

AN ARGUS SPECIALIST PUBLICATION

APRIL 1983
70p

Hardware
Factfile Inside

Personal Computing Today

**DOES THE
COLOUR GENIE
SLAY THE
DRAGON?**

**SURVEY:
HARDWARE
ADD-ONS**

**We sum them
up for the VIC,
Spectrum, BBC**

**Get up
and GO in
Gamesboard**

**Programs for
your Sharp,
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Reviews:
Track down the
Hobbit on your Spectrum**



MELBOURNE HOUSE

SHARP MZ 80K

SOFTWARE

EL ALALAMAIN

Recreate this famous World War Two battle with a little help from your Sharp.

Here is your opportunity to fight again the tank battle which was the turning point for the allies in the Second World War. You and your opponent battle it out on the television screen which displays a map of the battle area. The disposition of both tank forces is shown along with a random topography consisting of forest, a river crossed only by two bridges and the headquarters of both armies.

Your objective is to occupy your opponent's headquarters. You have ten tanks available, two of which have specialised functions, tank number 1 lays mines at the end of each move and tank number 10 is able to repair damaged or otherwise inoperative tanks by being brought alongside it.

Each player takes it in turn to move, but before doing so he can ask for a report on any of his tanks. This command flashes the current position of the tank and prints out the fuel, ammunition and damage status. Four different graphics characters are used for each army to show on the battle plan tanks that are intact, gun damaged, engine out and both gun and engine out.

A move consists of moving any or all tanks a total distance of 30 squares. The distance and direction are input by the GET command and you are asked if you wish to open fire on your opponent. If this is the case, and you are within range of enemy tanks an exchange of fire occurs. The likelihood of a hit is dependant on distance and

the presence of intervening trees!

Despite the length of this program, its structure is very simple. After setting up the screen there is one main loop with minor subroutines indicated in REM statements. Extensive use has been made of arrays which at first sight appear complicated but are in fact simple. For example the vertical and horizontal co-ordinates of each tank are stored in the form V(2,10) H(2,10), where the first dimension is the flag for which army we are dealing with and the second dimension is the number of the tank we are dealing with (1-10). Fuel, ammunition and damage sustained are F(2,10), A(2,10) and D(2,10).











HOW IT RUNS

5-90	Initialisation of arrays and game variables.	790-850	Fire routine.
100-129	Prints up instructions and inputs players names.	855-990	Defensive fire routine.
140-220	Sets up game display on the screen.	1900-3010	Battle status report.
225-285	Routines for printing river and trees.	3990-4020	Player wins.
290-630	Main program loop, includes keyboard detection and battle orders.	4990-5100	Repair damaged tanks.
715-780	Routine for calculating distance between tanks.	6990-7220	Full instructions.
		9000-9200	Sets up and plays music strings.

HINTS ON CONVERSION

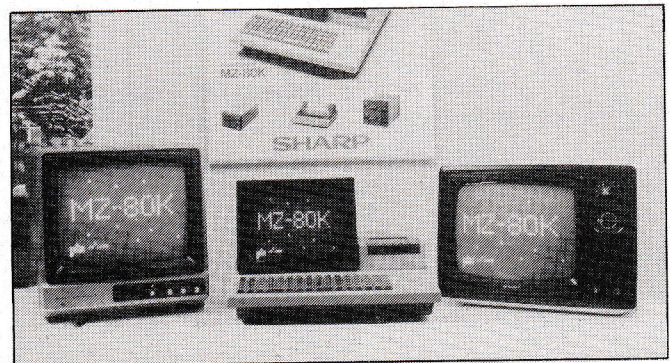
This program takes advantage of the superb range of graphics characters on the Sharp MZ 80K but these can easily be improvised for other machines. Also, extensive use is made of two dimensional arrays where the first dimension is a flag for whose turn it is. eg tank symbols:

T\$ (1,0) = "  "	T\$ (2,0) = "  "
T\$ (1,1) = "  "	T\$ (2,1) = "  "
T\$ (1,2) = "  "	T\$ (2,2) = "  "
T\$ (1,3) = "  "	T\$ (2,3) = "  "

If your machine lacks the define function (DEF FNR (X)) then the expression $Y = \text{INT}(\text{RND}(1) * X)$ must be used on each call of DEF FNR.

The Sharp screen is mapped starting at byte 53248 and is 40 characters by 25. My version of BASIC (SP 5025A) allows printing to a particular square on the screen by ? [Y,X] T\$ where Y is the line number starting top left, X is the column number and T\$ the character. Alternatively POKE (53248 + 40 * X + Y), (display code of character) will do the same job. POKE 4514,I

and calling USR(68) calls the routine which produces the noise of shells whining toward their target. USR (71) switches off the sound. Reverse field C,H and arrows are clear screen, cursor home, and cursor control characters respectively. The logical "and" and "or" are symbolised by "*" and "+" in this BASIC.



FACTFILE

SHARP MZ-80A

Sharp UK Ltd,
Thorn Road,
Newton Heath,
Manchester
M10 9BE
Tel: 061-205 2333



STANDARD PACKAGE

Memory Size (RAM)	48K
Screen Size	25 lines of 40 characters
Expansion Sockets	BUS connector
Tape Included?	Yes
Display Unit Included?	Yes
Usable Domestic TV?	No
Size of BASIC	12K
Average Price	£549

MANUFACTURER'S EXPANSIONS

	DETAILS	PRICE
RAM	No	£450-800
Printer	Yes	—
Monitor	N/A	£600
Disc Drives	Yes, dual	£45
Other Languages	Yes	—
Multi-user Capabilities	No	—
BASIC extensions (Toolkits)	No	—

OTHER ADD-ONS:
None Reported

SHARP MZ-80B

Sharp UK Ltd,
Thorn Road,
Newton Heath,
Manchester M10 9BE



STANDARD PACKAGE

Memory Size (RAM)	64K
Screen Size	25 lines of 40 or 80 characters
Expansion Sockets	BUS connector
Tape Included?	Yes
Display Unit Included?	Yes
Usable Domestic TV?	No
Size of BASIC	16K
Average Price	£990

MANUFACTURER'S EXPANSIONS

	DETAILS	PRICE
RAM	Yes	£120
Printer	Yes	£450-800
Monitor	N/A	—
Disc Drives	Yes, dual	£600
Other Languages	Yes	£45
Multi-user Capabilities	No	—
BASIC extensions (Toolkits)	No	—

OTHER ADD-ONS:

Multi-vision and triple-vision, Datron Micro Centre, 2 Abbeydale Road, Sheffield S7 1FD, £35.79

SHARP MZ-80K

Sharp UK Ltd,
Thorn Road,
Newton Heath,
Manchester
M10 9BE



STANDARD PACKAGE

Memory Size (RAM)	48K
Screen Size	25 lines of 40 characters
Expansion Sockets	BUS connector
Tape Included?	Yes
Display Unit Included?	Yes
Usable Domestic TV?	No
Size of BASIC	12K
Average Price	£350

MANUFACTURER'S EXPANSIONS

	DETAILS	PRICE
RAM	No	—
Printer	Yes	£450-800
Monitor	N/A	—
Disc Drives	Yes, dual	£600
Other Languages	Yes	£45 upwards
Multi-user Capabilities	No	—
BASIC extensions (Toolkits)	No	—

OTHER ADD-ONS:
None Reported

SINCLAIR ZX 81

Sinclair Research,
6 Kings Parade,
Cambridge CB2 1SN



STANDARD PACKAGE

Memory Size (RAM)	1K
Screen Size	24 lines of 32 characters
Expansion Sockets	BUS connections
Tape Included?	No
Display Unit Included?	No
Usable Domestic TV?	Yes
Size of BASIC	8K
Average Price	£49.95 built

MANUFACTURER'S EXPANSIONS

	DETAILS	PRICE
RAM	16K RAM pack	£29.95
Printer	ZX Printer	£59.95
Monitor	No	—
Disc Drives	No	—
Other Languages	No	—
Multi-user Capabilities	No	—
BASIC extensions (Toolkits)	No	—

OTHER ADD-ONS:

Memory expansion unit 16K or 64K, Memotech Ltd, 3 Collins St, Oxford OX4 1XL, £39.95-79; Memory Expansion 64K, Downsway Electronics (UK) Ltd, Dept 1XL, £39.95-79; Memory Expansion 64K, Downsway Electronics (UK) Ltd, Dept M, Downsway House, Epsom Road, Ashted, Surrey; £59.95; **Key Bleep Unit**, Microtronix, 3 Buxton Avenue, Coultan, Nottingham, N94 3RR, £8.85 kit, £9.95 built; **Maximem 1.1**, East London Robotics, Finlandia House, 14 Darwell Close, East Ham, London, E84 BT, £93.50; **Music Synthesiser + 16 line control port**, William Stuart Systems Ltd, Dower House, Billicicay Road, Herongate, Brentwood, Essex CM13 3SD, £19.50; **Full-size keyboard**, Protos Computer Systems, Frome Computing, 20 Ashtree Road, Frome, Somerset, BA11 2SF, £64.95; **ZX99 Automatic tape control**, Data-cassette, 44, Shroton Street, London NW1 6UG, £59.95.

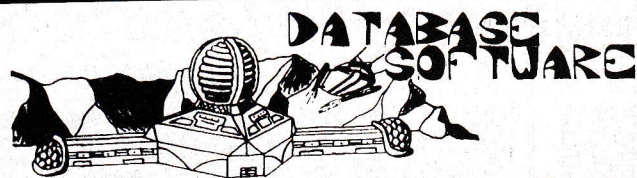
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Wide Bandwidth Modulator	£6.00
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97 Defoe Drive, Park Hall, Stoke-on-Trent.
Tel: (0782) 330552 (Twenty four hours)

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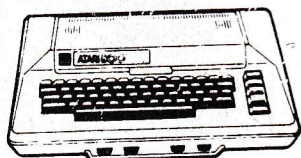
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VIC20	£120.87
GENIE I & II	£289
EPSON HX20	£402

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REFERENCE

SOFTWARE LISTING

BBC

Title	Program Type	Program Produced By	Memory Req'd	How Sold	Supplier Codes	Prices
Towns of Britain	Ed	Aztec S/W	16K	C	IB	£6.50
The Computer Programme Programs Vol 2	Do	B.B.C	32K	C	KB	£10.00
The Computer Programme Programs Vol 1	Do	B.B.C.	16K	C	KB	£10.00
Threed OXO	Gm	Micro-Aid	16K	C	IZ	£2.50
3-D Mouse Maze	Gm	Rainbow S/W	32K	C	KS	£3.50
3-D Maze	Gm	Hexagon S/W	16K	C	JA	£6.00
3D Maze	Gm	Earthshock S/W	16K	L	KI	£3.00
Utilities	Ut	Golem	16K	C	OB	£8.05
Utility A	Ut	Micro-Aid	16K	C	IZ	£4.95
Valley	Gm	ASP Software	32K	C	OD	£11.45
Varkman/Meanies	Gm	Aardvark Software	16K	C	IU	£4.00
Vogon Attack	Gm	Micromail	32K	C	OE	£6.33
Water Relations of Plant Cells	Ed	Garland Comp.	32K	C	JX	£18.82
Whole Number Arithmetic	Ed	W.E. Hunt	32K	C	KQ	£7.95
What's my number	Gm	Square Software	16K	C	NY	£6.00
Where?	Ed	Micro Power	32K	C	GK	£5.95
White Barrows Conquering Everest	Gm	ASP Software	16K	C	OD	£11.45
Wordwise	Gm	Computer Concepts	32K	C	GJ	£74.75
Word Processor	Bs	Rainbow S/W	32K	C	KS	£8.00
Word Processor	Bs	Pro S/W	32K	C	LD	£19.95
Wordy	Gm	Square Software	16K	C	NY	£6.00
World Geography	Ed	Micro Power	32K	C	GK	£5.95
Zombies	Gm	Micro Power	16K	C	GK	£3.95

DRAGON

Arcade Action	Gm	Apex S/W	32K	C	JT	£3.95
Astroblast	Gm	Dragon Data	16K	R	R KY	£19.95
Alcatraz II	Gm	Micro deal	16K	C	KY	£8.00
Berserk	Gm	Dragon Data	32K	R	DN,KY	£19.95
Black Sanctum	Gm	Dragon Data	16K	C	KY	£7.95
Breaker	Gm	Wizard S/W	32K	C	KU	£3.50
Calixto Island	Gm	Dragon Data	16K	C	KY	£7.95
Computavoice	Ut	Dragon Data	16K	C	DN	£7.95
Cosmic Invaders	Gm	Dragon Data	32K	R	KY	£19.95
Cyrus Chess	Gm	Dragon Data	16K	R	KY	£19.95
Devil's Island	Gm	Apex S/W	32K	C	JT	£4.95
Defense	Gm	Microdeal	16K	C	KY	£8.00
Dragon Mountain	Gm	Dragon Data	16K	C	KY	£7.95
Dragon Invaders	Gm	Microdeal	16K	C	KY	£8.00
Dragon Selection 1	Gm	Dragon Data	32K	C	DN	£7.95
Dragon Selection 2	Ut	Dragon Data	32K	C	DN	£7.95
Examples from the Manual	Ut	Dragon Data	32K	C	DN	£7.95
Escape	Gm	Microdeal	16K	C	KY	£8.00



Flag	Gm	Dragon Data	16K	C	KY	£7.95
Flipper	16K	C	KY	£8.00		
Forbidden City	Gm	Apex S/W	32K	C	JT	£4.95
Fruita	Gm	Wizard S/W	32K	C	KU	£6.50
Galleons	Gm	Wizard S/W	32K	C	KU	£5.00
Gamestape 1	Gm	Apex S/W	32K	C	JT	£1.95
Gamestape 2	Gm	Apex S/W	32K	C	JT	£2.95
Gamestape 3	Gm	Apex S/W	32K	C	JT	£2.95
Ghost Attack	Gm	Dragon Data	32K	R	DN	£24.95
Graphic Animator	Ut	Dragon Data	32K	C	DN	£7.95
Haunted House	Gm	Apex S/W	32K	C	JT	£3.95
Island Adventure	Gm	Apex S/W	32K	C	JT	£3.95
Invaders Revenge	Gm	Microdeal	16K	C	KY	£8.00
Jerusalem Adventure	Gm	Microdeal	16K	C	KY	£8.00
Lightpen	Ut	Microdeal	16K	C	KY	£12.00
Madness and the Minotaur	Gm	Dragon Data	32K	C	DN,KY	£7.95
Mansion Adventure	Gm	Microdeal	16K	C	KY	£8.00
Meteoroids	Gm	Dragon Data	32K	R	DN,KY	£19.95
Personal Finance	Do	Dragon Data	32K	C	DN,KY	£7.95
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Space War	Gm	Microdeal	16K	C	Ky	£8.00
Space Monopoly	Gm	Microdeal	16K	C	KY	£8.00
Sirius IV	Gm	Wizard S/W	32K	C	KU	£6.50
Sixth Sense	Gm	Kent Computer Co	32K	C	Ky	£9.95
Starship Chaleon	Gm	Dragon Data	16K	R	KY	£19.95
Special Selection 2	Gm	Dragon Data	16K	C	KY	£7.95
Triplet	Gm	Wizard S/W	32K	C	KU	£5.50
Typing Tutor	Ed	Dragon Data	16K	C	KY	£7.95
3-D Maze	Gm	Apex S/W	32K	C	JT	£3.95
Williamsburg Adventure	Gm	Microdeal	16L	C	KY	£8.00
Wizard	Gm	Wizard S/W	32K	C	KU	£6.50
Word Processor	Bs	Juniper Comp	32K	C	LA	£25.00

SHARP

3-D Basic	Gm	Kuma	6K	C	AX,AO,AB	£6.32
3-D Space Battle	Gm	Sumlock	48K	C	DN	£8.00
Acrobat	Gm	Sumlock	48K	C	DN	£6.33
Address Book	Gm	Highlight S/W	4K	C	CC,AB	£4.60
Agent 007	Gm	DCS	24K	C	JQ	£3.00
Aladdin's Cave	Gm	Kuma	24K	C	AX,CH	£6.32
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Analysis Book	Bs	Microtek	48K	C	EQ	£95.00
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Apolloword	Bs	Kuma	48K	D	AX,AC,AO	£63.25
Ardensoft Toolkit	Ut	Kuma	20K	C	AX	£40.25
Artillery/Biorhythms	Gm	DCS	24K	C	JQ	£3.00
Asteroids	Gm	Sharpsoft	20K	C	CH	£5.85
Astro Dodge	Gm	Kuma	48K	C	AX,CH	£6.32
Astor Shoot	Gm	Sumlock	48K	C	DN	£6.33
Auto Cross	Gm	Highlight S/W	6K	C	CC,AB	£4.60
Backgammon	Gm	Highlight S/W	10K	C	CC,AB	£5.75
Bank Account	Do	Highlight S/W	6K	C	CC,AB	£4.60
BASIC-C	Ut	DCS	24K	C	JQ	£16.00
BASIC-B	Ut	DCS	24K	C	JQ	£12.00
Basic Compiler	Ut	Sharp	48K	C	AB	£34.50
Basic Extensions	Ut	Kuma	20K	C	AX,AO,AB	£14.95
Basic Plus	Ut	Kuma	20K	C	AX	£13.80
Battleships	Gm	DCS	24K	C	JQ	£3.00
Bean Feast	Gm	DCS	24K	C	JQ	£3.00
Bingo Caller	Gm	DCS	48K	C	JQ	£3.00
Bio-Rhythm	Gm	Highlight S/W	6K	C	CC,AB	4.60
Block QC	Gm	Sharpsoft	20K	C	AB	£3.50
Block Stop	Gm	J Wolsencroft	24K	C	CZ	£4.60
Blockade	Gm	Kuma	48K	C	AX,AO,AB	£6.32
Bomb Run	Gm	Sumlock	48K	C	DN	£7.50
Bomber	Gm	Kuma	6K	C	AX,AO,AB	£6.32
Breakout	Gm	Kuma	48K	C	AX,AO,AB	£6.32
Breakout	Gm	Sharpsoft	20K	C	AB	£5.75
Bridge	Gm	Highlight S/W	22K	C	CC	£12.95
Broadwater Economic Simulations	Ed	BES	16K	C	KX	£28.75
Brownian Motion	Ed	Kuma	48K	C	AX	£12.00
CPM	Ut	Chrystal	48K	C	AX,AO	£172.50
Calc II	Bs	Kuma	20K	C	AX,AO,FZ	£39.65
Camelot	Gm	Kuma	48K	C	AX,AC,AB	



Carols	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Cash Book	Bs	Microtek	48K	C	EQ	£95.00
Cash Flow Projection	Bs	NCG Ltd	36K	C	KW	£95.00
Castle Bloodstone Adventure	Gm	Sumlock	48K	C	DN	£17.25
Casino	Gm	Kuma		C	AX	£6.32
Catch 2000/Invader	Gm	Kuma	12K	C	AX, AO, AB	£6.32
Cesil III	Ed	Kuma	20K	C	AX	£17.20
Chase	Gm	Highlight S/W	6K	C	CC, AB	£5.75
Chess	Gm	Kuma	12K	C	AX, AO, FZ, CH	£12.00
Children's Maths	Ed	Kuma		C	AX	£6.32
Chrystal Basic	Ut	Chrystal	48K	C	AX, AO	£46.00
Colditz	Gm	Sharpsoft	20K	C	CH	£8.46
Combat	Gm	Highlight S/W	6K	C	CC, AB	£5.75
Combat	Gm	Kuma	12K	C	AX, AO, AB	£6.32
Commands	Gm	Sharpsoft	20K	C	AB	£5.85
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Concentration	Gm	Kuma	12K	C	AX, AO, AB	£6.32
Conflict	Gm	Sumlock	48K	C	DN	£6.33
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Connect Four	Gm	DCS	24K	C	JQ	£3.00
Cosmiad	Gm	Highlight S/W	10K	C	CC, AB	£5.75
Cosmiad	Gm	Kuma	12K	C	AX, AC, AO, AB	£9.20
Count and Add	Ed	Highlight S/W	22K	C	CC, AB	£5.75
Cribbage	Gm	Kuma	12K	C	AX, AO	£12.00
Critical Path Analysis	Bs	NCG Ltd	36K	C	KW	£40.00
Cricket	Gm	Kuma		C	AX	£6.32
Cursed Chambers	Gm	J Wolstencroft	48K	C	CZ	£5.75
Data Base	Bs	Kuma	48K	C	AX, AO	£33.95
Data File	Gm	Gamer	48K	C	CZ	£29.95
Deferment Allowances	Bs	DCS	32K	C	JQ	£3.00
Demons Castle	Gm	DCS	48K	C	JQ	£3.00
Demon Drive	Gm	DCS	24K	C	JQ	£3.00
Disassembler	Ut	Kuma	20K	C	AX, AO, AB	£12.00
Donky Derby	Gm	Kuma	12K	C	AX, AO, AB	£6.32
Double Precision Basic	Ut	Sharp	48K	C	AB	£28.75
Double Precision Basic	Ut	Sharp	48K	D	AX	£46.00
Drunken Driver	Gm	Highlight S/W	6K	C	CC, AB	£5.75
Debug	Ut	Kuma		C	AX	£16.65
Editor Assembler	Ut	Sharp	48K	C	AB	£15.50
Editor Assembler	Ut	Sharp	48K	D	AX	£51.75
Election '84	Gm	Sharpsoft	20K	C	CH	£8.45
Electronic Organ	Gm	Kuma	12K	C	AX	£6.32
Electronic Organ	Gm	DCS	48K	C	JQ	£3.00
Electrons I	Ed	Kuma		C	AX	£12.00
Electrons II	Ed	Kuma		C	AX	£12.00
Empire II	Gm	Sharpsoft	20K	C	AB	£5.85
Enigma	Gm	Kuma	12K	C	AX	£6.32
Escape Forth	Gm	J Wolstencroft	24K	C	CZ	£4.60
Evasion	Gm	Kuma	6K	C	AX, AO	£6.32
Executive	Gm	Kuma	6K	C	AX, AB	£6.32
Exploring Africa	Gm	Kuma	6K	C	AX, AB	£6.32
F DOS	Ut	Sharp	48K	C	AB	£57.50
Fall Out	Gm	Kuma	6K	C	AX, AO	£6.32
Fireballs	Gm	Kuma	6K	C	AX, AB	£6.32
Fishing	Gm	Sumlock	48K	C	DN	£8.50
Football Manager	Gm	Highlight S/W	10K	C	CC, AB	£5.75
Forth	Ut	Kuma		C	AX	£40.20
Foundry Package	Bs	Microtek	48K	C	EQ	POA
Four in a Row	Gm	Kuma	6K	C	AX, AO, AB	£6.32
Fox and Geese	Gm	Kuma	6K	C	CC, AB	£4.60
Fruit Machine	Gm	Kuma	6K	C	AX, AO, AB	£6.32
Full Accounting	Bs	Microtek	48K	C	EQ	POA
Games Pack 1	Gm	Sumlock	48K	C	DN	£8.50
Games Pack 2	Gm	Sumlock	48K	C	DN	£8.50
Guess Word	Gm	Kuma	6K	C	AX, AB	£6.32
Hangman	Gm	Kuma	6K	C	AX, AO, AB	£6.32
Head On	Gm	Highlight S/W	10K	C	CC, AB	£6.90
Head On	Gm	Kuma	6K	C	AX, AO, AB	£6.32
Head On	Gm	Sharpsoft	20K	C	CH	£5.85
Hissing Sid	Gm	Kuma		C	AX	£6.32
Home Budget I	Do	Kuma	6K	C	AX, AC, AO, AB	£6.32
Hunter Killer	Gm	Kuma	48K	C	AX, AB	£6.32
I Spy	Ed	Highlight S/W	22K	C	CC	£5.75
Instant Addition And The Four	Ed	Kuma		C	AX	£6.32
Rules	Ed	Kuma	48K	C	AX, AO, AB	£6.32
Intruder	Gm	Kuma	20K	C	FZ	£6.30
Invaders	Gm	Kuma	48K	C	AX, AB	£6.32
J S Line 4	Gm	Kuma	48K	C	AX, AB	£6.32
Junior Maths and Stepping	Ed	Kuma		C	AX	£6.32
Stones	Ed	Kuma		C	AX	£6.32
Juntori	Gm	Sharpsoft	20K	C	AB	£5.85
Kentucky Derby	Gm	Kuma		C	AX	£6.32
Knights Commander	Ut	Knights	48K	C	AX	£28.75
Knights Commander	Ut	Knights	48K	D	AX	£74.75
Knights Fortran	Ut	Knights	48K	C	AX	£34.50
Knights Wee Pascal	Ut	Knights	48K	C	AX	£23.00
Large Display	Gm	Kuma	48K	C	AX	£6.32
Las Vegas	Gm	Sharpsoft	20K	C	AB	£5.85
Ledger	Bs	NCG Ltd	40K	C	KW	£90.00
Life	Gm	Kuma	48K	C	AX, AO, AB	£9.20
Linear Programming	Bs	NCG Ltd	20K	C	KW	£45.00
Lunar	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Lunar Lander	Gm	Kuma	48K	C	AX, AO, AB	£6.32
MZ Othello	Gm	Kuma	48K	C	AX	£12.00
Machine Code Editor	Ut	DCS	24K	C	JQ	£14.00
Machine Code Editor	Ut	DCS	48K	C	JQ	£14.00
Madness	Gm	J Wolstencroft	24K	C	CZ	£4.60
Mailing List	Bs	DCS	48K	C	CZ	£6.00

Maniac	Gm	Highlight S/W	6K	C	CC, AB	£5.75
Man on the Run	Gm	Sumlock	48K	C	DN	£6.33
Map of England	Gm	Kuma	48K	C	AO	£6.32
Map of England	Gm	Kuma	48K	D	AX	£12.00
Mastermind	Gm	Highlight S/W	6K	C	CC, AB	£4.60
Mastermind	Gm	Kuma	48K	C	AX, AO, FZ, AB	£6.32
Match the Character	Ed	Highlight S/W	22K	C	CC, AB	£4.60
Match the Word	Ed	Highlight S/W	22K	C	CC, AB	£5.75
Maths	Ed	Highlight S/W	22K	C	CC	£5.75
Maths 1	Ed	DCS	48K	C	JQ	£3.00
Maths 2	Ed	DCS	48K	C	JQ	£3.00
Maths 3	Ed	DCS	48K	C	JQ	£3.00
Maths 4	Ed	DCS	48K	C	JQ	£3.00
Maths 5	Ed	DCS	48K	C	JQ	£3.00
Maths 6	Ed	DCS	48K	C	JQ	£3.00
Melody	Gm	Kuma	48K	C	AX	£6.32
Memory Tests	Ut	Kuma	20K	C	AX, AO, AB	£6.32
Minefield	Gm	Kuma	48K	C	AX	£6.32
Missile Defence	Gm	Sumlock	48K	C	DN	£8.50
Miz-Maze	Gm	Kuma	48K	C	AX, AO	£6.32
Monkey Climb	Gm	Kuma	48K	C	AX, AO	£6.32
Moonlander	Gm	Highlight S/W	10K	C	CC, AB	£5.75
Mortar Attack	Gm	Kuma	48K	C	AX, AO	£6.32
Music Composer/Editor	Ed	Kuma	48K	C	AX, AC, AB	£12.00
Multiple Regression	Ed	NCG Ltd	24K	C	KW	£65.00
Narplex	Ed	Kuma		C	AX	£28.70
Newton/Conservation	Ed	Kuma		C	AX	£12.00
Pac Man	Gm	Kuma		C	AX	£9.20
Pascal	Ut	Sharp	48K	C	AB	£34.50
Patience	Gm	Kuma	48K	C	AX, AO	£6.32
Payroll	Bs	Microtek	48K	C	EQ	£65.00
Payroll	Bs	NCG Ltd	40K	C	KW	£150.00
Payroll 81-C	Bs	Sumlock	48K	C	DN	£74.75
Payroll 81-D	Bs	Sumlock	48K	D	DN	£74.75
Payroll	Bs	Tridata	48K	D	ID	£170.00
Pelmanism	Gm	Sumlock	48K	C	DN	£5.75
Physics 1	Ed	DCS	48K	C	JQ	£3.00
Physics 2	Ed	DCS	48K	C	JQ	£3.00
Picture Count	Ed	Highlight S/W	22K	C	CC, AB	£5.75
Pilot	Ut	Kuma		C	AX	£17.25
Poker	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Polaris	Gm	Sumlock	48K	C	DN	£6.50
Pontoon	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Posidon	Gm	Highlight S/W	6K	C	CC, AB	£5.75
Poster Printer	Bs	DCS	48K	C	JQ	£3.00
Princess & Monster Maze	Gm	Kuma	48K	C	AX, AB	£6.32
Program Filing Index	Bs	Kuma	20K	C	AX	£6.32
Quadrax	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Quest	Gm	J Wolstencroft	48K	C	CZ	£4.60
Race Track	Gm	Kuma	48K	C	AX, AO, AB	£6.32
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Rhymes	Gm	Kuma	48K	C	AX, AB	£6.32
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Rocket	Ed	Kuma		C	AX	£6.32
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Show Jumping	Gm	Kuma	48K	C	AX, FZ	£6.32
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Slave Interpreter	Ut	Kuma		C	AX	£16.65
Snakes and Ladders	Gm	Kuma	48K	C	AX, AO	£6.32
Solid State Non VAT	Ed	Kuma		C	AX	£33.90
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Space Battle	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Space Invaders	Gm	Kuma	48K	C	AX, AO, AC, AB	£6.32
Space Bomber	Gm	Sumlock	48K	C	DN	£7.00
Space Pursuit	Gm	Kuma	48K	C	AX, AO, AB	£6.32
Space Rescue	Gm	Sumlock	48K	C	DN	£7.50
Space Invaders	Gm	Sumlock	48K	C	DN	£7.50
Star Trek	Gm	Kuma	10K	C	AX, AC, AO	£6.32

REFERENCE

SOFTWARE LISTING

SHARP

Title	Program Type	Program Produced By	Memory Req'd	How Sold	Supplier Codes	Price
Stella Adventure	Gm	Sumlock	48K	C DN		£15.50
Stock Control/Invoicing	Bs	Microtek	48K	C EQ		£316.00
Stock Control	Bs	NCG Ltd	36K	C KW		£40.00
Stomper	Gm	Kuma	10K	C AX,FZ,AB		£6.32
Stomper/Minefields	Gm	Sharpsoft	20K	C AB		£5.85
Stoneville Manor Adventure	Gm	Sumlock	48K	C DN		£10.35
Submarine	Gm	Kuma	10K	C AX,AO		£6.32
Super Simon	Gm	Kuma	48K	C AX,AO		£6.32
Supercopy	Gm	Kuma	20K	C AX		£12.00
Superfire	Gm	Kuma	48K	C AX		£6.32
Supermouse	Gm	Kuma	48K	C AX,CH		£6.32
Swordmen	Gm	Kuma	48K	C AX,AO		£9.20
Tank Wall	Gm	Kuma	48K	C AX,AO		£6.32
Tank Practice	Gm	DCS	48K	C JQ		£3.00
Tenpin Bowling	Gm	Kuma	48K	C AX,AO		£6.32
Timetabling Aid	Ed	Kuma	20K	C AX		£22.45
Towering Inferno	Gm	Sharpsoft	20K	C CH,AB		£5.85
Towers	Gm	DCS	48K	C JQ		£3.00
Towers of Hanoi	Gm	Kuma	48K	C AX		£6.32
Track Layer	Gm	Kuma	48K	C AX,CH		£6.32
Trader Smith	Gm	Kuma	48K	C AB		£6.32
Tudor Village	Gm	DCS	48K	C JQ		£3.00
Trench Mortars	Gm	DCS	48K	C JQ		£3.00
Tycoon	Gm	Kuma	48K	C AX,AO		£6.32
Typewriter	Do	DCS	48K	C JQ		£3.00
UFO	Gm	Kuma	6K	C AX,AC		£6.32
Video Draughts	Gm	DCS	48K	C JQ		£3.00
War at Sea	Gm	DCS	48K	C JQ		£3.00
Waves I	Ed	Kuma		C AX		£12.00
Waves II	Ed	Kuma		C AX		£12.00
Wizards Quest Adventure	Gm	Sumlock	48K	C DN		£10.50
Wordpro	Bs	Kuma	48K	C AX,AC		£45.45
Wordpro	Bs	Kuma	48K	C AX,AC		£91.95
Wordprocessor LW	Bs	DCS	48K	C JQ		£10.00
Wordprocessor RW	Bs	DCS	48K	C JQ		£8.00
Zen Dos	Ut	Kuma	4K	C AX		£66.16
Zen Editor Assembler	Ut	Kuma	20K	C AX,AO,AB		£22.45
Zenmod	Ut	Kuma	4K	C AX,AB		£12.00
Z-80 Disassembler	Ut	Sumlock	48K	C DN		£12.00

SPECTRUM

Adventure	Gm	Abersoft	48K	C HX		£9.95
Autochef	Gm	CCS	16K	C KZ		£5.00
Alien	Gm	Spectre Soft	16K	C JJ		£3.95
Angles	Ed	AVC Software	16K	C IM		£3.00
Arcade Pack 1	Gm	Ohmega				
		Electronics	16K	C IO		£4.82
Assembler	Ut	Artic	16K	C EH		£9.95
Associative Database System	Do	Docimodus	16K	C JD		£15.00
Atoms	Gm	B.G. Cornhill	16K	C JK		£5.50
Airline	Gm	CCS	16K	C KZ		£5.00
Bit, Byte Rotation	Ut	B.G. Cornhill	16K	C JK		£4.50
Bomber	Gm	Llamasoft	16K	C KG		£2.95
City	Gm	Docimodus	48K	C JD		£8.00
Count-down	Ed	AVC Software	16K	C IM		£3.00
Database	Do	Chromasoft	16K	C KF,CN		£4.50
Dallas	Gm	CCS	16K	C KZ		£5.00
Digital X-Word Compiler	Gm	N. Darwood	8K	C JB		£6.00
Escape	Gm	New Generation S/W	16K	C CH,CN		£4.95
Fortune	Do	AVC Software	16K	C IM		£3.00
French	Ed	AVC Software	16K	C IM		£3.00
Game of Logic	Ed	N. Darwood	16K	C JB		£8.00
Galaxian	Gm	Artic	16K	C EH		£3.95
Gobbleman	Gm	Artic	16K	C EH		£3.95
Graph	Ed	AVC Software	16K	C IM		£3.00
Graph	Ut	Spectre Soft	16K	C JJ		£4.95
Graphics Creator	Ut	Llamasoft	16K	C KG		£2.95
Great Britain Ltd	Gm	S.W. Hesel S/W	48K	C IW		£14.39
Hangperson	Ed	AVC Software	16K	C IM		£3.00
Hangman	Gm	Spectre Soft	16K	C JJ		£4.95
Inheritance	Gm	S.W. Hesel S/W	48K	C IW		£5.95
Learning	Ed	AVC Software	16K	C IM		£3.00
Magic Cards	Gm	B.G. Cornhill	16K	C JK		£3.50
Mazing	Gm	Spectre Soft	16K	C JJ		£4.95
Mazeman	Gm	Abersoft	16K	C HX		£4.95
Modeller X	Bs	CCS	16K	C KZ		£8.00
Namitar Raiders	Gm	Artic	16K	C EH		£3.95
Parity	Ed	N. Darwood	16K	C JB		£6.00
Payroll	Bs	V&H Computer	48K	C IL		£14.65
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Print Shop	Gm	CCS	16K	C KZ		£5.00
Reversi	Gm	Spectre Soft	16K	C JJ		£4.95

Space Inturders	Gm	Quicksilva	16K	C GD		£5.85
Spectral Invaders	Gm	Bug Byte	16K	C CH		£5.00
Tables	Ed	AVC Software	16K	C IM		£3.00
Turtle	Ed	AVC Software	16K	C IM		£3.00
User-Defined Graphics	Ut	B.G. Cornhill	16K	C JK		£1.50
Wordprocess	Bs	Spectre Soft	16K	C JJ		£4.95

TRS-80

A-Maz-Ing	Gm	Molimerx	4K	C AJ		£6.33
Acquire	Gm	Avalon Hill	16K	C IA		£13.95
Adventure I	Gm	Adventure Int.	16K	C AJ		£13.77
Adventure III	Gm	Adventure Int.	16K	C AJ		£13.77
Adventure III	Gm	Adventure Int.	16K	D AJ		£13.77
Adventures No.1	Gm	Cload Inc	16K	C IA		£11.95
Advanced Programming Aid	Ut	Kansas	16K	C IH		£12.50
Adventureland	Gm	Adventure Int.	16K	C IS		£12.50
				AJ		£18.99
Adventure Mysterious	Gm	Adventure Int.	16K	C AJ		£10.06
Adventure Mysterious	Gm	Adventure Int.	32K	D AJ		£13.50
Aid, Basic	Ut	J.K. Gosden S/W	16K	C LB		£9.00
Air Raid	Gm	MA	16K	C IS		£7.50
Air Traffic Control	Gm	MA	16K	C IS		£9.50
Airflight Simulation	Gm	Instant S/W	16K	C GB,AB		£9.95
Airmail Pilot	Gm	Instant S/W	16K	C GB,AB		£8.50
Ajedit	Bs	Molimerx	32K	C AJ		£49.95
Aladdin	Ed	Bryants S/W	16K	C HW		£3.75
Alien Armada	Gm	Molimerx	16K	C IS		£11.50
				AJ		£10.06
Alien Armada	Gm	Molimerx	32K	D AJ		£13.23
Alien Attack Force	Gm	Instant S/W	16K	C GB,AB		£8.50
Alien Attack	Gm	Kansas	16K	C IH		£9.50
Alien Defence	Gm	Soft Sector Mkting	16K	C IS		£11.50
				GB		£15.50
Alien Defence	Gm	Soft Sector Mkting	16K	D IA		£11.95
All Stars	Gm	Instant S/W	16K	D GB		£26.50
				AB		£28.95
All Turret Gunner	Gm	Instant S/W	16K	C GB,AB		£8.50
Amateur Log	Ut	Molimerx	32K	D AJ		£18.40
Amazing Maze						
Touchdown	Gm	Kansas	16K	C IH		£7.50
Angel Worms	Gm	Adventure Int.	8K	C AB		£14.35
Animation	Ut	Molimerx	16K	C AJ		£17.20
Animation	Ut	Molimerx	32K	D AJ		£20.65
Android Nim	Gm	Molimerx	16K	C IS		£7.50
				AJ		£10.06
Arcade Invaders	Gm	Kansas	16K	C IH		£9.50
Arcade Scramble	Gm	Kansas	16K	C IH		£9.50
Armoured Patrol	Gm	Adventure Int.	16K	C IS		£15.00
				GB		£15.00
Armoured Patrol	Gm	Adventure Int.	16K	D AB		£18.99
Ascertain	Ut	Kansas	16K	C IH		£6.25
Assembly Package	Ut	Molimerx	32K	D AJ		£74.75
Asteroids	Gm	Molimerx	16K	C AJ		£10.06
Asteroids	Gm	Molimerx	32K	D AJ		£13.50
Astro Navigator	Gm	Molimerx	16K	C AJ		£14.95
Astrobball	Gm	Molimerx	16K	C AJ		£13.77
Astrolog	Ed	Molimerx	16K	C AJ		£10.93
Astronomical Calendar	Ed	Molimerx	16K	C AJ		£10.93
Asylum	Gm	Med Systems	16K	C IS		£9.50
				BT		£12.00
Atlantian Odyssey	Gm	Guild	16K	C IS		£11.50
				GB		£19.75
Atlantian Odyssey	Gm	Guild		D GB		£21.50
				GB,BT		£10.95
Attack Force	Gm	Big 5 S/W	16K	C IS		£11.50
BI Nuclear Bomber	Gm	Instant S/W	16K	C GB		£12.50
				BT		£12.95
BQ81	Bs	Baust Computing	48K	D HA		£79.95
Back 40	Gm	Molimerx	16K	C AJ		£10.06
Back 40	Gm	Molimerx	32K	D AJ		£13.50
Back 40 III	Gm	Adventure Int.	16K	C AB		£14.35
Backgammon	Gm	Adventure Int.	16K	C IS		£7.50
				AB		£7.99
Backgammon	Gm	Kansas	16K	C IH		£8.50
Balrog Sampler	Gm	Adventure Int.	16K	D AB		£33.70
Bandito	Gm	Acorn	16K	C AJ		£7.49
Barricade	Gm	MA	16K	C IS		7.50
Bandit/Maze Chase	Gm	Kansas	16K	C IH		£7.50
Banner	Ut	Kansas	16K	C IH		£7.50
Basic Bidding	Gm	Bryants S/W	16K	C HW		£9.00
Basic Compiler Accel.	Ut	Microsoft	16K	C AJ		£22.94
Basic Compiler Accel. 3	Ut	Microsoft	16K	C AJ		£45.95
Basic Compiler Accel. 3	Ut	Microsoft	16K	D AJ		£49.95
Basic Insert	Ut	Molimerx	16K	C AJ		£10.95
Basic Insert	Ut	Molimerx	32K	D AJ		£14.39
Basic Programming System	Ut	Instant S/W	16K	C AB		£12.50
Basketball	Gm	Molimerx	16K	C AJ		£10.95
Basketball	Gm	Molimerx	32K	D AJ		£14.39
Battle Bastogne	Gm	MA	16K	C IS		10.50
Battle St. Vith	Gm	MA	16K	C IS		10.50
Battle of Britain	Gm	Molimerx	16K	C AJ		£15.55
Battle Ground	Gm	Instant S/W	16K	C GB,AB		£8.50
Bearings	Ed	Bryants S/W	16K	C HW		£3.75
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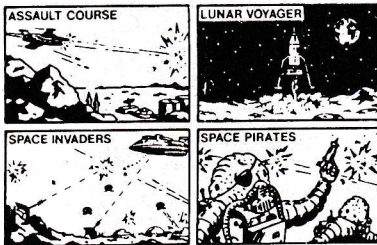
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