrakit "a great acquisition" *J. Le Page*

The Press:

Pascal "if you wish to teach yourself Pascal ... you won't go far wrong to buy HiSoft's Pascal" *PCF 1/84*

Devpac "it is impossible to recommend any other development package for the Spectrum" *ECM 4/84*

C "the most welcome addition to the Spectrum catalogue since Sinclair introduced the Microdrives" *Sinc. User 12/84*

Font64 "the manual is clear ... very simple to use" *PCT 7/85*

These are only a few of the glowing comments that we have on file showing that user and critic alike find HiSoft software offers a refreshing change of style.

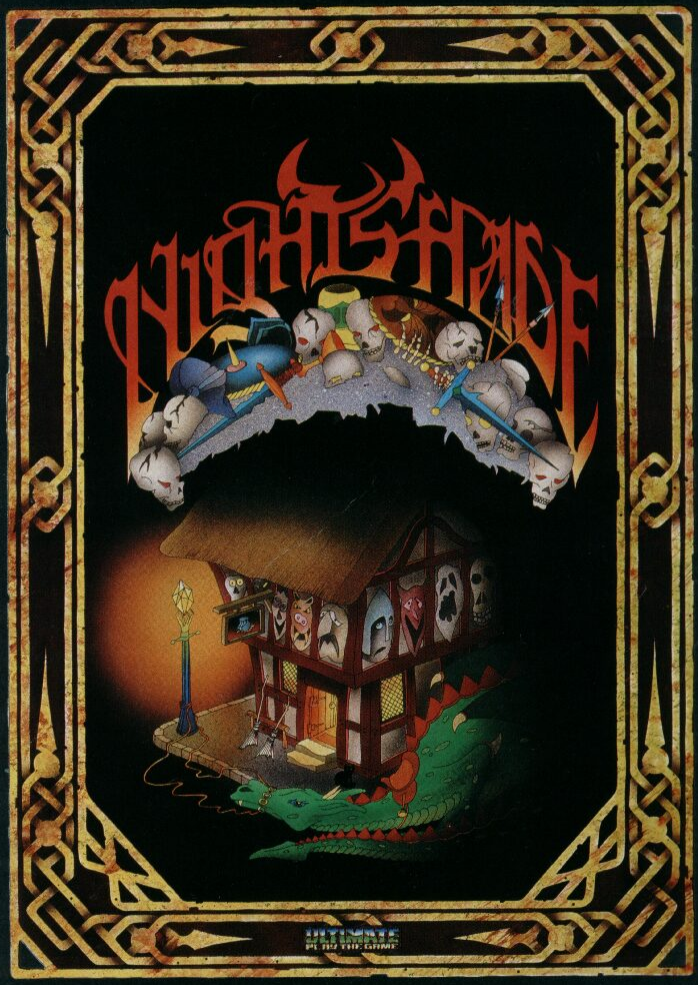
We produce and market a wide range of high quality, professional and well-documented software packages for the popular home micros. Our type of software is becoming increasingly more popular as people get tired of zapping aliens and want to put their brains to work; learning new computer languages (Pascal, C, Devpac), investigating their computer's power (The Knife, The Torch) or being artistic (Font64), we have it all. Please feel free to write to us or 'phone for full technical details of any of our products. The above prices are fully inclusive and you can order directly from us or through your local computer shop.

Programmers: we are currently seeking to engage an experienced programmer to join our team in Dunstable. Please contact Sue on (0582) 696421 for further details.

HISOFT

180 High Street North,
Dunstable, Beds. LU6 1AT
Telephone (0582) 696421

48K SINCLAIR ZX SPECTRUM

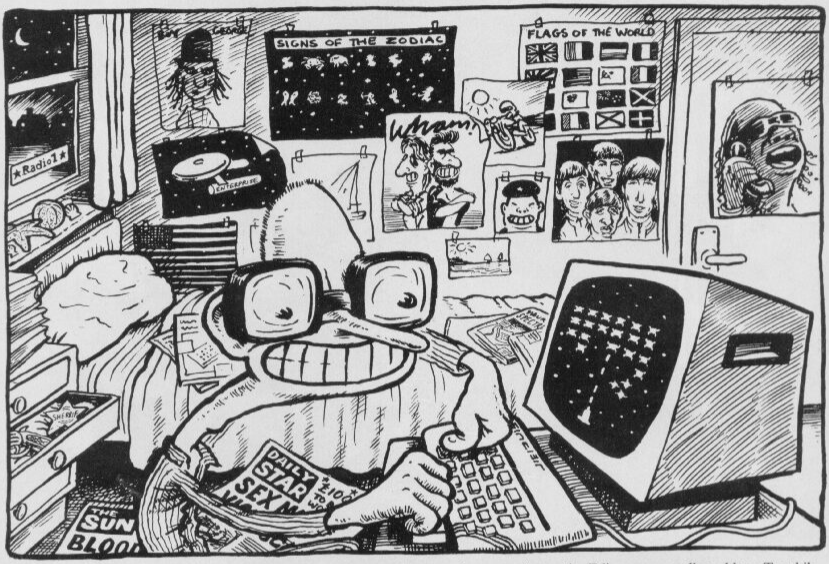


"NIGHTSHADE" recommended retail price £9.95 inc VAT.
Available from W.H.SMITHS, BOOTS, J.MENZIES, WOOLWORTHS
and all good software retail outlets. Also available from
ULTIMATE PLAY THE GAME, The Green, Ashby-de-la-Zouch, Leicestershire LE6 5JU
(P&P are included) Tel: 0530 411485

COMPETITION

STAR STRUCK

Are you seeing stars before your eyes? Don't worry — they could win you one of ten Star STX-80 printers. Bash on!



Have you read your stars this month? Well, it could just be that your luck's in with this month's star-spangled *YS* compo. Ten eagle-eyed readers will each win a Star STX-80 printer worth £159. So, let's tell you a little about the star of the show.

The STX-80 is a smart cream-coloured thermal printer that produces standard or enlarged text. It prints bi-directionally at a speed of 60 characters per second and it has no problem with bit-image graphics. And it doesn't weigh a ton either — at just 7lbs you shouldn't have to add structural support to the table! Each of the printers comes with a hundred foot roll of heat sensitive paper — so now you'll have no excuse for not dropping a line to *Forum*. All in all, this is a real hot property. Just thank your lucky stars that one can be yours for free!

STAR STARING MAD

Now we don't like to make things difficult for you. (*Spoilsport, I do! Ed*). Ignore him. (*We do anyway! T.P.*). No, we're not asking you to perform any star turns, we just want you to go star gazing. Take a look at the cartoon and see how many stars you can spot. Just remember there are stars, and stars and we want 'em all! When you've stared till you've gone quite starry-eyed, put a ring round each one in the piccy and then fill in the total number on the coupon. Cut them both out, pop 'em in an envelope, address it to Star Compo, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE, write the number of stars on the back and then put it in the post pronto. The rest is easy — you just have to sit back until the first ten correct answers are picked out of the Ed's compo cardboard box. To while away the time, just wish upon a Star!

STAR CHAMBER RULES

Entries should reach us by no later than November 31st 1985. (*How many days in November dumbo? Ed*) Oops, November 29th — or somewhere between the two.

Each entry must include a completed form and the cartoon with the number of stars ringed on it. And don't forget to put the number on the back of the envelope.

The Editor's decision is final, so it's no use telling him what a star he is. (*An' I am, I am! Ed*).

STAR COMPO

Put a ring round each star you've found in the cartoon then complete the coupon (or a photocopy of it) and send it to Star Compo, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE. Don't forget to write the number of stars on the back of the envelope.

I want *YS* to make me a Star — or at least to send me one as a prize! I've counted ..... stars.

Name .....

Address .....

.....

..... Postcode .....

PLAY IT AGAIN, SAM

A big noise in programming,* Tony Samuels, *has composed a zippa-de-do-da of a music package that'll set your Speccy buzzin'. You're not going to believe your ears!

OK, I've got to admit that the Speccy's not exactly famed for its outstanding sound facilities. But I've just about had it up to here, what with Commie 64 owners (*Wash your mouth out! Ed*) shunning my Speccy's burping sounds and Amstrad owners laughing at its chesty cough. So, to turn the tables on them all, I've written a program that'll transform the Speccy's humble Beep statements into the most mega amazing music you've ever heard a machine utter. Well, *I'd* rather listen to it than to an Amstrad hi-fi system let alone one of their crummy computers! (*You tell 'em, Tone! Ed*).

What we have here is a program that'll replace the boring bip, bip, bip of the Beep with a full warp effect. It really does produce synthesised sound! It works by using two sawtooth waveforms in anti-phase with each other — and though even I don't really understand what that means, it doesn't half impress those thicko 64 owners. Still, the mechanics aren't important — all you need to know is how to construct data statements for the Beep command using length of note followed by the pitch of the note. Just remember that this program, outclasses the sound systems in professional Speccy software and now you can include it in your own programs. Roll over Beethoven!

SOUND TRACKIN'

Now the first thing you'll presumably want to do is start using synthesized tunes in your own programs, so here goes. First enter and synthesize a tune using *Samsynth*. Then save the compiled tune and write down the number of bytes used and how many notes there are in it. Next load in the synthesizer routine using LOAD""CODE — the routine is 260 bytes long and loads at location 64750. Right, now load in the compiled tune code at an address of your choice remembering, of course, to clear enough space using the CLEAR command. To play your tune is as simple as POKEing the number of notes and the start address of the tune code into the synthesizer routine and typing RANDOMIZE USR 64750.

Now, don't panic if you haven't quite got all that 'cos I'm going to run through it using a concrete example. Load in *Samsynth* and then mess about with the tune until it's playing to your tastes. And before you ask, no, I'm not going to tell you what the tune is — you'll only solve that mystery by typing in the program! Right, done that? Now save it using option I. Load in the synthesiser routine and clear enough memory for it:

CLEAR 61999: LOAD""CODE

Now load in the tune code — and don't forget to specify an address:

LOAD""CODE 62000

OK, let's put the show on the road:

LET ADDRS=62000: POKE 64758,ADDRS—256*INT (ADDRS/256):POKE 64759,INT (ADDRS/256)
LET NOTES=137: POKE 64576, NOTES—256*INT (NOTES/256): POKE 64757,INT (NOTES/256)

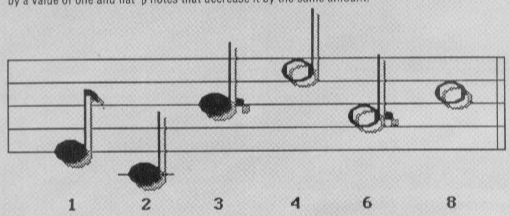
Finally, pin 'em back and play the tune with

RANDOMIZE USR 64750.

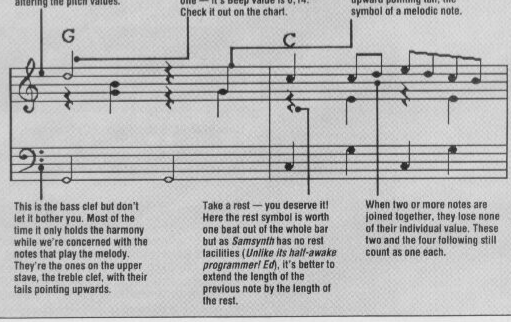
GET NOTED!

Unless you're a budding Beethoven, you're going to want to add a touch of class to your programs using tried and tested pieces of music. Well, it's quite possible to transfer anything from Dvorak to Duran Duran using *Samsynth*, provided you've got the sheet music in front of you. And what's more, you don't have to read a note of music — though it'll help!

First, you must learn to recognise the comparative lengths of each note and be able to work out their pitches. Take a look at the illustration below — it'll help you to work out the data statements for transcribing almost any piece of music. Remember that they take the form, length of note followed by pitch of note. You'll also have to watch out for sharp (#) notes which raise the pitch by a value of one and flat ♭ notes that decrease it by the same amount.



Now take a look at this snatch of our mystery tune and practise turning the notes here into data statements. With a bit of trial and error, you should soon have it cracked and you can move on to the music of your choice.



MUSICAL MENU

Here are the full details of all the options offered to you on the menu.

S Lets you change the speed that the synthesized tune is played at.

A Compiles the Beep values in the data statements into a form that can be used by the synthesizer routine.

W Lets you change the wave length and depth values. These really determine the synthesized sound effects that the routine can produce.

P This is the play option. You'll find that certain wavelengths and depths will cause a clicking sound — when this happens just return to the menu and change the values.

C Now you can really drive 'em up the wall. This option plays the tune over and over and over ...

I You'll find this the most important option when you come to incorporate synthesized tunes in your own programs. Select it and you'll be told how many notes in your tune and how many bytes it uses. Write them down for reference later. Next enter the name you want the block of code to be saved as — you'll be returned to the menu as soon as it's saved.

U This option saves the Basic loader with your tune data and the synthesizer routine. To load it back in, just type LOAD"" Easy innit?

B For all you nostalgia freaks this lets you hear Speccy music as it used to be played — in glorious Beeps! Oh, they don't write 'em like they used to — thank goodness.

SAMSYNTH

Yep, it's our ol' friend the Hex loader. What more is there to say but type it in and run it. 'Way you go then ...

```
  10 CLEAR 62199
  20 INPUT "START LOCATION >";SL
  40 LET A=10: LET B=11: LET C=1
2: LET D=13: LET E=14: LET F=15
  50 LET CQ=0
  60 LET T=0
 100 INPUT H$
 105 IF LEN H$<>2 THEN  GO TO 10
0
 107 IF H$="XX" OR h$="xx" THEN
 GO TO 200
 110 LET H=0
 120 LET H=H+16*VAL H$(1)
 130 LET H=H+VAL H$(2)
 140 POKE SL,H: LET SL=SL+1
 145 LET CQ=CQ+H
 150 PRINT TAB (T);H$;: LET T=T+
3: IF T=33 THEN  LET T=0: PRINT
 160 GO TO 100
 200 INPUT "CHECKSUM >";CS
 210 IF CS<>CQ THEN  PRINT : PRI
NT "DATA ENTRY ERROR": STOP
 220 PRINT : PRINT "DATA OKAY"
```

With the Hex loader in, it's time to tackle the code. Type it in one byte at a time until you're asked for the checksum at the end. If it's wrong, you'll be given an error report and you'll just have to go back and re-check your typing. Once it's correct, save it to tape.

```
C3 A9 FD C3 03 FD 6B 00 02 B0 0C
00 55 0A 00 00 0A 00 0A 00 00 F3
21 00 00 E5 2A F8 FC 2B 22 F8 FC
3E 00 BC C2 1C FD BD C2 1C FD E1
FB C9 2A FA FC ED 5B FC FC ED 52
11 01 00 CD B5 03 2A FC FC 11 01
00 CD B5 03 3E 7F DB FE FE FE CA
19 FD 2A FC FC ED 4B FE FC C9 22
FC FC E1 23 3A FF FC BC C2 07 FD
3A 00 FD BD C2 07 FD E5 2A F8 FC
2B 22 F8 FC 3E 00 BC C2 6D FD BD
C2 6D FD E1 FB C9 2A FA FC ED 5B
FC FC ED 52 11 01 00 CD B5 03 2A
FC FC 11 01 00 CD B5 03 3E 7F DB
FE FE FE CA 19 FD 2A FC FC ED 4B
FE FC ED 42 22 FC FC E1 2B 3E 00
BC C2 5B FD BD C2 5B FD C3 04 FD
2A F4 FC ED 4B F6 FC 0A 32 F8 FC
03 0A 32 F9 FC 03 0A 32 FA FC 03
0A 32 FB FC 03 0A 32 FC FC 03 0A
32 FD FC 03 0A 32 FE FC 03 0A 32
FF FC 03 0A 03 32 00 FD C5 E5 CD
F1 FC CD 8E 02 7B FE FF E1 C1 CA
F0 FD 3E 64 C9 2D 3E 00 BD C8 C3
B0 FD 00 00 00 00
```

Do I hear music? Not yet — just type in the Basic loader and save it in front of the code on your tape. Then load the whole kaboodle back in again — Basic plus code. The Basic listing already has an example tune in it, so run the program and choose the Synthesise routine. Then pin back your lugholes. If you want to put your tune into the program then you must enter it as data statements using the Beep command format (length of note, pitch of note) between lines 1-8999.

```
  10 DATA 2,7,3,12,1,14,1,16,1,1
4,1,12,1,11,4,9,4,21,2,19,2,16,1
,17,1,16,1,14,1,12,6,14
  20 DATA 2,7,2,12,1,12,1,14,1,1
6,1,14,1,12,1,11,4,9,4,21,2,19,2
,16,1,17,1,16,1,14,1,16,6,12
  30 DATA 1,19,1,19,2,12,1,12,1,
14,1,16,1,14,1,12,1,11,4,9,4,21,
2,19,2,16,1,17,1,16,1,14,1,12,6,
14
  40 DATA 2,7,2,12,1,12,1,14,1,1
6,1,14,1,12,1,11,4,9,4,21,2,19,2
,16,1,17,1,16,1,14,1,16,6,12
  50 DATA 2,19,3,24,1,26,1,28,1,
26,1,24,1,23,2,24,6,19,2,24,2,16
,1,17,1,16,1,14,1,12,6,14,2,7,2,
12,1,12,1,14,1,16,1,14,1,12,1,11
,4,9,4,21,2,19,2,16,1,17,1,16,1,
14,1,16,6,12,2,19,2,24,1,24,1,26
,1,28,1,26,1,24,1,23,1,24,1,23,2
,21,3,19,1,19,2,24,2,16,1,17,1,1
6,1,14,1,12,6,14
  60 DATA 2,12,1,12,1,14,1,16,1,
14,1,12,1,11,4,9,4,21,2,19,2,16,
1,17,1,16,1,14,1,16,12,12
```

Lines 10-60 These lines contain the data for your music. This is the area that you'll need to store your own music data in.

```
9000 DATA 9999,9999: RESTORE 1
```

Line 9000 This line marks the end of your music data.

```
9005 CLEAR 32759 : LET E=0
```

Line 9005 This clears some space in memory for the machine code routine, plus a bit of room for your tune (hey, lyrics already!)

```
9010 LET SPEED=PEEK 32760: LET D
EPTH=PEEK 32762: LET WAVEL=PEEK
32761
```

Line 9010 The values of Speed, Depth and Wavelength are stored in high memory so that they're not lost when the programs run.

```
9015 INK 7: PAPER 1: BORDER 1: C
LS
9020 PRINT "          **** SAMSYNTH
 ****"
9025 PRINT : PRINT : PRINT : PRI
NT
9030 PRINT "PRESS :-
                          S TO CHANGE
 SPEED
                          A TO SYNTHE
SIZE
                          W TO CHANGE
 WAVE EFFECT": PRINT
9035 PRINT "              P TO PLAY
                          C FOR CONTI
NUOUS PLAY"
9036 PRINT "              I SAVE COM
PILED TUNE
                          U SAVE DAT
A AND PROG"
9037 PRINT "              B TO PLAY
TUNE IN BEEPS"
```

Lines 9015-9037 This routine prints the menu.

```
9040 LET A$=INKEY$
9041 IF a$<>"b" AND a$<>"B" THEN
 GO TO 9045
9042 RESTORE : INPUT "SPEED ";sp
p
9043 READ b1,b2: IF b1=9999 OR b
2=9999 THEN  GO TO 9045
9044 BEEP b1/spp,b2: GO TO 9043
9045 IF a$="s" OR a$="S" THEN  C
LS : PRINT "      PRESENT SPEED I
S=";speed: INPUT "TYPE IN NEW SP
EED=";SPEED: POKE 32760,SPEED: G
O TO 9015
9046 IF A$="U" OR A$="u" THEN  I
NPUT "FILE NAME>";F$: SAVE F$ LI
NE 9999: SAVE "SAMSYNTH"CODE 64
750,270
9047 IF E<>0 THEN  IF a$="I" OR
 a$="i" THEN  CLS : PRINT "TUNE L
ENGTH ";e;" NOTES" '"e*9;" BYTES
USED": INPUT "FILENAME>";F$: SAV
E F$CODE 32770,e*9: GO TO 9000
9048 IF A$="I" OR A$="i" AND E=0
 THEN  CLS : PRINT "YOU MUST SYN
THESIZE THE TUNE      BEFORE YOU C
AN SAVE IT": PAUSE 0: PAUSE 0: G
O TO 9000
9050 IF A$="W" OR a$="w" THEN  C
LS : PRINT "      PRESENT DEPTH I
S=";DEPTH: PRINT : PRINT "  PRE
SENT WAVE LENGTH IS=";WAVEL: INP
UT "TYPE IN NEW DEPTH=";DEPTH: I
NPUT "TYPE IN NEW WAVE LENGTH=";
WAVEL: POKE 32761,WAVEL: POKE 32
762,DEPTH: GO TO 9015
9055 IF A$="A" OR a$="a" THEN  C
LS : GO TO 9075
9060 IF a$="p" OR a$="P" THEN  C
LS : PRINT "CERTAIN VALUES FOR W
AVELENGTH,  DEPTH AND SPEED WILL
 PRODUCE A  CLICKING SOUND,IF TH
IS HAPPENS, PRESS ANY KEY TO RET
URN TO MENU!": RANDOMIZE USR 6475
0: GO TO 9015
9065 IF a$="c" OR a$="C" THEN  C
LS : PRINT "TO ESCAPE,PRESS BREA
K": PRINT : PRINT " THEN  TYPE GOTO 9000 TO CONTINUE": RAN
DOMIZE USR 64750: PAUSE 50: GO T
O 9065
9070 GO TO 9040
```

Lines 9040-9070 This section reads the keyboard and performs the appropriate function.

```
9075 LET d=32770
```

Line 9075 This line sets a counter to be used in the main loop following.

```
9080 RESTORE : DIM N(150,2): FOR
 f=1 TO 150: READ X,Z: IF X=9999
 AND Z=X THEN  GO TO 9090
9085 LET N(F,1)=X: LET N(F,2)=Z:
 NEXT f: STOP
9090 LET f=f-1: PRINT AT 8,0;"No
te ) "
9095 FOR e=1 TO f
9100 PRINT AT 8,8;e
9105 LET freq=(1.0594631^n(e,2))
*100
9110 LET len=INT (freq*(n(e,1)/s
peed))
9115 POKE d,len-(INT (len/256)*2
56)
9120 LET d=d+1
9125 POKE d,INT (len/256)
9130 LET pit=INT ((466432/freq)-
128)
9135 LET d=d+1
9140 POKE d,pit-(INT (pit/256)*2
56)
9145 LET d=d+1
9150 POKE d,INT (pit/256)
9155 LET d=d+1
9160 POKE d,0
9165 LET d=d+1
9170 POKE d,0
9175 LET d=d+1
9180 LET w=wavel: LET d=depth
9185 POKE d,w
9190 LET d=d+1
9195 POKE d,INT (di/256)
9200 LET d=d+1
9205 POKE d,di-(INT (di/256)*256
)
9210 LET d=d+1
9215 NEXT e
9220 LET E=E-1
```

Lines 9080-9220 This is the main loop, which puts the ordinary Speccy Beep values through the mangle of Tony's equation crunching. The remains are POKEd into memory. If you find that you have a tune longer than 150 notes, then change the value of N() and the size of the F loop in line 9080 to the required length.

```
9225 POKE 64758,32770-256*INT (3
2770/256)
9230 POKE 64759,INT (32770/256)
9235 POKE 64756,e-256*INT (e/256
)
9240 POKE 64757,INT (e/256)
9245 GO TO 9015
```

Lines 9225-9245 These lines POKE the start location of the compiled music, plus the number of notes used into the synth routine ready for play. Line 9245 sends the action back to the main menu.

```
9999 CLEAR 32759: LOAD "SAMSYNTH
 C"CODE
```

Line 9999 When you save the program, use the format SAVE"SAMSYNTH"LINE 9999 and save the code directly after with SAVE"SAMSYNTHC"CODE 64750,270. Or, alternatively, you could use option 'U' from the main menu.

INCREDIBLE!

TRANSFER ANY PROGRAM TO MICRODRIVE CARTRIDGE
THE FULL POTENTIAL OF YOUR MICRODRIVE
CAN BE REALISED WITH THE

MIRAGE MICRODRIVER

The most revolutionary and exciting peripheral yet for th Spectrum 48K and the Spectrum+

NOW ONLY £39.95 inc P&P

Features:
- ★ Consists of hardware only, no additional software required.
- ★ Transfers *any* program to Microdrive in one simple opertion.
- ★ Extremely easy to use.
- ★ Freeze *any* game at *any* point, save it, and restore it later.
- ★ Compacts program for efficient use of cartridge.
- ★ Through connector for other peripherals.
- ★ "Poke" facility for infinite lives, etc.
- ★ Also saves to cassette.

"If you have a microdrive the Microdriver is the most important piece of hardware you could buy." *John Lambert — Sinclair User*
"...an essential buy for the Spectrum owner who has converted to microdrive..." *Ian Sinclair — Author*
"I much preferred the Microdriver for speed and ease of use." *Iolo Davidson — Your Spectrum*
"I preferred the Microdriver because of its ease of use." *Andrew Pennell — Popular Computing Weekly*

Note: This unit is intended for software owners to transfer programs on to microdrive cartridges for speed and ease of access. Programs saved using the Mirage Microdriver are *unreadable* unless the Microdriver is present.

Trade and overseas enquiries welcome.

MIRAGE Microcomputers Limited

24 Bank Street
Braintree
Essex CM7 7UL
Tel: (0376) 48321

ACCESS VISA AMERICAN EXPRESS

Tour London from your Armchair with...

LONDON ADVENTURE

A Challenging Adventure for the 48K Spectrum

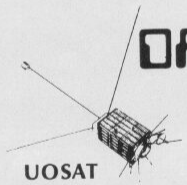


Available by mail order only,
Cassette £4.95, Microdrive £6.75 (inc. p & p).

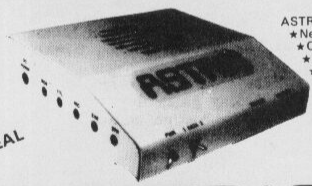
Fridaysoft

Unit F, The Maltings, Station Road,
Sawbridgeworth, Herts. CM21 9JX.

DATA FROM SPACE!



UOSAT
The University of Surrey Satellite Project



ASTRID receives from UOSAT satellites:-
- ★News Bulletins on spacecraft matters.
- ★Operating schedule of UOSAT.
- ★Satellite Status.
- ★Experimental Data.
- ★Messages on the Electronic Mailbox System
- ★Orbit Information.
- ★Digitalker Speech Telemetry.
- ★CCD Television Camera Signals.

Don't just play games on your computer—use REAL DATA from SPACE!

ASTRID

UOSAT Satellites are designed and built by the University of Surrey to encourage a deeper understanding of the rapidly expanding industries of space technology, electronics and computing.

Automatic Satellite Telemetry Receiver & Information Decoder

ASTRID is a COMPLETE Satellite receiving and decoding package that allows data from UOSAT Satellites to be displayed on home computers via a serial interface, (ASCII format 1 start 7 data 1 even parity & 2 stop bits). The system is fully tested and ready to operate and comprises: Receiver/Decoder/Power Supply Unit/Aerial/Feeder/Test Tape/Connecting Leads/Instruction Manual.

ASTRID operates FULLY AUTOMATICALLY – using the remote control on your tape recorder – for those night time passes!

ASTRID is only available from the manufacturers. Please send cheque or postal order (or use your Barclaycard or Access number) for £144.00 + £5.00 carriage to MM Microwave Ltd., Thornton Road Industrial Estate, Pickering, N. Yorks. YO18 7JB. Tel: 0751 75455.

ACCESS VISA

elitism!

***Are you ready to face the final frontier? Space is a dangerous place so stay at home if you're faint-hearted. But the rest of you should join Commander* David Bishop *as he battles his way through the infinite variety of Firebird's* Elite.**

It's taken an eternity but now the sitting around in space station departure lounges is almost over . . . fellow space travellers, you are grounded no longer. *Elite* has arrived to prove there's plenty of life left in Speccy software, not to mention the eight galaxies each with two hundred and fifty planets set in deep space.

Climb aboard your Cobra MkIII trading and combat craft, check your wallet for the 100 credits you start with (hardly enough for a GalacDonalds) and run through the list of weapons. There's the cheap and cheerful Front Pulse Laser, Zieman deflection shields, a Lance & Ferman 'seek and kill' missile system and the Holodirect & Grav-Distort communications system. Sounds impressive, huh? Well, it's interstellar peanuts compared what you'll need to become a member of the order of *Elite*.

But getting your hands on the hardware you'll need, requires ready cash. Your best bet is to start trading — buying cheap and selling on the other side of the galaxy at a premium. And if you're really out to make a fast buck, you can always try dealing in drugs — but don't be surprised when you find both pirates and police on your tail. In space there's no mercy, and justice is dispensed with the gun.

And as if that's not enough to contend with, you'll find yourself faced with special problems that can spell death if a solution isn't found — and fast! How will you react when your ship is infected with the plague, for example?

To win at *Elite*, you're gonna need the commercial acumen of a merchant banker, the stategic skills of a chess grand master and the combat reactions of a jet pilot from Earth back in the pre-dawn days of the 1980's and 90's. But then nobody said it was going to be easy!

LAUNCH PAD

At the start of your space mission, your Cobra MkIII isn't exactly the hottest hardware in the galaxy — you've only got three homing missiles and one forward firing laser. And a hundred credits ain't gonna go far — a bit like trying to turn a Renault 5 into a Rolls with only a tenner in your trousers. Your best bet is to stick to short hops at the start and only trade in safe commodities, building up your credits that way.



Lost in space? Well, there's no need to panic — just check here which planetary system you're in. Prepare for a warm welcome on this planet — a sort of Come Inside, Lave!

This is the stuff that makes the universe go round — the readies. Make sure you invest your initial hundred credits wisely as you're gonna need a small fortune before you get your hands on life's little luxuries — you know, docking computers and intergalactic hyperspace drives.

This tells you which planetary system your hyperspace drive's locked onto — use your short range scanner to make your choice. Looks like you've plumped for a trip to Diso.

Keep an eagle eye on your legal status. No problems if you're clean but prepare for police harrassment as soon as you acquire a criminal record or go on the run as a fugitive.

You start out with the measly skill level of 'harmless', but as your kills are registered by the Galcop Federation Law Centre your rating'll rocket through 'mostly harmless; and 'deadly' until you eventually reach the dizzy heights of 'elite'.

Fuel is measured in light years of travel. Keep a close eye on your gas tank as the maximum you can pick up at a space station is seven light years' worth.



Here's a breakdown of the equipment you have on board — not bad going so far. Each time you splash out on something, the display is immediately updated.

Just to give you an idea of how much ready credit you'll need to equip your ship, take a look at the list of fancy gadgets on offer — and their equally fancy price tags. Mind you, without them you don't stand a chance of making it to the top.

CHART TOPPIN

The one thing you've got to bear in mind about the unknown vastnesses of space, is that you don't know much about them! So, to help you plug some of the gaps in your knowledge, use the short range chart to have a quick shufti at your destination. Once you've selected a planet, have a look at its economic profile — with a bit of practice you'll soon know whether it's worth paying a visit.

As the humanoids say, there's no space like home! Your home, or at least where you crashed out for the night, is marked by the large cross on the screen.

The short range chart shows all the registered planets in the galaxy and the radius of the circle indicates the range you can jump in hyperspace. So, the more fuel in your tanks, the larger the circle grows.

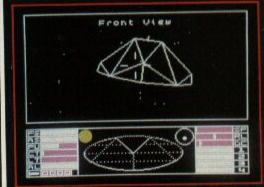


If you're travelling round the galaxy, you'll want to know if the natives are friendly. Move the cursor over the chosen planet and you'll be shown the basic info you need.

STAR WARS



This is a Fer-de-Lance and best avoided — as well as its own missiles it has an ECM system so don't waste your missiles — hightail it out of here unless you have an ECM of your own.



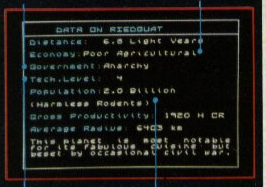
If you're wondering what your ship looks like — feast your eyes on this Cobra Mk III. Usually, you're in no danger from them but it's still an idea to arm a missile when one's around. The first rule of space is, trust no-one.

TRADE UNION

Before you can start trading, you'll have to master the tricky process of docking with space stations. Practise on your home planet until you've got it right. Then plan your route through the galaxy so that you call in at different types of planet each time you dock.

Some governments are more stable than others. Corporate states' shouldn't give you too much aggro. Riedquat is run along the same lines as Y3, as an anarchy! Don't go zippin' off here, loaded to the bulkheads with contraband unless you're prepared for an interstellar scrap.

The economic profile of each planet lets you know what to expect when you get there — essential stuff for all budding traders. Since Riedquat has a poor agricultural economy you can expect to make a healthy profit with hi-tech goods to trade. Where d'you think Rabbit software came from?

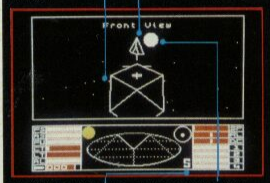


The technical level of each planet is given a rating from one to twelve. It'll give you an idea of the sort of goodies you can lay your hands on there. Don't worry if your fuel's running low, though, 'cos it's readily available on all planets.

Riedquat is inhabited by harmless rodents so you shouldn't have too many problems here. (*Oh, and aren't The Rats rodents? Ed*). Not all the aliens are quite so hospitable, though.

This is the planet's space station, a sort of orbital airport where all trading and re-equipping takes place — a bit like stocking up on the old duty-frees at Gatwick. All the planets have several of these Coriolis space stations orbiting at different altitudes in neutral territory.

Docking with the space stations is a right pain in the reverse thrust region — unless, that is, you're rich enough to buy a docking computer. Without one, you'll have to manoeuvre manually into the acess tunnel facing the planet. And if you thought three point turns were difficult you ain't tried nothing yet . . .



The S tells you that you're in neutral territory around a space station — and you'll be relieved to know that nothing can touch you here unless you're on the police wanted list.

In space the suns never set, of course. Don't steer too close or you could find your ship overheating — keep your eye on the cabin temperature chart.

● Space is very much like a supermarket, only bigger! The range of goods covers everything from food to narcotics and slaves — and you don't see many of them in Sainsbury's.

As soon as you've docked, you'll be able to see how much the local produce will set you back. The more you shop around, the bigger the bargains you'll find — but you have to weigh up whether it's worth travelling half way across the galaxy to save yourself a few credits.



● Psst, wanna make a quick killing in the markets? Find two planets within seven light years of one another that've got fairly stable governments. One must be industrial, the other agricultural. Now shuttle back and forth, between them trading computers with the peasants and furs with the techies.

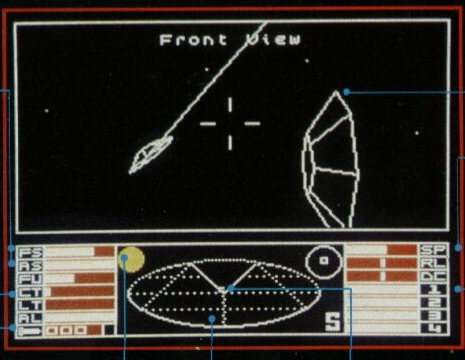
● The big question is why bother trading at all, when it's only good ol' killing and maiming that increases your rating in the universe. Well, you're not gonna last long against the big boys unless you're all togged up with the latest in offensive and defensive weapons — and they cost money. So, get out there and sell it to them before they lay one on you.

Out there, in space, only the fittest survive. No matter how sharp you are at selling or how quick you are at snapping up the bargains, you must be able to pack a punch to protect yourself. Like a medieval knight strapped into his armour, you must practise the skills of the quick kill in your Cobra Mk III spaceship. You must learn to tell instinctively when it's right to attack and when to retreat. There's no other way that you'll ever join the ranks of the Elite!

You've got both fore and aft shields to protect you from those minor inconveniences of space war, such as direct hits. Watch out though, 'cos your energy banks will take a real hammering in the face of persistent enemy fire. If your front shields go down, you'll find it prudent to run like billy-o and let the aft shields take the strain.

Avoid the temptation to get trigger happy. Non-stop laser firing will cause them to overheat and the automatic cut-out circuits will come into play. Then you could find yourself with your lasers down around your ankles just when you need them most.

At any one time, your Cobra Mk III can carry up to four homing missiles. But before you launch them they must be locked onto target. Once they're gone, there's no stopping 'em. If you're really ace, you can out manoeuvre them or you can use your ECM (Electronic Counter Measure) System to destroy them — if you've bought one.



You're on course for a smooth ride if your status display is green but as it changes through yellow to red then you'd better watch out — there's trouble ahead!

As a humanoid-type organism, you haven't got eyes at the back of your head! That's why your 3D scanner is so useful. You'll soon be able to judge just where the enemy is, how fast it's travelling and when you should start panicking.

As soon as you see the enemy on the scanner, spin the Cobra round until the target is in front of you, then climb or dive until he's bang in the middle of your sights. Now let 'im have it!

● A sneaky trick if you don't have qualms about shooting people in the back is to perfect the art of taking ships out using the rear view of your Cobra.

Don't hang around here — *Dive . . .* These are Thargoids you're tangling with, some of the deadliest aliens in the universe. It's said that they've had their fear glands removed. Nasty for them and doubly nasty for you.

A good space pilot knows when to put his foot down and when to ease off. Watch your forward velocity level, speed to the uninitiated. Keep it on max when approaching a planet and take it right down to minimum when docking.

Keep a sharp eye on your energy banks — if you sustain a direct hit when they're at zero, they'll still be mopping up your molecules come doomsday. It's a wise idea to acquire an extra energy unit as quickly as possible as it'll replenish your banks at a much higher rate then normal.

Just When You Thought It Was Safe To Walk The Streets...

PAWS



HAVE YOU ENOUGH CATOPLEXIC ENERGY?
WILL YOUR STRENGTH AND STAMINA LAST OUT?
YOU MUST STOP THE DOGS DESTROYING YOUR HOME!

LOOK WHAT THE MAGAZINES SAY ABOUT THIS ARCADE ADVENTURE

Home Computing Weekly ... Top 10 ... Big Buy

GRAPHICS: ...

SPECTRUM £6.95
AMSTRAD £7.95

PLAY IT ! DEFEAT IT !

Order direct from:
Artic Computing Ltd.
Main St. Brandesburton
DRIFFIELD YO25 8RL
Tel: 0401-43553

Available from most good computer outlets.

PACER INTERFACE

COMPLETE DISC SYSTEMS



DISC DRIVE INTERFACE FOR THE SINCLAIR SPECTRUM AND SPECTRUM PLUS COMPUTERS

Purpose:
- Allows users of the Spectrum Computer to save and load programs on a floppy disc.

Features:
- Simple to use operating system on disc.
- Simple operating system provides easy file handling incorporating 10 user commands.
- Supplied with demonstration and instruction disc.
- Compatible with all popular 5¼inch disc drives.
- Fast and reliable storage of basic and machine code programs.
- Automatic run of basic or machine code programs after loading.
- Freeloading – hence will properly connect to Spectrum Plus.

Uses:
- Storage of programs and information for home and office use.

Applications:
- Word processing – fast access to word processing files, creation, modification, editing and storage of text files.
- Accounts – home and office accounts can be quickly accessed, updated and stored.
- Filing System – names and addresses of friends, family and business contacts can be quickly stored and retrieved.

Disc Drives:
- Suitable for 40/80 track drives. Shugart standard e.g. Cumana, Teac, Shugart, Mitsubishi and BBC compatible drives.

Discs:
- Single Double sided, single density, 40/80track, soft sectored.

Installation:
- Simply plug the interface between your Spectrum Computer and disc drive using the demonstration disc – OR you go!

PACKAGE 1
Interface Only
comprising
Pacer Interface c/w all cables, demo-disc, user manual etc.
£79.95

PACKAGE 2
Complete Disc System (100K)
comprising:
Pacer Interface (as in package 1) plus 5¼inch disc drive (40 track, 100K per side formatted storage, single sided, complete with P.S.U.)
£119.95 *While stocks last*

PACKAGE 3
Complete Disc System (400K)
comprising:
Pacer Interface (as in package 1) plus 5¼inch disc drive (40/80 track, double sided, 400K formatted storage c/w P.S.U.)
£189.95

All prices include VAT. Add £2.50 P&P and link for Package 1 or £5.00 for Package 2 or 3
Picture is example only, the Spectrum is not included
Send cash/cheque or S.A.E. for further information to:

OMNITRONIX LIMITED
13 Dartford Road, Leicester LE2 7PQ.
Tel. No: (0533) 839713

SPEC-MATE

NOW ONLY £32.95

We think that you will agree that this is
THE BEST ONE TOUCH BACKUP/TRANSFER INTERFACE AVAILABLE!

*** DISCDRIVE * MICRODRIVE * WAFADRIVE * SPRINT * TAPE**
Just load the original tape, press the button, select you option and that is ALL there is to do.

COMPARE these UNIQUE features:
* FAST DIRECT transfer to DISCDRIVE or MICRODRIVE or WAFADRIVE or TAPE
(please note discdrive transfer is for use with the Beta interface only) * Expansion Port included
* The transferred or backed-up program runs independantly. * NO need to load additional software.
* Works with ANY program. * Choice of reliable **DOUBLE SPEED** or **NORMAL** tape back-up.
* Program can be **"FROZEN"** at any point and continues normally after transfer or back-up.

AN INVALUABLE ASSET TO ANY SPECTRUM OWNER FOR JUST:
£39.95 INCLUDING VAT P&P
(Europe add £2 Outside Europe add £4)

Make cheque payable to:
A.T and Y Computing Ltd YS2
35 Villa Rd, London SW9 7ND Tel: 01-733 6175

PLEASE NOTE THAT THIS INTERFACE IS FOR USE WITH YOUR OWN ORIGINAL SOFTWARE ONLY

SHRINK WRAPPED

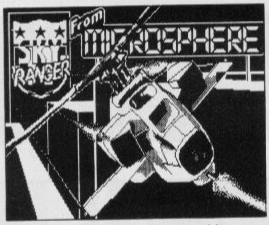
YS MegaBasic *is a big program that's had an enormous impact. But for all you who believe that small is beautiful,* Keith Symonds *has the solution. A* YS MegaBasic *program that'll shrink your screens and then print them onto a ZX printer.*

There was a time when the world was awash with ZX printer paper. Ah, those halcyon days! You couldn't move for programs that let you dump screen displays up to eight times larger than real size to Sinclair's hot piece. How times change — now everyone's short of the shiny stuff — and no, I don't mean just money!

That's why I've devised a routine to squeeze four full sized screen displays into one. And what's more, I did it using *YS MegaBasic!* The very useful GET, OUT and PROCedures meant that the program could be short and, best of all, quick to type in.

Of course, it's still not easy to shrink a screen by half if you still want to retain any semblance of detail. My routine scans the area needed for shrinking, finds out if every other pixel is on or off and then determines whether or not to plot a pixel in the area where the shrunk screen is to be placed. Tricky stuff you might think, but easily taken care of with GET command.

All that's left to be done is to place the display into one of the four corners and then the second program puts them all onto one display to be saved or printed. Easy really, provided of course, that you have a copy of *YS MegaBasic.* If you haven't, isn't it about time you saw a shrink!



Pick up a picture, any picture — this program will take 'em all. Now, load it into the Shrinker program ...



... and just watch that screen$ go for the slimmers' awards. Maybe there's a little lack of quality, but remember you're working in a quarter of the size.



Why not bring three friends to the party. The Mixer program will let you move 'em round, and then save a compiled pic of the lot!

SHRINKING PROCEDURES

For all you *YS MegaBasic* hacks, here's an explanation of the parameters used in the Shrink PROCedure:

SHRINK x,y,u,d,b,c,e,f

x and y are the pixel co-ordinates of the bottom left-hand corner of the area to be shrunk.

u is the number of pixels the area is across.

d is the number of pixels the area is down.

b is the amount to be shrunk in the u direction.

c is the amount to be shrunk in the d direction.

e and f are the pixel co-ordinates of where the shrunk area will be placed.

SHRUNKEN EDITOR

Load your copy of *YS MegaBasic* and then enter the program before saving it to tape. If you're not using microdrives, then change the following lines to:

```
20 LOAD AS SCREEN$
170 SAVE AS SCREEN$
```

Now run the program and it'll ask you for the name of the screen display you want to shrink. Start the tape and the program will load the piccy. You'll have to be patient now while you wait for the display to be shrunk in the wash!

You'll then be offered a choice of where you want to place your shrunken screen. 1=top left, 2=top right, 3=bottom left, 4=bottom right.

If you're using tape, it's an idea to save your screens in number order for the mixer program. Finally, the program will save the screen display.

```
 10 CLEAR 29999:PCLEAR
 14 SPRINT 6,85,5,1,"SHRINK":SP
RINT 0,95,2,1,"By Keith Symonds"
:SPRINT 60,105,2,1; 5:6:85"
 15 INPUT "Name of screen displ
ay:" A$
 20 LOAD *"m";1;A$SCREEN$
```

Lines 10-20 These lines shift the Ramtop and load in the screen$ you want to shrink.

```
 25 GET 0,30000,11,15,13,17
 26 WINDOW 11,32,12,32:CLW 0
```

Lines 25-26 These lines capture the bottom right of the screen...

```
 30 SHRINK 0,88,255,87,2,2,128,
4
```

Line 30 ... and this line calls the Shrink PROCedure, which squashes the top half into the bottom right.

```
 35 GET 0,32000,16,16,6,16
 40 PUT 0,30000,11,15,13,17
```

Lines 35-40 This puts the squashed top half into memory and then replaces the bottom half.

```
 50 WINDOW 0,0,11,32:CLW 0
 60 SHRINK 0,0,255,87,2,2,0,88
```

Lines 50-60 These lines shrink the bottom half into the top left.

```
 70 GET 0,34000,5,0,6,16
 80 CLS
 90 PUT 0,32000,0,0,6,16:PUT 1,
34000,5,0,6,16
 100 PAPER 7: INK 0:WINDOW 0,0,2
3,64:CLW 3:GET 0,30000,0,0,11,16
```

Lines 70-100 These lines put the whole shrunk picture back onto the screen, and then copies the picture into memory.

```
 110 INPUT "PLACE:";A
 120 LET X=(0 AND (A=1 OR A=3))+
(16 AND (A=2 OR A=4))
 130 LET Y=(0 AND (A=1 OR A=2))+
(11 AND (A=3 OR A=4))
 140 INPUT "NAME:";A$
 150 CLS
 160 PUT 0,30000,Y,X,11,16
```

Lines 110-160 These lines position your miniaturised screen where you want it.

```
 170 SAVE *"M";1;A$SCREEN$
 180 PAUSE 0
 190 STOP
9000 @SHRINK KX,KY,KW,KD,KB,KC,K
E,KF
```

Lines 170-190 This section saves the screen and then stops.

```
 9001 BRDFF
 9009 LET KKK=0
 9010 FOR Q=1 TO KW STEP KB
 9019 LET KKB=0
 9020 FOR R=1 TO KD STEP KC
 9030 IF POINT (KX+Q-1,KY+R-1)=1
 THEN  PLOT KE+KKK,KF+KKB
 9035 LET KKB=KKB+1
 9040 NEXT R
 9045 LET KKK=KKK+1
 9050 NEXT Q
 9051 BRON
 9060 ENDPROC SHRINK
```

Lines 9000-9060 This is the Shrink routine.

MINI MIXER

This program asks for the names of the screen displays in the correct numerical order and then loads them in. You'll then be asked what you want to call the final screen and then it saves it. You're now free to load up the miniature display and copy it onto your printer.

```
 10 REM Mixer v.1 1985
        By Keith Symonds
 20 :
 25 CLEAR 29999
 30 CLS
 35 SPRINT 10,80,6,1,"MIXER":SP
RINT 0,90,2,1,"By Keith Symonds"
:SPRINT 60,100,2,1, 5:6:85"
 40 INPUT "1st position:";A$
 50 INPUT "2nd position:";B$
 60 INPUT "3rd position:";C$
 70 INPUT "4th position:";D$
 80 CLS
 90 INPUT "Input cartridge and
press RETURN";E$
```

Lines 10-90 This clears the picture area in memory and then asks the names of the four screen$.

```
 100 LOAD *"m";1;A$SCREEN$
 110 GET 0,30000,0,0,11,16
 120 LOAD *"m";1;B$SCREEN$
 130 GET 0,31585,0,16,11,16
 140 LOAD *"m";1;C$SCREEN$
 150 GET 0,33170,11,0,11,16
 160 LOAD *"m";1;D$SCREEN$
 170 GET 0,34755,11,16,11,16
 180 CLS
```

Lines 100-180 This loads in your pictures from microdrive — take out the *"m"; 1; if you're using tape.

```
 190 INPUT "Name:";A$
 200 PUT 0,30000,0,0,11,16
 210 PUT 0,31585,0,16,11,16
 220 PUT 0,33170,11,0,11,16
 230 PUT 0,34755,11,16,11,16
 240 SAVE *"m";1;A$SCREEN$
 250 PAUSE 0
 260 STOP
```

Lines 190-260 This block simply positions the four shrunk screens on the display and then saves the picture as a separate file.

BUZZWORDS

Brring-brring... Click.... Phweeeeee... Welcome to our whistlestop tour of a Bulletin Board with guide, Iolo Davidson. *If you're after info, looking for a chat or you just want a nose around, remember it's only a phone call away.*

Aha! I'm through. Now I've just got to put the modem on line and replace the phone...

The bulletin board can tell what your Baud rate is by sensing your modem's carrier tone — this question is just to tell it whether you want the output scrolled line by line or paged like Prestel.

CBBS is the name of the software that runs the BB on a CP/M disk computer. This is an amateur service run by an enthusiast. It's not only free but more fun than the ones you have to pay for. So be nice!

Meet your host. And before you ask, Sysop stands for System Operator. Obvious, now you know!

These bulletin boards are real and similar to the one we're on now — why don't you give 'em a try? Maybe one of them's near enough for local phone call rates.

The board echoes the password as 'x's just in case someone's looking over your shoulder. Course, you don't have to protect your identity with a password if you don't mind other people masquerading as you!

'?' lets us see the full menu.

```
BRRING-BRRING...Click...PHWEEEEEE...

Are you using a PRESTEL Terminal (Y/N)
? n

   **********************
   *                    *
   *  CBBS Bull Board   *
   *                    *
   *      Member        *
   *        of          *
   *    A.F.P.A.S.      *
   *                    *
   **********************

Sysop Edward Fuller-Bull

1200/75 BAUD V.23 or 300/300 BAUD V.21
Auto-Select.....

Other CBBS's.....
-------------------------------
CBBS South West     0392 53116
Boyd Hitchcock      24hrs.
-------------------------------
CBBS Surrey         04862 25174
Mike Parker         24hrs.
-------------------------------
CBBS London West    0895 420164
John Bolton         24hrs.
-------------------------------

What is your FIRST name? iolo
What is your LAST name? davidson

Logging name to disk..

Password: your 1-5 char password?
? xxxx
You are caller 19313; next Msg =09448
693 active msgs.

Prev. call 21/09/85 @ 21:13,
next Msg was 09425

Function: (? IF NOT KNOWN)?
? ?

Main Commands....

<A)mend Password     <B)ulletins
<C)ase upper/Lower   <D)uplex full/half
```

Most bulletin boards need a posh computer with an eighty column screen and a 300 Baud modem but this one'll let you use a Prestel modem much as a Speccy with a VTX 5000. I'm not using my Speccy though, but a big computer with a 1200 Baud modem so I answer...

This is the association of system operators — just in case you were wondering. And no, I'm not sure what the letters stand for exactly!

I could've skipped all this stuff by pressing 'k', but it does no harm to take a look. 300 Baud both ways is still the standard in the world of the big boy computers but the Prestel speeds of 1200 receive and 75 transmit are starting to make an impact. V.23 and V.21 are the designations for a set of transmission standards that everyone else calls Prestel and 300 Baud.

Now to log on — I think I'll use my real name for once. That way the bulletin board can find any messages sent to me.

Lots of the older messages have been deleted but this tells you that there are still 693 on the system — all just waiting for you to nose around and read them.

```
Anyone with a PET who wants to swap software?

Msg 09434 on 23/09/85 from EDDY HOPEFUL
to GIRLS  re: HELLO

ANY GIRLS ON THIS BOARD WANT TO SAY HELLO TO
A GUY WHO HAS FAILED HIS A LEVELS TO CHEER
HIM UP?  I'M WRITING THIS FOR MY BROTHER.

No Msg 09435

Msg 09436 on 23/09/85 from KEVIN KEY
to ALL  re: DWARF SAGA

Have stolen the key from the sleeping guard
but can't find any keyholes. Also can't get
past dragon in Holborn Viaduct. Clues please?

Msg 09437 on 23/09/85 from LESLEY GAMMON
to BRUCE KING  re: I'LL TALK TO YOU!

OK, SO WHAT DO YOU THINK OF ASTON VILLA'S
CHANCES THIS YEAR?

Msg 09438 on 23/09/85 from SYSOP
to FRED NEWCHUM  re: HELP

Try the <H>elp function to learn about CBBS.

Msg 09439 on 23/09/85 from SYSOP
to BEA HOLDEN  re: LOST CHARACTERS

Try doing without the Specnet
software and answer yes to the
Prestel question at Logon.
The text will then page instead
of scrolling.  It's a bit untidy
but you don't lose characters.

Msg 09440 on 23/09/85 from HORST BORG
to ALL  re: GREETINGS

Hello from Sweden to all British BB users.
I am Spectrum owner in Goteborg using
VTX5000.  Yes, we have them too!

Msg 09441 on 24/09/85 from WAYNE SCOTT
to KEVIN KEY  re: HOLBORN VIADUCT

To get past the dragon, just park and hide in
the boot.  When you open the boot you will
have been towed away by the Black Watch. You
must have some gold with you or you'll
forfeit the horseless carriage.

Msg #: to retrieve (C/R when done)?
? +

Msg 09442 on 24/09/85 from WEBB OFFSET
to ALL  re: SCREEN DUMP

Anyone have the Spectrum screen dump software
for Epson printer?  It was in "Your Spectrum"
number 4, but I don't want to type it all in
myself if someone already has it on tape.
```

If you're wondering why some messages are all in capitals, remember that some computers don't have lower case letters.

There used to be a message here but it was erased with the <K>ill option. And that can only be done by the person the message was addressed to or the person who wrote it.

So, Bea's got her answer. And the clever ol' Sysop writes his reply in 32 columns so readers with narrow screens can read it. A nice touch.

If you didn't manage to get abroad on your hols, how about calling up a foreign BB? That's if you can stand the phone bills, of course!

The bulletin board finally pauses for more instructions from you. Put the plus in for more messages. The "+" makes the bulletin board keep printing following messages without having to wait for further instructions.

```
<A>mend Password      <B>ulletins
<C>ase upper/Lower    <D>uplex full/half
```

Use the <A>mend function to give yourself a password for next time — that way you'll stop the sneaks from reading your private messages or leaving moronic messages with your name as sender.

```
<E>nter message       <G>OODBYE
<H>elp                <K>ill message
<M>odem UP/Download   <N>ulls How many?
<O>ne line summary    <P>rompt bell
<Q>uick summary       <R>etrieve message
<S>ummaries msgs      <T>ime on system
<U>sers flags         <V>ideo Backspace
<W>elcome             <X>pert mode on/off

Function: (? IF NOT KNOWN)
? r;*;+
```

The <H>elp file is a good place to get lost! Still, there's a lot of info available though. Just enter <H> at the Function:? prompt and you can then get help with any problem by just typing the name of the subject. For instance, enter "find" and you'll get help with finding messages.

```
Msg 09425 on 21/09/85 from TONY BACKUP
to ALL  re: HIGH SPEED BB'S

I have an Osborne computer and a WS2000
modem, but can only get them to work at 300
BAUD.  What do I have to do to use the 1200
BAUD option on fast bulletin boards like
this one?  Can anyone help?

Msg 09426 on 21/09/85 from LESLEY GAMMON
to ALL  re: ASTON VILLA

ANY ASTON VILLA SUPPORTERS ON THIS BOARD?
PLEASE LEAVE A MESSAGE.

Msg 09427 is PRIVATE.

Msg 09428 on 21/09/85 from MAD GEORGE
to MAD GEORGE  re: HELLO

Hello old buddy- Give us a ring when the
let you out.

Msg 09429 on 21/09/85 from FRED NEWCHUM
to ALL  re: HELP

HELP-1ST TIME USER-HAVEN'T A CLUE-

Msg 09430 on 22/09/85 from BEA HOLDEN
to ALL  re: LOST CHARACTERS

Keep losing characters from
messages.  What is going
wrong?  Have Spectrum, VTX5000,
and Specnet software.

Msg 09431 on 22/09/85 from ED HACKFORTH
to TONY BACKUP  re: REPLY TO Msg 09425

I am afraid that your Osborne won't handle
both the BAUD rates that you need (1200
receive and 75 send) from its single RS232
port.  The WS2000 modem only supplies the
proper tones, not the actual BAUD rates.
Sorry, looks like you're stuck with 300.

Msg 09432 on 22/09/85 from BRUCE KING
to ALL  re: WHY HAS NO ONE TALKED TO ME?

This is my fourth message on this board and
no one has replied to any of them.  I thought
computer freaks were supposed to be friendly!

Msg 09433 on 22/09/85 from EDWIN OLDACRES
to ALL  re: PET
```

You'll soon get over the shock that not everyone out there's got a Speccy — and a lot of the time you won't have a clue what they're going on about.

Hi, George. Long time no see. Both of you!

Poor Bea — the 32 column screen forces scrolling in the middle of the longer lines so characters are missed during the scroll. The Sysop may help.

Cor, this is the kind of thing so-called 'real' computer users think BBs are all about. Fear not, Speccy pilots are flooding in all the time!

Some of these functions set up the bulletin board to suit your terminal and some have their own menus. We'll just use <R>etrieve to have a butchers at the message section.

This lets me read everything since my last visit. "r" is Retrieve, "*" for the last message number and "+" to keep reading. Use semi-colons to separate commands. Terse, ain't it?

Here's the first message that's been put up since my last time on. It's not for me but then again it's not marked private either.

Huh, the spoilsport has marked this message private so only the person named can read it. Shame.

Well, he's not doing too badly. At least he's managed to <E>nter a message. If you want to have a go, just enter 'e' at the Function:? prompt then follow the instructions.

Specnet software is the utility that Steve Adams wrote for using the VTX5000 modem on suitable BBs.

But before we go, we're given the option of leaving a message for the Sysop or changing our minds about logging off. Press N for no — logical really.

That's nice. Our Sysop says goodbye.

```
myself if someone already has it on tape.

Msg 09443 on 24/09/85 from BUSTER BOARDS
to ALL  re: 300 BAUD ON VTX5000

Someone told me you can get a VTX5000 to work
at 300 BAUD.  Does anybody know the details?
There is supposed to be information about
this on the North Birmingham BB, but I can't
get on that one as it is 300 BAUD only and I
have only got a VTX5000.

Msg 09444 on 24/09/85 from BRIAN FERGUS
to LESLEY GAMMON  re: REPLY TO ASTON VILLA

Afraid not.  Try the ACORN USER DATABASE.
They have a counselling service for people
with football problems.

Msg 09445 on 24/09/85 from ZIGGY STARDUST
to ALL  re: ANY PSS NUMBERS PLEASE.

Anyone got any numbers/passwords/etc that
they are prepared to share?  Will trade info
on getting into MUD.

Msg 09446 on 24/09/85 from NAN TUCKETT
to EDWIN OLDACRES  re: PET (REPLY TO 9433)

Well I asked my pet canary if he has any
software to swap, but he thinks you're just
being cheep.

Msg 09447 on 24/09/85 from RON MELDRUM
to ALL  re: SPECTRUM BB

Spectrum Bulletin Board
NAME....KEY-BOARD
TEL.....0908-668398
SYSOP...Ron M
BAUD....1200 HALF DUPLEX
TIMES...Mon,Wed,Fri,Sat &Sun
..........8pm till 11.30pm
Saturdays also 2pm till 4pm
This board is one of a number of boards being
run on a Spectrum/Microdrive set-up so don't
expect the rapid response like you get on
Disk based boards. At the moment the board
is Spectrum only requiring SPECIAL software
written by Diamond Design and available from
Micronet page 800112191.

Past hi Msg #
Msg #: to retrieve (C/R when done)?
?

Function: (? IF NOT KNOWN)?
? g

Comments Y/N: Want to leave any comments or
suggestions?    To get back to CBBS
? n

From ED, Thanks for calling, IOLO

++End of connection++
++Please HANG-UP!!!++
```

This may be a myth, of course. I've never heard anyone actually claim to have done it, only that they heard someone else has done it.

Hmmm, this is either a naughty hacker or a fraud squad cop looking for promotion. I'd steer well clear if I were you.

And now, finally, for a real message — the only one in the article. If you fancy having a go at this board, do remember to keep within the allotted times.

It's not that long ago that this would have been considered totally impossible. Even now I reckon it's pretty heroic to attempt such a thing — but then we Speccy owners are notorious adventurers!

Right, there are no more new messages. Just press ENTER or RETURN to leave the <R>etrieve function.

And now, we face the final curtain — press G for <G>oodbye and say your farewells.

And that's it. But if you've got a VTX5000 then you can ring up a bulletin board right now — try CBBS South West on (0392) 53116.

SPECTRUM

THE MACHINE CODE SYSTEM



£8.50 INC VAT. P&P

* *"... one of the all too few jewels of Spectrum programming ... deserves a place in every serious programmer's library"* (Simon Springett—Popular Computing Weekly—June 1984)
* *"... the whole package is very friendly and easy to use ... can be highly recommended for those who are just about to start programming in Machine Code."* (Phil Holliday—Your Computer —May 1983)
* Fully compatible with MICRODRIVES/NETWORK/RS232 (with Interface 1) and most popular Centronics interfaces for 80 col. printout.



£7.50 INC VAT. P&P

AMSTRAD

THE CODE MACHINE

* Both programs in one package
* Many NEW FEATURES
* Compatible with CASSETTE and DISC

AVAILABLE NOW £19.95

* Send S.A.E. for fully detailed leaflet
* Available from many computer shops, or by FAST mail order by sending a cheque/PO. to:—

PICTURESQUE

Dept YS, Picturesque, 6 Corkscrew Hill, West Wickham, Kent BR4 9BB

NEW TAPE COPIER 7

on m/drive

Yes, it can be done! Make security BACK-UP copies of the MAJORITY of your SPECTRUM programs including HIGH SPEED loaders, and JERKY leaders with TC7. Other methods and programs hve proved limited — NO RISK with OUR money back guarantee.

★Manages short/wide tone leaders. Long headerless, etc.
★Includes BAUD RATE (speed) measurer.
★Can save high speed/jerky parts in "normal" form for DRIVE transfer.
★So many extra features we can't possibly list them here. Just try it and see. As the market leader we can't afford to let you down.
★MT6 an extra program for m/drive owners to transfer basic/code to their drives. Stops basic, etc.

COST ON TAPE ONLY £6.50 (or £7.50 inc MT6)
ON M/DRIVE CARTRIDGE £9.99 inc MT6

NEW TAPE TO DRIVE TRANSFER OF RECENT PROGRAMS

Yes, SPECTRUM owners now have a **LOW COST** way of transferring many of even the **LATEST** high-speed/jerky programs to their drives. You will be amazed! Other methods are expensive or very limited.

Firstly you need our MD1b (for m-drive) or WD1b (for Wafa/or Disc drive). They give you the tools to convert programs so that they will run on your drive. Includes ability to cope with very long programs, can split/chop bytes in one go. "VAL" creator, REMkill, make Visible, etc., etc. **FULL** manual (highly rated by CRASH) with example transfers. **MD1b or WD1b on tape cost £6.99.** "Manages more programs" — Your Spectrum.

NEW LERM INFORMATION SHEETS

Each sheet gives you the DETAILED instructions required to transfer eight of the more POPULAR programs. They cost *£2 each plus SAE.* Up to sheet 5 available.

TRANSFER PACK: Buy TC7+MD1b on M/drive cartridge + INFORMATION SHEETS 1-3 for £15.50 (other drive owners get TC7 + WD1b on tape + sheets at same price).

UPDATE SERVICE: Send old tape + large SAE to get a £2 REDUCTION. *OVERSEAS:* Add £1 Europe; £2 others for each product. *SAE for enquiries.*

ALL PROGRAMS CARRY OUR MONEY BACK GUARANTEE (not updates).

LERM, DEPT YS, 10 BRUNSWICK GARDENS, CORBY, NORTHANTS NN18 9ER

ROMANTIC ROBOT *present*

multiface one™

No1 Spectrum multipurpose interface with

1) **Fully automatic and universal 100% push-button back-up of any program to cartridge, disks, wafer, tape**
2) **Joystick interface** 3) **Composite video interface**

All three in one compact box at an amazing price of £39.95!

* Menu-driven with prompts & one-touch commands turning a complex task into a trivial procedure: 1) Push button 2) Select function - exit/return/save/change syntax 3) Input name 4) Select destination - tape/cartridge/wafer/disk
* Automatic, intelligent "compressed" saving for fast re-loading & ecomizing on space on cartridges, disks etc. MULTIFACE saves only the relevant parts of RAM and leaves out the rest.
* SAVE to any type of peripheral - default syntax for MICRODRIVE, WAFADRIVE & TAPE can be changed for disk systems etc. Transfer from one peripheral to another if both attached at the same time, or save from one to tape, swap, reload & save to the other one
* Can be used not only for pure back-ups: you can, eg.- ✱ stop any program and restart anytime later or also ✱ study/alter/customize and then save, continue, etc. This way you can load and continue a game from where you got last, poke infinite lives, customize programs
* "warm reset" - recover from a "crashed" computer (escape from infinite loops when the keyboard is inoperative, etc.)
* save just a screen or leave out screen when saving a program
* Designed to remain attached to RUN programs it saved as it is meant only for personal use in accordance with copyright laws
* No extra software - has internal 8K EPROM & 2K RAM
* Through extension bus for connecting other peripherals

Unbeatable value & specifications

TRANS-EXPRESS

The software way of transferring Spectrum software.
4 utilities for m/drive, 2 for wafadrive, 2 for Opus Discovery.
Invaluable for cartridge/disk maintenance & automatic transfers.
Highly professional, user-friendly, versatile and comprehensive.
An ingenious piece of software:
★★★★★ Features ★★★★★ Performance PCN

TOP SOFTWARE AT BOTTOM PRICE

Wriggler

One of the best games for any machine I've seen for very long time.
'Wriggler is a totally original game.' CRASH SMASH — STAR GAME PCN
'Great game, good music, well recommended.' — What Micro
'The grahics and sound are excellent and the game is totally addictive. 10/10 value & playability. 9/10 graphics & sound.' — C&V Games
'This is a great game.' CAS — 'Well worth buying.' ZX C & Crash
'If you've any sense you'll order your copy now.' PCN — 'A WINNER' PCW

!NOW FOR AMSTRAD!! SPECTRUM version at Xmas PRICE!

MUSIC TYPEWRITER

Complete Spectrum music system for writing, editing, playing, printing & storing music. Its real notation graphics and ease of use make it an ideal educational tool. Great fun to play with & a lot to offer in serious use (transposing, dot matrix printout etc).
'A very professional piece of programming, easy to use, excellent screen presentation, error trapping & helpful prompts. If you're interested in music and own a computer then get it.' ZX Computing

MIDI compatible with MIDI MUSICIAN package
New overlay for Spectrum - Now at Xmas price!

multiface one ESSENTIAL SPECTRUM COMPANION

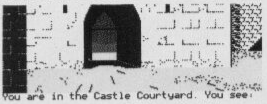
I enclose a cheque/PO for £..... (European orders please add £1 overseas £2)
or debit my [Access] [Visa] No [| | | | | | | | | | | | | | | |]
Name ..... Card expiry.....
Address.....

Please send me (tick as applicable):			
TRANS-EXPRESS cartridge	£9.95 ☐	MULTIFACE	£39.95 ☐
disk (Opus Discovery)	£9.95 ☐	tape (for m'drive)	£ 7.95 ☐
MUSIC TYPEWRITER	£7.95 ☐	wafer (Rotronics)	£ 9.95 ☐
WRIGGLER Spectrum tape	£4.95 ☐	with supplement	£ 9.95 ☐
WRIGGLER Amstrad tape	£7.95 ☐	or cartridge	£ 6.95 ☐
		or disk version	£ 11.95 ☐

ROMANTIC ROBOT 77 Dyne Road London NW6 7DR 24 hrs [Access] [Visa] orders 0892 834783 YS

It's time for an adventure or two! Let's see what Steve Cooke *has found for you to explore...*

ROBIN OF SHERWOOD
Adventure International £9.95

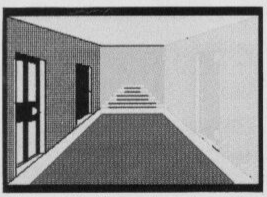


Adventure International certainly rake in those big titles to turn into Spectrum adventure hits! Following in the footsteps of *Gremlins* is *Robin of Sherwood.* You could say it was like robbing the big screen to give to the small!

Anyway, how do the adventures of Robin the wonderboy live up to our expectations? You'll find great graphics, with a different one for every location. You won't be at all disappointed by the program either, though I reckon the game could be just a *teeny* bit friendlier. It kept ignoring my commands and getting the program to accept my phrasing was harder than solving the puzzles.

This game is a winner despite the niggly bits. Be careful when leaving the castle near the start. If you manage to make your escape from the Goblin's Dungeon, then you should make it out of the castle...

THE SECRETS OF ST. BRIDES
St Brides School £6.95



Oh, I say girls, this is a wizard wheeze! Even the boys might fancy a bash at this one.

If the thought of Quilled games sends your knees a quiver, and I admit there've been some shockers, then think again. *St. Brides* has quite a whacky atmosphere to it, and if you can forgive the occasional *Quill*-like quirk — like waiting an age before replying to your commands, you should find these antics give you quite a kick.

As Trixie Trinian you'll find yourself in the heart of *St. Brides* School where all the young school girls seem to have the idea that it's not 1985 but about fifty years back in time! Even worse, those mysterious mistresses seem to be dab hands at hypnosis and ... (like a good school goer I mustn't give the secrets of St. Brides away, must I?) Pssst! I mustn't say a whisper about that amulet either or I'll get a jolly good ticking off... it's all jolly hockeysticks what!

GIVE US A CLUE...

Just when we were thinking that solving *Sherlock* was sheer luck, you've flooded us with hints and tips on the game! **Paul Ridley** and husband-and-wife team **John** and **Patricia Black** sent in *far* too many clues to print, but here's a few for those of you still trying to work out who this Watson fella is. To get people to follow you, you'll need to ask them *three* times per move. A bit long winded, but it works! Paul suggests trying it out on the cabbie — don't pay him. (*Now that's a wise investment. Ed*) Why not ask Daphne about Tricia Fender, you'll get another address for your collection. Finally, Paul recommends that you should *always* take the lamp.

A fair number of you are still having problems killing off Smaug (the dragon) in *The Hobbit.* Well, **Helgi Hafthorsson** from Iceland (how did you guess?) has settled this problem once and for all with his tip. Go to the village of Lake Town and tell the Bard to go North. From here you must follow him up to the mountain until you see the dragon. You're far too weak to kill the dragon yourself, so you must ask the Bard to shoot it for you. Now that solution should keep **Richard Webber** from Chadwell-St.-Mary happy. It's exactly what he was asking for!

Peter Bates, who calls himself 'the wally from Leeds,' and **Freddie Still** from London both sent in some useful tips for *Valkyrie 17* freaks. Behind the dustbins in the Schloss, apparently, you'll find an aqua-lung which you'd be well advised to take. Also, give the butcher the lead-box and hide Reichmuller's body in the shower. (Stranger things have been known to happen in *Valkyrie,* so don't be surprised by those clues!)

Here's *another* first for *YS* — the first person to complete Level 9's *Red Moon.* **Graeme Smith** finished the epic only one week after its release! Now that *must* be a record for one of Level 9's adventures! Graeme also kindly sent in some tips for those of you who aren't quite as speedy with the puzzles. To get the brooch you'll need to read the book and find the aviator's sarcophagus. (*Pardon? Ed*) When you want to enter the metal room, Graeme suggests using a little rubber insulation. When you've killed the cloaked statue in the dark junction, you'll find that his ghost will be wandering around! To avoid being killed by this, type *Kill Statue* and then go back the way you came. When you return to where the ghost was, it should have vanished! (*It's magic! Ed*) Finally, Graeme says that the purple potion restores your hit points to 50, the shirt makes your armour less painful and the tracers allow you to carry more, so what more do you want?

Right, that's your lot for this month — but if you're stuck in an adventure, look to the masters below. If there ain't one there that can help you, then write in and we'll publish your problem. If you're a *brilliant* adventurer, on the other hand, write in anyway and tell us all about how to do it. Just stick your stuff down on a piece of paper and send it in to Give Us A Clue, *Your Spectrum,* 14 Rathbone Place, London W1P 1DE. Just think of all that talent out there waiting to be tapped!

KINGS OF THE CASTLE

Red Moon
Graeme Smith, 22 Woodvale Avenue, Giffock, Glasgow.

The Hobbit
Helgi Hafthorsson, Blondvbakki 11, Reikjavik, Iceland 109.

Valkyrie 17, Planet Of Death
Peter Bates, 21 Bedford Gardens, Tinshill, Leeds 16.

Valkyrie 17
Freddie Still, 2 School House, Wellclose Square, London E1 8HY

Eureka, The Hobbit, The Hulk, Spiderman, Inca's Curse, Ship Of Doom, Mountains Of Ket, Temple Of Vran, Final Mission, Light Globe, The Templars' Secret, Safari. Vasco Novais de Oliveira, Rua João Luis de Moura No 52, 2750-Cascais, Portugal.

Valhalla, Black Crystal, LOM, Doomdark's Revenge, Hobbit, Sherlock Iain Gibson, 27 Cruftparks Road, Hardgate, Clydebank G81 6NN.

The Hobbit
Toby Blake, 25 Holm Park, Inverness, Scotland IV2 4XT.

Sherlock
Paul Ridley, 34 London Road, Daventry, Northants NN11 4BZ.

The Hobbit, Urban Upstart, Quest For The Holy Grail
Philip Kevin Bugler, 209 Trealaw Rd, Trealaw, Rhonda, Mid Glamorgan, S. Wales CF40 2NT.

DOWN IN THE DUNGEON

Erik The Viking — 'How do I save a game in progress?' Tom Clark, 75 Brailsford Road, Fallowfield, Manchester M14 6PX.

Dungeon Adventure — 'How do I escape the central dungeon exit chamber without being killed by weights, and what's the significance of the pedestals and collars?' M.C. Lumley-Holmes, 21 Wheatley Drive, Haxby, York YO3 8WA.

Sherlock — 'How do you break the codes on the letters found in Basil's house in the fire and rubbish bin?' Michael Meechan, 7 Perniside Ads, Edinburgh EH17 7HN.

Kentilla — 'When I get the castle and Zelda has taken me across, I get stuck. Please help!' Lynsey Strachan, 17 Bishop Foraes Crescent, Blackburn, Kinellar, Scotland AB5 0S.

Sherlock — 'How do I stop Lestrade arresting Major Ffoulkes?' David Vivian Jnr., 4 Parc-an-Challow, Penryn, Cornwall TR10 8QS.

Ship Of Doom — 'I've got the Micro Battery and the Sonic Screwdriver, but now I'm stuck. Please help!' Alan Figgins, 27 Menzies Close, Lordshill, Southampton SO18FX.

DOOMTOWN RATS

They v
And th
of ther
over 4
Spectr
releas
YS Pi
have j

Once again, London is at war. But this time the enemy is already within its walls... waiting, waiting, for just the right moment. And then the black army emerged from the dark recesses of the sewers to do battle. First, they were like shadows unsettling a sunny day — black and swift but seldom seen. Soon though, they were everywhere — rats, giant rats driven on in a frenzy by an obscene craving for human flesh...

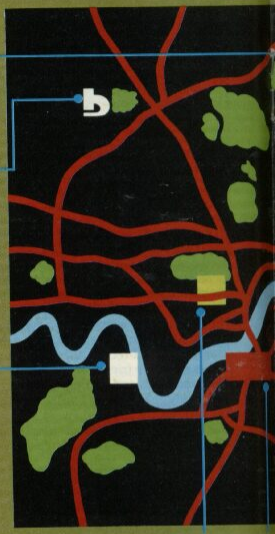
It's your task to staunch their crazed bloodlust — to stop the horrific slaughter and mindless massacres. The gravity of the situation calls for a three pronged attack. Howard is in charge of Research and Development working round the clock in a bid to create a weapon that'll get the rats on the run. To Foskins falls the unenviable task of deciding where the meagre resources he's been allocated should be deployed.

Both of them are generals in the war, initially isolated in offices and distanced from the battlefields. Harris, however, is in the thick of it — he has come face to face with the monsters, seen how swiftly they can devour a human body leaving only bloodstains and polished bones. Above all, he knows what it is to face death and feel fear...



Protect Harris's flat at all costs — the rats seem to home in on it sensing a deadly enemy within. If you let them overrun the place, it's curtains for you!

Here at the Research and Development Centre, the vital work to find a weapon that'll eradicate the rats is going on. You can do your bit to help the boffins by protecting the establishment from the rodents.



The rats are on the rampage all over the city. Keep track of them by constantly calling up the white squares for reports on sightings — and take note of what you're told so you can assess how dangerous the situation is on each square.

The yellow squares show you where you've deployed your troops. Move the cursor over them when you want to inspect their strengths.

The ra
claw w
square
colour

Day and night, Howard and his team toiled in their bid to develop an antidote to the rats. But the poison was spreading — and time was running out . . .

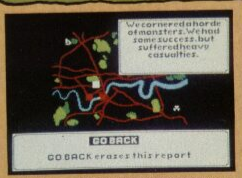
• Although you have weapons from the beginning of your struggle, you'll need specially designed equipment if you're to stand a chance. First, the boffins will come up with sonic scramblers followed by ultrasonic rat detectors, stun prods and anti-rattus gas.



• As the battle develops, the backrooms boys at the R&D centre will send you newsflashes at the top of the screen. Read them to keep abreast of all the latest research.

• Your research and development resources are limited. The temptation, of course, is to slap the whole shebang onto research into defence and offence. *Don't!* Without background knowledge on where the rats are coming from, you'll never be able to develop the weapons to wipe them out.

• Try out all the different combinations of deploying your scientific resources until you come up with the one that yields the best results. For us, one man an' his microscope digging away at the origin of the species, another researching their nature and the rest employed on weapons development has proved successful in the field.



• You'll also receive reports from the areas where your troops are under attack. If you're told that casualties are light, take it that you're doing OK, and press on elsewhere. As soon as you're told of a massacre, move in the big boys to that area. Like now!



Foskins and the other bureaucrats weren't too worried at first. After all, ho idea was laughable. People do panic so! The pest control would come in a would have found something else to sensationalise. It just goes

As the true scale of the threat comes home to the politicians, you'll be given reinforcements — in the main, police and firemen. Now it may sound callous, but use the firemen at this stage as they're expendable.



• Don't spread your men too thinly. Far better to concentrate on key areas and clobber the critters as they come out.

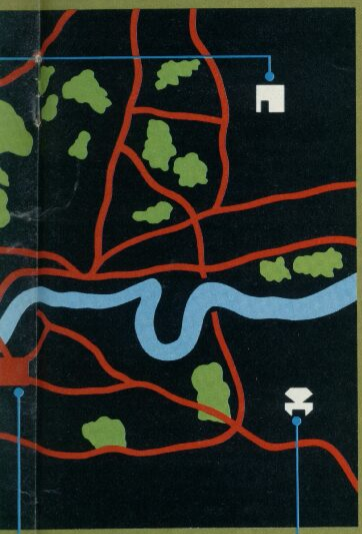
• Here's your standard issue rat-killing equipment. It's not amazingly effective but you've got to make do until the R&D boys come up with the goods.

• Just like the movies, the cavalry arrives at the last minute — or in this case the army though they haven't turned up yet. Not that they're any guarantee of victory — these rats are more deadly than any Apache — but they'll give you the extra resources to rally against the enemy.

• In the early stages, you'll have very limited numbers of troops. Best to use them in the centre of the city where the rats first crawl out of the sewers, remembering to keep some in reserve so you can stomp on any stray sightings in the outskirts.

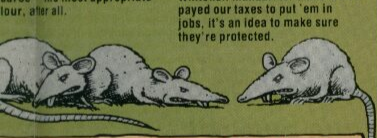
At the start, you'll h
of police, firemen a
police should form
force — send them
The professional ra
hand, are more use
situations and for d
targets like Harris's

hey were big (well, ish!). They were black. nd they were ugly. Soon there were swarms f them. They teemed into the shops and took ver people's homes. They were The pectrums. Now Hodder and Stoughton has leased a new game designed to tame them. S Pied Pipers, Peter Shaw and Penny Page, ave joined The Rats race...



e rats are fighting tooth and aw with your troops on the red uares – the most appropriate lour, after all.

This is General Head Quarters manned by Foskins and the other Whitehall mandarins. Since we've payed our taxes to put 'em in jobs, it's an idea to make sure they're protected.



how could a few rats take over London — the in and it'd be all over in a week. The papers es to show how wrong you can be!



This sonic scrambler is the first of the specially designed weapons to leave the labs but only the Rat-Kill exterminators are allowed to operate them. Get them to the battlegrounds as soon as possible — they're doing no good tucked away in the armoury.

'll have a team consisting en and rat-killers. The orm your main attacking hem in with guns a blazin'. al ratcatchers, on the other useful in domestic or defending strategic ris's flat.

● Now you might not think it's not that worthwhile saving somewhere like, er, Hounslow but once the rats get a foothold in the outskirts, you're in big trouble. It's only a matter of time before they're out of the metropolis terrorising England's green and peasants! And that means the game's up for you.

All over the city, ordinary men and women were having their lives completely changed by chance encounters with the black menace. And sometimes those lives were brought to a bloody end . . .

At intervals throughout the game, you'll find yourself in the shoes of someone who's about to come face to face with the rats. It's your job to make sure that that someone doesn't become another government statistic with a closed file labelled Deceased.

You are Harris, on a mission to capture a rat.
You are in the Rat-Kill van.
Ferris is with you, carrying a wire cage.
Objects present:
a lit torch
Take torch
Ferris gets out saying, "Come on mate, scared of a load of overgrown mice?"
Leave van
You are on the waste-ground near the van.
Ferris goes into the graveyard whispering, "Wait here".
Go to graveyard
You are in the graveyard.
One of the tombs has cracked open.
Ferris walks towards the tomb and bends to look inside.
A huge rat springs at him. Ferris screams and falls back.
Dropping the cage he claws at the wriggling creature.
Horrified, you watch as he is dragged into the tomb.
Take cage.
Enter tomb.
You are in the tomb.
A bloody trail leads to the tunnel in the back wall.
Enter tunnel.
You are in the tunnel.
Objects present:
the van keys
a rat gnawing on a piece of Ferris' body
A single monster rat sits gnawing Ferris' body
A single monster rats sits gnawing Ferris' chest.
Small boons crack under your feet.
Take keys
Grab rat
You are holding the feeding monster but it will soon finish the piece of flesh.
Put rat in cage
Go back
You are in the tomb.
Go to graveyard
You are in the graveyard.
Go to van.
You are on the Rat-Kill van.
Close van
Start van
The engines start, you plough through the vermin to safety.

I'm only here for the ride — this one's strictly for the professionals. No sir, Ferris calls the tune — he's being paid to be the Pied Piper!

Eeyah, this graveyard is really spooky. I ain't afraid of no ghost — it's the rats that give me the creeps.

It's a bit of a shame if the various people you're looking after become victims of the rats but it's not the end of the world. If you lose Harris, however, it is — or at least the end of the game!

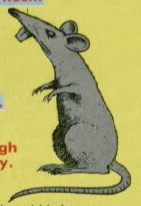
Oh my God... Ferris... no, the horror, the horror... he's dead... mustn't look, mustn't be sick... just take the cage...

Often your first reaction in situations like this is to turn tail and run for it. Better to keep your nerve and press on — remember that there's only one course of action that'll see you safely through and it's not always the most obvious or pleasant one.

If R&D are to come up with the weapons you need, then they're going to need all the information they can lay their hands on — only this time, you've got to lay your hands on a big black rat first. Yeuch!

Aaargh... this monster's so strong... not sure if I can hold it... s'like wrestling the devil... get in there... one last... eergh... got'ya!

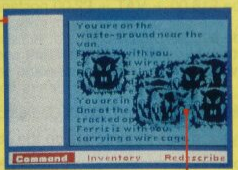
I've got the keys, I've got the cage an' I've got the rat. Looks like there's only one thing left to get — the hell out of here!



THE BLACK DEATH

And then the black, writhing carpet engulfed him, knawing at his bones, ripping mouthfuls of hair from his scalp, gorging themselves on great gobbets of living flesh and gulping down the blood...

The game uses a unique method of instruction entry to save you having to type in your commands. You're given a menu of options at each location and when you choose one it branches out into a sub-menu.



● Unless you're one of the three main characters, you can continue the game despite losing a life. But if you do survive, a message is automatically sent to the R&D Centre containing information that helps in the development of the superweapon.

This is the gruesome scene that faces you if you let the dirty rats get on top of you. Sometimes the rats spring from the screen and there's nothing you can do but thank God that it was all over in an instant. More terrifying are the rats gnawing through doors as you wait in vain for help to arrive. At least it gives you time to appreciate the way the text on screen is corrupted to simulate the scratching of the rats' claws. A nice touch that.

cascade CASSETTE 50

50 COMPUTER GAMES ON ONE CASSETTE

YOURS FOR £9.95

including FREE Watch and Postage

PLUS SPECIAL FREE WATCH OFFER...

CASSETTE 50 IS AVAILABLE ON

BBC A/B ATARI DRAGON ELECTRON VIC 20 ORIC-1 ZX81 Apple Atmos Spectrum commodore 64 AMSTRAD

FREE 20 KEY, MULTIFUNCTION CALCULATOR WATCH with every order for a Cassette 50

- Normal 12 and 24 hour time mode
- Calendar mode
- Alarm mode
- Calculator mode

WORTH OVER £10

Spectrum 16k/48k or +

'Incredibly frustrating!' - that's the verdict on Cassette-50's FROGGER. Satisfied users tell us it's one of the most challenging you'll find - it's almost as good as the arcade version! CARGO has you trying desperately to complete your helicopter mission under attack. Plus 48 other tactical, logical and adventure games featuring multi-coloured and user-defined graphics, scrolling and full use of the Spectrum sound capabilities.

1. Muncher
2. Ski Jump
3. Basketball
4. Frogger
5. Breakout
6. Crusher
7. Startrek
8. Martian Knockout
9. Boggles
10. Alien Attack
11. Lunar Landing
12. Maze Eater
13. Microtrap
14. Motorway
15. Labyrinth
16. Skittles
17. Race Track
18. Ski Run
19. Tanks
20. Solar Ship
21. Ten Pins
22. Cars
23. Stomper
24. Pinball
25. Cavern
26. Laser
27. Alien
28. Cargo
29. The Race
30. The Skull
31. Orbit
32. Munch
33. Bowls
34. Raiders
35. Field
36. Draggold
37. Space Search
38. Inferno
39. Nim
40. Voyager
41. Sketch Pad
42. Blitz
43. Fishing Mission
44. Mystical Diamonds
45. Galaxy Defence
46. Cypher
47. Jetmobile
48. Barrel Jump
49. Attacker
50. Space Mission

Names and games may vary for each type of computer.

FREE calculator watch with every Cassette 50

EXPRESS DELIVERY-ORDER NOW!

ONLY £9.95

Name

Address

Post Code

Country YS 10-85

Postage FREE in U.K. Add £1.00 for overseas orders. Free watch and tape will be despatched within 7 days.

I enclose a cheque/postal order for £ made payable to Cascade Games Ltd.

or through any Post Office by TRANSCASH (Giro No. 655 6655)
For even faster ordering when charging to Access, Barclaycard and Trustcard Visa use our 24 hour service. (0423) 504663.

Access VISA No.

COMMODORE 64 ☐ ATARI ☐ ORIC 1 ☐ BBC A/B ☐
SPECTRUM ☐ VIC 20 ☐ ZX 81 ☐ APPLE ☐
AMSTRAD ☐ ATMOS ☐ DRAGON ☐ ELECTRON ☐

Cascade Games Ltd., 1-3 Haywra Crescent, Harrogate, North Yorkshire, HG1 5BG, England.
Telephone: (0423) 504663. Registered Number 1755554

THETFORD MICROS

SPECIALIST IN SPECTRUM REPAIRS

21 Guildhall Street,
Thetford,
Norfolk,
Tel: (0842) 61645

Service Department
Unit 4, Leyland Close,
Thetford, Norfolk,
Tel: (0842) 65897

Why wait weeks to get your Spectrum repaired

We at Thetford Micros (Service Dept) have just put into operation a new fully equipped workshop to allow us to keep up our 24 Hours "Guaranteed" repair service on your Sinclair Spectrum computers. We have fully trained staff and our workmanship and repair work is fully warranteed to give your the confidence that you micro is in the safest hands. Any first time repairs will be £16.00 + VAT + £2.00 postage and package = total £20.40 for any repair on your computer. We also specialise in the repair of the Spectrum microdrive, Interface I, II and ZX printers at the same standard charge. Payment maybe made by cheque, Barclaycard, Access, American Express, or Postal Order. So all you have to do is post your faulty Spectrum to us along with payment and we will dc the rest, your repaired Spectrum will be back in the post within 24 hours (we never sleep!) and depending on the post office it will be back with you within 5-6 days. We have already undertaken repairs from all over England and the continent.

We also undertake repair work on Acorn, Commodore, Amstrad, Texas, Dragon etc., at the lowest of prices.

Any problems with your micro phone Pete on the above telephone numbers – I'll be only too pleased to assist.

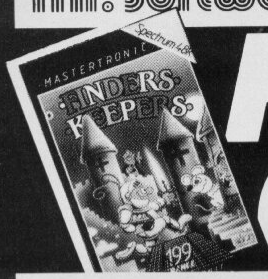
We also produce our own Spectrum "48K Upgrade Kits" complete with fitting instructions. £24.00 (VAT+P&P) inclusive.

QL repairs £35.00 + VAT + P&P £2.00. Microdrive £39.00 + VAT + P&P £2.00

Switchable UHF — composite video can be fitted to your Spectrum for only £14.00+VAT+£2.00 P&P.

Trade enquiries welcome

Mr. Software



FREE GAMES!



YES....place an order for our Spectrum Magazine and we will send you one of the above games absolutely free. We will also enrol you in our Discount Software Club enabling you to purchase software at huge savings over shop prices. We offer all the latest titles at substantial discounts such as, **Frank Bruno's Boxing** at £3.95 (saving £3.00), **Frankie Goes To Hollywood** at £6.95 (saving another £3.00) or **Spy Versus Spy** at £6.95 (saving yet another £3.00). We also have a number of older titles at even bigger discounts, such as, **Alchemist, Zoom** or **Cosmic Cruiser** all at just 95p each. In all we have over 200 titles available for *your* computer.



SIX MAGAZINES A YEAR
A subscription of just £5.00 will bring you six magazines a year through the post. Each magazine is packed with reviews of all the latest software, reader's game playing tips, competitions to enter, our reviewer's personal choices and a summary of how the other magazines rate the new releases.

HARDWARE AND UTILITIES SUPPLEMENT
Every new subscriber to the magazine gets a 24-page review of some of the more popular utilities — such as word processing software — and hardware including joysticks and Spectrum interfaces.

HOTLINE KEEPS YOU UP TO DATE
Subscribers to the magazine can phone our 24 hour Hotline for up to the minute news of the latest releases. A three minute recording, updated weekly, details the new titles and their prices. Club members may order by phone too!

EASY ORDERING
You can order from our substantial range as and when you like. There are no minimum order requirements — you don't *have* to buy anything at all. When you do order we do our best to despatch your goods within a week — often quicker.

DON'T TAKE OUR WORD.....
Here's what some of our subscribers say:-

"I am very pleased at your quick response. I know that the enclosed order will be dealt with quickly and efficiently as always."
J. Mann, Wallsend, Staffs.

"I think your Club is sensational, terrific — who else could offer such bargains."
David Barrows, Northampton.

(Original letters available for inspection.)

Mr. Software
KELVIN HOUSE, TOTTERIDGE AVENUE, HIGH WYCOMBE, HP13 6XG. (0494) 450751

Mr. Software

SUBSCRIPTION FORM YS1185

I wish to become a subscriber to the Mr Software:
☐ Spectrum Magazine
for the next 12 months, for which I enclose £5* (£10 if you want both magazines!. I understand you will send me your most recent Club Magazine by return and that if I'm not completely satisfied within two weeks I can return the game & magazine for a refund. I would like as my FREE game:-
☐ Finders Keepers ☐ Formula One

Name (BLOCK CAPS) .....

Address .....

.....

.....

Postcode..... Cheque/Postal Order No .....

Or charge my Access/Visa account

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

(£5* applies to UK & BFPO only. Other rates are £7 Europe, £9 USA & Middle East, £12 Australia, Far East & S. Africa.)

Gothic horror

Fairlight *is a land of mystery and magic with a castle that holds as many secrets as Castle Rathbone. It's also the new game from The Edge* — Simon Forman *has come under its spell.*

Things haven't been too rosy recently in the Land of Fairlight — war, murder, plague, famine, You know the sort of thing! Well, now you've got the chance to do something about it. Imprisoned in the Castle Avars is the magician whose Book of Light can make the sun shine once more — and guess who the task of freeing him has fallen too? Got it in one, so you can stop sloping off. After all, you might miss out on the best arcade adventure of the year — maybe *the* game of the year!

Fairlight is a true adventure, not just one in name. There are eighty-odd locations, a mystery to solve and hidden objects to uncover and use. But it all takes place in stunning 3D graphics. Here are caves and courtyard, dungeons and drawbridges, towers and secret rooms — all pieces of a jigsaw that'll fit together to form a perfect castle.

You'll soon suss out that the magician you've got to rescue is holed up in one of the towers. It's getting up there that's the problem — your path's blocked by a monk-like ghoul who will not budge. So, it's off round the castle, exploring all the rooms, finding keys to the locked doors, collecting crowns and books and bags of gold. But you're not the only one wandering within the walls — beware the soldiers, trolls, magic bubbles and monks, all of them out to do you a mischief.

The atmosphere of the medieval castle is captured by the programmer, Bo Jangeborg using his Worldmaker Technique. This has added an extra dimension of realism to the game that you won't have come across before. You'll find that objects weigh differently just like in real life. When you move an object, leave and then return to a room, it doesn't reset but stays just where you put it. And best of all you can pick up all the objects you find and use them in any of the other rooms.

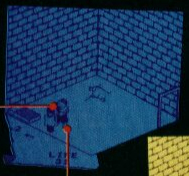
Different from the Ultimate megagames, huh? *Alien 8* and *Knightlore* are more puzzle games — each room poses a problem that you've got to overcome. *Fairlight* is one big problem — but you'll have one helluva time trying to solve it!

CASTLE COMPO



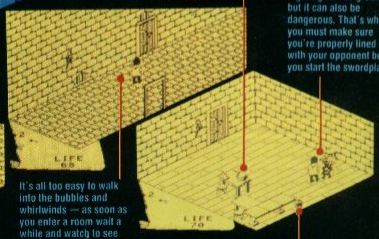
Welcome to the loading screen for *Fairlight*. If you study it very closely it'll help you fill in the gaps in your own map. And have no illusions, you'll have to draw a map if you're to get anywhere in the game. Just to spur you on in those moments after midnight when you know there's only one more room to go, if only you could find the key, The Edge have come up with a wizard idea for a compo. So, here's the scam — the first ten YS readers to send in a complete map of *Fairlight* will receive free membership of the Edge Connection, You'll get a T-shirt, *Fairlight* poster and the offer of discounts off all future Edge games, including *Fairlight II*, the follow-up. And tucked away at the bottom of the jiffy bag will be a free copy of *The Artist*, the graphics package that got such a rave review in YS 15. And if you look at the title screen, you can see why — it was created using *The Artist*. Not surprising really, 'cos both programs were written by the same programmer, Bo Jangeborg!

cryptic clues



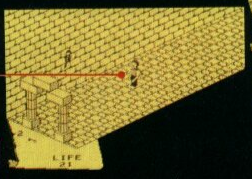
If you thought the soldiers were stoopid, just try the trolls. It's a doddle getting them to bash their heads (and other parts of their anatomy) up against brick walls ... or tables ... or ... Just make sure you put an object between you and the troll and watch him get stuck!

Isn't that? Nah, it can't be. Surely not. Well, it certainly *looks* like our ol' friend Tony 'Slim' Samuels! Rumours that the trolls were based on him must be unfounded. *Mustn't* they?



You start out with your life force at 99 but the land of fairlight is a dangerous place to expect it to drop fast. Eating the bread and chicken you find, or drinking from the jugs is one way of getting your strength back — but they're only worth ten points each.

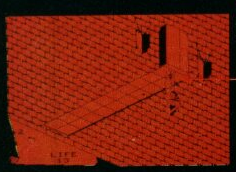
Fighting can be great fun but it can also be dangerous. That's why you must make sure you're properly lined up with your opponent before you start the swordplay.



Your big physical advantage over all the other nasties in the castle is that you can jump and they can't. So, you can duck out of their way by leaping onto tables and stools and doing an Errol Flynn from up there.

It's all too easy to walk into the bubbles and whirlwinds — as soon as you enter a room wait a while and watch to see the patterns they follow. That way you can safely work your way round them.

Old soldiers never die, they simply fade away into their helmets — so, don't try treading on them or using them to jump on 'cos they're still as dangerous as ever. And if you leave a room and return to it, up pops your adversary as though nothing had happened.



Feeling suicidal? Try crossing one of the two drawbridges. The monks who stand guard will have you over the edge and into the chasm before you have time to say Aaaargh! And that means game over for you. The only easy way to stop their tricks is to use an hourglass.

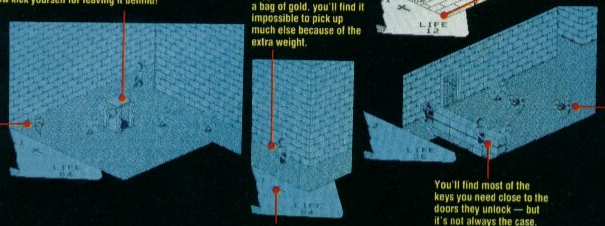
tower block

You can only pick up objects that are directly in front of you. Line yourself up and then it's knees bend for the quick snatch.

If your life force is really on its last knockings, there's only one way of bringing it back to full strength — by drinking the liquid in the small stoppered bottles. Use them wisely, though — we've only tracked down a couple in the whole castle.

Remember the well in *JSWII*? Well, there's one here as well. And this one's just as nasty — if not as wet! The bad news is the bubble at the bottom waiting to blow you away — and the worse news is there's no way out once you've burst it. Your only hope is to use the scroll that'll magically transport you to the courtyard. *Now* kick yourself for leaving it behind!

You're not built like Geoff Capes, y'know! There's a limit to the number of objects you can carry — and that's five. Course, if one of the objects happens to be a barrel or a bag of gold, you'll find it impossible to pick up much else because of the extra weight.

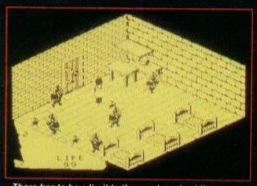


Never leave objects you've collected in a room with a whirlwind. All it takes is one touch and whoosh, the object vanishes.

The day of the triffids has arrived. The killer daffodils in the courtyard aren't just decorative but deadly. Tread very gingerly around them — if they snap out, you can expect a great deal of damage.

You'll find most of the keys you need close to the doors they unlock — but it's not always the case. The key at the top of the tower unlocks a door on the far side of the castle.

Sometimes you'll find it impossible to drop an object just where you want it 'cos the way's blocked. Tackle the problem by dumping your chosen object as close to where you need it then a quick shove'll put it into position.

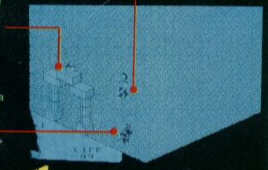


There has to be a limit to the number of soldiers you can squeeze into one room. So far, we've managed eight with no difficulty just by killing them and then transporting their helmets to another room. Let us know if you beat that.

Having trouble with one of the guards? Here's a tip that works if the room's got two exits. Enter and draw him towards you — just as he's about to do you a nasty with his spear, turn tail and leg it out of there. Now it's just a question of nipping round to the other entrance and dashing in while he's occupied on the far side of the room.

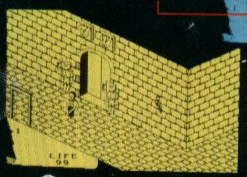
Some objects are there for all the world to see — but they're well out of your reach. Don't give up even if you can't get your mitts on them by jumping. Start stacking barrels and then use the stools to leap on top of those.

One very nice touch is that you can pick up a soldier's helmet and transport it to another room where he can cause less bother. There's no way you're going to be able to search a room fully with a member of the military dogging your every step.

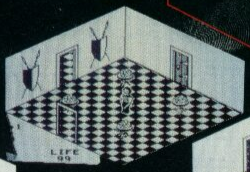


hiding places

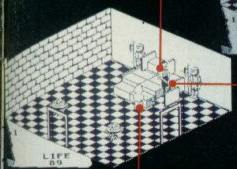
Some objects are sneakily tucked away where you can't bend down and reach 'em, all is not lost. Slide the lighter objects through and they'll shove what you're after in front of them.



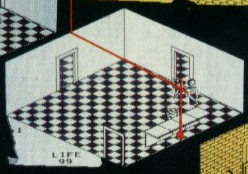
The only safe way of walking round a room with a monk in, is to use an hour glass. Immediately, time stands still and you can search to your heart's content — but make sure you don't leave the room 'cos as soon as you return the clock's started again.

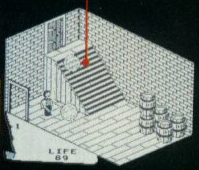


Bubbles are the ultimate deterrent — or at least they're the only objects which reset to their original positions when you leave a room. Yep, just like in the Ultimate games.

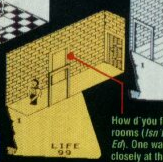


Don't expect to just walk into a room and see all its secrets straight off. Some like the cross concealed beneath the throne will take a fair bit of searching for.

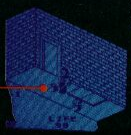




Nobody's gonna push you around, eh? That's what you think! The soldiers and trolls may be a pushover but the monks have the strength of two — and you can't even make a stab at killing them. As soon as you come into contact with them, you'll be fucky to escape with your life.



How d'you find the secret rooms (*Isn't that a secret? Ed*). One way is to look closely at the little screen and see if there are any rooms shown that don't appear on your map. Now check 'em out by walking into walls. You'll soon be rewarded by finding the hidden doors.



Money, money, money, that's all they ever think about these soldiers — mercenary devils! If you want to take one of the guards off your tail, try dropping a bag of gold. It doesn't always work but in most cases it should buy you some time.

The Spectrum storage system



ONLY £99.95 INCL.P&P

ROTRONICS

WAFADRIVE

- Dual 128K storage
- Fast, reliable access
- Centronics and RS232 ports
- FREE Spectrum Writer wp package
- FREE blank wafer

Blank wafers: 16K (£2.49)
64K (£2.79) 128K (£2.99)

Heathrow/Nightflite II £14.95 Space Wars/ Seiddab Attack/Luna Attack £14.95 Bear Bovver/Wong's Loopy Laundry/WorldCup £9.95 Melbourne Draw £9.95 Starbike £7.95 ZAPP (Assembler/Disassembler/Monitor) £19.95 Sherlock £14.95 RS232 lead £10.95 Centronics lead £12.95 Mugsy £9.95 Stock Manager* £19.95 Finance Manager* £19.95 Address Manager* £19.95 VAT Manager* £19.95

* 80 column version

All prices include VAT and p + p. Please make your cheque/PO payable to SMT. Or quote Access/Barclaycard number. Write your name and address clearly. Please allow 28 days for delivery. SMT, FREEPOST, Greens Norton, Towcester, Northants, NN12 8BR

VISA

SMT

Want to keep in touch? Use databases, electronic mail, bulletin boards, viewtext? Download the latest super software from Prestel*? Now you can, with your 48K Spectrum*, a suitable modem and the DATASPECTRUM modem interface and software package from Miracle Technology.

DATASPECTRUM fits straight into the Datapac edge connector and handles baud rates of 300/300, 1200/75 and 75/1200. Software features include Mailbox Editor, Frame Processor, Save, Print and Telesoftware Downloader.

The Datapectrum Package, including interface, cable, cassette and full User Guide costs only £39.95 exc (£47.09 inc VAT & UK P/P). It's available now – so get in touch!

Please send me

☐ DATASPECTRUM packages @ £47.09 inc VAT + UK P/P

☐ I enclose cheque/postal order

☐ charge my Access/Visa card no:

.....

expiry date ... / ... / ...

Name .....

Address .....

.....

Postcode .....

send to:

Spectrum Support 3, Miracle Technology (UK) Ltd, St Peters Street, Ipswich IP1 1XB.

Tel 0473-216141.

*reg'd trade marks of the companies concerned

DATA-SPECTRUM PUTS YOU IN TOUCH!

MIRACLE TECHNOLOGY

THOUGHTS & CROSSES

GENERAL ENQUIRIES TELEPHONE 0924-402337

37 MARKET STREET, HECKMONDWIKE, WEST YORKS.

24hr CREDIT CARD ORDERS TEL: (0924) 409753

Shop Hours 9am-5pm Mon-Sat

Title	Company	Price
Ghostbusters	Activision	8.10
Pitfall II	Activision	8.10
River Raid	Activision	8.10
Space Shuttle	Activision	8.95
Football manager	Addictive	6.75
Incredible Hulk	Adventure	8.95
Spiderman	Adventure	8.95
Arcticon	Anirolsoft	6.95
Hard Hat mack	Anirolsoft	6.95
One and One	Anirolsoft	6.95
Son of Blagger	Alligata	5.00
Chess 9	Artic	3.50
Chess Tutor	Artic	3.50
Eye of Bear	Artic	3.50
Galaxians	Artic	3.50
Golden Apple	Artic	3.50
Invaders	Artic	2.50
Mr Wong's Loopy Laundry	Artic	3.95
On the Ocke	Artic	3.00
Snooker	Artic	3.00
World Cup Soccer	Artic	6.25
System 15000	AVS	8.95
Chuckie Egg 2	A + I	6.75
Beer Base 3.0	Betasoft	13.50
Doomdarks Revenge	Beyond	9.95
Lords of Midnight	Beyond	9.95
Psytron	Beyond	7.15
Shadowfire	Beyond	9.95
Spy vs Spy	Beyond	8.95
Manic Miner	Bug Byte	1.00
The Castle	Bug Byte	6.75
Twin Kingdom Valley	Bug Byte	7.15
Masterfile	Campbell	13.50
Masterfile & MT Print	Campbell	18.00
Steve Davis Snooker	CDS	7.15
Astronomer	CP Software	6.95
Backgammon	CP Software	6.95
Bridge Player 2	CP Software	6.95
Bridge Tutor Advanced	CP Software	6.95
Bridge Tutor Beginner	CP Software	5.95
Draughts	CP Software	5.95
Extended Basic	CP Software	5.95
Flapping Flyer Fun!	CP Software	5.95
Pinball Wizard	CP Software	5.25
Superchess 3.5	CP Software	9.95
Supercode II	CP Software	6.95
Supercode III	CP Software	11.95
3D Rovers	CP Software	5.25
Loonacide	Creative	7.15
Money Manager	Creative	6.25
Arbi Stix	CRL	3.00
Formula One	CRL	7.15
Highrise Code	CRL	5.25
Magic Roundabout	CRL	5.25
Nato Horror Show	CRL	6.95
Dungeon Secrets	CRL	3.00
Terrahawks	CRL	5.25
War of the Worlds	CRL	7.15
Dungeon Master	Crystal	7.50
Halls of Things	Crystal	2.50
Runaway Revenge	Crystal	3.50
Highway Code	Datel	6.25
Mini Office	Database	9.95
Rod Action	Database	8.95
Fighter Pilot	Digital	7.15

Title	Company	Price
Dk Tronics	DK Tronics	2.75
Dk Tronics	DK Tronics	2.50
Dk Tronics	DK Tronics	5.25
Dk Tronics	DK Tronics	5.25
Dk Tronics	DK Tronics	6.95
Dynamite	Dynamik	5.95
Dynamite	Dynamik	8.90
Dynamic	Dynamic	4.00
Durrell	Durrell	8.05
Durrell	Durrell	7.95
Durrell	Durrell	5.25
Elite	Elite	8.25
Elite	Elite	8.25
Firebird	Firebird	2.50
Firebird	Firebird	2.50
Firebird	Firebird	2.50
Free Ways	Free Ways	7.15
Free Ways	Free Ways	7.15
Free Ways	Free Ways	7.15
Gargoyle	Gargoyle	8.95
Gargoyle	Gargoyle	8.95
Gilsoft	Gilsoft	13.50
Gilsoft	Gilsoft	13.50
Gremlin	Gremlin	6.25
Gremlin	Gremlin	5.25
Gremlin	Gremlin	5.25
Gremlin	Gremlin	6.25
Gremlin	Gremlin	6.25
Hewson	Hewson	7.15
Hewson	Hewson	7.15
Hewson	Hewson	7.15
Hewson	Hewson	1.00
Hewson	Hewson	1.00
Hewson	Hewson	5.35
Hewson	Hewson	14.00
Hoott	Hoott	22.50
Hoott	Hoott	17.50
Hoott	Hoott	22.50
Hoott	Hoott	6.50
Imagine	Imagine	2.75
Imagine	Imagine	2.75
Imagine	Imagine	2.75
Imagine	Imagine	2.75
Imagine	Imagine	2.75
Incentive	Incentive	5.25
Incentive	Incentive	3.00
Incentive	Incentive	7.15
Incentive	Incentive	7.15
Incentive	Incentive	3.00
Incentive	Incentive	3.00
Interceptor	Interceptor	4.95
Kemp	Kemp	7.50
Kemp	Kemp	7.50
Kemp	Kemp	13.50
Knightsoft	Knightsoft	6.25
Level 9	Level 9	8.90
Level 9	Level 9	8.90
Level 9	Level 9	8.90

HACKER'S GUIDE

Two games in the three dimensions — Fairlight and Nightshade. Dave Nicholls ventures into the code.

Hmmm, *Fairlight* and *Nightshade*, day and night, light and shade. You know from the titles that these two games are going to be related somehow — two sides of the same coin, that sort of thing. And, of course, the thing they've got in common is 3D.

The biggest problem facing any 3D programmer is how to store all that data. It's bad enough in ordinary games — the sprites and backgrounds take up enormous amounts of space. In three dimensional games, it's a nightmare. The programmer has to find space to store info relating to all the positions of objects and meanies, as well as having more sprite frames for each character because of the different orientations.

For all that, *Nightshade* isn't too much of a problem. There are 1024 'rooms' in the village (though you don't seem to be able to get into all of them) but each room takes up very little space. That's because all you need to know is which side the doors are on and which of the small selection of walls to use. You also have to keep track of a few meanies and special objects. Ultimate uses its now customary table technique with a small entry for each room and a larger table for the meanies containing their type and current positions. As usual the programming is slick but yawn, it's so boring — all the emphasis is on increasing speed without losing structure.

Fairlight is much more interesting even though the techniques that Bo Jangeborg uses for screen handling aren't up to Ultimate's standards. This is the first game, for example, I've seen for a long time that uses an LDIR instruction to move the screen buffer from memory to where you can see it. It's much more usual now to use special routines that draw line by line upwards from the bottom. This avoids any problems with the screen refresh that occurs every fiftieth of a second. Still, the fact that you can move objects from room to room and leave them there means the program structure looks much more like an adventure than any other similar game that I've looked at.

So, how's it done? Well, several tables are used to store the data while the objects are kept in one 1000 byte block. Here the entries detail the room location and the 3D co-ordinates within — that's how objects can be stacked on top of one another, for example. The table that stores the backgrounds is in a special format so that it doesn't waste space — when you have to find somewhere to store a whole 6912 byte screen buffer, space is very important! Each entry starts with a two byte number which is the length of the entry. To find a particular room, you start with the first entry; if it's not the one you want, you add the length bytes onto the current position to look at the next one and so on until you find it. Each entry itself is divided up into similar sub-tables that say what goes where in the room.

One side effect of all this space saving is that the initial set up of the screen is very complicated. It involves setting up the background and then laboriously searching the object table until all the objects in the room are found and put in their proper places. Also, they have to be found in the right order so that 'hidden' objects stay hidden. So, when you're staring at the blank screen as you pass from room to room, spare a thought for the Z80 — it's working overtime to get the new room on screen as quickly as possible.

All in all, both programs are extremely competent. Still, I can't help feeling that *Nightshade* could've done with being a bit more involved while *Fairlight* would've benefitted from Ultimate's skill with the screen. From the hacking point of view, *Fairlight* is much more rewarding and I've a hunch that Hacking Away will be choc-a-bloc with POKEs for it next month. But just to be going on with, here's a short program that'll give you infinite lives on *Nightshade* — and it's short because Ultimate has given Speedlock a miss this time round.

```
100 FOR x=1 to 5: LOAD
""CODE: NEXT x
110 POKE 53442,0: POKE
53443,12
120 RANDOMIZE USR 23424
```

All you have to do is type in the short Basic loader, run it and play your master tape through from the beginning. The original Basic loader will now be ignored. Now play till you drop!

Evesham Micros

THE UTILITY SPECIALISTS

MAKE THE MOST OF YOUR MICRODRIVE WITH

INTERFACE III

THE IMPOSSIBLE HAS BEEN DONE

Yes it's true this **fantastic** new peripheral will transfer **every program available** on to microdrive. **Yes every one**. Yet, believe it or not, it is so **easy to use** that we are training our pet cat (Clive) to use it. **Anyone** capable of loading and saving a BASIC program can transfer **really awkward** programs to microdrive.

Just look at these features . . .

- **Consists of hardware and software.**
- **Transfers all programs available on to microdrive.**
- **Very, very, easy to use. (If Clive can do it we're sure you can.)**
- **Makes a "snapshot" of any stage of a program. (Saved as a screen $)**
- **Transfer can be actuated at any stage allowing "customised" versions.**
- **All programs reLOAD and RUN once transferred.**

WARNING: Unlike competitive products, transferred programs run independently of the utility and occupy the correct amount of cartridge space for the program. (This means you can fit two large programs on one cartridge.)

IF YOU HAVE A MICRODRIVE YOU MUST HAVE INTERFACE III

ONLY £39.95 inc. P&P

SIMPLY AMAZING

Trade and distributor enquiries invited. U.K. and overseas.

The software can be supplied on cassette for tape users.

This product is in a class of its own. Designed by DRAYSOFT.

DOUBLER

HAVING PROBLEMS BACKING UP THE LATEST LOADING TECHNIQUES?

DOUBLER
Will solve ALL your problems

THE tape backup "device".

After **spectacular success** on the CBM 64 and by public demand we introduced **Doubler** for the Spectrum. Now we have released **Doubler Mk.II**, which is professionally cased and has greater tolerance to the varying types of cassette decks in use.

It includes **hardware and software**. This **superb "device"** allows you to make backup copies of software with **all types of loader** regardless of length and speed. (Includes pulsing headers and different baud rates.) In fact our tests have **proved** "Doubler" is capable of copying with **100% success**.

Requires access to **two** cassette decks. The software allows you to save a **brand new machine copy** onto one cassette deck while loading from the other. **Fast and easy to use**. They said it couldn't be done.

ONLY £14.95

PATENT APPLIED FOR

Customers who have the Mk.I Doubler may return it along with £4.95 for the new version.

All prices include P&P and VAT. Send cheque, Postal Order of Credit Card No. Credit Card order accepted by phone. Callers welcome. Wide range of goods stocked. Trade enquiries welcome. European orders send price as advertised. Outside Europe £2.00 for airmail. Mail order to Evesham Shop please.

EVESHAM MICROS
BRIDGE STREET, EVESHAM, WORCS., WR11 4RY.
Tel: 0386 41989

MICRO CENTRE
1756 PERSHORE ROAD, COTTERIDGE, BIRMINGHAM.
Tel: 021-458 4564

SET TO STUN, READY TO RUN.



SUPER SILVER RANGE

firebird

NEW SUPER SILVER FOR SPECTRUM

304	**CHIMERA**	311	**THUNDERBIRDS**
308	**WILLOW PATTERN**	315	**CHICKIN CHASE**

MAIL ORDER
Please state name of game, code number and quantity required. Enclose crossed cheque/PO made payable to FIREBIRD SOFTWARE. All offers are subject to availability. Orders are despatched promptly. All prices inclusive of VAT and postage.

MAIL ORDER: *FREEPOST FIREBIRD,
WELLINGTON HOUSE,
UPPER ST. MARTIN'S LANE,
LONDON WC2H 9BR.

*No stamps required

FIREBIRD SOFTWARE, WELLINGTON HOUSE, UPPER ST. MARTIN'S LANE, LONDON WC2H 9DL. TEL: 01-379 6755/5626

Firebird and the Firebird logo are trademarks of British Telecommunications plc.

DEADLY NIGHTSHADE

Plague and pestilence, death and destruction. You'll find them all in Ultimate's newie, Nightshade. Sounds like a job for Sabreman — with help from Teresa Maughan!

Imagine a deserted village, lost in time, enveloped by an evil force. Here, hideously foul creatures roam the streets, flesh falling from their rotting bodies. Sounds like the new Michael Jackson video, eh? It's actually the scenario for *Nightshade*.

The game is set in a world of death and decay. The only life forms are mad monks, gruesome ghouls, deadly demons and mutant monsters. It's your awesome task to release the Kingdom of Nightshade from the grips of an evil curse that's brought plague to the land. There are four objects for you to locate that'll wipe out the four main nasties and lift the curse.

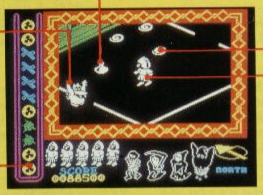
Sounds simple, huh? Well, you'll have to avoid swarms of nasties such as lethal germs, gyrating blobs and maniacal meanies. Touch them and they'll infect you with the fatal disease — but fortunately you don't die straight away, you just turn a bit of a funny colour!

To defend yourself, you must go inside the rooms and collect various antibodies to fire at the nasties — but be warned, you've gotta be quick on the trigger.

The graphics are well up to the usual Ultimate standard. The village is built up of beautifully drawn houses — and as you enter them the walls disappear so you can check up on all that's happening inside. The gooks and goblins don't have the evil aspect that the scenario suggests but they sure are some of the cutest you're ever likely to encounter. And the scrolling is nothing short of superb — you won't have seen it faster or more flicker-free.

It has to be said, though, that *Nightshade* is a couple of steps back from *Alien 8* and *Knightlore*. As an arcade adventure, the adventure element is almost non-existent — the game is much more a good ol' shoot 'em-up with the added excitement of 3D scrolling and a vast area to wander around in. Trouble is you may find the game becomes tedious unless you're heavily into mindless alien bashing.

But having said that, you have to remember that Ultimate hasn't yet come up with a naff game — and though *Nightshade's* not their best, it certainly can't be classed as a duffer.



Don't be tempted — this monster's tantalising touch will leave you feeling mighty queasy! Attack with an anti-body and be warned, it takes a lot to kill off these Ken Dodd look-alikes.

These strange-looking blobs are your collection of antibodies. Let them attack the baddies' defences to protect yourself, but remember to keep your supply well topped-up.

Potion Power! This special brew refreshes the parts other potions can't reach. You'll feel like a new man again after just one sup! Go easy though, this liquor is pretty scarce.

What kills all known germs dead? Spirals of course! These particular antibodies are wafting about in various rooms, so stand in a corner if you want increased antibody attraction.

Who's this handsome beast? My, it's you of course! — Sporting a rather fetching helmet and looking like you're ready for anything... On second thoughts, all those furtive glances over the shoulder make you seem pretty paranoid!



These boots sure weren't made for walkin'. Step on this to give your weary pins a boost! Now you can hot-foot it round the village in double quick time without falling prey to the local nasties.

Cross your heart and hope *not* to die! Take up the cross and search out that mad monk. The cross'll flash when he's near, so you can home in for the kill. Don't get trigger happy as you'll destroy the cross before he appears...

This chap may look harmless, but watch him shift! Shooting him only gets him out the way for a few seconds, and what's worse, he'll soon be joined by a bunch of cronies. The objects tend to blend in with the background, so keep your eyes opened!

Yikes, it's the hooded-monk, not a very Holy one either. He's just one of the demons you've got to destroy using either the cross, the hammer, the bible or the egg-timer.

If you didn't get your Scouts or Brownies orienteering badge, then there's a compass to help you locate the objects. That's fine if you've got time to use the thing!



At least the scenery's pleasant, even if the inhabitants aren't! There's a whole mini-town to explore if you get tired of zapping those aliens.

Back to the biology lab to learn about the four types of antibodies. Spirals, spinners, globes and bubbles — sound more like fun fair props than deadly weapons! Their effectiveness varies, so just keep blasting!

'Them bones, them bones, them dry bones!' The hammer's the thing to fend off this foul fiend of a skeleton...

Spooky man! Even the skeleton's scared of this spook. Use your bible to dispel this spirit or you'll find he'll turn you into ghoulash...

Once wiped out, the dastardly demons will change colour... the mad monk has gone a putrid shade of purple, what a nasty habbit..!



This 'Gremlins reject' ain't as much fun as he looks. Just watch him multiply and go on the rampage! Don't shoot with spirals — spinners are your best bet here.

Losing a life is a colourful experience — you'll go a wonderful shade of blue. Once you've lost five lives, it's curtains!

This jelly-like blob is rife with some vile disease, so keep your distance. Stay out of reach of the germs, acid pools and spikers too... they're not nice!

You could find yourself turning yellow... then green if you're not killed outright by one of these dreaded creatures...Yuk!

This is your hit list — go for that mad monk, the grim reaper, the ghost and the skeleton! When you've blasted the lot, they'll be plunged into a fearful black abyss and you'll be freed from the evil curse... until the next game!

OUT OF ALL PROPORTION

Normal Speccy printing is ugly, ugly, ugly and boring, boring, boring. Here's shaped crusader Tony 'Slim' Samuels with a pretty neat alternative!

No-one could say that the way the Speccy PRINTs is the most beautiful in the world. The problem is that the screen is divided into 32 character columns and every character always takes up the same amount of space on the screen. Hardly news and not the kind of thing that bothers us hacks at all. But it's a bit of a shock for all those poor misdirected human beings out there in the real world.

Now take a close look at these words in *YS*, You'll see that thin characters like I and 1 take up a lot less space than fat ones like M and W. This is our secret way of making sure you can read and re-read *YS* from cover to cover at no risk to your eyesight. Who says we don't look after you?

So how's about a little bit of machine code to print properly using this sneaky proportional printing idea? Not only will any program you write using it look really nice and be very pleasant to use but you get the added benefit of printing at any pixel position on the screen and so stuff *far* more than 32 characters on every line. Choose thin words and you'll get more than 100 characters per line! Proportional printing is therefore ideal for any program with lots of text in it — databases, word processors and so on.

GOTO LPRINT

To make life even easier, the print program here becomes part of Speccy Basic by taking over the LPRINT

SHAPIN' UP...

You'll find here all the code you need to get proportional printing up and running on your Speccy. Tony's also provided a designer program, so if you're not happy with his creative characters then you can knock up your own. If you're going for the minimum typing job, then you'll only need to enter three parts. The Hex Loader (which enters the code), the Proper Print machine code listing (using either our Hex Loader or your own assembler package) and finally the Character Set code using the Hex Loader program.

A HEX FOR YOU

In case you're wondering, this is a hex loader — a program to provide hours and hours of endless entering fun for all the family. To use it, type it in and SAVE it and then enter the print program by typing in each line of hex in the second column of the main listing (one byte at a time) starting from address 65000. When you've finished type xx. The checksum should come to 45760 if you've got it right. Next, use the loader to enter the proportional character set. It starts at 64200 and the checksum should come to 64743. Don't forget to save it all with SAVE "PROPSYS" CODE 64200,1150

```
10 CLEAR 62199
20 INPUT "START LOCATION >";SL
40 LET A=10: LET B=11: LET C=1
2: LET D=13: LET E=14: LET F=15
```

```
 50 LET CQ=0
 60 LET T=0
100 INPUT H$
105 IF LEN H$<>2 THEN  GO TO 10
0
107 IF H$="XX" OR h$="xx" THEN
GO TO 200
110 LET H=0
120 LET H=H+16*VAL  H$(1)
130 LET H=H+VAL  H$(2)
140 POKE SL,H: LET SL=SL+1
145 LET CQ=CQ+H
150 PRINT TAB (T);H$;: LET T=T+
3: IF T=33 THEN  LET T=0: PRINT
160 GO TO 100
200 INPUT "CHECKSUM >";CS
210 IF CS<>CQ THEN  PRINT : PRI
NT "DATA ENTRY ERROR": STOP
220 PRINT : PRINT "DATA OKAY"
```

PROPER PRINT

This is it — the machine code program that, coupled with a character set at 64200, prints like magic on your Speccy. If you've got an assembler or a monitor, you can start straight away. Otherwise nip ahead and type in the hex loader and come back when it's running.

```
FDEB              0010        ORG  65000
5C8D              0020 ATTRP  EQU  23693
22AA              0030 PIXAD  EQU  22AAH
5C7B              0040 UDG    EQU  23675
```

Start the routine at 65000 and declare some labels.

```
FDEB 26A8         0050 INITI LD   H,168
FDED 2E00         0060       LD   L,0
FDEC 22DBFE       0070       LD   (XPOS),HL
```

Reset the printing position to the top left of the screen.

```
FDEF 2A4F5C       0080 ENABL LD   HL,(23631)
FDF2 010F00       0090       LD   BC,15
FDF5 09           0100       ADD  HL,BC
FDF6 01FDFD       0110       LD   BC,DO-IT
FDF9 71           0120       LD   (HL),C
FDFA 23           0130       INC  HL
FDFB 70           0140       LD   (HL),B
FDFC C9           0150       RET
```

Change the pointer to the LPRINT routine in the CHANS table to point to the proportional printing routine.

```
FDFD E5           0160 DO-IT PUSH HL
FDFE C5           0170       PUSH BC
FDFF D5           0180       PUSH DE
FE00 F5           0190       PUSH AF
FE01 CD09FE       0200       CALL DOIT1
FE04 F1           0210       POP  AF
FE05 D1           0220       POP  DE
FE06 C1           0230       POP  BC
FE07 E1           0240       POP  HL
FE08 C9           0250       RET
```

Save all the registers, call the printing routine, put all the registers back again and leap back to the operating system.

```
FE09 F5           0260 DOIT1 PUSH AF
FE0A 3AE2FE       0270       LD   A,(ATFLG)
FE0D FE00         0280       CP   0
FE0F 2008         0290       JR   NZ,GETXP
FE11 F1           0300       POP  AF
```

Look to see if last character was a control code 22 — the code for AT.

```
FE12 FE16         0310 ATCHQ CP   22
FE14 2021         0320       JR   NZ,CRCHQ
FE16 3EFF         0330       LD   A,255
FE18 32E2FE       0340       LD   (ATFLG),A
FE1B C9           0350       RET
```

If the current character is an AT control code, set the ATFLG to indicate that the next two codes dealt with will be the X and Y positions for the print.

```
FE1C FEFE         0360 GETXP CP   254
FE1E 2809         0370       JR   Z,GETYP
FE20 F1           0380       POP  AF
FE21 32DBFE       0390       LD   (XPOS),A
FE24 21E2FE       0400       LD   HL,ATFLG
FE27 35           0410       DEC  (HL)
FE28 C9           0420       RET
FE29 F1           0430 GETYP POP  AF
FE2A 47           0440       LD   B,A
FE2B 3EA8         0450       LD   A,168
FE2D 90           0460       SUB  B
FE2E 32DCFE       0470       LD   (YPOS),A
FE31 3E00         0480       LD   A,0
FE33 32E2FE       0490       LD   (ATFLG),A
FE36 C9           0500       RET
```

If the last character was an AT then fetch the X and Y co-ordinates and move to the new printing position.

```
FE37 FE0D         0510 CRCHQ CP   13
FE39 2009         0520       JR   NZ,VCHRQ
FE3B CD1CFF       0530       CALL DWNCR
FE3E 3E02         0531       LD   A,2
FE40 CD0116       0532       CALL 1601H
FE43 C9           0540 SKIPC RET
```

If the current character is a Return control code, move down 8 pixels and open channel 2 to deal with nasty INK and PAPER control codes.

```
FE44 FE20         0550 VCHRQ CP   32
FE46 3804         0560       JR   C,PRNT?
FE48 FE80         0570       CP   128
FE4A 3804         0580       JR   C,FCHR
FE4C 3E3F         0590 PRNT? LD   A,63
```

Burp! If the character is not between 32 and 127 then print a question mark instead.

```
FE4E 1800         0600       JR   FCHR
FE50 210000       0610 FCHR  LD   HL,0
FE53 6F           0620       LD   L,A
FE54 29           0630       ADD  HL,HL
FE55 29           0640       ADD  HL,HL
FE56 29           0650       ADD  HL,HL
FE57 EB           0660       EX   DE,HL
FE58 2A6EFE       0670       LD   HL,(CRADR)
FE5B 19           0680       ADD  HL,DE
FE5C 7E           0690       LD   A,(HL)
```

Figure out where the character's definition is stored in memory.

```
FE5D 32E3FE       0700       LD   (CRMSK),A
FE60 3600         0710       LD   (HL),0
```

Store the first byte of the character (the width indicator) and stick a zero byte in its place.

```
FE62 22E4FE       0720       LD   (CRAD1),HL
FE65 010700       0730 PRNIT LD   BC,7
```

We're getting there! Load CRADD with the address of the seventh byte of the character, check the character will fit on the screen and calculate the address in the display file where the character will be printed.

```
FE68 09           0740       ADD  HL,BC
FE69 22E0FE       0750       LD   (CHRAD),HL
FE6C 3ADCFE       0760       LD   A,(YPOS)
FE6F FE49         0770       CP   169
FE71 D2FCFE       0780       JP   NC,ERR5
FE74 CD05FF       0790       CALL FITCQ
FE77 ED4BDBFE     0800       LD   BC,(XPOS)
FE7B CDAA22       0810       CALL PIXAD
FE7E 32DFFE       0820       LD   (PIXPO),A
FE81 22DDFE       0830       LD   (DFADD),HL
FE84 0608         0840       LD   B,8
FE86 C5           0850 PRNLP PUSH BC
FE87 2AE0FE       0860       LD   HL,(CHRAD)
FE8A 7E           0870       LD   A,(HL)
FE8B 2B           0880       DEC  HL
FE8C 22E0FE       0890       LD   (CHRAD),HL
FE8F AF           0900       LD   L,A
FE90 3ADFFE       0910       LD   A,(PIXPO)
FE93 FE00         0920       CP   0
FE95 CAA2FE       0930       JP   Z,PUTIT
FE98 47           0940       LD   B,A
FE99 2600         0950       LD   H,0
```

command. The syntax is the same except you can now use the AT command if you like. The program doesn't like INK and PAPER control codes but it will print in whatever permanent colours you've set with INK and PAPER. Once you've got the routine loaded, the command, LPRINT AT 0,0; "Your Spectrum" will print "Your Spectrum" proportionally spaced in the top left of your screen. All proportional printing is done as if OVER 1 was set so you've got to be careful only to print on blank bits of screen or else the result will be more of a mess than the usual PRINT command!

GET LOADED

To get your own printing going, you're going to have to type in the proportional print program and either the character set given here or one of your own design. If you've got an assembler, you can go to work on the assembly listing. Otherwise, you'll have to type in and use the hex loader provided. Once that's in, use the hex loader to enter the proportional character set itself. Done all that? Wow, you're getting really quick! Okay, best remember to save the whole shebang as one lump with SAVE "PROPSYS" CODE 64200,1150.

Now, whenever you get the urge, you can set up the whole thing with:
CLEAR 64199: LOAD "PROPSYS"
CODE : RANDOMIZE USR 65000
LPRINT ; will go on working until you do a NEW. You can get it back afterwards with another RANDOMIZE USR 65000.

The Speccy's got 96 printing characters from space (CHR$(32) to the copyright symbol CHR$(127)). Each of these is defined just like a UDG using 8 bytes. A proportional character set is done in a similar way except the first byte of each definition is used to tell the print program how wide the character is, so that it can start the next character just after it.

To work out this byte, just set those bits that aren't used by the character to 1 and leave the rest at 0. If your character is four bits wide, the bits 8,7,6,5 and 4 should all be 0 (bit 4 is 0 so that there's a one pixel gap between this character and the next) and bits 0,1 and 2 should be 1. Simple really! And I've included a little font designer listing opposite so you can get started right away. There, who says I'm just a pretty face?

```
FE9B CB3D       0960 ROTLP SRL   L
FE9D CB1C       0970       RR    H
FE9F A7         0980       AND   A
FEA0 10F9       0990       DJNZ  ROTLP
FEA2 ED5BDDFE   1000 PUTIT LD    DE,(DFADD)
FEA6 1A         1010       LD    A,(DE)
FEA7 AD         1020       XOR   L
FEA8 12         1030       LD    (DE),A
FEA9 CD2AFF     1040       CALL  COLAD
FEAC 3ADFFE     1050       LD    A,(PIXPO)
FEAF FE00       1060       CP    0
FEB1 CABCFE     1070       JP    Z,PST
FEB4 13         1080       INC   DE
FEB5 1A         1090       LD    A,(DE)
FEB6 AC         1100       XOR   H
FEB7 12         1110       LD    (DE),A
FEB8 CD2AFF     1120       CALL  COLAD
FEBB 1B         1130       DEC   DE
FEBC 2ADDFE     1140 PST   LD    HL,(DFADD)
FEBF CDE9FE     1150       CALL  ULINE
FEC2 22DDFE     1160       LD    (DFADD),HL
FEC5 C1         1170       POP   BC
FEC6 10BE       1180       DJNZ  PRNLP
```

Rotate the character definition into the correct pixel position, place it on the screen one byte at a time and make sure each byte is in the right colour.

```
FEC8 3AE3FE     1190       LD    A,(CRMSK)
FECB 2AE4FE     1200       LD    HL,(CRAD1)
FECE 77         1210       LD    (HL),A
FECF 3ADBFE     1220       LD    A,(XPOS)
FED2 47         1230       LD    B,A
FED3 3A60FE     1240       LD    A,(WIDTH)
FED6 80         1250       ADD   B
FED7 32DBFE     1260       LD    (XPOS),A
FEDA C9         1270       RET
```

Get the width indicator byte and put it back at the start of the character definition. Then move right the correct number of pixels for the character just printed.

```
FEDB 00         1280 XPOS  DEFB 0
```

```
FEDC A8         1290 YPOS  DEFB 168
FEDD 0000       1300 DFADD DEFW 0
FEDF 00         1310 PIXPO DEFB 0
FEE0 0000       1320 CHRAD DEFW 0
FEE2 00         1330 ATFLG DEFB 0
FEE3 00         1340 CRMSK DEFB 0
FEE4 0000       1350 CRAD1 DEFW 0
FEE6 C8F9       1360 CRADR DEFW 64200-256
FEE8 00         1370 WIDTH DEFB 0
```

Reserve a bit of space for some variables.

```
FEE9 F5         1380 ULINE PUSH AF
FEEA 7C         1390       LD   A,H
FEEB 25         1400       DEC  H
FEEC E607       1410       AND  7
FEEE 200A       1420       JR   NZ,END
FEF0 7D         1430       LD   A,L
FEF1 D620       1440       SUB  32
FEF3 6F         1450       LD   L,A
FEF4 3804       1460       JR   C,END
FEF6 7C         1470       LD   A,H
FEF7 C608       1480       ADD  8
FEF9 67         1490       LD   H,A
FEFA F1         1500 END   POP  AF
FEFB C9         1510       RET
```

Here's a handy routine that sets HL to point to the next pixel line up in the display file.

```
FEFC 3AE3FE     1520 ERR5  LD   A,(CRMSK)
FEFF 2AE4FE     1525       LD   HL,(CRAD1)
FF02 77         1530       LD   (HL),A
FF03 CF         1540       RST  8
FF04 04         1550       DEFB 4
```

Restore the width indicator byte to the first byte of the character definition and generate an Out of Screen error.

```
FF05 0608       1560 FITCH LD   B,8
FF07 3AE3FE     1570       LD   A,(CRMSK)
FF0A 4F         1580       LD   C,A
FF0B A7         1590 CNTLP AND  A
```

```
FF0C CB39       1600       SRL  C
FF0E 3003       1610       JR   NC,OUT
FF10 05         1620       DEC  B
FF11 18F8       1630       JR   CNTLP
FF13 78         1640 OUT   LD   A,B
FF14 32E8FE     1650       LD   (WIDTH),A
FF17 3ADBFE     1660       LD   A,(XPOS)
FF1A 80         1670       ADD  B
FF1B D0         1680       RET  NC
FF1C 3E00       1690 DWNCR LD   A,0
FF1E 32DBFE     1700       LD   (XPOS),A
FF21 3ADCFE     1710       LD   A,(YPOS)
FF24 D608       1720       SUB  8
FF26 32DCFE     1730       LD   (YPOS),A
FF29 C9         1740       RET
```

Check if the character to be printed will fit on this line — if it doesn't, move down 8 pixels and back to the left hand side of the screen.

```
FF2A E5         1750 COLAD PUSH HL
FF2B F5         1760       PUSH AF
FF2C 7A         1770       LD   A,D
FF2D CB0F       1780       RRC  A
FF2F CB0F       1790       RRC  A
FF31 CB0F       1800       RRC  A
FF33 E603       1810       AND  3
FF35 F658       1820       OR   58H
FF37 67         1830       LD   H,A
FF38 6B         1840       LD   L,E
FF39 3A8D5C     1850       LD   A,(ATTRP)
FF3C 77         1860       LD   (HL),A
FF3D F1         1870       POP  AF
FF3E E1         1880       POP  HL
FF3F C9         1890       RET
```

And another useful routine — it calculates the relevant address in the attributes file from a given display file address and stores the value of ATTRP (the permanent PAPER and INK colours) in it.

```
                1900 FINIS END
```

That's all folks!

CHARACTER SET

Here's the info for proportionally-spaced characters — all 96 of them! Grab the hex loader and get going...

```
07 00 00 00 00 00 00 3F 80 80
80 80 00 80 00 07 50 A0 00 00 00
00 00 03 50 F8 50 50 F8 50 00 03
00 78 A0 70 28 F0 00 0F A0 20 40
40 80 A0 00 07 40 A0 50 A0 A0 50
00 1F 40 80 00 00 00 00 00 1F 40
80 80 80 80 40 00 1F 80 40 40 40
40 80 00 07 90 60 F0 60 90 00 00
03 00 20 20 F8 20 20 00 1F 00 00
00 00 00 40 80 03 00 00 00 F8 00
00 00 3F 00 00 00 00 00 80 00 0F
20 20 40 40 80 80 00 03 70 88 88
E8 88 70 00 0F 40 C0 40 40 40 E0
00 03 70 88 08 30 40 F8 00 03 F8
08 30 08 88 70 00 07 80 A0 A0 F0
20 20 00 03 F8 80 70 08 88 70 00
07 60 80 E0 90 90 60 00 07 F0 10
10 20 20 20 00 03 70 88 70 88 88
70 00 07 60 90 90 70 10 60 00 3F
00 00 80 00 80 00 00 1F 00 00 00
40 00 40 80 0F 00 20 40 80 40 20
```

```
00 07 00 00 F0 00 F0 00 00 0F 00
80 40 20 40 80 00 03 70 88 10 20
00 20 00 01 78 84 84 BC 80 78 00
07 60 90 90 F0 90 90 00 07 E0 90
E0 90 90 E0 00 07 60 90 80 80 90
60 00 07 E0 90 90 90 90 E0 00 07
F0 80 E0 80 80 F0 00 07 F0 80 E0
80 80 80 00 07 60 90 80 B0 90 60
00 07 90 90 F0 90 90 90 00 0F E0
40 40 40 E0 00 07 70 10 10 10 10
90 60 00 07 80 90 A0 C0 A0 90 00
0F 80 80 80 80 80 E0 00 03 88 D8
A8 88 88 88 00 07 90 D0 D0 B0 80
90 00 07 60 90 90 90 90 60 00 07
E0 90 90 E0 80 80 00 07 60 90 90
B0 70 00 07 E0 90 90 E0 A0 90
00 07 60 90 40 20 90 60 00 0F E0
40 40 40 40 40 00 07 90 90 90 90
90 60 00 0F A0 A0 A0 A0 A0 40 00
03 88 88 88 A8 A8 50 00 07 90 90
60 60 90 90 00 07 90 90 70 10
60 00 07 F0 10 20 40 80 F0 00 1F
C0 80 80 80 80 C0 00 0F 80 80 40
40 20 20 00 1F C0 40 40 40 40 C0
00 03 20 70 A8 20 20 20 00 07 00
00 00 00 00 F8 00 07 60 90 80 E0
```

```
80 F0 00 03 00 70 90 90 90 68 00
07 80 80 E0 90 90 E0 00 07 00 60
90 80 90 60 00 07 10 10 70 90 90
70 00 07 00 60 90 E0 80 80 70 00
00 60 90 80 E0 80 80 07 00 70 90
90 70 10 60 07 80 80 E0 90 90 90
00 3F 00 80 00 80 80 80 00 0F 00
20 00 20 20 A0 40 0F 80 80 A0 C0
A0 A0 00 1F 80 80 80 80 80 40 00
03 00 50 A8 A8 88 88 00 07 00 E0
90 90 90 90 00 07 00 60 90 90 90
60 00 07 00 E0 90 90 E0 80 80 03
00 70 90 90 70 10 18 0F 00 60 80
80 80 80 00 07 00 70 80 60 10 E0
00 0F 00 80 E0 80 80 60 00 07 00
90 90 90 90 60 00 0F 00 A0 A0 A0
A0 A0 00 03 00 88 88 88 A8 50 00
0F 00 A0 A0 A0 A0 A0 00 07 00 90
90 90 70 10 60 03 00 F8 10 20 40
F8 00 0F 60 40 80 80 40 60 00 3F
80 80 80 80 80 80 80 0F C0 40 20
20 40 C0 00 01 00 00 64 98 00 00
00 00 7C 82 BA A2 BA 82 7C
```

```
CHECKSUM >64743
```

Do you want to learn machine code the easy way?

If you're serious about programming, you *need* machine code.

But, until now, it's been a hard slog through thick books and you've probably given up in despair before mastering the techniques.

Now there's a simpler answer: **THE PEKER MACHINE CODE COURSE FOR SPECTRUM MACHINE CODE.**

Unlike other systems, the PEKER course is designed to take you simply, easily and quickly through Z80 Machine Code in a way you will understand.

This is achieved by separate lessons which you learn at your own pace – each is designed with *you* in mind with examples at every stage and we illustrate the course with the BASIC equivalents making it easy for you to understand.

Make no mistake. With the PEKER MACHINE CODE COURSE you'll be programming in fast machine code in minutes with a full understanding of how and why things work and if you're not sure we offer you a PROBLEM HOTLINE to have things explained in detail.

The course consists of 12 lessons at only £4.49 (plus P&P) per lesson.

If you really want to program like a professional, learn how to simply . . with PEKER.

CHOOSE YOUR INTRODUCTORY GIFT FROM ANY OF THESE FANTASTIC ITEMS:

OFFER A ORDER THE FIRST SIX LESSONS AND CHOOSE ANY **FOUR** ITEMS SHOWN OR THREE ITEMS AND THE ROM ASSEMBLER AT £14.95.

OFFER B ORDER THE FIRST FOUR LESSONS AND CHOOSE ANY **TWO** ITEMS SHOWN OR ONE ITEM AND THE ROM ASSEMBLER AT £14.95.

OFFER C ORDER ONE LESSON ONLY AND CHOOSE ANY **ONE** ITEM OR THE ROM ASSEMBLER AT £17.95.

OFFER ITEMS AVAILABLE:

ASSEMBLER	FREE
DISASSEMBLER	FREE
CHARACTER GENERATOR	FREE
TOOLKIT	FREE
FAST LOAD/SAVE	75p
SCREEN PLANNER PAD	75p
CHARACTER PLANNER PAD	75p
PROGRAM PLANNER PAD	REDUCED PRICE ROM-BASED ASSEMBLER AT SPECIAL PRICES (NORMALLY £24.95)

POST TODAY – LOOK AT WHAT YOU CAN GET FOR YOUR MONEY:

Post to: PEKER COMPUTERS LTD., FREEPOST, Great Yarmouth, Norfolk NR30 3BR. (No stamp needed).

Name _____

Address _____

_____

Please send me the following:

☐ **The first 6 lessons of your machine code course**
Total Cost @ £28.50 (inc P&P) I wish to claim OFFER A

☐ **The first 4 lessons of your machine code course**
Total cost @ £18.95 (inc P&P) I wish to claim OFFER B

☐ **The first lesson only of your machine code course**
Total cost @ £5.50 (inc P&P) I wish to claim OFFER C

The items I wish to claim under my offer are as follows:

_____

_____

TOTAL REMITTANCE ENCLOSED: £ _____

Overseas orders should include an additional 20% on the prices quoted for *surface mail* post.

PEKER Computers

POOLS WITH SPECTRUM

PREDICTOR

PLUS **FREE RACING ANALYSER**

14,000 MATCH DATABASE

After three successful seasons, we know a thing or two about successful pools prediction on home computers. Things like seven powerful methods of analysing form. Like a masive database and easy data entry. Not forgetting tuning facilities to let you improve your forecasts as the season progresses. We've combined all of these and much more into the 1985/86 version of our renowned Football Pools Predictor Program. And to complete this outstanding punter's package, there is a free Racing Analyser Program to let you analyse any race using the racecard from your daily paper. Now beat that for value!

BOTH PROGRAMS FOR ONLY **£8.99**

MAYDAY SOFTWARE
181 Portland Crescent
Stanmore, Middx. HA7 1LR

HIRE SPECTRUM SOFTWARE

* **OVER 500** different titles available for hire including **ARCADE, ADVENTURE, BUSINESS, EDUCATIONAL** etc.
* **OVER 10,000** tapes in stock. All publisher's originals.
* **LOWEST HIRE CHARGES** – hire up to 3 tapes at a time, from only 63p (plus P&P and VAT) for 2 weeks hire.
* **FREE** printed **CATALOGUE**.
* **FREE** newsletter with hints, tips, reviews, etc.
* **TAPES** for sale at **DISCOUNT** prices, (eg **MANIC MINER £2.00**).
* **FAST, FAST SERVICE.** All tapes sent by 1st class postage.
* **HALF-PRICE OFFER – LIFE** membership **ONLY £3.00** (normally £6.00).
* **FREE** first hire tape. (For limited period).
* **EUROPEAN MEMBERS WELCOME.** (Payment in Sterling).

Have you ever been disappointed with software you've purchased? Now you can hire it first. If you like it, buy it at £1.00 off our already discounted prices. If you don't, send it back and it will only cost you the hire fee.

NSL is the best **SPECTRUM** library, with over 8,000 delighted members, the largest range of tapes and controlled by our computer with 22 mb hard disc. **JOIN TODAY**, or, if you don't believe our claims write or 'phone 01-661 9240 for a catalogue, and check our competitors. We're confident you'll join **NSL**.

NATIONAL SOFTWARE LIBRARY

42 Harefield Avenue, Cheam, Surrey SM2 7NE.

I enclose £3.00 for **LIFE MEMBERSHIP**. Please rush my membership kit to me. If, within 28 days, I'm not delighted with your service you'll refund my membership fee.

Name _____

Address _____

_____

_____

FONT DESIGNER

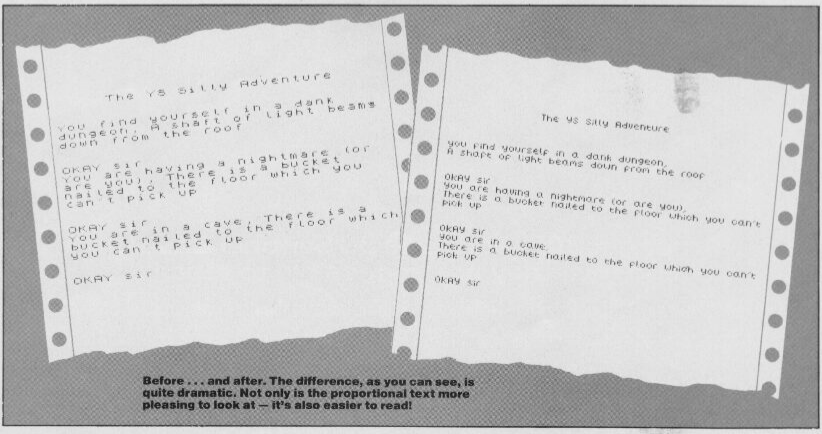
You can use this either for the proportional printing program or for the Speccy's normal characters. Q,A,O and P move the cursor round — give Troubleshootin' Pete a ring if you can't work out which does which direction! To set a pixel use M and to turn one off use N. F stores the design on the grid in memory as any particular character you want, D displays any character, U shows the whole character set and S and J save and load the whole lot for you. Once you've saved a new set, you can load it into the proportional print program with LOAD "name" CODE 64200. Away you go...

```
 10 CLEAR 34999
 20 LET ba=40000
 100 PRINT AT 2,3;"▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
 110 FOR f=3 TO 10: PRINT AT f,3
;" OOOOOOOO▒";: NEXT f
 120 PRINT AT 11,3;"▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒"
 130 LET a=0: LET b=0
 200 OVER 1: PRINT AT a+3,b+4;"▒
";: PAUSE 2: PRINT AT a+3,b+4;"▒"
: PAUSE 2: OVER 0
 210 LET a=a+(INKEY$="a" AND a<7
)-(INKEY$="q" AND a>0)
 220 LET b=b+(INKEY$="p" AND b<7
)-(INKEY$="o" AND b>0)
 230 IF INKEY$="m" THEN PRINT A
T a+3,b+4; INVERSE 1;"X"; PLOT b
+160,(8-a)+151
 240 IF INKEY$="n" THEN PRINT A
T a+3,b+4;"O"; PLOT INVERSE 1;b
+160,(8-a)+151
 250 IF INKEY$="f" THEN GO TO 3
00
 260 IF INKEY$="d" THEN GO TO 4
00
 270 IF INKEY$="u" THEN GO TO 5
00
 275 IF INKEY$="s" THEN GO TO 1
000
 280 IF INKEY$="j" THEN GO TO 1
020
 290 GO TO 200
 300 INPUT "WHICH CHARACTER ";c$
 310 IF LEN c$<>1 THEN GO TO 30
0
 320 IF CODE c$<32 OR CODE c$>12
7 THEN GO TO 300
 330 LET c=CODE c$
 340 FOR f=0 TO 7
 350 POKE (c-32)*8+f+ba,PEEK (16
48+(f*256)): NEXT f: RUN
 400 INPUT "WHICH CHARACTER ";c$
 410 IF LEN c$<>1 THEN GO TO 40
0
 420 IF CODE c$<32 OR CODE c$>12
7 THEN GO TO 400
 430 POKE 23606,64: POKE 23607,1
55: PRINT AT 2,20;c$: POKE 23606
,0: POKE 23607,60
 440 FOR a=0 TO 7: FOR b=0 TO 7
 450 IF POINT (b+160,(8-a)+151)=
1 THEN PRINT AT a+3,b+4; INVERS
E 1;"X"; GO TO 470
 460 PRINT AT a+3,b+4;"O"
 470 NEXT b: NEXT a
 480 LET a=0: LET b=0: GO TO 200
 500 PRINT AT 15,0;: FOR f=32 TO
 127: PRINT BRIGHT 1;CHR$ f;" "
;: NEXT f
 501 PRINT AT 15,0;" ";: OVER 1:
 FOR f=32 TO 127: POKE 23606,64:
 POKE 23607,155: PRINT BRIGHT 1
;CHR$ f;: POKE 23606,0: POKE 236
07,60: PRINT " ";: NEXT f: OVER
0: POKE 23606,0: POKE 23607,60
 510 BEEP .1,1: PAUSE 0: PAUSE 0
: RUN
 1000 INPUT "file name ";f$: SAVE
 f$CODE 40000,768: RUN
 1020 INPUT "file name ";f$: LOAD
 f$CODE 40000,768: RUN
 9999 STOP : ERASE "m";1;"YSGD";
SAVE *"m";1;"YSGD": STOP
```

DEMO LISTING JOB

If you're still confused about life, death and the meaning of proportional printing, try out this major new adventure program once you've got PROPSYS working. Cor, it's even harder than *Castle Rathbone!* Just so you can see how awful Speccy printing is, the magic word xyzzy will flip you between the two types of printing.

```
  1 REM *Proportional Printing*
  2 REM * Tony Samuels 1985 *
  9 REM --Initilize routine--
  10 LET l=USR 65000
  11 PAPER 0: BORDER 0: CLS
  12 FOR f=1 TO 7
  15 INK f
  20 LPRINT AT f*2+50,(f-1)*8;"P
roportional Printing"
  30 NEXT f
  40 FOR f=7 TO 1 STEP -1
  50 INK f
  60 LPRINT AT f*2+50,(8+(8-f))*
8;"Proportional Printing"
  70 NEXT f
  80 FOR f=0 TO 10
  85 INK RND*6+1
  90 LPRINT AT 165-f*2,80+f*8;"I
n High Resolution"
  120 NEXT f
  125 PAUSE 400
  130 INK 0: PAPER 0: BORDER 0: C
LS
  132 LET l=USR 65000
  135 INK 5
  136 LET c=3
  140 LPRINT AT 70,0;"The YS Sill
y Adventure"
  145 DATA "You are in a room","Y
ou are in a cave","you find your
self in a dank dungeon","You are
 in an extremely messy office (Y
eah ed.) !","You are having a ni
ghtmare (or are you)"
  146 DATA "A shaft of light beam
s down from the roof","It is dar
k","There is a bucket nailed to
the floor which you can't pick u
p","There are strange etchings o
n the wall","A wind is blowing"
  150 LPRINT : LPRINT : LPRINT
  160 INK RND*4+3
  170 RESTORE 145: FOR f=1 TO INT
 (RND*5)+1: READ f$: NEXT f
  180 RESTORE 146: FOR f=1 TO INT
 (RND*5)+1: READ s$: NEXT f
  185 IF PEEK 65244<30 THEN LET
l=USR 65000: CLS
  190 PRINT #c;f$;", ";s$: PRINT
#c
  200 INPUT INK 5;"COMMAND >";c$
  210 IF c$="xyzzy" THEN IF c=2
THEN LET c=3: RANDOMIZE USR 650
00: CLS : GO TO 221
  220 IF c$="xyzzy" THEN IF c=3
THEN LET c=2: CLS
  230 IF c$="n" OR c$="s" OR c$="
w" OR c$="e" OR c$="xyzzy" THEN
 GO TO 250
  235 IF PEEK 65244<30 THEN LET
l=USR 65000: CLS
  240 INK 5: PRINT #c: PRINT #c;"
I'm sorry I dont understand !":
BEEP .5,1: GO TO 200
  250 PRINT #c: PRINT #c;"OKAY si
r"
  300 GO TO 160
```



Before . . . and after. The difference, as you can see, is quite dramatic. Not only is the proportional text more pleasing to look at — it's also easier to read!

Program Techniques

XCEL



Amongst 300 worlds lie 30 Sentinel Bases.
Legend has, they are impossible to reach . . .

XCEL. A stunning new game from Program Techniques, featuring state of the art hi-res graphics and movement.
Available from all good software retailers for the 48K Spectrum, coming soon for the C64 and Amstrad.

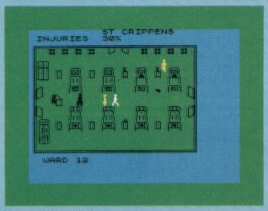
R.R.P. £7.95

DISTRIBUTED BY ACTIVISION (U.K.) Ltd.

DEFY THE LEGEND!

JOYSTICK JURY

Are you ready for a software seige? It's time for our trusty panel of joystick jurors to line up all the latest and greatest games and put them through their paces! Let* Ross Holman, Rick Robson *and* Dougie Bern *lead you to the hottest arcade action around!



ST CRIPPENS

Creative Sparks £2.50

Rick: Creative Sparks has come up with a cheap and nasty for the sick at heart.. But then I like 'em cheap and nasty.

More horrific than *Young Doctors, St. Crippens* makes *St. Elsewhere* look like a Swiss Spa. You have to try and escape the worst hospital in the world before getting limbs lopped off by nurses, porters and genetic mutants. The game is wildly inaccurate. For a start you can tell the difference between the genetic mutants and the nurses. To escape you must find bribes of ciggies and beer to swop for clothes to slip by the security guards.

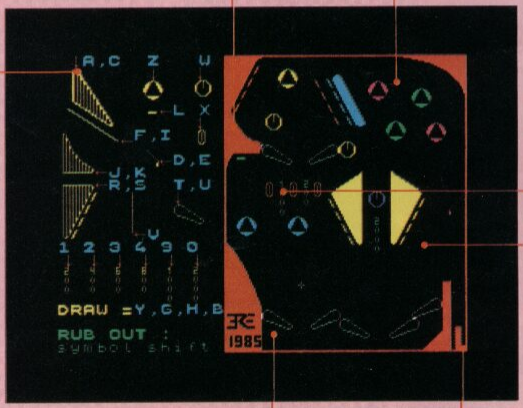
A concept so gruesome as to be brilliant, its tackiness is exceeded only by that of the graphics that have a certain minimalist charm, ie there's not much of them. The collision detection is so bad that the nurses presumably kill you with airborne germs as I kept getting zapped *miles* before actual contact. A couple of hours of this and you'll want to put the programmers in casualty, if you're not already in the mental ward. I gave this to me Dad — he reckoned it was a cut above the rest. If you're into squeamish fun then look no further. **6/10**

Ross: Original idea, unoriginal graphics, but more than a pain to play. The collision detection is awful and means that you get struck down all too frequently. I never did like hospitals. **2/10**

Dougie: Nice idea ... shame about the game! I definitely wouldn't want to stay at this hospital, what with all those mutants and 'orrible nurses hanging around. Just keep taking the tablets and you may never have to go near this game. **2/10**



RICK'S RAVE OF THE MONTH



These posts count for bonus points after each ball — get as many as possible before going down the tube.

Yes the game even includes tilt! You can nudge that ball over just a little, but go too far and... Ooops!

You position the bumpers and the like, that you want on the play area by simply pressing their letter label. The arrow on the object marks the point from which they'll be drawn.

Macadam features all those nice bits you get on the 'real' machines including extra balls, bonus points and something mysteriously tagged 'special'.

This is the screen that will allow you to design your own Pinball game. If your efforts are judged the best by PSS then you could win a real full-sized machine for your bedroom!

If you get bored with this layout then you can redesign your own. One of the program's most powerful features, that!

This game's got more flippers than a school of dolphins. You see, Macadam will let you have as many flippers as you care to cram into the screen.

The ball's shot out from here and you've total control over the speed it flies out at. It's all done in the press of a button!

MACADAM BUMPER

PSS £9.95

Rick: Well, flip me, what a bumper treat for pinball and programming wizards. This is the pinball game in excelsis!

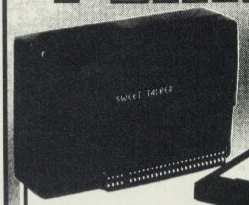
But not only that, this game has the facility to let you design your *own* pin ball table. Mind you, there's nothing wrong with the programmed one. And if you come up with a beaut then PSS will build it and give it to you. If you don't win their competion it'll still provide you with endless permutations of bumpers, bells and ripples.

Right from the loading screen this game captures all the thrills of those nights manically flexing your flipper fingers. But there's no seven foot lurch behind you ready to top yer if yer beat his score.

Like all the best games its simplicity itself. Six flippers are controlled by two keys. For a little ambience, press C to put your money in. (No bent 10ps allowed). Punch up the number of players you want then release the ball at the pace you like to pin those posts or pot that special. As a simulation its uncanny. The flippers have the deftness and delicacy of the best of the real thing. You can jolt — but gently, or else, of course you tilt. You can catch and hold the ball for precision shooting — or flip as frantically as your reflexes allow.

You don't have to be a Tommy to enjoy this — nor, indeed, to have played pinball before. But I bet you'll be deaf, dumb and blind to any other Arcades once you're hooked on this! 9/10

PERIPHERAL POWER



CHEETAH" SWEET TALKER"
Based on an allophone system, program any word or phrase, providing unlimited speech. Now make your Spectrum talk. Compatible with Interface I & II and Spectrum + ... **£24.95**



CASSETTE/DATA RECORDER
For your home computer, will allow easy loading of even the most stubborn program. Features include single key record, mains/battery, accepts standard computer leads and 5 pin DIN connector. Also provides exceptional audio quality for fine listening. (Batteries not included) **£24.95**



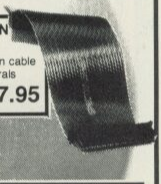
MEGASOUND
For 48K Spectrum and ZX Spectrum + Achieve amazing sound capabilities that your Spectrum has been lacking. Just plugs into the user port at the rear of your computer and amplifies sound through your T.V. **£10.95**



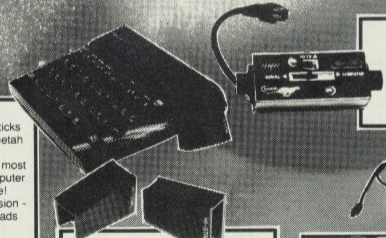
SPECTRUM JOYSTICK INTERFACE
Simply plugs into the user port at the rear of the computer and accepts any Atari style joystick including Quickshot and Kempston. Comes without rear edge connector at **£11.50**
or with connector which allows other peripherals to be stacked up at **£12.75**



32K RAMPACK
Upgrade your 16K ZX Spectrum now! The Cheetah 32K Rampack simply plugs into the user port at the rear of your computer and increases the memory instantly. to 48K **£39.95**



56 WAY EXTENSION CONNECTOR
Cheetah's 6" long extension cable enables Spectrum peripherals to be distanced from your computer .. **£7.95**



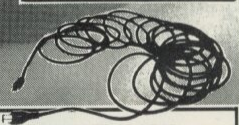
AERIAL SPLITTER
Cheetah's neat splitter unit complete with self adhesive pad allows you to keep your T.V. and computer aerial leads plugged in without disturbing the picture **£2.25**



R.A.T.
Conventional joysticks are dead! The Cheetah Remote Action Transmitter is the most sophisticated computer controller available! Infra red transmission - so there are no leads trailing across the living room. Touch control, extremely fast, can be used with Cheetah RAT/ Kempston compatible software. Complete with receiver/ interface. **£29.95**



HI-STAK FEET
These instantly applied stick on feet for your ZX 81, Spectrum, New Brain, VIC, TRS etc. tilt the computer and make your keys easier to see and more enjoyable to use, allowing smoother programming. **£2.99**



EXTRA LONG AERIAL LEAD
Over 15' long. Our super lead will allow you to sit back away from your T.V. and enable you to play games in the comfort of your armchair. **£1.50**

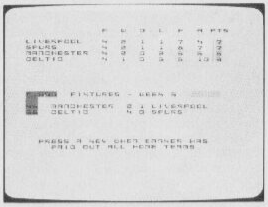
All Cheetah Peripherals have rear edge connectors for compatibility with all Sinclair accessories.

Prices include VAT, postage & packing.
Delivery normally 14 days.
Export orders at no extra cost.
Dealer enquiries welcome.
Cheetah products available from branches of
John Menzies WHSMITH Rumbelows
WOOLWORTH Spectrum dealers
and all good computer stores.

Cheetah Marketing

DEPT YS

Cheetah Marketing Ltd, Dept YS, 24 Ray Street, London EC1R 3DJ. Tel: 01-833 4909
Telex: 8954958



BRYAN ROBSON'S SUPERLEAGUE

Paul Lamond/£12.95

Rick: You can tell this is Bryan Robson's football game and not Glenn Hoddle's. The emphasis is definitely on sweat and perseverance, not grace and artistry. This is a manager's game, not a simulation, but presumably Bryan's name sells better too.

The gimmick of this is to combine the pleasures (and pitfalls) of a dice board with a computer. Of course they could be combined on a T.V. screen but then you wouldn't get the impressive packaging. If you buy this for the skills of the ball rather than the beauty of the box you might be disappointed.

Basically you have to build a team and keep it fit (and more importantly solvent) to win the league as you battle against chance and hazards depicted by weather, bank managers and errant train drivers rather than Barnes or Gary Lineker. Your matches are mapped out on the board and take you to the major cities rather than the major teams.

Yer actual fans (and there are some left!) might think too much emphasis is put on weather as though this is cricket not soccer. A player's worth is seen in monetary, not skill terms but the most expensive is only £120,000 so we're really in the second division.

You can profit by breaking your opponent's legs (without fear of suspension) or cheat by saving goals that the ref hasn't seen go over the line. Not bad as a long playing strategy game. **6/10**

Ross: Lovely box — wonderful presentation and all that, but I reckon the software house behind it should have spent a little more cash on the program rather than the promotional gear. **7/10**

Dougie: I always did go for the Football Manager type programs. This one ain't up to the original's standards, but it's quite a challenge once you settle in. **8/10**

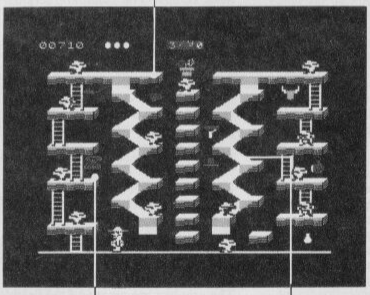


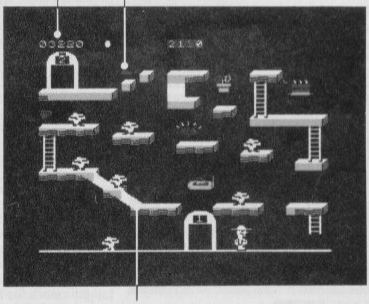
ROSS'S RAVE OF THE MONTH

The idea of each screen is to turn all the shaded platform areas solid. You do this by — you guessed it — walking on them!

Throughout the game you'll come across these doors with the numbers nailed above them. These are the transporters. Climb into one and press 'P' — you'll be beamed up to the next door in sequence.

Collecting these knick-knacks gives you power to get your own back on the meanies. Isn't that like the puck pellets in *Pac Man*.





As long as you don't linger, you'll find that you'll be able to get through the screens quite simply. The objects are laid out so that if you take the right path you'll pick up an object every one or two meanies — enabling you to eat them without having to stop.

Go for a slide down here. On later levels these slides can run from top to bottom of the screen — weaving around every possible object — somewhat like a Butlins funpool!

Bob's long distance jumping abilities aren't as good as those of some other platform heroes. It seems that if you fall a matter of two steps, you're in for the squash routine.

BOUNTY BOB

US Gold £7.95

Ross: Scrambling around hundreds of screens looking for assorted objects and dodging hordes of nasties — sounds familiar, eh? Yep, it's yet another ladders and platforms game. But wait! Don't try for a getaway in sheer disgust, this one's a cut above yer average, believe me.

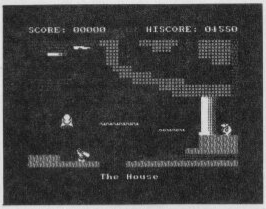
So what's it all about? You've got to guide bouncing *Bounty Bob* around quite a few screens, hording unlikely combinations of clutter like flower pots, gems and cakes. As you'd expect there's no shortage of nasties to hamper his progress, but Bounty's got a handy asset, his own insatiable appetite! Just like a magpie or an old billy goat, he'll greedily demolish every object in sight, and by doing this he transforms the yellow nasties into an appetising snack too! There's a lot to be said for greedin this game!

There's plenty of leaping and bounding for *Bounty Bob* to try, but don't let him fall too far or he's a gonner! With only three lives he can't afford to take too many risks!

If you manage to touch every platform in the *Painter* game part, you'll then be promoted to the next screen. And that's where the fun starts. Bounty Bob can take lifts, slide down the longest tracks possible, use the transporters and generally cause havoc amongst the idyllic lives of the nasty green things.

There's only one thing that you'll lack while playing Bounty Bob — that's time to think. Bob won't have time to hang around because the meanies will be on his tail if he does.

All in all, it's pretty addictive, but don't be fooled into thinking it's a cinch... you'll see why... 9/10



MONTY ON THE RUN

Gremlin Graphics £7.95

Ross: For all the *Monty Mole* fans out there, this game continues his escapades, only this time, it all seems a little more difficult. You're gonna have to help little Monty escape the forces of Law and Order and get him on a boat bound for France!

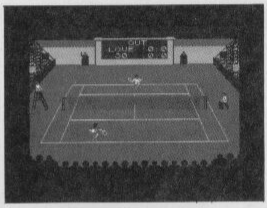
The scenario of screens behind the tale of this cosmopolitan little rodent are similar to those in the original game. It's all platforms, ladders, ropes, and even those horrible 'crushers'. What's new are the transporters which flash on and off in spectacular multicolours, and you'll have to learn the colour code as quickly as possible if you want to pass through them safely. It's a bit like complicated traffic lights really...

You can kit Monty out with five assorted objects at the start, to set him up in life. You then have to collect gold coins, and use the objects, just as you did in the first Monty game. Your timing has to be pretty hot, and mapping is essential

I'd say that this game has a higher fun factor than its predecessor especially since Monty has become more dynamic and has taken to leaps and somersaults rather than straight walking! This adds to the visual sparkle and keeps the adrenalin flowing. It's a goodie, try it! **9/10**

Dougie: He flies through the air with the greatest of ease... Just another boring platform game? Rubbish! Give me that joystick back... **9/10**

Rick: Not a bad rework on an old adventure. Monty seems to have developed a few more athletic tendencies though, so I won't be surprised if I end up with a headache after playing this one. **9/10**



SUPERBRAT

Atlantis £1.99

Rick: Atlantis they say disappeared below the waves without trace. Not unlike McEnroe at Wimbledon! And really this tennis simulation that promises so much, ends up a loser too. Play a few rallies on the opposition simulations before making your mind up.

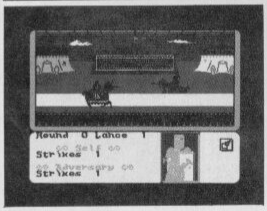
Mind you, it does have *some* aces up its sleeve. All the basic facilities of singles tennis are on offer. Matches are of 3 or 5 sets and follow the score patterns of the real McCoy. You can actually toss the ball to serve — until you've mastered the art, its underarm — no wonder superbrat is so often the winner! — but an ace or two is still possible. Direction, curiously, depends on the speed you hit the ball — fast to the left, slow to the right. Combined with lateral movement angles and cross courts can be created — a step up from the old pit-pat over the net.

Master these movements and then progress through the three layers of difficulty — the British tournament (for beginners of course!), then European and World. Though would it've been so hard to actually name tournaments?

Unfortunately, you can't programme yourself or the omnipresent superbrat for different skills or variations in temperament or style so it can take on the monotony of the base-line basher. But it could while away the months until the strawberries and cream are fresh again.

Ross: Tennis? You *cannot* be serious, man... **5/10**

Dougie: An unoriginal idea with an unchallenging game. This one scores no aces with me. **5/10**



THE EVIL CROWN

Mind Games £9.95

Dougie: *The Evil Crown* is an Icon driven, trading simulation of the middle ages, where you take the part of lord and master over the peasants. But that's not enough to satisfy your lust for power, so you're going for the big one, *The Evil Crown*, Top Dog, The BOSS!

As Top Baddy, your job's to make sure the peasants don't get too big for their boots, sort out the other Barons who've got designs on the throne, look after your loyal troops and expand your lands as well! Not only that, you've got to thrash the chainmail off your opponents' knights at the annual jousting tournament. Nothing too difficult, in fact, it's all in a knight's work for an apprentice tyrant like yourself. Be careful at the jousting though, as some of the knights are a bit knatty with ye olde lance, they like to lance-a-lot (*groan Ed.*).

The game itself is well written and the graphics are fairly good, not brilliant, but they'll do. The icon driver is one of the smoothest and easiest I've ever used

Although I enjoyed playing *The Evil Crown*, I have to say that they'd have a hard job separating me from a tenner for it! Perhaps Mind Games should concentrate more on the software and less on the megasized boxes! **5/10**

Ross: Mind Games have made the move from menu to icon and pointer driven games quite smoothly, and seem to find games that suit this new environment. The graphics are great and the game's pretty enjoyable. **9/10**

Rick: It's the only game of Kingdoms that I reckon's worth playing. The icons are a bit tricky at first, but you'll soon get used to them. **8/10**



CONVOY

Budgie £2.50

Dougie: *Zis* iz a very interezting simulation game. Lizten, you wargaming fanaticz out zere. Ze scenario is WW II, ze location, the North Atlantic. You and your partner play ze parts of ze commanders in the British and German Naval forces. Your mission? to destroy ze enemy convoy and sink their flagship — zats all.

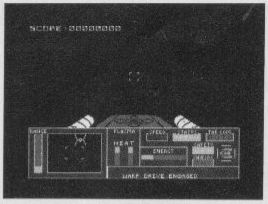
Ze fleet under your command haz ze full complement of Aircraft carriers, Battleships, Cruisers, Destroyers and Submarines. Occasionally, you have ze benefit of ze air reconaissanze too.

Ze game starts with ze British Player being given ze option to review his fleets' status or begin moving it around. He iz allowed to set the speed and course of each vessel independently, so he haz full control over zair movements. Power, huh!

Convoy iz a very interezting game if you like ze wars, but it's written in ze Basic vhich makes it very slow and difficult to play. At two and a half poundz, it's not a winner, but itz very good practice for vinning ze wars and ruling ze vurld ... Ha, Ha, Ha!! **6/10**

Rick: For a budget game it ain't bad, but it's not for the uncommitted wargamer or non-strategist. Shame you have to reload after each game. **7/10**

Ross: A well-produced version of battleships with extra graphics and better computer control. There's nothing wonderful to make saying "Get yourself a *Convoy*" worthwhile. **4/10**



CODENAME MAT II

Domark £8.95

Ross: As I suspected, this game is a near clone of *Codename Mat 1*. It's time to get your spacesuit out and join the *Star Trek* league of alien-zappers again.

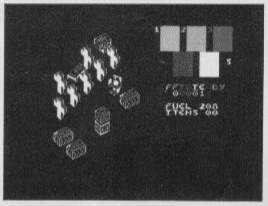
The scenario is a few ions different from the original, — you'll be protecting the 24 satellites that are circling the Mines of Vesta. (*So that's where they get the curries from? Ed*) Maintaining your satellites is a bit like painting the Forth Bridge as the nasty little Myons keep trying to destroy at least one satellite out of each group of four, so you must keep repairing them without letting the links between groups break down. Circles of boredom, perhaps?

Your craft is well equipped to feed you with info about your status, etc. As for fighting back, you've got a choice of lasers or energy bolts to attack with. The lasers are faster but deprive you of more energy into the bargain. You must control the temperature of the lasers, speed, shields and all — which leads to not only a complex game but a wonderful tangle of fingers too! And I thought computers had done away with such mundane tasks...

If you've played *Codename Mat 1* then there's no real surprises for you. If not, then take a look. **7/10**

Dougie: Better than *Codename Mat 1* it may be, but it ain't as hot as *Starion, Elite* and games of that ilk. **6/10**

Rick: I never played *Codename Mat 1*, and I'm not sure whether I should have bothered with the sequel. 3D space wars are a bit dead unless you can do them well. **5/10**



CYLU

Firebird £2.50

Ross: I was hoping that this would be some kind of crazy maze game... but to say that would be misleading. There's not so much as a measly minataur to stumble across in this limp labyrinth.

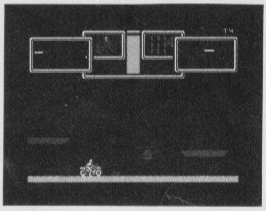
Talking of myths, I was certainly mythled by the claim that this game's graphics were up to *Alien 8* standard — which *would* be impressive at £2.50! But no, they're not that good at all. It *is* a 3D style game, which although pretty, doesn't help you manoeuvre. The 3D bit means that the corridors between blocks are on the diagonals, and as your robot friend moves a character block at a time, staying on course is pretty difficult.

Big problem number two, is finding fuel cells to replenish your supply as you busily consume away on your convaluted travels. You can only carry five things around, so don't tank yourself up too much.

Access to hidden parts of the maze is gained by using keys to activate any of the nine teleport terminals. But even there, you won't be in for any great surprises. As a bargain priced game it's reasonable, but it's not what you'd call 'amazing'. **5/10**

Rick: You're either going to love or hate this game. I hate it. The weird 3D effect confuses me beyond wanting to play, and as my fuel runs out before I get a chance to get into it, I ain't going to bother trying. **5/10**

Dougie: If I had time to get into this I'm sure I'd enjoy it. As it is I just can't understand what makes it tick. **7/10**



STREET HAWK

Ocean £6.95

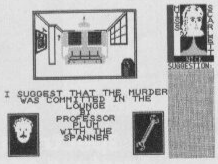
Dougie: *Street Hawk*'s another one of those TV tie-ups of which we all expect great things. I'm sure you're as disappointed as me to learn that once again, the computer game bears no relation to the TV show. I just wish for a change that someone would actually do a good TV or movie game. Anyway, back to the game, if like me you're a fan of the original *Defender*, this game's for you.

First, you have to charge up your *Street Hawk* by gaining points through the accuracy of your laser firing. Once you've got the juice then you're off, your mission ?... to blast the enemy helicopters to bits and rescue the survivors -- simple innit!!, You've also got to pick up the pieces of some of the enemy helicopters to get you on to the next level. Keep a keen eye on the twin scanners to make sure you know where the next attack is coming from.

All in all, if you're a *Defender* fan, then this game's got some of the fastest, flicker-free, hi-res sprites that I've ever seen on the Speccy. And it's full of hi-speed Defender style action, though I'm not sure that my software collection really needs another *Defender* style program. **6/10**

Rick: The ultimate for Arcade Hell's Angels. Fast, furious and full throttle for battling bikers chasing choppers with choppers. Not one for the meek and mild. **7/10**

Ross: *Defender* with motorbikes — didn't Activision do something similar on the Atari two years ago? Points for pretty graphics, but nothing for originality. **7/10**



CLUEDO

Leisure Genius £9.95

Ross: Was it Mrs. Peacock, in the Conservatory, with the revolver ... or Reverend Green in the Library? For those of you who've never played this classic board game, the thought of solving mysterious murders in a huge mansion setting must sound pretty intriguing. But the thing is, after you've learnt all the names of the characters, and the rooms, the novelty wears well and truly off!

As the Spectrum version follows the original Waddington's traditions, there's nothing to distinguish the two. You'll see the same board, throw the same dice and make the same old moves from room to room. You'll also make the same old accusations about who did what, and where? What's more, you'll miss out on the miniature weapons that you can place on the board in the original.

Another let down is the pictorial versions of the rooms. They convert the palatial, spacious residence of your imagination into a vision of next-door's pokey semi... shame.

It has to be said that the graphics are clear, and the speed of play is pretty nifty, so you'll be kept on the move. If you fancy yourself as a good-ol'-fashioned detective, then you'll find everything you need in this one. **6/10**

Rick: Same old solid replication of the board game. Ivor Notion Miss Scarlett did it with the lead-piping, but that's another story. If you're a *Cluedo* fan, you could be playing it for hours, in the kitchen, the lounge or wherever! **7/10**

Dougie: The graphics are nice and the program's well written — but who could think of playing *Cluedo* on anything but the lounge floor? **7/10**

INTERNATIONAL KARATE



..And you thought you'd seen a Karate game

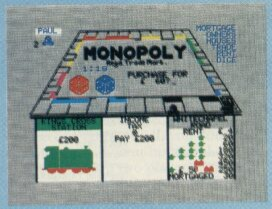
As you know, like the Martial Arts, Perfection is the only accepted standard, so play nothing until you play — SYSTEM 3's — INTERNATIONAL KARATE

For the Spectrum, C.64, Amstrad and all 48k Ataris at ONLY

£6.50

SYSTEM 3 SOFTWARE. SOUTHBANK HOUSE, BLACK PRINCE ROAD. LONDON SE1 TEL: 01-735 8171. Ex. 68

JOYSTICK JURY



MONOPOLY

Leisure Genius £9.95

Rick: Does following the traumas of Uncle Clive in the market place put too much strain on the old ticker? Why not relax and put your greenbacks into where the real bunce is — simple low down, land and property. Leisure Genius's adaption of Waddington's classic board game *Monopoly* could be just the start you need — gazump your girlfriend, bankrupt your brother and mortgage your mother in this fun family game!

As *Monopoly* imitates life, so Leisure Genius has unerringly simulated it for the computer. Technically, nothing would appear to be missing from the original. And there are added bonuses — your snotty brother can't kick the board over 'cos he's 'the boot' again or 'cos he's landed on your Regent Street with 4 hotels for the eighth time (tee hee!). More importantly, there's a facility for playing by yourself for all you lonely hearts Monopoly fans. Trading with other players seems slower than in the board version — and not so much fun — it's hard to haggle and shout abuse on a TV screen (for some at least).

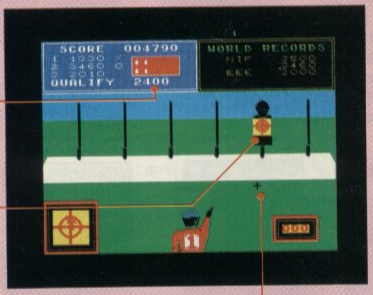
I also missed the crackle of new £50 toy-town notes between my fingers — and piling up my placcy houses and hotels. Otherwise it's a worthy if hardly imaginative translation, staying loyal to the original but you probably expect a little more from your computer games. **6/10**

Ross: An excellent conversion from the original, albeit slightly harder to have an enjoyable game. This one gets my vote! **8/10**

Dougie: As with most computer games based on a board game, this lacks something on the TV Screen. I still prefer to get out the board and sit in the middle of the room with the family. **7/10**



DOUGIE'S RAVE OF THE MONTH



Each event has its own 'qualify' mark. You don't necessarily need to achieve this point to get into the next event, but if you *do*, it does mean you'll go with your full line up of athletes.

You can move out and up, but you can't move back in to hit your target, that means you've got to be accurate first time! There ain't no second chances in this event.

One advantage this has over *Hypersports* is the fact you start off with three men. This means that if you fail in one event, you can always get into the next event providing you have a man left.

You've only got two directional controls, so how does Daley work that one out? Well, it ain't too easy — the left button is used for moving left *and* right while the right-hand is used to move you up. It takes a lot of getting used to!



To do well in the Ski Jump, build up plenty of speed before launching yourself off into the cold air to gain the maximum jump possible. You'll need to go like fury on power buttons, and then take off as close to the edge as you dare.

Down here, at the bottom of most screens, you'll find this little power meter. This tells you just exactly how much effort you're putting into each event, which is quite important since this is directly related to the score you're going to get at the end.

Take care when landing — if you press the button too early then you'll take a tumble in the snow. Too low and you'll break those expensive skis on hire from Ocean.

These views show you the plan and side views of your jump. Use the top one to judge when you've got to prepare your landing, and the bottom one to estimate how far you are flying. Whoopee!

DALEY THOMPSON'S SUPERTEST

Ocean £6.95

Dougie: you'll be really knackered when you get to grips with *D.T.'s Supertest*, it's a real test of skill and endurance not to mention the damage it does to your digits!

First off, comes the pistol shooting, where you'll need a quick eye and a fast hand to score enough points to qualify.

Next up is the Cycle Racing, where you compete against the clock. Actually, it's more of a test to see what gives in first, you, your fingers, or your poor ol' speccy!

When you've fully recovered from the cycling, you get the chance to go for a nice relaxing dip in the pool. Ha-ha, that'll be the day — you didn't think youd get in there for nothing did you? No, you have to turn somersaults and dive into the water without the slightest ripple.

You'd better dig out your thermal underwear for the next event as it gets pretty chilly on the Giant Slalom. Although you get 2 chances you'll probably spend more time on your backside than you will winging your way down the slopes!

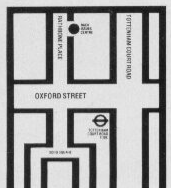
Day 2 sees you starting four new events. The rowing is another finger numbing exercise in stamina, and you'll have to beat the clock to qualify. You're also up against a computer opponent who's hard to beat.

Beat the Goalie, next. Well, you don't actually get to beat the goalie, you have to beat him at penalties. You can build up the power of your shot on the run up and at the last minute kick the ball at an angle to fool the goalie. (Tee-hee!)

Now you're for the high jump. Well actually, the Ski Jump, but they want you to jump high anyway! To get the best flight, build up your speed on the ramp, then just before the end, press the fire button to jump off into the clear blue yonder.

If you've any stamina left after all that, it's time to put your bulging biceps to the test in the tug-of-war. Once again your fingers bear the brunt of the bashing as you struggle to pull your way to victory. It's all pretty exhilerating stuff. **9/10**

BACK ISSUES BLITZ



You can now obtain any of these back issues of *Your Spectrum* by filling in the coupon below and enclosing £1.10 for each issue.

Also, our shop is open Monday to Friday, 9.30am to 5.30pm. The address is 14 Rathbone Place, London W1P 1DE.



ISSUE 1 (DEC/JAN 1984)
REVIEWS
Currah's MicroSpeech, general computing books, joysticks.
FEATURES
Speech synthesis, Toni Baker's machine code break-out, Spectrum communications, DIY keyboard buffer, machine code scrolling.
GAMES
Chess packages.



ISSUE 5 (JULY 1984)
REVIEWS
British Micro's Grafpad, DIY computing books.
FEATURES
Computerised bulletin boards and modems, software for printer interfaces, *ZIP* compiler [Pt. 3], DIY joystick interface.
GAMES
Gilsoft's *The Quill.*



ISSUE 8 (OCTOBER 1984)
REVIEWS
Graphics toolkits, programming languages books.
FEATURES
Microdrive recovery, Project 3 revisited, multi-tasking your Spectrum, *YS MegaBasic* [Pt. 1].
GAMES
Vortex's *TLL.*



ISSUE 12 (MARCH 1985)
REVIEWS
Music packages
FEATURES
Multisearch, Mac Man, Harry Hacker, *Tuning UP*
GAMES
Ghostbusters, Ghoulies, Doomdark's Revenge



ISSUE 13 (APRIL 1985)
REVIEWS
Microdrivin' Megademo
FEATURES
Program Power, Screen scrunger, Big Deal
GAMES
Kong Strikes Back, Hunchback II, JSW



ISSUE 14 (MAY 1985)
REVIEWS
Speed Trials
FEATURES
It's A Cracker
Patching Up The Drives
GAMES
Alien 8, Emerald Isle, The Illustrator.



ISSUE 15 (JUNE 1985)
REVIEWS
Painting by Numbers
Hot Heads
FEATURES
Pic 'n' Mix,
Snap, Crackle & Pop
(YS Megabasic), Mastermind
GAMES
Starion, JSW, Gremlins



ISSUE 16 (JULY 1985)
REVIEW
Disko-Tech
FEATURES
3D Daze, Flash Moves, Program Power
GAMES
Shadowfire, Ashkeron, Funhouse, Rocky Horror Show



ISSUE 17 (AUGUST) 1985
REVIEWS
Black Magic Boxes
The Generation Game
FEATURES
3D3, Just A Tick, Program Power
GAMES
A View To A Kill, Dun Darach, Cauldron



ISSUE 18 (SEPTEMBER) 1985
REVIEWS
Bits 'n' Pieces, Joystick Jury
FEATURES
The Ghostwriter, New Rom Antics, Hidden Extras, Program Power
GAMES
Dambusters, JSW, The Fourth Protocol



ISSUE 19 (OCTOBER 1985)
REVIEWS
Joystick Jury
FEATURES
Sprite High, No Limit, Movin 'n' Groovin, Program Power, Second Opinion,
GAMES
Exploding Fist, Frankie, Highway Encounter, Red Moon, Mordon's Quest,

ORDER YOUR BACK ISSUES NOW!

Please send me the following back issues of *Your Spectrum* (UK £1.10 inc. p&p, £1.50 Europe, £1.70 rest of planet?

☐ Issue 1 ☐ Issue 13 ☐ Issue 17
☐ Issue 5 ☐ Issue 14 ☐ Issue 18
☐ Issue 8 ☐ Issue 15 ☐ Issue 19
☐ Issue 12 ☐ Issue 16

Issues 2,3,4,6,7,9,10 & 11 are now sold out, so don't waste your time ordering them!

I enclose a cheque/Postal Order for £..... made payable to Sportscene Specialist Press Ltd.

Name.....

Address .....

..... Postcode .....

Date .....

Please fill in this form and mail it immediately to:
Your Spectrum, Back Issues, PO Box 320, London N21 2NB.
You can use a photocopy of this form is you don't want to deface your issue.

OPPORTUNITY KNOCKS

SHOOT OUT

Howdy pardner, it's doggone Opportunity Knocks time. Shootin' star* Alan Trevartha's *machine code revives the traditional shoot'em up down at the OK Corral. OK?

Right, who said games are kids' stuff? Well, hold your horses, cowboy, 'cos this game's Billy the Kid's stuff! So, strap on your holster, load up your six-shooter and mosey on down to cactus canyon. And just take a look at the time. It's High Noon!

Yep, being quick on the draw is the name of the game, so start slinging that gun around. Your aim is to shoot down your opponent before he has a chance to pump you full of lead. Weave your way behind the cactus bushes and take cover behind the stagecoach or you'll end up in a coffin. Well, you don't want to die with your boots on!

Shoot Out is a two player game — well, where would Butch be without the Sundance Kid? — so you and your pardner will need to know the following control keys:

	Blue	Red
Up	1,2,3,4,5	6,7,8,9,0
Down	Q,W,E,R,T	Y,U,I,O,P
Fire	Caps,Z,X,C,V	B,N,M,S/S,Space

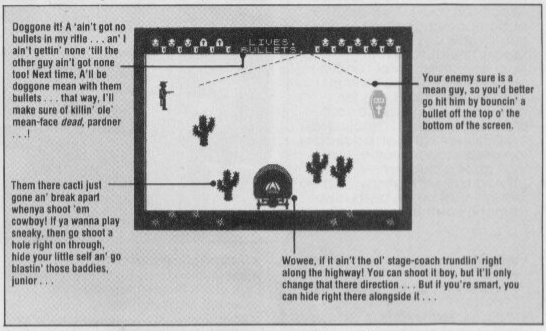
If you feel a Kempston joystick would be more akin to a six-shooter then you'll need to make these additions:

Blue Player — POKE 29620,0: POKE 29622,31: POKE 29623,201
Red Player — POKE 29660,0: POKE 29662,31: POKE 29663,201

Do I hear the sound of machine gun fire already? Nope, it's the clatter of the keys as the machine code goes into the Speccy. So, take a slug of red-eye and let that wagon roll. Yee-hah!

WHO'S THAT A'KNOCKING

You've started to panic now, haven't you? You've only just realised that there are just three more places to go in the Opportunity Knocks compo — and then the door slams shut. Yep, we're already half way there and if you're megaprogram's not in, then time is slipping away. And with it goes your chance for fame and more importantly, a little fortune — here at *YS*, we pay *very* well for all programs that make it to the page. OK, so you won't be able to rush out and buy the Porsche straight away but discovery could be just around the corner.



We're looking for outstanding programs backed up by original ideas. The rest is up to you. Oh, and just remember that we would like to fit something else into the issue, so don't go way over the 5K limit.

And now you want to know who's doing the judging. Well, it's YOU! That's right, when all six entrants have been published, who'll be the *YS* Programmer of the Year? So, stop your slacking and start typing now!

The Basic Loader

You'll need this loader at the start of your master tape of *Shoot Out*. You should save it with SAVE "SHOOT OUT" LINE 9000.

```
  10 LET win=USR 27720: LET L=US
R 29816
  20 IF win=1 THEN  PRINT AT 7,0
;"          The Red Gang
  "
  30 IF win=2 THEN  PRINT AT 7,0
;"          The Blue Bunch
  "
  40 PRINT ,,"   Walk off in to
the sunset.  ",,"   Leaving the
 dying,bleeding  ",,"      bodi
es behind them.  "
  50 IF INKEY$<>"" THEN  GO TO 5
0
  60 PRINT  PAPER 2;AT 20,9;"Pre
ss Any Key.": IF INKEY$="" THEN
 GO TO 55
  70 FOR F=1 TO 10: LET L=USR 29
718: PRINT  PAPER 8; INK 9;AT 6+
RND*10,F*3;" ": LET L=USR 29697:
 PAUSE 1: NEXT F
  80 GO TO 10
9000 BORDER 0: PAPER 0: INK 6: C
LEAR 27720
9010 LOAD ""CODE
9020 POKE 23676,127
9030 FOR F=1 TO 10: LET L=USR 29
718: PRINT  PAPER 8; INK 9;AT 6+
RND*10,F*3;" ": LET L=USR 29697:
 PAUSE 1: NEXT F
9040 RUN
```

The Hex Loader

Use this Hex loader (or one from a previous issue that you've already saved) to type in the Hex code. Remember that you shouldn't leave spaces between the eight bytes of hex code as you enter them.

```
   1 REM HEX Loader for Shoot Ou
t
   5 POKE 23658,8
   9 CLEAR 26999
  10 FOR i=27722 TO 27722+5046 S
TEP 8
  20 LET cs=0
  30 PRINT AT 0,0;"Address ";i
  40 INPUT "Hex 8 Bytes", LINE a
$
  60 IF LEN a$<>16 THEN  GO TO 1
000
  80 LET f=0: FOR j=1 TO 16
  90 IF (a$(j)<"0" OR a$(j)>"9")
 AND (a$(j)<"A" OR a$(j)>"F") TH
EN  LET f=1
 100 NEXT j
 105 IF f=1 THEN  GO TO 1000
 110 FOR n=0 TO 7
 120 LET y=CODE a$(1)-48: IF y>9
 THEN  LET y=y-7
 130 LET z=CODE a$(2)-48: IF z>9
 THEN  LET z=z-7
 140 LET va=16*y+z
 150 LET cs=cs+va
 160 POKE i+n,va
 165 PRINT AT 2,n*3;a$( TO 2)
 170 LET a$=a$(3 TO )
 180 NEXT n
 183 INPUT "Checksum "; LINE a$
 184 PRINT AT 2,25;a$
 185 IF VAL a$<>cs THEN  GO TO 1
000
 187 CLS
 190 NEXT i
 200 CLS : PRINT "SAVE CODE AFTE
R BASIC LOADER."''"REMOVE EAR LE
AD"
 210 SAVE "shootcode"CODE 27722,
5046
 220 CLS : PRINT "VERIFYING"
 230 VERIFY ""CODE
 240 CLS : PRINT "ALL OK": STOP
1000 PRINT AT 15,0;"ERROR": GO T
O 20
```

The Hex Code

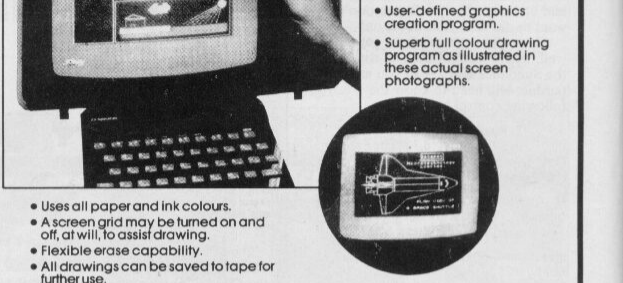
Simply type this Hex code into the Hex Loader (no, the program, not the star of screen and back page!) and SAVE it as soon as it's all in. And don't come crying that you're all in after all that typing!

```
27722 21 00 40 11 01 40 01 00 =180
27730 18 36 00 ED B0 36 46 01 =616
27738 00 03 ED B0 01 30 30 11 =530
27746 2C 78 3E 28 F5 C5 D5 CD =1126
27754 AA 22 D1 EB 01 13 00 ED =905
27762 B0 EB C1 F1 05 3D B7 20 =1126
27770 EB 01 58 AF 3E 5A F5 C5 =1093
27778 11 7C 76 3E 30 F5 C5 D5 =1024
27786 CD AA 22 D1 EB 01 09 00 =863
27794 ED B0 EB C1 F1 05 3D B7 =1331
27802 20 EB 01 E8 03 0B 78 B1 =811
27810 20 FB C1 F1 05 3D B7 20 =998
27818 D5 3E FE CD 01 16 21 BC =978
27826 6C 7E FE FF 28 3A D7 23 =1091
27834 18 F7 16 01 0B 10 05 9A =480
```

Datapen

A QUALITY LIGHTPEN for use with the SPECTRUM computer

The DATAPEN lightpen enables you to create high resolution pictures and technical layouts directly on your T.V. screen. The accompanying software allows you to draw any shape or *filled area* you wish, to *pixel accuracy*, in full colour and the results may be utilised within your own programs, e.g. for animation, or to illustrate your title pages. At just £29 inclusive, the Datapen lightpen package represents superb value – just look at the actual screen photographs and you will agree that this must be the best value for money on the market.



PLUS: 3 SOFTWARE PROGRAMS

- Routines and ideas for your own programs. (Menus, games, music, etc.)
- User-defined graphics creation program.
- Superb full colour drawing program as illustrated in these actual screen photographs.

- Incorporates features not provided with other pens.
- Push button operation on pen – no need to use keyboard.
- Works under any lighting conditions.
- Plots to pixel accuracy.
- 20 pre-defined commands allow plotting of geometric shapes, including triangle, lines, circles, etc., text, or user-defined characters.
- Uses all paper and ink colours.
- A screen grid may be turned on and off, at will, to assist drawing.
- Flexible erase capability.
- All drawings can be saved to tape for further use.
- Plugs in direct – no batteries, additional components, or adjustments needed.
- Handbook, plus printout of routines for use in your own programs.

Send cheque or P.O. for £29.00 to: Dept YS/11/85 DATAPEN MICROTECHNOLOGY LIMITED, Kingsclere Road, OVERTON, Hants. RG25 3JB 0256 770488
or ask at your local computer shop. Send S.A.E. for details. Lightpens and software are also available for BBC B, Dragon, CBM-64 and VIC-20.

BETA BASIC 3.0

SINCLAIR USER, JAN, 85 (ABOUT RELEASE 1.8): "HAS ESTABLISHED ITSELF AS THE STANDARD EXTENDED BASIC FOR THE SPECTRUM..... TURNS SINCLAIR BASIC FROM A GOOD VERSION OF THE LANGUAGE TO A FANTASTIC ONE..." NOW, WITH RELEASE 3.0, BETA BASIC BECOMES PROBABLY THE MOST POWERFUL BASIC AVAILABLE ON ANY 8-BIT MICRO!

- PROCEDURES - a very full implementation that lets you extend Basic easily. With parameter passing by value or by reference (including arrays), LOCAL variables, recursion, DEFAULT parameter values, and the ability to handle parameter LISTS of any length. No PROC keyword is needed; e.g. you can use things like: swop a,b or draw box 10,20,5 or addup b(),sum.
- GRAPHICS - up to 128 WINDOWS, each with its own character size (giving 1-64 chars/line!) and attributes. ROLL and SCROLL any part of the screen by any number of pixels in any direction! Use GET to store parts of the screen, then put them back anywhere at different magnifications. Fast FILL, ALTER attributes, PLOT strings, DRAW to a point, change scale and origin...
- TOOLKIT-features: Renumber with block move or copy; block DELETE, search and/or change (e.g. ALTER apples TO a$ 38 User-defined keys. List the variables, list a procedure, list DEF KEYs.
- EDITOR - lets you move the cursor around the screen 10 times faster! And you can move the cursor up and down within edited lines. AUTO, EDIT, JOIN and SPLIT commands.
- LISTINGS with optional automatic indentation of loops, IF, procedures etc. Works on existing programs e.g. you can choose to list:
  10 FOR n=1 TO 10: PRINT n: NEXT n
  as:
  10 FOR n=1 TO 10
  PRINT n
  NEXT n
- KEYWORDS can all be entered by typing them in full, or by the "single entry" method, or both in the same line; e.g. the line:
  10prin t"hello":if x=1 THEN goto 100 will be recognised and listed normally.
- Upgrades to Release 1.8 customers: If you bought direct from us, there is no need to return your cassette - just quote the (approximate) original purchase date with your order; otherwise return your cassette and name your supplier. The upgrade price of £6.95 (£7.50 overseas) includes a new manual.
- ARRAY and string handling features include fast INSTRING (100,000 chars/sec) and INARRAY search functions. You can JOIN arrays together, delete, transfer and insert sections, change dimensions without data loss, LENGTH function gives dimensions. Ultra-fast array SORT - e.g., a$500,301 will sort in about 3 seconds!
- MICRODRIVE commands let you use simple forms, or exactly the same commands you normally use for tape - just enter DEFAULT =m1 or m2. Some possible Microdrive commands: SAVE "name", ERASE "name", LOAD !, "name", SAVE 10 TO 100, "part prog", SAVE a "slicer" or just the variables. MOVE programs, CODE, arrays. MERGE auto-running programs. End-Of- File function.
- OTHER FEATURES, new or improved, are too many to describe: DO - LOOP structure with WHILE, UNTIL and EXIT IF; BREAK, CLEAR, CLOCK, CONTROL CODES, EDIT variables, ELSE, GET, KEY$N (programs can write themselves!) multi-LET, !(JUST a "slicer", ON (works with line nos, procs, etc.) ON ERROR, OVER 2, POKE strings, POP, READ LINE, TRACE, USING, DPOKE, Faster GOTOs, GOSUBs and FOR-NEXT loops.
- 28 FUNCTIONS: AND, OR, XOR, DEC, HEX$, BIN$; fast SINE, COSE, RND#; CHAR$, NUMBER, DPEEK, EOF, FILLED, INARRAY, INSTRING, ITEM LENGTH, MEMORY$, MEM, MOD, SCRN$, SHIFT$, STRING$, TIME$, USING$.
- Spectrum Basic compatible - you can run existing programs! Transferable to Microdrive. Syntax check on entry. Extra error messages. Compatible with most printer interfaces (please specify). Wafa-drive version available.
- Comprehensive A5-size manual. More than 80 pages, with many examples.
- To show you the power of Beta Basic's procedures, we include a FREE TURTLE GRAPHICS package!
- Release 1.8 remains available, at a lower price of £8.95 (£9.50 overseas). You can upgrade later to Release 3.0 for £6.95 (£7.50 overseas).
- TRANSFORM your Spectrum with BETA BASIC 3.0 for just £14.95 inclusive! (£15.50 overseas).

(TICK AS APPROPRIATE.) PLEASE SEND ME:
[ ] BETA BASIC 3.0, PAYMENT OF £14.95 (OR £15.50 OVERSEAS) IS ENCLOSED.
[ ] BETA BASIC 3.0 UPGRADE, PAYMENT OF £6.95 (£7.50) IS ENCLOSED.
[ ] BETA BASIC 1.8, PAYMENT OF £8.95 (£9.50) IS ENCLOSED.
[ ] MORE INFORMATION ON ____ I HAVE/DO NOT HAVE RELEASE 1.8 ALREADY.
A STAMPED ADDRESSED ENVELOPE IS ENCLOSED.

BETA SOFT
92 OXFORD RD.
MOSELEY
BIRMINGHAM
B13 9SQ

CAMMAC FROM MICRO ZEIGHTY

ASSEMBLER/DISASSEMBLER/TESTER/MOVER/EDITOR/SEARCHER
THE PERFECT MACHINE CODE TOOL FOR THE 48K ZX SPECTRUM

Five main functions in one package, which are loaded in as one so each part is never more than two key presses away. It can be loaded in within 10 or 15 seconds after both your program and its labels have been loaded separately. The least significant parts of the assembler and disassembler would cost at least £8 each if bought separately elsewhere.

ASSEMBLER-Direct entry assembler allows for the input of every Z-80 instruction without exception, as soon as one is typed in it will be instantaneously excepted or rejected. If rejected it will be treated as a label because a fully labelling system with up to 255 labels each of length up to 255 characters. Data to the instruction assembled is input as a denary number(no tedious hexadecimal number entry) on the following line. Completely different from a normal assembler in that only one instruction can be entered in at once so errors are spotted immediately whereas normally a whole string of text would be entered in one go which would then be assembled in as one leaping you to go back and make all the corrections after. No doubt the fastest assembler for the spectrum in terms of having the code actually poked into memory. With one key press you can alternate to and from a very flexible data entry routine which allows you to edit any part of a program easily.

DISASSEMBLER - Lists any machine code program including all protected instructions at high speed allowing you to stop, start list with by pressing any key. Detailed data listing as well and both can be sent directly to the ZX printer. Listings can alternate between inverse and normal printing after every NOP, EX A, or EX AF instruction is reached. Listings are easily understandable because for every address (2 byte number) printed which has a label associated with it, the label is printed around the instruction and address - either JU or 64 options. Labels in order listed as well so pieces of code can be found quickly and easily. For every byte in disassembly there is one line of text containing the mnemonic or data values.

TESTER - Crashproof machine code test tool /monitor - simulator allowing the running of any program at over 1600 instructions per second with provision for you to break in at any point view all flags and registers on screen or use any other part of cammac and return later to the exact same conditions. At last machine code programs with error reports if they go wrong while being tested; any instruction likely to result in a crash or system restart produces an error message. Allows single stepping with instruction to be tested disassembled in full at the bottom of the screen, essential aid for the debugging of programs. Enables you to execute an exact number of instructions in one go. Facility to run the program up until a particular condition occurs depending on the state of any register, register pair, bit or byte in memory, the branch or not possibility or even trapping 'trace' activity which prints the changing values of a register or byte in memory at the bottom of the screen while the program is being tested. The on screen tester allows you to dodge various instructions or correct that the program counter sees or move with the arrow keys and displays the total register set and the current instruction. Includes 2 wait flags which make the debugging of a program so much easier because during UNTIL commands CALL, NOP and EX for EX AF instructions lead to pauses in the checking of the required condition or cause a non-print period during a TRACE. One flag makes it possible to trace any step or jump from the alternate register set and the other allows you to reach the end of a CALL routine with one key press. Once a program works on the tester it can be executed at lightning speed - 400,000 instructions per second directly by the Z-80 processor from a USR command and will work exactly the same. Machine code could be learnt quite easily by using the on-screen tester alone without even consulting the manual because it's so simple to operate and you can see exactly how each instruction works by watching the changes in the complete register set displayed on screen. Can be used to test the spectrum rom or other software on the market to see exactly how they work, while being tested you'd think it was the real thing if it wasn't for the reduction in speed.

MOVER RELOCATOR - Lets you move any section of a machine code program so that the whole thing works exactly the same after the move as it did before. Perfect for creating space or removing errors, moves all labels, sub-labels and segregation addresses as well. Simple to use: just input the start and end of the block to be moved and then just enter the number of bytes up or down it is to be relocated to. Affects all JR jump lengths and all JP, CALL and LD addresses in areas of memory segregated off as WHOLE nor DATA taking no longer than 2 seconds. The mover makes programs as compact as possible, in the 20,000 bytes of cammac there is not one NO-OPERATION in either version because of a similar relocator used upon it. The mover can combine with the searcher for a NOP DUMP - making it possible to remove all NOPs from a program in one go so that it still runs the same afterwards. Without it you would have to go through the whole program changing relative and absolute addresses every time you needed to move some code which could take hours.

SEARCHER - Lets you search for the first occurrence of an instruction or find the number of occurrences of it in a defined area of memory and gives the addresses of up to 128 of them. Change all occurrences of a particular instruction into another one in one go. Change them with tester by running a program until it comes across a particular instruction. Can search for an instruction with or without data part or can search for a 1-12 byte data block. Can search for occurrences of 1-12 consecutive instructions.

CAMMAC - including 64 characters per line for labels and trace, 26 memory letters for storing numbers to be input during number entry retrieved by one key press which are also used as control variables for various parts of cammac. All numbers printed in decimal - integer form with commas. Cammac makes machine code much easier than basic. Superb editing including poke, double poke, 8 bit binary poke, string input and during data entry a whole lot of these can be entered in one go. Available only for the 48K ZX spectrum with interface 1 and microdrive. Supplied on microdrive cartridge are two versions of it, both are 20K in length and were written totally in machine code. One is at the bottom of memory 24000-44000 leaving 44000-65190 for your program instructions, data, labels and segregation addresses while the other lies between 45100-65100 so you can use 24000-45100. So the whole of the spectrum's 41K ram can be used for your own machine code programs at some time. Cammac is totally crashproof and new proof and allows for a perfect return to basic every time it is supplied with microdrive cartridge and an excellent 62-page manual explaining Z-80 machine code in full and the 40 cammac control keys and the 10 cammac flag settings. 77728 variations of the modes in can be in. Anyone from beginner to expert can build up their own very large machine code programs quickly and easily which run at between 5-200 times faster than basic and use ½ of the memory on average and any program which can be written in basic can be written in machine code. No machine code programmer should ever be without it.

SEND CHEQUES OR POSTAL ORDERS FOR £40 PAYABLE TO MICRO ZEIGHTY
7, THE CRESCENT, DEPT YS, HURSTBOURNE TARRANT, ANDOVER, HAMPSHIRE, SP11 0AP.
TELEPHONE: 0264 - 76 - 396

```
27842 9C 9E 9E 00 28 00 2E 00 A2 =1016
27850 A0 16 02 0D 18 04 9B 9D =527
27858 9F 9F A1 20 20 9F A3 A1 =1026
27866 16 04 07 10 06 54 6B 65 =344
27874 20 20 57 65 73 74 65 72 =698
27882 6E 20 20 47 61 6D 65 FF =807
27890 11 24 7B 01 1B 80 3E 10 =407
27898 F5 C5 D5 CD AA C2 01 EB =1508
27906 01 19 00 ED B0 EB C1 F1 =1108
27914 05 3D B7 20 ED 21 A0 59 =734
27922 11 61 59 01 40 01 3A 7B =447
27930 5C E6 1C 1F 1F 77 ED B0 =944
27938 3A 7B 5C E6 07 B7 CC 3A =952
27946 6D CD BF 02 FE 53 CA 11 =1063
27954 6F FE 44 CA C1 6D 18 D5 =1174
27962 21 58 6D 06 25 7E 23 C5 =631
27970 D7 C1 10 F9 3A 5B 5C CB =950
27978 5D 6D 21 5E 6D 01 5F 00 =534
27986 ED B8 32 BB 6D C9 16 09 =991
27994 00 11 02 65 73 73 20 7E =508
28002 44 7E 20 74 6F 20 63 68 =688
28010 61 6E 67 65 20 64 69 66 =750
28018 66 69 63 75 6C 74 79 20 =800
28026 7E 74 79 70 65 6F 20 2E =723
28034 2E 2E 2E 2E 7F 41 2E 48 =884
28042 48 2E 54 2E 20 31 39 38 =442
28050 35 20 2E 2E 2E 2E 2E 2E =361
28058 20 50 72 65 73 73 20 7E =715
28066 53 7E 20 74 6F 20 53 74 =699
28074 61 72 74 20 50 6C 61 79 =765
28082 20 2E 2E 2E 2E 2E 2E 20 =340
28090 50 72 3E 1E 32 4F EE 3E =715
28098 FE CD 01 16 21 00 40 11 =596
28106 01 40 01 00 18 36 00 ED =381
28114 B0 36 30 01 00 03 ED B0 =695
28122 CD 21 6E 11 2C 01 21 CB =643
28130 00 CD B5 03 3E 14 D7 3E =748
28138 01 D7 3A 32 6F C6 30 D7 =896
28146 3E 08 D7 CD BF 02 FE 0D =950
28154 CA 4A 6C FE 36 28 06 FE =992
28162 37 28 0F 18 EE 3A 32 6F =591
28170 FE 01 20 E7 3D 32 32 6F =798
28178 18 C9 3A 32 6F FE 32 28 =747
28186 0A 3C 32 6F 18 BC 21 =734
28194 2C 6E 7E FE FF C8 D7 23 =1239
28202 18 F8 16 00 0D 0D 10 05 =9A =480
28210 9C 9E 9E AA 20 20 9E A2 =1016
28218 A0 16 01 0D 10 04 9B 9D =526
28226 9F 9F A1 20 20 9F A3 A1 =1026
28234 16 04 07 0D 0D 11 06 54 =254
28242 65 20 42 75 6C 6C 65 74 =749
28250 20 53 70 65 65 64 20 63 =660
28258 61 6E 20 62 65 20 76 61 =685
28266 72 69 65 64 0D 0D 69 6E =661
28274 20 74 68 65 20 67 61 6D =694
28282 65 2E 0D 0D 0D 53 70 65 =482
28290 65 64 20 31 20 5B 53 4C =590
28298 4F 57 5D 0D 20 20 20 20 =400
28306 20 20 7C 0D 20 20 20 20 =329
28314 20 20 35 20 5B 46 41 53 =458
28322 54 5D 0D 20 20 20 20 20 =350
28330 20 7C 0D 20 20 20 20 20 =329
28338 20 59 20 5B 4D 41 47 4E =497
28346 49 4E 45 20 47 55 4E 20 =518
28354 21 5D 0D 10 02 50 72 65 =452
28362 73 73 20 37 20 74 6F 20 =608
28370 49 6E 63 72 65 61 73 65 =810
28378 0D 20 20 20 20 20 20 36 =259
28386 20 7F 20 20 44 65 65 72 =672
28394 65 61 73 65 0D 20 20 45 =560
28402 4E 54 45 52 20 74 6F 20 =604
28410 46 69 6E 69 73 68 2E 0D =668
28418 0D 10 00 50 72 65 73 65 =540
28426 6E 74 6C 79 20 3A FF 3E =862
28434 05 32 B1 7D 24 32 B2 7D =897
28442 3E 79 CD 95 6F CD DD 6F =1174
28450 CD 78 74 CD B3 74 CD 45 =1215
28458 6F CD E7 70 CD 98 71 06 =1135
28466 03 C5 CD 7C 72 DC 33 75 =1031
28474 C0 29 73 DC 5C 75 C1 10 =999
28482 F0 18 E0 3A 93 6F 47 0E =889
28490 08 11 BC 7C 3E 30 21 05 =985
28498 D5 CD 0A 22 D1 EB 01 06 =1073
28506 00 ED B0 EB C1 F1 05 3D =1148
28514 B7 20 EB 3A 78 5C B7 20 =935
28522 08 3A 94 6F ED 44 32 94 =828
28530 6F 3A 94 6F FE 01 28 0D =736
28538 3A 93 6F 3D 32 93 6F 3D =735
28546 32 93 6F 18 0B 3A 93 6F =659
28554 FE 9F 28 04 3C 32 93 6F =825
28562 C9 9B 01 0E 3D CD A6 6F =901
28570 0E 48 CD A6 6F 0E AD CD =947
28578 A6 6F 0E B8 76 2A 78 5C =847
28586 26 20 7E E6 7F C6 1F 47 =853
28594 11 DC 70 3A 20 FB CD 05 =1111
28602 CD AA 22 D1 EB 01 03 00 =857
28610 ED B0 EB C1 F1 05 3D B7 =1331
28618 20 EB 21 00 40 11 1F 00 =412
28626 0A C0 36 A0 19 36 05 23 =531
28634 10 F8 C9 3E FE CD 01 16 =1089
28642 4F 32 6B 5C CD 7A 70 16 =885
28650 00 00 00 28 95 20 95 20 =543
28658 20 95 20 95 20 95 20 4C =534
28666 49 56 45 53 2E 20 20 20 =453
28674 95 20 95 20 95 20 95 20 =724
28682 95 20 97 20 97 20 97 20 =730
28690 97 20 97 20 97 20 42 55 =700
28698 4C 4C 45 54 53 2E 20 97 =617
28706 20 97 20 97 20 97 20 97 =732
28714 20 97 16 16 00 20 20 20 =323
28722 98 20 20 98 20 20 20 20 =496
28730 9A 9C 9E 9E A0 20 20 9E =1008
28738 A2 A0 20 20 20 20 98 20 =634
28746 20 20 20 20 20 20 98 20 =376
28754 20 20 20 20 20 20 98 20 =376
28762 9B 9D 9F 9F A1 20 20 9F =1014
28770 A3 A1 20 20 98 20 20 20 =636
28778 20 20 20 20 98 20 16 00 =312
28786 FF 3E 02 32 6B 5C 18 0A =602
28794 E1 7E 23 E5 FE FF C8 D7 =1539
28802 18 F6 21 00 58 11 01 58 =497
28810 01 3F 00 36 46 ED B0 3E =663
28818 14 21 C7 70 01 20 00 ED =634
28826 B0 3D B7 20 FA 21 C0 5A =1011
28834 11 C1 5A 01 40 00 36 06 =425
28842 ED B0 21 CB 5A 11 CC 5A =1050
28850 01 09 00 36 05 ED B0 21 =515
28858 EB 5A 11 EC 5A 01 09 00 =678
28866 36 04 ED B0 C9 31 31 31 =819
28874 31 30 30 34 34 34 34 34 =385
28882 30 30 30 30 30 30 30 30 =380
28890 30 34 34 34 34 34 34 30 =408
28898 30 32 32 32 32 CD B1 73 =745
28906 CB 67 C4 57 72 CD D1 73 =1200
28914 CD 57 28 20 3A 97 71 B7 =867
28922 28 06 3D 32 97 71 18 14 =465
28930 3A 96 71 FE 9F 28 06 3C =847
28938 32 96 71 11 28 00 21 28 =443
28946 00 CD B5 03 CD B1 73 CB =1069
28954 5F 28 21 3A 97 71 FE 04 =748
28962 28 06 3C 32 97 71 18 14 =464
28970 3A 96 71 FE 1F 28 00 3C =720
28978 32 96 71 11 28 00 21 2D =445
28986 00 CD B5 03 21 3C 00 3A =666
28994 96 71 A7 17 17 17 17 E6 =752
29002 60 16 00 5F 19 EB 0E 10 =503
29010 3A 96 71 47 3E 20 F5 C5 =928
29018 D5 CD AA 22 D1 1A 13 77 =995
29026 C1 F1 05 3D B7 20 EF 3A =1012
29034 71 A7 17 17 17 E6 E0 =786
29042 21 58 7F 16 00 5F 19 EB =625
29050 0E 1B 3A 96 71 C6 F9 47 =877
29058 3E 08 F5 C5 D5 CD AA 22 =1134
29066 D1 1A 77 13 C1 F1 05 3D =873
29074 B7 20 EF C9 50 02 CD D9 =1159
29082 73 CB 67 C4 04 73 CD D1 =1168
29090 73 57 28 20 3A 56 72 =735
29098 B7 28 06 3D 32 56 72 18 =564
29106 14 3A 55 72 FE 9F 28 0D =743
29114 3C 32 55 72 11 28 00 21 =399
29122 3C 00 CD B5 03 CD D9 73 =986
29130 CB 5F 28 21 3A 56 72 FE =883
29138 01 28 06 3D 32 56 72 18 =584
29146 14 3A 55 72 FE 1F 28 0D =615
29154 3D 32 55 72 11 28 00 21 =400
29162 3C 00 CD B5 03 21 3C 7E =668
29170 3A 55 72 A7 17 17 17 17 =516
29178 E6 60 16 00 5F 19 EB 0E =717
29186 E8 3A 55 72 47 3E 20 F5 =899
29194 C5 D5 CD AA 22 D1 1A 77 =973
29202 06 08 1F CB 11 10 FB 71 =645
29210 C1 F1 05 3D B7 20 E8 3A =1005
29218 56 72 A7 17 17 17 E6 38 =722
29226 21 58 7F 16 00 5F 19 EB =625
29234 0E E0 3A 55 72 C6 F9 47 =1013
29242 3E 08 F5 C5 D5 CD AA 22 =1134
29250 D1 1A 06 00 1F CB 11 10 =473
29258 FB 71 13 C1 F1 05 3D B7 =1066
29266 20 E8 C9 50 00 3A 00 73 =718
29274 B7 C0 3A 03 73 B7 C8 3D =995
29282 32 03 73 3A 96 71 C6 F5 =932
29290 32 01 73 3E 1E 32 00 73 =423
29298 3A 97 71 32 02 73 C9 3A =1024
29306 01 73 3A 00 73 B7 28 7A =835
29314 ED 4B 00 73 CD AA 22 3C =896
29322 47 3E 7F A7 1F 10 FD A6 =893
29330 77 3A 00 73 3C 3C 32 00 =462
29338 73 3A 01 73 47 3A 02 73 =535
29346 FE 02 28 0F 3D 32 01 73 =553
29354 20 09 04 18 06 05 FE 04 =338
29362 30 05 78 32 01 73 FE =578
29370 02 30 0A 3A 02 73 47 3E =368
29378 04 90 32 02 73 3A 01 73 =489
29386 FE 9D 38 0A 3A 02 73 47 =723
29394 3E 04 90 32 02 73 ED 4B =869
29402 00 73 CD AA 22 3E 47 3E =717
29410 80 37 1F 10 FD A6 B7 20 =864
29418 17 ED 4B 00 73 CD AA 22 =855
29426 3C 47 3E 80 37 1F 10 FD =676
29434 B6 77 47 C9 37 C9 00 45 =994
29442 02 05 3A AD 73 B7 C0 3A =786
29450 00 73 B7 C8 3D 32 00 73 =1076
29458 3A 55 72 CA F5 32 AE 73 =1039
29466 3E E0 32 AD 73 3A 56 72 =882
29474 32 AF 73 CD 16 74 C9 3A =942
29482 AD 73 B7 28 7A ED 4B AD =1118
29490 73 CD AA 22 3C 47 3E 7F =844
29498 A7 1F 10 FD A6 77 3A AD =983
29506 73 3D 3D 32 AD 73 3A AE =807
29514 73 47 3A AF 73 FE 02 28 =830
29522 0F 30 07 04 B7 20 09 04 =302
29530 18 06 05 FE 04 20 01 05 =331
29538 78 32 AE 73 FE 02 30 06 =773
29546 3A AF 73 47 3E 04 90 32 =679
29554 AF 73 3A AE 73 FE 9D 38 =1104
29562 0A 3A AF 73 47 3E 04 90 =639
29570 32 AF 73 ED 4B AD 73 CD =1145
29578 AA 22 3C 47 3E 80 37 1F =611
29586 10 FD A6 B7 20 13 ED 4B =981
29594 AD 73 CD AA 22 3C 47 3E =890
29602 80 37 1F 10 FD B6 77 47 =951
29610 C9 37 C9 00 00 00 00 06 =469
29618 00 3E F7 DB FE E6 1F FE =1297
29626 1F 28 02 CB D0 3E FB DB =1016
29634 FE E6 1F FE 1F 28 02 CB =1045
29642 D8 3E FE DB FE E6 1F FE =1520
29650 1F 28 02 CB E0 3E FD DB =1047
29658 00 3E EF DB FE E6 1F FE =1289
29666 1F 28 02 CB E8 3E DF DB =988
29674 FE E6 1F FE 1F 28 02 CB =1045
29682 DB 3E 7F DB FE E6 1F FE =1393
29690 1F 28 02 CB E0 78 C9 F5 =1064
29698 11 0A 00 21 F4 01 06 06 =361
29706 C5 E5 D5 CD B5 03 E1 2C =1277
29714 10 F6 FB C9 3A 48 5C 1F =967
29722 1F 1F E6 07 57 21 F4 01 =664
29730 01 CB 00 7E E6 10 B2 D3 =914
29738 FE C5 06 1E 10 FE C1 0D =961
29746 23 7B B1 20 EE C9 AF 32 =1028
29754 97 71 32 56 72 32 AD 73 =754
29762 32 01 73 32 02 73 32 AF =558
29770 73 32 AE 73 32 AD 73 3C =852
29778 32 94 6F 3E 06 32 03 73 =545
29786 32 B0 73 3E 50 32 96 71 =796
29794 32 55 72 3E 58 32 93 6F =707
29802 21 00 40 11 01 40 01 00 =100
29810 18 36 00 ED B0 C9 3A B1 =927
29818 74 B7 C6 01 FE 0D 28 12 =773
29826 F5 3E 16 D7 3E 00 D7 F1 =1062
29834 D7 F5 3E 96 D7 F1 3C 3C =1248
29842 18 EA 3A B2 74 B7 47 3E =878
29850 1E 90 FE 14 CB F5 3E 16 =977
29858 D7 3E 00 D7 F1 D7 F1 C9 =1235
29866 96 1F F1 3D 3D 18 EB 05 =992
29874 00 CD EF 74 3A 03 73 B7 =919
29882 C0 3A B0 73 B7 C0 3A 00 =974
29890 73 B7 C0 3A AD 73 B7 C0 =1211
29898 3C 32 03 73 32 B0 73 F5 =814
29906 11 28 00 21 64 00 06 2C =246
29914 2D 3D B5 C5 CD B5 03 C1 =1266
29922 D1 E1 10 F4 CD EF 74 F1 =1495
29930 FE 06 20 DC C9 3E 16 D7 =1012
29938 3E 01 D7 AF D7 3A 03 73 =844
29946 06 06 F5 C5 FE 06 3E 97 =927
29954 30 02 3E 20 D7 3E 20 D7 =668
29962 C1 F1 3C 10 ED C9 D7 1046
29970 3E 01 D7 3E 14 D7 3A B0 =809
29978 73 06 06 3D F5 C5 FE B0 =1012
29986 F5 3E 20 D7 F1 3E 97 3B =1064
29994 02 3E 20 D7 C1 F1 10 E8 =996
30002 C9 CD 62 76 CD 01 74 3A =1002
30010 01 73 47 3A 00 73 B7 =1011
30018 73 36 00 FE 60 38 44 FE =897
30026 98 3B 37 FE D0 38 3C FE =1095
30034 F0 DA EA 75 21 00 73 36 =1011
30042 00 C9 CD 62 76 CD 01 74 =944
30050 3A AE 73 47 3A AD 73 21 =797
30058 AD 73 36 00 FE A0 38 1B =831
30066 FE 68 30 17 3E 01 FE 58 =1004
30074 10 30 27 21 AD 73 36 =732
30082 00 C9 3A 94 6F ED 44 32 =873
30090 94 6F C9 4F 04 3E 04 F5 =854
30098 C5 CD AA 22 36 00 C1 F1 =1094
30106 05 08 78 B7 C8 08 3D B7 =768
30114 20 ED C9 3A 96 71 47 0E =876
30122 10 11 FC 70 2C 77 23 =471
30130 05 CD AA 22 D1 EB 01 02 =1069
30138 00 ED B0 EB D5 11 0A 00 =888
30146 21 84 03 CD B5 03 D1 C1 =959
30154 F1 05 3D B7 20 E0 3A 96 =954
30162 71 47 0E 10 CD 2F 76 E1 =609
30170 3A B1 74 E6 1F 32 B1 74 =780
30178 B7 00 01 00 CB C3 19 6F =716
30186 3A 55 72 47 0E E0 11 FC =835
30194 7E 3E 20 F5 C5 D5 CD AA =1250
30202 22 D1 EB 01 02 00 ED B0 =894
30210 EB D5 11 0A 00 21 BC 02 =698
30218 CD B5 03 D1 C1 F1 05 3D =1098
30226 B7 20 E8 3A 55 72 47 0E =781
30234 E0 CD 2F 76 E1 E1 3A B2 =1280
30242 74 3D 32 B2 74 B7 01 02 =707
30250 00 CB C3 19 6F 11 FC 7E =926
30258 3E 22 F5 C5 D5 CD 4C 76 =1150
30266 01 40 1F 0B 78 B1 20 FB =687
30274 D1 C1 F1 1B 1B 3D B7 20 =973
30282 E7 C9 3E 20 F5 C5 CD AA =1345
30290 22 EB 01 02 00 ED B0 EB =920
30298 C1 F1 05 3D B7 20 ED C9 =1153
30306 3A 01 73 47 3A AE 73 B8 =776
```

★ ★ ★ COMPUTER USERS ★ ★ ★

At last the ultimate formula for computer users. Available now for SPECTRUM and COMMODORE. THE GOLDEN KEY FORMULA produces an average of 63% winners with starting prices from 33/1 down to even money. With good graphics and easy to understand instructions this formula will make your racing pay. After following instructions and feeding in details requested ie previous form, jockey, trainer, going etc, displayed on the screen will be the top two rated of every race that you enter. This programme will even work out your winnings for you. To receive your copy for either cassette or disc send £20 now to ANNVIC RACING LTD, 13 ELTER WALK, GUNTHORPE, PETERBOROUGH PE4 6TY and receive yours by return of post, all instructions are included and some past results for checking if you wish.



PRODUCED BY ANNVIC RACING ADVISORY SERVICES

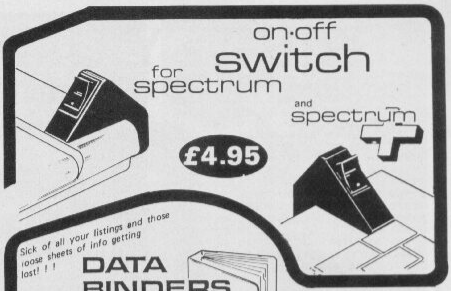
THE GOLDEN KEY RACING FORMULA

GUARANTEE

This program carries a lifetime guarantee. Should it fail to load for any reason, please return it to Annvic Racing. Do not take it back to your dealer.

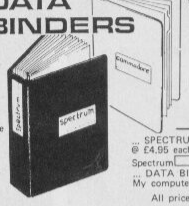
THE GOLDEN KEY FOR SPECTRUM ALSO CONTAINS PRINTER OPTIONS

ALL ANNVIC PROGRAMS HAVE BEEN MADE COPYRIGHT AND ANY ATTEMPT TO COPY WILL CAUSE THE PROGRAMME TO CRASH



Sick of all your listings and those loose sheets of info getting lost! ! !

DATA BINDERS



Heavy duty, large capacity A4 binder with front and side pockets. Printed insert cards for easy identification. Comes complete with contents page and divider sheets. Colours - Black or cream to suit Micro.

£5.95

... SPECTRUM ON/OFF SWITCHES @ £4.95 each to suit (please tick) £.....
Spectrum [ ] Spectrum + [ ]
... DATA BINDERS @ £5.95 each £.....
My computer is a.....

All prices include post & packing.

Please make cheques payable to TEC Publications, 24 Victoria Rd, Bromsgrove, Worcs, B61 0DW.

Name.....
Address.....
.....
.....
.....

Dealer Enquiries Welcome Tel (0527) 74567

THE GREATEST SALE EVER

SOFTWARE

ROM CARTRIDGES
CHESS, PSSST, COOKIE, PLANETOIDS, JETPAC, BACKGAMMON .....£3.00 each or 4 for £10.00
ANDROID ONE £1.95
ANDROID TWO £1.95
T.L.L. £2.95
CYCLONE .....£2.95 or 4 for £7.50
KENTILLA £1.95
BRAXX BLUFF £1.95
SUBTERRANEAN STRYKER .....£2.45 or 3 for £5.00
CHEQUERED FLAG £1.00
HORACE GOES SKIING £1.00
SINCLAIR CHESS .....£1.20 or 3 for £2.50
JASPER £2.45
STOP THE EXPRESS £2.45
RUNES OF ZENDOS £2.45
BACKPACKERS GUIDE .....£2.95 or 4 for £8.00
BEAKY & THE EGG SNATCHERS £2.25
PSYTRAXX £2.95
TOY BIZZARE £2.95
ROBOT RIOT £2.45
A DAY IN THE LIFE 2.45
CLUEDO £8.75
MONOPOLY £8.75
GYRON £6.95
VALHALLA £2.95
PSYTRON £2.95
DOOMDARK'S REVENGE £4.95
EUREKA!! £4.95
THE ARTIST £11.75
BRIDGE PLAYER II £8.75
ARNHEM £7.75
THE BULGE £8.75
HISOFT 'C' COMPILER £22.95
HISOFT DEVPAC 3 .....£13.75
PAINT PLUS £8.75
SUPERCODE III £11.75
SCREEN MACHINE £7.75
OMNICALC 2 .....£13.90
JONATHAN MILLERS BODY WORKS £13.75
ASTRONOMER (CP SOFTWARE) £8.75
HISOFT PASCAL £22.95
TRANS EXPRESS (CASS) £8.95
POPEYE £5.75
FAIRLIGHT £8.75
BLACKWITCH £8.75
MERCENARY £8.75

Plus all the latest titles. Just send us your order with £1.50 off the RRP and we will send you the goods.

PERIPHERALS:

DK LIGHT PEN £17.95
QUICK SHOT II JOYSTICKS £7.95
SINGLE PORT INTERFACE £7.95
CURRAH SPEECH & SOUND SYNTH. £19.95
DK'TRONICS KEYBOARDS £27.95
KEMPSTON CENTRONICS INT. 'E' £37.95
INTERFACE III £39.95
TIMEX 2040 THERMAL PRINTER £39.95
EPSON RX80FT + ...£249.95 add £5.00 p&p

Ring us for a quote on any item not listed

PACK 1. BEYOND BASIC, FORTH, PRINT UTILITIES, SMALL BUSINESS ACCOUNTS, CATTEL IQ TEST £10.95

PACK 2. SET OF FIVE SINCLAIR LEARN TO READ SERIES £5.95

PACK 3. VU CALC, VU FILE, VU 3D £5.95

PACK 4. SHIP OF DOOM, PLANET OF DEATH, ESPIONAGE ISLAND, INCA CURSE, EMBASSY ASSAULT, TRANSYLVANIAN TOWER £5.95

PACK 5. ALPHABET GAMES, SPEECH MARKS, CASTLE SPELLEROUS, THE APOSTROPHE, CAPITAL LETTERS, EARLY PUNCTUATION £5.95

PACK 6. BACKGAMMON, 4D, ARCADE ADVENTURE, BIORYTHMS, REVERS, DEVILS OF THE DEEP, MANIC MINER £5.95

PACK 7. SMALL BUSINESS ACCOUNTS, COLLECTORS PACK, CLUB RECORD CONTROLLER £5.95

PACK 8. MAGNETS, GLIDER, FLIPPIT, CARGO, CHESS TUTOR £5.95

PACK 9. SPACE RAIDERS, TRAXX, PLANETOIDS, HUNGRY HORACE & THE SPIDERS, INVINCIBLE ISLAND £5.95

PACK 10. ROMMELS REVENGE, TRANSYLVANIAN TOWER, RACING MANAGER, LOST, DUNGEON MASTER, DEVILS OF THE DEEP £5.95

PACK 11. POOL, DUNGEON MASTER, TIMEBOMB, THE MAGIC ROUNDABOUT, TRANSYLVANIAN TOWER, INVINCIBLE ISLAND £5.95

PACK 12. MURDER AT THE MANOR, GALACTIC COMMANDER, HANDY ANDY, WILD WEST, CORRUPTION, GALACTIC PATROL £5.95

PACK 13. SPECTRUM SAFARI, WINGED WARLORDS, CATERPILLER, LEAPFROG, OTHELLO, GERMAN IS FUN £5.95

PACK 14. 12 TITLES INC. HEXAGONAL MUSEUM, TANGLED WEBB, WIZARDS SCROLL, DRAGON SLAYER, ORC ISLAND, THE SWAMP, MURDER HUNT, LAST WILL & TESTAMENT, COMMANDO, OPERTION TURTLE, EARTH BOUND, ALTER EARTH £5.95

PACK 15. 12 TITLES INC. HIDDEN CITY, THE SEALED CITY, RIFTS OF TIME, THE TRAVELLER, TIME QUEST, CRYSTAL QUEST, URQUAHART CASTLE, THE GOLDEN ROSE, SEA OF ZIRUN, EYE OF VARTAN, THE MOREBY JEWELS, TO THE MANOR BOURNE £5.95

PACK 16. COSMIC CRUISER, BC BILL, PEDRO, ZZOOM, ZIP ZAP, ALCHEMIST £4.95

PACK 17. HORACE GOES SKIING, CHEQUERED FLAG, CHESS, MAKE A CHIP, SURVIVAL, SCRABBLE. £4.95

PACK 18. SPELLBOUND (BEYOND), SPACE STATION ZEBRA, TIME TUNNELS, FIVE DICE, DEVILS OF THE DEEP, TRANSYLVANIAN TOWER £5.95

PACK 19. DOOMDARK'S REVENGE (BEYOND), PSYTRON (BEYOND), VALHALLA (LEGEND) £8.95

PACK 20. ALL LOTHORIEN TITLES, INC. DREADNOUGHTS, PANZER ATTACK, RED BARON, PARAS £5.95

PACK 21. LOTHLORIEN ACTION GAMES, INC. BILLYBONG, TWO GUN TURTLE, MICRO MOUSE, BEETLEMANIA, BEDLAM BLASTER, GRID PATROL £5.95

PACK 22. SPORTS PACK INC. SNOOKER, ON THE OCHE (DARTS), OLYMPICS, ST. ANDREWS GOLF, DERBY DAY, WORLD CUP FOOTBALL £5.95

P&P 60p for any Software order. £1.50 for Keyboard + Printer. 60p for Peripherals. Overseas 75p per tape or £2.50 per pack

LOGIC SALES LTD.

6 MIDGATE, PETERBOROUGH, CAMBS PE1 1TN

Telephone: (0733) 49696

```
30314 C0 3A AD 73 47 3A 00 73 =782
30322 B8 C0 E1 C9 ED C9 00 00 =1240
30330 00 00 00 00 00 00 00 00 =0
30338 00 00 00 00 00 00 00 00 =0
30346 00 00 00 00 00 00 00 00 =0
30354 00 00 00 00 00 00 01 FF =256
30362 FF FF FF FF F0 00 00 00 =1162
30370 49 24 92 49 24 F0 00 00 =604
30378 74 92 49 24 92 49 2E 00 =636
30386 03 C9 24 92 49 24 92 49 =714
30394 C0 1C 92 49 24 92 49 24 =730
30402 92 78 69 24 92 49 24 92 =808
30410 49 24 96 24 92 49 FF FF =1534
30418 FF FF FF FF 9F FE 7E 01 =1560
30426 F9 FF E6 00 07 8F FC 78 =1256
30434 00 79 FF E6 00 03 87 F8 =992
30442 71 FE 39 FF E6 7F F1 C3 =1472
30450 F0 F3 FF 39 FF E6 7F F9 =1656
30458 E1 E1 E7 FF 39 FF E6 7F =1781
30466 F9 F8 C3 E7 FF 99 FF E6 =1808
30474 7F F9 F8 07 E7 FF 99 FF =1525
30482 E6 7F F3 FC 0F E7 FF 99 =1506
30490 FF E6 00 03 FE 1F F3 FF =1271
30498 3C FF CE 00 07 FF 3F F1 =1087
30506 FE 3C 7F 8E 7F 1F FF 3F =1059
30514 F8 00 FE 3C 7F 87 FF FF =929
30522 FC E6 01 FF 00 7E 7F C7 =1153
30530 FF FF FF FF FF FF FF FF =2040
30538 FF FF FF FF FF FF FF FF =2040
30546 FF FF F3 C1 E0 F3 C0 40 =1669
30554 E3 10 E1 C0 C0 60 C0 C0 =1352
30562 40 63 10 E1 C0 C0 60 C0 =1216
30570 C0 40 63 10 E1 C0 C0 60 =823
30578 80 40 44 23 10 E1 BC 46 =746
30586 23 8C 71 C6 23 10 E1 8C =902
30594 46 23 8C 71 C6 23 10 E1 =832
30602 8C 46 23 8C 71 C6 23 10 =747
30610 41 8F C6 23 8C 71 C6 23 =927
30618 10 41 87 C6 23 8C 71 C6 =900
30626 23 10 41 C3 C6 23 8C 71 =792
30634 C6 23 10 41 C1 C6 23 8C =860
30642 F1 C6 23 10 41 E0 C4 20 =1007
30650 8F F1 C6 23 10 01 F0 C0 =1066
30658 60 8F F1 C4 63 11 11 F8 =1057
30666 40 63 8F F1 C0 63 11 11 =872
30674 FC 41 E3 8F F1 C0 E3 11 =1364
30682 11 8C 47 E3 8C 71 C0 E3 =1127
30690 11 11 8C 47 E3 8C 71 C4 =921
30698 63 11 11 8C 47 E3 8C 71 =824
30706 C4 63 11 11 8C 47 E3 8C =907
30714 71 C4 60 11 B1 80 47 E3 =1025
30722 80 71 C6 20 11 B1 C0 C7 =1056
30730 E0 C0 F1 C6 30 31 B1 C0 =1321
30738 C7 E0 C0 F1 C6 30 31 F1 =1392
30746 F3 C7 E0 F3 F1 C6 3C F1 =1649
30754 F1 FF FF FF FF FF FF FF =2026
30762 FF FF 00 00 00 00 00 FF =765
30770 FF FF FF FF FF FF FF FF =2040
30778 80 00 00 00 00 00 00 00 =128
30786 00 03 55 55 55 55 55 55 =513
30794 55 55 55 55 00 00 00 00 =351
30802 00 00 00 00 04 00 00 00 =4
30810 00 00 00 00 00 00 10 00 =16
30818 00 00 00 00 00 00 00 1D =29
30826 55 55 55 55 55 55 55 55 =680
30834 55 5C 00 00 00 00 00 00 =177
30842 00 00 60 00 00 00 00 00 =96
30850 00 00 00 00 00 03 00 00 =3
30858 00 00 00 00 00 D5 55 55 =383
30866 55 55 55 55 55 55 55 55 =680
30874 00 00 00 00 00 00 00 03 =131
30882 00 00 00 00 00 00 00 00 =0
30890 00 00 00 60 00 00 00 00 =96
30898 00 00 00 55 55 55 55 55 =438
30906 55 55 55 55 55 55 50 00 =598
30914 00 00 00 00 00 10 00 00 =16
30922 00 00 00 00 00 00 00 00 =0
30930 00 04 00 00 00 00 00 00 =4
30938 75 55 55 55 55 55 55 55 =712
30946 55 55 55 55 57 00 00 00 =127
30954 00 00 00 01 80 00 00 00 =129
30962 00 00 00 00 00 00 00 00 =0
30970 C0 00 00 00 00 00 55 55 =365
30978 55 55 55 55 55 55 55 55 =680
30986 55 55 55 55 60 00 00 00 =351
30994 0C 00 00 00 00 00 00 0F =12
31002 00 00 00 00 00 00 18 00 =24
31010 00 00 00 00 35 55 55 55 =393
31018 55 55 55 55 55 55 55 55 =680
31026 55 56 00 00 00 00 40 00 =235
31034 00 00 00 00 00 00 00 00 =0
31042 00 00 00 00 00 01 00 00 =1
31050 00 FF FF FF FF FF FF FF =1785
31058 FF FF FF FF FF FF FF FF =2040
31066 80 00 00 00 01 01 F0 1F =641
31074 F8 0F 87 0F 87 80 08 00 =684
31082 F8 3C 38 40 00 00 01 00 =429
31090 70 07 C0 70 03 87 0E 01 =576
31098 80 04 00 60 0C 38 40 00 =360
31106 00 02 00 60 03 80 30 01 =278
31114 87 0C 00 80 04 00 60 06 =381
31122 1C 20 00 00 04 00 60 03 =163
31130 00 30 01 0F 0C 00 C0 04 =272
31138 00 20 C2 0E 10 00 00 04 =260
31146 38 43 83 0C 10 81 0F 08 =434
31154 00 F8 7F C3 E1 E1 06 10 =1042
31162 00 00 08 78 43 C2 1C 21 =450
31170 C1 0F 08 30 F8 7F C3 F0 =1074
31178 E1 03 08 00 00 10 F0 87 =627
31186 84 3C 21 C1 0F 08 78 78 =681
31194 7F C3 F0 F0 81 84 00 00 =1063
31202 10 F0 86 0C 3C 21 C1 0F =703
31210 08 78 78 7F E1 F0 F0 80 =1208
31218 84 00 00 21 E1 00 0C 3C =462
31226 21 C3 0F 08 7C FC 3F EF =915
31234 00 00 00 00 00 40 03 =565
31242 00 18 78 43 C3 0F 08 7F =556
31250 FC 3F E0 F8 78 40 21 00 =1084
31258 00 40 06 00 38 78 43 C3 =508
31266 0F 08 7F FC 3F F0 FC 3C =1017
31274 20 01 00 00 80 1E 01 F0 =432
31282 F0 43 C2 1F 08 7C FC 3F =958
31290 E0 3E 11 00 80 01 07 =707
31298 FC 0F F0 F0 43 C2 1F 08 =1047
31306 7F FE 1F F8 7C 3E 10 80 =990
31314 40 01 0F FC 0F F0 F0 87 =962
31322 82 1F 08 7F FE 1F F8 3E =891
31330 1F 08 40 40 02 1F 0F 07 =455
31338 F8 7C 3E 10 8F 1F 08 7E =1005
31346 0F F8 3E 1F 08 60 20 04 =496
31354 1F F8 07 E1 E0 87 86 1F =1035
31362 18 7C 3E 0F FC 1F 0F 84 =655
31370 30 10 04 3F F0 C3 E1 E0 =1015
31378 8F 06 1F 18 7C 3F 0F FC =658
31386 1F 84 38 10 08 07 C1 0F =1055
31394 C3 C3 01 0E 06 1E 18 7C =781
31402 3F 07 FE 0F 87 C2 1C 08 =704
31410 10 7F E1 E1 C3 C1 0C 06 =999
31418 0E 18 38 3F 07 FE 0F 87 =568
31426 C2 0E 04 10 FF E1 E1 C3 =1128
31434 03 00 0E 00 FF C0 7F 87 =719
31442 00 81 C3 0F 04 21 FF =855
31450 C3 F0 C0 03 00 0E 00 1C =672
31458 00 7F 83 E0 00 E0 03 07 =716
31466 82 41 FF C3 F0 E0 0E 00 =1123
31474 1F 00 3E 00 1F 83 F0 00 =719
31482 60 03 87 C1 43 FF 87 FF =1139
31490 F0 1F 00 FF C0 7F 83 FF =1356
31498 83 F0 00 7C 0F 83 E1 7F =993
31506 FF FF FF FF FF FF FF FF =2040
31514 FF FF FF FF FF FF FF FF =2040
31522 FF FF 00 00 00 00 00 00 =510
31530 00 00 00 00 00 00 70 00 =112
31538 00 7F FF FF 80 00 00 00 =765
31546 00 00 00 20 80 00 00 00 =160
31554 00 0C 00 00 00 00 00 00 =204
31562 00 0C 00 00 00 00 00 00 =634
31570 00 00 00 00 71 C0 00 00 =305
31578 00 00 0C 00 00 00 00 00 =12
31586 CC 00 00 3F FF C0 00 00 =714
31594 00 00 00 00 00 00 F1 E0 =466
31602 8C 00 00 0C 00 00 00 00 =152
31610 00 00 00 3F FC 00 00 00 =513
31618 00 00 00 00 00 00 CA 60 =298
31626 19 8C 00 00 0C 00 00 00 =177
31634 00 31 86 00 00 3F FC 00 =450
31642 00 00 00 00 00 00 CC 00 =192
31650 69 91 CE 3C 98 0F 00 8C =831
31658 00 00 03 86 00 00 3F FF =228
31666 00 00 00 00 00 00 00 00 =0
31674 C4 6B C1 8C 66 8C 0F 98 =1093
31682 C8 00 00 03 0E 02 00 7C =343
31690 1C 00 00 00 00 00 20 40 =124
31698 00 EE C6 59 8C 7C 66 0C =903
31706 D8 00 00 00 03 1F 06 80 =440
31714 00 00 00 00 00 00 00 00 =236
31722 C0 00 7F C6 19 8C 60 66 =880
31730 0C D9 CC 00 00 07 E3 06 =673
31738 00 00 1C 00 00 00 00 00 =28
31746 60 C0 00 7B C6 19 EF 7E =999
31754 66 0F 0F C8 00 00 07 C7 =342
31762 00 00 00 00 00 00 00 34 =52
31770 00 60 C0 00 1B 64 10 C6 =533
31778 3C 44 0B 8F C0 00 00 06 =480
31786 01 86 78 98 1D 30 F0 CC =928
31794 78 4C 70 D8 78 00 00 00 =644
31802 00 00 00 00 00 C0 00 FF =447
31810 0F 01 86 FC 8C 1D 7E 7F =1372
31818 0F 5E 00 FC 00 00 00 00 =1080
31826 00 00 00 00 00 C1 C0 00 =385
31834 7E 0C 01 86 CC 66 1C CD =812
31842 F1 B6 CC 33 60 E6 CC 00 =1208
31850 00 00 00 00 00 00 7F 80 =255
31858 00 3E 08 01 86 CC 66 18 =535
31866 C1 81 7E 66 CC 30 76 66 =1276
31874 00 00 00 00 00 00 00 3F =63
31882 00 00 0F 10 01 B6 FF 66 =523
31890 18 C1 F8 CC FF 30 3C C6 =1230
31898 FF 00 00 00 00 00 00 00 =255
31906 00 00 00 03 E0 01 0A 7A =354
31914 44 10 80 F0 CC 7A 20 18 =814
31922 B4 7A 86 86 86 86 86 86 =790
31930 06 86 00 00 00 00 00 00 =12
31938 00 00 1F F8 00 00 00 00 =279
31946 6A AE 00 00 00 01 D5 55 =579
31954 80 00 00 06 AA AA E0 00 =698
31962 00 00 55 55 50 00 00 1A =289
31970 BF FA A8 00 00 35 7F FF =1044
31978 54 00 00 6B FF FF AA 00 =871
31986 00 57 FF FF F6 00 00 AF =1018
31994 FF FF FB 00 01 5F FF FE =1541
32002 FD 80 01 BF FF FF FE 80 =1465
32010 03 7F FF FF FD 40 02 FF =1214
32018 FF FE C0 05 FF FF FF =1726
32026 FF 60 06 FF FF FF FF A0 =1537
32034 05 FF FF FF E0 05 FF =1509
32042 FF FF FF A0 07 FF FA 5F =1532
32050 FF FF E0 07 FF F2 4F FF =1547
32058 07 FF E4 27 FF E0 07 FF =1270
32066 C4 23 FF E0 07 FF C8 13 =1191
32074 FF E0 07 FF 89 91 FF E0 =1502
32082 07 FF 93 C9 FF E0 07 FF =1351
32090 9F F9 FF E0 07 FF B5 55 =1415
32098 FF E0 07 FF EA AF FF E0 =1629
32106 07 FF D5 57 FF E0 07 FF =1299
32114 FF FF FF E0 07 FF FF FF =1761
32122 FF E0 03 FF FF FF FF C0 =1694
32130 03 FF FF FF FF C0 01 FF =1471
32138 FF FF FF 80 01 FF FF FF =1659
32146 FF 80 00 06 0F F0 60 00 =740
32154 00 67 FF FF F6 00 00 67 =1446
32162 FF FF D5 57 FF 60 00 F8 =1121
32170 66 00 00 70 3F FC 0E 00 =543
32178 00 FF FF FF FF 00 00 FF =1275
32186 FF FF FF 00 00 70 0F F0 =1132
32194 0E 00 00 60 07 E0 06 00 =347
32202 00 60 00 00 06 00 00 60 =198
32210 00 00 00 00 00 00 00 00 =64
32218 00 00 00 10 00 00 84 00 =196
32226 00 78 10 01 FC 5A 00 FE =733
32234 3C 01 BC 3C 00 FC 3E 00 =623
32242 F6 7C 01 FC B4 00 FC 7E =1181
32250 11 FE FC 5A FD FA 3C EF =1415
32258 F8 3D FF F4 7C BF 3F 2C =1479
32266 FF F8 7F 3C 00 FF 7C 00 =1347
32274 3F FF 00 5E FF 00 3F FA =932
32282 80 13 FE 00 02 FF 00 00 =658
32290 7E 00 00 DE 00 00 7F 00 =475
32298 00 FE 00 00 76 00 00 FF =627
32306 00 00 FF 00 00 FF 00 00 =510
32314 3C 00 00 7E 7C F4 7E =801
32322 3C 38 78 FC DC DE DF EE =1391
32330 EC FC FC F8 5C 5C 5C 5C =1356
32338 5C 5C 5C 7C 1C 1C 1E 1F =517
32346 00 00 00 7B 7C 7C F4 7E =941
32354 3C 38 78 FC DC DE DF DE =1375
32362 E4 FC FC F8 5C 5C 5C 5C =1348
32370 5C 5C 7C 1C 1C 1C 1C 1E =450
32378 1F 00 00 7B 7C 7C F4 7E =772
32386 3C 38 78 FC DC DE DF DE =1375
32394 EC F4 FC F8 7C 5C 5C 5C =1380
32402 5C 5C 5C 7C 1C 1C 1E 1F =517
32410 00 00 00 7B 7C 7C F4 7E =801
32418 3C 38 78 FC DC DE DF DE =1375
32426 DC DC FC F8 7C 5C 5C 5C =1340
32434 5C 5C 5C 5C 7C 1E 1F 00 =553
32442 00 00 00 00 00 00 00 00 =0
32450 00 00 00 00 00 00 00 00 =0
32458 00 00 00 00 00 00 00 00 =0
32466 00 00 00 00 00 00 00 00 =0
32474 00 00 00 00 00 00 00 00 =0
32482 00 00 00 00 00 00 00 00 =0
32490 00 00 00 00 00 00 00 00 =0
32498 00 00 00 00 00 00 00 00 =0
32506 00 00 0F F0 17 F8 17 F8 =797
32514 2F FC 2F FC 5F FE 5F FE =1296
32522 BF FF B0 03 B6 5B B6 5B =1171
32530 B5 33 B0 03 BF FF B0 03 =1355
32538 BF 3F 5F 3E 5C 0E 5C 0E =623
32546 5F 3E 2F 3C 2F 3C 2F 3C =478
32554 2F 3C 17 38 17 F8 17 F8 =728
32562 17 F8 B0 F0 B0 F0 B0 F0 =1024
32570 0F F0 06 06 06 06 06 06 =291
32578 06 06 06 06 C0 57 C0 57 =410
32586 F3 0D 21 17 C6 1E 5F 6D =744
32594 76 1B 03 13 00 3E 00 00 =229
32602 06 10 E0 40 00 00 00 00 =312
32610 00 0C F0 40 00 00 00 00 =316
32618 00 00 FC 40 00 00 00 00 =316
32626 00 00 F0 4C 00 00 00 00 =316
32634 00 00 E0 50 00 00 00 00 =396
32642 FF 3C 5A 7E 66 3C 38 7C =873
32650 6C C6 EE EE EE FE 7E 3C =1460
32658 34 34 34 3C 1B 00 04 24 =280
32666 9B 66 24 5A 09 10 00 B9 =590
32674 7F 6B F0 C0 C0 00 3C 7E =1041
32682 E7 DB DB E3 70 38 1C 0E =1106
32690 C7 DB DB E7 7E 3C 63 63 =1252
32698 63 6F 6F 63 63 7F 7F 63 =872
32706 63 7B 7B 63 63 63 1C 3E =732
32714 77 63 7B 7B 63 63 63 63 =860
32722 6F 6F 63 77 3E 1C 7F 7F =784
32730 0C 0C 3C 3C 0C 0C 0C 0C =192
32738 0C 0F 0F 0C 0C 0C 63 63 =276
32746 63 63 7B 7B 63 63 63 63 =840
32754 6F 6F 63 77 3E 1C 00 9D =687
32762 FE 16 0F 03 03 00 00 00 =297
32770 00 00 00 00 00 00 00 00 =0
32778 00 00 00 00 00 00 00 00 =0
```

THE END OF

Single Letter Keyword Entry ...
Three Character Fonts ...
Three Character Sizes ...
QL-Style Windows ...
Named Procedures ...
Stippled Characters ...
64 Column Text ...
Sprites Galore ...
... Upgrade Your Spectrum To A MegaSpectrum—NOW!

ONLY £9.95!



It all began with the ZX80 ...the first personal computer retailing for under £100. Next, Sinclair Research announced the ZX81, offering memory expansion to 16K. Completing the ZX series of micros came the Spectrum and its big brother, the Spectrum+.

Although the hardware has been modified extensively, not much thought has been given to ZX Basic ... and, compared to Basics on many other home computers, ZX Basic is sadly lacking!

Until now, that is! *Your Spectrum* is proud to offer your Spectrum the opportunity to transform itself into a MegaSpectrum. All it needs is *YS MegaBasic* — the inexpensive miracle on cassette.

Professional Computing Power — On A Spectrum

Incorporating many of the best features of Basics found on some of the Spectrum's major rivals (such as the BBC Micro, CBM 64 and Amstrad computers), *YS MegaBasic* gives you the opportunity to unleash power normally associated with machine code!

The program itself uses 19K of RAM, leaving you with 22K to write your own *YS MegaBasic* programs. It may seem as though you've lost a lot of memory, but you'll find you don't need so much code to create on-screen effects with *YS MegaBasic*. Anyway, when was the last time you wrote a program larger than 22K?

At Last! A Real Keyword Entry System

If you've ever suffered from cramp when you're playing double-octaves over the Spectrum's keyboard accessing some of those 'hard-to-get-at' commands ... then despair no longer.

YS MegaBasic incorporates a *real* single-letter keyword entry system. And before you start thinking this is going to mean more typing, *YS MegaBasic* allows most commands to be abbreviated. For example, you'd type 'RA.' instead of 'RANDOMISE'.



The man behind *YS MegaBasic* — Mike Leaman.

KEY FEATURES OF YS MEGABASIC

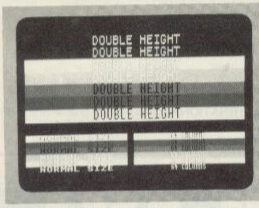
- *An extended command set. **YS MegaBasic** recognises over 35 **new** commands, which allow you to access the new features available as well as providing the opportunity to make more of the commands in standard ZX Basic.*
- *64 columns of text. Useful for wordprocessing and database applications.*
- *Three character sizes. Using **YS MegaBasic**, you've now the choice of accessing double-height, standard and half-width characters.*
- *Three character fonts. **YS MegaBasic** offers three font styles which allow your Spectrum to mimic other machines on the market.*
- *Windows. You can manage up to six QL-style windows on-screen at any one time.*
- *Sprites. Using the free **Sprite Designer** package that accompanies each copy of **YS MegaBasic**, you'll be able to design and manipulate up to ten sprites on-screen at once!*
- *Enhanced sound. Mike Leaman's taken the Spectrum's BEEP command and given it the full Mega-treatment.*
- *Procedures. Structure your programs and define new commands — it's all here!*
- *Stippled characters. QL-style stipples allow you to mix colours on-screen to give interesting colour effects.*

ZX BASIC?

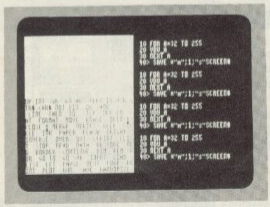
Sprite Designer — Free With Each Copy Of YS MegaBasic!

Included in the *YS MegaBasic* package, you'll find a special utility program called *Sprite Designer*. Written by Mike Leaman in *YS MegaBasic*, this 11K program is designed to help you create sprites on the Spectrum.

You can have up to ten sprites on-screen at any one time, but if you're careful with memory you can get more!



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.



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.

YS MegaBasic

Available only by mail order and only from

Your Spectrum

Your Spectrum, YS MegaBasic Offer, Sportscene Specialist Press, 14 Rathbone Place, London W1P 1DE.

YS MEGABASIC PRIORITY ORDER FORM

Thousands of clever *YS* readers have now upgraded their Spectrums to the status of MegaSpectrums with a copy of *YS MegaBasic*. But there are still plenty of you who can't quite believe the claims we've made for the program. Well, you don't have to take our word for it, listen to **Tony Wise** a reader from North Yorkshire. "Mike Leaman deserves a knighthood for *YS MegaBasic*. It must stand as the classic Speccy program of all time." Need we say more?

How To Order MegaBasic

Just complete the order form below (or a photocopy) and send it off to *Your Spectrum, YS MegaBasic Offer, Sportscene Specialist Press, 14 Rathbone Place, London W1P 1DE*. For each copy you'll need to enclose a cheque/Postal Order for £9.95 made payable to Sportscene Specialist Press. We won't give up until a new name makes it to the birthday honours list — arise Sir Michael Leaman!

QTY	ITEM	PRICE	P&P	TOTAL
....	YS MEGABASIC	£9.95	45p	....

I enclose a cheque/Postal Order for £....., made payable to Sportscene Specialist Press.

Name .....

Address .....

.....

..... Postcode .....

Phone ..... Age .....

Name .....

Address .....

.....

..... Postcode .....

Phone ..... Age .....

Please allow 28 days for delivery.

MAGAZINE HEALTH WARNING

Using scissors to cut this coupon may prove hazardous to this issue's health. Why not use a photocopy instead?

SUBSCRIBE TODAY

and see what you're missing!

Some people just aren't in touch with the real world. Make sure you're not one of them — simply fill in the coupon below and send it (by Royal Mail) to Speccy Subs, 14 Rathbone Place, London W1P 1DE. It's the only magazine that treats one like royalty!



SUBSCRIPTIONS: PRIORITY ORDER FORM

I would like to subscribe to **Your Spectrum.** Please start my subscription from the..... issue.

Please tick appropriate boxes:

☐ One year £12 UK and Eire

☐ One year £15 Europe

☐ One year £25 Rest of the world (inc. Mars)

I enclose my cheque/postal order payable to Sportscene Specialist Press Ltd for £.....

☐ Please charge my Access/Visa/American Express/ Mastercharge card number .....
(Delete where not applicable)

Signature .....
(Credit card orders cannot be accepted without a signature)

Name .....

Address .....

.....

Postcode ..... Phone No. .....

Send the completed form with payment or credit card number to: **Your Spectrum** Subs, 14 Rathbone Place, London W1P 1DE. If you don't want to cut up your magazine, use a photocopy of this coupon.

SPECTRUM LIGHT PEN ONLY £10.00



WORKS WITH ALL SPECTRUMS, CREATE PICTURES, SKETCHES, ANIMATIONS AND GRAPHS. PICK FROM MENU OF 16 ROUTINES. COMPLETE WITH INTERFACE CIRCUIT (PLUGS DIRECT IN TO USER PORT) AND SOFTWARE PROGRAM WITH COMPREHENSIVE INSTRUCTIONS, NO NEED TO KNOW ANYTHING ABOUT MACHINE CODE OR EVEN BASIC PROGRAMMING.

LIGHT PEN £10 inclusive VAT & PP

I enclose Cheque/Postal Order for £10 or Debit my Access/Barclay card/Visa
No.....Expiry Date.....

Name.....

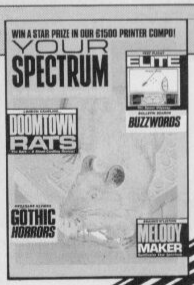
Address.....

Signature.....

CUSTOM CABLES INTERNATIONAL LTD., Units 3 & 4 Shire Hill Ind. Estate, Saffron Walden, ESSEX. CB11 3AQ.

RELAX!

This issue's programs are already on tape...



Save your time, energy and sanity when you load direct from **DigiTape** cassette, this month's program listings (as marked).

Create your own collection of games and utilities which will prove invaluable for years to come and will look superb when added to your own library.

This unique service, provided by **DigiTape** in conjunction with **YOUR SPECTRUM**, is to increase the enjoyment for the readers. This service will be available every month.

Back issues, from July 1985 on, will be available on request.

Telephone Orders: ACCESS CARD Holders ring (0792) 799193

DIGITAPE™ cassette issue No.

Please rush me my official copy of **YOUR SPECTRUM's DigiTape** cassette issue No. (see front cover). I have enclosed a cheque/P.O. for £2.99 (£3.99 for Overseas)

OR please debit my ACCESS Card No.

Signed Name

Address Code

Send to: DigiTape, Freepost, Swansea SA5 3ZZ (no stamp required)

INPUT/OUTPUT

THE FREE YS CLASSIFIED AD SERVICE

Are you on the hunt for hardware, screaming for software, or pining for a pen pal? Whatever your message, you can leave it here for free! Just fill in the form below.

SOFTWARE

■ Will swop *Doomdark's Revenge* or any two of *Airwolf*, *Beach Head*, *Cyclone*, *TLL*, *Timegate*, *Harrier Attack* or *Night Gunner* for *Underwurlde*. Write to Plod, 34 Arnside, Stapleford, Notts NG9 7EY.

■ Swop *Underwurlde* and *Zip-Zap* for *Shadowfire* Write to Douglas Hare, 57 Bradford Avenue, Cleethorpes, S. Humberside DN35 0BQ. Tel. Cleethorpes 603 003 anytime after 4pm.

■ Will swop *Alien 8* or *Lords of Midnight* for *Knightlore* or *Sabre Wulf*. Must be in good condition. First come, first served. Tel. St Albans 69460 after 8 pm and ask for Tony.

■ Swop software with me. Send your list for mine. Over 200 games to choose from — many new releases. Write to Darren Stevens, 8 Windmill Road, Southwick, Brighton BN4 4RP.

■ I have over 200 games to swop including *Cyclone*, *Match Day*, *Turmoil*, *Underwurlde*, *Pyjamarama*, *Kong Strikes Back*. Send your list for mine. Write to Luis Fernando, Apartado 57, 4465 S. Mamede Infesta, Portugal.

■ I have nearly 200 games to swop (many recent titles). Send me your list. Write to James McMullen, 8 Woodview, Pinecroft Grange, Douglas, Co. Cork, Ireland.

■ Wish to swop any five of following: *Ghostbusters*, *Alien 8*, *TLL*, *Fighter Pilot*, *Atic Atac*, *Ant Attack*, *World Cup*, *Scuba Dive*, *Harrier Attack*, *3 D's*, *Snooker*, *Tir Na Nog* for *Quill* and *Illustrator*. Write to Maurice Hartery, 39 St Johns Terrace, Carrick-On-Suir, Co. Tipperary, Eire.

■ Swop *Airwolf*, *Daley's Decathlon*, *Beach Head* for *Raid Over Moscow*, *Skool Daze* and *Match Day* (will swop separately). Tel. Worcester 358941 and ask for Gareth, after school hours please!

■ Swop *Airwolf*, *Pyjamarama*, *Gift From The Gods*, *Cyclone*, *Booty*, *Splat!* and *Strange Loop* for *Alien 8*, *Full Guy* and/or *Blockbusters* and *Psytron*. Tel. 031-336 3577 and ask for Graeme after 6 pm.

■ Lots of games to swop. Titles include *Skool Daze & 3D Starstrike* + many more. I particularly want *Brian Bloodaxe* — but anything will do! Tel. 01-948 7945 and ask for Michael.

■ Swop *Magic Carpet*, *Hungry Horace*, *Airwolf*, *Tranz Am*, *Trashman*, and Quicksilva's *Games Designer* for Currah MicroSpeech with manuals. Tel. 01-804 0579 and ask for Ian Walker.

■ Will swop *Booty*, *Manic Miner* or *Chuckie Egg* for *Blockbusters*, *Pyjamarama* or *Match Day*. Write to Gareth Morgan, 46 Hereford Road, Monmouth, Gwent NP5 3HJ.

■ Swop Ocean's *Kong*, *Atic Atac* and *Voyage into Unknown* for *Pheonix* and *Automania*. Write to Stephen Murray, 194 Skegoneill Avenue, Belfast, BT15 3JW, N. Ireland. (All originals please).

■ Swop *Brian Bloodaxe*, *Strange Loop*, *HURG* and *Finders Keepers* for *Shadowfire*. Tel. (0749) 72423 and ask for Matthew after 6 pm.

■ Swop *Scrabble* for *Bruce Lee*, *Lunar Jetman* and *Hunchback* for *Fred* or *Gremlins*. Also *Full Guy* for *Blue Thunder*. Tel. 061-436 4703 and ask for Paul.

■ Swop *Lords of Midnight* for *Quill* (both originals) for any Level 9 or Artic adventures (originals please!). Tel. Chepstow 3859 and ask for Simon Hughes after 4 pm.

■ I have over 300 of the latest programs to swop. Send your list! Write to Maurice Boot, Acacialaan 1, Bergen of Zoom, Holland 4621 EW.

■ Will swop my programs for Pascal, Forth, etc. Send your list for mine. John Boere, Ramsesdreef 215, 3564 CL Utrecht, The Netherlands.

■ Many games to swop including *Knightlore*, *Gift from the Gods*, *Doomdark's Revenge*, *Fighter Pilot*. Write to M. Allan Edginton, 2 Langton Villas, Hampden Road, London N17.

■ I have over 300 games and would like to swop some of them. I have all the latest ones like *Rocky Horror Show*, *Minder*, *Starion*. Tel. 091-775 588 and ask for Nigel between 6 pm-8 pm.

■ Swop *Dun Darach*, *Knightlore*, *Underwurlde*, *Spy Hunter* and *Tapper* for the *Blast* compiler or Hisoft Pascal or *Quill*. Can also offer *Fighter Pilot* and *Jonah B's Squash*. Write to Mijay Srinivasan, 95 Navjiwan Vihar, New Delhi 110017, India.

■ I have *VU-3D* and *Make-A-Chip*. Both unused, will swop for *Booty*, *Short Fuse*, *Jasper*, *UGH!* Tel. 01-748 9076 and ask for Jamie.

■ Swop any two of *Starion*, *Knightlore*, *Underwurlde*, *Codename Mat* for two of *Shadowfire*, *Monty Mole*, *Sherlock*, *Gift from Gods*. Write to A. Houston, 10 Howbarn Place, Aberdeen AB1 2XX.

■ Send your list for mine. Guaranteed reply. Over 100 titles including *Match Day*, *Ghoulbusters* and lots more. Write to Daniel Stuchfield, Hawthorn House, Bolton, Nr. Appleby, Cumbria CA16 6AW.

■ Will swop *Dun Darach*, *Cyber Rats*, *Hyper Action*, *Zzoom*, *Nodes of Yesod*, *Troon Golf* and for the ZX81 *Flight Simulator*, *Avenger* and more for any decent software. Tel. Leeds 587781 and ask for John after 5 pm.

■ Swop any one of *Beach Head*, *Match Point*, *Full Throttle*, *Stevie Davis Snooker*, *Air Traffic Control*, *Combat Lynx* and *Sports Hero* for any one of *Run For Gold*, *Alien 8*, *Grand National*, *The Hobbit*, *Knightlore*, *Minder*, *Match Day*. Write to N.P. Wilmore, 61 Claygate Road, Dorking, Surrey RH4 2PS.

■ Over 200 Spectrum games to swop. Send your list for mine with an sae to Gary Byrne, 22 Buckfast Close, Bootle, Merseyside L30 5QT.

■ Will swop *Bruce Lee*, *Backpackers*, *Hulk*, *Technician Ted*, *Chess Driller Tanks*, *Gangsters* or *Mission 1*. Any four for *Quill* and/or *Illustrator*. Write to Paul Bocij, 86 Crew Street, Normanton, Derby DE3 8PQ.

■ £150 worth of software (arcade, adventure and utility). Will swop for Interface 1 and Microdrive or Triton Quickdisc. Tel. Gravesend 66197 and ask for Steve.

■ Swop 100 games for Microdrive — must work! Send letter for more information. Ricardo Pereira, Urb Dos Campos Verdes. No. 36 Ric Esq. Moreira, Maia, Portugal 4470.

■ Software to swop? You name it, I've got it. Nearly 100 titles — your list for mine. Send sae please. Also ZX Printer cheap. A.B. Murray, Suumarez Block, HMS Nelson, Portsmouth, Hants.

■ Spectrum software? Write to Kevin Wallace, 30 Rufford Road, Edwinstrowe, Mansfield, Notts NG21 GHY.

■ Spectrum owners! I have a large selection of software to swop — my list for yours. Write to Graham Hinds, c/o 15 Ridge Road, Hillcrest 3610, Natal, South Africa.

■ Over seventy original tapes (games, utilities, etc.), for swop. Your list for mine. Glenn Robinson, 20 Wasdale Close, Cramlington, Northumberland. Tel. Cramlington 715160.

■ Will swop games including many more. Send your list for mine. Simon Jenkins, 1 Greenwood Road, Victoria Village, Abersychan, Pontypool, Gwent NP4 8QA.

■ I have over 350 programs. Will swop 100 for Currah Microspeech or Kempston Pro 5000 joystick plus interface. Write to Erhan Tekcan, Eendenstraat 25, 5912 VE Venlo, The Netherlands.

■ Swop *Gift from the Gods*, *Horace goes Skiing* and *Chess* for *Pole Position*. Also, *Jump Challenge* for *Cyclone* and *Zaxxon* for *Raid Over Moscow*. Tel. Ringwood (04254) 78848 and ask for Justin.

■ Software to swop. Send your list for mine. Write to P Hutchinson, 160 Talbot Road, Southsea, Hants. PO4 0HG.

■ Send your software list for mine. Please enclose sae. Write to John O'Neill, 106 Balmore Drive, Hamilton, Scotland, ML3 8HU.

■ Will swop *Penetrator*, *Mined Out* and *Flight Simulation* (Psion) for The Complete Spectrum ROM Disassembly. Tel. 061-724 6048 and ask for Pete.

■ I have many new software titles to swop. Write to Quentin Lefeure, 51 Koning Albert-Straat, 1600 Sint-Pieters, Leuw, Belgium.

■ Swop Software — send me your list. I have over 300 games. Write to Jani Meri, Kalevanpuisto 7Hc, 28120 Pori, Finland.

■ Swop *Runes of Zendos* or *Twin Kingdom Valley* for *Out of The Shadows*. Originals only. Tel. Southend-on-Sea 521 801 and ask for Colin after 5 pm.

■ Hello LK! Swop new super games with me. I have 500 titles. Send your list to Dario Zani, Abulundsgatan, Sweden.

■ Spectrum software to swop. Many top games, send your list for mine. John Wilson, 38 Ryedale Way, Selby, Yorks.

■ Spectrum software to swop. Send your list for mine. I have over 220 titles. Write to Andy Mckenna, 7 Attlee Avenue, Linnvale, Clydebank, Dunbartonshire, Scotland G81 2SB.

■ Swop software. Send your list for mine. Will give 7+ programs for light pen, printer adn/or Microdrive. All replies answered. 480 titles to choose from. Brian Griffiths, 74 Malpas Road, Newport, Gwent (many new ones).

■ Swop £180 of software and some magazines for Alphacom 32 printer or Microdrive and Interface 1. Software includes *Match Day*, *D.T's Decathlon*, *Match Point* and many others. Tel. (0703) 734549 and ask for Tim.

■ Many top games to swop. Send your list for mine. Love tips for Microdrive and printers. Faider Paul, 149 Chaussee de Malines, 1970 Wezembeek, Belgium.

■ Have 200 games; utility, education, business. Will swop with anyone who lives in Reading. Tel. Reading 29611 and ask for Des.

■ Swop BBC 'B' software for Spectrum software. Tel. 01-669 4477 ext 328 and ask for Tony Pollard during office hours.

HARDWARE

■ Stonechip programmable joystick Interface to swop for Cheetah Data Recorder or Cheetah RAT. Also software to swop, including *Gift from the Gods*, *Cyclone*, *Full Throttle*, *Quill*, etc. Tel. (0977) 433677 and ask for A Mountain.

■ York CB rig for sale, model number JCB863, includes SWR, aerial and transformer. £80. Tel. Iver 652744 and ask for David.

■ 48K Spectrum, Interface 2 + Microdrive, *MegaBasic*, assembler, etc. + many books. £160. Tel. Winsford (06065) 3017 and ask for H Smith.

■ 48K Spectrum Lo-Profile keyboard, cassette recorder, Alphacom 32 printer, Stonechip programmable interface and Quickshot joystick. Many games, books and magazines. £250 ono. Tel. (0207) 521995.

■ For sale. Interface 1, two Microdrives, 14 cartridges, Saga 1 keyboard and Alphacom printer all for £150. Sell separately. Offers welcome. Tel. (06005) 53319 and ask for Gary.

■ ZX Printer paper, 3½ rolls, £3. Write to Jordan Bailey, 23 Aldermans Hill, Hockley, Essex SS5 4RP.

■ 48K Spectrum, Interface II + joystick, 270 top games worth over £1000, magazines, books — including 24 issues of Sinclair User, Nos. 2-37 of *YS*. Paid £350 for it, will sell for £180 ono. Tel. (0633) 892158 after 4pm, buyer collects.

■ 48K Spectrum, tape recorder, Backpack with amplifier, programmable joystick and interface. Games and books. £100. Tel. (0329) 234 291 and ask for Mr Baker. Buyer collects.

■ 48K Spectrum+, Interface II, Kempston interface, Quickshot II joystick, Gunshot joystick, 2 games cartridges, Currah MicroSpeech and over 70 original games plus loads of mags. Cost £600 accept £250. Tel. Southend 711237 and ask for David.

■ 48K Spectrum plus tape recorder, Spectrum books and top games included. *Knightlore*, *Deathchuckle*, *Ant* and *Booty*. Offers around £155 please. Tel. Wilmington (83) 583 and ask for Peter.

■ Rotronics Wafadrive for sale complete with five 128K blank wafers and Romantic Robot *Trans Express 85.2* on wafer. Asking £90. Mr G Brown CPL, 72 Squadron, RAF Aldergrove, BFPO 808.

■ Swop Spectrum+, special tape recorder, joystick and interface, 7 books, software for Commodore 64 and accessories. Tel. 061-860 6875 and ask for Karl Thomas.

■ KDC WP550 D. Wheel printer, worth £400+, will sell or swop with Kemptston, Speech Synth, etc., plus software. Offers? Robert Hammamond, 70 Holywell Close, Cove, Farnborough, Hampshire GU14 8TT.

■ 48K Spectrum, Fox Electronics keyboard, joystick + interface, cassette recorder, original software worth £200, books, magazines. Worth over £475! All offers considered. Tel. (0707) 336308 and ask for Nigel after 4 pm. Will deliver.

■ For sale. Dk Tronics light pen. Good condition. £13 ono. Tel. 061-224 7158 and ask for Robert.

■ 48K Spectrum, Dk keyboard, Prism Modem, ZX Printer, Currah MicroSpeech and Slot. Recorder, joystick, extensive software, books, cables. £210, or will split. Tel. (0401) 40247 and ask for Chris.

■ Sinclair ZX Spectrum with RAM Turbo and Interface II. Lots of software, books, mags, etc. Worth over £400, sell for £170. Tel. (0978) 757817 and ask for Richard.

■ DkTronics light pen. Unused, £12, or exchange for MicroSpeech. Tel. (0535) 52836 and ask for J Fairclough.

■ Viscount disc drive + interface for Spectrum. Cost £256, no reasonable offer refused. Tel. 01-435 1915 and ask for F.E. Norton.

■ Stack Light Rifle (good condition) £29 ono. Tel. (0865) 240691 and ask for Stuart after 4.30 pm.

■ Currah MicroSpeech and original of *Rocky* for sale. Worth £38, sell for £25 ono. Tel. 01-204 9793 and ask for Paul after 4 pm.

■ For sale. Speccy 'Ricoll' keyboard £10, Tandy MC10 Color Computer (USA model) £10. Mitsubishi colour TV 14" £60. Tel. Romford 46948 and ask for Steve Freedman.

■ Currah MicroSpeech for sale + *Zaxxon* — both for £24. Tel. (0202) 886627 and ask for Chris.

■ Swop software 10 plus for light pen and/or printer. Also send sae for software swops. B. Griffiths, 74 Malpas Road, Newport, Gwent. Tel. (0633) 857685.

BOOK YOUR FREE AD HERE

I'd like you to insert the following advertisement in the next available edition of INPUT/OUTPUT.

Name .....

Address .....

.....

Please enter it under the following category:

☐ HARDWARE ☐ SOFTWARE ☐ WANTED

☐ MESSAGES ☐ CLUBS & EVENTS ☐ PEN PAL

Address this coupon to: INPUT/OUTPUT, *Your Spectrum*, 14 Rathbone Place, London W1P 1DE.

If you don't want to mutilate your issue, send a photocopy instead!

Postcode .....

INPUT/OUTPUT

■ 48K Spectrum joystick ZX printer, Dk Tronics keyboard £125. Tel. (0227) 360838 and ask for Mr A Rowe.

■ Spectrum+, Interface 1, Microdrive, Alphacom 32 printer, Currah MicroSpeech, joystick and interface, cassette recorder and 130 games and utility programs on cassette and cartridge. Cost £480, accept £280. Tel. (0438) 62167.

WANTED

■ Wanted — *YS* issues 2, 3 and 4 to complete collection. Tel. Glossop 66129 after 6pm. Will pay £2.50 for good condition.

■ Interface 1 and Microdrive wanted. Will give Currah MicroSpeech, *HURG*, *Psytron*, *Gift from the Gods*, *Manic Miner*, *Zip Zap*, *Scuba Dive*, *Bugaboo*, *Mugsy* and *Pedro*, worth approx £97. Tel. (0224) 321081 and ask for Allan.

■ Prism VTX 5000 modem, will pay £25 to £35, depends on condition. Write to Ian, 2 Milburn Street, Workington, Cumbria CA14 2XP.

■ Would like hints and POKEs on any old or new games. I will exchange for any hints and POKEs I have. David Bell, 97A Fort Street, Broughty Ferry, Dundee DD5 1DY.

■ *YS* issues 2, 3, 4, 6 and 7. Will pay £1.50 each. Tel. (0506) 843515 or write to Mrs Burgess, 31 Brachead Drive, Linlithgow EH49 6EG.

■ I have 600 new programs. Swop Currah MicroSpeech, light pen or joystick interface + joystick for 15 of them. Jose A. Suarez Marquez, Vazquez Varela 19-30B, Vigo-4, Pontevedra, Spain.

■ Zeus assembler and/or printer, will swop for new originals like *The Artist, Baseball, Supercode 3, Shadowfire, Gyron, Gremlins, Komplex* to name but a few . . . Tel. 01-521 5978 and ask for Keith. I'm in most days.

■ Wanted, Quickshot II + programmable interface. Swop for Currah Speech. Loads of software to swop — send list. Geoffrey Inns, 26 Bowyer Close, Basingstoke, Hants RG21 1UZ.

■ Can anyone send me the fitting instructions for the Gizmo, *Tele-Sound*, or the new address of Compu-Sound, Langley Close, Redditch? Tel. 041-774 3313 and ask for John.

■ Wanted — issues 2, 3 and 6 of *YS*, in good condition (complete). Tel. Bishop Auckland 603 533 and ask for Philip.

■ Wanted — *YS* issue 4 in good condition. Will pay good price. Tel. Gravesend 61218 and ask for Steve after 5 pm.

■ Please help! Advice needed to convert taped programs to Microdrive, please write to Carl Murphy, 87 Selwyn Street, Kirkdale, Liverpool L4 3TN.

■ Will swop French Computing and Electronics books (hard to find in UK) for British ones. Send your list for mine. Patrick Gueulle, BP 279 F 76055, Le Havre, Cedex, France.

■ Help! Free game for the first person who can provide a listing stopping the distortion of the Screen$ with the normal 'Start tape, press any key' message. Write to Mark Le-May, 45 Liverpool Road, Fratton, Portsmouth, Hants PO1 5DY.

■ Hardware wanted in good condition with leads and manuals. Will give at least 50 titles for anything offered. Write to Gerard Cahill, 22 Church Drive, Clarecastle, Co Clarke, Ireland.

■ Wanted, Microdrive and Interface 1. Also need printer. Will swop various pieces of hardware and software for the above items. Tel. (0501) 41528.

■ Issues 1, 3 and 5 of *YS* for sale or swop with programs such as *Dungeon Builder*. Write to Kurt Frary, 85 Silver Street, Norwich, Norfolk NR3 4T9.

■ Someone kind in the UK who could buy the Spectrum + upgrade kit for me. Will pay up to £30. Nuno Oliveira, Est. Alto Dos Barrieiros, 10 DT, Sta. Clara, 3000 Coimbra, Portugal.

■ Any Spectrum light pen wanted, with required software if applicable. Will swop for any two of *Knightlore*, *Shadowfire*, *Valhalla*, *Scrabble*, Mick Hewitson, 73 Arthur Street, Barrow-in-Furness, Cumbria.

■ Where for art thou *Robotron*? If anyone has this game or knows where to obtain it, please contact John Flynn. Tel. 021-475 4535 and ask for John.

PENPALS

■ Female pen pal wanted, 14+ to swop games. Write to Stuart Finch, 1 Beechwood Park, South Woodford, London E18 2E.

■ 18 years old, hopeful fantasy novelist wants female pen pal. Age does not matter. Must like Speccies. I have over 100 games, also a large record collection. Please write to Micky Finn, 98 Ripon Street, Blackburn, Lancashire BB1 1TW.

■ I'm almost 17 and would like a pen pal of 17+ to swop ideas, tips, etc., and general correspondence. I'm *no* good at programming, I've never completed *The Hobbit*, but I'm quite good at *Atic Atac*. Helen Spriggs, 3 Barnet Gate Lane, Arkley, Herts EN5 2AA.

■ I'm 14 and I would like a British pen pal of any age to swop software, hints and POKEs. I like playing most Speccy games. Steven Hudson, 8 Kippielaw Park, Mayfield, Dalkeith Lothian Region, Scotland EH22 5AH.

■ 14-year-old male Speccy owner wants pen pal, same age, male or female, Speccy owner. Write to Nicholas Frewin, 29 Gravely Avenue, Borehamwood, Herts.

■ 18-year-old seeks pen pal (preferably with Microdrive) to swop games and playing tips. David Crichton, 14B Corsewall St., Coatbridge, Lanarkshire, ML5 1PY.

■ Mad pen pal wanted for hopeless 14 year-old adventurer. Must hate flying games. Humpty Dumpty was pushed! Squawk! Robbie Pickering, 86 Grange Tower, Muirhouse, Motherwell ML2 2LZ.

■ Are you into designer clothes, all types of music and computers. I'm 17 and want a male/female pen pal with similar interests. Paul Nunn, 15 Cotswold Drive, Waltham, South Humberside DN37 0EA.

■ Pen pals (20+) wanted from any country. If you know something about motor-bike thieves in Newcastle then you *must* write! Also, loads of software to swop. All letters answered. Per H. Kristensen, Norresobakken 111,8800 Viborg, Denmark.

■ Pen pal wanted, any sex, to swop hints, tips, programs, etc. Must be into hacking and arcade adventures, aged between 13-15. Send photo. Andrew Daly, 5 Shearburn Terrace, Snaith, Nr Goole, Nth Humberside DN14 9JS.

■ 16-year-old wants American or Australian pen pal to swop software, hints and tips. Write to David Neeson, 25 Ladywell Drive, Tullibody, Clackmannanshire, Scotland FK10 2QP.

■ Pen pal wanted to exchange games, hints and tips. Write to Gareth Morgan, 68 Hereford Road, Monmouth, Gwent, NP5 3HJ.

■ Wanted! Male or female pen pal to swop games. Aged 15 to 18 if possible. I have lots of games to swop. Write to Mark, 46 Church Lands, Sunning, East Looe, Cornwall.

■ Pen Pal, male or female, 14+ to swop POKEs and games tips and preferably have some interest in programming as well. Write to Jeremy Parsley, 12 Ty-Wern Road, Rhiwbina, Cardiff, South Wales CF4 6AA.

■ Anyone male or female, 18-22 interested in writing own programs, Basic, Pascal and machine code, chart music and has 48K, write to Joe Clark, 9 Glenraith Square, Craigend, Glasgow G33 5PD.

■ Beautiful female computer owner, 17+, sort. Into arcade or adventures. Hints and info given on games. Also likes Si-Fi films, music. *Max Headroom* or anything weird. Please send photo. Noel Wallace, 6 Acris Street, Wandsworth, London SW18 2OP.

■ Any female novice please reply to the letter. Must have a Speccy or else you can't swop games and hints with me and my friend Neil. I'm 16. Anthony Nobbs, 10 Cains Lane, Bedfont, Middx TW14 9RH.

■ I'm a 14 year-old Speccy lover who wants a pen pal of around the same age. My hobbies include adventures, computer programming in Basic, Forth and m/c, not playing arcade games, Esperanto, the occult, reading and youth hostelling. Ashley Monk, 119 Brighton Road, Southgate West, Crawley, Sussex RH10 6TE.

■ I'm 15 and would like a female pen pal of about the same age. J.J. Waldron, 62 Greenloons Drive, Formby, Merseyside L37 2LR.

MESSAGES

■ Hello Blacksmith! Hope your Speccy gets well soon! Give the sun some pink pyjamas and watch it grow like a bunch of bananas? Good luck in the future, yours Gad!

■ The pen pal from Denmark. Your Tas-letter would not load, and I don't know your address. Please write back. Waiting, Mall Smith.

■ *YS* issues 2, 4 and 7 for sale. £4 each. Write to JRM Rooth, Culver Combe, Chudleigh,S. Devon TQ13 0EL.

CLUBS AND EVENTS

■ Wallysoft seeks new members to buy or swop programs (originals only!). Free competition open to members. For details send two stamps to Wallysoft, 29 Bower Road, Swinton, S. Yorks, S64 8NU.

■ Londoners! Finsbury Park's *Computers in the Park* club is still looking for you. Tel. 01-631 1433 during office hours and ask for Pete or Tony — they're waiting for your call . . .

■ ZX-Aid Sinclair Computer Club. We meet twice monthly at Walsall. Tel. 021-502 4420 and ask for T. A. Walker after 6 pm.

BINDERS!

You can tell at a glance. Some people have just got it while others don't even come close. It's tricky to pin it down exactly. P'raps it's the way they walk — as if they owned the world? No, that's not quite it. There's definitely something about them though, that makes others envious of their success. Of course! It has to be the *Your Spectrum* binder — can you come up with a better explanation?



I've been a bit of a drop-out up till now but I'm keen to try the *YS* way to worldly success.

Please rush me.....exclusive *YS* binders.

Tick the appropriate box:

☐ UK £4.95 each

☐ Europe £5.45 each

☐ Absolutely everywhere else £5.95 each

I enclose a cheque for £.....
Alternatively, please charge my Access/Visa/Am Ex/ Mastercharge* card number.....
(*delete as applicable)

Signature .....
(Credit card orders cannot be accepted without a signature)

Name.....

Address.....

.....

.....Postcode.....

Now send the completed coupon (or a photocopy of it) with payment or credit card number to:
Your Spectrum, Binder Offer, PO Box 320, London N21 2NB.
Prices include post & packing.

YOUR SPECTRUM SPECTRUMARKET YOUR SPECTRUM

YOUR SPECTRUM DOES NOT CONDONE SOFTWARE PIRACY

SPECIAL XMAS OFFER!

NOTE OUR PRICES AND WATCH OTHERS FOLLOW THE LEADER

2 GAMES (WORTH £10) WITH EVERY REPAIR

REPAIRS BETWEEN 69 AND 620

EXPRESS SPECTRUM & BBC REPAIRS!

in all U.K. with While-u-Wait repairs!

with INTERNATIONAL repair service!

to charge LOW PRICES for the smaller repairs! (e.g.£9 for keyboard faults)

to advice and a helpful attitude" AUG 85.

FOR SPEED – "One firm at least can effect any necessary repairs over the counter in 45 minutes. Based in Manchester, MANCOMP can offer what is arguably the FASTEST turnaround in the business to personal callers" CRASH Magazine JUNE 1985.

FOR LOW PRICES – "My Spectrum blew recently. I took it to MANCOMP, who fixed it in 8 minutes! and for less than £10! They are local, 'clued up', and blindingly efficient!" 4 HEATONS DIGEST.

FOR REPUTATION & HELPFULNESS – "I have come across a firm that will be more than willing to advise you as to how to remedy your problems. They are called MANCOMP and as well as repairing faulty Spectrums, are also quite willing to discuss your problems with you and offer reasonably cheap and more importantly CORRECT CURES" Phil Rogers POPULAR COMPUTING WEEKLY JAN 85.

FOR PROFESSIONALISM – "Of all the repair companies 'Sinclair User' spoke to, MANCOMP seemed the MOST PROFESSIONAL when it came

FOR HONESTY – We let you watch your computer being repaired and if there is nothing wrong with it, we will tell you!!!

THIS IS WHY Spectrum users from London, Cornwall, Scotland, Birmingham, Liverpool, Coventry, Leicester, Glossop, I.O.M., etc. AUSTRALIA, AUSTRIA, BELGIUM, EGYPT, EIRE, GERMANY, HOLLAND, KUWAIT, NORWAY, PAKISTAN, PAPUA NEW GUINEA, SAUDI ARABIA, SWEDEN, SWITZERLAND and ZIMBABWE – send their Spectrums to MANCOMP for repair!

- 24 TURNAROUND
- NO-QUIBBLE GUARANTEE
- NO HIDDEN COSTS.

EXTRA-SPECIAL DISCOUNTS FOR EDUC INST., H.M. FORCES, CHARITIES, HOSPITALS, ETC!

WHY DELAY? For FREE no-obligation estimate PHONE OR SEND YOUR SPECTRUM TO MANCOMP FOR THE FASTEST AND CHEAPEST REPAIR SERVICE AROUND!

MANCOMP LTD (Dept.)
Printworks Lane, Levenshulme, Manchester, M19 3JP
Phone 061-224 1888, OR 061-224 9688.
OPEN MON - SAT 9am to 7pm
WE ALSO REPAIR APPLES, I.B.Ms, APRICOTS and EPSON & OLIVETTI PRINTERS!!



The 1st choice

SUPERIOR SPECTRUM HYPER TAPE COPIER

The NEW 007 SPY is the ONLY copier capable of copying even a full 48K Headerless program, AND the Hyper load clicking programs and/or the fast programs.

★Copies multipart programs all in one Loading, automatically.

★Copies programs from 1 to 65279 bytes long. (Can yours?)

★Copies Headerless files upto a full 48K. (Can yours?)

★Copies ALL types, Hyper-Click, Fast, Normal Coce, Basic, Screen, Headerless. Even copies programs with no gaps between sections or with very short tones.

★Can remove auto-start from Basic.

★Guaranteed easiest to use.

NEW 007 SPY IS JUST £5.95

O/seas, Europe +55p
Others + £1.55
(Please order as 007H)

ZX GUARANTEED (Dept. YS)
29 Chadderton Drive, Unsworth,
Bury, Lancs. BL9 8NL
Tel: 061-766 5712

SPECIAL AGENT DE-LUXE SPECTRUM COPIER

A multi-purpose copier, ideal for experienced or absolute beginner.

* * * * * 5 STAR RATINGS * * * * *

1. Copies multipart programs all in one Loading.
2. Copies Basic, M/code, Headerless programs upto 51K.
3. Cannot be fooled by weird names which crash other copiers.
4. Can remove Autostart from Basic.
5. YOU can determine Pause between sections.

Includes sheets explaining copying of Hyper-Load games; Alien 8, etc.

Once you've experienced this super DE-LUXE silk smooth easy to use Copier, you'll never use any other.

£5.95
O/seas, +£1 Europe, +£2 Others

KERR (Dept. YS)
1 & 2 The High Street
KING'S LYNN PE30 1BX

THE BEST SPECTRUM TAPE COPIER?

NEW! SUPERCOPIER 2 NEW!

Make your essential security backup software copies. Features are:-

- It will copy the MAJORITY of "ordinary" programs.
- It will copy FAST LOADERS – even the latest types!
- Program parts are loaded CONTINUOUSLY – no cassette changing!
- Repeat backup copies can be made.
- Contains integral HEADER READER.
- It will copy VERY LONG programs (up to 64000 bytes!)
- Many other advanced features. FULL instructions – very user friendly.

UNBEATABLE VALUE AT ONLY:
£6.95 (inc. P&P)
SC1 TAPE TO MICRODRIVE UTILITY.

Transfer your cassette programs to microdrive. Relocates code for M/D transfer. Complete with HEADER READER and FULL instructions. Superb value at only: **£4.95** (inc. P&P).

Send cheque/PO to:
"KOBRAHSOFT", Pleasant View, Hulme Lane, Hulme, Nr. Longton, Stoke-on-Trent, Staffs ST3 5BH. Overseas: Europe add £1, others £2.

COMPUTER REPAIRS IN SOUTHEND

Spectrum/plus	£19.95
Spectrum K/B faults	£12.95
Interface 1 & 2	£14.95
C64/Vic 20 from	£12.95
Brand new Spectrum power supply units	£9.95

Above prices include parts, post & packing. All repairs are guaranteed 3 months. Call in or phone for more details.

MINNIE MICRO ELECTRONICS
12 EASTERN ESPLANADE,
SOUTHEND, ESSEX. TEL: (0702) 62033/615809
OPEN 7 DAYS A WEEK

STOP-REVEAL

Genuinely let you:

1. STOP virtually all programs, Basic, M/code and Headerless even if protected. (ANT ATTACK, etc.).
2. REVEALs hidden Basic in M/code programs. (Could be clues in an Adventure or 10K of ANT ATTACK).
3. LISTs actual M/code on screen.

Now you can STOP, LIST, MODIFY, STUDY most Spectrum programs at leisure. Includes a DISSASSEMBLER so could even study Sinclair ROM, etc. Plus the most Advanced HEADER-READER ever written, plus pages of super SECRETS OF THE TRADE explaining professional methods used to hide lines/programs, etc.

EVEN STOPS/REVEALS PROGRAMS WHICH ARE A GENUINE 48K LONG.

£5.95
O/seas, +£1 Europe, +£2 Others

KERR (Dept. YS)
1 & 2 The High Street
KING'S LYNN PE30 1BX

KIDDISOFT

The Tape Magazine for the younger child
(4 to 8 years)

LOTS of GAMES – PLENTY of FUN & INTEREST

IT'S CHILDS PLAY!

OUT NOW
Issues No. 1 & 2
£3.99 per tape

Send to: KIDDISOFT
5b, NANPUSKER ROAD,
HAYLE, CORNWALL.

FOR RATES AND DETAILS ON ADVERTISING CALL DAVID 01-580 0504

YOUR SPECTRUM SPECTRUMARKET YOUR SPECTRUM

YOUR SPECTRUM DOES NOT CONDONE SOFTWARE PIRACY

MULTI-CHOP PLUS BYTE-COUNTER

A suite of six extremely useful and easy to use programs which let you chop programs into two or more parts ready for transferring onto either Microdrive, Wafadrive or Discdrive or simply use to chop off Screen so programs load faster.

Your programs can be split into:

1. Just the first 6912 (Screen).
2. All except first 6912.
3. First 4000 + Remainder.
4. 4000+ Remainder less screen.
5. Can reduce Superlong programs up to 65279 Bytes down to size.

Has been used to successfully put MONTY-MOLE and POGO on Microdrive.

Includes a Header-Reader and Byte counter which can even give the length of Headerless-Files.

POST £5.95 FREE

O/seas, Europe +55p Others +£1.55
(Please order as MULTI-CHOP)

ZX-GUARANTEED (Dept. YS)
29 Chadderton Drive, Unsworth
Bury, Lancs. BL9 8NL

★ ★ SEVEN STARS ★ ★ UTILITIES

C-DOC is *the* essential Microdrive utility. Find, load, repair and rewrite bad sectors, and hence load damaged files. Features "filter" option for text files (eg Tasword Two), full status reports, monitor-type editing and fast 100% machine code. Order now so you have it ready for the "File not found" blues! **£4.95**

GENER-80 is the fastest Spectrum assembler, and one of the easiest to use, with an excellent 40-column full-screen editor. Can load/save/verify source and object code via tape/Microdrive/network/Opus Discovery disc. Also compatible with ZX printer and "full-size" printer interfaces. "An excellent machine code development program . . . five stars . . . instructions 100%, display 100%, ease of use 100%, value for money 100% — Home Computing Weekly. **£7.95.**

MODER-80 is a handy monitor/disassembler with a built-in mini-assembler. Features include breakpoint, single step and hex-dec-hex conversion. Can be used with Gener-80 to form a complete machine-code programming system. "It offers all the features you would expect from a machine-code de-bugging tool . . ." Popular Computing Weekly. **£5.95.**

PROFILA is an activity profiler which displays in bar-chart form the "bottle-necks" that are slowing down your BASIC and mic programs. Fascinating to use, and cuts out guesswork when "tuning" programs for maximum speed — a "must" for the serious programmer. **£4.95.**

TASPRO enables Tasword Two to justify using equal spaces between words (even with **proportional** mode on FX80 and Juki 6100!) for that professional-quality look. Uses no extra memory. Approved by Tasman Software. **£4.95** (please state printer and interface).

All programs except C-DOC are compatible with both Microdrives and Opus Discovery discs. C-DOC, Profila and Taspro run on 48K Plus only. Fast mail order (UK post free, Europe add £1, outside Europe add £2 airmail) with seven-day "money back if not entirely satisfied" guarantee (statutory rights not affected), or phone for leaflet. All programs now on sale via Micronet 800! Dealers welcome.

SEVEN STARS PUBLISHING
(Dept. S), 34 Squirrel Rise, Marlow,
Bucks SL7 3PN
Tel: 06284 3445

SPECTRUM REPAIRS
A Better Deal from Micro-World

REPLACEMENT OF MIC, EAR & POWER SOCKET	7.95
POWER SUPPLIES (Spectrum/Plus/ZX81)	10.95
KEYBOARD — REPLACEMENT (Mat, Membrane & Plate)	12.95
ALL OTHER FAULTS	17.95
SINCLAIR-PLUS KEYBOARDS inc fitting	29.95
SINCLAIR-PLUS KEYBOARD AND REPAIR	45.00
16-48K UPGRADE (12 months Warranty)	25.95
ZX81 — REPAIRS	15.95
ZX — INTERFACE I — REPAIR	15.95
ZX — PRINTER — REPAIR	15.95
ZX — MICRODRIVE — REPAIR	15.95

- Prices fully inclusive of VAT & Return P&P
- 48hr turn round on most machines
- 3 months warranty on repairs
- Send SPECTRUM ONLY suitably packed clearly stating fault, your name & address, cheque or postal order to:

Micro-World Computers (YS)
25 Hill Top Road, Slaithwaite, Huddersfield HD7 5ES
Telephone: (Day) 0484-846117 (Evening) 0484-845587

Showroom:
1006/1010 Manchester Road, Linthwaite, Huddersfield HD7 5QQ
Open 9 to 5.30, 6 days

BANISH LOADing PROBLEMS

AND THE 'WEENY' BEEP ON THE SPECTRUM
WITH THE ELINCA TAPELOADER ~~£14.99~~ £12.99
OR THE LOUDMOUTH ~~£12.99~~ £9.99
Both post free

SUMMER SALE

For details send S.A.E. to: **Celina Ltd**

Daisy Walk, Sheffield S3 7PY, England Tel: 756728 (0742)

48K SPECTRUM UTILITIES

CODE SLICER is an advanced cassette handling utility which will read ANY section of a NORMAL, DOUBLE or TREBLE speed tape into ANY store address. This single utility now allows you to split a large program into several sections for Microdrive, Wafadrive, Disc drive transfers, tape copies, general hacking, etc. There is NO limit to the size of file this program can handle. It works with Basic or Machine Code files and is an flexible as your imagination.

Simple to use — just **£4.95** including a free tape header reader.

☆ ☆ ☆

KWIKLOAD allows cassette software to be loaded THREE TIMES the normal speed on a standard cassette recorder. The professionally written manual explains how to convert most commercial programs including Basic, Machine Code and many which are protected.

KNIGHTLORE loads in 115 secs
JET SET WILLY loads in 95 secs
FOOTBALL MANAGER loads in 90 secs

"A bit like upgrading your C5 to a 3.5 litre car."
ZX Computing

"I'm very satisfied" — N. Mellet — France

"Thank you for the delivery of your excellent Kwikload" A. Cupit — Switzerland

Only **£4.95** including a free tape header reader.

☆ ☆ ☆

VARILOAD is a new product written at the request of our customers. Several KWIKLOAD users asked whether loading speeds in excess of 4500 baud could be achieved. As a result VARILOAD was written to allow KWIKLOAD to operate at any of 8 different speeds between 2000-6000 baud. Depending on the reliability of your cassette recorder you can now tailor KWIKLOAD to your exact requirements.

NOTE — VARILOAD works in conjunction with KWIKLOAD.
Only **£3.50.**

KWIKLOAD AND VARILOAD only £7.50

Overseas customers please add 55p postage.

Send SAE for details of all our products.

Forats Software YS
37 Gladstone Road
Hockley Essex
SS5 4BJ
Tel: (0702) 207388

SPECTRUM RGB OUTPUT MODULE

adapt electronics

☆ Connect a monitor to your Spectrum ☆ Super sharp text ☆ Superb colour graphics

- True TTL/Analogue outputs + comp syncs
- Monitor quality pictures-no dot crawl.
- Suits RGB monitors & monitor/ TVs
- Simply plugs into expansion port.
- No separate power supply required.
- New through port version.Allows connection of modems, joy-stick interfaces etc.

Price £34.95 or £36.95(through port) + £1 P&P many addons parts & software SAE for details
20 STERLING CLOSE, BUCKHURST HILL, ESSEX. IG9 5TN. Tel. 01-504-2840

SPECTRUM KOPYKAT
Version 3

Simply the best. Copying any 16/48K Spectrum program is now as easy as LOADing and SAVEing your own program.

Even unstoppable programs can now be backed up on to a fresh tape.

NEW FEATURES
★ Continuous LOADing — Multipart programs copied in one go ★
★ 65400 - byte programs backed up easily ★
★ Repeat Copies ★
★ plus much, much more. ★
For 16/48K Spectrum only £4.95

MICRODRIVE KOPYKAT

Transfer your cassette software onto Microdrive simply and easily.
★ Automatically relocates machine code programs ★
★ Stops and reveals BASIC programs ★
ESSENTIAL UTILITY FOR MICRODRIVE TRANSFER
For 16/48K Spectrum only £4.95

Both programs include FREE Header Reader program.
Despatched by First Class return of post.

MEDSOFT
Dept YS, PO Box 84, Basingstoke, Hampshire, RG25 2LW.

FOR RATES AND DETAILS ON ADVERTISING CALL DAVID 01-580 0504

SPECTRUMARKET

YOUR SPECTRUM DOES NOT CONDONE SOFTWARE PIRACY

MULTI-CHOP PLUS BYTE-COUNTER

A suite of six extremely useful and easy to use programs which let you chop programs into two or more parts ready for transferring onto either Microdrive, Wafadrive or Discdrive or simply use to chop off Screen so programs load faster.

Your programs can be split into:

1. Just the first 6912 (Screen).
2. All except first 6912.
3. First 4000 + Remainder.
4. 4000+ Remainder less screen.
5. Can reduce Superlong programs up to 65279 Bytes down to size.

Has been used to successfully put MONTY-MOLE and POGO on Microdrive.

Includes a Header-Reader and Byte counter which can even give the length of Headerless-Files.

POST £5.95 FREE

Olseas, Europe +55p Others +£1.55
(Please order as MULTI-CHOP)

ZX-GUARANTEED (Dept. YS)
29 Chadderton Drive, Unsworth
Bury, Lancs. BL9 8NL

48K SPECTRUM ★ ALL MACHINE CODE PROGRAMS ★

SPEEDFILE: A fast versatile program suitable for hundreds of uses: Records; Film/Video Titles; Names; Magazine index; Search less than 1 second; Items foled alphabetically on entry; An essential utility for all Spectrum users. **£5.90** (Micro-drive compatible)

RADIO STATION LOG: Custom designed to fit the needs of the offical log. FEATURES: Date; Station worked; Time start/finish; Frequency; Report sent/received; Locator; QSL sent/received; Mode; Name; QTH; Notes; Search on all fields less than 1 second; Fast optional data entry. **£5.90** (Micro-drive compatible)

And for your leisure:
NIMJDGER: The best fruit machine simulation yet. Featuring: Large smooth graphics; On screen cash payout; ⅝ pay out, etc. **£5.90.**

SAE for details:

DGF SOFTWARE (Dept YS)
7 RUSHLADE CLOSE, PAIGNTON
DEVON TQ4 7BZ

SPECTRUM REPAIRS

We expertly repair Spectrums for £17 inclusive of parts and labour and retrurn postage.

Spectrums upgraded 48K for £34. Keyboard faults only £12.

R.A. ELECTRONICS
133 London Road, South
Lowestoft, Suffolk
Tel: (0502) 66289

Tour London from your Armchair with...

LONDON ADVENTURE

A Challenging Adventure for the 48K Spectrum



Available by mail order only.
Cassette £4.95, Microdrive £6.75 (inc. p & p).

Fridaysoft
Unit F, The Maltings, Station Road,
Sawbridgeworth, Herts. CM21 9JX.

SINCLAIR SERVICE CENTRE

We have the spares for all repairs to: Spectrum, ZX81, Interface I, Microdrive and Ram Pack.

Spectrum	£10.00 + Parts
ZX81	£7.50 + Parts
Interface I	£7.50 + Parts
Microdrive	£7.50 + Parts
Rampack	£7.50 + Parts

All units repaired to original standard.

Using genuine Sinclair spares, by our HNC qualified staff.

Also available: Spectrum Memory update 16-48k fitted by us ....£28.50. From

QUANTUM
33 City Arcade, Coventry
West Midlands, CV 3HX
or phone: Coventry (0203) 24632

MAGIC-MESSAGE PLUS

This tape lets you do remarkable things with programs. Such as:

★ Reveals and lets you change Hidden basic in "machine-code" programs. (Even the Basic messages in the Sinclair ROM will be revealed.) Could reveal clues in some games. Just for fun, a game was changed to say: Written by Orsen Cart!!

★ Puts Headers on Headerless-Files ready to Load into Magic-Message or make them ready to transfer to a Disc/Wafa/Microdrive.

★ Makes FALSE headers for any progs (so will STOP the UNSTOPPABLES).

Load MAGIC-MESSAGE, play in program and like Magic messages will appear on video for you to read/change.

Post £5.95 Free

Olseas, Europe +55p Others +£1.55
(Please order as magic M)

ZX-GUARANTEED (Dept. YS)
29 Chadderton Drive, Unsworth
Bury, Lancs. BL9 8NL

16K SPECTRUM REPAIRS 48K by TAPS

Test and program services on Spectrum production style test equipment. Gives rapid high quality test and repair, most within 24 hours. No hidden costs. Open Monday to Friday (8.30 to 18.00) Saturday (8.30 to 13.00).

Send or bring your Spectrum and ONLY £16.00 to:

TAPS (BETONE) LTD, 3 Cordwallis Street, Cordwallis Trading Estate, Maidenhead, Berks SL6 7BH. Tel: 0628 781202/32640

SPECTRUM OWNERS

Are you a manic arcade player; a dedicated adventurer/strategist; or do you want an independent, no nonsense critical review of current software/utilities?

Whichever, we have the brochure(s) for you!

Based on the formula which has already produced the successful Hints and Pokes brochures, we are now able to offer not one but three individually tailored brochures specific to the Spectrum and your own particular interests.

For further information on the above and our other computing services, send an S.A.E. to:

H&D SERVICES (YS)
FREEPOST (no stamp required)
MANCHESTER M11 2FA
TEL: 061-370 5666

BLANK CASSETTES

WITH LIBRARY CASES

	C10	C15	C20	C30
10	3.80	4.00	4.15	4.15
20	7.00	7.20	7.35	7.50
50	15.00	15.20	15.35	15.50
100	27.00	28.00	29.00	29.00

Fully inclusive (C.O.D. 65p extra)

5¼" DS/DD DISKS

10 FOR £14.00 inc. PLASTIC CASE

DK'TRONICS KEYBOARDS

(SPECTRUM ONLY)
ONLY £30.00
(£32.50 FITTED. SEND FOR DETAILS)

RING US NOW! (0793) 695034
UK HOME COMPUTERS (DEPT YS)
82 CHURCHWARD AVE,
SWINDON, WILTS SN2 1NH

INCREASE YOUR SALES THROUGH YOUR SPECTRUM SPECTRUMARKETING YOUR SPECTRUM

FAST COMPUTER REPAIRS

VIDEO VAULT INTERNATIONAL 10★ REPAIR SERVICE

Spectrums repaired for £19.95 inc. Parts, Insurance and P & P No Hidden Extras. BBC, Commodore 64, Vic 20, Atari. Quoted for.
Are you fed up with waiting weeks for your Home Computer to be repaired!!!
Why not try the Experts, we offer a full repair service on any Home Computer. All repairs carry a full 3 months guarantee, plus on every Spectrum repaired we send you a free game worth £5.95 for your enjoyment and pleasure.

★ **While you wait Service by Professional Computer Engineers.**
★ **3 Months written guarantee on all repairs.**
★ **International repair company.**
★ **All computers sent by mail order turned around in 24 hrs.**
★ **Most Spectrums repaired within 45 minutes.**
★ **All Micros insured for return journey.**
★ **Open 7 days a week.**
★ **School repairs undertaken-discounts available.**
★ **Free software with each Spectrum repaired worth £5.95.**
★ **Over 8 years experience working with computers.**

ONLY GENUINE SINCLAIR PARTS USED.
Phone today for your free estimate or send your computer to us with £1.75 (UK EIRE I.O.M. C.I.) or £6.50 (Europe/Scandinavia) we will contact you the same day by phone or 1st class Mail should you require quotation first.
TRADE ENQUIRIES MOST WELCOME. ACCESS WELCOMED
VIDEO VAULT LTD DEPT R17 THE LOGICAL CHOICE

VideoVault

Telephone: Glossop (STD 04574) 66555.
140 High St. West, Glossop, Derbyshire, England.

FREE GAME WORTH £5.95 WITH EACH SPECTRUM REPAIR.

FOR RATES AND DETAILS ON ADVERTISING CALL DAVID 01-580 0504

HACK FREE ZONE

Hi there, Hexophiles. Hex Loader's here again, with some more winnin' hints and triffic tips.

Haw've you been, old sport? I feel terrible! I've got a cold in my CPU, and my joystick port is running like a tap . . .aaaa-AAAAA-CHOOOooooooo!!!

Still, you don't want to hear my problems, (sob!), I'm here to listen to your tips and hints on all the wackiest new arcade games. Just a second, I'll dip a tendril into the jolly old mailbag . . . Aha! Here we go then . . . here's the next instalment to **P. Bradford** of Nottingham's help list for *Dun Darach*, begun last month . . . Go to the Magick Shop on Cinder Bank, and buy a spell for 1000Ir. Press 'offer' to activate the Tele-stone, and it'll show you where Skar is. When she's passing you, quickly change the asterisk to the spell and offer it to Skar. She'll say "I am seen", and now you'll be able to see her all the time. Now offer her the pearl, and she'll give you a scroll saying 2**25. In old fashioned ZX Basic this is 2 to the power of 25. The answer to this is 33554432. Make a note of this, as it is an important clue, Go to 3 North Wall, and buy a statue. That'll set you back 600Ir. Take the statue to Teth on Claw lane — just follow the rat! When you give the statue to Teth, he'll offer you the D-key in return. With it you can pass through the door in the north of the Castle, hence the club "Teth is jailer". Drop objects on the three altars, under the spinning letters to spell D.P.E. The door to the right of the screen will now be unlocked. Go through this door, retaining the 2**25 scroll plus one other object! And then . . . Ha-hah! That's where I've got you, because you're gonna have to wait until next time to see the final solution. Stop griping! You don't expect me to give away the whole thing in one go, do you? No, you don't! Wait until next ish, or I'll send you to bed with no tea!

While I'm on the subject of *Dun Darach*, I have notes here from **Barbara Winterton** of Wetherby, **Paul McLean** of Tyne and Wear and **Major W. Beardwell (Rtd)** of Taunton to name but a few of the hordes of people who wrote to say that Paul Allen was wrong. He said that in return for the brooch you received a script which reads "Rats are vain" not "Rats are *not* vain" as quoted. Shoot! Look folks, don't blame me, I wasn't even built when that issue was printed! As for not giving away too many clues, why d'ya think I only release a piece of the solution a month? Well yes, I am a sadist, but the other reason is that I want you to enjoy the games! Simple really!

For those of you that never made it out of nappies (I for one still drop little batteries around the house) here is how to make it out of *Herbert's Dummy Run*. **Paul** and **Darren Robinson** of Dundee sent me this little list of hints:

1. Get the light bulb, and then the torch to allow you to see in the darkroom to the right of the swimming pool.
2. Get the cork, then the popgun to allow you past the soldiers.
3. Get box key and honey pot, return to first screen and stand on the Jack-in-a-Box; you're then able to get the teddy bear.
4. Use the Teddy to help unlock the door in the dalek room.
5. In the dalek room you will see a short rope. Jump at this with the rope and it will lengthen.
6. The duck in the swimming pool is now accessible, although difficult.
7. Try using the duck to get stones from the castle, they might help with the catapult.

Thanks, boys!

Mark Watts of Burton-on-Trent writes "I have a few tips for *Wriggler* players . . ." Do Tell! ". . .Get the bags of gold and immediately drop them. This increases your score dramatically. Also, get to the scrublands, get to the screen with the clockwork spider — go up, up, right, down, left, left, and then follow the ant." Huh? Surely you mean follow the bear . . . oh no, sorry. That's a lager commercial. "Next go down and then right and you'll be in the screen with *two* clockwork spiders" Yuk! "Here go through the bottom right, go down and then left and you'll be in the scrublands. There are a lot of extra lives in the scrublands." Goforit! "Hang on, I'm not finished . . . One last tip. Go down the first two passages in the Underground . . ." Cryptic, huh? Thanks, Mark. Triffic!

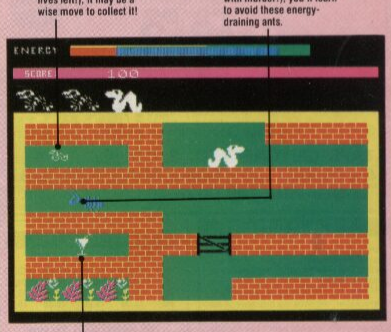
Now **Stephen Trask** of Rochdale. "On the 18th of August I finished *Highway Encounter*. Am I the first to do so?" Dunno. Is he? Tips include sending one Vorton forward to clear Zones 29-20, then sending him back to release the rest, and continuing like that. Don't spend too much time on the pathways, just clear them enough to get through — time is precious. On zone 5, block the alien and push to trap him. Go to the corner of your block, turn toward the alien and push — it'll move just enough for you to get the Lasertron through! Nice one, Steve.

Right. That's enough from the mailbag. You know, I've been playing a lot of games lately. No, really! My favourites of the moment are *Macadam Bumper* by PSS, that old rave from the grave *PSSST!* from Ultimate before they got sassy, and *The Covenant* also from PSS. Give 'em a try . . . they're wangy! Hey, drop me a line and tell me what your favourite game is, and why you play it, rather than any other.

Right, that really is it. I've run out of space. Besides, my printer's getting hot! OK, see ya next month, and keep those letters flying in. Oh yeah, something else . . . hey, take your hand off my plug! You're not going to do that again . . . (Click, buzzzzzzzz)

If you really must, send your missives to his mechanical mouthship, Hex Loader, Hack Free Zone, Your Spectrum, *14 Rathbone Place, London W1P 1DE. Ed.)*

Mark Watts from Burton-on-Trent has a few suggestions on how to play Wriggler — Hex has some other ideas...



Editor Kevin Cox; **Art Editor** Phoebe Evans; **Deputy Editor** Peter Shaw; **Production Editor** Louise Cook; **Designer** Martin Dixon; **Editorial Consultant** Andrew Pennell; **Software Consultant** Gavin Monk; **Contributors** Steve Adams, Ross Holman, Tony Samuels, Penny Page, Alan Trevartha, Dave Bishop, Teresa Maughan, Keith Symonds, Iolo Davidson, Steve Cooke, Chris Wood, Rick Robson, Dougie Bern, Max Phillips, Phil South, Dave Nicholls; **Advertisement Manager** David Baskerville; **Production Manager** Sonia Hunt; **Group Advertisement Manager** Chris Talbot; **Managing Editor** Roger Munford; **Art Director** Jimmy Egerton; **Publisher** Stephen England; **Published by** Sportscene Specialist Press Ltd. 14 Rathbone Place, London W1P 1DE. **Telephone (all departments)** 01-631 1433. **Telex** 8954139 BunchG. Company registered in England; **Typesetters** Carlinpoint, London; **Reproduction** Graphic Ideas, London; **Printed by** Chase Web Offset, St Austell, Cornwall; **Distribution** Seymour Press, 334 Brixton Road, London SW9. Telephone 01-733 4444. All material in *Your Spectrum* © 1985 Felden Productions, and may not be reproduced in whole or part without the written consent of the publishers. *Your Spectrum* is a monthly publication.



ADVANCE WITH SAGA



After adding our products to your Spectrum, your Spectrum will not merely become a superior computer but a more complete computer system.

The SAGA keyboards, culminating in the new SAGA 3 ELITE, provide your Spectrum with the sheer elegance that it deserves. The SAGA 3 ELITE incorporates the most recent technology in keyboard design which provides 27 single entry functions.

If you would like graphics with real Style, then they are yours with our latest graphics package, while letter quality print can be produced for less than £120 from our new printer.

Just cut out the Coupon below for any of the following products:

SAGA 1 EMPEROR 67 keys enable easy access to every function, making obsolete the "Stretch requirement" of other keyboards. **£49.95**

SAGA 2 PROFILE A re-design of the popular Lo Profile with number pad, 52 keys. **£49.95**

SAGA 3 ELITE recently developed, the SAGA 3 ELITE is the finest available keyboard for your Spectrum. The keyboard and number pad has 87 keys in total, a massive 27 keys are auto-shifted. **£79.95**

DUSTCOVERS Black with SSL logo, available for all keyboards. **£4.95**

STYLE Realise your graphic expectations. Comprises Kempston compatible interface and Software. **£29.95**

SAGA GP Graphics Tablet—super improve STYLE, plug it in and see. **£79.95** (read the reviews!)

NEW LETTER QUALITY PRINTER The first in a new range of printers to be available shortly. SPEED: 12 CPS. PRINT: Ink on ordinary A4 paper. INTERFACE: Centronics & RS232. For print sample and further information, write or call now, only **£119.95**

SOUNDBOOST Puts music in your ears (and television) **£9.95**

FLEXICABLE Extend your capabilities with two more ports! **£11.95**

TURBO INTERFACE with custom chip, ROM slot and 2 joystick sockets the TURBO out-performs other joystick interfaces. **£21.95**

We invite your enquiries on (04862) 22977, more descriptive literature is freely available for each product (please send stamp).

SAGA SYSTEMS LIMITED
(04862) 22977

KEEPING YOUR COMPUTER UP TO DATE

	QUANTITY		P&P	
SAGA 1 EMPEROR	☐	*£49.95	£1.50	
SAGA 2 PROFILE	☐	*£49.95	£1.50	
SAGA 3 ELITE	☐	*£79.95	£1.85	
DUSTCOVER	☐	*£4.95	FREE	
STYLE	☐	*£29.95	FREE	
SAGA GP	☐	*£79.95	£1.50	
LTR-1 PRINTER	☐	*£119.95	£2.30	
SOUNDBOOST	☐	*£9.95	FREE	
FLEXICABLE	☐	*£11.95	FREE	
TURBO INTERFACE	☐	*£21.95	£1	
VAT is included			TOTAL	

Overseas orders, please deduct 15% VAT add £3 for postage excess.

SEND YOUR ORDER TO: Dept YS10 Order Desk Saga Systems Limited. 2 Eve Road, Woking, Surrey GU21 4JT.

Mr/Mrs/Miss _____

Address _____

_____

_____ Amount enclosed £ _____

My Access Card No. is ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

ACCESS ONLY ACCEPTED

Please tick method of payment: PO ☐ Cheque ☐ Draft ☐ Access ☐

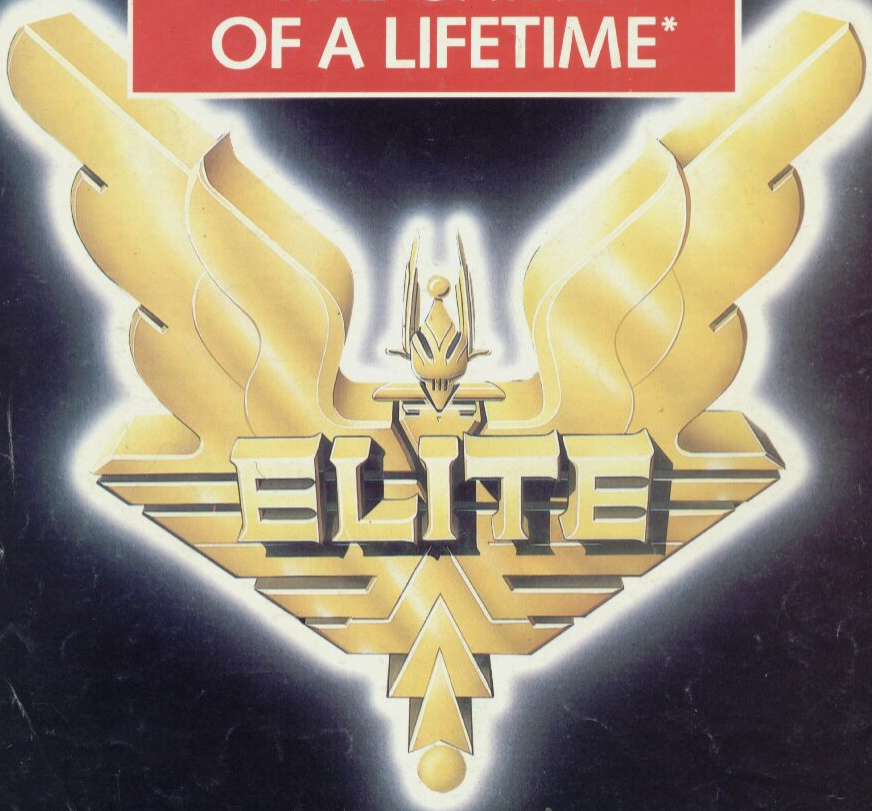
If this is confirmation of telephone order, please tick box ☐

Signature _____ Date _____

Please allow 28 days for delivery.

Limited quantities of the original low profile keyboard are available at only £39.95 inc. V.A.T. + £1.50 P&P.

THE GAME OF A LIFETIME*



Available for Commodore 64, Spectrum 48K and Spectrum +. Coming soon: Amstrad and MSX.

FIREBIRD

FIREBIRD SOFTWARE · WELLINGTON HOUSE
UPPER ST MARTIN'S LANE · LONDON WC2H 9DL

GOLD EDITION

Firebird is a Trade Mark of British Telecommunications plc
Elite is a Trade Mark of Acornsoft Ltd. © Acornsoft 1984 © BT 1985

*Zzap! 64 Magazine