

40p EVERY WEEK • No 110 • MAY 11 1985

PERSONAL

Computer

NEWS

STILL
ONLY
40p

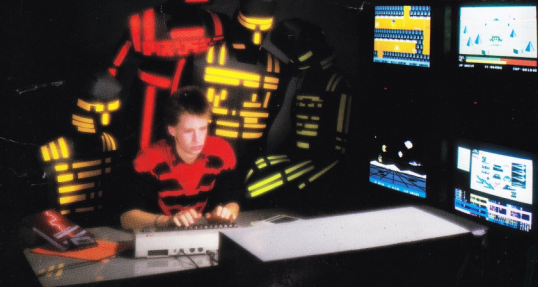
**EXCLUSIVE
HANDS-ON TEST
OF THE 512K ST**



ATARI'S DREAM MACHINE

White Lightning

The Games Designer used
by the Professionals
Commodore 64



Now, without any knowledge of machine code, you can write fast, smooth, professional, totally original games and market them without paying royalties.

Even if you have already mastered machine code, we believe that the time and problems saved by writing in White Lightning's **FORTH**-based high level language could revolutionise commercial games writing for years to come.

IDEAL IDEAL is an Interrupt Driven Extendible Animation sub-Language. Once you have mastered IDEAL's easy to learn set of over 100 commands and just a little **FORTH**, you will be ready to produce arcade-quality games even if you don't know machine code. Up to 255 software sprites, each with its own user-defined dimensions, can be moved around the screen (or memory), scrolled, spun, reflected, enlarged or inverted with amazing speed and smoothness. Operations are possible between screen windows, sprites and

sprite windows. Software sprites can even stretch across several screens, so those difficult scrolling landscapes that form the basis of so many games are easy to achieve. White Lightning also adds **PLOT**, **DRAW**, **POLY** and **CIRCLE** as well as fully supporting the Commodore's own excellent hardware sprites and sound facilities. The IDEAL routines operate in hi-res or 4-color modes.

MULTI-TASKING Because White Lightning uses interrupts, you can effectively run two programs at once. This means, of course, that games like *Space Invaders* and *Defender* can be written without complex timing calculations. So while one program smoothly scrolls the landscape, the second animates the other characters. This is undoubtedly one of White Lightning's most powerful features.

MARKETING AND PORTABILITY Although White Lightning uses an integer **FORTH** as its host language, programs can be written in a combination of Commodore **BASIC**, **FORTH**,

IDEAL and machine language. The final program will run independently of White Lightning and absolutely no marketing restrictions are imposed.

BASIC LIGHTNING In addition to the White Lightning program itself, the package also includes an extended **BASIC**. This **BASIC** adds more than 200 reserved words including all the IDEAL commands, procedures and a full set of structured programming commands. Up to five tasks can be run simultaneously.

SPRITE DESIGN White Lightning comes complete with a separate sprite designing program, two libraries of sprites are included and up to 255 sprites can be designed with loading and saving facilities between sessions.

The package comes complete with two 100-page manuals and a free demonstration program is included to show off the potential of the system.

Every product carries a lifetime guarantee. All prices include comprehensive manuals, V.A.T. and p & p, and includes manuals and p & p for overseas. Overseas customers requiring air mail add \$5.00. All payments in £ sterling. Please send A4 (297mm x 216mm) S.A.E. for our extensive product range catalogue.

DATA SOFTWARE

12 Walliscote Road, Weston-super-Mare, Avon BS23 1UG.
Telephone: (0934) 419921. Telex 437287 Shatel G.

Please send me the following Lightning Systems Pack(s)

Basic Lightning Tape (\$14.95) ☐

Basic Lightning Disc (\$19.95) ☐

White Lightning Tape (\$19.95) ☐

White Lightning Disk (\$29.95) ☐

I enclose my cheque/P.O. for \$ _____
24-hour Access Tele-ordering on (0934 419921)

Name _____

Address _____

Postcode _____

Telephone _____

COVER STORY

Atari's Attack

10

Has Tramiel come up trumps with the new range of Atari's PCN hotfooted it out to Slough to give the new 520ST an exclusive hand-on test. And if that's not enough, we also have a Pro-test of the 130XE. Who else could give you all this and more?



ATARI'S DREAM MACHINE

OUTPUT

Adventurous moves

16

In the second part of our article on writing your own adventure, Mike and Pete Gerrard explain how to put printed page to screen.

ATMOS anatomy

20

After last week's Oric class, here comes a duo of delicious utilities for the Atmos.

QL ROMs on

21

In the latest version of QL's ROM (JS, to those in the know) hits the shops, we show where the improvements can be found.

HARDWARE

130XE Revs up

18

With a price tag of just under £170, 128K of memory and a wealth of games already released, the 130XE appears to be on a winning streak. We take a look.



SOFTWARE

QC central

27

At last, a C compiler for the QL. GST has leapt to the rescue and it's an eminently usable package indeed

Turbo charged BBC

28

Cheap, cheerful and excellent value — Altor Computer's fast Pascal package is a bargain that Beeb owners shouldn't miss

REGULARS

Monitor

1

Commodore announces losses; Atari support grows; Compaq launches new machines; and what price portable computers?

PCN Charts

5

Random Access

7

Fight out the war of words on our pages. More readers share their views.

Microwaves

9

Software Pre-view

23

Lastest releases from the software houses.

Gameplay

24

Even the Apple gets a look-in this week

Billboard

29

Quit

32

After the good buys, a few humorous goodbyes.



PLUS PROBLEM

The new BBC B Plus computer is being viewed unenthusiastically by the major multiple stores, but Acorn is receiving the news phlegmatically.

At £499 the machine is unlikely to sell in the sort of volumes that would appeal to the likes of Boots and WH Smith, but Acorn sees it as much more of an 'independents' machine, selling through smaller dealers who can give it better technical support.

Acorn has been running a presentation for software houses and distributors for about a month now, but samples of the machine didn't go to the multiples until the Friday before last. WH Smith and Boots like to give computers a thorough evaluation before deciding to stock them, and it's unlikely they'll make a decision for another week or so.

The possibility of one or more of the chains turning it down is being prepared for. According to an Acorn spokesman it's quite possible that they'll view it as too pricey for a home machine, and considering their track record of trying to sell business machines (WH Smith and the Advance, for example) they may not think it's viable.

The last year or so hasn't exactly been a wonderful experience for micro shops of any description. The unwary have been left half buried in Oric Atmos, Acorn Electrons, Dragons and even Lynxes. This has disenchanted a lot of small dealers, and Boots has on occasion seemed ready to start a rummage sale at the drop of a hat. The Boots price pledge may not have always been the best possible deal, but the company has offered exceedingly keen pricing on ZX81s and Dragons.

All this has meant the multiples have shown a willingness to garotte low-selling backsliders, and they have been able to use their muscle to exert a considerable influence.

Acorn's own position is more complex than this because the company also has to rebuild its bridges to small dealers who were caught out by the Electron price-cut this spring. The problem here will be that the financial loss to the dealers can be made up, but regaining their confidence will take more time.

With the new Plus added to the Acorn range it seems clear that the company, as promised, will be concentrating on selling to small businesses and educational users. The price tag on the Plus is too high for anything else — although the way prices are moving it may even be too high for these markets.

Acorn's gamble must therefore be to establish the Plus as a prestige successor to the Model B, and first impressions are that the odds are stacked heavily against the company.

As part of its bid to regain the market's attention Acorn has been dropping its software prices in three separate brackets. Schools and parents (the last one may be difficult to prove, but kidnap a kid and take it along with you) will be able to save 50 per cent on education titles if they buy more than five. If you don't buy more than five you can save 30 per cent, which is the amount the company is dropping the price on almost everything.

Acornsoft Small Business software drops 43 per cent if you buy all seven together, while Electron titles except Elite (sorry), Countdown to Doom and Linkword come down to £6.99.

Fancy flyer

May 25 will see the release of Jump Jet, a combat and flight simulator from Anirog. It was



Prepare for take-off.

written by Vaughan Dow, an ex-VTOL and test pilot and author of Flight Path 737.

The four skill levels reflect RAF ranks, from Flight Lieutenant to Group Captain. Jump Jet uses Anirog's voice reproduction technique, Voice Master, to convey important information to the pilot.

The first machine to see the game will be the Commodore 64. Spectrum, Amstrad, BBC, C16 and Vic 20 owners will have to wait until July 22. Versions for Atari, MSX and Tatung machines are planned for September, costing £9.95.

COMMODORE HIT BY LOSSES

If you thought things were looking bad in the home micro market, confirmation arrived this week with news from Commodore where the world's number 1 is up against the ropes.

The US giant has posted third quarter losses of \$20 million — a year earlier it was showing profits of \$36 million. Worst of all, chairman Irving Gould has warned that the company will probably show a loss on the year's operations. It's been a while since that happened.

Mr Gould was quoted in the *Financial Times* last week as saying earnings were affected by a price reduction in Febru-

ary, a reluctance of retailers to rebuild their depleted inventory and by the general slowdown in our non-US sales.

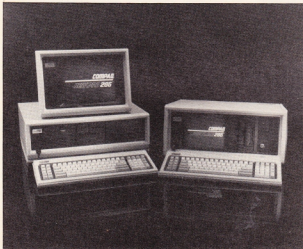
This sounds like a bit of guff to us, but taken at face value what Mr Gould is saying is that Commodore couldn't afford to go into a price war, and even after it did retailers still thought its products were wrongly priced.

The truth is that Commodore went into 1984 like a champion and came out of it staggering. Its product range was badly scrambled with the introduction of the C16 and Plus/4 — the 128 is the machine it should have released for Christmas.

Since then a round of price cutting on the newer models but not on the 64 has made a mess of the company's price structure. The more recent launch of the IBM-compatible business machines may defray some of the worst possibilities, but Commodore could get badly hurt trying to reassert its former position at the top of the business market.

If anyone from Commodore is reading this, we'd suggest you drop the 16 and the Plus/4, cut the 64 to the position the Vic once held, move the 128 into the 64's slot and put your faith in God and the Amiga, not necessarily in that order.

COMPAQ GOES TWO UP ON IBM PC AT



Latest Compaq — AT compatible at cut prices.

Compaq — the most successful manufacturer of the IBM compatibles — announced two new products last week that will increase the pressure on Big Blue to sort itself out.

The Compaq Portable 286 and Deskpro 286 are compatible with and, according to Compaq, better than the PC AT.

Both are based on Intel's

latest hot processor, the 80286, and the portable is easily the most powerful system in its class with a 20Mb hard disk and up to 2.6Mb of RAM. Compaq says it will run up to 30 per cent faster than the AT but you can slow it down for full AT compatibility.

The Deskpro will give up to 70Mb of hard disk space and 8.2Mb of RAM. Hardware and

software compatibility extends to MSDOS 3.1, the new IBM PC network, the Topview operating system and the enhanced IBM graphics adapter.

The machines will be launched in the US this month, arriving in the UK in late summer.

Prices have not been fixed but British owners can expect to pay 'around £4,000'.

Lisa loses out to Mac

The future of Apple's Lisa is now clear — it's being dropped in favour of the Macintosh.

Lisa was launched in 1983 and brought the now fashionable windows, icons and mice into public view for the first time, but sales of the machine have been very low, largely because of its high price and lack of software.

Apple reduced Lisa's price to £4,000 last year but is now to replace it with a 512K Mac with a 20Mb hard disk. A range of peripherals designed to enhance the Macintosh's power and business image will be made available later this year.

With no radically new machine, and GEM and Atari posing a threat, Apple has to make the machine more attractive than GEM-based systems.

The 4th National Apple User Exhibition (May 9-11) will see demonstrations of Macs networked with Appletalk driving laser printers via Laserwriter. Interest among UK software houses is high: Lotus will be showing Jazz (due for release May 27), Blyth Software will launch a networked Omnis 3, Pace is developing a comms package and Psion has a Macintosh version of its Chess.

Price error

Forth may be a fast language, especially on the QL, but that's no excuse for the rampant inflation we applied to Computer One's version. It costs £39.95, not £139 as we stated in issue 106.

Legal aid

Readers with long memories may remember the fuss being created last year over something called The Data Protection Act 1984 — a new law designed to cover persons and organisations using computer databases.

As with all laws, the detail is mind-bogglingly complex with lots of clauses defining who is affected, and why, and what they have to do about it.

To help, the Office of the Data Protection Registrar is issuing a series of booklets explaining the law and its provisions. If you think you might be affected, you can get copies from Chambers of Commerce, National Computing Centres and a host of other places, or direct from the Office of the Data Protection Registrar, Springfield House, Water Lane, Wilmslow, Cheshire SK9 5AX.

MODEM LINK FOR ATARI FANS

Long-suffering Atari owners could be forgiven for thinking that Christmas has come late this year. The kick up the pants that Jack Tramiel has given the slumbering US company has had the noticeable side effect of waking up several other parts of the industry.

Leading the revival is Miracle Technology which has announced a modem interface and communications package that offers full Prestel facilities.

The package labours under the unwieldy name of Multi-Viewterm Datatari but makes up for that with an impressive specification. It will handle baud rates of 1200/75, 75/1200, 1200/1200 and 300/300. The cable comes with 13-way plugs at the Atari end and a standard 25-way plug to fit Miracle Technology's range of modems.



Prestel power — Atari users get on-line at last.

The interface and disk-based software give Atari owners access not just to Prestel but also to electronic mail, telex and a range of bulletin boards. The system also supports the downloading of teletext.

Best news of all is that the package is compatible with all

8-bit Atari's from the old 400 and 800 through the XL range and the new XE series.

It should be available through most of the main Atari dealers or by mail order from Miracle Technology, St Peters Street, Ipswich IP1 1XB. Price is £61.10.



When is a portable not a portable?

What do you reckon the specs for a really classy portable computer should be? Twin micro floppies, 80x25 LCD, 256K of RAM, IBM compatible — go on admit it, that's what you're thinking isn't it?

Most of the world's micro industry thinks this too, as you'll see by the number of manufacturers falling over each other to get HP110 clones onto the market. The net result is that, if you're not careful, you'll find yourself salivating over a substantial piece of kit that... well, that keeps falling off your lap, for a start.

The first successful portable computers (aside from the likes of the Osborne and the rest of the luggable crowd) were the Tandy, Olivetti and NEC lap-portables based on the same Kyocera design. These are still fairly widely used, but manufacturers have looked at their perceived limitations and started designing them out.

Which means, if a 40x8 LCD isn't good enough you put on a bigger fold-up screen (so you're sitting tapping away on a bus, then the conductor brushes past and rips your screen off), while if the memory isn't big enough you install more of it, forcing up the price of the basic unit.

The end result is an expensive piece of hardware that has sacrificed a great deal of its portability. And it's decidedly low-tech.

Why low-tech? Because it's trying to be a self-contained unit, likely its desktop rivals, whereas the earlier portables were really remote terminals. These allow you to work on the move, and if they're used in conjunction with desktop or mainframe computers you can still have desktop power when you need it.

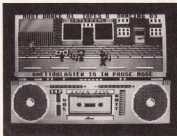
But there's one good thing about the new generation of portables. If the manufacturers convince enough mugs they're a good idea then the demand for the earlier portables will drop. The manufacturers will therefore have to drop the price, and then we can all buy one.

MUSICAL MICROS

Virgin Games' next release will be GhettoBlaster. Written by Tony Gibson and Mark Harrison, it features 12 original backing melodies.

It's not another Breakdance simulation; you're responsible for collecting and delivering music tapes around the town for the company Interdisc. Life is made harder by the inhabitants who may steal your batteries or turn your volume down.

Gibson and Harrison normally code for Taskset, but offered GhettoBlaster to Virgin. The game should be out soon.



GhettoBlaster — touch the characters with notes to make them dance.

First to the defence

First Software is living up to its name with a remarkable product for Commodore 64 owners — an ADA compiler.

ADA is a very high level language much beloved of the US Defence Department where it's the number one choice for controlling missile systems.

First's package consists of an editor, syntax and semantics checkers, assembler and disassembler complete with a fat manual for £50. This may be the first implementation of ADA on a micro.

Slogger bid

Support for the ageing Acorn machines, the BBC B and Electron, is still thriving with a selection of new products from Slogger Software. ROM manager chips BeebMan and ElkMan provide facilities for examining, enabling, disabling, and generally fooling around inside the ROM system. The ROMs cost £17.50 each and include facilities for accessing sideways RAM, if you have any.

Commands include `offrom` to turn off a ROM (useful for avoiding conflicts), `kust` which gives the status of all the 16 function keys, hex and mnemo-

nic dumps of memory and facilities for moving ROM data from the filing system or memory, into and out of the ROMs themselves.

Slogger has also produced a ROM board for the Electron with space for 8 ROMs of either 8 or 16K. The unit plugs into the back of the Electron and is fully compatible with the existing Acorn add-ons, the Plus 1 and Plus 3. It gives Electron users access to most of the ROM software for the BBC including View, MultiForth-83, and EX-MON. The Rombox costs £44.95 including postage and packing and is available direct from Slogger Software 0643-811634/41622.

HISOFT

High Quality
Microcomputer
Software

CP/M PASCAL

When choosing a compiler, support is crucially important. It is vital to ensure that you will receive technical back-up for the package as quickly as possible. This may prove difficult, if not impossible, when the software was designed in another country and you have no access to the authors. **HiSoft Pascal** is a British product, created and manufactured by ourselves and fully supported by our technical team here in Dunstable. We offer inexpensive upgrades and we are continually extending and improving the compiler.

HiSoft Pascal is available in a wide variety of Z80 CP/M disc formats, is very close to Standard Pascal and comes supplied with a comprehensive and sophisticated full screen editor (ED80) which is specially designed for program development; the editor may be easily configured to suit all displays and also for special keyboards and individual keystroke sequences.

All this for a fully inclusive price of **£39.95!**

High Quality Software at a Fair Price.

HiSoft was founded over four years ago and since then has built up a reputation for the quality of its products and the strength of its support. Our utility and language software is available for most of the home computers currently on the market and we are always developing new products: our latest is **Devpac 80**, a powerful assembly language development package for all Z80 CP/M computers. **Devpac 80** is a macro assembler (GEN80), a configurable full screen editor (ED80) and a super front panel debugger (MON80) all in one integrated package.

Devpac 80 makes Z80 assembly language development a joy to do and is incredible value at only **£39.95** inclusive!

Please feel free to write to us or telephone for immediate despatch of full technical details of all our products - there is so much more than we can say in this small space. Our next product for CP/M-80? Wait and Cl!

HISOFT

180 High St. North
Dunstable, Beds
LU6 1AT
Tel. (0582) 696421

AMSTRAD



£6.95
SPECTRUM 48K
£5.95

**The ultimate space
shoot-em-up**



C + VG GAME OF THE MONTH
CRASH SMASH 93%



REALTIME SOFTWARE

3D STARSTRIKE



Please rush me: ☐ Starstrike (Amstrad) £6.95 ☐ Tank Duel (Spectrum) £5.50
☐ Starstrike (Spectrum) £5.95 ☐ Both Spectrum Games £9.00

Name

Address.....

Cheques/P.O.'s Payable to REALTIME SOFTWARE, PROSPECT HOUSE, 32 SOVEREIGN STREET, LEEDS LS1 4BJ

GAMES

TW	LW	TITLE	PUBLISHER	MACHINE	PRICE
1	1	Softaid	Softaid	SP, C64	£4.99
2	2	Wild Series B'ball	Imagine	SP, C64	£6.95
3	4	Brian Jacks S'Star	Martech	SP, C64, AC	£7.95
4	3	Spyhunter	US Gold	SP, C64	£9.95
5	6	Gremkins	Adventure Int	SP, C64, AC	£9.95
6	8	Starion	Melbourne	SP	£7.95
7	5	Ghostbusters	Activision	Various	£9.99
8	—	Int Basketball	Commodore	C64	£5.99
9	11	Pitstop II	CBS/Epyx	C64	£10.95
10	7	Impossible Mission	CBS/Epyx	C64	£9.95
11	—	Shadowfire	Beyond	SP, C64	£9.95
12	15	Gyron	Firebird	SP	£9.95
13	9	Bruce Lee	US Gold	SP, C64	£9.95
14	14	Sorcery	Virgin	Various	£8.95
15	10	Moon Cresta	Incentive	SP, C64	£6.95
16	—	DT's Deathlon	Ocean	SP, C64, AM	£6.90
17	13	Dragontorc	Hewson	SP	£7.95
18	16	Raid over Moscow	US Gold	SP, C64	£5.95
19	—	3D Star Strike	Real Time	SP, AM	£5.95
20	12	Grand National	Elite	SP, C64	£6.95

SPECTRUM

TW	TITLE	PRICE
1	Softaid	£4.99
2	Wild Series Baseball	£6.95
3	Spyhunter	£9.95
4	Starion	£7.95
5	Gyron	£9.95
6	Brian Jacks S'star	£7.95
7	Gremkins	£9.95
8	Grand National	£6.95
9	Bruce Lee	£9.95
10	Moon Cresta	£6.95

COMMODORE

TW	TITLE	PRICE
1	Softaid	£4.99
2	Int Basketball	£5.99
3	Pitstop II	£10.95
4	Wild Series Baseball	£6.95
5	Impossible Mission	£9.95
6	Gremkins	£9.95
7	Theatre Europe	£9.95
8	Brian Jacks S'star	£7.95
9	Entombed	£9.95
10	Cauldron	£7.99

MICROS

BELOW £1,000

TW	MACHINE	PRICE
1	Spectrum	£129
2	Amstrad	£349
3	CBM 64	£179
4	BBCB	£399
5	Atari 800XL	£125
6	Electron	£129
7	Einstein	£499
8	CBM 16	£140
9	MSX (series)	£250
10	Sinclair QL	£399

ABOVE £1,000

TW	MACHINE	PRICE
1	IBM PC XT	£2,340
2	ACT Apricot	£1,760
3	Compaq	£2,064
4	Olivetti M24	£1,776
5	Wang Professional	£3,076
6	Eriasson PC	£1,917
7	Macintosh	£2,064
8	ITT Extra	£1,997
9	Columbia PC	£2,478
10	Corona PC2	£2,498

These charts are compiled from both independent and multiple sources across the nation. They reflect what's happening in high streets during the week up to May 2. The games chart is updated every week. The prices quoted are for the no-frills model and include VAT. Information for the top-selling micros is culled from retailers and dealers throughout the country and is updated every month. PCN Charts are compiled exclusively for us by RAMC, who can be contacted on 01-892 6396.

WOOTTON COMPUTERS

	Our Price	Phone price
528 S.T. 524K Computer		
528 S.T. 524K Computer + 3.5 inch disk drive 500K		
1302X 128K Computer	£199.00	£158.00
8002L 34 Computer	£129.95	£98.00
1010 Program Recorder	£34.95	£32.99
1050 Disc Drive + DOS3	£199.95	£165.00
8002L + 1010 case + level Prog.		
+ Pole Position + 5 blank cassettes		£129.00
8002L + 1050 Disc Drive + Home Filing Manager		
+ 1010 Adventure + Game Master Disc (2.80)	£248.90	£248.90
H.S. PERIPHERALS		
Managers Tally M1 82 + (400cps)	£248.95	£210.95
CE77 Touch Teller + Accu-Act Soft	£48.95	£48.95
H.S. SOFTWARE		
Adventure	£3.99	£9.45
Chess	£3.99	£9.45
Solitaire	£3.99	£9.45
Long Rider	£3.99	£9.45
Pengo	£3.99	£9.45
Pole Position	£3.99	£9.45
QIX	£3.99	£9.45
Space Invaders	£3.99	£9.45
Desktop King Jr.	£3.99	£9.45

All AtariSoft software available at discount prices. Please phone for full details of stocks.

	£22.99	£20.99
EDUCATION/PROGRAMMING		
Assembly Editor	£22.99	£20.99
Conversational French/Spanish	£22.99	£20.99
Conversational German/Italian	£22.99	£20.99

Maths V Level Course Year 1-4	(each) £9.95	(12.95 disc)
Maths V Level Course Year 5 Revision	(each) £9.95	(12.95 disc)

Logo + Manuals	£59.99	£55.00
Microsoft Basic (cart)	£48.00	£48.00
Teach Typing (cart)	£12.95	£11.99
HOME/BUSINESS		
Alan White (cart)	£36.99	£37.99
Home Filing Manager (disc)	£24.95	£14.99
Kingpin (cart)	£9.99	£8.99
C.D.C. Draw (55,000) 10 in box		£16.99
Memorex Discs (55,000) 10 in box		£16.45
Curious Disc 10 in Library Case		£19.99
Blank Cassettes 10 of C70	£5.30	£5.30
Track Ball	£19.99	£17.99

3 year disc costs use the 8. side. Disc Master £5.99

All Subject to availability.
All prices inc. VAT
P&H extra please enquire.

116 EDLESTON ROAD, CREWE,
CHESHIRE. 0270-214118

York Computer Centre

SPECIAL OFFERS!!!

Atari 800XL £99.95
Atari 1050 Disc Drive £175.00

Atari Cassette Package
Includes 800XL Computer, Cassette Recorder + two pieces of software.

ONLY £129.00

Atari Disc Package
Includes 800XL Computer,
1050 Disc Drive,
Home Filing Manager Disc,
The Pay-Off adventure and demo disc.

ONLY £249.00

100's OF SOFTWARE TITLES IN STOCK
Ring for availability of the latest titles.

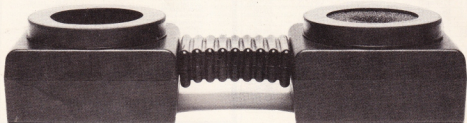
Dropzone, US Gold. tape £9.95 disc £14.95

Infocom series of Zork I, II, III disc only £29.95 each
Encounter tape £9.95
Scott Adams Adventure Series: £7.95 each (cass.)
Enquiries welcome for any Atari requirements.

YORK COMPUTER CENTRE
7 Stonegate Arcade, York YO1 2QQ.
Tel: (0904) 641862

THE TALK OF BRITAINS COMPUTERS...

PROTEK 1200 BAUD MODEM



- * Acoustic Coupler
- * Baud Rate Mode 1 = 1200:1200
Baud Rate Mode 2 = 1200:75
- * Portable 4AA Batteries
- * BATB Approved
- * RS232C/RS432 Compatible
- * Prestel & BT Gold Compatible

BATB
APPROVED

	Normally	Now	Save
1200 Modem	£59.95	£29.95	£30
ZX Spectrum Pack inc: Modem, interface, cable & software	£84.95	£39.95	£45
BBC Model 'B' inc: Modem, cable & software	£79.95	£39.95	£40
Commodore 64 inc: Modem, cable & software	£79.95	£39.95	£40
Amstrad CPC 464 inc: Modem, cable & software	£89.95	£49.95	£40
Acorn Electron inc: Modem, cable & software	£89.95	£49.95	£40
Epson PX8 cable only	£19.95	£9.95	£10

Postage & Packing U.K. £2 (Overseas £3)

WRITE OR PHONE FOR IMMEDIATE DESPATCH

All prices include VAT where applicable.

NAME _____
ADDRESS _____

POSTCODE _____
SIGNATURE _____



Protek=

Protek Computing Ltd, 1A Young Square,
Brucefield Industrial Park, Livingston, West Lothian. 0506 415353.

RANDOM ACCESS



Share your words of praise or send us a rocket about PCN. We want to hear your views and feelings on the articles we print — and those you feel we ought to. Write to **Random Access, Personal Computer News, Evelyn House, 62 Oxford Street, London W1A 2HG**. You could win £15 for the best letter of the week.

Quick guide to 464/664 harmony

We are eager to ensure that any programs published for the Amstrad 464 machine will also be entirely compatible with the 664. There is no problem with prerecorded Basic programs, however typed in programs must not use variable names that have now become reserved words (FILL for example).

Assembler programs are, however, a different matter. Provided that they only rely on addresses and routines that are documented in our Concise Firmware Specification there should be no problem. However, programs that make use of undocumented addresses and routines that have been found by inspection cannot be guaranteed to work.

A case in point is the Event Block Effects article by J. Keenally (issue 108). The event routines he uses will work on the 664 exactly as they did on the 464 — they are documented in the Firmware Spec.

Unfortunately, his program makes use of a pointer that holds the start address of the Basic program area — this was not documented and has now changed. Consequently, the program will not work on a 664.

The program also makes assumptions about the format of Basic program storage — this is undocumented and is liable to change without notice.

Mr Keenally is not the first and will probably not be the last to make this mistake. However, by publishing this letter, we hope more people will recognise this potential problem.

Cliff Lawson,
Software engineer,
Amsoft.

PCN should become multi-lingual

I am writing in agreement with CB Goldman, the 'minority micro user' (issue 105). Your magazine lacks both diversity and content.

Being a weekly magazine you should have a lot more space to publish articles and programs than your monthly competitors, but looking through issue 105 I found to my dismay that over half the magazine consisted of adverts.

The bits of text I managed to find in between was anything but varied; in fact the only article which did not apply to any popular micro specifically was the Hacker's Handbook.

Putting this aside, it bothers me how, with a title like Personal Computer News, you only deal with such a small aspect of personal computing. There is a lot more to the subject than Basic, arcade games and machine code. I wonder if you have ever published anything on Forth, Fortran, Lisp or Logo — languages available for most personal computers.

It's wrong that all magazines should follow the trend only to produce material for the more popular aspects of computing and I hope PCN will improve in this way.

P Armour,
Fleetwood, Lancs

In an average four-week period PCN publishes more than 100 pages of editorial — a good deal more than most of our monthly competitors. Yes, we do publish articles on other languages — the last was a review of QL Forth in issue 106, and next week sees the start of a series of articles looking at alternative languages to Basic.

While each issue generally contains one arcade game listing, the rest of the Output section is devoted to utilities and other aspects of programming. But we're not complacent and I'd like to receive more letters on these subjects. — Ed

Sord user group opens its letterbox

I would like to inform your readers of a Sord/CGL M5 user group which has recently been formed. If any of your readers wish to join a software library or want any leaflets they should send a stamped addressed envelope to the address below. We also have details of software from independent houses.

David O'Grady,
M5 Users Group,
19 Balally Close,
Dundrum,
Dublin 16

Boffins take shine out of computers

I was interested to read Mike Howard's comments on your magazine (issue 107). In particular, I was taken by his comments on the listings.

I'm not a regular contributor but I've had about four games published in your hallowed pages and his comments dug a little deep. Obviously he intended to criticise the games and not the various utilities and he suggests more mathematical content to make them more like programming instructors than functional listings.

I'm sure that many others like me would rather type in a game that does what it should than a listing which does nothing but prints semi-circles.

We are in totally separate areas of computing — he is

clearly the computer boffin (no insult intended) and I'm the casual user. I hope Mike Howard's comments won't cause you to go completely boffinised. Don't make computers a dull hobby and don't make PCN a dull magazine.

Andrew Clarke,
Boddesley Enson, Warwick.

PCN, dull? No chance — Ed.

Getting another byte at the cherry

Further to the encouraging coverage that ITL's Byte Drive system has been getting recently, culminating in the announcement of the release of the Macro-Assembler package from McLaughlin (issue 106) ... dare we ask for a review?

I am prompted to write again to clarify my appreciation of the BD500 system, as my initial letter (issue 100) seems to have sparked off a whole spate of activity from other owners. I must admit to having been very much encouraged by the response and do whole-heartedly agree with the general praise of this quite remarkable application.

However, my own problem still exists in as much as I am still without my Capable Cable and am having difficulty trying to trace the 'administrators' of Tyrell Computers affairs to lodge a claim for my property.

Stuart T G Wright,
Clacton, Essex.

Adopting an Elite Vector for success

Thank you for publishing my letter concerning Acornsoft's cassette (issue 108).

I feel it is only fair to inform your readers that my debugged version of the Elite cassette has now arrived, thanks to the assistance of a company called Vector Marketing.

It would seem that all Acornsoft's affairs are now being handled by the above company. Within two weeks of my telephone call it has been able to locate and replace my faulty cassette. The telephone number is 0933-228953.

Mike James,
Leeds.



Pirate tape or not, you've just arrested the superintendent's son.



On sale
every month
at all good
newsagents,
price £1

MICRO CHALLENGE... the first computer-age puzzle magazine

No, not another
computing magazine.

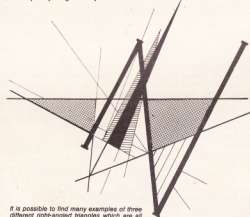
Micro Challenge is unique. Colourful and exciting,
it's packed with intriguing puzzles — and prize competitions
— devised specifically for microcomputer owners.

WIN A
COLOUR
TV!

This is an example of one of the many types of puzzle to be found in Micro Challenge — but it's also your chance to win a superb JVC portable colour television with remote control. Solve the problem, using skill, judgement and your own micro, then send the solution, on one of the prize puzzle entry forms from the May/June issues of Micro Challenge, to the address given in the magazine, marking the coupon AP1. (A proper form must be used; no photocopies or facsimiles are permitted). The competition closes first post on June 17, 1985, and the first correct entry opened wins the prize.

TRIANGLE TANGLE

Brush up on your geometry to unravel the answer.



It is possible to find many examples of three different right-angled triangles which are all equal in area. Can you, however, find three such triangles for which every side is a whole number of units (an integer)? Try to devise a program to find the trio with the smallest possible area.

Moving at the speed of light you could still snap up our fabulous launch issue. Order a regular copy from your newsagent now. Details of subscriptions or postal deliveries contact:
MICRO CHALLENGE
Somers House, Linkfield Corner, Redhill, Surrey
RH1 1BB

MICROWAVES



Send your hints and tips
to **Microwaves, PCN**
62 Oxford Street,
London W1A 2HG.

Amstrad caps lock indicator kicks off

There have been a number of comments from Amstrad CPC464 users about the lack of a caps lock indicator. Here is a short routine that uses the screen border colour as this indicator. Once loaded, the program can be deleted.

As written, the border colour is set to green (colour 09) by the two 09s in line 150. These can be changed — if the two numbers are different, the border will flash.

The indicator is kicked by the frame flyback so the display is updated every 1/50th of a second.

R J Halsall,
Wokingham, Berks.

```
10 REM A CAPS LOCK state indicator
20 REM Written by R.J.HALSALL
30 hi=HINEM
40 MEMORY hi-73
50 FOR loc=hi-72 TO hi
60 READ code$:POKE loc,VAL("&"+code$)
70 NEXT
80 CALL hi-72
90 DATA 21,e1,e9,22,30,0,f7,eb,21,25,0,19
100 DATA e5,21,2e,0,19,eb,e1,6,81,cd,d7
110 DATA bc,f7,eb,21,26,0,19,e5,4e,23,46
120 DATA 60,69,19,44,4d,e1,71,23,70,c9,0
130 DATA 0,0,0,0,0,0,0,cd,21,b0,3e,ff
140 DATA bc,01,0,0,c2,2c,0,06
150 DATA 09,0e,09
160 DATA cd,38,bc,c9
```

QL routine hooks up to Epson printer

To dump a screen from the QL to a printer, try this program. The escape codes are for the Brother HR2, but they work with most Epson compatible printers. Although the program is written in SuperBasic, it performs at an adequate speed because it prints horizontally instead of

vertically.

The routine only copies a screen area the same size as window 1. Line 170 works out which 16bit word to look at. 180 bitwise ORs the two bytes to the red and green ones. In Mode 4, white red and green areas will become solid, in Mode 8, white and magenta will be solid, the rest of the colours being shaded.

I G Booth,
Warrington, Cheshire.

```
100 DEFine PROCedure dump
110 OPEN#10,ser1:BAUD 9600
120 PRINT#10:CHR$(27); "A"; CHR$(8);
130 FOR loop1=1 TO 112 STEP 2
140 PRINT#10,CHR$(13)
150 PRINT#10,CHR$(27); "L"; CHR$(144); CHR$(1);
160 FOR loop2=179 TO 0 STEP -1
170 s=loop2*128+133127+loop1
180 t=PEEK(s):i=PEEK(s+1)
190 PRINT#10,CHR$(t); CHR$(t); CHR$(t);
200 END FOR loop2
210 END FOR loop1
220 END DEFine
1000 DIR adv_1
```

Another quick hint for the Amstrad

Issue 106 Microwaves contained two useful features on the Amstrad that are little

known. I add to these one more: Pressing CTRL SHIFT CAPS LOCK will effectively give SHIFT LOCK ie all the keys are shifted.
D O Wright,
Sheffield, S Yorks.

QL BANK ACCOUNT

Fed up with infrequent Bank statements? Avoid Bank charges and keep up to date with QL BANK ACCOUNT. Check your mortgage HP, standing orders! Budget your bills.

- ★ Automatic posting of Standing Orders & other regular payments or credits. 80 column display.
- ★ Delete, amend and even backdate entries. Scroll through accounts. 80 column display and print-out
- ★ Six different entry search routines!
- ★ Post items to account headings chosen by YOU to suit your circumstances. Print out individual accounts & summary, eg all payments to Building Society or Motoring expenses.
- ★ Output of Bank statement & accounts to most Epson compatible printers. Makes automatic use of memory expansions. Full instructions and bank account included. Demonstration bank account included.

Cartridge & Manual £19.95 + 50p P & P. Cheques & POs too:

cenprime software
10 Castle Street, RUGBY, CV21 2TP
Coventry (0203) 686162

Connexions Magic Mouse

FOR THE COMMODORE 64

£59.95
INC. VAT.



- CREATE HI-RES GRAPHICS
- TRANSFORM YOUR OWN PROGRAMS
- COMES COMPLETE WITH DISC AND TAPE SOFTWARE - NO EXTRAS REQUIRED
- SOFTWARE INCLUDES HI-RES GRAPHICS PACKAGE, MOUSE CONTROLLER, SPRITE DESIGNER, ICON DESIGNER.

PHONE FOR YOUR NEAREST STOCKIST TEL: 01-441-1282

ANOTHER CONNEXIONS PRODUCT FROM:
SMC SUPPLIES, 11 WESTERN PARADE, GREAT NORTH ROAD, BARNET, HERTS EN5 1AD Telex: 295181 SMC G



ATARI ADVANCES

It's arrived at last. John Lettice subjects the 520ST to his rigorous standards in an exclusive PCN preview of the Atari onslaught.

The new Atari is coming — and that's official. Last week there was one 520ST in this country and a dozen or so in Germany, but 200 development machines (for software companies only, at a cool \$4,500) are scheduled for arrival this month, and the first full systems should reach end-users before the end of the summer.

The ST series is Jack Tramiel and Atari's bid for the hearts and minds of the world's computer users. It's based on the Motorola 68000 wonder-chip used in the Apple Macintosh and incorporates Digital Research's Graphics Environment Manager (GEM). The 520 has built-in floppy and hard disk interfaces which will allow you to link up to Atari's own low-cost drives. Link together a 520, monitor and twin floppies and you've got a system more powerful than the Macintosh for around £900. If it works — and when PCN saw it last week it looked like it did — Atari could corner the serious hobbyist market and at the same time make spectacular inroads into the business market.

Currently the ST is nearly finished. The review machine was running a disk version of GEM, and something like the first 1,500 machines will come in this configuration. Full production machines will however come with the software on ROM, the disk version only being produced to buy sufficient time for a few last minute 'features' to be corrected.

These machines will also come with DR Logo and Personal Basic (which will be Microsoft-ish with graphics, sound and a few hooks to GEM) bundled. These two languages are still under development, and weren't in a testable state when I saw the machine. It would be nice



ST, mouse and disk drives. The 1Mb version is on the left. Note Breakout, peeking from below the control panel.

to think the finished Personal Basic will be as good as the Microsoft Basic running on the Mac, but this is quite a target.

GEM itself is now running on the 520, and as you'd expect from a 68000 processor, it's running very fast indeed. The ROM version should be even faster in that it will cut out any time-wasting disk accesses. There are no applications running fully under the system yet, but Lifetree Software's *Gem World*, which is a development of *Volkswriter Deluxe*, should be ready shortly (the IBM PC version should be available in days rather than weeks). A few other packages are under development.

Atari's intention would seem to be for the machines to have a few applications packages in common with IBM, Apricot and sundry PC-compatible versions of GEM, but to go it alone beyond that.

The \$4,500 price tag for development systems is symptomatic of this, Atari's reasoning being that, if a software company is serious about getting software out for a new machine it will be sufficiently serious to cough up enough loot to get an early look at it.

About GEM

Aside from GEM there are no finished twiddly bits on the machine as it stands at the moment. While Atari promises (if promises were processors) great things for the finished item, the STs stand or fall on the efficiency of GEM. It's therefore worth having a look at what GEM sets out to be, and at what Atari and Digital Research have at stake.

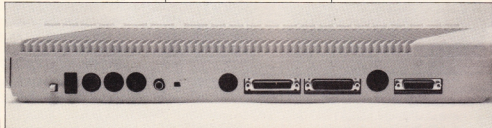
Two years ago Apple and IBM fired the opening rounds in a battle for control of the micro industry. IBM launched the PC and Apple launched the Lisa. The PC was traditionalism writ large — slow,

bulky and expensive, while Lisa, although still expensive, was hailed as the way machines would go in the 80s. The PC was quite clearly a sitting duck but proceeded to more or less take over the world. Lisa bombed.

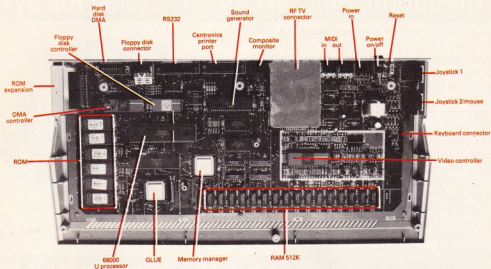
Since then this state of affairs has become even more perplexing. Apple has persisted — understandably, considering the R&D big bucks involved — with the technology in the shape of the Macintosh, but there have also been a few spirited attempts to install Lisa-like software on the PC and, more recently, on everything, home machines included.

The basic intention of the companies involved in developing this software is to duplicate a desktop on your computer's screen and to allow you to use a mouse to point at whatever you want. The minimum requirement is usually a calculator, digital clock, filing cabinet and/or disk and waste-paper bin. Use the mouse to point at the disk drive and a window containing pictures (icons) of the files on it will be shown on the screen. Point at the file and it will be 'opened.'

That's the theory. Unfortunately, putting it into practice isn't quite that



Rear view, left to right: reset switch, power switch, power, Midi out, Midi in, TV, channel switch (US only), RGB, Centronics, RS232, floppy disk, hard disk.



simply. Your desktop has to operate as a "front end" to your applications software, which is presented as a file on the desk. At its simplest, instead of typing WORDSTAR you'd point at a file called Wordstar and it would load. Exit Wordstar and you should get back to your desktop.

And there's the rub. Existing PC users will have a fair amount of software that was developed before their new front end, and they'll be righteously indignant if all of it is made redundant. This doesn't matter for new machines like the Mac or the Atari, but it does for established business users.

Enter two major software producers, with two different approaches. Microsoft, which produced MSX Basic and MSDOS, the PC's operating system, plumped for total compatibility with its front end, Microsoft Windows. This may not have been a totally smart idea as Windows has been coming Real Soon Now (RSN) for over a year now. Arch rival Digital Research has taken the other approach, which means that GEM won't run with everything but which also means that its available now. More important, it's available on home computers in the shape of the Atari ST series.

This last point is crucial to DR's long term strategy. Microsoft won the important operating system contract for the IBM PC and DR is therefore in the position of having to break back. DR is therefore pricing implementations of GEM on the PC and its rivals low, and is simultaneously linking with Atari to produce it on relatively cheap home/business crossover machines like the STs. It's a big gamble, but the goal is to make GEM an industry standard in the same way as MSDOS became an industry

standard, and so the rewards for success will be high.

Operation

The ST PCN looked at was, so far as this country is concerned, a rare bird. This particular machine had, towards the end of March, been sent specifically to Sam (son of Jack) Tramiel, and had a delivery label on the underside to prove its collectable status. In operation, however, it was similar to the PC version of GEM which PCN has had on test for around a month now, and this, although showing a few rough edges we'd like to

you gently what's up. The PC version of GEM shows a regrettable tendency to let you try to do something silly (say, load a data file without loading the relevant program), not let you do it, but not tell you why you couldn't do it.

The earlier versions of the Atari GEM produced more serious goofs than this, giving you traditional unintelligible disk error messages (grab the manual and look up error 42) without a window in sight.

Atari says, however, that it is aware of the problem and will be correcting it. As far as more comprehensively friendly



Side view showing the cartridge slot

see corrected, seems to be a success.

Some of the initial problems in using GEM can be put down to its friendliness. On several occasions I found that what appeared to be a bug was in fact something that could be corrected by reading the manual, the problem being that it's so easy to use you don't feel you need to look in the manual.

The error messages are a more serious problem because a friendly front-end should, if you do something wrong, tell

messages are concerned it looks like the ball is in DR's court. Initially there seem to be areas where the Mac's friendliness beat's GEM's, but if GEM is to become an industry standard, we can expect developments of it to follow. If you consider the amount by which the prices of the STs undercut the Mac you find yourself not wanting to check a free nag's fillings.

The system I saw had one interesting little oddity. The standard GEM package incorporates a calculator icon that

Is the Information Revolution Passing You By?

If you use an Apple, IBM, BBC or ACT micro then you could be missing out on the information revolution of the decade. Today there are literally hundreds of databases worldwide, which can be accessed by a microcomputer fitted with a Nightingale modem and using appropriate software. These data bases include Prestel, Micronet, Homelink, Telecom Gold, various 'Bulletin Boards' and massive American Databases such as 'DIALOG' and 'The Source'. Micros can also be used to send telex messages.



A world of information is available to you now when you install the Nightingale modem from Pace. There are hundreds of thousands of 'pages' of data available on Prestel, free computer software on Micronet, homebanking facilities available with Homelink, Company facts, Educational information, magazine and news articles available with Knowledge Index and the ability to communicate with other micro users direct, or via 'bulletin boards'.

The Nightingale modem is only £136.85 inc. VAT. If you do not already have suitable communications software Pace can supply this complete with a manual and full installation instructions.



PACE SOFTWARE LTD.
92 NEW CROSS STREET,
BRADFORD, BD5 8BS
Tel. (0274) 729306
Telex 51564

"Bringing tomorrow a little closer"

NIGHTINGALE - The Modem

By far the most versatile modem available, at the price, for either home or business use, Nightingale will enable your micro computer to send and receive data utilising an ordinary P.O. Telephone Line. It offers Prestel/Viewdata baud rates (1200/75 & 75/1200) alongside 300/300 baud full duplex for communication between computers.

The state-of-the-art modem chip technology employed in Nightingale requires minimum support circuitry resulting in low power consumption, low cost, high quality and extreme reliability. It also features a simple self test facility for easy installation.

Nightingale complies with the vigorous specifications laid down by British Telecom and is fully BABT approved.

SPECIAL INTRODUCTORY OFFER

For a limited period, when you order the Nightingale modem you will receive discount vouchers entitling you to the following:-

KNOWLEDGE INDEX

20% discount off standard enrolment fee (normally £25)

This remarkable collection of databases includes over 22,000,000 items covering Agriculture, Books, Business, Electronics and Computing, Engineering, Government Publications, Legal Information, Magazine Articles, Mathematics, Medicine and News Current Affairs (The enrolment fee also includes 2 hours of free access time).

ONE TO ONE

50% discount off standard enrolment fee (normally £50)*

One to one is an electronic message service designed to give you the communications capabilities of a telex at much lower cost. By using your micro fitted with a Nightingale modem you can produce memos, letters, reports and contracts, and send them in seconds to any destination. Courier delivery, priority mail and radio paging are also included in the highly efficient communications service.

To Pace Ltd., 92 New Cross Street,
Bradford BD5 8BS

Please supply:

- ☐ modems at £136.85 inc. VAT & carriage
- ☐ modems & software pack for BBC micro at £159, inc. VAT & carriage
- ☐ modems & software pack for Apple II/IIe at £279 inc. VAT & carriage
- ☐ modems & software pack for IBM PC* at £269 inc. VAT & carriage
- ☐ modems & software pack for ACT at £269 inc. VAT & carriage

Name

Address

Cheque enclosed £..... or please debit my Access ☐

Barclaycard ☐ (Please tick)

If you require further information on the above communications products for other computer systems, please write enclosing a stamped addressed envelope.

*Assumes IBM micro fitted with RS 232 interface.

Please allow up to 28 days delivery.

GENPAT



THE OFFICIAL MEMOTECH USER GROUP

**CALLING ALL MEMOTECH OWNERS... IF YOU'RE NOT A MEMBER OF GENPAT —
YOU DON'T KNOW WHAT YOU ARE MISSING!!**

LOOK WHAT YOU GET!

1. MONTHLY MAGAZINE (Between 30 & 40 pages).
2. 15% DISCOUNT ON ALL SOFTWARE.
3. BETWEEN 10% & 15% DISCOUNT ON ALL HARDWARE.
4. FREE PHONE IN... OPEN 5 DAYS PER WEEK TO ANSWER
ALL YOUR TECHNICAL & PROGRAMMING PROBLEMS.
5. ACCESS TO ALL THE LATEST INFORMATION.

GENPAT IS ONE OF THE MOST ACTIVE USER GROUPS IN EUROPE. THE CLUB HAS ITS OWN SOFTWARE LABEL SYNTAXsoft AND STOCKS ALL OTHER MAJOR SOFTWARE WITH A MAIL ORDER TURN AROUND OF 48 HOURS IN MOST CASES.

AS A MEMBER YOU HAVE INSTANT ACCESS TO A PROFESSIONAL TEAM OF PROGRAMMERS AND WRITERS HEADED BY KEITH HOOK WHO IS WELL KNOWN FOR HIS TECHNICAL WRITING AND FOR HIS CONTRIBUTIONS WITHIN THESE PAGES.

MEMOPAD THE CLUB MAGAZINE CARRIES ARTICLES ON MACHINE CODE, GRAPHICS, PASCAL, FORTH, BASIC, REVIEWS OF LATEST SOFTWARE, PROGRAMS SUBMITTED BY MEMBERS, AND A HOST OF OTHER INTERESTING ITEMS.

GET THE MOST OUT OF YOUR MEMOTECH AND JOIN OVER 3000 OTHER USERS!! SEND TODAY FOR MEMBERSHIP. SUBSCRIPTIONS £16.00 PER YEAR TO:

GENPAT, 3 BULCOCK STREET, BURNLEY BB10 1H

SYNTAXSOFT

THE EXCLUSIVE USER GROUP LABEL

NEW SOFTWARE RELEASES FROM SYNTAXsoft...

MEMOSKETCH This is an excellent high resolution drawing package that allows you to design screens you didn't think were possible. Use them within your programs as title screens, games screens etc. ... complete with comprehensive manual.

GRAPHICS Design all your Sprites, UDG's etc with this excellent piece of software... then forget them! The graphics are installed into your program... no need for all those Genpat statements.

THE CAVES OF ORB The very first graphic adventure on the Memotech. This is a massive adventure that uses special techniques to compress text. A real challenge to your mind.

SUPERBIKE Can you complete the journey? You must avoid road-up signs, on-coming traffic and the death dispensing helicopter... and try not to scratch your new bike!

TARGET ZONE Once you have left the safety of your aircraft carrier you are on your own! Can you complete your mission over enemy territory and return to the mother ship... if you are a good pilot, you just might get lucky!

FLUMMOX Definitely one of the greatest games available on the MTX. Over 40 different waves of attack in this high-speed, all machine code, shoot 'em up.

FORTH This is an excellent implementation of FIG FORTH which supports all the MTXs' special features. This is the one you have been waiting for. Comprehensive manual supplied.

VERNON & THE VAMPIRES This game presents a real challenge to the most adept joystick manipulator... Too tough for me!

MISSION OMEGA Great game with excellent scrolling and graphics. This is a very popular piece of software.

LITTLE DEVILS A really original game for the MTX. To win at this, you must ice the Little Devils... but they're not going to let you off lightly!

ICEBERG I've heard of Asteroids but this is ridiculous! Something very fishy about this game!

AGROVATOR One of the top selling games on the MTX, a real challenge. 30 random mazes to complete in this massive game. Not to be confused with other maze games... this one is really different.

SALTY SAM A real delight to play. You must collect the treasures from under the sea, but it's not that easy... I forgot to mention the octupii!

SEND £1.25 FOR SAMPLE MAGAZINE AND APPLICATION FORM
ALL ENQUIRIES TO GENPAT, 3 BULCOCK STREET, BURNLEY BB10 1UH
DEALERS PLEASE RING SENTIENT SOFTWARE
(SOLE DISTRIBUTORS FOR SYNTAXsoft)
FOR INTERESTING TERMS LEEDS 0532-791136

WORD PROCESSOR cum LETTER WRITER FOR Commodore 64

FULL SCREEN EDITING

- * Upper and lower case
- * Insert and delete characters
- * Add, move, delete lines
- * Search and change strings
- * Centring facility
- * Tab facility
- * Screen 24 lines by 40 columns
- * Text up to 99 lines by 80 columns
- * View + edit any 24 lines by 40 columns
- * Or view + edit any 12 lines by 80 columns
- * Near machine code speed
- * Save text to tape or disc
- * Print to Commodore or RS232 (eg Epson)
- * Your own name and address coded in the program for your letter headings
- * Despatch by return whenever possible

A: Tape (with your address).....£9.85
B: Tape (without your address).....£8.85
C: Disc (with address facility).....£14.50

Other Countries: Sterling or local currency at current exchange rates

To Cotswold Software
8 Monks Park, Milbourne, Malmesbury, Wilts
SN16 9JF

Please send me A/B/C (delete as necessary).
I enclose cheque, money order etc
(payable to Cotswold Software) for £.....
or: Please send me further details without obligation.

Name.....

Address.....

Post Code.....

MAIL ORDER ONLY

PCN C 215 223

Computer Support PRESENTS

A whole new range of affordable software and hardware products for every *Atari user

Hardware	
80 COLUMN PACK	£69.95
ULTIMON	£49.95
THE GAP	£29.95
ROM EULATOR	£29.95
OVER-WRITE	£14.95
BADSECTOR	£19.95
PORTPOINT	£29.95
MONITOR CONNECTION LEAD	£ 8.95
HI-FI CONNECTION LEAD	£ 4.95
REPLACEMENT ARIEL LEAD	£ 2.95
SERIAL FLY LEAD (1 metre)	£11.95
SERIAL FLY LEAD (2 metres)	£12.95
SERIAL I/O PLUG	£ 3.99

Software		Cass	Disk
SUPER DISASSEMBLER	—	—	£24.95
FILE LOADER	—	—	£14.94
BOOT LOADER	—	—	£14.98
BIORHYTHM	£ 6.95	—	£24.95
MAILING LIST	—	—	£12.95
UTILITY PACONE	£ 6.95	—	£ 9.95
DISK DUPLICATOR	—	—	£19.95
DISK DUPLICATOR 128K	—	—	£19.95
CARTRIDGE DUPLICATOR	£15.95	—	£16.95
CASSETTE DUPLICATOR	£ 9.95	—	£10.95
MACRO LIBRARY (MAC65*)	—	—	£12.95
ZAPPING ZOMBIES	£ 6.95	—	£ 9.95

We are continually adding new products to our range.
Please send SAE for full details.

Computer Support (Dept PCN)
26 Seacourt Road
Abbey Wood
London SE2 9UW
Tel: 01-311 7339

*ATARI is a registered trademark of ATARI CORPORATION
*MAC65 is a trademark of G.B. Ltd

NEED MORE?

PAGE 6

ATARI USERS MAGAZINE

TWO
YEARS OLD
AND
STILL GOING STRONG

Published
bi-monthly.
Subscriptions:
£7.00 U.K.
£10.50 Europe
to PAGE 6 Magazine
P.O. BOX 54,
STAFFORD,
ST16 1DR
Tel: 0785 41153

Our Guarantee: Subscribe NOW. If when you receive your first copy you do not think PAGE 6 is worth having, write and tell us and we will refund your subscription in full (you can keep the copy received). With a promise like that we must be confident that PAGE 6 is good. Thousands of our existing subscribers think so too.

from
ENGLISH SOFTWARE™
THE BEST ATARI RANGE OF SOFTWARE IN THE U.K.

ATARI SMASH HITS

32K Cassette/48K Disk:
VOLUMES 1, 2 and 3.
FIVE GREAT GAMES
including JET-BOOT JACK,
IN EACH PACK!!!
Only £14.95 Cassette/
£17.95 Disk

PLUS
COLOSSUS CHESS 3.0
48K Cassette/Disk
THE BEST
CHESS
PROGRAM
FOR ATARI
COMPUTERS:
£9.95 Cassette/
£12.95 Disk

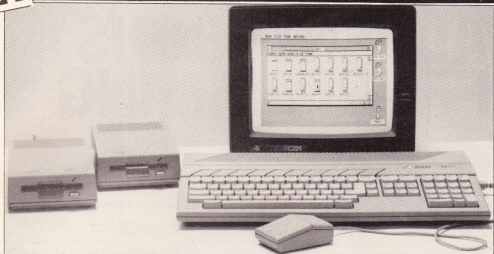


ENGLISH SOFTWARE'S GREAT RANGE is available at selected branches of: • LASKYS • BOOTS • VIRGIN GAMES CENTRE (London) • SILICA SHOP (Mail Order and Retail) • WILDINGS • LION HOUSE • JUST MICRO (Sheffield) • VISION TECHNOLOGY CENTRE (Croydon) • G.B. MICROLAND (Waterlooville) Southern Ireland: Contact G.B. Distributors. Tel: 944 894

ENGLISH SOFTWARE TRADE ENQUIRIES
TEL: 061-835 1558



HARDWARE PRO-TEST: ATARI 520ST



The screen shows the GEM desktop in medium resolution mode.

- ◀11 you can operate with a mouse. This wasn't running on the ST, but instead there was a calculator-sized Breakout game you could play with the mouse. The old style Atari Corp, it would seem, is by no means dead...

Hardware

If all goes well the software will be attractive, but the hardware is finished and it's poetry. It's difficult to take in the beauty and economy of the circuit board from a black and white shot, but if you know what to look for you'll see what I mean. The most significant thing about the PCB is the fact that there are no jump leads indicating last minute corrections, and this on a very early machine.

This machine is significantly more powerful than an IBM PC, yet there are very few chips on the board and the circuitry is widely-spaced, making for a very cool running machine. Atari may have put one over on me, but I couldn't see any sign of a heat-sink. The secret of this is simple — custom chips. Atari has successfully depopulated its board by condensing the gubbins into just a few chips.

Outside it has got practically every interface a reasonable user is likely to require. There's a TV output, monitor, twin joystick ports, Centronics and RS232. Besides this there are a Midi interface (used for connection to synthesisers), a floppy disk interface and a hard disk interface.

These last two are particularly interesting. Two kinds of floppy drive are now ready (500K single-sided and 1Mb double-sided) and the hard disk has made a brief appearance. The hard disk exists, and I've seen it in operation, but it's currently in Germany, much to the chagrin of Atari UK.

All of the storage systems are intended to be extremely cut-price and

should be available in time for the launch proper. They'll also be interfaced to other, non-Atari micros, this being promised by Christmas.

The display is also worth looking at. The system pictured on the cover of this issue had a software-switchable low/medium resolution monitor and the screen shown on the cover was actually in low resolution mode. Colour is still possible in medium resolution, but there is also a high resolution monitor which is monochrome only. This was, naturally, in Germany.

Verdict

The ST itself is fast, powerful and attractive, although even the cut-down

version promises to be a shade on the price side for a mass-market machine. As an operating environment GEM also looks good but it's doubtful if it can become so universal that it percolates down to low-cost machines.

Even if it does it's not certain that it will be of much use to entry-level users. In that sense there will still be room for cheaper machines, including Atari's 130XE, in this Christmas's marketplace.

Atari under Jack Tramiel is embracing the new 'power without price' slogan wholeheartedly, and if this sort of power can come down to this sort of price, who knows what will be available for £200 in 1986. If it's possible to design a sure-fire winning machine, this is it. ▀



Side view showing the joystick ports. Note the 'icon' in-between.

SPECIFICATIONS

Processor	Motorola 68000
RAM	512K
ROM	192K
Storage	500K or 1Mb floppy disk (extra) or tape (standard)
Display	320×200/640×200 switchable colour display, 640×400 monochrome
Interfaces	RGB, UHF, Centronics, RS232, Midi in/out, floppy disk, hard disk, ROM cartridge

ADVENTUROUS PROGRAMMING

Last week Mike and Pete Gerrard outlined the general approach to adapting a book. Now programmer Pete converts the Conan Doyle yarn that they chose, 'The Sign of Four', from printed page to program.

In the previous article we discussed the problems of making a Conan Doyle story into an adventure. We said we divide the work into writing and programming, and then go our own separate ways.

As the programmer, I am presented with a collection of A4 sheets, usually one for each location (see issue 105). These contain the room descriptions, and any possible changes as the adventure progresses, the challenges (if any) to be found at each location, messages or objects to be found there, and the directions in which the player can move from.

I also get the map for the game at this stage, although this is of surprisingly little use until it comes to testing the finished game.

You might think this would make life a lot easier, but in fact it's the source of many problems. As with preparing the A4 sheets in the first place, the question is always 'where to start?'

Obviously a short introductory program is needed to set the scene, which is the purpose of the short listing called *Start*. Examining the listing reveals that a number of conventions have been observed.

For instance, Line 10 contains the cryptic phrase `PRINT "CLR,BLK"`. This means: type in the word `PRINT`, a set of quotation marks, and then the keys marked `CLR` and `BLK`. In other words, we want to clear the screen and start printing text in the colour black. `[CD]` implies that you need to press the cursor down key, to move text down, and any others used should be self-explanatory.

Another point to note is that you must use the abbreviations for keywords when entering some of the longer lines, eg use `? Instead of PRINT`, `T shifted H instead of THEN`, and so on. Finally, owing to the limitations of my printer, letters entered using the Shift key are printed out in italics, and letters entered normally appear in upper case. Just something that we all have to live with.

Lines 210 and 220 load and run the main program by printing the name on the screen and poking a carriage return, the letters `R,U,N`, and another carriage return into the keyboard buffer. This program is for disk use, so tape users should exchange the 8 towards the end of line 210 for a 1.

Main program

First write out all the verbs and nouns you think you'll need in the program. This list will change and expand as you get further into the program, but this gives you a starting point. The program checks for the first four letters of any word that the player might use, so lines 5100 to 5103 contain the data for all your verbs, and lines 5200 to 5205 contain the data for all nouns—objects—used in the game. All these objects have to start life out somewhere, or be hidden from view until the player can find them, so line 5004 initially sets everything to zero. The player won't come across anything until we let him.

You also need some longer descriptions for each object as it isn't much use telling a player that he can see a `TELE` when we want him to see a `A TELEPHONE`. This is all found in lines 5500 to 5513.

respectively. This is read in by line 5001.

All that remains before the real work begins is to type in the location description. Initially, these are taken directly from the sheets of A4 paper supplied by Mike Gerrard. Quite often, when the adventure expands faster than the universe, you have to go back and abbreviate some, but as this is simply a boring typing job which requires no programming skill at all, it's best got over and done with.

Consequently, lines 2000 to 2384 contain all the location descriptions. The variable used to tell the program which location the player is currently in is the variable `CP`, which is controlled by lines 4000 to 4004. This ensures the correct description is printed up for each location.

I've made no attempt at text compression here, as the adventure isn't particularly large and getting it all to fit into the memory of the Commodore 64 wasn't a



What I usually do next is type in the map data, with possible directions of movement. Lines 5050 to 5058 contain this; four numbers for each location, which tell you which room a player can go to by moving north, south, east or west

problem. However, owners of other machines might like to tackle this problem. Perhaps the simplest way to tackle this is to use symbols instead of common words, and then use a program to check through each room description,

printing the full word instead of the symbol if the program finds it. For example you might use shifted T instead of the word *the*, since it frequently occurs. And not only by itself: words such as *rather*, *another*, and so on, all contain *the*.

Next comes the coding for the verbs, and checking what the player types in. Taking the latter first, take a look at lines 60000 onwards. This is the input routine, which makes sure that the player cannot escape from the program by pressing *eg* the cursor keys. Run/Stop and Restore have not been disabled, though they could be if you wanted to make the program foolproof.

The player is limited to 27 letters (line 60080 sees to that), and generally the routine checks for ASCII values of keys being pressed, enabling the player to correct any mistakes, and to press the Return key once happy about what has been typed in.

How do we analyse this? Well, in Basic we're obviously not going to approach the sophisticated analysers of people such as Melbourne House or Infocom, but we can go a reasonable way towards that.

Lines 390 to 412 control this part of the program.

With this routine we can handle sentences such as 'Go North and get key.' or 'Knock at house number 3,' for example. Look at the listing to figure out how it works (lots of string handling); the basics of it are a check on each character typed in, and building that

noun). The whole program revolves around VB, NO and CP.

New developments

Move on to entering the code for each of the verbs, starting with essentials such as *get*, *drop* and those handling movement. Now you can get on with testing the program, and adding other verbs as you go. Be prepared to change with new developments. I'm sure Conan Doyle changed *The Sign Of Four* a few times before it was published.

If you look at line 100 you'll see a SYS call (the machine code data is poked in by line 20000). This is a convenient way of handling program control, although if you're not using the Commodore 64 you may have problems. Essentially, it allows us to go to the program line whose number is given by adding 980 to the verb number times 20. So, if VB was equal to eight, we'd go to program line (980+8*20), ie line 1140. A computed GOTO for the Commodore 64.

The first verb is *open*, so if the player had typed in OPEN then VB would equal 1, and we'd go to line 1000. The second verb, UNLO (short of UNLOCK), was typed in we'd go to line 1020, and so on.

Opening doors

The verb *open* is a handy example of how it all works. Line 1000 checks to see what room the player is in; if they're not in any of the rooms given, there's nothing to open, so GOTO line 1019. Always try to structure your verb handling so that either the most likely, or the most

to the main part of the program. The next line simply goes to 1019 if they're in room 56, since there's nothing else to open there.

Line 1004: this checks to see if the player is in room 8; he's trying to open the window. That is, he's trying to open object number 20 and the window counter hasn't been set. If everything's okay, print the OPEN WINDOW message, set the variable, and add one to the variable CL. CL comes into play only at the start of the game, as the player is given a specific number of moves in which to find 12 CLUES. In the book, the police arrive fairly soon after you do, so we've attempted to reproduce that part here. Line 392 keeps an eye on how many moves have elapsed.

Line 1005: checks to see if the player is trying to open the door in any one of locations 1, 2 or 5, whereupon they are informed that the door is locked. Then, unless he's in the only other one where they can open anything (room 52), program control is sent off to line 1019 again.

And so it goes on, checking for objects and locations and variables before allowing the player to act. You will probably find that the first few versions of the program do not work correctly (checking your adventure is the most difficult part of all) and the version of *The Sign Of Four* that you're looking at now is the fifth or sixth. We apologise for any errors that might remain in it, but if Melbourne House can have Watson charging into the hallway at Baker Street while still inside a Hansom cab, we're in good company.

Good adventures are not difficult to write. They just take a lot of time and perseverance. If you've ever balked at taking up the challenge, why not give it a go now?

Try changing the listing, a little bit at a time, to get the feel of what's happening, and before you know it you'll have a totally different game.

For cassette users

Cassette users need to make minor changes to the program.

This affects the save and load routines when you wish to record your progress onto tape. As it stands, the program is designed to save the current game status onto disk, so you must make the following changes:

- Change line 1427 to read 1427 OPEN1,1,1,"SIGN DATA"
- Alter the PRINT#2 statements in lines 1428 to 1434 to become PRINT#1 statements
- Change the CLOSE2 statement in line 1435 to become CLOSE1; then alter line 1447 to read 1447 OPEN1,1,0,"SIGN DATA"
- Alter the INPUT#2 statements, lines 1448 to 1452, to become INPUT#1 statements.
- Change the CLOSE2 statement in line 1453 to become CLOSE1. Now you have a tape-based version. ▀



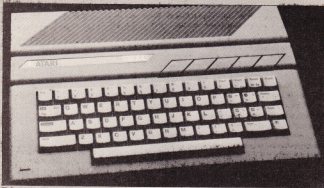
into a four-letter verb-noun format. The program then checks through every verb and noun that it knows; if this corresponds to what the player has typed in, we get a value for VB (the verb) and NO (the

unlikely, responses are dealt with at the beginning. Then program execution appears to be reasonably fast.

Line 1001: if the player is in room 56 and trying to open object 67, the chest, inform him that it's empty, and go back

XE UNDER EXAMINATION

More memory, better graphics and improved sound for less money, the 130XE is aimed to appeal to a mass market, says Stuart Cooke.



The smart design makes an asset out of the cooling grille.

If you were to ask the country's top microcomputer programmers which machine they thought was the best, the majority would say the Atari. Even those who are well known as Commodore 64 programmers would prefer to use the Atari if it was feasible.

Until now Atari's reputation for very highly-priced products and extremely over-priced software has put software houses off since there was no mass market to buy their wares. However, things are about to change. Atari has launched the 130XE personal computer with 128K RAM for a staggering £169.99.

With software houses such as US Gold importing US titles at realistic prices and Atari dropping its software prices, the machine looks set to go far.

First impressions

Despite its futuristic styling, the Atari 130XE is extremely reminiscent of the old Atari 800 computers. The main differences are fewer joystick ports, these are now on the side of the machine and have been cut from 4 to 2, and the function keys have been moved above the keyboard.

The cartridge port has been moved to the rear of the machine and there is only one. On the old Atari's two were needed because Basic was provided on a ROM cartridge. With the 130XE (and the earlier XL's) Basic is installed inside the machine on ROM.

The similarities to the older machines don't end with the actual layout of the

product — the 130XE is totally software compatible with the Atari 400/800 and XL range of machines. This means that there is a wide range of software already available, although in some cases it is quite pricey but this is changing.

Unfortunately the standard Atari peripheral connector has been used. Whether you want to use disk drives or a cassette tape, you will have to buy Atari's own; your old battery operated cassette player is no good at all. Even so, the fact that the standard Atari interface is used means that a large number of disk drives, printers and other peripherals are already available, so you won't have to wait for them to be developed.

In use

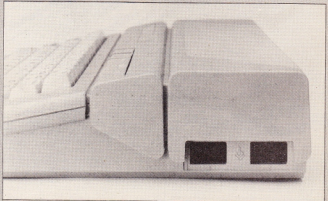
The first and probably most surprising thing you notice about the 130XE is that the expected 128K of RAM is not available for use. The machine behaves as if it was a 64K Atari, if you wish to use the extra memory you will need to refer to a two page section at the rear of the manual.

On many of the older Atari machines there was a fairly common problem with the graphics and sound. You could tune the TV to give you excellent pictures with very poor sound quality, or excellent sound but with very poor picture quality. This was most annoying when playing games because you often had to turn the sound right down when the background hiss became unbearable. This problem seems to have been cured on the 130XE and both picture and sound are of excellent quality, even on my cheap colour television.

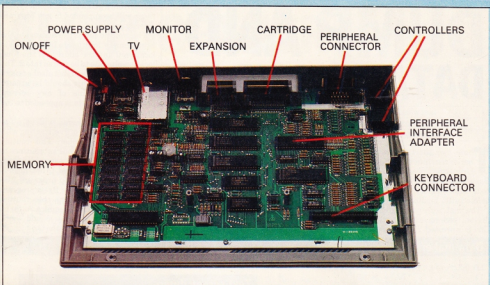
Documentation supplied with the machine can be described as both excellent and poor, depending who is looking at it. If you are a beginner who has never used a computer then it is fine. You are taken through most of the available commands at a steady pace with lots of little examples to type in so you can see the commands in action. Once you have gone through this, or if you are already past this stage, the manual is of little use.

Believe it or not, the Atari 130XE has eight sprites available for use. These are predefined graphics characters that can be placed anywhere on the screen and moved around with ease. It is even possible to move them under and over objects on the screen. Atari prefers to call these sprites Player Missiles.

You would expect such an important facility to be extremely well explained so that owners of the machine could use them with ease — and you'd be wrong. The facilities that these sprites offer are only mentioned within the example program section of the manual. The supporting text merely states: 'This program uses a technique called Player



Two games controller sockets are provided instead of the traditional four.



The centre of the circuit board is dominated by Atari custom chips.

Missile graphics to create a pink monster that moves across your screen; followed by a program of 18 lines, full of POKES to memory, with no comments.

The appendix that deals with the extra 64K of RAM states that the extra memory is usually transparent to the user and is accessed by a method known as bank switching. This means you can take a 16K section of memory and swap it with another section. The explanation is quite technical, and novice micro users would be well advised to stay clear of the extra 64K until they feel at home with the machine and understand the meaning of the words bit and byte.

The extra memory is, however, an exciting thing for experienced programmers. It can be used to store information for a database or spreadsheet. Games programmers will be able to produce arcade games with an extremely large number of screens, and adventure programmers should be able to write some very large adventures. But how long will we have to wait for the software that makes use of this superb facility?

In order to fully test out the compatibility of the new machine with the old Atari, a number of pieces of software were tested. Software typed in from magazine listings worked without a hitch. Atari home computer cartridges and cassette software worked perfectly.

The machine is actually a joy to use; the keyboard has very little travel but is still reasonable to type on. The main problem is the very small carriage Return key and the unfortunate positioning of the Caps Lock key directly beneath it.

The keyboard layout is exactly the same as on the Atari 800 machines. This has probably been done to make the

machines totally compatible. It would have been nice if the cursor keys could have been moved though — you have to press the control key with the -, =, + and * keys.

The graphics facilities of the machine are extremely good: 16 graphics modes and 256 colours are available. There are 16 main colours and the other colours are obtained by adjusting the luminance of the colour. However, only five of the main colours can be used at any one time. Text is displayed as 40 columns x 25 lines and five different text modes are available. The maximum high resolution screen is 320 x 192.

Within the Basic there are commands to deal with most of the graphics and sound facilities of the machine, and of course colour is spelt the American way, COLOR. Having graphics commands resident in the machine is certainly one up on Atari's major competitor Commodore.

Verdict

The Atari 130XE should certainly be a winner. With 128K of RAM, superb graphics and sound facilities, a plethora of software already available and a very attractive price tag, other manufacturers must be getting worried.



The peripheral and cartridge ports use standard Atari add-ons.

SPECIFICATIONS

Software	Atari Basic, compatible with Atari 65XE and 800XL computers.
Processor	6502C, 1.79MHz.
RAM	128K.
ROM	24K.
Display	11 graphic modes, 256 colours, 320 x 192 highest resolution, 5 text modes, 40 x 25 text display.
Sound	4 voices, 3 1/2 octave range.
Keyboard	62 Keys, including 5 function keys.
Interfaces	Cartridge, TV, monitor, 2 controller ports, serial I/O connector.
Price	£169.99

DUMP AND DATA-MAKER

Just when you'd given up hope, Stephen Brunton comes to the rescue with two useful machine code utilities to help your programming on the Atmos.

These two short programs provide handy machine code utilities for the Oric Atmos, presented in the form of Basic programs that load the machine code into memory. The Basic can be deleted after loading.

The text screen dump is interrupt-driven, and so will execute whenever Ctrl P is pressed. It is assumed that the

printer does not add a line feed to a carriage return code. The ROM printer routine is used, and I have included the minor changes that should enable this routine to run on the Oric 1.

The second routine is an aid to constructing Basic programs that use machine code subroutines. When called this program will construct DATA state-

ments from a given area of memory, and these will be appended to any program already present.

The routine needs the address of the first memory location to be poked into location 0 and the address of the final location plus one to be poked into 2. The starting line number must also be poked into location 4. This should be greater than the last line of any current program, as the data is appended to the program.

The DATA statements will be numbered in increments of five, starting with the given line number. This routine allows any machine code subroutines to be entered using an assembler and, when working and tested, to be transferred easily to the Basic program. The DATA statements in my Basic program were constructed using this routine after I'd written it in assembler. As far as I'm aware the routine should work without modification on the Oric 1. ■

Data-maker

```

10 REM*****
11 REM      "DATA MAKER"
12 REM
13 REM This program constructs data
14 REM statements from assembler.
15 REM It is totally relocatable.
16 REM and uses just under 200 bytes*
17 REM of memory.
18 REM
19 REM Requires:
20 REM DOKE 0,start
21 REM DOKE 2,end
22 REM DOKE 4,line-no
23 REM
24 REM The data statements will be
25 REM at the end of any program
26 REM already present, so line-no
27 REM must be greater than the last*
28 REM line already present.
29 REM The data statements will be
30 REM numbered in increments of 5,
31 REM starting with the given line.*
32 REM
33 REM to use, enter the above DOKEs*
34 REM and then CALL #9700
35 REM
36 REM      Steve Brunton.      March 85
37 REM
38 REM*****
100 HIMEM#9700:I=#9700
110 READ DTA
120 REPEAT
130 : POKE I,DTA
140 : I=I+1
150 : READ DTA
160 UNTIL DTA=-1
1800 DATA#A5,#9C,#3B,#E9,#02,#85,#06,#A5,#9D,#E9,#0B,#85,#07,#A2,#0B,#A0
1805 DATA#02,#A5,#04,#91,#06,#A5,#05,#CB,#91,#06,#A9,#91,#CB,#91,#06,#A9
1810 DATA#23,#CB,#91,#06,#A1,#0B,#4B,#29,#F0,#4A,#4A,#4A,#C9,#0A,#90
1815 DATA#04,#69,#36,#90,#02,#09,#30,#CB,#91,#06,#6B,#29,#0F,#C9,#0A,#90
1820 DATA#04,#69,#36,#90,#02,#09,#30,#CB,#91,#06,#E6,#0B,#02,#E6,#01
1825 DATA#A5,#01,#C5,#03,#90,#06,#A5,#00,#C5,#02,#B0,#36,#CB,#A0,#B0,#07
1830 DATA#A9,#2C,#CB,#91,#06,#0B,#86,#CB,#A9,#00,#91,#06,#9B,#A0,#0B,#A6
1835 DATA#07,#3B,#65,#06,#90,#01,#E8,#EA,#91,#06,#CB,#4B,#8A,#91,#06,#6B
1840 DATA#85,#06,#86,#07,#1B,#A5,#04,#69,#05,#05,#04,#90,#8B,#E6,#05,#18
1845 DATA#90,#F9,#A9,#00,#CB,#91,#06,#CB,#91,#06,#CB,#91,#06,#B8,#9B,#A6
1850 DATA#07,#1B,#65,#06,#90,#01,#E8,#EA,#A0,#00,#91,#06,#8A,#CB,#91,#06
1855 DATA#0B,#B1,#06,#1B,#69,#02,#85,#9C,#CB,#B1,#06,#69,#0B,#B5,#9D,#60
1860 DATA -1
    
```

Text screen dump

```

59990 REM*****
59991 REM TEXT SCREEN DUMP <ctrl>P *
59992 REM
59993 REM Steve Brunton. March 85
59994 REM*****
59995 REM
60000 HIMEM #97AB: MEM=#97AB
60010 READ DTA:REPEAT
60020 :POKE MEM,DTA: MEM=MEM+1
60025 :TT=TT+DTA: READ DTA
60030 UNTIL DTA=-1
60035 IF TT<>#2893 THENPRINT"ERROR IN DATA":END
60040 DOKE#24B,#97AB:POKE#24A,#4C
60100 DATA #B,#7B,#4B,#8A,#4B,#9B,#4B
60105 DATA #AD,#9,#2,#C9,#A2,#0D,#A,#AD,#B,#2
60110 DATA #C9,#9D,#0B,#3,#2B,#CB,#97
60115 DATA#6B,#AB,#6B,#AA,#6B,#2B,#4B,#EA
60120 DATA #A2,#1C,#A9,#8B,#B5,#B,#A9
60125 DATA#B5,#B5,#1,#A2,#B,#B1,#B,#C9,#2B
60130 DATA #BB,#2,#A9,#2B,#2B,#C1,#F5
60135 DATA #CB,#CB,#2B,#0B,#F0
60140 DATA #A9,#A2,#0B,#C1,#F5
60145 DATA #A9,#B0,#2B,#C1,#F5
60150 DATA #1B,#A5,#0B,#69,#2B,#B5,#0
60155 DATA#90,#2,#E6,#1,#CA,#0B,#0B,#0B,#04
60160 DATA #A9,#3B,#8B,#0B,#02,#60
60170 DATA -1
60200 REM
60210 REM For Oric-1 replace #C1,#F5
60220 REM in lines 60130,60140,60145
60230 REM with #7B,#F5
60240 REM and replace line 60040 with
60250 REM DOKE#231,#97AB:POKE#230,#4C
60260 REM
    
```

ALL TOGETHER NOW

Alan Turnbull lists some of the improved facilities of the QL's upgraded ROM — version JS. Among them are better error trapping and extra extensibility with systems variables. JS brings all the special tables together.

Sinclair Research has developed a new version of the QL's ROM, which it has called JS. It follows on from AH and JM, as well as the earliest FB and PM releases which should have been replaced in a recall operation. Version JS should be available in QLs in the shops soon.

The new ROM comes with QDOS version 1.10 (see versions 1.02 and 1.03) and the JS SuperBasic provides 25 extra keywords to allow error trapping in conjunction with WHEN and ERROR which have been implemented at last.

Also included in the new release of the QL's firmware is extra extensibility in the form of two new system variables which point to special tables. In previous releases of the QL's firmware, these tables were scattered throughout the ROM — this new ROM brings them all together.

National character set

One of these system variable points to a table which holds the national character set — the characters to be output on receipt of each code in the range 0-255. For example, in the UK we expect the hexadecimal code \$41 to produce the ASCII character A. However, in Greece QL users would expect \$41 to print the Greek letter alpha. Altering this system variable to point to another table would allow people of different nationalities to use the QL easily.

The other system variable points to a table of messages used on the QL. These messages include the rather terse error reports which could do with being extended.

The national character set pointer is at \$28146 and the message table pointer follows it at \$2814A. Each table has a special format.

The long word at \$28146 points to the national character set table which is in the following format:

\$4AFB special table identifier
<word>offset of first character from table start
<word>offset of last character from table start
<bytes>characters corresponding to codes

The message table (pointed to by \$2814A) is in the following format:
\$4AFB special table identifier;

<word>offset of first message from table start
<word>offset of last message from table start
<word>character count for first error report
<bytes>characters making up first error report
<word>character count for last error report
<bytes>characters making up last error report
<word><bytes> for At line, sectors, monitor/TV, copyright, during WHEN and PROC/FN cleared messages;
<bytes>characters for days of week
<bytes>characters for months of year.

All messages are word aligned by filling to the right with zeroes.

Listing 1 shows an assembly listing which provides an extension to the current message table. It can be linked into the QL system. To use the listing, take the following steps:

- 1 Type in and assemble the listing and store the code generated on backing store (about 1K long).
- 2 Reserve some QL memory with LET A=RESPR(1024).
- 3 Get the data off backing store and into memory with, for example, LBYTES MDVL,MESSAGES,A.
- 4 POKE L 164170,A.

If you have done everything correctly, all subsequent messages should read as in Listing 1.

I hope this article proves of use to new 'JS' QL owners who may not have known that such facilities were available on their machines.

Listing 1

00100 * New QL messages table for VERSION JS

00101 *

00120 * COPYRIGHT (c) March 1985, Alan Turnbull

00130 *

00140 *

00150 START: D.W. \$4AFB

00160 D.W. MESSAGE1-START

00170 D.W. MESSAGE2-START

00180 D.W. MESSAGE3-START

00190 D.W. MESSAGE4-START

00200 D.W. MESSAGE5-START

00210 D.W. MESSAGE6-START

00220 D.W. MESSAGE7-START

00230 D.W. MESSAGE8-START

00240 D.W. MESSAGE9-START

00250 D.W. MESSAGE10-START

00260 D.W. MESSAGE11-START

00270 D.W. MESSAGE12-START

00280 D.W. MESSAGE13-START
00290 D.W. MESSAGE14-START
00300 D.W. MESSAGE15-START
00310 D.W. MESSAGE16-START
00320 D.W. MESSAGE17-START
00330 D.W. MESSAGE18-START
00340 D.W. MESSAGE19-START
00350 D.W. MESSAGE20-START
00360 D.W. MESSAGE21-START
00370 D.W. MESSAGE22-START
00380 D.W. MESSAGE23-START
00390 D.W. MESSAGE24-START
00400 D.W. MESSAGE25-START
00410 D.W. MESSAGE26-START
00420 D.W. MESSAGE27-START
00430 D.W. MESSAGE28-START
00440 D.W. MESSAGE29-START
00450 MESSAGE01: D.W. 24
00460 D.W. 'operation not completed',10
00470 MESSAGE02: D.W. 'DOS error return',10
00480 D.W. 'no more memory left',10
00490 MESSAGE03: D.W. 20
00500 D.W. 'no more memory left',10
00510 MESSAGE04: D.W. 19
00520 D.W. 'value out of range',10,0
00530 MESSAGE05: D.W. 26
00540 D.W. 'no more buffer space left',10
00550 MESSAGE06: D.W. 28
00560 D.W. 'cannot find or open channel',10
00570 MESSAGE07: D.W. 48
00580 D.W. 'cannot find file system, device, medium, file or identifier',10
00590 MESSAGE08: D.W. 20
00600 D.W. 'file already exists',10
00610 MESSAGE09: D.W. 30
00620 D.W. 'file or device already in use',10
00630 MESSAGE10: D.W. 28
00640 D.W. 'end of file or data reached',10
00650 MESSAGE11: D.W. 17
00660 D.W. 'file device full',10,0
00670 MESSAGE12: D.W. 50
00680 D.W. 'cannot recognise name or name used out of context',10
00690 MESSAGE13: D.W. 22
00700 D.W. 'HD-252-C parity error',10
00710 MESSAGE14: D.W. 39
00720 D.W. 'attempted format of file device failed',10,0
00730 MESSAGE15: D.W. 71
00740 D.W. 'error in parameter list or attempting to read from a write-only device',10,0
00750 MESSAGE16: D.W. 33
00760 D.W. 'faulty or changed storage medium',10,0
00770 MESSAGE17: D.W. 20
00780 D.W. 'error in expression',10
00790 MESSAGE18: D.W. 20
00800 D.W. 'arithmetic overflow',10
00810 MESSAGE19: D.W. 34
00820 D.W. 'feature not currently implemented',10
00830 MESSAGE20: D.W. 37
00840 D.W. 'attempting to write to a shared file',10,0
00850 MESSAGE21: D.W. 32
00860 D.W. 'syntax error in SuperBASIC line',10
00870 MESSAGE22: D.W. 54
00880 D.W. 'Error at line'
00890 MESSAGE23: D.W. 22
00900 D.W. 'free/maximum sectors',10
00910 MESSAGE24: D.W. 21
00920 D.W. 'F1...Monitor',10, 'F2...TV',10,0
00930 MESSAGE25: D.W. 30
00940 D.W. '(c) 1985 Sinclair Research Ltd'
00950 MESSAGE26: D.W. 23
00960 D.W. 'during WHEN processing',10,0
00970 MESSAGE27: D.W. 27
00980 D.W. 'PROCEDURE/FUNCTION cleared',10,0
00990 MESSAGE28: D.W. 'SunsoftMedThruFrtSat',0
01000 MESSAGE29: D.W. 'JanFebMarAprMayJunJulAugSepOctNovDec',0



TROPICAL TANGLE

Bob Chappell, forced to bail out in the Bermuda Triangle, finds himself lost in paradise — and the king hates tourists!

I've started in some weird and wonderful places but never before have I begun an adventure stuck up a tree in a mangrove swamp. The Austen clan from Level 9 Computing had struck again.

Their latest text and graphics adventure, *Emerald Isle*, is available for a wide number of home computers. If you've got an Amstrad, Commodore 64, MSX or Spectrum, the game includes some 240 pictures and about 30K of text. BBC owners should rejoice — their version also has the same number of pictures but a sacrifice comes in the form of reduced text. Atari, Enterprise and Memotech owners get a plain text only version. All versions cost £6.95.

The price is lower than other Level 9 games because *Emerald Isle* is somewhat simpler and easier to solve than the rest of their range. But don't get the idea it's a walkover, because it isn't.

Up a gum tree

So what was I doing perched in a tree?

Well, a few minutes earlier I had been piloting a light aircraft over a tropical island paradise. But, as adventurer's luck would have it, not only had Level 9 set this emerald island in the middle of an azure sea, they had also placed it slap bang in the middle of the dreaded Bermuda Triangle. The parachute tangled round the branches beside me made it clear that I had just bailed out.

The objective of the adventure is not just to find the usual cartload of treasures but to try and escape from the island. My immediate problem was to untangle myself from the chute and then climb down. Having managed to get my feet safely back on terra firma, I was instantly on the move — straight round in circles, as it happened.

Lay a trail, thought I. Hah! — Level 9 had anticipated that old trick. Persistence paid off and ere long I was in the centre of a strange city, set high among the trees.

The motto of any seasoned adventurer must ever be 'Lay

thy mitts on everything thou canst — thou never knowest when it's going to come in handy, like'.

Just like Del Boy and Rodney, I followed this illiterate aporism to the letter and was soon collecting enough objects to start a jumble sale.

Among the bric-a-brac I had amassed within a very short time were an ermine robe, a piece of silk, a pot of glue, coins of all values, a railway ticket and an instruction manual (not about opening junk shops). A stopped clock, an invisible barrier and some locked doors were but a few of the first puzzles to give me pause for thought. And where was that darn lamp?

Characters appearing quite early in the game included a gullible guard, a sad seamstress and a sniffy butler. I especially liked the testy king: 'Tourists! Will I never get any peace?'

Emerald Isle has fast if simple graphics which can be switched on and off by a command. As with all Level 9 adventures, you get an immediate response to all text input. It is an enjoyable, fast-moving adventure with plenty to keep the fans happy until the next Level 9 fantasy appears.

Golden oldie

One of the all-time great

adventures makes a welcome re-appearance on the Commodore 64. *Colossal Cave Adventure* (Duckworth, £7.95) is the original Crowther and Woods mainframe adventure and follows the original layout quite faithfully.

To be fair, other companies have had versions of this favourite available for some time now. Level 9 (*Colossal Adventure* — unquestionably the best of all the adaptations) and Melbourne House (*Classic Adventure*) are but two.

The adventure is supplied on cassette and the entire program loads into memory. Since no compression techniques seem to have been used, there has been some curtailment of the fulsome text in order to squeeze the game into memory. *Colossal Cave Adventure* was programmed for the Commodore 64 by Peter Gerrard who is already well-known for his series of books on exploring adventures.

Past and present owners of the aged Commodore Pet micro will have fond memories of this adventure. It was originally produced for the Pet, on disk, by Commodore guru Jim Butterfield.

The famous plot involves a trip around a massive cave complex and appears to have the familiar classic puzzles, traps and mazes. Adventure

buffs are likely to come over all nostalgic when I mention such beloved features as the axe-throwing dwarves, the black rod, the nervous bird, Plugh and Xyzzy.

Every adventurer worthy of the name should have at least one version of the Crowther and Woods masterpiece in their collection. This one is a competent translation and should certainly provide a good deal of pleasure.

Dungeonade

Thinking to curry flavour by gleefully reporting the misfortunes of others, an apprentice bat has whispered in the Dungeon Master's ear that many wretches are unable to progress beyond the first half of *Castle of Terror* (Melbourne House). To them comes the Dungeon Master's benevolent helping hand while to the malodorous bat has come intimate knowledge of a more culinary meaning of the word curry.

● Old man not very talkative? NAM OT ELA EVIG NEHT ELA YUB

● Can't wedge open the drawbridge? First: LLIM DNOCES EHT OT NNI KCUD MORF-TSAEOG, then GNURESOL TEG NEHT REDDAL ENIMAXE, and finally (GNUR) NIP TRESNI EGDIBWARD TA.



COMMODORE 64

CAULDRON



STAR GAME
Cauldron is one of the best 64 games I've seen this year. But it's very difficult. Palace Software has produced a compulsive, graphically tasty little number that should be a winner.

The aim of the game is to collect ingredients to make a magic potion. Once collected they must be returned to the bag's cottage and mixed in the cauldron of the title. As in many games these days, the ingredients are slightly obscure. Not quite Ultimate Obscurantism, but a little worse.

The bag in question is a delightfully animated and detailed green-haired witch, straight out of Brothers Grimm. You can make her mount the monkey on her back, or use the monkey for a stroll. Hanging in the firmament are fixed stars and a cloud cast

moon, adding to the tremendous atmosphere created by the accompanying music.

Airborne control is very tricky and takes a long time to master because of the momentum. Once you've built up speed it takes an age to slow down, so fast manoeuvres are out of the question. This makes dealing with the various flying hazards a doubly problematic. Acceleration is slow and there's a



peculiar feature whereby you move a fraction in the opposite direction to the way you're facing before picking up speed. There are bats, seagulls and ghosts on the surface level where you start. The ghosts are a delight. You'll spend ages battling with them just to move at the way they're done, rather than getting on with the

are innocent civilian vehicles and killing them loses you points. The Road Lord is bullet-proof but has to be rammed; not so Switch Blade, which carries buzz-saw blades.

Strike a yellow motorcycle and he goes into a sickening spin before crashing. The road is shown as a central black strip, flanked by a lethal hard-shoulder. Behind this is green countryside dotted with trees, the colours changing as you progress. The road's not straight. Bends, detours and forks appear, forcing you to slow down to cope with the driving conditions.

Last long enough and the Weapons Van appears again, with a symbol on its roof. This tells what kit you can pick up. If each object you acquire you gain experience, but each one seems to set off a trap unless it's a monster. I soon found my resistance to losses measured in hitpoints running low.



There are three levels of difficulty and at the lowest you are resuscitated several times. Even so, it took me just five minutes to acquire permanently the first time I played. And that's when the problems really start. The program is pro-

lapsed on a double-sided disk. To load you have to boot up the first side, then flip over and make a copy of the second side (the Master Character disk). The game then runs off your copy. This wouldn't be too bad if you could continue playing several times on one copy, but you have to make a new copy every time you lose a game.

The copying process takes more than two minutes with two disk drives, and I'd have to find out how long it takes if you've got only one. Beginners could find themselves following up the longer spell of copying with an even longer spell of play.

The graphics are average, which is less than I would expect from Penguin. Then again, with over 200 rooms and passages I suspect there wasn't

wasn't, you suddenly find yourself in one of four rather nasty platform games.

Here you'll come across more bats and fireballs as well as ribcages and gaping skulls. Down in the planet's interior you must hop from level to level, dodging the nasties and looking to collect ingredients for your spell. But the game isn't as simple as it might sound at this stage. To collect some of the ingredients you'll need special containers, and you can only carry two at a time.

If you manage to collect all the ingredients to make your spell — and I'm nowhere near that yet — you can make your way to the Pumping's hide-away in one of the caverns and get stuck into the final showdown.

There's an awful lot to this game and the graphics and action are superb. The starting music is great and, while it's not sustained, the sound effects are good throughout. Cauldron just has to be a chart-topper.

Price £7.99 Publisher Palace Software, 01-278 0751

SPECTRUM

SPY HUNTER

Back the white DB5 out of Q's workshop. Van onto the hot tarmac. Van the van pull away then stamp down on the gas. Ease up behind a red Switch Blade and let him have it up the exhaust pipe from your double-barrelled machine guns.

Spy Hunter is a straight James Bond stuff, the official version of Bally Midway's first arcade hit. There are two phases to the game, but they're very similar. In the tradition of shoot-em-ups the aim is simply to better the current high-score.

Points are scored for rubbing out enemy agents, but this isn't out enemy agenda. You score at everything you see — some

are innocent civilian vehicles and killing them loses you points. The Road Lord is bullet-proof but has to be rammed; not so Switch Blade, which carries buzz-saw blades.

Strike a yellow motorcycle and he goes into a sickening spin before crashing. The road is shown as a central black strip, flanked by a lethal hard-shoulder. Behind this is green countryside dotted with trees, the colours changing as you progress. The road's not straight. Bends, detours and forks appear, forcing you to slow down to cope with the driving conditions.

Last long enough and the Weapons Van appears again, with a symbol on its roof. This tells what kit you can pick up. If each object you acquire you gain experience, but each one seems to set off a trap unless it's a monster. I soon found my resistance to losses measured in hitpoints running low.

There are three levels of difficulty and at the lowest you are resuscitated several times. Even so, it took me just five minutes to acquire permanently the first time I played. And that's when the problems really start. The program is pro-



lapsed on a double-sided disk. To load you have to boot up the first side, then flip over and make a copy of the second side (the Master Character disk). The game then runs off your copy. This wouldn't be too bad if you could continue playing several times on one copy, but you have to make a new copy every time you lose a game.

The copying process takes more than two minutes with two disk drives, and I'd have to find out how long it takes if you've got only one. Beginners could find themselves following up the longer spell of copying with an even longer spell of play.

The graphics are average, which is less than I would expect from Penguin. Then again, with over 200 rooms and passages I suspect there wasn't



Rating 7/10
Price £34.95
Publisher Penguin Software, 890, 4th Avenue, PO Box 3111, Geneva, IL 60134 (312) 232 1884

enough memory available in 48K to go into too much detail. The animation is cute if unimpressive and the joystick control is good.

The game offers a lot of variety and can get very tricky at level three, but the pace is too slow for arcade fanatics and the puzzles aren't very demanding on the intellect. They consist mainly of finding hidden puzzle pieces by bashing against brick walls until a hole appears. Good fun for a while, but not good value.

Rating 7/10
Price £34.95
Publisher Penguin Software, 890, 4th Avenue, PO Box 3111, Geneva, IL 60134 (312) 232 1884

SPECTRUM

KISSIN' KOUSINS

English Software has built up an enviable reputation for producing a series of games with high-quality graphics and good presentation.

Kissin' Kousins certainly starts off well. It comes with a colourful cover and decent loading instructions. Once loaded (a surprisingly long process for a BBC game) there's a pretty, animated header and a nicely integrating title screen when you tap the space bar to start the game.

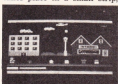
KK is a variation of the

Hunchback or Mr Punch story-line. To reach your 'gal' on the other side you have to run and jump over obstacles, avoiding the bombs from passing bi-planes, kangaroos etc.

The first set of objects, hydrants and dustbins, is largely static. After this, though, you encounter the giant caterpillars, which hoop their way back and forth across the screen. Then it's more hydrants, a trampoline and an overgrown wallaby. Screen four introduces the gogglers, and there are bats, rubber frogs and toadstools later on.

You may have gathered I'm not over-impressed with it. The

game is uninspired and the screen's use limited. Apart from the bi-plane, and the things which jump high, all the action takes place in a small strip,



two-thirds of the way down the screen.

The neatly drawn background, which scrolls smoothly between screens, is just that. It

pays no active part in the game.

Completing a screen is just a question of timing, as many of the creatures repeat their movements each time you come to them. While the idea of the Country and Western setting is a good one, the old game hasn't been sufficiently revamped.

The cassette does have the advantage of offering the Electron version on the other side. But cheap as it is, it's not worth it.

Simon Williams



Rating 7/10

Price £24.95

Publisher English

Software

061-835 1358

AMSTRAD

DEATHSTAR INTERCEPTOR

Death Star Interceptor is a little out of date — it's the 'official' version of the final scenes of *Star Wars*, and was first released for the Commodore 64. You know the theme — fly to the planet Deathstar, down a trench on its surface and loose off a direct hit on the reactor port. But despite the age of the ideas, *Deathstar* is pretty good.

There are three screens — well just. The first is a 'fly

through the portal' affair; dead

simple after a few tries, so it

doesn't really count. The

second appealed most — a

good shoot-em-up. Here you



can see the Deathstar at the top left of the screen, in the distance, planet Earth off to the right. Waves of alien fight-

ers swirl from the Deathstar's surface and snake towards you. Busy with dodging from side to side, raking the enemy hordes with laser fire, you may not notice the Deathstar edging closer.

The animation of the fighters is superb. They're straight *Star Wars* craft, large vertical side foils etc. but as they turn and bank the perspective transformation is almost cartoon quality.

Survive your trip to the planet and it's down the trench. Sure, it's been done before, but this one's no piece of cake, even if the graphics

are limited. Besides, it's nice to get two games in one.

The trench is deep blue with various devices set in the walls. Some of these spit lethal bullets, or set up deadly rays three-quarters of the way across the trench.

Deathstar Interceptor is good, despite being dated. The graphics have been given a lot of attention, it's worth a close encounter.

Bryan Skinner



Rating 7/10

Price £7.95

Publisher System 3

01-587 0873

AMSTRAD

JET-BOOT JACK

Originally for the Spectrum and Commodore 64, Jack has made the transition to the Amstrad very ably — no doubt by using the famed power of his jet-boots.

Jet-Boot Jack is a platform game of sorts, but with a rather different scenario. The space-age jogger has to empty each screen of the musical notes suspended at head-height along the five levels of platforms.

As well as headbanging the

notes, Jack can recharge his boots by knocking into the vinyl pods, but the outcrops of solid rock and assorted weirdos hanging from the ceilings should be avoided. Even experienced nutters have to draw the line somewhere.

To move from one level to the next, Jack slides into one of the paternoster-style elevators which connect the platforms. When he is in full flight he can jump the gap left behind a moving lift but should be stop in the gap or run into the lift itself, he loses a life.

There are several neat extra features. You can restart in the

screen in which you expired, you can jump up and down on top of a wierdo until it loosens its grip and drops to the floor and you get a bonus for ducking



under the vinyl pods rather than taking full from them.

Skill modes govern the number of weirdos and the amount

of fuel available on each screen, and there's a set of demonstration screens if you want to sit back and rest. The jolly little tunes must be designed to demot the unwary.

Even though it's another conversion, it's worth having. But when are software houses going to start writing in earnest for the Amstrad? There are more than 200,000 in the UK crying out for original games.

Simon Williams



Rating 7/10

Price £8.95 Publisher

English Software

061-835 1358

AMSTRAD

DEATH PIT

Tunnels, ladders and monsters — that's what this game offers, but don't get excited. It's an anti-climax after Durell's superb *Combat Lynx*.

You start off above ground, a chunky, helmeted figure carrying a shovel. Move left or right and you come across a tent or Land Rover. These are red herrings. The only way into the game is via the single downward set of ladders.

Underground you'll find a pretty standard scenario of more ladders linked by tunnels. You'll also be struck by the lack of variation and action. You're

supposed to wander about, gathering up gold bars, with the aim of amassing a fortune. There's a gem somewhere and the game ends when you take it



back to the tent, so you're advised to leave doing that until last.

The shovel's not for digging — it's for bashing nasties intent on preventing your fortune hunting. Use the T key (or fire)

to collect gold, or the space bar to select a carried item for use.

One of the worst faults is that screens don't carry across from one to another. If you're trucking down a ladder and a deadly scorpion waddles up towards you, just nip up to the screen above, then duck down and it'll have disappeared. This makes for a boring gameplay — it's too easy to stay out of trouble.

Death Pit lacks variation — all you have to do is troll about, dodging or bashing nasties and picking up gold bars. Flooded tunnels and a declining battery merely complicate the rules, but not the play. The choice of colours is odd, too — khaki-green bats on khaki-green steps are hard to pick out.

A game like this could and should have incorporated caverns among the passageways, perhaps some platform element, and a greater variety of hazards. The software sprites show promise, but it's just not realised.

All in all, *Death Pit* is a disappointment. And why do so many software houses insist on converting Spectrum and Commodore 64 games for the Amstrad? Why are there so few original games for the machine?

Bryan Skinner



Rating 6/10

Price £8.95

Publisher Durell Soft-

ware 0823-54489

AMSTRAD USERS SPECIAL OFFER!

A "frustrated" order means that we have a limited quantity of interfaces in stock. These interfaces have been designed and manufactured by us and are ready for immediate delivery. They are uncased and have many features, including:

- * Full RS232 interface (8251)
- * 8 software controlled baud-rates (with Parallel Option) (9600, 4800, 2400, 1200, 1200/75, 75/1200, 300, Etc)
- * 24-bit Parallel Port Option (8255)
- * "Sideways" ROM Operating System Included.
- * 2 Sideways ROM sockets for ROM based software.
- * Fully compatible with the Disc System.
- * Ideal for Software Houses intending to produce "Sideways" ROMs of their own or the serious user.

Write or Telephone for more details

SKYWAVE SOFTWARE

73 CURZON ROAD, BOURNEMOUTH
(0202) 302385

MILES BETTER SOFTWARE

221 Cannock Road, Chads Moor,
Cannock, Staffs WA11 2DD.

Tel: 05435 3577

U.S. GOLD SOFTWARE

Title & Machine	Cass	Disk		
Beach-Head (A)	£8.95	N/A	Nato Commander (64)	£8.95 £12.95
Beach-Head (Amstrad)	£8.95	N/A	Indiana Jones (64)	£8.95 N/A
Beach-Head (ZX)	£8.95	N/A	Tapper (64)	£8.95 £11.95
Conan (A)	£8.95	N/A	Tapper (ZX)	£8.95 N/A
Conan (64)	£8.95	N/A	Congo Bongo (64)	£8.95 £11.95
Pole Position (A)	£8.95	N/A	Congo Bongo (ZX)	£8.95 N/A
Pole Position (64)	£8.95	N/A	Spy Hunter (64)	£8.95 £11.95
Mr Do (A)	£8.95	N/A	Spy Hunter (ZX)	£8.95 N/A
Mr Do (64)	£8.95	N/A	Up and Down (64)	£8.95 £11.95
Pacman (A)	£8.95	N/A	Up and Down (ZX)	£8.95 N/A
Pacman (64)	£8.95	N/A	Up and Down (64)	£8.95 £11.95
DigDug (A)	£8.95	N/A	Wizard and the Princess (64)	£8.95 £11.95
DigDug (64)	£8.95	N/A	Mission Astro (64)	N/A £11.95
Dropzone (64)	£8.95	N/A	Exodus: Ultima II (64)	N/A £17.95
Raid over Moscow (64)	£8.95	N/A	Scough Boy (64)	£8.95 £12.95
Raid over Moscow (ZX)	£8.95	N/A	Quasimodo (64)	£8.95 £12.95
Strip Poker (64)	£8.95	N/A	Sentinel (64)	£8.95 £12.95
Antar Challenge (A)	£7.95	N/A	Ulysses and the Golden	N/A £11.95
Forbidden Forest (A)	£7.95	N/A	Fiaca (64)	N/A £11.95
Stinky (A)	£7.95	N/A	Combat Leader (64)	£12.95 £12.95
Caverna of Khaka (A)	£7.95	N/A	Game for Normandy (64)	£12.95 £12.95
Super Huey (A)	£8.95	N/A	Grope Revenge (64)	£8.95 £11.95
Talladega (64)	£8.95	N/A	Fort Apocalypse (64)	£8.95 £11.95
Bruce Lee (64)	£12.95	N/A	Fort Apocalypse (ZX)	£8.95 £12.95
Bruce Lee (A)	N/A	N/A	Dreile (64)	£8.95 £12.95
Dallas Quack (64)	N/A	N/A	Blue Max (A)	£8.95 £12.95
Stellar 7 (64)	£8.95	N/A	Blue Max (ZX)	£8.95 N/A
Solo Flight (A)	£12.95	N/A	Zaxxon (A)	£12.95 N/A
Solo Flight (64)	£12.95	N/A	Zaxxon (64)	£8.95 £12.95
F15 Strike Eagle (A)	£12.95	N/A	Zaxxon (ZX)	£8.95 N/A
F15 Strike Eagle (64)	£12.95	N/A	Bounty Bob Strikes	£8.95 £12.95
Ghostbusters (A)	N/A	N/A	Back (64)	£8.95 £12.95
Bounty Bob Strikes	£8.95	N/A		
Back (A)	£8.95	N/A		

Please phone or write for software list regarding Atari and 64
Please phone for stocks available on all items. Add £1 per
item for overseas orders. Access and Visa welcome.

MoveMeat Discount Software Co

SPECTRUM

GAME	RSP	PRICE
Raid Over Moscow	7.95	6.45
Bruce Lee	7.95	6.95
Everyone's a Wally	9.95	7.45
DIT Decathlon	6.90	4.90
Scach Head	7.95	5.95
Knights Lion	9.95	6.90
Underwarde	9.95	7.90
Tr N Noy	9.95	6.20
Off the Gods	9.95	7.45
Alien 8	9.95	7.45
Ghostbusters	9.99	7.99
Hassam Road	9.95	4.45
Valhalla	14.95	3.95
GT Space Race	14.95	3.95
World Series Baseball	6.95	5.25
Brian Jacks Superstars	7.95	6.20
The Hobbit	14.95	7.95
Match Point	7.95	4.95
Potty Pigeon	6.95	2.95
Full Throttle	6.95	2.95
Frank N Stein	5.95	3.45
Koonin-Kanga	6.95	4.95
Peytraax	7.95	4.25
Peytraax	7.95	4.25
Dragonport	7.95	5.95

COMMODORE 64

GAME	RSP	PRICE
Raid Over Moscow	9.95	7.45
Bruce Lee	9.95	8.95
DIT Decathlon	7.90	5.20
Summer Games	14.95	10.30
Fighter Pilot	9.95	6.95
Impossible Mission	8.95	6.95
Moon Cresta	6.95	5.45
World Series Baseball	7.95	5.45
Brian Jacks Superstars	7.95	6.90
Greenlins	9.95	7.45
Slapshot	9.95	7.45
Blindies	8.95	3.95
Bladder Dash	8.95	4.95
Ashy Chase	8.95	3.95
Flip & Flop	8.95	3.95
World Cup	7.95	3.95
Hunchback II	7.90	4.99
Kong Dinked Back	7.90	4.99
Gypped	6.90	2.99
Power Paster	6.90	2.99
Humphead	9.95	5.95
Freight	9.95	5.95
Colossus Chess	9.95	4.95
Valhalla	14.95	7.95
The Hobbit	14.95	7.95

All prices include VAT. Postage and packing is FREE on orders in excess of £15.00. All orders of less than this amount are charged 0.75p towards the cost. 1,000s of more titles available for all machines. Send a S.A.E. for full list. Send your cheque/P.O. for the full amount (plus postage, if required), to:-

MOVEMEAT (MARKETING) LIMITED,
55 AYLESBURY STREET, BLETCHLEY,
BUCKS, MK2 2BH Telephone: (0908) 79232/3

Orders despatched within 3 days of receipt of your order and cheque/P.O. All tapes are offered subject to availability. E&OE.

DUCKWORTH ADVENTURES

COLLOSSAL CAVE ADVENTURE by Peter Gerrard

The original and best mainframe adventure, now available for the Amstrad and Commodore 64. Unlike other versions, this game follows the original layout, complete with all the intricate traps and bewildering mazes, not to mention the Troll, the Dragon, the Pirate or the mysterious shadowy figure. You can't call yourself an adventurer until you have conquered this mammoth quest! As a concession to the fair-hearted, you are allowed to resummon yourself twice. £7.95

ISLAND ADVENTURE by Peter Gerrard

The setting for this fascinating adventure game for the Commodore 64 is a desert island, on which you are stranded. Try to find your way off the island, avoiding monsters and other hostile inhabitants and collecting treasures. There is an option to save the current game status on tape. The game will accept a wide variety of words and is originally responsive. £7.95

MOUNTAIN PALACE ADVENTURE by John D. Ryan

This devious adventure for the Amstrad and Commodore 64 is set in a lost-lost palace in a distant land. You have heard rumours of the vast wealth to be gained by anyone brave enough to enter the palace. Unfortunately, the task turns out to be more difficult than you imagined, as the palace has some sinister inhabitants. Even the palace seems to have a mind of its own! There is an option to save your progress on tape at any time. £7.95

CASTLE DRACULA by Ray Davies

Available for the Amstrad, BBC 32K and the Commodore 64, this game starts in a deserted village, overshadowed by Dracula's sinister castle. Your mission is to enter the castle and save Princess Aislince, a well-prepared stake. There are many useful objects to be found along the way, and from time to time the program can be persuaded to give you hints. There are 100 locations to explore and you have the option to save your progress on tape at any time. £7.95

Write in for a descriptive catalogue (with details of cassettes).



DUCKWORTH
The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY
Tel: 01-485 3484

QC ON TRIAL

GST has chipped in with a C compiler for the QL, called QC. It implements a subset of C, says Leon Heller.

When the QL was launched, Sinclair promised a C compiler. But the official Sinclair product has not yet materialised, and GST, the Cambridge company which developed the 68K/OS operating system for the QL, has now brought out its own — it's a familiar story.

Rather than implement an all singing, all dancing, full C compiler, GST took the source code of the Small C 8080 Z80 compiler, originally published in Dr Dobbs' *Journal of Computer Calisthenics and Orthodontics*, and modified it to run on the QL to produce 68000/68008 code.

The result, QC, is a compiler that implements a subset of the C language as described in the C programmer's bible, *The C Programming Language*, by Kernighan and Ritchie. The main omissions are floating point, structures and multi-dimensional arrays.

First impressions

QC comes on two Microdrive cartridges with two blank cartridges provided for backup. An A5 ring binder contains the 73-page user manual, supplemented by a book on C (*A Book on C* by R Berry and B Meakins).

What is C?

For those readers not already addicted to C, it is a relatively simple expressive general-purpose programming language which allows the programmer to produce concise, highly structured source code. This compiles to compact, fast machine code. C is ideally suited to systems programming — writing operating systems, editors and compilers — but it also used for applications programming. It is one of the most portable languages as C programs written for one machine usually run on another with few, if any, changes. QC programs which don't use any features specific to the QL should run on most other machines with a C compiler. Lots of public-domain software written in C is available as source code from the C Users Group and the CP/M Users Group software libraries.

One cartridge (QC1) contains the C compiler, assembler, the standard Sinclair linker, a linker control file, a SuperBasic program to drive the compiler, assembler and linker, and a clone program. The second cartridge (QC2) contains two library files, a standard I/O header file, a sample program, and a clone program.

The package runs on a standard QL, but is much easier to use if you have the QL Toolkit, due to the implementation of pipes, which means the output of one program can be used as input to another without needing temporary files. There's no text editor, but most users probably have one already. I have been using the Metacomco editor; masochists could even use Quill.

In use

QC is written in QC, by the way and, like most C compilers running on micros, compiles to assembly language. This is first assembled, then linked with a library to produce a program which can be EXECed in the usual manner. A comprehensive library is provided, which as well as usual functions for input/output, opening files etc, also includes many features available in SuperBasic, such as sound generation, windowing and string handling. Direct access to QDOS functions is provided, and 'in-line' assembly language may be employed using the #asm and #endasm directives.

Assuming you have your program residing in source code form (a file called "fred.c" on cartridge QC2 in drive 2, with cartridge QC1 in drive 1, you compile the source by typing "exec.w mdv1-qc" to boot QC. When prompted for a command line, you just type "mdv2.fred", and the program is translated into an assembly language file called "fred.asm", on drive 2. This is assembled by typing "exec.w mdv1.qasm", followed by "mdv2.fred", when a command line is requested.

The relocatable binary file produced by the assembler, "fred.rel", must now be linked with the runtime library. This is done by first typing "exec.w mdv1.link". The linker requests a command line, and "mdv2.fred mdv1.qc.link -nolist" produces a file called "fred.bin" on drive 2, which may then be executed with "exec" or "exec.w".

The process can be menu-driven using a SuperBasic program called "compile", supplied as part of the package.

QC supports separate compilation: functions may be compiled separately and linked with the main program to create your own function libraries.

Error messages given by the compiler and assembler are informative, but the same cannot be said of the linker. This merely outputs "undefined symbols" when it comes across an unresolved reference, necessitating close examination of the optional linker listing file, which can be rather large.

A typical program

This is part of a program which emulates a (very) dumb terminal, which illustrates some features of QC.

```
#include <stdio.h>
#define ESCAPE 27
int *chan, fd;
main ()
{
    int c;
    baud(300);
    chan = fopen("ser2er", "w");
    fd = *chan;
    if (fd == 0)
        puts("Serial I/O open error");
    exit(0);
}
while (1)
{
    c = serin();
    if (c != 0)
    {
        c = c & 127;
        putchar(c);
        fflush(std out);
    }
    c = poll(0);
    if (c != 0)
    {
        if (c == ESCAPE) exit(0);
        serout(c);
    }
}
serout(c)
int c;
{
    int regptr[8];
    regptr[0] = 5;
    regptr[1] = c & 127;
    regptr[3] = -1;
    regptr[4] = fd;
    trap3(regptr);
}
serin()
{
    int regptr[8];
    regptr[0] = 0;
    regptr[3] = 0;
    regptr[4] = fd;
    trap3(regptr);
    if (regptr[0] < 0) return(0);
    regptr[0] = 1;
    regptr[1] = 0;
    regptr[3] = -1;
    regptr[4] = fd;
    trap3(regptr);
    return(regptr[1]);
}
```

Verdict

QC lacks some of the features of a full C compiler, but it can be used for serious work and is ideal for learning the language. It makes excellent use of the QL's unique features. ■

REPORT CARD: 1 TO 5

Features	●●●●
Documentation	●●●●
Performance	●●●●
Overall value	●●●●

Name QC compiler Price £59.99 Application Language compiler Supplier GST Computer Systems, 91 High Street, Longstanton, Cambridge CB4 5BS.

TURBO CHARGER

With Z80 card plugged in, David Janda savours the pace — and the price — of the Turbo Pascal compiler version 2.0

```

1,3 : integer;
write : text;

procedure setmode(var m : byte);
begin
  write(chr(22),chr(m));
end;

procedure plot (var m1 : byte; m2 : integer; m3 : integer);
begin
  write(chr(25));
  write(chr(m1),chr(m2),chr(m3));
  write(chr(25),chr(m1),chr(m2));
end;

begin
  assign(infile,'TV.MOI');
  read(infile);
  k := 0; m := 0;
  while k < 255 do
    read(infile,k);
    m := m + k;
    plot(m,k,k);
  end;
  read(infile);
  m := 0;
  while m < 255 do
    read(infile,m);
    k := 0;
    while k < 255 do
      plot(m,k,k);
    end;
  end;
end.

```

```

Support drive: A
Host file:
Main file:
Edit Compile Run Save
Allocate Dir Build compiler Options
Text: 8 bytes (8000-8000)
Proc: 255 bytes (8000-1000)

```

Fast acting relief — Turbo Pascal shows what it's made of.

Just two months after unwrapping a copy of *Turbo Pascal* I can see why it received such a good press in the U.S. It's fast, packed with features and very cheap.

The package, available for micros running CP/M-80 and MS/PCDOS, lets you edit, run and fine-tune programs which can then be run stand-alone, ie without the compiler in main memory. At £60 you might think there's a catch, but — take it from me — there isn't.

I ran version 2.0 on a BBC Model B fitted with the Torch Z80 card. There is a version for the Acorn Z80 second processor, so specify which Z80 card you've got when ordering.

Features

Entering 'TURBO' at the keyboard invokes a menu with several options. From this command level it is possible to edit, run, compile, save and load to disk. On-screen information includes the name of the logged-on disk and byte counts for text held in memory, as well as memory remaining.

Choosing 'O' from the menu displays some compiler options, which allow you to compile to memory which is the default, or to disk in the form of a '.COM' file. Sub-programs are easy to manipulate, and the 'H' option saves program code to disk without the Pascal library. This is used when you have a main file

(.COM) that calls sub-programs with the extension '.CHN'.

Turbo Pascal has numerous extensions, including absolute address variables; bit/byte manipulation; direct access to memory and data ports; dynamic strings; in-line machine code generation; program chaining with common variables; type conversion function and much more.

A string type is one of the extensions to standard Pascal. A string can vary in length, but it is necessary to declare its maximum length when defined. A number of predefined procedures and functions to manipulate strings are provided.

File handling is also enhanced — you simply assign a file name to a variable. Random access is catered for and, as with strings, a number of procedures and functions are available for file handling.

The overlay system is among the best of all these facilities. This feature allows you to create programs that would not normally fit into memory at the same time. Instead, segments are loaded into RAM at run-time in the same area of memory. Overlays may be nested, but as they occupy the same area in memory they cannot call other overlays or be

Documentation

The reference manual is excellent. The 300-odd pages contain chapters cover-

ing the Turbo implementation, editor, file handling and so on. It looks a little daunting at first, but this is mainly because versions for all the operating systems are covered.

The manual can be treated as a reference work and, finding your way round is simplified with 12 pages of contents. The variety of typefaces proved to be a great benefit and, all in all, the manual was even pleasant to read.

Installation

I backed up the master disk and ran the terminal configuration program. There are 25 terminal types pre-listed and I was glad to see one for the Torch. Existing terminal types can be modified and, if your terminal is not listed, a series of questions allow you to create a file with your terminal's characteristics.

The configurator also allows the user to customise the editor commands to their own liking. Once done, the file with the terminal characteristics is automatically saved to disk.

IBM owners may be interested to know that *Turbo Pascal* supports colour and graphics for 80x25 or 40x25 text screens.

In use

Any *Wordstar* user will have no problems adapting to the sophisticated screen editor provided. All the common Ctrl sequences are used, as well as some new ones. *Wordstar* fanatics will be glad to learn that *Turbo Pascal* accepts source produced with no problems.

Turbo Pascal is fast — exceptionally fast. This applies not only to execution times for object code, but the whole compilation process too.

I found the additions to standard Pascal far outweighed the omissions. A number of Pascal programmers I have spoken to agree.

As far as faults are concerned I really don't have any to report; it's that good.

Verdict

Great software, good value for money — get it. ■

REPORT CARD: 1 TO 5

Features	●●●●●
Documentation	●●●●●
Performance	●●●●●
Overall value	●●●●●

Name Turbo Pascal V2.0 Systems CP/M 80/86, MSDOS, PCDOS Availability BBC and Torch versions, available from Altor Computer Software, Unit 11a, The Anderson Centre, Glasgow G2 7PH. Tel: 041-226 4211 (versions for other machines can be obtained at selected dealers) Price £63.19 (inc VAT & P&P) User group Turbo Pascal User Group, c/o Dr J Maher, School of Chemistry, University of Bristol.

Amstrad

Amstrad games: Codename MAT, Foot-Ball Manager, Fruit Machine, Harrier Attack, Manic Miner, Roland Cave, Star, Star Commander, £5 each. Tel: 0625-528036 after 6pm.

Amstrad, Codename MAT, Fr & Bert, Fruity Frank, Ghoul, Pajamas, Smokey, Football Manager, Punchy, 3D Invaders, Harrier Attack, Roland On Ropes, sell 24 each. Tel: 051-924-2503.

Amstrad HiSoft Depac incorporates, editor, assembler, disassembler, monitor. Excellent condition £15. Codename MAT, Master Chess, hardly used £4 each. Tel: 041-632-2020. Bernard.

Amstrad software £3 each. Contact James on Medway 0634-250644 (after 4pm).

Amstrad printer, listing paper, assembler, processor assembler, disassembler firmware specification Home Budget. £170 the lot. Tel: 090-455-325.

Amstrad CPC 464 system, modulator, books, joystick, cover, clubs, Basic Tutor etc. Lot £400 - £500 software. £289 the lot. Local enquiries welcome (Glasgow) Tel: 041-645-0037 after 6pm.

Amstrad software: Harrier Attack, Alien Breakin', Codename MAT, Hunter Killer, Flight Path, £4 each. Tel: 01-881-4697, ask for Lam.

Amstrad software for sale, games and utilities or swap. Write: Stephen Turner, 29 Draper Close, Belvedere, Kent DA17 5BY.

Atari

Atari 400-800 1XL cartridges to swap. Star Raiders or Robotron For Defender carrier, or anything else that's good. Tel: Poole 686423.

Atari software for sale. Large range of English software, Thorn EMI, US, Gold etc. All cassettes. Tel: 02556-71986 after 6pm, with your offers.

Atari software disk and cassette, sell or swap. Tel: 0904-791067 after 6pm.

Acorn

BBC Games. Originals, over 14 to be sold. No reasonable offers refused. All under half price. Tel: David 01-722 7885 after 6pm.

BBC Solidak 128K sideways RAM with manual and utility disks £90. Tel: 0256 472264 after 7pm or weekends.

BBC BI Micro complete with tape recorder etc. Masses of software. Worth over £750. Will accept £500. No offers. Tel: 01-803 9283 after 6pm.

BBC Games, Manic Miner, Fortress, Cycles, Rocket Road, £5 each. DD Denis, Gunsmoke, Olympics, Wimpy, £4 each. Chuckie upgrade £2. Tel: Potters Bar 0707 90336.

Acorn Electron and plus 3 disk drive. All new, lots of software, cost £550, sell for £275 only. Tel: 051-722 5962 6-7pm please.

Original BBC software for sale, Jetpac, Killies, Gorilla, Cylon Attack, etc. Bargains £3 to £1. Send for list W K Tam, 127 Brodie Ave, Mossley Hill, Liverpool L18 4RG.

PCN Billboard

Sell BBC Overdrive Ghoul 3D G Prix Aviator, 747, Bandits at 3, Eldorado Gold, Logo II joystick prog. 3D-Deep Space Super Strips, Sphinx ad. Will swap. Also Graphics ROM. Reasonable prices. Tel: 031-449-2277 (Craig).

Swap BBC disk software approx. 200. Send list to Steven Chan, 16 Lawrence St, Partick, Glasgow G11 5HQ. Tel: 041-334-2168 after 6pm. All letters answered.

Wanted BBC Model B in good condition for around £200 or with disk drives! for signs £350 only. Tel: Coventry 0203-303784.

Penguin study software for BBC and Electron. Five tapes. Shakespeare including Macbeth, 12th night, Henry IV (1), Julius Caesar, Merchant of Venice. Cost £90. All five £5 incl postage. Tel: 0304-484-271.

ISO Pascal, view 2.1, for the BBC cost £89. £56, sell for £50. £40 complete with ROMS, manuals etc. Tel: 0698-884499.

BBC £2X 400K disks 9in mono monitor. All cased with detachable keyboard. £70 only. Might split. Tel: 01-482 1699 after 6pm.

BBC Model BSL20 with Acorn joysticks, Stack light pen, manual, leads, tape recorder and games (Pratt Dambuster etc). £285. Tel: Bath 21531.

Commodore

CBM64 software, swap or sell. Have access to 700 programs. Many American. Preferably disk. Send list to: Tomas Carlsen, Box 4692, 7160 Hedemera, Sweden.

Commodore 64 version of Activision's Ghostbusters. Unwanted present, sell for £10. D. Pettigrew, 27 Spier Road, Lachwinch, Strathclyde, Tel: Lochwinnoch 843313.

CBM 64, C2N, printer, plotter, Simons Basic cartridge, two games. Sell for £300. All brand new, boxed and under guarantee. No offers. Phone Crantock 830789.

CBM 64 software to swap. Cassette only. Send list to: Jorge Leite, Ostergardsg. 10, S-212 22, Malmo, Sweden.

CBM 64 £95 disk, Easyfile, Easycript, Practicle, £20 each. £50 the lot. Beach Head, Slinky, Alice, £5 each. £10 the lot. Phone Knowle 79395.

CBM-64 disk based business software worth over £600, for sale (£150) or swap for equivalent value software. Write Karin Vedvik, Kronstadveien 44, 5000 Bergen, Norway.

Pet 3032, toolkit, plus Microline 90 printer and addressable interface. Some software and C2N recorder included. £370 only. Tel: 01-653 2648.

CBM 64 games to swap over 300 titles available. (Best deal) Slinky £5, Boulder Dash £5, Beanydroids £5, Booty £1.50. Tel: 0255-513161 after 5pm.

Commodore 64 + data cassette, joystick, books, over £250 original software including many arcade + adventures all under £290. Tel: Titchfield (Hants) 43986.

Newbrain

Newbrain model AD, transformer, all leads, boxed, never used. Only £135. Tel: Laurence 0480-21488.

Oric

Wanted: Oric wordprocessing software and/or printer lead for 48K Oric 1. Tel: 0200-25316.

48K Oric 1, excellent condition, £80 of software including Trouble In Store, Chess and Ultra. Cost £220, sell £70. Tel: 0505 843313.

Oric 1 48K 290 170 software. Includes Hobbit Xenon Probe 3, Lords Of Time, Hunchback, Tverga King, Dragon Plus chess. Tel: John on Kidderminster 0562-742293.

Oric Atmos 48K, compatible recorder, reset switch, joystick port. Software: Basicline, Xenon, Assault. Cost £240, sell for £125. Tel: 0596-74803 (Christoph).

Swap Atmos software, including MARC, Zorgons, Ultra, Boss, Loki, Chopper Commander, Scuba, Harrier, Defence Force etc. Tel: Graeme on Oyrington 75008.

Sinclair

Alphacore 32 ZX style printer. One year old, perfect condition, with full roll of paper. £45 including P&P. Tel: 0742 361178 (Jae).

ZX Spectrum 48K and software collection including Ghostbusters, Chiller, Blockbusters etc. Sell for £100, no offers.

Sinclair wanted: Spectrum 48K, £90 offered. Tel: Dave 051-424 5553 day time.

48K Spectrum DK Tronics keyboard, Kempston interface Kempston joystick, Radio data recorder £50 software worth £275. Sell for £175. Tel: Hornchurch 72626 after 5pm.

48K Spectrum, FX electronics keyboard, cassette recorder, interface 2 + joystick, original software (£150) + books. Worth £420+. Want £220. Tel: 07073-26308, and leave phone number. May split.

Sinclair flat screen pocket T.V. Boxed with earphone, case, month old battery unused. Quick sale, only £69 (R.R.P. £99.95). Tel: Glasgow 649-0037 after 5pm.

Spectrum Games Jasper Strangelov, Pajamas, Kentilla, Factory break out, and many others. Halfprice: write Jack Lockery 44, Hyde Place, Aylesham, Canterbury, Kent. CY3 3AL.

Spectrum software for sale or exchange, including Knight Lore and Zeus assembler. Especially wanted: White Lightning or Machine Lightning. Tel: 0872 78520.

ZX printer for sale. Needs slight attention. Yours for £10 including P&P. Write to: B Shah (saxco), 84 Spring Grove Crescent, Hounslow London TW3 4DB.

ZX interface II, new, still in packing. Unwanted gift. £15. Tel: 051-652-0038.

Spectrum 48K, printer, Quickshot II joystick, programmable interface and over £600 of software, including Knight Lore, Underworld, White Lightning. Boxed with full instructions. Bargain £220. Brighton 32505.

Wanted Spectrum Crazed or Loco Profile, Spectrum 48K, keyboard, good condition. Pay up to £30. Tel: after 7pm 01-806 3523.

Spectrum games for sale. 16K & 48K. Spectrum penpals also wanted to exchange software, etc. Tel: Stafford 47359. Write 14 Greenway, Littleworth, Stafford, Staffs, ST36 3TT.

Spectrum 48K + tape recorder, s/w including Dark Star, Android 2 £90. Tel: Littlehampton 713763.

48K Spectrum + programmable joystick Quickshot II + Interface I with 1 Microdrive + tape deck + £200 of software and magazines £215 only. Tel: Blackpool 02531 403994.

Spectrum software - 30 originals cost £165. £500 for £125 the lot. Tel: 0954-81537 after 4pm, for list. Ask for Russell.

ZX Printer £20. RAM turbo interface £165. Lancing 764299. Will post on clearance of other goods.

16K Spectrum original titles including Horace and the Spiders and Horace Goes Skiing. Lots of magazines and software £55. Tel: Bedford 0234 59170 after 4pm.

Spectrum DK Tronics keyboard £30, DK Tronics lightpen £15, Microcl Use and Learn £5, Protek Hunter Killer £4, CRI Fifth £5. Tel: 01-533 2529 after 6pm.

Wanted Spectrum 48K issue 4, joystick and other peripherals considered. Tel: 01-379 6835.

48K Spectrum + games, Currah speech, joystick + interface, tape, boxed. Worth £450 sell £300 for CBM64 L2P, £320 for plotter.

Exchange for ZX81 16K if possible 20 approx LPS Electron pin converter exposure meter sunlamp telescope six 3.5 inch video cassettes. Phone 0408-21870 even days.

Spectrum (mint condition) cassette recorder and over 50 programs. Will sell the lot for £120. Tel: 0268-623063.

Spectrum DK Tronics keyboard, Kempston interface, sound box. Over £210 worth of software top titles. Cassette recorder, mag. Worth £450 sell £250.

48K Spectrum Interface 2 1 Microdrives cartridges ZXprinter data cassette recorder 14in Decas colour television, 100 used tapes £400. Tel: 051-678 0435.

Wanted Spectrum penpal over 14 years old. To exchange tape, write to: Tony Carlisle, 258 Church Lane, Epsom, Surrey, Surrey SE24 4EB.

Spectrum 48K software for sale. All originals, half list price, including Manic Miner, Sabre Wulf, Cyrus, Sens, etc. Tel: Holywell 3532 71444.

Swap computer keyboard for Spectrum, unused duplicated gift. £45. Tel: Malvern 06845 68099 after 6pm.

Billboard Buy & Sell Form

Free forever — from now on you can advertise your second-hand equipment and (almost) anything else you want for free in PCN. To place your Billboard ad, fill in the form on the left with a maximum of 24 words. Send the completed form to:

Billboard, Personal Computer News, 62 Oxford Street, London W1A 2NG.

Note that we cannot guarantee that your ad appears in any specific issue, and that we cannot accept ads from commercial organisations of any sort.

Your name.....

Address:.....

Telephone:.....

MICROSHOP

Rates: £12 per single column cm. Minimum size 3cm. Series discount available. Also spot colour available. **Mechanical Data:** Column width, 1 column 57mm. 2 columns 118mm. 3 columns 179mm. **Copy Dates:** 10 days prior to publication.

Contact: Jacqui Edmiston on 636 6890

SINCLAIR COMPUTER REPAIRS

Fast, reliable repairs by experienced engineers, having serviced Sinclair computers since the introduction of the ZX80. Our price is inclusive of all parts, labour, postage and VAT irrespective of fault. *No hidden charges. *While-you-wait service available. Spectrum £18.75. ZX81 £11.50. 16K Ram £9.95. Call or send with cheque or P.O. to: T.V. Services of Cambridge Ltd, French's Road, Cambridge CB4 3NP. Tel (0223) 311371.

SPECTRUM 'XK' MEMORY EXPANSION SYSTEM

XK System Kit £15.95 inc. VAT
XK System Factory fitted £29.95 inc. VAT



BINARY BANANA

AMSTRAD 464

MAGIC PEN By best, probably the ultimate APT utility. Saves tape — supplies with raster audio, or fast. £4.95. **SYNCHRO** Add Design your own lettering, copy pictures from anywhere or original. Save to tape. **DISK BOLLERS** By best, rapid with file. **PAINT** Add the 16 function. Fast or alternative line, plus program subroutines supplied. £3.95. **MOVE IT** Move the files produced around + screen dump facility. A collection of integrated graphics functions and subroutines. '85' options plus MAGIC PEN, plus SYNCHRO, 464, plus DISK BOLLERS, plus PAINT 464, plus MOVE IT with handbook. The complete collection. £9.95.

All price inc. p&p. Export enquiries welcome.

Binary Banana c/o Pitco Ltd, Park Crescent, Peterborough PE1 4BG.

SPECIAL OFFER

Datalife

disks at unbelievable prices!!!

15% OFF already LOW prices until 30th June 1985

Write or phone NOW for Offer details and Special Order form.



C&S
CONWAY COMPUTER SERVICES LTD
30 CONWAY RD - LONDON - N15 3BB
Tel (01) 850-1796 (0) 1 850-1007
Data Processing Supplies & Peripherals

THE NEW 'FOREST' RANGE OF CABINETS

A new range of computer cabinets, made by our own craftsmen, designed especially for your Home Computer System. Send S.A.E. for leaflet and price list to:

NEW FOREST CABINET MAKERS LTD
85 DERBY ROAD, EASTLEIGH
HANTS SO5 5GW

Ref. NW.4

SEX PROBLEMS?

Solve all your PS232 problems with our universal cable. Plug and socket at both ends of the one metre cable.

GENDER CHANGES

M — M = £16.00, M — F = £17.00, F — F = £16.00
All are 3' long

See our range of computer printer cables, communications cables, custom cables, interfaces, data-switches

WATCH THIS SPACE FOR FURTHER DETAILS OR Ring our 24hr answering service on (0223) 322394



TYPED LTD, 30 GAMPKIN ROAD, CAMBRIDGE CB4 2NU
DEALER ENQUIRIES WELCOME



SOFTWARE UP FOR GRABS

100's of TITLES

UP TO 50% OFF!

Manufacturers' Recommended Retail Prices

Many of the top cassette based titles for all the popular makes of computers are on offer with a full money back guarantee if not highly delighted.



Please rush me your FREE descriptive software catalogue
Make of Computer

Name _____
Address _____

PHILIPS & PHILIPS COLTD

Scriptomatic House, Torrington Park,
Finchley, London N12 9DU
Telephone 01 446 5648

AMSTRAD CPC 464 UTILITY PROGRAMS FROM PRIDE

Always the first and the best software. Offering more features and better value for money than other similar programs available. We also offer a fast reliable and friendly order service.

- SYNCHRO** Convert your programs to load in four times faster
• Comments available from Easy
• Choice of four loading speeds, 1000 to 4000 baud
• Comprehensive header reader
• Load and test protected basic programs
List your 'Welcome' tape. Cassette £6.95 inc P&P

***** NEW *****

- TRANSFER** Transfer your programs onto Amstrad Disc System.
• Fully transfer cassette based software to disk
• Add metadata if necessary
• Safe to run auto media
• Easy to manage programs
• Comprehensive header reader
Cassette £7.50 inc P&P

SPECIAL OFFER WORTH £3.95

Buy both and get a cassette containing a real time digital alarm clock FREE including to P&P (While stock last)

Europe — add £1.00 per title, rest of world — add £1.50 per title.

PRIDE UTILITIES LTD (PCN)

7 CHALTON HEIGHTS,
CHALTON, LUTON, BEDS LU4 9UF
Customer enquiries. Tel: 0582-411686 (9-10am)

COMPLETE SOLDERING KIT

(For the Hobbyist/Electronics Engineer)



24 hr answering for credit card orders
Tel: 0244 536699

FOR LESS THAN £11!!

Comprises of:

- Antex Miniature 15W 240v AC Soldering Iron
- Antex Iron Stand c/w Storage
- Desolder Pump
- 2 ml Solder
- Desolder Braid
- 13A Plug

ONLY £10.95
Please add 80p P & P
+ 15% VAT



Name _____
Address _____

Postcode _____
PO/Charge enclosed for £13.60 (in P.P.)
OR Debit my Access A/C No. _____
OR Telephone through your Access Order

Signature _____
FREE COMPONENT CATALOGUE ☐ TICK

SYSTEMS ELECTRONIQUE
PO BOX 105

26 Engineer Park, Sandycroft, Dossie,
Chyrls CH5 2DU. Tel: (0244) 536700.

PROGRAMMERS

Urgently required for CONVERSION WORK from CBM64 onto AMSTRAD.

Must be HIGH QUALITY and conversant with MACHINE CODE. Write, giving full details, plus any samples of your work to:—

SEVERN SOFTWARE
15, HIGH STREET
LYDNEY
GLOS
GL15 5DP

We are also very interested in evaluating software for **SPECTRUM/CBM64/AMSTRAD**

MICROSHOP

HEMEL COMPUTER CENTRE LTD.

For fast reliable repair service, send your 16/48K Spectrum computer to us. We will repair and return for £20 + £1.00 p.p.s.

Also BBC, Commodore, Atari and Dragon service. Three months warranty on all repairs.

Hemel Computer Centre Ltd.
52 High Street,
Hemel Hempstead,
Herts HP1 3AF.
Tel: 0442 212436

COMPUTER REPAIRS IN SOUTHERN

SPECTRUM, BBC, ELECTRON
C16M4, VIC 20

MINNIE MICRO ELECTRONICS

12 Eastern Esplanade, Southend
Tel: 0702 62033 615809
Open 7 days a Week

LYNX

Over 50 arcade games, adventures and utility programs, including Software Projects' **JET SET WILLY**

Now on 48K/96K/128K

S.A.E. for list to:

Phoenix Software
Unit 70, Marsh Lane Site, Marsh Lane,
Frodsham, Cheshire WA6 7BX.
Phone: 0928 35525

CHILTERN COMPUTER CENTRE

Fast, reliable repair service

Spectrum £10.00
We also repair BBC, C16M4, VIC 20, Amstrad, Citi-Dragon and others, plus printers and disk drives.

PLEASE RING FOR DETAILS.

Complete warranty on all repairs. Send computer with details of fault and cheque to:

NEWCROWN COMPUTERS LTD (PCN)

705 Dallow Road, Luton, Beds. LU1 1LY
Tel: (0582) 455664
Overseas enquiries welcome

- MAXAM - FOR THE AMSTRAD

THE COMPLETE CODE DEVELOPMENT
SYSTEM FOR THE AMSTRAD CPC 464.
★ ASSEMBLER ★ MONITOR ★ TEXT EDITOR ★

The Amstrad system is the best editor/ assembler to be released for the AMSTRAD so far. - PCN 100.
"For flexibility and ease of use, AMROR is easily the best I have seen" Pop. C. Willy Vol 4 No 8
"assemblers... look no further. AMROR is the best I have seen... for the easiest to use and most friendly I have come across"

Computing with the Amstrad, April 1985

Now available in ALL THREE formats

Tape (only) £13.50

Disc £20.90

16K ROM + multi-function adapter \$59.90

(All prices include VAT, p & p)

Cheques/P.O.s to AMROR Ltd Dept PCN
PO Box 619, London SE25 6JL

Overseas: no extra - trade enquiries welcome

Make MAXIMUM use of your Amstrad

Hotline 07 463 6485

Telex 07 832 2174

WHY PAY MORE

CUMANA DS-00 DISCS IN THEIR OWN LIBRARY BOX

Cumana discs are top quality DS-00 5 1/4 inch Cumana's own packaging. They include a plastic flip-top library box. These discs are suitable for Amstrad's disc drive including single sided ones.

Prices include delivery.

1-5 boxes DS-00 5 1/4 inch (17.50 + VAT)

6-10 boxes DS-00 5 1/4 inch (17.50 + VAT)

11-15 boxes DS-00 5 1/4 inch (17.50 + VAT)

16-20 boxes DS-00 5 1/4 inch (17.50 + VAT)

21-25 boxes DS-00 5 1/4 inch (17.50 + VAT)

26-30 boxes DS-00 5 1/4 inch (17.50 + VAT)

31-35 boxes DS-00 5 1/4 inch (17.50 + VAT)

36-40 boxes DS-00 5 1/4 inch (17.50 + VAT)

41-45 boxes DS-00 5 1/4 inch (17.50 + VAT)

46-50 boxes DS-00 5 1/4 inch (17.50 + VAT)

51-55 boxes DS-00 5 1/4 inch (17.50 + VAT)

56-60 boxes DS-00 5 1/4 inch (17.50 + VAT)

61-65 boxes DS-00 5 1/4 inch (17.50 + VAT)

66-70 boxes DS-00 5 1/4 inch (17.50 + VAT)

71-75 boxes DS-00 5 1/4 inch (17.50 + VAT)

76-80 boxes DS-00 5 1/4 inch (17.50 + VAT)

81-85 boxes DS-00 5 1/4 inch (17.50 + VAT)

86-90 boxes DS-00 5 1/4 inch (17.50 + VAT)

91-95 boxes DS-00 5 1/4 inch (17.50 + VAT)

96-100 boxes DS-00 5 1/4 inch (17.50 + VAT)

101-105 boxes DS-00 5 1/4 inch (17.50 + VAT)

106-110 boxes DS-00 5 1/4 inch (17.50 + VAT)

111-115 boxes DS-00 5 1/4 inch (17.50 + VAT)

116-120 boxes DS-00 5 1/4 inch (17.50 + VAT)

121-125 boxes DS-00 5 1/4 inch (17.50 + VAT)

126-130 boxes DS-00 5 1/4 inch (17.50 + VAT)

131-135 boxes DS-00 5 1/4 inch (17.50 + VAT)

136-140 boxes DS-00 5 1/4 inch (17.50 + VAT)

141-145 boxes DS-00 5 1/4 inch (17.50 + VAT)

146-150 boxes DS-00 5 1/4 inch (17.50 + VAT)

151-155 boxes DS-00 5 1/4 inch (17.50 + VAT)

156-160 boxes DS-00 5 1/4 inch (17.50 + VAT)

161-165 boxes DS-00 5 1/4 inch (17.50 + VAT)

166-170 boxes DS-00 5 1/4 inch (17.50 + VAT)

171-175 boxes DS-00 5 1/4 inch (17.50 + VAT)

176-180 boxes DS-00 5 1/4 inch (17.50 + VAT)

181-185 boxes DS-00 5 1/4 inch (17.50 + VAT)

186-190 boxes DS-00 5 1/4 inch (17.50 + VAT)

191-195 boxes DS-00 5 1/4 inch (17.50 + VAT)

196-200 boxes DS-00 5 1/4 inch (17.50 + VAT)

201-205 boxes DS-00 5 1/4 inch (17.50 + VAT)

206-210 boxes DS-00 5 1/4 inch (17.50 + VAT)

211-215 boxes DS-00 5 1/4 inch (17.50 + VAT)

216-220 boxes DS-00 5 1/4 inch (17.50 + VAT)

221-225 boxes DS-00 5 1/4 inch (17.50 + VAT)

226-230 boxes DS-00 5 1/4 inch (17.50 + VAT)

231-235 boxes DS-00 5 1/4 inch (17.50 + VAT)

236-240 boxes DS-00 5 1/4 inch (17.50 + VAT)

241-245 boxes DS-00 5 1/4 inch (17.50 + VAT)

246-250 boxes DS-00 5 1/4 inch (17.50 + VAT)

251-255 boxes DS-00 5 1/4 inch (17.50 + VAT)

256-260 boxes DS-00 5 1/4 inch (17.50 + VAT)

261-265 boxes DS-00 5 1/4 inch (17.50 + VAT)

266-270 boxes DS-00 5 1/4 inch (17.50 + VAT)

271-275 boxes DS-00 5 1/4 inch (17.50 + VAT)

276-280 boxes DS-00 5 1/4 inch (17.50 + VAT)

281-285 boxes DS-00 5 1/4 inch (17.50 + VAT)

286-290 boxes DS-00 5 1/4 inch (17.50 + VAT)

SOFTWARE CENTRE

EINSTEIN SPECIALISTS

Wordstar professional
Dastar
Reportstar
All three £375
Einstein from £350

52A Bromham Road
Bedford. Tel: 0234 44733

3 Crosskeys St. Neots
Cambridgeshire.
Tel: 0480 72013

Send for details of our user club

WORKBENCH

MODEM LINE TERMINAL UNIT VM 65001

This unit is the line interface for a processor-controlled modem with auto-dial designed to work at 1200 Bps or 1200/1200. Fitted with new plan plus supplied with full CDT diagram and connections.

★ £12.00 ★

SENDZ COMPONENTS

63 Bishopsgate, Shoreditch, Essex EC2A 4BF. Tel: 332992

Q.L.

QL COMPUTER DESK

Throw away those silly little feet from Sinclair! Support your QL at recommended price. Allows full access to MDVs and sockets. Soft rest for wrist. Matching black finish. £12.50 all inclusive by post.

BROOMSPECIALITIES

99 Broomspring Lane, Sheffield S10 2FB. Tel: 0742 737000 (any time)

DATAMANAGEMENT

— leading the way with QL software

- SAUTIL** (£9.00) — Possibly the last word in Basic programming utilities.
- BACKUP** (£8.00) — An independent, fast and reliable backup to protect from fire or disk.
- TERMINAL CHARGER** (£12.50) — A full featured terminal package.
- SEXTRAS** (£8.00) — A comprehensive character generator.
- QLARY** (£12.50) — Many extra features and procedures to add to SuperBasic.
- GLIFFE** (£8.00) — A superbasic diary package.
- DATASOBS** (£10.50) — The QL's graphics is the greatest to date.
- MAILBOSS** (£10.50) — A user definable database in SuperBasic.
- GLIFFE** (£12.50) — A special version of DATASOBS for handling these mailing lists.
- ANIMAL** (£12.50) — If you ever needed to modify a file this is your program.
- PROJECT** (£10.50) — A game of Think of an Animal for Archive — very instructive.
- FM** (£12.50) — A fast, pretty 2D presentation of various equations.
- FILE** (£12.50) — File management package for Disk/Modv. Fast and effective file control.

All 100% m language, multi-tasking unless SuperBasic is stated. Prices shown include VAT & P.P. but add £2.99 per order for a m/c cartridge.

Cheques or P.O.s to DataManagement: 12 Larch Way, Harby, YORK, YO3 1RU or telephone (0446) 783551 (anytime) for our latest list, which is growing daily.

Have you written any good QL software. We are looking for the best software and are prepared to pay the best royalties.

Our latest list and newsletter explains in much more detail. Write or phone now for your copy. We also have a number of 'time-bomb' shares are distributed with orders. However, we send a share and a large SAE and we will send copies with your list and newsletter.

WD Software

FOR THE QL

- WD Utilities (3rd ed)** (Issue 65-90) — PRINT 60 file Directory or view it on one screen, one-key L.O.A.D. COPY or PRINT 50 files with one key (allows for namesakes). Multiple FORMATTING to prevent corruption by stretching of tape. TOOLKIT to give added, numbered modules in programs. PRUNE old files to release space (one key) (DELETE a file). Full instructions in QL file. Use up to 6 EXTRA MICRODRIVES (add on your Spectrum ones!)
- WD Utilities for CMT Discs** (Issue 64) — 100 file capacity, for CMT/Computatec disc system WITH all microdrive facilities.
- WD MicroTape** (Issue 64) — Specification as for Spectrum but no speech (hurry up, Cumana!)
- Ref QL (1st ed)** (Issue 63) — 100+ useful QL references in an ARCHIVE file.
- For the 48K Spectrum** (Issue 64) — From absolute beginner to beyond RYA and Amateur Radio receiving. Adjust pitch. Set speed to your test level (4-15 wpm). Learn from single characters, via groups with wide spaces to random sentences, decrease spacing to normal. Write down what you hear, then CHECK on Screen or Printer or LISTEN to phonetic TALKBACK from Cumana MicroSpeech if fitted. Also own message, random figures, letters or mixed.
- Tridewind** (Issue 64) — Selling/trading strategy game with graphic surprises.
- Jeany Quest** (Issue 64) — Text adventure with Bergarac and the Dragon.
- Prices** — Spectrum Cassettes — base price only — QL or Spectrum Microdrives — £2 cartridge plus base price £5.99. Routines 12 plus base (1000s for Spectrum). Two or more programs on one medium — pay medium + base. E. G. WD Utilities and Ref QL for £8.50, but IMPOSSIBLE to mix QL and Spectrum programs on one medium. Send QL cartridge and 25p to update earlier editions.
- WD Software, Biltop, St Mary, Jersey** — Tel: (0534) 81392

Computer Repair Centre

Have you got problems with your computer?

Then call us for:

BBC, Commodore, Spectrum, Dragon

Mail order or call in

Enfield Communications

135 High Street, Ponders End, Middx.
Tel: 01-805 7772

COMMODORE C16 CASSETTE HIRE

AT LAST! All the top games available for the C16 can now be hired from:

DABSOFT

LIBRARY CONSTANTLY UPDATED. AS NEW GAMES I BECOME AVAILABLE. MEMBERSHIP FEE OF £5.00 INCLUDES 12 FREE RENTALS.

ONE PRICE FOR BOTH GAMES:

CHARGE OF £1.25 inc p&p ANYWAY

For complete membership at your game or postal order to:

DABSOFT
39 Guilford Road
Lewisham SE13 3FG

Microsoft Word is a pretty powerful word processor, but has been dogged by a reputation for intractability. Microsoft has therefore revised it a couple of times, and sets its PR people to phoning up journalists telling them 'the new version's much easier to use, you know.'

The latest (the third, we think) version is called New Word 2, and is currently being advertised with the aid of a young lady in particular disc-slipping posture (see right). If you haven't seen it you can get the flavour of it by hooking your toes over the top of a door-frame and hanging upside down. Now touch your toes.

But there are even more gymnastics in the text. 'The manual has been completely rewritten,' it burles. 'Word operates even faster now.'

So it looks like, after the odd false start, Microsoft could have got it right this time. But the company's got at least one thing wrong. 'New Word 2,' says the ad. 'Right. First Time.'

Meanwhile in Japan Fujitsu is looking a bit more like the Megagalactic Computer Corporation than it used to. The company has just launched the



Microsoft Word — disc-slipping postures with version three.

Facom VP-400, which is the biggest computer in the history of the universe.

It is capable of more than a billion calculations per second, which is the equivalent of 500 million Albert Einsteins, and it runs at more than twice the speed of the previous biggest computer in the history of the universe (this itself had special ultra-fast electrons which moved at speeds equivalent to 3 million Sebastian Coes).

Of course the Fujitsu is pricey, costing £250,000 a month to rent. This in itself is equivalent to rearming Belgium's air force three times a year.

Warning — readers should note that we've made all the above statistics up, but the computer is still incredibly fast and expensive.

Back in the land of lesser quantum leaps, *QLUB News*, the official magazine for lonely

QL users, has just published the winners of its 'What does QL stand for and will you write a limerick about the QL while you're at it' competition. The entries, where they're intelligible, are almost uniformly sycophantic — understandable, considering the fact that Clive-fearing judges chose Quintessentially Lightfingered as the winner.

PCN liked Quarry Lust, but where was Queer Looking and Quiche Lorraine?

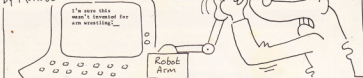
Sinclair itself is currently embattled, with journalists claiming huge share movements are taking place. Sinclair Research says 50 £10 shares isn't that huge compared to the total number.

Watch out Nicaragua. The Grid Compass, already loved by the US military as the sort of micro the best tank squadrons have, has just had a version approved by the US National Security Agency for transmission of classified data. Agencies and military services which send personnel into the field (whose field? — writes our paranoia correspondent) or are involved in tactical C3I (we think that's something to do with confidential communications) applications should welcome the advent of a rugged portable computer with secure communications.

So now when the CIA parachutes someone into the jungle somewhere he can phone home to his family and friends and be confident that his communications are impervious to Soviet satellite snoopers. Phone home? Hey, wait a minute . . .

PAL2000

by Mollusc



PCN DATELINES

Event	Dates	Venue	Organisers
Apple 85	May 9-11	Novotel Complex, Hammersmith, London	Pamela Goodwin, 061-480 7863
Electron and BBC Micro User Show	May 9-12	New Horticultural Hall, London	Database Publications, 061-456 8383
Micro City 85	May 14-16	Bristol Exhibition Complex	Argus Specialist Exhibs 04427-73291
Hong Kong Comp Conf & Exhbn	May 21-24	Hong Kong	Trend Exhbn, 1203 Wah Kwong Building, 60 Hennessy Road, Hong Kong
DEXPO South	May 26-29	New Orleans, USA	Reed Exhibs 01-643 8040
Compu Europe	May 7-9	Brussels	CGP 01-528 9256
Nat Software & Comp Exhbn	May 29-31	Brisbane, Australia	Riddell Exhbn Promotions, Riddell House, 137/141 Burnley Street, Richmond, Victoria 3121, Australia
Business Computer Show	June 4-6	Earls Court, London	Reed Exhibs 01-643 8040
Computer Peripherals & Equipment Trade Exhbn (COMPETA)	June 4-6	Kensington Exhbn Centre, London	Network Events 0280-815226
Software Show	June 4-6	Earls Court, London	Reed Exhibs 01-643 8040
Commodore Computer Show	June 7-9	Novotel, London	D&CS Marketing 01-630 6071
European Unix User Show	June 12-14	Olympia, London	EMAP Exhibs 01-837 3699
National Computer Conf and Exhbn	July 15-18	Chicago	American Federation of Information Processing Societies, 1815 N Lynn Street, Arlington VA 22209

EDITORIAL: Editor Peter Worlock Deputy editor David Guest Production editor Lauraine Turner Editor's assistant Karen Isaac Features editor John Lettice Software editor Bryan Skinner Peripherals editor Kenn Garrock Hardware editor Stuart Cooke Art editor Dave Alexander

PUBLISHER: Tony Harris Publishing manager Peter Goldstein
ADVERTISING: Advertisement manager Sarah Barron Assistant advertisement manager Laura Cade Sales executives Phil Benson, Mike Blackman, Jacqui Edmiston, Andrew Flint, Sarah Musgrave, Tony O'Reilly Production Richard Gaffrey Advertisement assistant Andrea Laurence Subscription enquiries Gill Stevens
 address 53 Frith Street London W1A 2HG 01-439 4242 Editorial address 62 Oxford Street London W1A 2HG 01-636 0590 Advertising address 62 Oxford Street London W1A 2HG 01-323 3211 Published by VNU Business Publications, Evelyn House, 62 Oxford Street London W1A 2HG © VNU 1983. No material may be reproduced in whole or in part without written consent from the copyright holders. Photoset by Quikset, 184-186 Old Street, London EC1. Printed by Chase Web Offset, St Austell, Cornwall. Distributed by Seymour Press, 334 Brixton Road, London SW9, 01-733 4444. Registered at the PO as a newspaper

ATARI 600XL ENTERTAINMENT PACK

Great news for games addicts who appreciate high quality graphics and sensational arcade action gameplay. For only £69, you can buy a 10K Atari 600XL Computer with two top arcade ROM cartridge titles and a joystick. These two ROM titles are the famous arcade hit Donkey Kong and another favourite Qix (We only have a limited number of packs with Qix. When these run out, Qix may be substituted for an arcade entertainment cartridge of the same value). The 600XL Entertainment Pack offers real value for money and another way to save £63.96, nearly half the normal RRP of the pack items when purchased individually. Silica Shop have a wide range of ROM cartridges available including arcade favourites such as Asteroids, Centipede, Missile Command, Popeye, Q*bert, Super Raiders, Super Cobra for only \$9.95 each! The 600XL is a programmable home computer with the Basic Programming Language built in and if you later add a 1010 Program Recorder (XLP 1010 - £41), a range of hundreds of cassette programs will become available to you. The Atari 600XL is recommended as a first class games machine.

ATARI PACKS - POWER WITHOUT THE PRICE!



ATARI 600XL ENTERTAINMENT PACK	
16K Atari 600XL	£99.99
Donkey Kong (R)	£14.99
Qix (R)	£9.99
Single CX40 Joystick	£7.99
Total (if purchased separately)	£133.96
Less Discount (saves 48.00)	£85.96
PACKAGE PRICE (XLC 1600)	£69.00

£69

ATARI 600XL AND RECORDER PACK

The 64K 600XL is packaged here with the 1010 Recorder, an economical storage and retrieval unit, a smash hit arcade game and programming aid, all for a package price of only £129 (incl. XLC 1010), a saving of £85.96 over the RRP of the individual items which total £194.96. The game included in this pack is Pole Position. Now on cassette from Atari, Pole Position is an accurate reproduction of Atari's own highly successful arcade driving game which has all the thrills and spills of the grand prix racecars. On the reverse of the cassette is a demonstration program of Atari's amazing sound and graphics capabilities giving an example of the high quality performance of the Atari 600XL. Also included is an invitation to Programming 1 cassette which takes you step by step through the first stages of programming in Atari Basic using Atari's unique soundthrough facility which allows you to record human speech to be played through your TV speaker. All you need is a joystick (ATJ 0400 - £7.80 for Pole Position), to be up and running with this package. The Atari 600XL in this pack comes with a Silica two year guarantee.

ATARI PACKS - POWER WITHOUT THE PRICE!



ATARI 600XL - PROG. RECORDER PACK	
64K Atari 600XL	£129.99
1010 Program Recorder	£34.99
Pole Position - Demo Prog (C)	£9.99
Invitation to Programming 1	£19.99
Total (if purchased separately)	£194.96
Less Discount (saves 65.96)	£129.00
PACKAGE PRICE (XLC 1010)	£129.00

£129

ATARI 600XL AND DISK DRIVE PACK

This pack includes the 64K 600XL with a 1050 Disk Drive for mass storage and speedy information retrieval as well as a brand new adventure game and a powerful home help program, all for only £249 (incl. XLC 1050), a saving of £115.96 over the RRP of the individual items which total £364.96. The first of these programs is The Payoff on disk, a new adventure game which is a fantasy simulation in which you play the leading role. An exciting introduction to adventure programs which are always popular with a demonstration program of Atari's amazing sound and graphics on the reverse. Also included in this pack is Home Filing Manager to help you organise your files. It allows you to catalogue and file details of birthdays, books, your stamp collection or anything else which would normally require you to use filing cards. The instructions for Home Filing Manager are on the reverse of the disk and all the disks which come in this package are in protective paper sleeves. You get an extended two year guarantee on the 600XL and 100 free programs with the disk drive when you buy this package from Silica.

ATARI PACKS - POWER WITHOUT THE PRICE!



ATARI 600XL - DISK DRIVE PACK	
64K Atari 600XL	£129.99
1050 Disk Drive	£199.99
Home Filing Manager (D)	£24.99
The Payoff - Demo Prog (D)	£9.99
Total (if purchased separately)	£364.96
Less Discount (saves 115.96)	£249.00
PACKAGE PRICE (XLC 1050)	£249.00

£269

ATARI 130XE NOW IN STOCK £169

Atari's new 128K computer, the Atari 130XE offers an enormous 131,072 bytes of RAM for only £169. The 130XE comes with built in Basic and operating instructions and is now in a newly designed case with a modern full stroke keyboard. The 130XE is fully compatible with both the 400/800 and the XL range of machines, this means that it can run approximately 90% of all Atari computer software on the market. This provides a range of over 1,200 software titles as well as a large selection of accessory and peripheral items. Initial stock of the 130XE will be limited, so it's best come first served.



SILICA SHOP

WE ARE THE UK'S NO1 ATARI SPECIALISTS
Since the introduction of Atari Video Games into the UK six years ago, Silica Shop has been selling Atari products and supporting Atari owners with a specialist mailing service which we believe is unbeatable. We stock over 1,500 Atari related product lines and have a mailing list including over 300,000 Atari VCS owners and over 50,000 Atari Home Computer owners. Because we specialise in Atari, we aim to keep stocks of all the available Atari hardware, software, peripherals and accessories. We also stock a wide range of Atari dedicated books and through us, the owners on our list can subscribe to seeing a new Atari product mailed to them. We can provide a full service to all Atari owners and are now fully established as the UK's NUMBER ONE Atari specialists. Here are just some of the things we can do for you:

FREE POST & PACKING ON MAIL ORDERS
FREE CLUBS & INFORMATION SERVICE
HIGHLY COMPETITIVE PRICES
AFTER SALES SUPPORT SERVICE
REPAIR SERVICE ON ATARI PRODUCTS

If you would like to register on our mailing list as an Atari computer owner, or just because you are interested in buying an Atari machine, let us know. We will be pleased to keep you up to date with all new developments on the Atari scene free of charge. So, post off the coupon with your order or enquiry and begin enjoying an Atari service that is second to none.

01-309 1111

SILICA SHOP LTD, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Tel: 01-309 1111
ORDER NOW-OR SEND FOR OUR FREE ATARI BROCHURES

To: SILICA SHOP LTD, Dept WMI 0685, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Telephone: 01-309 1111

LITERATURE REQUEST:

☐ Please send me your FREE brochures on Atari Home Computers. PCN 0585
☐ I already own a Videogame ☐ I already own a Computer

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

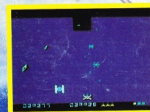
ORDER REQUEST:

PLEASE SEND ME:
☐ 16K 600XL Entertainment Pack £69 All prices include VAT
☐ 64K 600XL & 1010 Recorder Pack £129
☐ 64K 600XL & 1050 Disk Drive Pack £249
☐ 128K 130XE Home Computer £169 Post & Packing is Free Of Charge

☐ I enclose Cheque/P.O. payable to Silica Shop Limited for the following amount: £.....

☐ CREDIT CARD - Please debit my: Access/B Barclaycard/Visa/American Express/Diners Club My Card No is:

The Fight Continues... On The Spectrum.



**NOW
AVAILABLE
ON THE
48K
SPECTRUM**

... Earth is threatened by an Empire Deathstar, can you penetrate its defences, destroy it before it destroys you?
... Deathstar Interceptor gives you 12 screens of 3D graphics, super smooth 3D animation, unbelievable sound effects, music, 4 skill levels and a score table ... this is the ultimate challenge!

... This game has to be played to be believed! You have now seen what the 48K Spectrum is capable of until you have played Deathstar Interceptor!

Available now at £1.95

**Also available for
CBM £9.99**



HOW TO ORDER

To purchase Deathstar Interceptor, simply fill your name and address on a piece of paper, enclosing your cheque/P.O. made payable to, SYSTEM 3 SOFTWARE, and post to the address below. Please allow 7 to 14 days for delivery.

OVERSEAS ORDERS

Please add £1.00 per game ordered.

System 3 Software

South Bank House, Black Prince Road, London SE1
Tel: (01) 587 0873