Battle over BBC micro

Several computer companies will be in the battle when Acorn's three-year contract to make BBC branded computers ends next year. Although there have been no outside discussions, the BBC has already started preliminary talks with Acorn. A spokesman said: "There is nothing to stop anyone putting in a bid. "It is not a foregone conclusion that the contract will be renewed. "If the discussions with Acorn are not successful we may invite other offers." Sinclair Research and Dragon Data are asking for copies of the specification and a Commodore spokesman said: "We are always interested in getting business wherever we can and this is no exception." (See page 3)

Software reviews for:
Dragon, BBC, Spectrum, Oric, ZX81, Commodore 64 and Texas

Type in our great game and take your BBC micro to the dogs

More programs to type in for:
Texas, Sord M5, VIC-20, Atari, Oric

Video shops to sell software

You will soon be able to buy computer software in the same shops that rent video films. A big distributor says a few shops will be stocking games by Christmas with many more to follow. Peter Graham, chairman of Centre Video, is talking to software distributors about programs for the Spectrum and Commodore 64. His company supplies 2,000

Continued on page 4

CDs for big game hunters!

• POOL • REVERS • LEAPFROG • GOBBLE A GHOST • SOFTPEER • BOOY BOA • CATERPILLAR • AND MORE ON THE WAY

FROM W. M. SMITH ROOTS JOHN MENOUS AND OTHER LEADING COMPUTER STORES

ONLY £2.95

CDS Micro Systems
THREE EXCITING NEW GAMES IN THE LIVEWIRE SERIES FOR THE

FROM SUMLOCK MICROWARE

GRIDTRAP 64

We promise you won't be able to turn it off! It's a real skill tester and loads of fun to play!

Play with the Keyboard or Joystick.
Choose your own operating keys with our User Definable System.
Compete with an opponent by selecting Two Player Mode...

Great graphics, super sound, effects in the Livewire tradition including a selectable Melody Mode where the tune is available at the touch of a key and Melody On is indicated by a cursor graphic.

Program No. LW04 £6.95

JUMPING JACK 64

Not just a game - an Experience!
IT HAS IT ALL: EXCITEMENT, HUMOUR, STRATEGY

Jumpin' Jack leaps into a totally new look for the 64 created by Three Dimensional Graphics giving Full Perspective to the game - PLUS hours of features never seen before!

Submarin Turtles — Snakes — Crocodiles — Otters — Lady Frog — Dragonfly!!

It's Fun ***
IT'S FROGRIFIC ***

Program No. LW02 £8.95

TRIAD 64

NEVER BEFORE HAS A COMPUTER GAME LOOKED SO EXCITING

FELT AND PLAYED SO EXCITING

Watch astonished as the Triad hurl themselves towards your craft in a remorseless battle against your Intuition.

Feel the heat of their antimatter fields.

Your pulse laser will have to turn white hot before this encounter is over.

Featuring —
A new DIMENSION
Into the realm of TOTAL PERSPECTIVE GRAPHICS

Program No. LW03 £8.95

SUPERB SOFTWARE FOR THE VIC 20

Also available from good computer dealers and bookshops nationwide

More micro firms up before ASA

One has been hauled up before the Advertising Standards Authority, again, for making misleading claims in advert in the computer press. The company had said that the 48K Oric had VERIFY, DOUBLE, FLASH, and INVERSE facilities, plus a facility for drawing arcs in high speed in the high res graphics mode. But when put on the spot by the ASA, it failed to demonstrate that the facilities existed.

Two software companies reported to the ASA recently came off rather better. Despite a complaint that Sparten Software's Housebreak game was likely to encourage burglary, the ASA decided that "although the subject of the game was tasteless, it was unlikely to cause offence, or to encourage criminal offences."

And Softek managed to fend off Super C compiler against complaints that it did not perform as advertised. The advert stated that the compiler could 'create virtually any Spectrum BASIC statement', 'instantly convert Spectrum BASIC into machine code' and convert any BASIC program into a compiled version.

But a Spectrum user from Brighton complained that Super C could handle only 62 of the Spectrum's 96 instructions and only 38 variables, and would not deal with programs containing INPUT statements — meaning that such programs had to be re-written especially for the compiler.

After consulting independent experts, however, the ASA decided that Softek had explained these limitations, and that the advertiser's claims were fair enough.

Advertising Standards Authority, Brook House, Torrington Place, London WC1E 7HN

Out now from Sunshine is a full feature assembler/disassembler for the Commodore 64. It includes a machine code monitor and file editor, and costs a mere £14.95.

Sunshine, 12/13 Little Newport Street, London WC2R 3LD
JOYSTICK INTERFACE

The Interface Module II has been specially designed to plug into the rear connector of your ZX Spectrum or ZX81 and allow you to connect any standard Atari type digital Joysticks. All of the computer's connections are duplicated on an extension connector so that you can still use any other devices intended for use with your computer.

The Interface Module II resides in the same memory space as the keyboard which remains fully functional at all times, therefore it will not interfere with anything the keyboard does. When a suitable joystick is plugged into 'Player 1' position its action will mimic pressing the cursor keys up, left, right and down. The firing button will simulate key A. This unique feature guarantees the best software support.

A second joystick may be connected to the 'Player 2' position which simulates the player 2 handle for more advanced games. This will allow you to play a whole new generation of two player games.

KEY FEATURES

- Proven cursor key simulation for maximum software support
- Accepts Atari Competition Pro, Wico, Starfighter, Le Stick, etc Joysticks
- Second Joystick facility
- Rear extension connector for all other add-ons.

AGF COMPATIBLE SOFTWARE - AVAILABLE NATIONWIDE

The following titles are available from us:

- Galactic Invaders
- Apocalypse
- Solar Software
- DX Thunder
- Blocks
- Incentive Software Ltd
- Phoenix Magivoice
- New Generation Software
- Knight in 3D
- Siverook
- Cyber Rats

COMPATIBILITY CASSETTES £4.95

These cassette have short programs to load before the chosen game which will convert its as a cursor handle and therefore become compatible with the Interface Module II.

Cassette converts

- Acradia
- Centipede
- Space Invaders
- Superman
- Jet Pac
- Starfighter Level 1
- Space Invaders
- Starfighter Level 2

Contact: A.G.F. Hardware, Dept IUWJ8, Freepost, Bognor Regis, West Sussex. PO22 9BR

FROM MR/MRS/MISS

ADDRESS

SEND GWO (NO STAMP NEEDED) TO A.G.F. HARDWARE, DEPT

FREEPOST, Bognor Regis, West Sussex, PO22 9BR

QTY ITEM INTERFACE MODULE II

JOYSTICK(S) SOFTWARE SOFTWARE

ZX81 ☐ ZX SPECTRUM ☐ Please tick

DEALER ENQUIRIES WELCOME

WHERE TO BUY AGF PRODUCTS OVER THE COUNTER

AGF Computing
67 Grafton Street, Liverpool L1 2AT

Camer
24 Gloucester Road, Highgate, London N1 4AQ

GB Microvision
7 Queen's Parade, London Road, Westcliff-on-Sea

Microgry Hy-Tech
49 Road Street, Hereford HR4 9AR

Mako
296 Gloucester Road, Hove, East Sussex

Wren Video
74 Green Lane, Totton, Southampton

Screen Scene
144 N Glebe's Road, Chelsea, London SW3 3JS

AGF COMPATIBLE SOFTWARE - AVAILABLE NATIONWIDE

The following titles are available from us:

- Galactic Invaders
- Apocalypse
- Solar Software
- DX Thunder
- Blocks
- Incentive Software Ltd
- Phoenix Magivoice
- New Generation Software
- Knight in 3D
- Siverook
- Cyber Rats

COMPATIBILITY CASSETTES £4.95

These cassette have short programs to load before the chosen game which will convert its as a cursor handle and therefore become compatible with the Interface Module II.

Cassette converts

- Acradia
- Centipede
- Space Invaders
- Superman
- Jet Pac
- Starfighter Level 1
- Space Invaders
- Starfighter Level 2

Contact: A.G.F. Hardware, Dept IUWJ8, Freepost, Bognor Regis, West Sussex. PO22 9BR

FROM MR/MRS/MISS

ADDRESS

SEND GWO (NO STAMP NEEDED) TO A.G.F. HARDWARE, DEPT

FREEPOST, Bognor Regis, West Sussex, PO22 9BR

QTY ITEM INTERFACE MODULE II

JOYSTICK(S) SOFTWARE SOFTWARE

ZX81 ☐ ZX SPECTRUM ☐ Please tick

DEALER ENQUIRIES WELCOME

WHERE TO BUY AGF PRODUCTS OVER THE COUNTER

AGF Computing
67 Grafton Street, Liverpool L1 2AT

Camer
24 Gloucester Road, Highgate, London N1 4AQ

GB Microvision
7 Queen's Parade, London Road, Westcliff-on-Sea

Microgry Hy-Tech
49 Road Street, Hereford HR4 9AR

Mako
296 Gloucester Road, Hove, East Sussex

Wren Video
74 Green Lane, Totton, Southampton

Screen Scene
144 N Glebe's Road, Chelsea, London SW3 3JS
News

BBC micro

From front page

For each BBC micro sold the corporation earn a percentage. So far about 200,000 have been sold, mostly to schools. Acorn a big boost. Acorn is expected to report £10m profits this year, helped substantially by this contract. It recently launched a "cut-down" model, the Electron, at £109.

Richard Wadman, Dragon's managing director, said his company was writing to the BBC for a specification.

Depending on the details, Dragon would want to build a machine that met the specification or adapt a future machine now on the drawing board.

Mr Wadman, a former lecturer in statistics and computing, said the Dragon was designed with education in mind.

He said: "We feel that our machine has been passed over for education largely because of the time it arrived."

Many were now in use in schools, but the Dragon has been launched later than the Spectrum and BBC computers, for which schools get a 30 per cent Government grant.

Sir Clive Sinclair is known to have been unhappy that his company was not awarded the BBC contract. Among the computers considered at the time was the Newbrain.

Now, a Sinclair spokesman said: "We want to look at the ground rules to see if we want to enter. We want to encourage the BBC to look at other computers before the contract is signed."

Robert Blood, for Acorn, said: "The BBC has given no indication that it wants a change or that it is looking around. On the contrary, there are strong indications that it does not want to change. It will be a matter of renewal."

The contract comes to an end in mid-1991 and next year Mr Wadman said he expected a number of computer firms to put in a bid. Overseas firms would either be told not to manufacture to ensure they were not excluded because of foreign ownership.

Briefly

The BBC is the latest micro to get a version of The Hobbit, the adventure program originally written for the Spectrum by Melbourne House and now available for the Oric and Commodore 64. But because of the BBC's memory limitations, it will be a text-only version: Price £14.95, which as usual includes a copy of the book on which the program is based.

Melbourne House, 224 Stanley Road, Tadcaster, Middlesbrough TW1 1UE

Just to show that it isn't leaving TI-99/4A owners in the lurch, Texas Instruments has got together with Collins Educational to produce four school packs which take you from the basics of programming right through to writing your own games. They are Starter Packs 1 and 2 and Games Writer Packs 1 and 2, and cost £9.95 each. From Texas Instruments dealers.

Home Computing Software Preview

Free T-shirt

Home Computing Software Preview 2

Voucher

You can get your free T-shirt by using the voucher in the next week's Home Computing Weekly. If your envelope is among the first 750 you open you will receive a free Bag-Byte T-shirt, depending on the size requested.

Did you get it right?

RACING MANAGER R.ANGLER

OLOI]JIX]ILOJ UOP BTOAJ SDEU

BEFOUS TARF IRETT FBB

OKJASHIX HARKOVER HOFX

PIE EICKLERCA VERSAHS

DPU AQOKOFXVSTPBNGDFOO

DO OLEUMTRBPLOCTICCO

SLURYI MICRBEFO FOB FAG

XUNE NO BRANDI VAPningsZLR

VOITDHO FOSTING WDM CO

PCI YZ CBG MECOY VRGO

PHI WMX ERIVNR PICTOO

VNLIC YKCI SUCING OF

NP OONK CNM KSAD WRPV

NPOO MFLANK WALKBUSTW

RMT ELZATMFLANK WALKBUSTW

SCWLAN OF ALL ERUNERH

SHI V MIFQOFMTXJOET ASD

CASTLE AVENTUREVLYD

Shea Wadman, Mr & Margaret Huntington, Elizabeth Knight, Orpington;

John Goodbody, Janis Jon_inds, Bournemouth, Mr. Smith, Croydon;

Peter Drury, St Austell; Katharine, Mr. Bland, Manchester;

Dorothy Wadman, Richard Sinclair, Sharles, Mr. Sinclair, Wadhurst;

John Knowles, Stanmore, Mr. Sinclair, Hendon.;

Jim Price, John Price, Mr. Price, Southend-on-Sea;

Michael Craven, Mr. Craven, Barnet;

David Law, Mr. Law, Hertfordshire.

Simon Wood Bradford, John Rosie, Huntingdon, Mr. Rosie, Huntingdon; Tommy Canningsham, Galway, National Woods, Mr. Canningsham, Galway;

Peter Cottrell, Peter Cottrell, Mr. Cottrell, Peterborough

John Richardson, Barnsley, Mr. Richardson, Barnsley;

Dorothy Wadman, Richard Sinclair, Sharles, Mr. Sinclair, Wadhurst;

John Knowles, Stanmore, Mr. Knowles, Stanmore;
**Newbrain's future secure**

The Newbrain will soon be on sale in more dealers than ever according to Allan Mann of Brainwave.

Brainwave, which also sells Newbrain software, was recently appointed sale UK distributor for the Newbrain by Tradecom, the Dutch company which has taken over the Newbrain's design and marketing rights from Grundy.

But Mr Mann said that Brainwave would be adapting a new approach to the Newbrain's marketing. "It was marketed by Grundy as a home machine, sold over the counter. But that's not really what it was designed for - it was designed as a business machine.

"Because it's aimed at the business market, it does a lot of things that home micros don't do. So dealers can't just leave people to play a few games on it - they need to explain the features to them.

"That's why we'll be putting more emphasis on selling the machine through specialist dealers."

Grundy had a policy of not disclosing much technical information about the Newbrain, but Tradecom is taking the opposite approach. According to Allan Mann, Tradecom will reveal more technical information to companies who want to make add-ons for the Newbrain.

"It wants to encourage people to open the box. And if this is the peripheral people come up with, it'll market them too."

Mr Mann said that Tradecom was itself working on a networking module, which would enable 16 Newbrains to communicate and share peripheral equipment.

And Brainwave has produced some new programs for the Newbrain's relaunch. As well as business programs, these include a 30K adventure game with 50 different monsters to fight.

Mr Mann said he was confident that Tradecom and Brainwave would be able to succeed where Grundy had failed.

He said "I didn't really know how Grundy managed to go under - the order books were full. I've been in touch with all the UK dealers, and without exception they've all said they'll return. The response from the marketplace has been tremendous.

"In fact, a group of the dealers had even taken the unusual step of getting together to try and buy the rights to the Newbrain, before Tradecom stepped in."

**Ace company up for sale**

If you have dreamed of owning a computer company, now's your chance.

Jupiter Canab, which made the Jupiter Ace, is now being offered for sale by liquidator Dennis Cross.

Launched at the end of last year, the Ace is the only home computer using Fort as its built-in language instead of BASIC. But the statement, Mr Cross' firm, says problems began when Jupiter Canab expanded into the UK and overseas retail and distribution markets and large orders were placed which were never taken up or paid for.

This caused strain on cash flow, halting further research and development into areas like robotics and control for which the Ace was suited.

It ends "Time ran out for Jupiter and the Ace's true potential remained unrealised."

All the employees of Jupiter Canab have been dismissed. Mr Cross is offering the company for sale as a going concern if no suitable offers are received, he will have to sell off the stock for as much as can be raised for the creditors.

Mr J. D. Cross, Chuter and Myhill, Sussex House, Hobson Street, Cambridge CB1 1NJ.

**Teaching programs for the Spectrum**

Sixteen new programs recently launched by Sinclair will boost the Spectrum's credibility as an educational microcomputer.

For all 16, Sinclair has followed its usual policy of teaming up with another company, which then supplies software for Sinclair to market.

But one of the companies it is collaborating with is best known for books rather than software - Macmillan Education, which is a leading publisher of school text books.

Macmillan is contributing a total of nine programs to the range. There are the Learn to Read programs, for five to seven year olds, and four Spectrum Horizon programs aimed at eight to 12 year olds.

In addition, Blackboard Software has developed six spelling and punctuation programs for six to 12 year olds.

And Sinclair is also offering MicroPROLOG, a version of the PROLOG programming language, adapted for microcomputers by Logic Programming Associates.

MicroPROLOG allows you to talk to the Spectrum in simple English-like phrases, and makes it easy to build up an information database which can answer questions like an 'expert system'.

The full scale version of PROLOG has been used to program sophisticated artificial intelligence systems.

Initially, the programs will be available by mail order only: The Macmillan programs cost £9.95, the Blackboard programs cost £7.95, and the MicroPROLOG costs £24.95.

Sinclair Research Stanhope Road, Camberley, Surrey GU15 1GD.

**Editor Roy**

HCW contributor Ray Elder has been appointed editor of our sister magazine, ZX Computing. He succeeds Roger Manfield, who is now freelance journalist. We would like to wish the best of luck to both of them.

Mr Clive Sinclair and Harold Macmillan at the launch of Macmillan and Sinclair's joint venture into educational software.
48K ZX SPECTRUM ADVENTURES – PICTURE GRAPHICS AND COLOUR

**16K ZX SPECTRUM GAMES AND PUZZLES**

- **The Knights Quest**
  - You are a Knight of Camelot searching for Merlin's lost treasure. On your way you will discover the Witches Tower, rescue a Princess held by the wicked Wizard of Trill. £4.95

- **Pharaohs Tomb**
  - You discover the entrance to an ancient pyramid blocked by a rock. Once inside you discover eight rooms, six rooms and other traps set by the pharaohs to protect the treasures. £4.95

- **Magic Mountain**
  - A rope above a rock fissure is the only way into this Magic Mountain. Is it? Legends tell of vast stores of treasure but also of poisonous spiders, birds and magic at work. £4.95

- **Creedy Gough**
  - An old deserted mining town holds the clues to the location of a lost gold mine. Once in the mine, your problems are not over. The roof cracks alarmingly and might cave in. £4.95

**48K ZX SPECTRUM GAMES**

- **Rabbit Shoot**
  - The cassette of the book contains six games (including Castle Walls, Great Fire of London, Reversi) machine code assembler disassembler. £2.95, book available separately £6.99

- **The Spectrum Pocket Book**
  - The traditional game with superb screen presentation. Score points by making the two ends add to a multiple of five or three. The first one to reach 72 points wins. £4.95

- **Dominoes**
  - The computer takes a long and shuffles a two by two coloured square whilst you watch the moves it makes. You must then rearrange it to resemble the original square. Machine coded. £4.95

- **Nowotnik Puzzle**
  - The computer then asks you to find the hidden square amongst a selection of mazes. £4.95

**16K ZX81**

- **The Black Planet**
  - To find the Black Planet you need to piece the key puzzle together on different planets, and meeting different puzzles to be solved. On the way, you fight off the aliens who get steadily more desperate. £5.95

- **Gorgon**
  - You are spectrasonar battling in the arena with Gorgon whose stare can turn you to stone. To recover the lost charm you must also win a sword fight with Gorgon inside his cave. £4.95

- **The Forest**
  - Three-dimensional simulation of the sport of orienteering. Display is continuously updated as you run. Ideal for map reading practice. Instructions, colour map and cassette. £5.95

- **Adventure Tape**
  - For the ZX81, three adventures: black and white text. Magic Mountain, Pharaoh's Tomb, Creedy Gough. Each as described above. Superb value for money. £5.95

---

PHIPPS ASSOCIATES

Prices include postage (outside Europe add £1.00 per item)
ANIROG SOFTWARE
COMPUTER GAMES OF TOMORROW
AVAILABLE NOW!

NEW APPROVED GAME FOR
THE STACK LIGHT RIFLE
COSMIC COMMUNICATIONS

KRAZY KONG

VIC 20 16K EXP.

KRAZY KONG K B / J S £7.95
GALACTIC ABDUCTORS J S £7.95
3D TIME TREK J S £8.95
XENO II J S £7.95
SKRAMBLE J S £7.95
FIRE GALAXY K B / J S £7.95

VIC 20 UNEXP GAMES

MINI KONG K B / J S £5.95
FROG RUN K B / J S £5.95
SLAP DAB K B / J S £8.95
OOTMAN K B / J S £8.95
CAVERN FIGHTER K B / J S £6.95
CRAWLER J S £9.95
TINY TOTS SEVEN K B £5.95
SEVEN PROGRAMS (VOL. 1 & VOL. 2) K B £6.95
BATTLE FIELDS K B / J S £6.95

ADVENTURE GAMES

THE DUNGEONS K B 16K EXP £6.95
DARK DUNGEONS K B. 16K £8.95
ZOK'S KINGDOM K B / J S 16K £8.95
PHARAOH'S TOMB K B. 18K £8.95
DRACULA/LOST IN THE DARK K B UNEXP £6.95

24 HR. CREDIT CARD SALES HORLEY (03034) 6043
PAYMENT BY CHEQUE, P.O., ACCESS/VISA
8 HIGH STREET HORLEY, SURREY.
Overseas 50p post & packaging

TRADE ENQUIRIES WELCOME
ANIROG SOFTWARE
COMPUTER GAMES
OF TOMORROW
AVAILABLE
NOW!

NEW COMMODORE 64

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

KONG        K.B./J.S.   £7.95
4 SCREENS WITH BRILLIANT ANIMATED GRAPHICS

SKRAMELE    J.S.       £7.95
2 SCARECROWS TO TEST YOUR SKILL

HEXPERT      J.S.       £7.95
TRAIN BEST TO BE HEXPERT ON THIS 3D HEXAGONAL PYRAMID

MOON BUGGY   J.S.       £7.95
MANOEUVRE YOUR PATROL CRAFT OVER GIANT POT HOLES AS
YOU DEFEND THE MOON BUGGY FROM ALIEN ATTACK

FROG RUN     K.B./J.S.   £5.95
A POPULAR ARCADE GAME FUN FOR THE WHOLE FAMILY

3D TIME TREK K.B./J.S.   £7.95
SPECTACULAR 3D GRAPHICS STAR TREK GAME

DUNGEONS    K.B.       £6.95
ENTER THE REALM OF FANTASY IN THIS ROLE PLAYING GAME

DARK DUNGEONS K.B.      £6.95
2ND IN THE SERIES OF FOUR DEFINITELY NOT FOR THE FAINT HEARTED

NEW APAPPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE

NEW APPROVED GAMES FOR
THE STACK LIGHT RIFLE
MR CHIP SOFTWARE

SPECTRUM GAMES

SPECTRUM DARTS (48K)
Five games of darts for 1-5 players, 501, Cricket, Killer, Round the Board, Noughts and Crosses, four levels of play per game, take on the computer or friends at these games of skill and judgement £5.50

WHEELER DEALER
As for the Commodore 64, but now available for the 48K Spectrum, Texas T199/4A and Dragon £5.50

VIC-20 GAMES AND UTILITIES

JACKPOT
This is it, the ultimate Fruit Machine for the VIC with nudge, hold and respin 100% machine code. “Overall Jackpot is a beautifully written simulation giving superb graphics, animation and use of colour. In fact, this program makes Commodore’s Fruit Machine cartridge look unbelievably cheap and nasty.” Home Computing Weekly No 20 19/7/83 £5.50

KWAZY KWAKS
Accuracy and speed are required for this Shooting Gallery, superb use of colour and graphics in this new and challenging game from the author of Jackpot. 100% machine code, joystick or keyboard control £5.50

PACMANIA
Choose your own game from the following options — difficulty 1-3 speed 1-3, size of maze 1-3, visible or invisible maze, still or moving power pills, define your own key controls, any combination, if this is your type of game, then this is the one for you, for the 3K expand VIC £5.50

BUGSY (Joystick Only)
This is a Minefield with a difference as you step on the stones whilst collecting purple boxes which give your bath time and points, they disappear from beneath your feet. DO NOT DESPAIR! ‘BUGSY’ will randomly replace the stones but avoid bumping into him or its sudden death! An original compulsive and challenging game £5.50

MINI-ROULETTE — PONTOON — HI-LOW
Three great games of chance for the VIC, try to beat the computer, hours of fun, full colour, sound effects and tunes £5.50

DATABASE — create your own files and records on tape £7.50

SUPER BANK MANAGER — A full feature version any memory size, but needs 3K expansion £7.50

COMMODORE 64 GAMES AND UTILITIES

JACKPOT 64
At last its here, specially written for the 64, by the author of “JACKPOT” the ultimate Fruit Machine program for the VIC £5.50 (available from 1st Nov)

WESTMINSTER
A game for up to four players, can you lead the party of your choice and win the general election, you tour the 60 constituencies (seats) buying votes, when you can, (jut like the real thing), this must be one of the first board type games specially written for the computer. Why play on your own, have fun with your family and friends playing WESTMINSTER £5.50

WHEELER DEALER
A game for two to twenty players, become a tycoon of the motor trade, you must obtain gearboxes, tyres and engines to produce cars for sale. Form syndicates, buy and exchange parts, buy dealerships, but be careful, you may become bankrupt and have to liquidate, find out what you are made of, have you got what it takes to become a WHEELER DEALER £5.50

LUNAR RESCUE
Our new version, avoid the asteroid belt, to rescue the stranded scientists, then fight your way back to the mothership, fast reactions are required to safely land and dock your lunar module £5.50

PURCHASE LEDGER
Easy to use, single entry, handles 400 invoices per month, Gross/Net purchases, V.A.T £14.50
Disk Version £17.00 (available from 1st Nov)

SALES LEDGER — As Above £14.50
Disk Version £17.00

CHIPMDN — Contains a one- or two-pass Assembler, Disassembler and Monitor A programming aid for the development of machine code programs and routines on the CBM 64 £12.50

BANK MANAGER — As our Super Bank Manager, but for the 64 £7.50
Now available on disc with added facilities £10.00
Full documentation with all utility programs Other software available for the VIC and Commodore 64, send for free brochure, including RABBIT SOFTWARE at £5.50 each.

Send Cheques/PO's to:

MR CHIP SOFTWARE
Dept HCW, 1 NEVILLE PLACE, LLANDUDNO, GWYNEDD LL30 3RJ. Tel: 0492 49747
Wanted. High quality software, of all types, for export and UK distribution All programs now available on disc please allow £2.50 extra
DEALER ENQUIRES WELCOME
Keep cool, calm and collecting

All you need is £8 to get you off Danger Island and safely home. Simon Lucas, who wrote this mini-adventure for either Oric, explains how to earn your fare.
ORIC PROGRAM

Main variables
X(0) hold message number
P(0) holds the number of the current location
S(0,0) holds the number of the location you visit if you go N,E,S,W
VS(0) holds what you carry
Q(a) has a description of the location
G(a) holds items found at each location
N(S) holds words recognised (second word entered)
R(a)'. D.m(N) act as pointers to other arrays
L. test flag
H the number of the word entered
ZS and response to what should I do
Tg is split into two parts
CS left word and LS is the second word
H.D. act as counters for loops
A% score
Other variables act as flags to test if you have done certain things in the game such as dropped the food

HUD3 on conversion
The program is in a fairly standard version of BASIC and will require only minor modifications to run on most machines.
Line 40 may be deleted from most machines, as it only selects the text mode and colours used on the IBM micro the MODE #7.
Line 101 is a garbage collection routine and may be deleted from most machines equally.
The CHR$ codes from 129-135 are used to change colour. They may be changed to suit your needs. Note on the IBM micro the same codes are used.
The PLOT commands, 3000-2000 print the text at different locations on the screen. The numbers are X coordinate Y coordinate, text or X, Y, colour code (0-7). They may be replaced with PRINT TAN(X,Y) on IBM PRINT @ on TR80 etc. Integer variables have been widely used as they are economic of memory space. They may be changed to ordinary variables if required.

How it works
40 selects TEXT mode & colour of foreground background.
45 selects subroutine for titles etc.
50 DIV64envisions the arrays.
90-155 display directions you can go in.
101 acts as garbage collection routine (may be omitted from other machines).
160-185 displays messages if you have solved the game.
190-240 display what you can see and where you can go.
250 waits for your response.
270-460 recognise your words and send to appropriate routine.
280-320 takes.
290-320 DATA for locations you find.
300-10330 DATA for words underwood.
3100-11000 score routine.
3100-12000 reads DATA into arrays.
3100-13400 routine for GET responses.
31500-13570 splits input responses into two words.
31600-15900 drop routine.
31700-14700 inventory routine.
31500-15920 swear routine.
31700-17400 swear routine.
31500-17540 death routine.
31500-17800 throw routine.
31500-18000 search routine.
31600-19000 end routine.
31600-19500 end routine.
ORIC PROGRAM

Micro Tip

Switch your switch

A very simple, and useful, modification to the cassette recorder that you use with your Dragon is a switch to override the computer control of the cassette motor.

Connections could not be easier: join a wire to each side of the remote jack and provide this function. Use a small, neat switch

to simulate the appearance of your particular recorder — there is no wide choice available from any electronic supplier.

Mount the switch at a convenient point on the cassette recorder case, making sure there is plenty of clearance, and solder the four connections. It now becomes easy to rewind program tapes while running programs and to position DATA tapes accurately without pulling out the remote plug.

Many recorders make the job even easier as they feature an electrical (as opposed to mechanical) PAUSE switch, which in some cases may simply cut the power to the motor.

Although this feature is of limited use, a small wiring re-arrangement will provide the more useful override facility.

All you have to do is move the wire which goes from the PAUSE switch to the motor to the other side of the switch and provide a new wire from the now spare switch contact to the supply side of the remote jack.

A further use for this is to find the gap between programs — Type AUDIO ON and switch on the override.

Eric Craven

OMEGA SOFTWARE

FOR DRAGON 32

GO FOR BROKE

A board type game for all the family!

Attempt to Bankrupt your competitors by skillful wheeling and dealing on the property market.

High Res graphics, and incorporates save feature to continue game at a later date.

Price £7.00 each inc. P&P

Special Offer both for £12.60

Trade available from P.C.S. Distribution or by Mail Order

Enquiries & Orders to:

OMEGA SOFTWARE
38 HAMMOND AVE.
BACUP, LANCs OL13 8LN

JUNGLE SEARCH

An Adventure game mainly in text, where you are in darkest Africa in search of the Treasure of the Elephants graveyard.

Score features for successful searchers.

Price £7.00 each inc. P&P

Special Offer both for £12.60

Trade available from P.C.S. Distribution or by Mail Order.

Enquiries & Orders to:

OMEGA SOFTWARE
38 HAMMOND AVE.
BACUP, LANCs OL13 8LN
Tapes must be won

There's more than £1,000-worth of software which could be won by readers who can spot the differences.

We have got together with English Software which is offering 38 prize packages worth £27 each. The prizes are for Amstrad and Commodore 64 computers.

And, as usual in Home Computing Weekly, the competition is fun to do, easy to enter and free.

The prizes

English Software will choose a selection of tapes worth about £27 for each of the 38 winners. The prizes will be selected from the following:

- Steeplejack
- Word Olympics
- Xenon Reed
- Air Strike 2
- Krazy Kopter
- Capsule
- Stick's Gold
- Jet Boot Jack
- Hyperblast
- Venue
- Vouyer
- Marathon
- Diamonds
- Firefight
- Tarot Card
- Battle Bulldozers
- Bonoboy
- Air Strike

How to enter

Look carefully at the two cartoons below — there are a number of differences between the two. Cross the differences on the right-hand cartoon and then fill in your name, full address and the word from the left-hand cartoon, on the prizes you would like. Then cut around the broken lines, seal the drawing with a coupon attached and an envelope and write clearly on the back of the envelope the number of differences you found.

If you own a Commodore 64 your answer must be on a postcard; if you own an Amstrad, your answer must be printed on a sheet of A4 paper, and then you will get a package chosen from the following:

- Marathon
- SuperFor 40
- Spellmaker
- Neptune's 69
- Daughters

The winners' names and the solution will appear in Home Computing Weekly. The editor's decision is final and no correspondence will be entered into.

December 9: The winners will be the first 38 correct entries opened, regardless of prizes chosen, in noon on that day.

Copies of the coupon will not be accepted. The solution and the names of the winners will be published in the news columns of Home Computing Weekly and the prizes will be awarded.

The rules

The rules apply to any other Competition. The competition is open to all readers except employees of Amstrad, Home Computing Weekly and English Software. Entries must be received by 5 pm on Friday, December 9, 1983. The editors reserve the right to disqualify any entry which is not in accordance with the rules.

English Software Competition Entry Coupon

Name __________________________
Address _______________________

Postcode ______________________

Computer _______________________ Number of differences found _______________________

End date: 5 pm on Friday, December 9, 1983.
"ADVENTURES INTO IMAGINATION"
AVAILABLE FROM W.H. SMITH, JOHN MENZIES, BOOTS
AND ALL LEADING COMPUTER STUDIES

TRANSYLVANIAN TOWER
A spectacular 3-D maze adventure for the 48K Spectrum and Dragon 32
RICHARD SHEPHERD SOFTWARE

A spine-tingling adventure — enter and the lunge into... to escape your way through 500 3-D rooms... survive the terrifying vampire bats... reach the terrifying bat... confront and kill Count Dracula in the most... in this Transylvanian Terror.
Can you survive the test of the Tower? £4.50

RICHARD SHEPHERD SOFTWARE

NEW DEALERS WELCOME — RING JOHN SALTHOUSE ON 06286 63531
Famous names appear on-screen

Darts, chess, racing — your micro will play them all, and others too. The possibilities are endless

One Hundred and Eighty 32K 88C £6.90
A/R: 320 Hyde Road, Manchester M18 7JG

Not all computer owners are arcade fanatics but this doesn’t mean you don’t enjoy playing games. For the less energetic keyboard bashers, 180 is a fully-dedicated game of darts, with no need to leave your chair!

The game offers several different types of darts match. Standard is the traditional game, with daunting scores anywhere between 101 and 901, but there is also Round the Clock, On and Off and Shanghai, all variants of the basic game.

When run the program asks for each player’s name, and the type of game required. A difficulty level from 1 to 5 can also be selected.

The board is then drawn in full colour, together with a side-on view of the darts board.

To throw a dart you must use the keyboard to steer vertical cross-hairs to the correct distance into the board, then using separate keys, make the dart as it flies into the board. All scoring is done automatically, and the two players are depicted as matchbook men who sit down and stand up as required.

Chess Dragon (cartridge) £24.95
Dragon Days, Kenig Industrial Sales Office

In the introduction to the computer handbook User Manual you read that Cymric is a strong chess program which won the European Computer Chess Association's 1981 competition in a triple new-determined battle. It moves the chess pieces by using the arrow keys to indicate which piece you want to move and its destination. Illegal moves are not permitted. You can take back as many moves already made as you wish.

In Chess Dragon you can train yourself, or have a friend come over and play. You can even have two games going at once.

Pirate Island Ti-99/4A £4.95
Andromeda Software, 56 Wells Street, Harington, Rossettadale, Lancashire

Pirate Island is a board type game for two players. The instructions and game are both on cassette and loaded separately. Each player controls a ship which sails across the sea, seeking treasures. Each player has to gather treasure and decide the route of each game. The screen displays the game board, the ships and the scores for each player.

HOME COMPUTING WEEKLY 22 November 1983 Page 17
Playing fast and loose

Five new action games — our review panel gives its verdicts

**Lunar Jetman**
48K Spectrum
£5.50

Ultimate Play the Game, The Green, Ashby de la Zouch, Leics LE6 3JU

It's subtitled Jetpack II, the sequel, but, unlike most movie sequels, this program is as good and possibly even better than the original. The scene is set on the cassette label, but Jetman has crashed on a planet inhabited by hostile beings which attack. So far, it's simply another explosion game, but that's only the beginning. Jetman has to explore the scrolling planetscape and destroy the alien installations that attack earth. This is the same time as the attack on himself and your. You are not told how to proceed or what each item does, but simply provided with the eight controller options — joystick can also be used. I haven't even managed to get into the fourth level yet, and I've only played it once. Despite its addictive gameplay, superlative action, and sound, I especially liked the little and its delectable sensation. The game is rear of attack. The screen displays an original source, and when the box becomes too large, the game will stop. Another winner from Ultimate. F.R.

**Traxx**
48K Spectrum
£6.95

Quicksave, 13 Palmerston Road, Southampton, SO1 1TJ

This game is a variation on a theme. It is essentially an enjoyable variation. The idea is that you track around the squares of a grid, tracing a route line after another. Suddenly! Don't you believe it. Whether by accident or design, the fact that you are so far after you are very relevant to start. Just when you think you have got it right, the trap flies back as though it were on classic. This is all the same in the case of Traxx. You can program in the speed and turn yourself. You can also program in the number of targets that chase you. You usually pick up your targets from any loose end, and if you manage to cover the four corners by the time limit to the easiest. You have to other problems with loading — it only takes after that your problems start. If you are strongly advised against loading with one hastily to clear. That way you will be finished. Otherwise, the men in West's coats will be coming for you. I found it playable, but taxing.

**Egbert**
Commodore 64 plus joystick
£7.95

Game Machine, Boxerome Drive, Stevenage, Herts

This game has a very popular setting. Egbert is a character who works on a production line pressing buttons and in charge of an egg. Left to his own devices, the egg falls slowly down the screen and smashes on the floor. But, using the joystick, you can get Egbert to move. The buttons appear at random down the sides of the screen and Egbert uses the buttons to push these. The egg is in the middle of the screen. However, Egbert has to dodge to the bottom.

**Crusader**

**Hungry Horace**
Commodore 64
£9.95

Melbourne House, 131 Trafalgar Road, London SE10

Melbourne House's famous Horace character, first created for the Spectrum, has now made his appearance on the Commodore 64. After playing the new game, I'm bound to wonder what is going. I don't much enjoy playing Crusader. Horace, and your aim is to get from one side of a room to the other without getting stopped by the park keeper. On the way, you can eat the flowers and the park-keeper's lunch or extra points.

There are four sections of park to go through. After reaching the end of the fourth part, you get jumping up to catch a hook which moves across the top of the screen. Failure means a watery death. I couldn't get beyond this level despite determined efforts.

The display goes into life, but you still have to initiate the next game. It makes it all look very easy and I got an impulse to show the flat wall top. Those-others can fall coning safely in the water, the exit, and down into the water. The cassette is well packaged in a series of many video containers, and I'm not all on the users, though.

<table>
<thead>
<tr>
<th>CRUSADER ORACON PLUS JOYSTICK £9.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>J Moorison Mains, 2 Glendine Street, Lords LS9 9J</td>
</tr>
<tr>
<td>You are the hero in search of the Holy Grail and you have to overcome seven increasingly difficult stages to achieve your goal. On the first level, you are faced with the task of climbing steeply to reach the top of a wall, jumping over lethal scorpions as you go. Once this is achieved, the graphics move smoothly to show the flat wall top. Those-others can all keep coming safely in the water, the exit, and down into the water. The cassette is well packaged in a series of many video containers. Minimal on screen instructions — they are all on the users, though.</td>
</tr>
<tr>
<td>Instructions</td>
</tr>
<tr>
<td>Playability</td>
</tr>
<tr>
<td>Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRAXX  $6.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quicksave, 13 Palmerston Road, Southampton, SO1 1TJ</td>
</tr>
<tr>
<td>This game is a variation on a theme but essentially an enjoyable variation. The idea is to track around the squares of a grid, tracing a route line after another. Suddenly! Don't you believe it. Whether by accident or design, the fact that you are so far after you are very relevant to start. Just when you think you have got it right, the trap flies back as though it were on classic. This is all the same in the case of Traxx. You can program in the speed and turn yourself. You can also program in the number of targets that chase you. You usually pick up your targets from any loose end, and if you manage to cover the four corners by the time limit to the easiest. You have to other problems with loading — it only takes after that your problems start. If you are strongly advised against loading with one hastily to clear. That way you will be finished. Otherwise, the men in West's coats will be coming for you. I found it playable, but taxing.</td>
</tr>
<tr>
<td>Instructions</td>
</tr>
<tr>
<td>Playability</td>
</tr>
<tr>
<td>Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HUNGRY HORACE  £9.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne House, 131 Trafalgar Road, London SE10</td>
</tr>
<tr>
<td>Melbourne House's famous Horace character, first created for the Spectrum, has now made an appearance on the Commodore 64. After playing the new game, I'm bound to wonder what is going. I don't much enjoy playing Crusader. Horace, and your aim is to get from one side of a room to the other without getting stopped by the park keeper. On the way, you can eat the flowers and the park-keeper's lunch or extra points. There are four sections of park to go through. After reaching the end of the fourth part, you get jumping up to catch a hook which moves across the top of the screen. Failure means a watery death. I couldn't get beyond this level despite determined efforts. The display goes into life, but you still have to initiate the next game. It makes it all look very easy and I got an impulse to show the flat wall top. Those-others can all keep coming safely in the water, the exit, and down into the water. The cassette is well packaged in a series of many video containers. Minimal on screen instructions — they are all on the users, though.</td>
</tr>
<tr>
<td>Instructions</td>
</tr>
<tr>
<td>Playability</td>
</tr>
<tr>
<td>Graphics</td>
</tr>
</tbody>
</table>
EPSON FOR RELIABILITY

EPSON EPS 2420...£279 + VAT at 25% 80 column 100 CPS typewriter. Quick and easy character registration. Character action area is 100 x 100. An excellent unit for draughtsmen, salesmen, etc...

£495 VAT £599.50

P. P. P. (Telephone prices) With free library £55 VAT £65.50

P. P. P. P. (Included with basic unit) £95 VAT £114.50

100% BBC COMPATIBLE MITSUBISHI and TEAC SLIMLINE DISK DRIVES

COMPLETE WORD PROCESSOR FOR ONLY £1 099 + VAT

PROFESSIONAL MONITORS

SEIKOSHA DOT MATRIX PRINTERS WITH HIGH RES GRAPHICS

NEW LOW PRICES ON STAR

POCKET COMPUTERS AND CALCULATORS

THE AFFORDABLE DAISY WHEEL PRINTER

THE CP80 QUALITY PRINTER

THE NEW SHARP MZ 711 COLOUR COMPUTER

- 4K RAM - 4x1.93m monochrome or 4x2.43m彩色 Internal cassette and printer. Modem option £228.85 (free 10 games included)

SPECIAL OFFERS AT A3 SIZE (540 x 720) £230 VAT £287.50

SPECIAL OFFER AT A4 SIZE (840 x 1180) £230 VAT £287.50

THE CP80 QUALITY PRINTER

THE CP80 QUALITY PRINTER

THE NEW SHARP MZ 711 COLOUR COMPUTER

- 4K RAM - 4x1.93m monochrome or 4x2.43m彩色 Internal cassette and printer. Modem option £228.85 (free 10 games included)

SPECIAL OFFERS AT A3 SIZE (540 x 720) £230 VAT £287.50

SPECIAL OFFER AT A4 SIZE (840 x 1180) £230 VAT £287.50

Coming soon...
You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette, check carefully that they are bug-free; include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H OEE
Save your town from a watery disaster

Here's your opportunity to save the town of Pollington, population 100,000, with your VIC-20 — the unexpanded model at that. Your job is to defend the dam above the town by knocking out the missiles.

If a missile hits the dam, making a big enough hole, the valley will flood leaving the people of Pollington awash. You have won if you manage to hold the dam until everyone has got to safety. The number of people left in the valley is shown at the top of the screen.

Here's a hint: if a missile gets near the dam before blowing it up and the townsfolk will have more time to get away.

To get more out of the unexpanded VIC the program is in two parts. The first defines the characters and gives instructions and part 2 is the main body of the game.

**Variables**
- A: position of missile
- P: population
- N: number of missiles fired
- W: position of your ship
- J: position of bomb

**Listing 1** — type this in first. Title etc. has been removed from lines 100-500

```
10 PRINT "Save your town from a watery disaster"
20 PRINT "Here's your opportunity to save the town of Pollington, population 100,000, with your VIC-20 — the unexpanded model at that. Your job is to defend the dam above the town by knocking out the missiles."
30 PRINT "If a missile hits the dam, making a big enough hole, the valley will flood leaving the people of Pollington awash. You have won if you manage to hold the dam until everyone has got to safety. The number of people left in the valley is shown at the top of the screen."
40 PRINT "Here's a hint: if a missile gets near the dam before blowing it up and the townsfolk will have more time to get away."
50 PRINT "To get more out of the unexpanded VIC the program is in two parts. The first defines the characters and gives instructions and part 2 is the main body of the game."
```

**Hints on conversion**
Conversions should be fairly easy if you have a Commodore 64 or a PET. To convert to other computers you would have to look up the method your computer uses to make the characters and replace having 1 you would have to replace all the screen locations and sound control.

Here are the POKE locations I have used:
36786 = volume for sound
36874-36877 = sound voices
36879 = border and screen colour
76800 = screen locations
38400-38895 = colour locations

**How it works**

**Part 1**

- 0-170 input width of dam draw
- 180-290 decade approach of missile
- 290-240 move missile
- 240-300 update population left
- 300-1099 missile hits dam
- 1099-2000 dam blown up
- 2000-2500 no people left in valley
- 2500-3000 move ship clock to see if bomb is to be dropped
- 3000-5300 move bomb
- 5300-3380 bomb hits missile
- 3380-3400 bomb misses

**Part 2**

```
400 PRINT "Save your town from a watery disaster"
500 PRINT "Here's your opportunity to save the town of Pollington, population 100,000, with your VIC-20 — the unexpanded model at that. Your job is to defend the dam above the town by knocking out the missiles."
600 PRINT "If a missile hits the dam, making a big enough hole, the valley will flood leaving the people of Pollington awash. You have won if you manage to hold the dam until everyone has got to safety. The number of people left in the valley is shown at the top of the screen."
700 PRINT "Here's a hint: if a missile gets near the dam before blowing it up and the townsfolk will have more time to get away."
800 PRINT "To get more out of the unexpanded VIC the program is in two parts. The first defines the characters and gives instructions and part 2 is the main body of the game."
```

**Listing 2** — the main game

```
100 PRINT "Save your town from a watery disaster"
200 PRINT "Here's your opportunity to save the town of Pollington, population 100,000, with your VIC-20 — the unexpanded model at that. Your job is to defend the dam above the town by knocking out the missiles."
300 PRINT "If a missile hits the dam, making a big enough hole, the valley will flood leaving the people of Pollington awash. You have won if you manage to hold the dam until everyone has got to safety. The number of people left in the valley is shown at the top of the screen."
400 PRINT "Here's a hint: if a missile gets near the dam before blowing it up and the townsfolk will have more time to get away."
500 PRINT "To get more out of the unexpanded VIC the program is in two parts. The first defines the characters and gives instructions and part 2 is the main body of the game."
```
The chart-hitting Mad Martha

And now—

Mad Martha II

In the next-packed hero of a domestic tale. One night Henry comes home to find his wages have been taken out of his wife's purse, and he is left with only money. He only way to raise some cash is to gamble his few remaining coins on the spinning wheel at the roulette table. Just as Henry is getting in to his evening at the tables his wife — Mad Martha — has noticed his absence. Realising Henry has ascended with the housekeeping money after him with an idea, she sets about to find him before it's too late. This is the story of Mad Martha.

Time for the annual holiday and Martha decides to visit her half-brother Manuel, who is a waiter in a plush hotel in Barcelona. One afternoon Martha sets out on a hot tour with her son, young Aragon. Leaving orders for Manuel to keep an eye on Henry. Unknown to Martha, crazy Henry has a Spanish pen-pal, and has planned a secret rendezvous. Henry leaves the hotel, braving the enthu-
siasm of Manuel (who is totally weak) to embark on his trail. The adventure takes us through the thrills and spills of a make-up chase, taking in amongst other delights a bull fight in which poor Henry is forced to play the leading role. Guaranteed laughs and fun for all the family.

* FOR 48K SPECTRUM ONLY £6.95 *

Christmas Computing for Girls

A Christmas Offer for £19.95

- Bella Comes to Life ... a novel computer game to create a girl's ideal friend.

- Bella Begins Computing ... a set of 3 tapes to introduce the machine, the keyboard, basic concepts of structured computer programming and computer graphics — as part of a game.

PLUS

A CHANCE TO WIN A T.V. SET IN EVERY PACK.

SAGA SOFTWARE Mitchell House, 1B5 High Street, Cottenham, Cambs.
**SOFTWARE REVIEWS**

**The Quill 48K Spectrum £14.95**

Gilcoff, 30 Hawthorn Road, Barry, South Glamorgan CF6 5LE.

Described by Gilcoff as an "Adventure Editor", it would go as far as to call it this a completely new language. Not like BASIC or Forth but a language developed and dedicated to one task - writing adventure programs. The idea is to allow writers of adventure programs to concentrate on producing their maps, plots, encounters etc. without having to learn the intricacies of programming. The tape arrived complete with a 32-page booklet which explained in detail the workings of the program's sections and functions and led the user through its operations via a simple demo program.

The manual and program need practice and careful reading. Don't assume that this is a "programming made easy for adults" tool.

The program is in three parts: Editor, Interpreter and Database. The company allows for commercial use by only holding copyright on the editor and manual.

If a program is created and marketed then all Gilcoff ask is a mention in the credits. R.E.

instructions 97%

case of use 93%

display 91%

value for money 90%

---

**Ald 48K Oric £10**

D. Bandoo, 81 Mount Pleasant, Wembley, Middlesex HA0 1UD.

A comprehensive package consisting of a toolkit for BASIC programs, monitor and assembler. The tape handled well and proved a joy to review.

Simple but very well written instructions explain each of the three machine code programs in turn: Toolkit supports Append, Convert, Delete (memory contents into BASIC data statements) Delete, List, Line Number, Verify, Rename and four other commands. Together they offer a powerful system which any serious BASIC programmer would be delighted to have at their disposal.

The monitor was effective without the need for fancy displays, and I liked the pause facilities offered during screen scanning.

The assembler occupies the location also used by the interpreter, but of this mode is called the Toolkit and Monitor remain in place. Y, T, X, and ASM are supported and the assembly code is entered like a BASIC program - aided by Toolkit - allowing separate saving of both the basic and assembled machine code.

instructions 97%
case of use 91%
display 90%

value for money 91%

---

**Music Maker 48K Spectrum £5.75**

Bellflower Software 6 Rosewood Avenue, Greenford Middlesex.

This is a really comprehensive music making program - a master piece of programming and programming in BASIC. It allows you to record your own creations in standard music format, play the tune back, store it on tape and even print it out using the ZX Printer. Although not fault free it is most unspectacularly the result of careful attention to detail. There is however a strange adaptation in the purpose of this program.

To use it to the full, you need to know standard music notation very well. If you don't, then it's unlikely that you will benefit from this program. The Spectrum and you could record your music down with a pencil.

If, on the other hand, you are a computer junkie who wants to use the sound capability of the Spectrum, explore your own programs and get to grips with the notation before this program can help you.

According to my standard, sound music notation is harder to understand than the assembled machine code. D.M.

instructions 95%
case of use 95%
display 90%

value for money 90%

---

**Programs with a purpose**

Our review panel test a selection of programs whose aim is to help you out.

**Microprint 42/51 Spectrum £5**

Myramond Software, PO Box 2, Tailworth, Surry KT30 7LU.

This £33 type utility prints 42 or 51 characters per line to 24 lines, using all keyboard characters, including angles, with usual colour combinations.

Sounds good? Yes but! Alpha box/numbers are reduced with ideally an 8 x 8 character set. Corrected graphs, though obtained in removing multiple line drawings, are produced by removing multiple line drawings. All too often the graphics seem to be placed by hand rather than by a program.

This makes building up large tables for example difficult, since they may no longer measure up to the last test.

instructions 85%
case of use 90%
display 90%

value for money 90%

---

**Save-A-Sketch**

TI-99/4A plus Minimemory Module £5

Sparrow Software, 10 Alstone Road, Stockport.

This program is not intended to replace the Minimemory module, but makes use of some of the extra functions provided by the module for TI BASIC. Using a character code definition technique, the program allows you to enter and store a limited highresolution picture on the screen or to print a picture already defined within the program.

It is unusual in that it is of the type known as self-modifying - that is, the program rewrites part of itself so that if you SAVE the program after it has finished, it will still when you reload it, print up your picture in double-quicken time. Control of a small pen is achieved through the keyboard, using the W E R S Z X and C keys. Also active are the 1, 2, 4, and 8 keys, giving pen up, pen down, move right and pen erase.

This is not a fast program by normal standards, but nevertheless with patience a satisfactory image can be produced.

The program works with both TI-99/4A's and 4A's, and overcomes the CALL KEY bug on the 4A.

instructions 80%
case of use 90%
display 90%

value for money 90%

---

**USAGE**

When you have produced your picture you can export it to another program. The program is now available for the TI-99/4A and 4A, and overcomes the CALL KEY bug on the 4A.
COMPUTER CLUB INTERNATIONAL

Reserve YOUR Membership today

CCI is a NEW COMPUTER CLUB specifically for you—the home computer enthusiast—whether or not you own a computer. Members will enjoy a wide range of facilities, including their own magazine, regional meetings, contact with international members, exchange of software and many other benefits, all at very reasonable cost. Make sure of your membership reservation today.

Complete the coupon and send to:

Computer Club International
FREEPOST
(NO STAMP REQUIRED)
STALYBRIDGE
CHESHIRE
SK15 1YD

DO NOT SEND MONEY WITH COUPON

MEMBERSHIP RESERVATION

Please include my name on the CCI Membership Reservation List and send me further details without any obligation on my part to join.

SURNAME ____________________________
FORENAME/S. __________________________
ADDRESS ____________________________
TOWN ________________________________
COUNTY _____________________________
POSTCODE ___________________________
COMPUTER OWNED ___________________

SPECTRUM & ZX81 EDUCA TIONAL SOFTWARE

CALPAC LEARNING SERIES

Use our Computer Attitudes software package to help you in idenfying their school work. The programs in the series use moving colour graphics and sound to make learning more enjoyable. Each pack contains four programs, and is suitable for use with the 16K or 48K Spectrum Program notes are supplied.

VOLUME 1 (from 9 years) Time and units addition and subtraction with data tables of facts and powerful essay in use drawing program. English comprehension adapted to American and British English.
£9.99

VOLUME 2 (from 7 years) Roman history. Seeing inner wall in the history of the Roman Empire. £9.99

VOLUME 3 (from 9 years) French verbs, adjectives and adverbs' nouns of verb. Biology of the flower by drillion. £9.99

Additional features at the CALPAC LEARNING SERIES include: • Spelling checkers • Help call up routine • Easy input on a subject material of your own choice into the program.

CALPAC C1 O-LEVEL CHEMISTRY £7.50

For use by public exams of pupils in all schools. The subject matter has been carefully structured to cover the most important aspects of: • Elements and Compounds • Organic Chemistry • Physical Chemistry • Redox reactions and the active metals. 

CALPAC COMPUTER SOFTWARE

For further details please telephone: 0484 25596 We have a demonstration cassette available for retail or schools.

PETTIGREWS DIARY

Available now at only £7.95 from selected branches of BOOTS and all good outlets or send cheque/PO to SHARDS SOFTWARE 189 Eton Road Ilford, Essex IG1 2UQ

Page 24 HOME COMPUTING WEEKLY 22 November 1983
SOFTWARE REVIEWS

Our reviewers took to the road, sea and air to bring you their ratings of these games.

Gron Pree
TI-99/4A (extended BASIC) £4.99
Andromeda Software, 56 Wells Street, Washington, Romedale
Gron Pree is a one or two player game in which cars are raced against those controlled by the computer. Before starting you are given the option of either playing through a full Grand Prix version of 15 races, or selecting your own limits for race duration and the number of wins required to become champion. The race track is then displayed with two base cars and pit stop cars line up on the starting grid and play begins when a flashing light changes from red to green. Player's cars may be moved up or down, accelerated or decelerated, and their current fuel reserve and speed are displayed at the bottom of the screen. Changes in speed are indicated by a series of diamonds, the number of which soon becomes intolerable. With a choice of four skill levels, you might expect this to be a fairly entertaining race simulation. The action was too slow for my liking however, and I soon became frustrated and bored watching the vehicle speeds against the computer or with another player.

Instructions playability graphics
values for money

Super Dogfight
Commodore 64 £9.35
Terminal Software, 28 Church Lane, Prestwich, Manchester
This is the classic two-player dogfight, as seen on a thousand Atari video games. Two planes in a cloudless sky are trying to blast each other to bits with machine guns. Your opponent must be hit 10 times before you win. Graphics are better than on the Atari version — I particularly liked the way the latter plane flies out of the screen and the bits falling off the plane.

Instructions playability graphics value for money

Chequered Flag
48K Spectrum £6.95
Sinclair Research, Stanhope Road, Camberley, Surrey GU15
Chequered Flag is one of the best programs since Flight Simulation and will appeal to all fans of high speed driving. The game is to drive a Formula 1 racing car so as to get the best possible time over a chosen course and distance. After a straightforward load in you are invited to select from plan views of 10 courses, and then pick your cars from three models requiring different levels of skill. The easier cars have automatic gears. You can then either see a demonstration run on screen or field.

Instructions playability graphics value for money

Admiral Graf Spee
16K ZX81 £5.95
Templmann Software, 27 Cluny Ports Street, Rye, East Sussex
I had trouble with this tape. It seemed to load successfully but whether I was just bad at playing it or whether there was a flaw on my copy I don't know. The game makes you the captain of the battleship Graf Spee in the Atlantic in 1940 and your task is to sink all the enemy shipping in the area. First you are shown a map of the Atlantic with your position, and you have to locate the enemy ships and shoot at them. You can move and turn but may not shoot too often. You find three important situations that come with the tape and that you are offered by seven levels of difficulty, but it is wise to begin with level one as each level is a real challenge.

Instructions playability graphics

Harrier Attack
Spectrum £5.95
Durrell Castle Lodge, Castle Green, Taunton TA1 4AB
Similar to Straddle, although with enough unique features to be considered a unique game. Your task is to take off, fly to an island, fly across the island through the enemy plane attacks bomb the enemy plane base and return home. You then have three quarters of the screen and the time to complete the mission smoothly from right to left. Graphics are quite good, but the screen is a bit too bright. Overall, a good game for those who enjoy this type of challenge.

Instructions playability graphics value for money

HOME COMPUTING WEEKLY 22 November 1983 Page 25
It’s easy to complain about advertisements.

The Advertising Standards Authority. If an advertisement is wrong, we’re here to put it right.

ASA Ltd, Brook House, Torrington Place, London WC1E 7HN

GAMES MACHINE
AVAILABLE AT ALL SPECTRUM SHOPS
BREW SEEN BY COMMISSIONERS
LEISURE ZONE AND ALL GOOD COMPUTER SHOPS
DEALERS PLEASE CONTACT US FOR THE NAME OF YOUR NEAREST DISTRIBUTOR

NEW RELEASE
AARON'S QUEST for COMMODORE 48
A fast action adventure game with Aaron on his quest to save Aladdin. Watch as the game begins with Aaron entering the wishing stone. He must use his wits and skills to find the magic lamp and rescue Arnd from the evil genie. Then it's up to you to lead Aaron through the underground maze to the final showdown... £7.95

BARBIE DISNEY for SPECTRUM
A classic game for girls of all ages. Help Barbie find her way through the enchanted land of Pixie Hollow. £1.95

OGLES for SBC/9
This exciting game is sure to please children and adults alike. £3.95

SUPERMAME for 16K or 48K SPECTRUM
Super Mario Brothers style platform game for children of all ages. £3.95

OLOGS for SBC/9
OLOGS is a new word game for children of all ages. £2.95

OLOGS COMPETITION APRIL 94
£5 95

CITY 101
GAME MACH LTD., FREEPOST ST ENEGAN, HERTS SG1 2YX
Telephone: 0345 313 651

Please send 50p to cover cost of packing.

Name ____________________________ Date ____________________________
Signature ________________________
Address __________________________

DEALERS AND DISTRIBUTORS INCLUDED GAMES AND EDUCATIONAL PROGRAMMES WANTED FOR ANY HOME COMPUTERS

Page 26 HOME COMPUTING WEEKLY 22 November 1983
Give them a lift... if you can stand the strain

It's a risky job being a lift attendant - in this program anyway. Rod Lane wrote the game for the unexpanded TI-99/4A.

My game places you in the role of a despairing lift attendant whose job is to carry passengers in a six-storey office building to the roof top helped by a 16-light hex string.

However, your lift is in need of repair and the doors have the unfortunate habit of opening when they are not there and the passengers, take a nasty tumble.

Your task then is to whisk the passengers to the roof as quickly as possible, using the F and X keys.

This is complicated by two factors.

The mechanism is old and weak and if you try to cram more than six people into your lift the cable will snap with obvious consequences.

And when a disaster happens the other workers, realising something is amiss, pour out of their offices onto the corridor near the lift shaft.

When more than 10 people have suffered an untimely end the game finishes and displays your tally and the opportunity to try again.

How it works

140-250 set up variables
160-370 define characters
180-260 draw screen
280-330 scan keyboard, move lift or move passengers and, when lift reaches roof, write total number of passengers
190-270 randomly decide on floor the passenger advances and remembers how far along the corridor figure has reached. Extra choices included to make progress of the figures less smooth.
280-330 move figures
290-330 check when passenger reaches lift or last passenger to reach the help pad.
300-330 crash lift on over loading
310-330 print tally, offer new game.

Hints on conversion

TI BASIC is fairly standard with two main exceptions. Single statement lines are used and subroutines for graphics and sound are available, prefixed with CALL as detailed below.

CALL CLEAR clears screen
CALL SCREEN defines screen format
CALL CLEAR defines a character with a 16-digit hex string from an eight by eight grid. Other machines will use a different method.

CALL COLOUR (character set, foreground and background) sets colour of character

CALL HCHAR(row, column, character code, number of repeats) places character on screen at coordinates specified.

CALL VCHAR(row, column, variable) similar to HCHAR, but repeats character vertically.

CALL SOUND(D,F,V) gives sound of duration D, frequency F and volume V. Three sounds can be produced at once.

Variables


MET number of passengers met and therefore in the lift.

TOT total of passengers to reach the help pad.

LST number of passengers who failed to make it.

DEF number of places from the end of the floor on which the figures appear.

100 REM Lift Attendant
110 REM By R. Lane
120 REM
130 REM Initial Values
140 CALL CLEAR
150 F=31
160 S=31
170 T=31
180 FT=31
190 FIF=31
200 SN=31
210 DET=0
220 LST=0
230 DET=0
240 TOT=0
250 RANDOMIZE
260 REM Draw Characters
270 CALL HCHAR(128, "08080808080808080808")
280 CALL HCHAR(129, "087F557F557F557F557F")
290 CALL HCHAR(136, "00103010301030103010")
300 CALL HCHAR(137, "00103010301030103010")
310 CALL HCHAR(132, "0000000CE142378FF")
320 CALL HCHAR(144, "FFFF000000000FF")
330 CALL COLOR(14, 6, 1)
340 CALL COLOR(15, 9, 1)
350 CALL COLOR(3, 8, 1)
360 CALL COLOR(4, 8, 1)
370 CALL SCREEN(2)
380 REM Set Up Screen
390 CALL VCHAR(1, 4, 30, 24)
400 CALL VCHAR(2, 6, 30, 23)
410 CALL VCHAR(1, 5, 126, 24)
420 P=INT(24*PND)+1
430 CALL HCHAR(P, 5, 129)
440 FOR ROW=4 TO 24 STEP 4
450 CALL HCHAR(ROW-7, 30, 25)
460 CALL HCHAR(ROW-1, 6, 32)

HOME COMPUTING WEEKLY 22 November 1983 Page 27
470 NEXT ROW
480 CALL HCHAR(2,7,144,4)
490 MS="MET"
500 C=11
510 60SUB 560
520 MS="LOST"
530 C=21
540 60SUB 560
550 GOTO 610
560 FOR L=1 TO LEN(M$)
570 CALL HCHAR(2,C+L,ASC(SEG$(M$),(L,1)))
580 NEXT L
590 RETURN
600 REM Move Lift
610 CALL KEY(3,K,ST)
620 IF ST=0 THEN 920
630 IF K=69 THEN 660
640 IF K=88 THEN 830
650 GOTO 920
660 P=P-1
670 IF P<0 THEN 720
680 CALL HCHAR(P+1,5,128)
690 CALL HCHAR(P,5,129)
700 CALL SOUND(150,-7,0)
710 GOTO 610
720 P=1
730 TOT=TOT+MET
740 MET=0
750 CALL HCHAR(2,16,48)
760 FOR I=1 TO LEN(STR$(TOT))
770 CALL HCHAR(16+I,ASC(SEG$(STR$(TOT)I,1,1)))
780 NEXT I
790 CALL HCHAR(16+I,136)
800 CALL SOUND(150,659,3)
810 GOTO 610
820 GOTO 920
830 P=P+1
840 IF P>25 THEN 890
850 CALL HCHAR(P-1,5,128)
860 CALL HCHAR(P,5,129)
870 CALL SOUND(150,-7,0)
880 GOTO 610
890 P=24
900 GOTO 610
910 REM Decide On Floor
920 C=INT(10*RND)+1
930 ON C GOTO 940,990,1040,1090,1140,1190,1240,1250,1260,1270
940 ROW=9
950 COL=F
960 60SUB 1290
970 F=COL
980 GOTO 610
990 ROW=7
1000 COL=8

1010 GOSUB 1290
1020 S=COL
1030 GOTO 610
1040 ROW=11
1050 COL=T
1060 60SUB 1290
1070 T=COL
1080 GOTO 610
1090 ROW=15
1100 COL=FT
1110 60SUB 1290
1120 FT=COL
1130 GOTO 610
1140 ROW=19
1150 COL=FIF
1160 60SUB 1290
1170 FIF=COL
1180 GOTO 610
1190 ROW=23
1200 COL=SK
1210 60SUB 1290
1220 SK=COL
1230 GOTO 610
1240 GOTO 610
1250 GOTO 610
1260 GOTO 610
1270 GOTO 610
1280 REM Move Passengers Subrou
1290 CALL HCHAR(ROW,COL+1,32)
1300 IF (COL>5)+(COL-1<5) THEN 14
1310 CALL HCHAR(ROW,COL+1,32)
1320 COL=COL-1
1330 CALL SOUND(60,880,0)
1340 CALL HCHAR(ROW,COL+1,32)
1350 CALL HCHAR(ROW,COL,197)
1360 CALL SOUND(100,587,0)
1370 COL=COL-1
1380 RETURN
1390 REM Check For Lift
1400 CALL HCHAR(ROW,5,GET)
1410 IF GET<1.29 THEN 1510
1420 CALL SOUND(100,440,0)
1430 MET=MET+1
1440 IF MET>6 THEN 1680
1450 FOR I=1 TO LEN(STR$(MET))
1460 CALL HCHAR(2,15+I,ASC(SEG$(STR$(MET)I,1,1)))
1470 NEXT I
1480 COL=81-DET
1490 IF COL>8 THEN 1490
1490 COL=8
1490 RETUR
1500 REM Miss Passenger
1510 FOR SOUND=880 TO 220 STEP 20
TI-99/4A PROGRAM

1520 CALL SOUND(50, SOUND, 0)
1530 NEXT SOUND
1540 DET=DET+9
1550 LOST=LOST+1
1560 FOR I=1 TO LEN STR$(LOST)
1570 CALL HCHAR(226+I, ASC(SEGS$(STR$(LOST), 1, 1)))
1580 NEXT I
1590 IF LOST>10 THEN 1640
1600 COL=31-DET
1610 IF COL>8 THEN 1630
1620 COL=8
1630 RETURN
1640 FOR DELAY=1 TO 2000
1650 NEXT DELAY
1660 GOTO 1780
1670 REM OVERLOAD SEQUENCE
1680 FOR E-ROW TO 24
1690 CALL NCHAR(E, 5, 32)
1700 CALL SOUND(50, -6, 0)
1710 NEXT E
1720 CALL HCHAR(24, 5, 132)
1730 CALL SOUND(350, -7, 1, 110, 0, 1
150, 120, 0)
1740 FOR DELAY=1 TO 2000
1750 NEXT DELAY
1760 CALL CLEAR
1770 PRINT "YOU OVERLOADED THE LIFT.",":=
1780 PRINT "YOU ELEVATED":TOT:"P
1790 INPUT "PRESS ENTER TO START
AGAIN":A$ = 1800 GOTO 140

Micro Tip

Make Space for hi-res

This line can be entered as a direct command, or as part of a
program, so as to reconfigure your VIC to take hi-res graphics
with a 16K RAM pack.

It can be used in a program of instructions, for instance, to
reserve space for hi-res and then to auto-load the next part of
the program
POKE 199, POKE 645,30 POKE 642,32 POKE 198,10
POKE 631, 131 SYS 64524
631 is the first location of the keyboard buffer - not 632, as
was stated recently in one magazine

David Shepherdson

ARCADE ACTION - ORIC-1 - ADVENTURES

DINKY KONG

For 48K £8 95
SUPER M/C ARCADE GAME
- Skill Levels, Full Colour, Platforms, Ladders, Fire-balls, Rolling Barrels, Umbrellas
- Heroes, Hall of Fame, Sound Effects
You won't see a better game for the Oric.
*Author - Adrien Sheppard

JOGGER

For 48K £8 95 Inc.
REAL M/C ARCADE ACTION
- 4 Sceens, Skill Levels, Full Colour, Road, Cars, Lomina, River, Croas, Logs, Hall of Fame
- Sound Effects

You can't program seriously without Oricade.
*Author - Adrian Sheppard

GRAIL

For 48K £8 95 Inc.
Exciting Graphic Adventure
Where is the Castle Periuse is the Holy Grail? Gather armour and
weapons to light monsters.
Sell treasure to a trader in
exchange for strength potions and
wound ointment
Where will the warp take
you to? This is a test of skill,
logic & intelligence.

Author - Adrian Sheppard

ORICADE

For 48K £15.50 Inc.
- Assembler/Disassembler/Editor
- Handles full 5602 microcomputer
- Features Save & Reload M/C Assemblies & Disassemblies at
any address

*Authors - Adrian Sheppard

MORIA

For 48K £15 95 Inc.
A challenging adventure set in the mines of Moria
- Can you survive encounters with
the monster of Middle-Earth?
- Will the wizard help you? Are
you fated to die beside the
sealed doors? Or have you the
power to open them? Unless you
find Durins ring you will never
leave the mines alive!

*Now available from branches of
Laskyes
*Dealers enquiries welcome -
excellent trade terms
*Ask for Severn Software at your
local computer store

Please send me your program
For My Oric!
I enclose cheque/PO no.
NAME
ADDRESS

Post Code
Severn Software
HCW 8
5 School Crossing, Lydney, Glos, GL15 5TA.
AGF

PROGRAMMABLE

JOYSTICK

INTERFACE

for

Spectrum

or ZX81

PROGRAMMABLE INTERFACE
The AGF Programmable Joystick Interface is a unique design offering the use of any Atari compatible joystick with absolutely all software, whether it is cassette or ROM cartridge with the Smaller Spectrum or ZX81. The circuit features programmable interface requires no additional software and accurately replicates the keys of the computer in a manner which is responsive to absolutely ALL key reading methods, both BASIC and Machine Code.

The interface does not interfere with key operation and can therefore be used simultaneously with the keyboard.

There is no need to remove the interface once fitted as the rear extension connector will accommodate further expansion e.g. printers or RAM packs etc. This important feature avoids excessive wear to the expansion port.

The key replication principle patented by AGF means that your own programs can use eight directional joystick movement by utilising simple key reading BASIC.

Two joystick sockets are provided which share the same keys, for use with the majority of two player games. Several interfaces may be used on the same computer for multiple joystick applications.

The interface is programmed by a 2 digit code, which is locked up on a programming chart supplied for each direction and firing button. The two numbers are then selected on a pair of leads which are clipped onto appropriately numbered strips on the interface.

Once configured that can be marked on a Quick Reference Programming Card for storing with the game. As the programming is not power dependent the interface retains the last configuration made and can be immediately used when next switched on.

KEY FEATURES
- Programmable design gives TOTAL software support
- Accepts Atari, Competition Pro Wee, Starfighter, Quick Shot 2a Stick etc.
- Rear extension connector for all other add ons
- Free demo program and instructions

PLEASE ALLOW 25 DAYS FOR DELIVERY

FROM MR/MRS/MISS
ADDRESS

SEND C.W.O. (NO STAMP NEEDED) TO A.G.F. HARDWARE, DEPT.
FREEPOST, BOGNOR REGIS, WEST SUSSEX, PO22 9BR

<table>
<thead>
<tr>
<th>QTY</th>
<th>ITEM DESCRIPTION</th>
<th>ITEM PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROGRAMMABLE INTERFACE</td>
<td>33.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JOYSTICK(S)</td>
<td>7.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PACK(S) QUICK REFERENCE CARDS</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VIDEO GRAFFITI</td>
<td>FREE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ZX81</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ZX SPECTRUM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DEALER ENQUIRIES WELCOME
EXPORT PRICES ON APPLICATION

PACKAGE CONTENTS SUPPLIED
- Programmable Interface Module as illustrated, complete with clip-on programming leads.
- Self adhesive programming chart detailing how to define which key is simulated by UP, DOWN, LEFT, RIGHT, and FIRE. This can be fixed on to the case of your computer or if preferred the protective backing can be left on. The chart is made of a very durable reverse printed plastic and is extremely easy to read.
- One pack of ten Quick Reference Programming Cards for all game settings to your games requirements. The card allows you to mark the configuration in an easy to read fashion with space to record the software title and company name.
- Video Graffiti demonstration program which is written totally in BASIC to illustrate how all eight directions and fire can be used. This is also a useful high resolution drawing program.
- 12 months guarantee and full written instructions.

JOYSTICKS

CONTROLLERS

FOR USE WITH OUR INTERFACE

Module or VIC 20, Commodore 64, Atari VCS, Atari 400, Atari 800

ONLY £7.54 inc. VAT + P&P

If you require extra Joysticks for our original interface module mark order 'OLD' Joysticks

ALL ORDERS CONFIRMED
SOFTWARE REVIEWS

Gopher
Tl-93/4A
(Extended BASIC) £8
Tinn, from Sumsoft Software, 10 Allston Road, Stockport, Cheshire SK4 5AH

Gopher is a Caterpillar type game for one or two players in which you rush through a maze number level. The game is displayed on the opposite side of the screen then the following level points are replaced and all the points are then replaced and the game is continued. This is not necessarily a bad thing, as long as the levels are good.

After this you progress to the next level where the points are doubled for each level it is.

There is a chance of three speeds; speed one is the fastest and two provides more numbers to eat and blocks to avoid. Speed three is slow but challenging, especially when attempting the two player game.

The latest version is the most enjoyable feature of Gopher. It is far more tricky to outwit your opponent by blocking him off as well as race against him to obtain the highest score.

Instructions: 95%
Playability: 75%
Graphics: 80%
Value for Money: 80%

Drake's Dozen
52K £5.95

This is a very low level of game and has wonderful silky sounds. The bonus fruit from the arcade version is replaced by a variety of symbols. On the whole the movement is very smooth and the game is very fast.

The only gripe I have is that whenever you lose a life you are forced to start again every frustration if you only had a few shots to go.

Certainly if you like Pacman then this game is well worth the money.

Instructions: 80%
Playability: 90%
Graphics: 85%
Value for Money: 85%

Orilmunch
48K Oric £7.95
Tannoy, 3 Club Mews, Ely, Cambridge CB1 4NW

Orilmunch' Orilmunch is certainly one of the better Pacman style games on the market, retaining most of the features of the arcade original. The arcades are rather slow moving and this makes the game very fast.

The arcades are usually used around a variety of sizes (a different one at each level).

Eating two of the ghosts causes the remaining two to increase the speed at which they pursue you. This offsets their inability to re-generate before the next level.

All this is accompanied by good sound, wonderful silky sounds. The bonus fruit from the arcade version is replaced by a variety of symbols. On the whole the movement is very smooth and the game is very fast.

The only gripe I have is that whenever you lose a life you are forced to start again every frustration if you only had a few shots to go.

Certainly if you like Pacman then this game is well worth the money.

Instructions: 80%
Playability: 90%
Graphics: 85%
Value for Money: 85%

Snail Trail
52K £4.95
R. H. Electronics, Chesterfield 346, French's Road Cambridge CB4 3NP

A simple game with very little action. A maze is drawn on the screen and players start at the same mark. The maze is a path of four keys. There are four levels of play and the players play against the clock. The level is only measured by the highest level to reach the top, and the high score on display will tell you the total number of keys.

Instructions: 80%
Playability: 40%
Graphics: 40%
Value for Money: 40%

Mined-Out
52K £6.95
Quakershaw, 13 Primrose Road, Southampton SO1 1LL

Don't be put off by the maze instinct: blunder - and don't be too attracted by the half naked dame dancing in a bubble on the cover either. The presentation may be the top but the game is

Fun

Frustrating, frustrating, frustrating.

You have one life (how realistic) and the opportunity to rescue dame - down all of Niki Muddle - who is looking for Bill there. You get extra points for the chamber but the first few moves are easy but then a little bug starts to follow you, forcing you to slow down and make mistakes - and get blown away.

At some point the screen is cut off by a maze. You are told how many minutes to the next level of play - the maze is now. You must choose that long enough to

You have one life (how real) and the opportunity to rescue dame - down all of Niki Muddle - who is looking for Bill there. You get extra points for the chamber but the first few moves are easy but then a little bug starts to follow you, forcing you to slow down and make mistakes - and get blown away.

At some point the screen is cut off by a maze. You are told how many minutes to the next level of play - the maze is now. You must choose that long enough to

Instructions: 95%
Playability: 80%
Graphics: 85%
Value for Money: 85%

Where should you turn for maze games?

If you're trying to find your way about the maze games on the market, our reviewers offer you some guidance.

Cybertanks
Spectrum
£5.90

Star Games, 17 Barn Close, Stevenage, Herts.

You are in a maze of houses with four tanks after you. There is a maze in the corner which you have to use to request extra tanks. You have to get them to them if you can.

This is the best way to get through the houses to get a path through. It's really a maze - you have to do it without any prior knowledge of the maze.

Instructions: 70%
Playability: 80%
Graphics: 70%
Value for Money: 70%

HOME COMPUTING WEEKLY 22 November 1983 Page 31
Logic doesn't cheat anymore!

Following the software review of Logic Systems, Draughts in HCW 10 where it was pointed out that the program 'cheated the player,' and where the review concluded: 'Now that's what I call really hospitable,' the creators of Logic Systems assures HCW that this is not the case with any of the Draughts games currently on the market!

An early copy was sent to HCW which had a fault whereby if you tried to end the game so that you could take more than one piece you would just disappear into the air.

Is this the end?

The announcement that Texas Instruments is increasing production of the TI 99/4A until it has alarmed many TI owners.

Owners may be assured that TI has its guarantees commitments in mind, and will continue to provide service for at least the next year.

From TI we learn: 'Texas Instruments will, of course, carry on supporting the TI 99/4A in terms of service-repair and there is plenty of software for owners and those who purchase up to Christmas.'

Present owners should remember that no new TI modules or peripherals will be produced and that what they need within the next month supplies of some items are very low.

We understand that there are many surplus consoles and these are likely to be reduced in price as some of the game modules are cleared stock before the end of the year.

The more costly modules and the peripherals are not at such surplus however. If you are thinking of buying these you should obtain a loan and buy them while they are low.

Galaxy Video in Maida Vale have very small supplies of a very recently released module LOGOZ, and some new Funware modules (Ambulance and Driving Demon). Owners should support such dealers!

If owners wish to maintain support it is suggested that all requests be channelled through the three or four dealers who show the most practical support for the computer.

By concentrating demand, make a point to consider the import of third party modules and peripherals from the States when a risk business.

Here in the UK we have a fixed party supplier of 32K, RAMS (Arcade Hardware) and they together with others also supply joy sticks or adapters, we also have over 20 titles of games, and also supplies 8-bit Magazine.

Stainless Software will continue to supply cassette programs to fans as there is a demand and send the other principal software houses will continue. Stainless Software will welcome additional sales to its catalogue, by individual programmers or from small suppliers who wish to leave the market.

But all enquires to us from individuals must be accompanied by a cheque, we are busy clearing the backlog of the Pysick and Stephen Shaw, Stainless Software, 10 Altruna Road, Swindon, Wiltshire MK-5B.

The ultimate frustration?

Some of the software houses charge more for their games and perhaps include black letters in their package. Ultimate, who have produced some excellent games this year, should have charged more for their current game Jezzball and included a bottle of Scotch and a sma box.

If I ever get to pick up that damn ball I shall know exactly where to drop it — The Green, Ashby de la Zouch.

Thanks anyway to Ultimate for top quality games.

LETTERS

Scoring high...
I was pleased to see you are reviewing modules for the TI 99/4A, which is a regular Texas program.
Since many Texas owners are bound to ask about their high scores on Pac-Man, I wish to know whether anyone has broken the high score on the Manchester module game of 212 9240 657. I am told to go to the highest score ever, especially when you get on to the next level at least.

Hollister, Hampshire...

with cartridges
I read in HCW 23 (the Paul Hopkins) a TI 99/4A owner had achieved a score of 100 000 on Pac-Man, and wonder if this was an all-time high.
In fact the highest score I know of was by a Cotton Colishan, Texas, who wrote into the 99th magazine of Family Name of Pac-Man, on page 302.
My favourite TI cartridge are Artifacts, as reviewed in HCW 30 and TI Invader, I achieved a score of 115 999 on the third level: I am quite satisfied as you cannot satisfy without an available balance, you can.

Hollister, Hampshire...

A series of disasters
I am having trouble with the TI 99/4A. I don't seem to be getting any connection with the published TI function problems.
So far I have had three unsuccessful attempts at.Score 44000 on the same level with the same cartridge. I have stopped using the cartridge and am using a new one that I have just bought. It seems to be working fine now.

Hollister, Hampshire...

Fun for all the family
I own a TI 99/4A and like the TI 99/4A BASIC. I am addicted to the company. The children love it and keep me busy all the time. I have been keeping up with them all on my own games.
But my husband was totally uninterested in computing — until we bought a Video Cassette recorder! He does sometimes enjoy a video and has even been heard to say he likes hearing the TI 99/4A at a volume one game.

I recommend that you try to find a way to make the TI 99/4A more interesting to the non-computer enthusiast.

Basingstoke, Hampshire...

Is TI its own worst enemy?
Like most TI 99/4A owners I have spent a lot of time trying to find good-quality software for my machine and I am beginning to think that the problem may be self-perpetuating.
TI's software is available for TI owners who are learning to program for themselves and discovering that this is the most satisfying form of buying and playing even the best games available.

This may reduce the market to the point where the big software houses won't bother. Although this may seem to be a fit in such software, having supply in the hands of the small software depository to whom have marketed some first-class products.

To make TI's own marketing, I recently visited three local chain stores, all advertising the TI 99/4A as being the best machine and not Texas software will at all and must have software.

The second had an excellent selection, all priced about $25 per game and although I have seen before that the third had a few finished modules on the shelf which an advertising agent explained by saying, "Oh have you a TI 99/4A? Perhaps you can use this software?"

 suing I have bought one and I think someone does not know of the software.

Graham Baldwin, South
crnnan, Surrey...

Encourage me to buy
High street computer dealers will have to give themselves a kick up the backside if they are to keep their software.
As a complete newcomer to the scene, I have visited various shops for advice and when I say have been told to buy a TI 99/4A. I have bought a TI 99/4A and am thinking about buying one and I think someone does not know of the software.

John Macdonald...

Treasurer
I got a great kick out of Yancy M. T., the VI disc on the island magazine (HCW 30). When you are eaten by a shark, or drowned in the ocean they can win.

Galicia, Texas...

Don't abandon the Atari
All right, it's up to you. You've got the machine, you've bought the monster, you've paid the hardware and software, you've been told by everyone that it's the way to go.

A couple of days ago I received a letter from Atari of a different make: "Dear customer, we are pleased to inform you that the Atari 800X is being released." I am told that it is the number one computer in the world.

Noreen L. Hunter, Ballymena...

HOME COMPUTING WEEKLY 22 November 1983 Page 33
This complete collection of books explains everything you need to know to get the most out of your Dragon 32. The most exciting games, the latest programming techniques and the most practical step-by-step instructions — everything necessary to make your Dragon roar.

Enter The Dragon
Thirty exciting programs that will turn your Dragon 32 into a complete palette of action-packed games including Lunar Lander, Dragon Invaders, and Meteor Storm. Includes many professional tips and hints.

Ambitious and aimed to improve your grasp of computing in general and the Dragon 32 in particular.

Personal Computing News

Dragon 32 Programmer’s Reference Guide
The complete Dragon reference. From simple BASIC to advanced machine language routines including sound and graphics. Each facility of the Dragon is fully explained with the aid of demonstration programs. A must for any owner who wants maximum performance from their Dragon 32.

Dragon Machine Language For The Absolute Beginner
Follow the logical steps and practical examples to complete mastery of Dragon machine language. Written in easy to-follow, no jargon style. Now you can write faster, more exciting programs. Take you right from the beginning to full understanding. In easy steps, each fully explained and illustrated with clear examples.

Melbourne House Publishers

Books
- Enter The Dragon
- Dragon 32 Programmer’s Reference Guide
- Dragon Machine Language for the Absolute Beginner
- Dragon 32 Hungry Horace

Cassettes
- Dragon 32 Hungry Horace £5.85
- Cassette from the Book £5.85
- Enter the Dragon Super Cassette B £5.85
- Enter the Dragon Super Cassette C £5.85

Please send me your free 48 page catalogue.

Orders to:
Melbourne House
13 First Avenue Road
Greenwich
London SE10

Please check your Details and have this form ready to post or phone in. All Melbourne House cassette software is unconditionally guaranteed against malfunction.

Please use the coupon above or call our 24 hr answering service (01) 858 7397.
ATARI PROGRAM

Suit yourself — 10 ways to win at poker

Poker Patience is the sixth game in my series. It's my favourite and I find it quite addictive.

The aim is to make the best possible poker hands in a grid using one card at a time dealt by the computer. Five cards are made in the five rows or the grid, another five in the columns and two on the diagonals.

Once a card has been placed in the layout, it cannot be changed, so think carefully. Remember each card is part of at least two hands and sometimes three or four.

When the grid has been filled, the computer scores each of your 10 hands and totals them. The value depends on how good a poker hand it is.

The computer scores each row first, then the columns and, finally, the diagonals.

Average scores tend to be around 60-80, so I have put in a target high-score of 85 which shouldn't be too difficult to beat.

Poker hands are as follows:

Royal flush A, K, Q, J, 10 in same suit
Straight flush any run of five cards in same suit
Four of a kind any four of same denomination
Straight a run of five cards not in suit
Full house three of a kind and pair in same hand
Flush any five cards in same suit
Three of a kind three cards of same denomination
Two pairs two pairs in same suit
One pair any pair
Any other hand does not score

Even if you missed the earlier games, you can still play Les Howarth's game of Poker Patience. All the listings you need are here and they'll run on any Atari

These hands can be counted in any order. For example, 5, 7, 5, 6, and 4 on the same line still counts as a run.

I don't know the best score, but my highest to date is 123.

Special Instructions: In print statements the letters U D L R refer to cursor control arrows U = Up arrow, D = Down arrow, L = Left arrow, R = Right arrow.

6020–6030 all print statements are in reverse character, inverse spaces and inverse CTRL/R. Each title is followed by two spaces and 12 x CTRL/R except for last title.

6040 use inverse for title and for Hi Score.

6050 print statement contains inverse space.

6110 print statement is "Hi Score".

6115 print in normal spaces.

6116 print in normal spaces.

6370 print in normal spaces.

6371 print in normal spaces.

6400 print "Score".

8110 print the clear screen character, use ESC/CTRL/CLEAR.

6480 print statement is in reverse "Hi Score".

8119 print the variable GM to read GM (greater than) N6, or GM (greater than) N3 in the case of two programs.

Screen colour can be altered by changing these POKEs:

Address 784 Cursor Colour, 789 cards and writing colour, 790 background, 712 border, 1558 D L L 4 colour.

How it works

Poker Patience

6000–6005 set up game in usual manner, but this time array D is filled as you place cards on the layout.

6060–6099 link program to joy stick routine.

6100–6150 deposit card on lay out update array D and turn up next card.

6200–6370 scoring routine: First 13 places in P array and S array are cleared and then used to hold values of cards in a hand in a two in F (12) would indicate two queens.

Loop V active for a hand Loop V controls direction of checking — row, column, first diagonal, second diagonal, Variable PB is player score.

6373–6420 print the total score and check if Hi Score has been beaten. Compress the remaining cards for you to press Option or Start for new game.

6440–6459 update hi score.
ATARI PROGRAMS

Listing 2 — Poker Patience

Micro Tip

Sound of music

I have written a musical sound program for the TI-99/4A. Any key with an ASCII code pressed will play a musical note. The lower the number, the lower the frequency.

Sarah Finch
DRAGON PROGRAMMING

Make your printer obey the Dragon's orders

Sooner or later some Dragon owners will buy a printer. This is usually quite easy to interface with the correct cable, but to get it working, well, that's different.

The Dragon manual is not very helpful with only common commands like PRINT, USING OPEN "0", "filename" & LLIST. There is no mention of graphics or control codes. I hope to overcome these shortcomings with this short article.

One of the first problems is the control over the length of the printed line. This is overcome by a simple POKE command 155,x, where x equals the length of the line. For example, POKE 155,32 will give you a line length of 32 characters and then a line feed.

Location 328 sets the Dragon to give an auto line feed at the end of a line. To set this in operation POKE 328,0.

If, however, the location is left at its default of 155 then the computer will print a line length to the word of the printer irrespective of the value of the command line length. Both of these commands can be used in the direct mode or from part of a program.

Another area which can be covered with a single POKE is line spacing. This can be set to double spacing with POKE 330,2, giving a double line feed at the end of a line. To revert back to single spacing POKE 330,1.

The other area for formatting is that of the printer's escape key. This can be achieved by PRINT or the comma field. The latter is controlled by location 153. POKE with the number of spaces you want after the comma.

The Dragon does not have an escape key. Control codes can be implanted by the use of PRINT ",CHR$(27)," "function code". For example PRINT ",CHR$(27)," "8" is a code for the Microlinc 83 to space text in eight lines per inch.

You will have to check with your printer manual for the various codes.

The block graphic codes on the printer do not match those of the Dragon, so you will have to experiment.

Just to give you an idea of what is available I have listed the graphic blocks from the

Listing 1 -- screen dump

```
10 FOR Y = 0 TO 158
20 FOR X = 0 TO 127
30 GRAPH 1: PRINT @X,Y
```

Microline 83 together with the ASCII codes for the various patterns. You will notice that the first 16 blocks have different codes to that of the printer. This is because the graphics codes do not fall into any standard, and therefore those listed in figure 1 will produce the pattern on the left, with the Dragon code equivalent shown on the right.

The listing of the screen dump, Listing 1, can be used as a subroutine to copy any text screen. Graphics can cause problems as stated before to check your printer manual for the ASCII codes.

The routine in Listing 2, will, if included in a program, allow the use of both printer and screen without the need to have separate lines for each.

One final point: Don't forget to POKE location 153 with the width of your printer if you want to use POS(2). See what happens if you don't!

Until now there was little to tell you how to make your printer work well with the Dragon.

Alan Gray passes on what he has learned

Listing 2 -- subroutine for screen/printer loop

```
100 K = $FF
110 PRINT L; TO START LOOP
120 OPEN 0; K = "OUT" OPEN CHANNEL
130 PRINT 3; "enter text here" END, "ENTER TEXT BETWEEN LINES 120-140"
140 CLOSE 0; END, "CLOSE CHAN
150 IF K THEN 3+1; RESET PRINT FOR PRINTER COULD BE SET TO K+1 FOR TAKE AWAY LINES RETURN TO LDR
```

Figure 1 — graphics conversion table for Microline 83 printer and Dragon

<table>
<thead>
<tr>
<th>Character</th>
<th>Printer</th>
<th>Dragon</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>128</td>
<td>143</td>
</tr>
<tr>
<td>&quot;</td>
<td>129</td>
<td>135</td>
</tr>
<tr>
<td>#</td>
<td>130</td>
<td>139</td>
</tr>
<tr>
<td>$</td>
<td>131</td>
<td>131</td>
</tr>
<tr>
<td>%</td>
<td>132</td>
<td>141</td>
</tr>
<tr>
<td>^</td>
<td>133</td>
<td>133</td>
</tr>
<tr>
<td>&amp;</td>
<td>134</td>
<td>137</td>
</tr>
<tr>
<td>(</td>
<td>135</td>
<td>123</td>
</tr>
<tr>
<td>)</td>
<td>136</td>
<td>142</td>
</tr>
<tr>
<td>_</td>
<td>137</td>
<td>134</td>
</tr>
<tr>
<td>1</td>
<td>138</td>
<td>138</td>
</tr>
<tr>
<td>2</td>
<td>139</td>
<td>130</td>
</tr>
<tr>
<td>3</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>4</td>
<td>141</td>
<td>132</td>
</tr>
<tr>
<td>5</td>
<td>142</td>
<td>136</td>
</tr>
<tr>
<td>6</td>
<td>143</td>
<td>126</td>
</tr>
<tr>
<td>7</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>8</td>
<td>145</td>
<td>145</td>
</tr>
<tr>
<td>9</td>
<td>146</td>
<td>146</td>
</tr>
<tr>
<td>0</td>
<td>147</td>
<td>147</td>
</tr>
<tr>
<td>-</td>
<td>148</td>
<td>148</td>
</tr>
<tr>
<td>+</td>
<td>149</td>
<td>149</td>
</tr>
<tr>
<td>,</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>.</td>
<td>151</td>
<td>151</td>
</tr>
<tr>
<td>;</td>
<td>152</td>
<td>152</td>
</tr>
</tbody>
</table>
Write your own machine code adventures
Without any knowledge of machine code whatsoever

THE QUILL

THE QUILL is a major new utility written in machine code which allows even the
novice programmer to produce high-quality machine code adventures of superior
gility at the moment without any knowledge of machine code

Using a menu selection system you may create, save and load characters, draw them, and move them around at will. You may then
problems or your choice. Having solved your adventure you may later print-out
your solution with the greatest of ease. A point scored adventure may be
sold in sets for later completion. When you have finished THE QUILL will allow
you to purchase any of your adventures which will run independently of the main
QUILL editor so that you may give copies away to your friends.

THE QUILL is provided with a detailed tutorial manual which covers many aspects of
its use in writing adventures. It is impossible to describe all the features of this
amazing program in such a small space as we have produced a demonstration cassette
which gives further information and an example of its use.

This demo-cassette is available at £2.00 and THE QUILL itself at £14.95.

FOR THE 48K SPECTRUM AT £14.95

Our Software is now available from many computer shops
nationally, or direct from us by post or telephone

SAE for full details of our range

Dealer enquiries welcome.

GILOFT
30 Hawthorn Road
Barry
South Glamorgan
g30 8LE
(01446) 753636

TELEPHONE YOUR ORDER WITH

NEW

Cartoon Animation

On the 16K and 48K Spectrum, with the GRAPHICS SUBROUTINE from FOWLER SOFTWARE

The GRAPHICS SUBROUTINE enables someone with no knowledge of machine code to animate his drawings. It is also suitable
for those who are expert at machine code, who want an easy way of moving small and large objects around the screen smoothly, one
pixel at a time.

Any size drawing (except on which nearly fills the entire screen) can be moved, turned, and moved at various speeds. In
order to show what is possible using this program, a demonstration program includes a 9x3 character figure walking across the
screen. A small car is moved extremely fast in a second demonstration program.

A booklet explains in detail how to move a drawing you need to tell the GRAPHICS SUBROUTINE where the drawing is in
memory, where an instruction sequence is, where you want the drawing to start on the screen, the length and height of the drawing
and the speed of movement. All this is done using BASIC commands.

The GRAPHICS SUBROUTINE occupies less than 760 bytes, just below the UDG area. It moves a drawing by altering the
area of memory containing the screen display, so the picture is stored once only. You do not even need to draw any pictures, you
could just move what is already on the screen, whatever it is.

The drawings that are moved are one colour (ink and paper). You can also use the GRAPHICS SUBROUTINE to draw and
colour a stationary drawing. The time taken to draw and colour a picture which fills the entire screen is 1/10 second. Instructions are
given on how to store drawings in memory. A 3x3 character drawing involving typing in 81 numbers, each between 0 and 255. In 1984
FOWLER SOFTWARE will release a program to make this easier.

If you wish to order a tape, please return this form


Please send me ______ copies of the GRAPHICS SUBROUTINE tape plus instructions. I enclose a cheque/PO for ______

(Please tick)

[ ] HOME COMPLEX WEEKLY 22 November 1983 Page 39
HEARING IS BELIEVING

Tele Sound
SPECTRUM BEEP BOOSTER

SPECTRUM has been designed
TELESOUND to tackle the full
duty for all of the above.

£24.98
£4.35
£5.45
£28.75
£29.75
£125
£51 50
£23 50
£29 50
£17 00

£29.50
£4.95
£17 00

£32 K NIBS

Software Cartridge — Extended Basic £51.50
Mini memory £51.50 Parsec £23.50
Chess £29.50 Invades £17.00

Software Tape — Core!, Blast It, Spudz, Code Break/3D Maze, U.F.O. all @ £4.95 each.

P&P 55p per order, send 50p (refundable on 1st order) for full list, cheques or PO’s to:

SEE US AT THE YOUR COMPUTER XMAS FAIR
DEC 15th - 18th

COMPUSOUND

Write to Compuaug, PO Box 399785, Bellevue, Washington 99289, for more details.

This week I think I am glad I am out of work. See you next week.

Justizen
Fairfield, California
### Best Sellers

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Developer</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jet Pac</td>
<td>Ultimate</td>
<td>Spectrum (2)</td>
</tr>
<tr>
<td>2</td>
<td>Manic Miner</td>
<td>Bug Byte</td>
<td>Spectrum (1)</td>
</tr>
<tr>
<td>3</td>
<td>Trans-AM</td>
<td>Ultimate</td>
<td>Spectrum (3)</td>
</tr>
<tr>
<td>4</td>
<td>Zoom</td>
<td>Imagine</td>
<td>Spectrum (6)</td>
</tr>
<tr>
<td>5</td>
<td>Horace and the Spiders</td>
<td>Psion</td>
<td>Spectrum (23)</td>
</tr>
<tr>
<td>6</td>
<td>Kong</td>
<td>Ocean</td>
<td>Spectrum (28)</td>
</tr>
<tr>
<td>7</td>
<td>Cookie</td>
<td>Ultimate</td>
<td>Spectrum (4)</td>
</tr>
<tr>
<td>8</td>
<td>Killer Gorilla</td>
<td>Program Power</td>
<td>2BC (--)</td>
</tr>
<tr>
<td>9</td>
<td>Jumpin’ Jack</td>
<td>Imagine</td>
<td>Spectrum (26)</td>
</tr>
<tr>
<td>10</td>
<td>Hall of the Things</td>
<td>Crystal</td>
<td>Spectrum (22)</td>
</tr>
<tr>
<td>11</td>
<td>Split</td>
<td>Incentive</td>
<td>Spectrum (18)</td>
</tr>
<tr>
<td>12</td>
<td>Cuthbert Goes Walkabout</td>
<td>Microdeal</td>
<td>Dragon (16)</td>
</tr>
<tr>
<td>13</td>
<td>Cuthbert in the Jungle</td>
<td>Microdeal</td>
<td>Dragon (12)</td>
</tr>
<tr>
<td>14</td>
<td>Krazy Kong</td>
<td>Anirog</td>
<td>VIC-20 (9)</td>
</tr>
<tr>
<td>15</td>
<td>Pest</td>
<td>Ultimates</td>
<td>Spectrum (11)</td>
</tr>
<tr>
<td>16</td>
<td>3D Combat Zone</td>
<td>Artic</td>
<td>Spectrum (5)</td>
</tr>
<tr>
<td>17</td>
<td>Chuckie Egg</td>
<td>A &amp; F</td>
<td>Spectrum (7)</td>
</tr>
<tr>
<td>18</td>
<td>Johnny Reb</td>
<td>Lothlorian</td>
<td>Spectrum (6)</td>
</tr>
<tr>
<td>19</td>
<td>Horace Goes Skiing</td>
<td>Psion</td>
<td>Spectrum (10)</td>
</tr>
<tr>
<td>20</td>
<td>The Hobbit</td>
<td>Melbourne House</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>21</td>
<td>Frogger</td>
<td>Microdeal</td>
<td>Spectrum (14)</td>
</tr>
<tr>
<td>22</td>
<td>Penetrator</td>
<td>Melbourne House</td>
<td>Spectrum (13)</td>
</tr>
<tr>
<td>23</td>
<td>Pool</td>
<td>CDC</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>24</td>
<td>The King</td>
<td>Microdeal</td>
<td>Dragon (--)</td>
</tr>
<tr>
<td>25</td>
<td>The Hobbit</td>
<td>Melbourne House</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>26</td>
<td>Valhalla</td>
<td>Legend</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>27</td>
<td>Lunar Jetman</td>
<td>Ultimate</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>28</td>
<td>Dungeon Master</td>
<td>Crystal</td>
<td>Spectrum (30)</td>
</tr>
<tr>
<td>29</td>
<td>Bewitched</td>
<td>Imagine</td>
<td>VIC-20 (--)</td>
</tr>
<tr>
<td>30</td>
<td>Hunchback</td>
<td>Superior</td>
<td>68C (27)</td>
</tr>
</tbody>
</table>

Compiled by Boots. Figures in brackets are last week's positions.

### Top 30

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Developer</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ant Attack</td>
<td>QuickSilver</td>
<td>Durrell (--)</td>
</tr>
<tr>
<td>2</td>
<td>Harrier Attack</td>
<td>Ultimate</td>
<td>Ultimate (3)</td>
</tr>
<tr>
<td>3</td>
<td>Lunar Jetman</td>
<td>Ultimate</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>4</td>
<td>Jetpac</td>
<td>QuickSilver</td>
<td>QuickSilver (--)</td>
</tr>
<tr>
<td>5</td>
<td>Bugaboo</td>
<td>Psion</td>
<td>2BC (--)</td>
</tr>
<tr>
<td>6</td>
<td>Flight Simulation</td>
<td>dk'tronics</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>7</td>
<td>Mazziest</td>
<td>Imagine</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>8</td>
<td>- Zoom</td>
<td>Ocean</td>
<td>68C (--)</td>
</tr>
<tr>
<td>9</td>
<td>Kong</td>
<td>Bug Byte</td>
<td>Spectrum (--)</td>
</tr>
<tr>
<td>10</td>
<td>Manic Miner</td>
<td>QuickSilver</td>
<td>Durrell (--)</td>
</tr>
</tbody>
</table>

Compiled by W.H. Smith. Figures in brackets are last week's positions.
The original idea for this game came from those amusement arcade machines which allow you to gamble on any one of five different coloured horses. The horses pay different odds but, of course, the white one pays the best odds, very rarely wins.

In developing the graphics for the game, the horses appeared more like dogs, so the game became the Greyhound Derby Stakes.

Up to five players may participate. They each start with £20 stake money which they may gamble as they wish on each of five races. The overall winner is the player who has won most after the five races are over.

Before the first race, all the dogs have equal chances of winning and therefore may have odds of five to one. The players are invited to place bets on the race and the actual starting price is calculated accordingly to the betting. Heavy betting on any one dog will greatly reduce its starting price.

As the race takes place, the course is displayed with the front and back ‘strait’ of the course shown on the screen. The dogs reach the end of the straight they disappear at the end of the screen as they go round the bend of the course. The race carries on while they are out of view, and the dogs reappear along the back straight.

The same happens at the left hand bend on the course, and the dogs finally reappear again on the front strait heading towards the winning post.

After each race, new odds are calculated depending on the form of each dog — with each win, a dog’s form improves and the odds are reduced accordingly. In subsequent races each dog’s chances of winning are slightly increased if it has won any previous races.

After the final race the program displays how much each player has won or lost and the player with the highest total is declared the winner.

The program runs on a BBC model B computer. The display uses a Mode 2 screen and the program uses almost all available memory. For this reason REM statements have been omitted from the listing, and care should be taken to avoid unnecessary spaces when typing in the program.

**Main variables**

- LD8 large dog user defined character
- SD8 small dog user defined character
- W number of wins
- O betting odds
- number of dog on which bet is placed
- BET amount of stake placed
- P amount of money held by each player
- T number of players
- NFS small fence
- LFS large fence
- GRs grass on racetrack
- X,Y,RR,XX,YY,ZZ coordinates of dog and horse positions

**How it works**

- 10-160 main program loop calling PROCedures
- 120-130 check if all players have lost all their money
- 170-500 initialise variables
- Several user defined graphics are assembled using VDU 23 command.
- 510-730 set up screen for course
- VDU 19 in 520 sets all colours to black while screen is printed. Colours are restored by VDU 20 at 720.
- 740-990 prepare race start. Dogs are placed at start line and have to run along side of track.
- 1100-2120 main part of program which displays race. Each dog jumps forward a random number of steps with a slight bias for a dog which is on form. Race continues until the dogs disappear from view around bend, and first to reach winning line after one circuit is declared winner. New odds are calculated in 2200-2290.
- 2120-2270 display new odds after each race, request players to place bets on next race. After bets have been placed, starting prices are calculated and displayed.
- 2780-2990 request number of players and their names.
- 2910-3190 PROCedure to end game, after five races or when all players have lost their money.
- 3260-3450 PROCedure to display instructions
- 3460-3570 display error messages.
ATTENTION!
- all ZX81 (16K) and Spectrum (48K) users - get this, the . . .

Micro-Myte

60

Only
£48.00

complete, inclusive of VAT, post and packaging in the UK only

It's the high speed computer phone link you have been waiting for
Transmits/receives at 1,000 Baud: Three times the speed of most other acoustic modems (including professionals)
Economic to use: Communicates data direct between compatible users. Typically 120,000 bits per two minutes of telephone time. (Cheaper than a first class letter) Also twelve times faster than a telex
Simple to operate: Connects directly to your cassette input/output sockets. Use your home computer like an on line terminal. Link up with your friends by telephone or cable
The Micro-Myte 60, in its sturdy moulded plastic housing, complements your home computer equipment

YOU CAN PRE-RECORD PROGRAM OR SCREEN CONTENTS ON TAPE. YOU CAN TRANSMIT OFF TAPE OVER THE PHONE AND YOU CAN RECEIVE ON TAPE

STOP PRESS!
Micro-Myte 60 will operate with all makes of home computer software available soon

YOU CAN NOW TRANSMIT AND RECEIVE OFF TAPE!

I am a ZX81/Spectrum user (specify )
Please send me Micro-Myte 60 modem(s) at £48.00 each I enclose cheque/postal order payable to Micro-Myte Communications Ltd
Name
Address

Micro-Myte Communications Ltd
Polo House
27 Prince St
Bristol 1
Telephone (0272) 299373
Callers welcome
PROFILE

A winter's tale

Wintersoft graduated into an independent company just four months ago, when one of its partners graduated from college. John Humphreys told Candice Goodwin the story so far

said John: "It was submitted to their testers.
"And though Ring of Darkness takes quite a long time to play — it has taken some people three months — someone sat down and played it all the way through. Boots are very thorough."

Finally, Boots decided to take the program, and it has featured in the Dragon best-seller charts ever since.

When he went back to college in Autumn last year, John knew that he wanted to work for himself, writing software. As soon as he graduated from Middlesex Polytechnic, with an honours degree, he went into partnership with Dave, who gave up his job as an engineer with Thorn Lighting. Wintersoft became a separate company; "S. W. Winter were very helpful," says John. "It was always understood that I'd be setting up my own company; I'd finished college. They still do some of the mail order for us, though."

John prefers to write for the Dragon, but Dave likes the One. Though he had written Operation Gremlin, just released for the 48K Oric, in November, they will be releasing an Oric version of Ring of Darkness — and once for sure. After that, they plan to bring out Ring of Darkness 2 for all three machines. "It has the same graphics as the first one, but some game changes. I can't say much about it yet," says John.

"We're also talking to some teachers about producing some educational programs — but that's just pipe dream at the moment."

John reckons that Wintersoft will stick with adventure games, and predicts that arcade games are on the wane. He hopes to make some strong graphics for Wintersoft's 'trademark', his main objection to the Dragon is the limited range of machine code and some lack of departure from a graphics. He looks forward to working with machines that are less restricted graphically; "I think computers at home are becoming more sophisticated, because people are becoming more demanding — and rightly so. The machines currently on the market are stretching to their limits."

After such a short time in business, it's hard to say exactly how well Wintersoft is doing, but John hopes to make "a bit of a profit" from which he will invest in extra programmers. "It'd be quite nice to be an employer."

Though he feels that his business and programming training was a good foundation for running his own company, John wouldn't necessarily want to recruit someone with a qualification like his own. "I'd look at what programs they'd written, and be quite hard. You don't need qualifications to write computer games — you just need to be keen and enthusiastic."

HOME COMPUTING WEEKLY 22 November 1983 Page 47
SOFTWARE REVIEWS

The Temple Of Zaren Dragon £7.95

Dungeon Software, Milton House, St John Street, Ashbourne, Derbyshire DE6 1GH

Dungeon Software has its own distinctive style of producing software. This adventure comes in the company's usual carton type case with a colourful insert and good instructions.

The game places you in charge of a damaged ship about to land on Zaren. You, as agent 609, must bring back four objects: the Golden Orb, a map of Zaren, a new inner pack and a new fuel module without which you cannot get back to Earth.

A detailed high resolution picture starts the game. A city is shown and you must land your spacecraft on the landing pad. From there the adventure returns to the more orthodox style of new type adventures. The locations are described accurately and the program shows more than a passing resemblance to Dungeon's other main adventure, The Crystal Chalice.

There is a more "spacy" feel about the adventure though, with robots, robotic aliens and murderous secret police which must be avoided.

The adventure is supposed to be easier than the Crystal Chalice and there is certainly more chance to explore the locations without fear of coming to grief. **CG**

INSTRUCTIONS: 80%
GRAPHICS: 65%
PLAYABILITY: 65%
VALUE FOR MONEY: 65%

The Crystal Chalice Of Quaram Dragon £7.95

Dungeon Software, Milton House, St John Street, Ashbourne, Derbyshire DE6 1GH

The Crystal Chalice could best be described as an advanced adventure. I had no trouble with handling or with the well written instructions.

The game starts with a title page and very good use is made of the Dragon's magnetic sound facilities. The actual game, however, is less inspired.

There are two departments of each location, some filling up three quarters of the screen. You are told just a few of the commands available and then left to get on with the task of finding the objects which give clues to the identity of the chalice. The program is a little slower, and has a couple of major flaws which do detract from the overall adventure.

For instance, if you type in SAVE to save the game for future play it is a funny message about a bed appears. You cannot enter another command and the program eventually breaks with a File Not Open error.

To its credit, the adventure is quite large and deftly written. **CG**

INSTRUCTIONS: 60%
GRAPHICS: 60%
PLAYABILITY: 60%
VALUE FOR MONEY: 65%

7ambs Of Xelops Cammadore 64 £6.99

Rennik Software, 272 Argyll Avenue, Slough, Berkshire

A text adventure game set in the Egyptian desert. Your objective is to find treasure, learn words and collect treasure. On your journeys you will come across some unusual animals which you can pick up to aid you, and you can also make and use some magical items and bows.

The asset utility card is quite helpful, given that it won't give you much about the adventure to come. Apparently there are more than 100 rooms to explore, even once you have got inside the tomb.

This seemed quite a good game, although the usual limitations of the computer not understanding input were obvious, for example, on entering a door, "open" prompted the reply "no key which is further enough." But "break door", "examine door", etc., all made the like gave the response "can't see!"

If you like textual adventures, then this is worth considering. It does not have to be numbered, though the memory in adventure allows you to switch between text or graphics as you wish. **CG**

INSTRUCTIONS: 75%
PLAYABILITY: 60%
GRAPHICS: 60%
VALUE FOR MONEY: 65%

Guest 48K Spectrum £5.95

Hewson, 60A St Mary's Street, Wallingford, Oxon

One of the classic adventure themes which start "You are on a path leading through a dark wood.

The aim is to find a scroll with clues on how to go on to find a map. There are of course a selection of hostile monsters in the wood, and treasure here and there. The player is invited to choose one of five characters, each with a different mixture of strength, luck, diplomacy, constitution and charm, and these are used in a complex calculation to decide who wins fights with the monsters.

After a lengthy but easy loading, a very attractive three dimensional picture of a primeval path and trees and mountains appears. Scrolling to the usual adventure style prompts. I'm a few snags though. On one occasion I ploughed straight north repeatedly finding the same hole in the ground, and another time I walked on and found nothing. Curved space perhaps? The instructions on the menu are thinly bunged-off compromise. **CG**

INSTRUCTIONS: 60%
PLAYABILITY: 60%
GRAPHICS: 60%
VALUE FOR MONEY: 65%

On the Trail Of The Unexpected

Take micro, load program, start playing. We look at what's new in adventure games.

Pettigrews Diary Dragon £7

Sharpes Software, 119 Eaton Road, Ilford, Essex IG1 2QJ

This is an adventure in three chapters linked by the diary of the title. The chapters are independent but can only progress by completing the earlier one.

Chapter 1 is a graphic adventure set in a haunted farmhouse. A bird's eye view shows the rooms you (represented by a cross) and deadly flames shown as red lines, spread through the house.

Your task is to find certain objects which you need in order to advance to Chapter 2. You can also read the diary which tells you about the next chapter. **SM**

INSTRUCTIONS: 85%
GRAPHICS: 90%
PLAYABILITY: 85%
VALUE FOR MONEY: 90%
SORD MS PROGRAM

You’re lost in space and low on fuel...

Our first program for the Sord MS is Space Pilot, by Shingo Sugiura. Type it in and see how long you can survive...

Inverse characters which appear in various lines — 20 and 60, for example — must be obtained by simultaneously pressing SHIFT + CTRL and the appropriate key.

While typing in this program you might find the screen go totally blank although you can still hear the clock every time you press a key. This means that you pressed CTRL and Y by mistake. Simply press CTRL and Y simultaneously and all should be well.

Hints on conversion

It would be very difficult to convert this program to run on other machines as you’d have to write machine code roms to scroll the screen in four directions although most machines will allow you to scroll the screen vertically.
ASP SOFTWARE

A STEP BEYOND THE ARCADE...

Demon Knight • The Valley • Strategy 1—Invasion • Strategy 2—Bismark
White Barrows • Executive • Cells & Serpents • Stockmarket
Conquering Everest • Climate/Reumber • Gallery of Death • Planetfall
ANNOUNCE

Top USA Software at Discount Prices
At least 20% Discount from Top Selling US Software

Just Look At These:

- Zakklon — Datasoft — Atari
  RRP: 33.00  A.N.  25.00
- Jumpman — Epix — Atari CB64
  RRP: 33.00  25.00
- Minit 2049F — Big Five — Atari
  RRP: 41.70  30.00
- Temple of Apsara — Epix — Atari
  RRP: 33.00  25.00
- Zork I to III — Infocom — Atari, CB64
  RRP: 33.00  25.00 (each)

All Prices include VAT and Post & Packing is Free (UK mainland only) This is just a selection. We have over 500 Games/Ultilities/Educational and Business programs to choose from. To obtain up to the minute information on any programme, telephone our Hot Line — 07842 57599.

(Export Orders Welcome)

Send all orders with cheque P.O. etc to:
A.S.N. COMPUTER SERVICES LTD, Dept. H.C.W., 89 Station Crescent, Ashford, Middx.

GALAXY

Number One For Texas TI99/4A

LOOK LOW PRICE

- Munchmatt
  RRP: £19.95  Sale: £16.80
- Extended Basic
  RRP: 39.95  Sale: 38.00
- Chess
  RRP: 28.40  Sale: 20.95
- Adventure/Thief
  RRP: 14.95  Sale: 10.95
- All Adventures
  RRP: 5.85  Sale: 3.95
- Speech Synthesizer
  RRP: 34.95  Sale: 19.95
- Tunnels of Doom
  RRP: 14.95  Sale: 9.95
- Terminal Emulator
  RRP: 39.95  Sale: 19.95
- Touch Typing Tutor
  RRP: 20.80  Sale: 10.95
- Soccer
  RRP: 12.50  Sale: 22.95

99er Magazine available including hack issues

LANTERN CASSETTE SOFTWARE

- Battlestar Attack
  RRP: £6.95  Sale: £5.95
- Operation Moon
  RRP: 6.95  Sale: 5.95
- Scrrolmaster
  RRP: 6.95  Sale: 5.95
- Pearl Diver
  RRP: 9.95  Sale: 5.95
- Daddies Hot Rod
  RRP: 9.95  Sale: 5.95

Large range of Books now available for TI-99/4A

COLECO AND ATARI OWNERS

Check our Prices for your
Games Cartridge requirements

Remember! There are no extra charges at Galaxy

All prices include VAT and postage. Send SAE for full list. Send cheque with order or phone or use Debit Card or Access

NEW

TI USER a new publication with
program reviews, comparison news, advisory service £6.00 p.a.

60 High Street, Maidstone Kent

Telephone: (0622) 682575 & 679265

HOME COMPUTING WEEKLY 22 November 1983  Page 51
ONE COMPANY'S VIEW

Greed that could hit you

In the beginning, the home computer software industry was not so much a business, more a pleasure. It was also one from which programmers, software companies and dealers could all make a good income and still give the public products it wanted at a fair price. But recently things have changed.

Since the beginning of this year, a number of "distributors" have sprung up. They have coursed dealers by promising bigger profits with less work. The distributor will tell the shops what to stock, so they needn't worry if their heads about it any longer.

So, you might think, what a nice chap the distributor is to look after the dealer so well. If that was the end of the story, no one would object - but the distributor is not a nice chap. The distributor is greedy.

At the moment, and all but the most powerful software houses will back this up, distributors demand that they buy programs at a 60 per cent margin. To put that into English, take the example of an average program selling at £3.95. The Government takes 76p VAT, the distributor wants £3.10 and the software company is left with 20p. For £2.07 the software house has to

1. Find the program
2. Pay the person who wrote it and provide computers to write it on
3. Design the packaging
4. Arrange and pay for the manufacture of the program
5. Advertise it to dealers and the public
6. Sell it
7. Deliver it to their customers

Once you have paid all these bills, you might, if you are lucky, have something left over to pay the rent, rates and taxman. How many software houses are going to do that because of the Inland Revenue's new-found interest, created by certain idiots going on about 335,000-a-year programmers?

For the £3.10 the distribution is getting, he is taking a product out of a warehouse and putting it on to dealers' shelves where it may get sold.

What if the software house thinks that this is a bit unfair? Well unfortunately, the few big distributors now control the vast majority of outlets selling software - so if you don't like their terms of business, you don't get to sell anything. Simple really isn't it?

Well, I call it blackmail, because if you don't go bust by dealing with them, you certainly will by not selling at all.

The small software houses must get together and tell the distributors where to get off. This would be something useful for the Guild of Software Houses to do rather than putting out customer's charters.

And next time you hear of another software company going under (and you will be reading about quite a few of these soon) or you cannot find the cassette you want in your local dealer, maybe you will understand why an anonymous software company.
Looking for spare time earnings?

Then why not sell software to your friends and workmates.

There are probably hundreds of micro users in your area looking for software who are wary of mail order and cannot find a local dealer. You can become that local dealer.

We are looking for agents in all areas to sell software for the Spectrum, ZX81, VIC-20, CBM 64, BBC, Dragon, Atari, Orlic 1 and Lynx. All the latest titles in stock. Write now for full details or telephone if you prefer.

Joysticks, Joystick Interfaces and Spectrum sound boosters along with CBM 64, Spectrum and Lynx 48K Computers also available.

If you are interested in becoming a Bytewell agent in time for the predicted boom in sales this Xmas then write or telephone now.

BYTEWELL, 203, COURT ROAD, BARRY, S. GLAMORGAN, CF6 7EW Telephone (0446) 742491

NEW REVISED PRICES

Texas Instruments
SOFTWARE

| EXTENDED BASIC | £39.50 |
| MUNCHMAN | £19.50 |
| PARSEC | £18.50 |
| ADVENTURE/Pirate | £15.00 |
| TUNNELS OF DOOM | £15.00 |
| CHISHOLM TRAIL | £12.50 |
| EARLY READING | £10.00 |

SEND SAE FOR FULL PRICE LIST
PLEASE MAKE CHEQUES/POs PAYABLE TO

A. J. DENNING (Duplicators)

QUALITY CONTROLLED CASSETTE Duplicating
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY
Constant stringent checks made throughout production

SERVICE
Despatched normally within 1D days from receipt of order

PRICE
C10 from 28p including case
C15 from 31p including case

CONTACT US NOW FOR YOUR PERSONAL QUOTATION

A. J. DENNING (Duplicators)
18 The Crescent, Henleaze, Bristol BS9 4RW Tel (0272) 823287

Christine Computing
6 Florence Close, Watford, Herts.
Tel: (0927) 372941

TI-99/4A
EXTENDED BASIC SOFTWARE
A.D.M. CONTROL (BY FANTASIA 99)
Defend your cities from attack by Ballistic & Cruise missiles.
Requires joysticks £6.95.
Also available Monkey Kong and Thirt.

Please send me ADM Control & full list Lendlove Cheque/PO for £6.95 plus 55p P&P

NAME
ADDRESS

New Revised Prices

Texas Instruments
SOFTWARE

EXTENDED BASIC .............. £39.50
PARSEC ............ £19.50
MUNCHMAN ............ £18.50
ADVENTURE/Pirate .... £15.00
TUNNELS OF DOOM .... £15.00
CHISHOLM TRAIL .... £12.50
EARLY READING .... £10.00

SEND SAE FOR FULL PRICE LIST
PLEASE MAKE CHEQUES/POs PAYABLE TO

A.J. Denning (Duplicators)

QUALITY CONTROLLED CASSETTE Duplicating
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY
Constant stringent checks made throughout production

SERVICE
Despatched normally within 1D days from receipt of order

PRICE
C10 from 28p including case
C15 from 31p including case

CONTACT US NOW FOR YOUR PERSONAL QUOTATION

A.J. Denning (Duplicators)
18 The Crescent, Henleaze, Bristol BS9 4RW Tel (0272) 823287

Looking for Spare Time Earnings?

Then why not sell software to your friends and workmates.

There are probably hundreds of micro users in your area looking for software who are wary of mail order and cannot find a local dealer. You can become that local dealer.

We are looking for agents in all areas to sell software for the Spectrum, ZX81, VIC-20, CBM 64, BBC, Dragon, Atari, Orlic 1 and Lynx. All the latest titles in stock. Write now for full details or telephone if you prefer.

Joysticks, Joystick Interfaces and Spectrum sound boosters along with CBM 64, Spectrum and Lynx 48K Computers also available.

If you are interested in becoming a Bytewell agent in time for the predicted boom in sales this Xmas then write or telephone now.

BYTEWELL, 203, COURT ROAD, BARRY, S. GLAMORGAN, CF6 7EW Telephone (0446) 742491

Christine Computing
6 Florence Close, Watford, Herts.
Tel: (0927) 372941

TI-99/4A
EXTENDED BASIC SOFTWARE
A.D.M. CONTROL (BY FANTASIA 99)
Defend your cities from attack by Ballistic & Cruise missiles.
Requires joysticks £6.95.
Also available Monkey Kong and Thirt.

Please send me ADM Control & full list Lendlove Cheque/PO for £6.95 plus 55p P&P

NAME
ADDRESS

New Revised Prices

Texas Instruments
SOFTWARE

EXTENDED BASIC .............. £39.50
PARSEC ............ £19.50
MUNCHMAN ............ £18.50
ADVENTURE/Pirate .... £15.00
TUNNELS OF DOOM .... £15.00
CHISHOLM TRAIL .... £12.50
EARLY READING .... £10.00

SEND SAE FOR FULL PRICE LIST
PLEASE MAKE CHEQUES/POs PAYABLE TO

A.J. Denning (Duplicators)

QUALITY CONTROLLED CASSETTE Duplicating
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY
Constant stringent checks made throughout production

SERVICE
Despatched normally within 1D days from receipt of order

PRICE
C10 from 28p including case
C15 from 31p including case

CONTACT US NOW FOR YOUR PERSONAL QUOTATION

A.J. Denning (Duplicators)
18 The Crescent, Henleaze, Bristol BS9 4RW Tel (0272) 823287

Looking for Spare Time Earnings?

Then why not sell software to your friends and workmates.

There are probably hundreds of micro users in your area looking for software who are wary of mail order and cannot find a local dealer. You can become that local dealer.

We are looking for agents in all areas to sell software for the Spectrum, ZX81, VIC-20, CBM 64, BBC, Dragon, Atari, Orlic 1 and Lynx. All the latest titles in stock. Write now for full details or telephone if you prefer.

Joysticks, Joystick Interfaces and Spectrum sound boosters along with CBM 64, Spectrum and Lynx 48K Computers also available.

If you are interested in becoming a Bytewell agent in time for the predicted boom in sales this Xmas then write or telephone now.

BYTEWELL, 203, COURT ROAD, BARRY, S. GLAMORGAN, CF6 7EW Telephone (0446) 742491

Christine Computing
6 Florence Close, Watford, Herts.
Tel: (0927) 372941

TI-99/4A
EXTENDED BASIC SOFTWARE
A.D.M. CONTROL (BY FANTASIA 99)
Defend your cities from attack by Ballistic & Cruise missiles.
Requires joysticks £6.95.
Also available Monkey Kong and Thirt.

Please send me ADM Control & full list Lendlove Cheque/PO for £6.95 plus 55p P&P

NAME
ADDRESS

New Revised Prices

Texas Instruments
SOFTWARE

EXTENDED BASIC .............. £39.50
PARSEC ............ £19.50
MUNCHMAN ............ £18.50
ADVENTURE/Pirate .... £15.00
TUNNELS OF DOOM .... £15.00
CHISHOLM TRAIL .... £12.50
EARLY READING .... £10.00

SEND SAE FOR FULL PRICE LIST
PLEASE MAKE CHEQUES/POs PAYABLE TO

A.J. Denning (Duplicators)

QUALITY CONTROLLED CASSETTE Duplicating
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY
Constant stringent checks made throughout production

SERVICE
Despatched normally within 1D days from receipt of order

PRICE
C10 from 28p including case
C15 from 31p including case

CONTACT US NOW FOR YOUR PERSONAL QUOTATION

A.J. Denning (Duplicators)
18 The Crescent, Henleaze, Bristol BS9 4RW Tel (0272) 823287

Looking for Spare Time Earnings?

Then why not sell software to your friends and workmates.

There are probably hundreds of micro users in your area looking for software who are wary of mail order and cannot find a local dealer. You can become that local dealer.

We are looking for agents in all areas to sell software for the Spectrum, ZX81, VIC-20, CBM 64, BBC, Dragon, Atari, Orlic 1 and Lynx. All the latest titles in stock. Write now for full details or telephone if you prefer.

Joysticks, Joystick Interfaces and Spectrum sound boosters along with CBM 64, Spectrum and Lynx 48K Computers also available.

If you are interested in becoming a Bytewell agent in time for the predicted boom in sales this Xmas then write or telephone now.

BYTEWELL, 203, COURT ROAD, BARRY, S. GLAMORGAN, CF6 7EW Telephone (0446) 742491

Christine Computing
6 Florence Close, Watford, Herts.
Tel: (0927) 372941

TI-99/4A
EXTENDED BASIC SOFTWARE
A.D.M. CONTROL (BY FANTASIA 99)
Defend your cities from attack by Ballistic & Cruise missiles.
 Requires joysticks £6.95.
 Also available Monkey Kong and Thirt.

Please send me ADM Control & full list Lendlove Cheque/PO for £6.95 plus 55p P&P

NAME
ADDRESS

New Revised Prices

Texas Instruments
SOFTWARE

EXTENDED BASIC .............. £39.50
PARSEC ............ £19.50
MUNCHMAN ............ £18.50
ADVENTURE/Pirate .... £15.00
TUNNELS OF DOOM .... £15.00
CHISHOLM TRAIL .... £12.50
EARLY READING .... £10.00

SEND SAE FOR FULL PRICE LIST
PLEASE MAKE CHEQUES/POs PAYABLE TO

A.J. Denning (Duplicators)

QUALITY CONTROLLED CASSETTE Duplicating
QUALITY & SERVICE AT COMPETITIVE RATES

QUALITY
Constant stringent checks made throughout production

SERVICE
Despatched normally within 1D days from receipt of order

PRICE
C10 from 28p including case
C15 from 31p including case

CONTACT US NOW FOR YOUR PERSONAL QUOTATION

A.J. Denning (Duplicators)
18 The Crescent, Henleaze, Bristol BS9 4RW Tel (0272) 823287
Inside...

Setting new standards in educational software with Sinclair-Macmillan

Plus six other learning programs
NEW WAYS TO LEARN WITH
THE ZX SPECTRUM
Programs from Blackboard Software

The new range of educational programs from Blackboard Software makes learning an enjoyable process by involving the child in a game which teaches as it entertains.

Each program has a step-by-step example section and gives correct answers after a number of attempts. Vocabulary changes can be made, allowing each program to keep pace with the child's development. This flexibility can also be used in the classroom to cater for children of differing ability.

The instructive and colourful games which follow the successful completion of each group of sentences provide useful practice in letter recognition and increase familiarity with the Spectrum keyboard.

All programs are written for the 48K RAM Spectrum.

Alphabet Games

Three games of letter recognition (using either upper or lower case) to help children learn the alphabet and find their way round the computer keyboard.

Hangman - The full alphabet is displayed, along with a second, incomplete version. The child must fill in the missing letters.

Random Rats - Press the letter key that is displayed on the gun to destroy the rats which have invaded the cellars.

Invaders - Stop little green men from invading Earth by pressing the appropriate letter.

Early Punctuation

While an animated matchstick man marches above displayed sentences the child must decide which punctuation mark is missing and where to insert it. At the touch of a key the matchstick man drops the mark into place. After successful completion of every sentence in the exercise light relief comes in the form of a bottle-shooting game.

The Apostrophe

As each sentence is displayed, a bird appears with a worm in its beak. The keyboard is used to move the bird and drop the worm into the correct place for the apostrophe. When ten sentences have been corrected, the Grub Game is displayed. Press the correct character to change the grub into a butterfly - before it munches through a flower.

Capital Letters

A program to teach the use of capital letters. Sentences incorporating proper nouns and sentences without opening capitals are displayed. The child inserts the correct letter by guiding an animated figure to the appropriate letter.

For each correct answer an apple grows on a tree. After ten correct answers the child's skills in recognising letters and using the Spectrum keyboard are needed to save the apples as they fall to the ground.

Speech Marks

A comprehensive program including sentences with one or two sets of speech marks ("inverted commas") and exercises in both direct and reported speech.

Using the Spectrum keyboard a cursor is used to guide speech marks to the correct position. The program offers three levels of difficulty, with full examples for each section. Guide Mala to the mouse through a maze after the correct completion of five sentences from each section, but beware of Persian cats!

Castle Speleneous

A spelling game with ten levels of vocabulary, including words with silent first letters, double letters and other difficult words. The Prince has been captured and carried off to Castle Speleneous. Helped by ten soldiers, the child can attempt a rescue by giving the right answers. Part of a siege tower is built for each correctly spelt word. Mistakes are costly - the wicked wizard appears as a vampire bat, turning the men into frogs, butterflies and bats!

When ten words are spelt correctly the rescue begins and the wizard takes flight.
Sinclair have joined forces with Macmillan Education to produce a completely new and different range of educational software. The results so far can be seen in these exceptional programs.

The Learn to Read series is derived from Macmillan Education’s best-selling primary school reading scheme, Gay Way. It offers a unique opportunity for parents and teachers to participate in the child’s first experience in reading.

Macmillan Education’s Science Horizons is one of Britain’s most successful school science schemes. Each program concentrates on key scientific ideas and, through simulation of real life, makes the learning process entertaining and enjoyable.

**Learn to Read 1**

Learn to Read 1 is designed for children who are just beginning to read. It is in four parts, each of which develops skills central to the reading process — letter recognition, sight vocabulary, early spelling and memory. The program is full of colour and fun and children will enjoy learning to read as they meet the animal characters — Ben the dog, Jim the cat and their friends.

**Learn to Read 2**

Learn to Read 2 extends the fundamental reading skills practised in the first program, as well as encouraging logical thinking. The child’s vocabulary is gradually built up as new words such as “red”, “green”, “cat”, “ship” and “bus” are introduced in addition to their meanings. The program first demonstrates the meanings of the words using clear pictures, then tests the child’s understanding of the words in two lively games.

**Learn to Read 3**

Learn to Read 3 builds on the child’s progress so far, so that he or she can gain the confidence to move on through the complex reading process. Learn to Read 3 features four different activities all of which are colourful and lively. Further vocabulary is introduced until the child is reading more than 30 words.

**Learn to Read 4**

Learn to Read 4 is the alphabet program in the Learn to Read series. Using various stimulating activities the program gives the child plenty of practice in working with the alphabet — matching initial letters to words and pictures and spotting missing letters. These exercises build familiarity with simple sequences within the alphabet.

**Learn to Read 5**

Learn to Read 5 teaches positional language — often difficult to understand and remember — by using words and phrases such as ‘behind’ and ‘in front of’, ‘inside’ and ‘outside’. The program first demonstrates the meanings of the words using clear pictures, then tests the child’s understanding of the words in two lively games.

**Cargo**

Set sail around the world. Choose your ports of call — New York, Tokyo, Belém, Helsinki — then the real challenge begins! You must reach your destinations safely, weathering storms on the way. But first, load your cargo — using all your knowledge and skill. Poor loading can mean capsizing and sinking. Your rank, if not your life, is always at stake.

**Glider**

Be a glider pilot! The glider models real-life gliding conditions so that you can learn through experience. As the pilot you must consider the time of day, the amount of cloud cover and the kind of terrain below you. In order to find the up-currents of air that will keep you airborne, try to fly as far as possible and when you are high enough navigate your way back to your home airfield and land safely — if you can.

**Survival**

Discover what it is like to be an animal in the wild! Be a lion stalking your prey escaping human hunter; or be a hawk, mouse or even a butterfly searching for food and avoiding predators.

Survival models the natural world and brings to life hazards that different creatures must face in their struggle to stay alive.

**Magnets**

With an army of small magnets you set out to conquer the powerful super magnets of your opponent. You have one weapon — your forces of magnetic attraction and repulsion.

The strategy is simple: attract smaller magnets to build strength to repel the super magnet. When cornered ...
ZX INTERFACE 2
THE NEW ROM CARTRIDGE AND JOYSTICK INTERFACE
Now available in stores.

Loads programs instantly
Takes two joysticks
Just plug-in and play

The ZX Interface 2 is the latest peripheral for the ZX Spectrum. It enables you to use new ZX ROM cartridge software: plug-in programs that load instantly. There are lots of terrific games already available on cartridge and Interface 2 also allows you to use

one or two standard joysticks without the need for separate special interfaces.

To use new ZX ROM Cartridge programs, just connect Interface 2 to the rear of your Spectrum or Interface 1 and plug in the cartridge of your choice. Switch on and the program is then loaded ready to run.

You can use any joystick that has a 9-way D plug. Use one or two of them for extra fun with suitable ZX ROM cartridge or Sinclair cassette programs — or with dozens of other Spectrum programs.

ZX MICRODRIVE/ INTERFACE 1

The ZX Microdrive System is unique. This compact, expandable add-on system provides high-speed access to massive data storage. With just one Microdrive and a ZX Interface 1 you'll have at least 65K bytes of storage, the ability to LOAD and SAVE in a matter of seconds, the beginnings of a local area network of up to 64 Spectrums and a built-in RS232 interface. The cost? Less than £30.

How to get ZX Microdrive and Interface 1

Spectrum owners who bought direct from us by mail order have been sent full details. Order forms are being mailed in strict rotation. If you haven't yet received your order form please bear with us: We're making good progress in meeting the huge demand.

If you didn't buy your Spectrum by mail order, send us the form at the bottom of this page and we'll add your name to the mailing list.

How to order

Complete the appropriate sections on the order form below. Note that there is no postage or packing to pay on software purchases. Orders may be sent FREEPOST (no stamp needed). Credit card holders may order by phone, calling 01-200 0200, 24 hours a day. Please allow 28 days for delivery.

Sinclair ZX Spectrum, ZX Microdrive, ZX, ZX Interface are trade marks of Sinclair Research Ltd.

Sinclair Research Ltd, Stanhope Road, Camberley, Surrey, GU15 3PS. Telephone (0276) 883311

ZX Microdrive information request

Please add my name to the Microdrive Mailing List and send me a colour brochure with full specifications of ZX Microdrive/Interface 1 (tick here)

Free Sinclair ZX Software Catalogue

Please reserve a priority copy of the January 1984 Sinclair ZX Spectrum Software Catalogue (tick here).

Please use the form above to send your name and address.
SAVE HUNDREDS ON YOUR HI-FI-NOW!

HI-FI NOW! – the new magazine with a new way of giving you the buying information you need – NOW!

HI-FI NOW! – will tell you the £99 speaker that sounds like £200 – NOW!

HI-FI NOW! – will help you spend £15 to make your personal stereo like a million dollars – NOW!

HI-FI NOW! will even make sure you spend £2,000 wisely – NOW!

HI-FI NOW! – answers the questions you are asking about hi-fi – NOW!

Wharfedale, KEF, Rotel, Sansui, Marantz, Koss, Sony, Pioneer, Hitachi. Just some of the names in the first issue of HI-FI NOW!

HI-FI NOW! AT YOUR NEWSAGENT NOW! ONLY 85p!

If you missed out on Breadboard '79, '80, '81 and '82, ... Now's the time to catch up with

THE PREMIER SHOW FOR THE ELECTRONICS ENTHUSIAST!

CUNARD INTERNATIONAL EXHIBITION CENTRE, CUNARO HOTEL, HAMMERSMITH, LONDON W6.

Frida November 25th 10am-6pm
Saturday November 26th 10am-6pm
Sunday November 27th 10am-4pm

Improved Venue
Offering improved facilities to the visitor, including car parking and ease of access by rail, tube and car, all in a modern attractive setting.

Holiday Weekend
Why not bring your partner to the show and enjoy a weekend in London? A complete hotel package is available to our visitors to the exhibition with all inclusive rail tickets. Send now for details of what we, the organisers, can offer you.

Write to:
Breadboard '83
ASP Exhibitions
145 Charing Cross Road
London WC2H 0EE

This year's features include:

* Computer controlled model railway competition (send off for entry form now)
* Latest components and tools to build all sorts of projects
* Robotic display
* Components and tools at bargain prices
* Technical advice on electronics projects and Ham Radio technique
* Computer Corner – 'Try before you buy'
* Lectures by professionals covering aspects of electronics and computing
* Holography and Producing Printed Circuit Boards
* Pick of the projects – Demonstration of the best from ELECTRONICS TODAY INTERNATIONAL, Hobby Electronics and Electronics Digest.
HOME COMPUTING WEEKLY

CLASSIFIED

01-437 1002
EXT 211.

Send your requirements to:
Debra Stubble
ASP LTD.
145 Charing Cross Road,
London WC2H 0EE

ACCESSORIES

UNIT ONLY

SPECTRUM & ZX 80/1

USERS
LOOK
THIS WAY
PUT
AWAY
ALL
THOSE
UNITED
WIRE

With this amazing new unit designed by a Spectrum user. Put on a clean
hour or your tape. Move it in all one go. Made of polished Mahogany ply m
black! Starts colour at £25 50 inc. VAT & desend cheque to
TE B. Carreras & Son Ltd Out HE

£9 9 The Ventures Enfield Beds. EXT 109Q

HARDWARE

Home and Business micro computer bought and sold. Apple
equipment always required. Your
BBC stockist in Berkshire
Tel 0344 844232

VIC-20 starter pack £105 Immunic
are condition under guarantee
Super expander card £25
Meopham Kent 07474 83626

BUY OR SELL
HARDWARE
THROUGH H.C.W.
WARE SECTION. IF
YOU'VE ALREADY
BOUGHT WHY NOT
ADD-ON? MAKE SURE
YOU APPEAR IN THE
RIGHT SECTION.
RING 01-437 1002
EXT 211

FOR SALE

TI-99/4A Cassette, Cable, Vade, English,
Chess, Manxman, Invaders, 3 side Soccer. Complete or
individual items. Telephone 0239/73
207 after 6pm. each

TI-99/4A and Expanded BASIC, manual, Plus/4 mode and
Speech Synthesizer and cassette tape
recorder and lead £200 on o Tel
01 843 1913.

New TI-99/4A, expansion box, speech synthesizer, joystick, 12 TI
games, 11 others ex BBS. Any memory new or £60. Cost
£250. Call 01 722 7846 after 5p m

£9 9 One to Two months old with
£100 worth software £200 on o
Telephone 01 743 6707

SERVICES

ALL YOUR CASSETTE
NEEDS

Blank cassettes £1.50 with care. 40p
Labels in Blue, white or yellow 20
for 18p. Labels in blue 60 or
yellow 20 for 40p. Library cases 79
each
Postage on each cassette under 50p
Spectrum Ltd. (HCW) 59 Mayfair
Way Hertford London LJD 3LA

DO YOU OFFER A
SERVICE PEOPLE IN
COMPUTING
REQUIRE? IF SO WHY
NOT TELL THEM
ABOUT IT?
RING 01-437 1002
EXT 211. TO APPEAR
IN THE SERVICES
SECTION.

BOOKS

CBM 64
RS-232-C INTERFACE
S.A.E. for information or send
Cheque/PO for £2.95
H. Banish. 3 Pheasants Close
Winchester. Hants. SP4 0LF

OX OWNERS

BANISH LOADING PROBLEMS

Free software for when you join
S.A.E. for details. Envelope
476 453

SPECTRUM & ZX 80/1

USERS
LOOK
THIS WAY
PUT
AWAY
ALL
THOSE
UNITED
WIRE

With this amazing new unit designed by a Spectrum user. Put on a clean
hour or your tape. Move it in all one go. Made of polished Mahogany ply m
black! Starts colour at £25 50 inc. VAT & desend cheque to
TE B. Carreras & Son Ltd Out HE

£9 9 The Ventures Enfield Beds. EXT 109Q

CLUBS

Free Arcade game when you join
Nationwide Computer Club - Soft
ware exchange. monthly Newsletter,
discounts Pen Pals... S.A.E. for
details NCC (HCW) 12 York
Close Barton Bedfordshire MK43
4RD

FOR HIRE

To Hire a Computer from ZX81
upwards, ring or write to
Business
and Computer Services. 292
Caledonian Rd. N1 1AJ
Tel 01 607 0157

One Software Library. Two weeks
here £1 Annual Membership £5
Stamp for list. Leo Watson,
Penobscot, Tring, Hertford
ZX Spectrum software for hire
Send S.A.E. for details to W
Anabrow, 6 Woodford Square
Addison Road London W14

REPAIRS

ZX81 Spectrum. We can now
offer out-of-guarantee repairs by
our Computer Dept. Our engineers
have had over three years experience
this Sinclair Computer pro
ucts Price including new ZX81 -
£125 50 16K Ram - £95
Spectrum - £185 75. Send with cheque or
PO TV Service of Cambridge
French's Rd, Cambridge CB4
3NP. Phone 0223 311371

BOOK SALE?
IT COULD BE YOUR
BOOKS FOR SALE.
RING 01-437 1002
EXT 213 NOW.

HOME COMPUTING WEEKLY 22 November 1983  Page 61
SPECTRUM KOPY KAT

IMPROVED PERFORMANCE

Simply the best copying any program

is now at a low price.

Copy it for yourself.

Only $2.95

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.

DELL

or $2.95

or $2.95

per copy.
WITH AN ACE IN YOUR HAND

- 100% BRITISH MADE
- 1/4 METRE CABLE
- HIGH IMPACT PLASTIC CASE
- PLASTIC STICK WITH STEEL SHAFT

PRO ACE

COMPETITION JOYSTICK

NO MATTER WHAT THE GAME, NOTHING PLAYS LIKE THE PRO-ACE
COMMODORE VIC 20/64 AND ATARI COMPATIBLE PLUS NUMEROUS
VIDEO GAMES MACHINES

PLUS LEFT OR RIGHT HAND FIRE BUTTON
PLUS CENTRE FIRE BUTTON
PLUS PURPOSE DESIGNED SWITCHES
PLUS NON-SLIP NON-SCRATCH BASE

A totally BRITISH designed and manufactured Joystick with a 2 year warranty!

Spectrum and BBC Interfaces available

Manufactured and Distributed by
SUMLOCK MICROWARE
198 Deansgate, Manchester M3 3NE
Tel: 061-834 4233

Please supply £12.95 each
I enclose cheque/P.O. for £

Name

Address

Tel

Price includes P + P U.K. only Telephone 061-834 4233
WE'VE GOT IT TAPED

All cassettes £8 each

Selected titles available from larger branches of Oasis, John Menzies, Spectrum Computers for All and all good computer shops.