

ZX

USER



● Flee from the empire—a challenging Spectrum adventure to type in

● Test your reactions with our ZX81 game

● Software reviews: we rate games and utilities



FREE with
Home Computing
Weekly



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Free with Home Computing Weekly

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Welcome to the second issue of ZX User, the essential magazine for users of the Spectrum and the ZX81.

It's packed with software reviews and listings, some just for fun and some which you'll find useful.

Don't forget, though, that ZX User is your magazine. So let's hear from

you. Your letters will help us to give you an even better magazine.

And if you would like to see your work on our pages, read the advice under the heading: You can get into print.

Happy computing!

You can get into print

WE WELCOME programs and articles from our readers. If you feel that your work meets our standards, please submit it to us for consideration for publication.

Programs must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include full details of what your program does, how it works, variables you have

used and hints on conversion. See the programs in this issue for guidance on what your paperwork should include.

Articles on using the Spectrum and the ZX81 should be no longer than 2,000 words. Those most likely to be published will help our readers make better use of their computers by giving useful advice, possibly with programming examples, tables and so on. Short hints are also welcome.

All submissions will be acknowledged and the copyright in such works which will pass to Argus Specialist Publications Ltd will be paid for at competitive rates.

Keep a copy of your work and include and SAE. Label everything clearly and give a daytime and home phone number if you can. All work for consideration should be sent to:

Paul Liptrot, ZX User, No. 1 Golden Square, London W1R 3AB.

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Follow the progress of the latest software on your own chart

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You are a prisoner of the empire. Type in our adventure and see if you can escape

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You'll face gangsters, killer tomatoes — not to mention spacecraft and monsters — in these games

ZX81 programthirteen

Catch me if you can — practise your reactions in a program for the 1K ZX81

Spectrum programfourteen

Give your software library the professional touch with tailor-made inlay cards. Our listing will also organise all the games you've written



AWIDE SPECTRUM OF PROGRAMS

Quite a mixture of software for your Spectrum. Our panel of reviewers has looked at them all and give you their views

Sci-File

48K £19.95

Visions, 1 Felgate Mews, Studland St, London W6

New from Visions is a program generator for a filing system and spreadsheet.

Excellent documentation with quick-start and detailed, technical manuals for both major programs on the twin-cassette package. They are essentially BASIC, and, taking you slowly and carefully through the decisions necessary to hold and display your own data, set up the framework of variables. Well written and user friendly.

★★★★

Though the master program is BASIC, there are a number of routines in machine code to search for your data, delete it, read it and so on. These are added by merging with another program. The whole structure is then saved to tape for future use. The companion spreadsheet is developed in a similar way, and information is transportable from the database, a useful feature.

Sadly, this major achievement in software has been overtaken

by hardware. No provision is made for Microdrives in the type of software for which it is purpose built. Given the excellent detail of the manual, you can modify the BASIC, but you would have to work out how. Which rather negates the purpose of the whole thing D.M.

instructions	100%
ease of use	100%
display	95%
value for money	40%

Star Reader A 48K £6.95

Scisoft, 5 Minster Gardens, Newthorpe, Eastwood, Notts

Another practice and teaching program to test a child's knowledge — but a well-planned and extremely well-designed one, using the Spectrum's potential to its fullest. For six- to 11-years-old.

Each side has three levels, with deletions — putting words from a list into sentences — at each level. If you are wrong the correct word is put in. At the end the sentences are listed to form part of the story.

Level one has sequencing (putting sentences in the correct order, with a big tick when correct or giant cross when wrong), level two has alphabetical order and level three has encyclopaedia work.

Side A is based upon a space story, Lunar Probe, and side B upon Bear Mountain.

The program practises alphabetical order visually, with the option to change, and leads on to its use in accessing information from encyclopaedia. It is a shame that, when sequencing, the use of the deletion key clears the whole sentence painstakingly typed in — very frustrating for young children. T.W.

instructions	90%
ease of use	90%
display	80%
value for money	95%

★★★★★

48K £4.95

Play as you learn

Turtle, 40 School Rd, Finstock, Oxford OX7 3DJ

An amateurish program, useful with primary or remedial children.

A rhyme teaches the alphabet, followed by a test. Correct answers are visually rewarded and wrong answers corrected. Score is kept at screen top and test completion brings retest or two games: Alphabet Snake is too fast and Alphabet Shootout starts with an exceedingly long flashing sequence.

★★★★

Compass teaches simple compass points, re-inforcing information with a treasure hunt. Help is given in the shape of warm, hot or boiling, and one glimpse of where the treasure is.

Mathematical Hangman invites name input, number of questions and level — 5 to 11 years. Correct answers bring one high note and a smiling face, incorrect answers produce a grimace and parts of the gallows.

Scores are kept on screen; prizes are awarded every five correct answers and score sheet at the end.

In Coordinates the player's name is entered and an addictive game of "find the person" on a grid is played. A song is played when the person is found. T.W.

instructions	65%
ease of use	70%
display	70%
value for money	60%

48K £5.95

Airbase Invader

CP Software, 2 Glebe Rd, Uxbridge, Middx UB8 2RD

A political arcade game, based loosely upon Atic Atac — but not refined. You are Peace Woman Annie in the Greenham Common USAF base, trying to prevent the Ronnie Raygun clones reaching the red nuclear attack button, and blowing up the world. To hinder you there are vast numbers of Harry Hardnoses — gutterpress photographers; Old Bills; Squaddies and Iron Ladies (thank goodness

★★★★

there's only one in real life). Don't bump into any of these or you'll be bumped off. Blowing kisses at the lads will devastate them, improving your score, but the Iron Lady is impervious to them — as we all know.

As you move through rooms and levels you can enhance your score by picking up food, drink, maps, and secret documents left by the underground movement.

Unfortunately there is no hall

of fame, and as the score at screen top left is so small, you rarely know how well you've done. Also on screen is hi-score, what level the President Rayguns are on and flashing warnings when they approach the red button — but no map of the base!

instructions	80%
playability	75%
graphics	75%
value for money	65%

T.W.

instructions	100%
playability	100%
graphics	100%
value for money	80%

★★★★★

The Prize 48K £5.50

Arcade, Technology Hse, Chislehurst Rd, Orpington

An arcade game with a prize at the end! 20p of the prize goes into the fund, so if it sells well and you are the first to photograph the final screen with its code, you get the lot!

An enormous playing area, à la Trans Am, is revealed in the "window" of the screen. You pilot your ship through a maze in order to reach the innermost chamber. Various nasties await in the form of Death Drones, Mutants and Crushers. Help is on hand in the form of energy bases which give a short period of immunity, if you can find them. Also hidden are the code pods which must be collected to reach the next level.

The graphics are superior. Fast and flicker-free, they stand comparison with the best from Ultimate and Software Projects, though clearly inspired by the Liverpool School of Hackers. Sound, though sparse, is acceptable. A joystick is essential. Keyboard control is very difficult. Will you like it? It's a combination of adventure and Pac-Man, Trans Am and Space Invaders, so it's up to you. D.M.

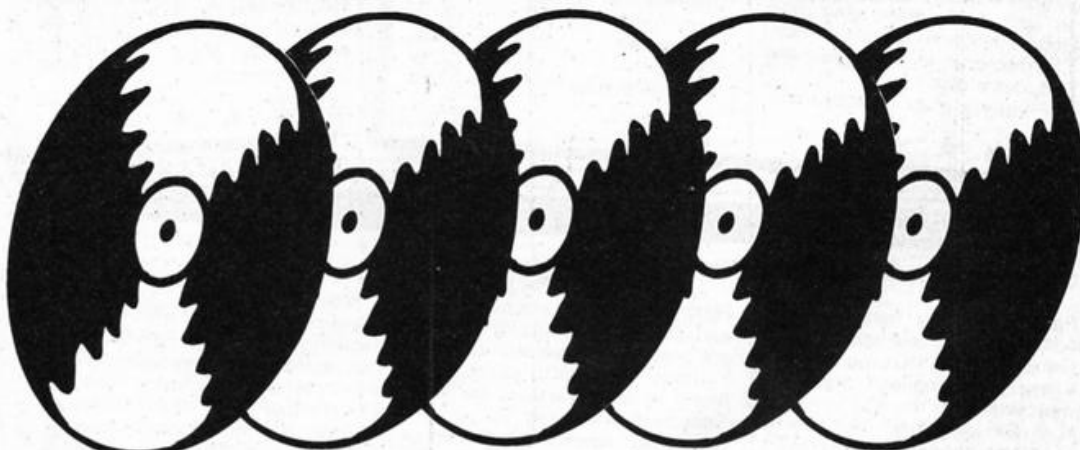
TOP OF THE POPS

*Follow the progress of the latest software on your own chart.
This program by Barrie Penman shows you how*

Keep up to date with the latest hits in your own version of the top ten. This program is easy to adapt so that you can keep tabs on the rise to fame or the descent to oblivion of all your favourite games.

Not only will you always be aware of the fate of new chart-toppers, but you can also keep track of high scores. The first three high score figures flash on your screen.

This program is menu driven. You can print out hard copy and keep a permanent record of high flyers and drop outs. Several error traps are included.



How it works

- 20 POKEs for capital lock and keyboard click. When S=2 prints on screen #S (1000-1190); when S=3 operates printer. Variable R = colour of paper
- 22 prints menu on screen
- 100 dimensions, arrays and variables for line numbers
- 120 input data with error traps, update of data via option 6
- 300 routine to update high score
- 400 routine to rearrange chart positions (arrays) with error traps
- 700 routine to delete any game
- 800 SAVE
- 1000 GOSUB: used constantly to display or print updated data note: print PRINT #S used for printer or screen display
- 1100 correct figures in right hand column

```

0  BARRIE PENMAN 1984          TOP TEN
2  REM SAVE:TOP TEN 1" LINE 20
20 BORDER 1: PAPER 0: INK 0: CLS: POKE 25400,0: POKE 25400,50: LET S=2: LE R=
21 PRINT AT 21,161"By Barrie Penman"
22 PRINT AT 2,111: INK 2: "H E N O P S" AT 4,2: INK 0: "1" SET UP NEW LIST"AT
23 "2" DISPLAY CHART / COPY "AT 10,31 "3" UPDATE HIGH SCORE"AT 12,3
24 CHART FLYER"AT 14,21 "5" CHART FALLER"AT 16,31 "6" CHART ENTH
25 AT 18,21 "7" CHART DROP OUT"AT 20,31 "8" SAVE"
26 INPUT "NUMBER "X
27 IF X=1 THEN GO TO 100
28 IF X=2 THEN GO TO 200
29 IF X=3 THEN GO TO 300
30 IF X=4 THEN GO TO 400
31 IF X=5 THEN GO TO 500
32 IF X=6 THEN GO SUB 1000: GO TO 120
33 IF X=7 THEN GO TO 700
34 IF X=8 THEN GO TO 800
35 GO TO 25
100 LET S=2: DIM A(11): DIM B(11,11): DIM C(11)
105 LET B=1: LET N=1
110 GO SUB 1000
120 IF B=1 THEN BEEP 1,-35: INPUT " CHART FULL" ENTER 0 TO
RETURN TO MENU "X: GO TO 20
125 IF B=1 THEN GO TO 197
130 LET A(B)=B
135 LET P=STR A(B)
140 PRINT TAB (3-LEN P):B
150 INPUT "ENTER TITLE (12 letter max.): " FLASH 1:"OR": FLASH 0:" QUIT IF FINI
SHEP "Y
155 IF LEN V$12 THEN BEEP 1,-35: GO TO 150
156 LET A(B)=V$
160 IF A(B)(1) TO 41="QUIT" OR A(B)(1) TO 41="quit" THEN LET A(B)=
"1" GO TO 20
165 PRINT TAB 4:A(B) 18 DIGITS MAX) " (C)B
172 LET Q=STR C(B)
173 IF LEN Q=10 THEN BEEP 1,-35: GO TO 170
174 PRINT TAB (27-LEN Q):C(B)
190 INPUT "IF AKE TAPE PRESS. Y "Y$
191 IF X="Y" OR X="y" THEN LET B(B)=Y
193 PRINT TAB 29:B(B)
195 NEXT B
196 GO TO 120
197 IF B=1 THEN BEEP 1,-35: INPUT " CHART FULL" ENTER 0 TO
RETURN TO MENU "X: GO TO 20
200 GO SUB 1000
220 INPUT "C - FOR COPY TO PRINTER OR 0 TO RETURN TO MENU "X$
230 IF X="C" OR X="c" THEN LET S=3: GO SUB 1000: LET S=2: GO TO 20
240 IF X="0" OR X="c" THEN GO TO 20
300 GO SUB 1000
320 INPUT "ENTER LINE No. OF NEW HI-SCORE " FLASH 1:"OR": FLASH 0:" 0 TO RETU
RN TO MENU "X
330 IF X=0 THEN GO TO 20
335 IF X=1 THEN BEEP 1,-35: GO TO 320
340 INPUT "ENTER NEW HI-SCORE (max 8 Digits) FOR " FLASH 1:A(X): FLASH 0:"
"Y
350 LET Q=STR X
360 IF V=0 THEN BEEP 1,-35: LET A=X: PRINT A: SCORE OVER 8 DIGITS LONG
"1" PAUSE 0: GO TO 340
370 LET C(X)=Y
380 GO TO 300
400 GO SUB 1000
410 INPUT "ENTER LINE No. OF CHART FLYER " FLASH 1:"OR": FLASH 0:" 0 TO RETU
RN TO MENU "X
420 IF X=0 THEN GO TO 20
430 INPUT "ENTER NEW POSITION OF YOUR CHART FLYER "Y
435 IF Y=0 THEN BEEP 1,-35: GO TO 410
437 IF Y=X THEN BEEP 1,-35: GO TO 410
440 LET A(X)=A(X): LET B(11)=B(11): LET C(11)=C(11)
445 FOR N=1 TO 11 STEP -1
450 LET A(N)=A(N-1): LET B(N)=B(N-1): LET C(N)=C(N-1)
455 NEXT N
460 LET A(Y)=A(11): LET B(Y)=B(11): LET C(Y)=C(11)
470 GO TO 400
500 GO SUB 1000
510 INPUT "ENTER LINE No. OF CHART FALLER " FLASH 1:"OR": FLASH 0:" 0 TO RETU
RN TO MENU "X
515 IF X=0 THEN GO TO 20
520 INPUT "TYPE IN THE NEW POSITION OF YOUR CHART FALLER "Y
522 IF Y=X THEN BEEP 1,-35: GO TO 510
523 IF Y=X THEN BEEP 1,-35: GO TO 510
525 LET A(11)=A(11): LET B(11)=B(11): LET C(11)=C(11)
530 FOR N=X TO (Y-1) STEP 1
540 LET A(N)=A(N+1): LET B(N)=B(N+1): LET C(N)=C(N+1)
550 NEXT N
560 LET A(Y)=A(11): LET B(Y)=B(11): LET C(Y)=C(11)
580 GO TO 300
700 CLS: LET R=2: BORDER 2: PAPER R: INK 0: CLS
705 GO SUB 1000
706 LET R=1
710 INPUT "ARE YOU CERTAIN? Enter Y to continue "Q$
715 IF Q="Y" THEN GO TO 720
720 INPUT "ENTER LINE No. OF CHART DROPOUT " FLASH 1:"OR": FLASH 0:" 0 TO
RETURN TO MENU "X
730 IF X=0 THEN GO TO 20
735 IF X=1 THEN BEEP 1,-35: GO TO 720
740 LET A(11)=
"1" LET B(11)=
"1" LET C(11)=0
750 FOR X=1 TO 10
760 LET A(11)=A(11): LET B(11)=B(11): LET C(11)=C(11)
770 IF A(11)=
"1" AND C(11)=0 THEN LET B(11)=1: GO TO 700
780 NEXT X
800 GO SUB 1000
810 INPUT "TYPE IN TITLE max. 1000 "Z$ PRINT Z$
820 SAVE Z$ LINE 20
1000 CLS: PRINT #1: INK 2: PAPER 0: TAB 1:"No. "TAB 6:" TITLE"TAB 19:"HI-SCOR
E"TAB 27:" A$B$
1001 PRINT #1: INK 1: "-----"
1002 FOR N=1 TO 11
1003 IF N=1 THEN PRINT #1: PRINT #1: INK 2:
1004 IF N=2 THEN PRINT #1: PRINT #1: INK 2:
1005 IF N=3 THEN PRINT #1: PRINT #1: INK 2:
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1390 IF N=3
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SERIOUSLY Speaking

When you've finished with games, here's a batch of programs designed to take your Spectrum further

Computer Studies

48K £8.95

Longman, Longman House, Burnt Mill, Harlow, Essex CM20 2JE

This has been written by someone with a sense of humour, which is a great help when working for O-Level or CSE.

There are five programs here. Text is a revision database containing 500 references to Computer Studies topics, with lots of good advice too! Visicode is a simulation of a simple machine code, allowing you to assemble instructions, see what they do, and modify your program accordingly. Files shows how a file handling system works. You can save files to tape and create your own database. Logic takes you from first principles to logic gates, and includes a test.

Finally, and humorously,

★ ★ ★ ★ ★

Putin, is a linked series of routines into which bugs have been introduced! You must debug the routines and get them running. Every possible mistake seems to have been put into the bubble sort, graphics drawing, mean calculation etc. After debugging, you can save the routines to tape for use in your coursework.

The screen layout and input handling of this package are magnificent. If only all computer-assisted learning packages were this well done! Highly recommended.

D.M.
100%
100%
100%
100%

value for money

Snail Logo

48K £9.95

CP, 2 Glebe Rd, Uxbridge, Middx UB8 2RD

Logo is a high level language for computers which is recommended for teaching because it encourages logical program design. Logo has turtle graphics, which can be used to control a robot turtle drawing a pattern on the floor.

Snail Logo is a simulation of turtle graphics for the Spectrum using a snail on-screen instead of the turtle. Don't think you're buying the whole language, it's just the graphics you get, although you could control a Zeaker robot.

The program itself is written in BASIC, and Snail is apt for the pace. It's even slower when you accidentally break into it and have to reload.

★ ★ ★ ★

The tape comes packaged with a detailed manual. Essentially, you must specify PROCEDURES at the outset, and these can be nested, and then called in the main program, which contains instructions for the initial position of the Snail and its movement. Quite a complex pattern can be drawn with a program of just seven instructions.

The package claims "this is more than a pretty pattern maker" and so it is. Logical thought can be encouraged by its use.

D.M.
100%
75%
80%
80%

Chessmaster

48K £15.95

Serin, PO Box 163, Slough SL2 3YY

Chess, like most board games, can be learned by almost anyone of any age, and the best way of learning chess is by personal tuition from an expert. That's exactly what you get in this package of three cassettes and explanatory booklet. One of the cassettes contains a computer program, the other two give a commentary on the program.

Assuming you know nothing about chess, the melodious tones of Tony Miles guide you through all the correct moves and tactics. Tony Miles is Britain's leading chess player, and one of the world's top Grandmasters, so he knows what he is talking about. I shall never be more than average at chess but after reviewing this I am better informed.

If you wish to learn chess, in all its subtleties, you can do no better than start with this package. If you think the price is steep how much do you think a Grandmaster could charge per hour for personal lessons?

This has got to be the best computerised chess tutor. Beat that!

B.B.
100%
100%
90%
100%

★ ★ ★ ★ ★

Floating Point Forth

48K £13.95

CP, 2 Glebe Rd, Uxbridge, Middx UB8 2RD

Forth is a very fast language which takes up less space than a comparable BASIC program. It is a lower level language, that is it's much closer to the way in which the CPU works. All Forth Programs consist of words, even the commands are words, and you teach the computer new words in order to achieve your task. Certain words are "built in", and it's these that are used to define your own.

This implementation is of

★ ★ ★ ★ ★

Forth 79 — there are others — and features floating point arithmetic as opposed to the "whole number" arithmetic found in most versions for the Spectrum. Integer is much faster, but even in its floating point mode, this package is still at least twice as fast as Sinclair BASIC.

A good manual comes with this package. You'll need to work at it, but all you need to know is here.

More important for the advanced user is the Editor section which allows testing and manipulation of the program in a way other packages won't allow. £1 cheaper than Forth from Sinclair, and more features must make this a good buy.

D.M.
95%
95%
N/A
100%

Spelling Bee

48K £6

Image Systems, 34 Lynwood Drive, Worcester Park, Surrey KT4 7AB

This started life as a 16K ZX81 program in English only. It is written in BASIC and the illustrations are formed from characters, not high resolution graphics.

The educational market is wide-open at present — so why are software firms content to publish unappealing programs of poor educational value? Programmers need to research the market.

Using the extra Spectrum

memory has given us sound and colour, and a French option. Cassette side A is easy and B hard. We are invited to enter our name at the start — but no use is made of it. Why?

Personally, I preferred to get my spellings of the on-screen pictures wrong in order to hear the pleasing odd sounds instead of the little show made when correct — a common error made by programmers. At the end of a sequence pictures appear, for

example a pen or fish, with comments such as "not bad" or "whoops" dripping from the nib or bubbling from the mouth. The pictures appear in the same order and no attempt is made to teach.

I cannot recommend this program.

T.W.
60%
55%
35%
20%

PICTURE THIS

Different nibs and inks can be used to create your own drawings in this graphics utility by Christopher Lang. Let your artistic streak take over and experiment with colour!



This is a useful utility program which allows you to draw a picture and save it to tape. The program contains a simple routine which saves bytes using the screens command. You can also print out your drawing.

To make your program more professional, you could feature your drawing at the beginning of your program. You can save a half-completed picture to tape, reload at a later stage and modify it.

The special feature of this program is that you can choose any one of four different sized nibs at any point. The nib is guided around the screen by the usual cursor keys and can also be moved diagonally. You can also choose different inks, but it is best to keep the choice of colours to a minimum, and don't use them too closely together because of the Spectrum's limited graphics/colour capability.

You can also draw circles if you input the co-ordinates of the centre of the circle and its radius. The program contains a routine which will detect whether the circle will be too big and overlap the edge of the screen, before it is drawn and stop this happening. If you wish to write in your picture a simple routine can cope with this. If you make a mistake it is easy to correct it by pressing E with caps-shift and going back over the mistake with the cursor keys, as the E switches the computer into inverse mode. When the mistake has been erased, pressing W with caps-shift will put the computer back into the drawing mode.

Load the program by typing LOAD "draw". Some questions will appear. Specify the colours and the size of nib

and the co-ordinates (all of which may be changed at any time during the program). Prompts will be given to tell you what to do when the program is running. The top line of the screen cannot be used for drawing, as it is used for prompts. When the picture is printed this line will be omitted.

Variables

Caps-shift key with:

- Z copy
- A exit from program
- X clear screen to restart
- W switches computer back to drawing mode after erase mode
- E switches computer into inverse mode in order to erase
- N change nib size
- Q change cursor position
- L load a picture
- S save a picture
- C draw a circle
- I change ink
- P print writing on screen
- cursor keys to move nib left, right, up and down
- y move diagonally NE
- h move diagonally SE
- t move diagonally NW
- g move diagonally SW

How it works

- 1-20 set up variables, colours nib size and cursor
- 25-300 main loop detects key input
- 900-950 colour set up
- 1000-1050 routine for saving pictures
- 1500-1530 routine for loading a picture for modifying
- 2000-2060 routine for printing writing on picture
- 3000-3020 program variables
- 3030-3065 colour options
- 4000-4090 routine for drawing circle
- 4500-4540 allows you to plot nibs co-ordinates
- 5000-5090 sets up nib size

```

1 REM draw
2 REM START
3 GO SUB 3000
10 GO SUB colour
15 GO SUB nib
20 GO SUB cursor
25 REM MAIN LOOP
30 PRINT AT 0,0;" "
40 PRINT AT 0,0;"(x=";x;"y=";y;" )";AT 0,10;"(y=";y;" )";
50 IF n=1 THEN PLOT x,y
60 IF n=2 THEN PLOT x,y; DRAW 1,0; DRAW 0,1; DRAW -1,0
70 IF n=3 THEN PLOT x,y; DRAW 2,0; DRAW 0,1; DRAW -2,0; DRAW 0,1; DRAW 2,0
80 IF n=4 THEN PLOT x,y; DRAW 3,0; DRAW 0,1; DRAW -3,0; DRAW 0,1; DRAW 3,0;
RAW 0,1; DRAW -3,0
100 LET i$=INKEY$
150 IF (x<252+z AND (i$="B" OR i$="y" OR i$="h")) THEN LET x=x+1
160 IF (x>0 AND (i$="S" OR i$="t" OR i$="g")) THEN LET x=x-1
170 IF (y>0 AND (i$="d" OR i$="q" OR i$="h")) THEN LET y=y-1
180 IF (y<162+z AND (i$="7" OR i$="y" OR i$="t")) THEN LET y=y+1
190 IF i$="A" THEN INK 0; BORDER 7; CLS : STOP
200 IF i$="Z" THEN PRINT AT 0,0;" "
205 IF i$="X" THEN CLS : GO TO 1
210 IF i$="W" THEN INVERSE 0
215 IF i$="N" THEN GO SUB nib; GO SUB cursor
220 IF i$="E" THEN INVERSE 1
225 IF i$="Q" THEN GO SUB cursor
230 IF i$="L" THEN GO SUB load
235 IF i$="C" THEN GO SUB circle; GO SUB nib; GO SUB cursor
240 IF i$="I" THEN INPUT AT 0,0;"Colour Ink (0-7) ? ";i$; INK i$
245 IF i$="P" THEN GO SUB print; GO SUB nib; GO SUB cursor
250 IF i$="S" THEN GO SUB save
300 GO TO 30
900 REM SCREEN
910 INPUT "Paper ?";pa$; IF pa$<0 OR pa$>7 THEN GO TO 910
930 INPUT "Ink ?";in$; IF in$<0 OR in$>7 THEN GO TO 930
940 PAPER pa$; BORDER pa$; INK in$; CLS
950 RETURN
1000 REM SAVE
1010 PRINT AT 0,0;" "
1020 INPUT AT 0,0;"Enter file name to be saved ";i$
1030 IF LEN i$>10 THEN LET i$=i$(1 TO 10)
1040 SAVE i$;SCREEN$
1050 RETURN
1500 REM LOAD
1510 INPUT AT 0,0;"Enter file name to be loaded ";i$
1520 LOAD i$;SCREEN$
1530 RETURN
2000 REM PRINT
2010 PRINT AT 0,0;"Writing to start at "
2020 INPUT AT 0,0;"X-coordinate ? ";ix
2025 IF x<0 OR x>31 THEN GO TO 2020
2030 INPUT AT 0,0;"Y-coordinate ? ";iy
2035 IF y<1 OR y>21 THEN GO TO 2030
2040 PRINT AT 0,0;"Enter line to be printed at x,y "
2045 INPUT AT 0,0;ps$
2050 PRINT AT x,y;ps$
2055 PRINT AT 0,0;" "
2060 RETURN
3000 REM VARIABLES
3010 LET x=0; LET y=0; LET screen=900; LET save=1000; LET load=1500
3015 LET colour=3035; LET circle=4000; LET cursor=4500; LET nib=5000; LET print=
2000
3020 RETURN
3030 REM COLOUR
3035 PAPER 7; BORDER 7; INK 0; CLS
3040 INPUT AT 0,0;"Do you wish to set up the colours (y or n)";i$
3050 IF i$="y" THEN GO SUB screen; RETURN
3060 IF i$="n" THEN RETURN
3065 GO TO 3040
4000 REM CIRCLE
4040 PRINT AT 0,0;"X-coordinates range=(0-255)";
4050 INPUT AT 0,0;"Circle's X-coordinate ? ";ix
4055 PRINT AT 0,0;"Y-coordinates range=(0-166)";
4060 INPUT AT 0,0;"Circle's Y-coordinate ? ";iy
4065 PRINT AT 0,0;" "
4070 INPUT AT 0,0;"Circle's Radius ? ";ir
4072 IF x<252+z OR x>0 THEN GO TO 4076
4074 IF y>162+z OR y<0 THEN GO TO 4076
4075 GO TO 4080
4076 PRINT AT 0,0;"Circle to big.Press a key"; PAUSE 0
4077 PRINT AT 0,0;" "
4079 GO TO 4050
4080 CIRCLE x,y,ir
4090 RETURN
4500 REM CURSOR
4505 PRINT AT 0,0;"X-coordinates range=(0-252+z)";
4510 INPUT "Nib's X-coordinate ? ";ix
4515 IF x<0 OR x>252+z THEN GO TO 4530
4517 PRINT AT 0,0;"Y-coordinates range=(0-162+z)";
4520 INPUT "Nib's Y-coordinate ? ";iy
4525 IF y<0 OR y>162+z THEN GO TO 4540
4526 PRINT AT 0,0;" "
4527 RETURN
4530 PRINT AT 0,0;"X is out of range.Press a key"; PAUSE 0; PRINT AT 0,0;" "
4540 PRINT AT 0,0;"Y is out of range.Press a key"; PAUSE 0; PRINT AT 0,0;" "
5000 REM NIB SIZE
5005 PRINT AT 0,0;" "
5010 PRINT AT 0,0;"(1:";AT 0,4;" )"; PLOT 27,169
5020 PRINT AT 0,0;"(2:";AT 0,12;" )"; PLOT 91,169; DRAW 1,0; DRAW 0,1; DRAW -1,0
5030 PRINT AT 0,16;"(3:";AT 0,20;" )"; PLOT 154,169; DRAW 2,0; PLOT 154,170; DRAW
2,0; PLOT 154,171; DRAW 2,0
5040 PRINT AT 0,24;"(4:";AT 0,28;" )"; PLOT 217,169; DRAW 3,0; PLOT 217,170; DRAW
3,0; PLOT 217,171; DRAW 3,0; PLOT 217,172; DRAW 3,0
5050 INPUT "Enter size nib (1-4)";n
5060 IF n=1 OR n=2 OR n=3 OR n=4 THEN PRINT AT 0,0;" "
5065 IF n=1 THEN LET z=3
5070 IF n=2 THEN LET z=2
5075 IF n=4 THEN LET z=0
5080 IF n=3 THEN LET z=1
5090 RETURN

```

```

1 REM draw
2 REM START
3 GO SUB 3000
10 GO SUB colour
15 GO SUB nib
20 GO SUB cursor
25 REM MAIN LOOP
30 PRINT AT 0,0;" "
40 PRINT AT 0,0;"(x=";x;"y=";y;" )";AT 0,10;"(y=";y;" )";
50 IF n=1 THEN PLOT

```


FLY FROM THE EMPIRE

Please help me! I have been held prisoner of the empire for longer than I can remember for a crime I did not commit. When the guards came to give me my midday meal I managed to give them the slip and I am now in the loading bay of a starship of the royal fleet.

If I can find 10 treasures and take them to the cargo hold (south of here), the captain has offered to fly me out. This is not an easy task to complete as there are guards everywhere.

Words understood

Note: give instructions in two-word sentences.

N,S,E,W

HELP, PRAY, GET, TAKE, GRAB, DROP, LEAVE, SHOOT, INSERT, INVENTORY, LOOK, ATTACK, HIT, EXAMINE, BLAST, BUILD, RUB, UNLOCK

My native language is Poldavian and I don't speak English very well, so if you find I don't understand you, try another word.

Hints

The fun of playing an adventure game comes from solving the problem on your own, so I have only included a few hints to help you over difficult problems.

- 1 The security guards may let you pass if you SHOW them a security pass
- 2 To open the locked gate you must insert a special key
- 3 The lever arm will open if you drop a rock on it
- 4 Only one sort of weapon can kill a dalek
- 5 The vending machine needs the right sort of money
- 6 The sports manager can be persuaded to let you in
- 7 Watch out! It's difficult to get out of the mine once you have got in

You are a prisoner of the empire. You must complete 10 tasks in this adventure game by S.W. Lucas before you can break free. The guards are on your trail so tread carefully!


```

10 REM ** Spaceship retreat **
20 REM ** an adventure game for 48K Spectrum **
60 GO SUB 3160
70 DIM q$(46,80)
71 DIM g$(37,100)
72 DIM s$(46,4)
73 DIM v$(3,100)
74 DIM b$(60,1)
75 DIM n$(60,40)
76 DIM a$(53)
77 DIM x$(65,110)
80 LET a$=""
81 LET p=2: LET e=0
82 RESTORE
83 GO SUB 450
90 CLS
100 FOR x=1 TO 3: LET v$(x)="" : NEXT x
110 PRINT "I am i-" : q$(p): LET a$=""
111 LET b$="" : LET c$=""
120 IF s(p,1)>0 THEN LET a$="North"
130 GO SUB 3210
140 IF s(p,2)>0 AND LEN(a$)>0 THEN LET a$=a$+",South"
142 IF s(p,2)>0 AND LEN(a$)=0 THEN LET a$="South"
150 IF s(p,3)>0 AND LEN(a$)>0 THEN LET a$=a$+",East"
151 IF s(p,3)>0 AND LEN(a$)=0 THEN LET a$="East"
160 IF s(p,4)>0 AND LEN(a$)>0 THEN LET a$=a$+",West"
161 IF s(p,4)>0 AND LEN(a$)=0 THEN LET a$="West"
170 IF a=10 THEN CLS : GO TO 4000
180 PRINT "I can go i-" : a$
190 IF p=22 AND s(22,3)=0 THEN PRINT x$(55)
200 LET e=0: FOR t=1 TO 37: LET pp=0: IF b(t,1)=p THEN LET pp=1
210 IF pp=1 THEN GO TO 230
220 NEXT t: GO TO 250
230 IF e=0 THEN INK 1: PRINT "I can see i-": INK 2
240 PRINT q$(t): LET e=e+1: GO TO 220
250 INK 3: PRINT "What should I do now?": INPUT z$
260 IF LEN(z$)>2 THEN LET b$=z$(1 TO 2)
262 IF LEN(z$)>3 THEN LET c$=z$(3 TO 4)
270 CLS : PRINT "please hang on a second!"
280 IF z$="n" AND s(p,1)>0 THEN LET p=s(p,1): GO TO 110
290 IF z$="s" AND s(p,4)>0 THEN LET p=s(p,4): GO TO 110
310 IF z$="e" AND s(p,2)>0 THEN LET p=s(p,2): GO TO 110
320 IF b$="sc" THEN GO SUB 3210: PRINT "you have scored i-": a$: " out of 10":
GO TO 110
330 IF z$="e" AND s(p,3)>0 THEN LET p=s(p,3): GO TO 110
340 IF b$="ge" OR b$="ta" OR b$="gr" THEN GO TO 1550
350 IF b$="fu" OR b$="pl" THEN GO SUB 3340
355 IF b$="he" THEN GO TO 2400
360 IF b$="dr" OR b$="la" OR b$="sh" OR c$="ins" THEN GO TO 1860
370 IF c$="loo" THEN GO TO 110
372 IF b$="pr" THEN GO TO 3390
380 IF b$="at" OR b$="hl" OR b$="ki" THEN GO TO 2130
385 IF b$="ex" THEN GO TO 2210
390 IF b$="bl" OR b$="bu" THEN GO TO 2350
395 IF b$="ru" THEN GO TO 3400
400 IF c$="inv" THEN GO TO 2290
405 IF b$="un" THEN GO TO 2370
410 PRINT "I'm sorry I don't speak very good english "
420 GO TO 110
430 STOP
450 FOR h=1 TO 46
451 FOR d=1 TO 4

```



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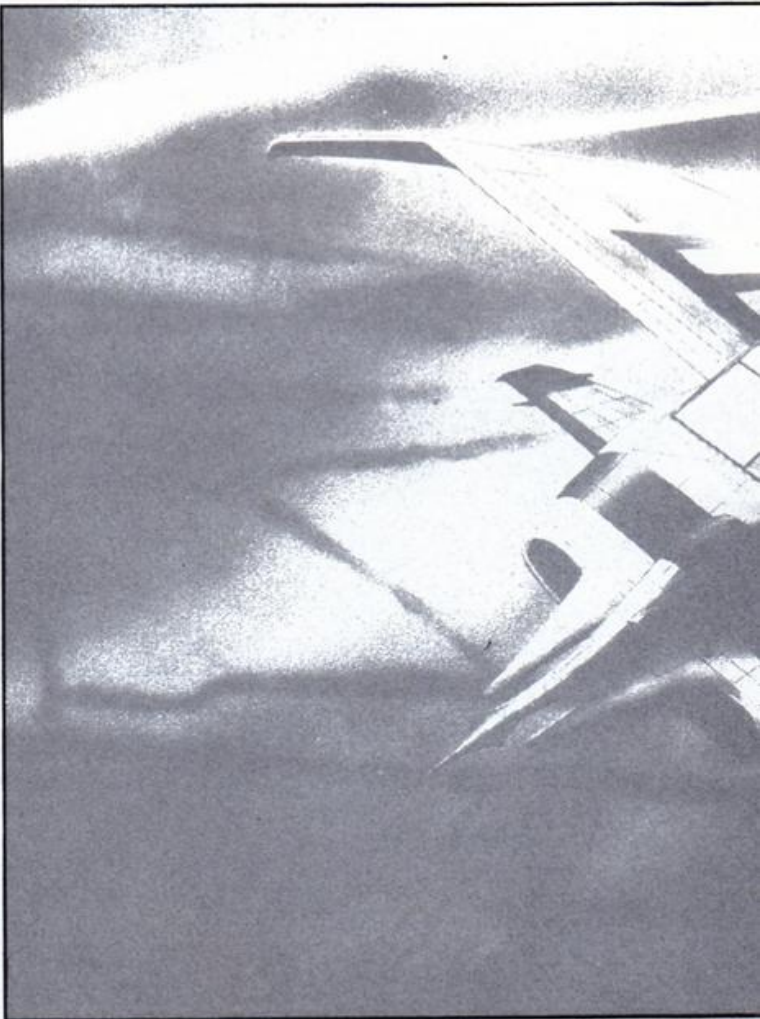
460 READ s(h,d)
465 NEXT d
470 READ q#(h)
480 NEXT h
481 FOR h=1 TO 37
490 READ q#(h): READ b(h,1)
491 NEXT h
500 FOR h=1 TO 53
510 READ n#(h),a(h): NEXT h
511 FOR h=1 TO 65
512 READ x#(h)
513 NEXT h
520 RETURN
530 DATA 2,0,0,0
531 DATA "in the cargo hold. A sign reads DROP TREASURES HERE"
540 DATA 43,1,3,8
541 DATA "In a large loading bay aboard a Starship of the Royal fleet"
550 DATA 0,0,4,2
551 DATA "On a moving walkway high above the ground."
555 DATA 0,10,9,3
560 DATA "by a visiphone kiosk"
570 DATA 0,1,6,10
571 DATA "at a junction in the walkway"
580 DATA 0,0,0,5
581 DATA "on a long narrow path."
590 DATA 0,0,8,0
591 DATA "at the entrance to the Spirolian headquarters. The guard won't let me in"
600 DATA 0,0,2,7
601 DATA "outside the Spirolian central headquarters"
610 DATA 0,0,0,4
611 DATA "in the 'Nags Head'....the best pub this side of Alpha Centuri"
620 DATA 4,0,0,0
622 DATA "at the edge of a dark and menacing forest."
630 DATA 5,0,16,0
631 DATA "in a large clearing."
640 DATA 7,0,0,0
651 DATA "inside the main building of the Spirolian Headquarters"
652 DATA 0,18,14,12
654 DATA "at the entrance to a dark cave"
660 DATA 0,0,0,13
661 DATA "in a large gloomy cavern. I hear sounds in the distance."
670 DATA 0,19,0,0
671 DATA "by a small opening"
680 DATA 0,0,0,11
681 DATA "in an area of total desolation"
690 DATA 12,25,26,0
691 DATA "in a damp, moss covered tunnel with water dripping down the walls"
700 DATA 14,0,19,0
701 DATA "on a narrow track"
710 DATA 15,27,0,18
711 DATA "at the entrance to a gloomy tunnel"
720 DATA 0,28,0,0
722 DATA "in some changing rooms"
730 DATA 16,0,0,0
731 DATA "on an old wooden bridge over a deep chasm"
740 DATA 0,0,0,16
741 DATA "at the entrance to a strange force field"
750 DATA 34,0,0,22
751 DATA "in a storeroom full of boxes of ammunition"
760 DATA 0,0,31,0
761 DATA "in a vast hall. The walls are lined with velvet tapestries"
770 DATA 17,0,42,0
771 DATA "in a dimly lit corridor. There is a pervasive smell of stale tobacco smoke"
780 DATA 0,42,0,17
781 DATA "in a strange cavern full of exotic looking carvings."
790 DATA 19,0,0,0
791 DATA "in THE entrance!"
800 DATA 20,38,0,27
801 DATA "in a vast sports emporium."
810 DATA 21,0,0,0
811 DATA "at a dead end."
820 DATA 22,0,32,0
822 DATA "in a small enclosure which has been used for keeping livestock."
830 DATA 31,32,31,31
832 DATA "spinning in a space-time vortex"
840 DATA 0,31,33,30
841 DATA "in a large cavern with a hole in the floor which is fenced off by plastic screens."
850 DATA 36,36,0,32
851 DATA "in a strange alien art gallery."
860 DATA 0,23,0,0
861 DATA "in a narrow corridor with glass walls"
870 DATA 41,41,41,34
871 DATA "in a spinning vortex"
880 DATA 36,36,36,36
881 DATA "trapped in an invisible force field"
890 DATA 33,0,0,0
891 DATA "in a warp of the space time continuum"
900 DATA 28,0,0,0
901 DATA "in a shower. I'm getting very wet in here."
910 DATA 27,0,0,0
911 DATA "in a narrow passage"
920 DATA 0,0,0,42
921 DATA "in a steel lined strongroom"
930 DATA 41,41,41,35
931 DATA "in a dust filled room. I can't see clearly"
940 DATA 26,0,0,25
941 DATA "by a locked door. A message on the wall tells me how to unlock my bonds"
950 DATA 0,2,45,44
951 DATA "at the security desk in a large office. It seems strange.. there's no one here"
960 DATA 0,0,43,0
961 DATA "at the far end of the office"
970 DATA 0,0,0,43
971 DATA "at the entrance to a mineshaft. A large metal gate bars the way"
980 DATA 46,46,46,46
981 DATA "at the bottom of the mineshaft. Passages lead in all directions."
1000 DATA "a vending machine. There is a notice on it which reads 'THIS MACHINE ONLY ACCEPTS DOLLARS'"
1001 DATA 14
1010 DATA "an intergalactic dollar",37
1020 DATA "a CENTURIAN credit card",30
1030 DATA "a gin and tonic",9
1040 DATA "a book of antique spells",29
1050 DATA "a marble + STATUE +",33
1060 DATA "a JEWEL encrusted PICKAXE +",14
1070 DATA "a maugilianian spartifact tipped with + ZIRCONIUM +",41
1080 DATA "a + PLATINUM + tipped sparkpatt",38
1090 DATA "the first edition of the Spark news printed on pure + SILK +",28
1100 DATA "a spartibater pfennig",31
1110 DATA "a Centurian selling crystals of pure ZOPHLURSPEAR",13
1120 DATA "a purse full of money",11
1130 DATA "a plogutian blodgaster",39
1140 DATA "a solid + GOLD + PHASER GUN ",40
1150 DATA "a security pass",4
1160 DATA "a heavy rock--engraved BLACKPOOL",15
1170 DATA "a magnetic security key",43
1180 DATA "a rusty padlock",6
1190 DATA "a metal gate which will not open",12
1200 DATA "a vicious man eating tiger",16
1210 DATA "the manager of the sportshall",27
1220 DATA "an enormous door which is firmly locked",42
1230 DATA "an evil DALEK guard who won't let me pass",10
1240 DATA "a pile of Kryptonite",25
1250 DATA "a lever shaped like a human arm",45
1260 DATA "a shelf full of old books (you never know what you might find here)",34
1270 DATA "a mining helmet. It has a light in it",26

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1280 DATA "an old fashioned computer (ZX80 I think)"
1291 DATA 24
1290 DATA "a dirty handcart",32
1300 DATA "a large crate bearing the label + ZX85 +",29
1310 DATA "a computer repair man",21
1320 DATA "a small battery",3
1330 DATA "a control panel",4
1340 DATA "a high power laser",2
1350 DATA "some liguritan + CHEESE + ...a rare delicacy!",20
1360 DATA "a repair manual",18
1370 DATA "silver",1,"earrings",1
1380 DATA "intergalactic",2,"dollar",2
1390 DATA "credit",3,"gin",4,"tonic",4
1400 DATA "book",5,"statue",6
1410 DATA "pickaxe",7,"axe",7,"zirconium",8
1420 DATA "sparkpatt",9,"platinum",9
1430 DATA "silk",10,"news",10
1440 DATA "pfennig",11,"zophlurspar",1,"crystals",12
1450 DATA "money",13,"dollar",14
1460 DATA "gold",15,"phaser",15,"pass",16,"rock",17,"magnet",18,"key",18,"padlock",19,"electronic",19,"propaganda",20
1470 DATA "tiger",21,"manager",22,"door",23,"dalek",24
1480 DATA "pile",25,"kryptonite",25
1490 DATA "lever",26,"arm",26,"shelf",27,"helmet",28
1500 DATA "zx80",29,"handcart",30
1510 DATA "zx85",31,"microcomputer",31
1520 DATA "man",32,"computer",32
1530 DATA "small",33,"battery",33
1540 DATA "control",34,"panel",34,"laser",35,"cheese",36,"manual",37

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1550 GO SUB 3080
1560 IF l#="zophlurspar" THEN PRINT "sorry!"
1570 IF l=1 THEN GO TO 1590
1580 GO TO 110
1590 LET e=0
1600 FOR h=1 TO 37: IF b(h,1)=p AND b(a(r),1)=p THEN LET e=1
1610 NEXT h
1620 IF e=0 THEN PRINT "I'm sorry I can't see it here": GO TO 110
1630 CLS: IF p=12 AND r=30 THEN PRINT x#(3): GO TO 110
1640 IF p=16 AND r=31 THEN PRINT x#(4): GO TO 110
1650 IF p=27 AND r=32 THEN PRINT x#(5): GO TO 110
1660 IF p=10 AND r=34 THEN PRINT x#(7): GO TO 110
1670 IF p=42 AND r=33 THEN PRINT x#(6): GO TO 110
1680 IF (r=35 OR r=36) AND p=25 THEN PRINT x#(8): GO TO 110
1690 IF p=14 AND (r=1 OR r=2) AND b(2,1)=1 THEN GO TO 1810
1700 IF p=45 AND (r=37 OR r=38) THEN PRINT x#(45): GO TO 110
1710 IF p=34 AND r=39 THEN PRINT x#(46): GO TO 110
1720 IF p=21 AND (r=44 OR r=45) THEN PRINT x#(49): GO TO 110
1730 IF p=14 AND (r=1 OR r=2) AND b(2,1)<14 THEN PRINT x#(17): GO TO 110
1740 IF p=13 AND (r=18 OR r=19) AND b(13,1)<13 THEN PRINT x#(19): GO TO 110
1750 IF p=9 AND (r=6 OR r=7) AND b(13,1)=9 THEN GO TO 1810
1760 IF p=9 AND (r=6 OR r=7) AND b(13,1)<9 THEN PRINT x#(36): GO TO 110
1770 IF p=9 OR (r=6 OR r=7) AND b(13,1)=9 THEN PRINT x#(21): GO TO 110
1780 IF p=29 AND b(4,1)<29 THEN PRINT x#(54): GO TO 110
1790 IF p=28 AND (r=15 OR r=16) AND b(11,1)<28 THEN PRINT x#(56): GO TO 110

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1800 IF p=28 AND (r=15 OR r=16) AND b(11,1)=28 THEN LET q(10)=x(57): LET b(11,1)=1
1810 LET a=0
1820 FOR d=1 TO 3: IF v(d,1)=0 THEN LET v(d)=q(a(r)): LET a=1: LET d=5
1830 NEXT d
1840 IF a=0 THEN PRINT x(38): GO TO 110
1850 LET b(a(r),1)=0: GO TO 110
1860 GO SUB 3080
1870 IF 1=1 THEN GO TO 1890
1880 PRINT "I'm sorry I can't see a "; i: GO TO 110
1890 LET a=0
1900 FOR d=1 TO 3: IF v(d)=q(a(r)) THEN LET v(d)=0: LET a=1
1910 NEXT d
1920 IF a=1 THEN GO TO 1940
1930 PRINT x(39): GO TO 110
1940 LET b(a(r),1)=0
1950 CLS
1960 IF p=7 AND r=24 THEN PRINT x(1): LET s(7,2)=12: LET b(16,1)=1: LET q(7)=0
1970 IF p=12 AND (r=26 OR r=27) THEN PRINT x(2): LET s(12,2)=17: LET s(12,3)=13
1980 IF p=14 AND (r=3 OR r=4) THEN PRINT x(9): LET q(1)=x(13): LET b(2,1)=1: GO TO 110
1990 IF p=37 AND r=5 THEN PRINT x(20): GO TO 110
2000 IF p=29 AND (r=7 OR r=6) THEN LET q(5)=x(14): PRINT x(12): GO TO 110
2010 IF p=28 AND r=11 THEN PRINT x(16): GO TO 110
2020 IF p=13 AND r=20 THEN PRINT x(18): GO TO 110
2030 IF p=45 AND r=25 THEN PRINT x(20): LET s(45,1)=46: LET b(26,1)=1: LET b(17,1)=1: GO TO 110

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2040 IF p=22 AND (r=49 OR r=50) AND b(33,1)=22 THEN PRINT x(53): LET s(22,2)=3
2050 IF p=22 AND (r=47 OR r=48) AND b(34,1)=22 THEN PRINT x(53): LET s(22,2)=3
2060 IF p=27 AND b(28,1)=27 THEN PRINT x(41): LET s(27,2)=39: LET s(27,3)=28: LET b(12,1)=0: LET q(22)=x(58): GO TO 110
2080 IF p=27 AND b(28,1)=27 THEN PRINT x(42): LET b(12,1)=13: GO TO 110
2090 IF p=21 AND r=53 THEN PRINT x(47): LET s(21,2)=29: LET b(32,1)=0: LET b(53,1)=0: GO TO 110
2100 IF p=13 AND (r=19 OR r=18) AND b(13,1)=13 THEN PRINT x(18): GO TO 1810
2110 IF p=34 AND r=8 THEN PRINT x(25): LET s(34,3)=35: LET b(5,1)=1: LET b(27,1)=1: GO TO 110
2120 GO TO 110
2130 IF p=10 AND b(7,1)=0 THEN PRINT x(27): LET s(10,3)=5: LET q(24)=x(58): GO TO 110
2140 IF p=29 AND a=0 THEN PRINT x(29): GO TO 110
2150 IF b(7,1)=0 THEN PRINT "I don't have anything to do thatwith!": GO TO 110
2160 PRINT x(30): GO TO 110
2170 GO SUB 3080
2180 IF p=27 AND r=28 THEN PRINT x(31): LET s(27,3)=28: GO TO 110
2190 IF p=24 THEN PRINT x(37): GO TO 10
2200 PRINT "INTO WHAT?": GO TO 110
2210 GO SUB 3080
2220 IF b(8,1)=0 AND r=12 THEN PRINT x(34): GO TO 110
2230 IF p=25 AND (r=35 OR r=36) THEN PRINT x(59): GO TO 110

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2240 IF b(15,1)=0 AND r=15 THEN PRINT x(22): GO TO 110
2250 IF p=24 THEN PRINT x(37): GO TO 110
2260 IF (r=47 OR r=48) AND b(33,1)=0 THEN PRINT x(23): GO TO 110
2270 IF (r=22 OR r=23) AND b(15,1)=0 THEN PRINT x(22): GO TO 110
2280 PRINT x(35): GO TO 250
2290 PRINT "I have 1-": PRINT x(63)
2292 PRINT x(64): PRINT x(65)
2300 LET f=0
2310 FOR h=1 TO 3
2315 IF v(h,1)=0 THEN PRINT v(h): LET f=1
2320 NEXT h
2330 IF f=0 THEN PRINT "Nothing else!"
2340 GO TO 110
2350 IF p=16 AND b(21,1)=16 AND b(15,1)=40 THEN PRINT x(48): LET s(16,2)=21: LET s(16,3)=22: LET b(21,1)=0: GO TO 110
2360 PRINT x(62): GO TO 110
2370 GO SUB 3080
2380 IF p=42 AND r=28 THEN PRINT x(31): LET s(42,3)=40: LET q(23)=x(24): LET x(63)=0: I AM FREE !: LET x(64)=0: I AM FREE !: GO TO 110
2390 PRINT "I don't know the combination!": GO TO 110
2400 PRINT "I'm sorry but I'm as confused as you are, although I often try pray ing!"
2410 GO TO 110
2420 DATA "The guard looks at my pass and takes it off me to examine "
2430 DATA "The key seems to work. The barrier opens and I can pass"
2440 DATA "You've got to be joking!"
2450 DATA "don't be silly!"
2460 DATA "I know I'm a superman, but even I can't lift him!"
2470 DATA "even I'm not that strong!"
2480 DATA "You must be joking! I'm not going near that unarmed!"
2490 DATA "It's even too heavy for me!"
2500 DATA "I drop it into the slot and an earring falls to the floor!"
2510 DATA "The Centurian officer says 'What's in it for me?'"
2520 DATA "For a payment like that, you can have the lot!"
2530 DATA "the caretaker likes that!"
2540 DATA "the machine dispenses!"
2550 DATA "I am allowed to get it!"
2560 DATA "That's odd, I seem strangely unable to do as you ask!"
2570 DATA "The page seems to come alive"
2580 DATA "I can't do that at the moment"
2590 DATA "The Centurian smiles and says 'thanks'"
2600 DATA "The Centurian is unhappy!"
2610 DATA "the rock falls onto the lever and the bar moves out of the way to let me pass"
2620 DATA "The robot barman comes over and says if you try that on again mate, I'll throw you to the Daleks!"
2630 DATA "There's a message on the screen which reads 'If at first you don't succeed...'"
2640 DATA "the battery seems to have some life left in it"
2650 DATA "for some reason this seems to interfere with the circuits and a nearby door opens"
2660 DATA "a shelf slides to one side revealing a secret room"
2670 DATA "that seems like a good idea! but nothing happens!"
2680 DATA "That's done the trick! The Dalek disintegrates!"
2690 DATA "a shrivelled mass of veins that used to be a Dalek!"
2700 DATA "Whoops I missed!"
2710 DATA "Well I hit it but nothing seems to have happened!"
2720 DATA "The security code works! The padlock is undone, I AM FREE!"
2730 DATA "I can't seem to do that just now"
2740 DATA "I've already solved that!"
2750 DATA "That's valuable stuff!"
2760 DATA "I can't see anything unusual!"
2770 DATA "The barman says 'I don't serve your sort in here!'"
2780 DATA "It shows the message 'DATA FOR SPORTSMAN MANAGERS'"
2790 DATA "I'm sorry my hands are full!"
2800 DATA "What do you think I am? STUPID?"
2810 DATA "The manager doesn't like that and won't let me in!"
2820 DATA "He thanks me and says 'you can come in here any time you like!'"
2830 DATA "I'll not fall for that!"
2840 DATA "Watch out I think I may have been spotted"
2850 DATA "I've just been attacked!"
2860 DATA "I can't budge it. It seems here to stay!"
2870 DATA "How am I expected to do that?"
2880 DATA "The repair man thanks me and lets me get past!"
2890 DATA "That's done it! It's stone dead!"
2900 DATA "Don't be absurd!"
2910 DATA "Seems like a good idea!"
2920 DATA "The wheel has just fallen off it"
2930 DATA "This is getting boring!"
2940 DATA "The field has become so weak that I can easily get past!"
2950 DATA "The wierd caretaker will NOT let me!"
2960 DATA "The field is too strong to penetrate! There is a console here, but some parts are missing"
2970 DATA "An old man jumps out of the shadows and shouts something in Holurian"
2980 DATA "The old man seems happy to let me in now"
2990 DATA "I'm sorry that word is not in my vocabulary!"
3000 DATA "I'd need a hoverlifter for that!"
3010 DATA "The manager is always keen to see me now!"
3020 DATA "The force field weakens and I can pass it now!"
3030 DATA "That's far too dangerous here!"
3040 DATA "an electronically encoded padlock"
3050 DATA "cleaved around my neck, a lamp,"
3060 DATA "a galactic flame thrower and 1-"
3070 LET i=0: FOR h=1 TO LEN (z$)
3080 IF z$(h)=0 THEN LET i=z$(h+1) TO LEN (z$): LET h=h+50
3090 IF z$(h)=0 THEN LET i=z$(h+1) TO LEN (z$): LET h=h+50
3100 NEXT h
3110 LET r=0
3120 LET i=0: IF LEN (i$)<2 THEN RETURN
3130 FOR h=1 TO 53: IF n(h,1) TO LEN (i$)=i$ THEN LET i=1: LET r=h
3140 NEXT h
3150 RETURN
3160 CLS
3170 BORDER 2
3171 INK 1: PAPER 7
3177 PRINT TAB 6;"Spaceship Retreat"
3178 PRINT : INK 2: PRINT TAB 5;"<C> S.W. Lucas 1984"
3180 PAPER 8: CIRCLE 100,87,50
3181 INK 5: PRINT AT 7,1;"an"
3182 INK 1: PRINT AT 9,8;"adventure"
3183 INK 3: PRINT AT 11,10;"game"
3184 RETURN
3200 REM ++ keep score ++
3210 LET a=0: IF b(6,1)=1 THEN LET a=a+1
3220 IF b(8,1)=1 THEN LET a=a+1
3230 IF b(7,1)=1 THEN LET a=a+1
3240 IF b(3,1)=1 THEN LET a=a+1
3250 IF b(9,1)=1 THEN LET a=a+1
3260 IF b(36,1)=1 THEN LET a=a+1
3270 IF b(29,1)=1 THEN LET a=a+1
3280 IF b(10,1)=1 THEN LET a=a+1
3290 IF b(15,1)=1 THEN LET a=a+1
3300 IF b(1,1)=1 THEN LET a=a+1
3310 IF b(31,1)=1 THEN LET a=a+1
3320 RETURN
3340 PRINT "Just who do you think you are talking to?"
3350 PRINT "What have you got to say for yourself now?"
3360 INPUT z$
3370 IF z$="sorry" THEN PRINT "I'll let you off this time": RETURN
3375 PRINT "be like that then": GO TO 3375
3380 REM pray routine
3390 PRINT "That made me feel better, but it didn't help me solve my quest!"
3395 GO TO 110
3400 GO SUB 3080
3410 IF i$="lamp" THEN PRINT "O.K. nothing happened....well I'm not Aladdin you know!": GO TO 250
3420 PRINT "Don't be absurd!": GO TO 110
4000 CLS : PRINT "Well done!.....you have 1-"
4010 PRINT "Successfully located all ten"
4020 PRINT "items of treasure and"
4030 PRINT "have completed this adventure"
4040 PRINT "WELL DONE!!!!!"

```


Everyone's got it in for you: gangsters, killer tomatoes, kamikazi cyclists — not to mention alien spacecraft and monsters!

Trashman 48K £5.95

New Generation, The Brooklands, 15 Sunnybank, Lyncomb Vale, Bath

We knew life was hard on the streets, but this brilliantly drawn, planned and executed game lets us experience the danger, with kamikazi cyclists, lunatic dogs and short-sighted motorists. A thoroughly enjoyable and addictive program, which uses large, readable type, allows you to enter your name in the hall of fame and has colourful, clever animated graphics.

You start your career in Montague Rd with a bonus of 250 points; time and where you walk causes you to lose them. Clear runs allow bonus points to be "topped-up" by entering houses in response to "Want a tip?" and "Take this thing away — my son is obsessed with it" and so on. After five bins you are sent to Pulteney Rd, where dogs and cars are joined by pavement-riding cyclists.

If you are too slow a newsflash tells you so, and gives you two more chances. Failure to speed up results in instant dismissal, while being run down provokes a newsflash telling wife and family your points scored, and a dog-bite results in a limp.

One you won't resist. **T.W.**

instructions	85%
playability	90%
graphics	90%
value for money	90%

★ ★ ★ ★ ★

The Pink Pearl 48K £4.95

Astrosoft, 101 Churchdown Rd, Ferndown, Wimborne, Dorset BH22 9ET

An all-text adventure produced using Gilsoft's The Quill, set on a desert island, where your task is to recover the pink pearl and other goodies and escape with them and your life.

Given the excellence of The Quill, the difference between adventures must now lie in the creativity of concept rather than in skill of coding.

An adolescent air hangs over this one. Attack any one of the monsters and it "smashes you in the face" if you have the wrong weapon! Whilst the descriptions of locations are quite good, somehow they don't conjure up a vivid picture. Similarly, the directions seem to have been slightly mixed up in places.

D.M.

instructions	75%
playability	80%
graphics	N/A
value for money	100%

★ ★ ★ ★ ★

Mugsy 48K £6.95

Melbourne House, Church Yard, Tring, Herts HP23 5LU

Welcome to Chicago in the 1920's, where this interactive video comic-strip has you cast as Mugsy — da Boss of de hoodlum gang — trying to become the most powerful gangleader in town.

You must manage the gang, make money, organize protection rackets, decide how much to pay for guns and ammo and how much to bribe the local police, in response to comments in speech balloons.

If successful, your life at the top is dangerous, as rival Ricco puts out a contract on your life — which is then acted-out arcade style. Melbourne Draw has been used to develop the hi-res graphics shoot-out in a speakeasy, where you must fight for your life.

Finally, the end of the financial year brings Louis, your hood, to explain how things went. Then the game repeats — assuming



that you are solvent, have a gang and are alive.

This program takes full advantage of the Spectrum's potential for colour, graphics, sound and lettering. **T.W.**

instructions	95%
playability	80%
graphics	90%
value for money	85%

★ ★ ★ ★ ★

Revenge of the Killer Tomatoes 48K £5.95

Visions, 1 Felgate Mews, Studland St, London W6

You play the part of Smiffy who has started working for a market gardener. You must walk around a cabbage patch pulling up weeds, while avoiding an assortment of vegetables intent on stopping you.

That's all there is to it. There isn't a multitude of screens to keep you interested; each screen seems exactly the same to me except for switching from killer tomatoes to psycho swedes and manic mushrooms. I couldn't tell the difference between skill levels one and nine!

There are some quite nice touches but it's a pity they have been wasted on such a simple game. You can define your own control keys, the instructions are built into the program and the graphics are clear and well designed although there is little animation.

I had difficulty loading the program and it is only recorded once on the cassette and then not very well. I am surprised that a software house which describes itself as the name in video games should release a game like this. Although professionally presented it's not addictive.

The title screen states it is a "video nasty". I quite agree. **M.T.**

instructions	85%
playability	30%
graphics	60%
value for money	35%

★ ★

Psytron 48K £7.95

Beyond, Farndon Rd, Market Harborough, Leics LE16 9NR

This game is attractively packaged in a cardboard box with a 20-page colour booklet of instructions included. There is a high score competition in which you can win a Sinclair.

You play the unusual role of a supercomputer in sole charge of the Betula 5 installation which is being attacked by alien space craft. This isn't just another arcade game; you must also destroy robot saboteurs which are beamed down, conduct repairs and order and receive supplies.

Spacecraft and robot destroying takes place in real time, while other tasks are conducted in "Freezetime" — this simulates the computer's ability to process data instantly.

You are introduced to the game in six levels because of the game's complexity. This is a good idea except that the computer decides when you are ready to advance to a higher level. You must have done well; I only reached the second level, despite many hours of playing.

The first levels are not exciting and I don't think it will live up much. This is certainly an original game and the 3D graphics are very spectacular, but I have doubts about its addictive qualities. **M.T.**

instructions	100%
playability	95%
graphics	50%
value for money	50%

★ ★ ★

ALL THE WORLD'S
AGAINST YOU!

CATCH ME



Round and round we go, chasing the black square. Tom Langford's game should keep you amused

Here's a straightforward game for you. Use a grey square to catch a black one. The listing shouldn't take you long to key

in, and then you're away!

Use the cursor keys, without SHIFT and NEWLINE, to control the grey square.

The program begins with a screen display and then a loop is used to give a pause. This is because of the slight screen

flicker which can be produced when you use the PAUSE command on the ZX81. Don't be worried by the exceptionally long pause at the beginning of the game: this is caused by the random generation of the later movements of the black squares.

Have fun, and practise your quick reactions on this one!

```

1  CLS
10 DIM A(100)
20 LET B=11
30 LET C=16
40 LET D=1
50 LET X=INT (RND*20)
60 LET Y=INT (RND*30)
70 PRINT AT X,Y;CHR$ 128
80 PRINT AT B,C;CHR$ 136
90 PRINT AT 0,0;"CATCH ME"
100 FOR E=1 TO 100
110 LET A(E)=INT (RND*4)
120 NEXT E
130 PRINT AT 0,0;"GO"
140 IF B=X AND C=Y THEN GOTO 27
145 IF X<=0 OR X>=21 OR Y<=0 OR Y>=31 THEN GOTO 420
150 IF B<=0 OR B>=21 OR C<=0 OR C>=31 THEN GOTO 320
154 PRINT AT B,C;CHR$ 0
156 PRINT AT X,Y;CHR$ 0
160 IF INKEY$="5" THEN LET C=C-
170 IF A(D)=0 THEN LET Y=Y-1
180 IF INKEY$="6" THEN LET B=B+
190 IF A(D)=1 THEN LET Y=Y+1
200 IF INKEY$="7" THEN LET B=B-

```

```

210 IF A(D)=2 THEN LET X=X+1
220 IF INKEY$="8" THEN LET C=C+
230 IF A(D)=3 THEN LET X=X-1
240 LET D=D+1
245 IF D=99 THEN GOTO 370
250 PRINT AT B,C;CHR$ 136
260 PRINT AT X,Y;CHR$ 128
270 GOTO 140
275 CLS
280 PRINT "YOU GOT ME IN ";D
290 FOR G=1 TO 175
300 NEXT G
310 GOTO 0
320 CLS
330 PRINT "OUT OF BOUNDS"
340 FOR H=1 TO 175
350 NEXT H
360 GOTO 0
370 CLS
380 PRINT "TOO SLOW"
390 FOR I=1 TO 175
400 NEXT I
410 GOTO 0
420 CLS
430 PRINT "I GOT AWAY"
440 FOR J=1 TO 175
450 NEXT J
460 GOTO 0
470 STOP

```


Give your software library the professional touch — make printed inlay cards for your cassettes.

This program will make manipulation of data easy, as well as organising all the games you have written. You can use it even if you don't have a printer.

All the data is held in one string, a\$, which is undimensioned, and therefore more flexible. This makes loading and saving simple, and of course you don't have endless arrays to save and verify.

The string \$ is divided into 20-character long blocks, containing the information for one program, together with tape number, side and tape

counter position at the beginning to facilitate sorting. Program type and loading instructions are specified after the program name (10 characters).

The variable k is equal to 20. This makes it easier to adjust the length of any section of a\$.

An integer bubble sort has been used, as opposed to a shell sort, which may be faster but is also longer.

If you have a printer which is 80 characters wide, A4 size paper is exactly twice the width of a cassette inlay, so add "-" eight times to j\$.

How it works

- 1-5 initialises with no data
- 95 warning message
- 100-115 display the main menu
- 120-130 INKEY routine to branch out to subroutines from Main Menu
- 1000-1900 subroutine for adding to the file
- 2000-2010 submenu for deleting from file
- 2050-2075 delete program
- 2500-2999 delete tape
- 2078-2115 routine which searches for and deletes the two above
- 3000-3120 input routine for search

- 3130-3999 display each file entry
- 5000-5010 submenu for LPRINTing
- 5080-5100 LPRINT a list of programs
- 5500-5551 choose tape inlay card to LPRINT
- 5556-5581 search for tape's program and transfer to front of a\$
- 5585-5640 sorting routine for the front part of a\$
- 5650-5999 LPRINT inlay card
- 6000-6010 submenu for saving

SEE YOUR NAME IN

This database-type program by Charlie Dibsdale will print out your own personalised cassette inlay cards, and even if you don't have a printer, you'll still find it handy

```

1 LET i$="" : LET k=20
2 REM ** i$ helps to keep entries to 10,k is the length of part of a$ that holds data for one program ***
5 LET a$=""
9 REM ** intro **
10 PRINT AT 3,9;"*****"
20 FOR n=4 TO 15: PRINT AT n,9;"*": AT n,22;"*": NEXT n
30 PRINT AT 15,10;"*****"
40 PRINT AT 5,11;"TAPE FILE"
50 PRINT AT 7,15;"By"
60 PRINT AT 9,14;"C.E."
70 PRINT AT 11,12;"Dibsdale"
80 PRINT AT 13,13;"1983"
90 PAUSE 100: CLS
95 PRINT AT 2,0;"If you break out of this program type in 'GO TO 100' Not 'RUN' as you would destroy the data": AT 10,0;"PRESS ANY KEY TO GO ON": PAUSE 0: CLS
99 REM ** main menu **
100 CLS : PRINT AT 2,14;"MENU": OVER 1: AT 2,14;"": OVER 0
110 PRINT AT 4,3;"(1)Add to file": AT 6,3;"(2)Delete from file": AT 8,3;"(3)Search file": AT 10,3;"(4)Display file sequentially": AT 12,3;"(5)LPRINT": AT 14,3;"(6)Save file"
112 PRINT AT 16,3;"(7)Load file data": AT 18,3;"(8)Finish with program"
115 REM ** branching routine **
120 IF INKEY="" THEN GO TO 120
125 IF INKEY="B" OR INKEY="C" THEN GO TO 120
126 LET ink=VAL INKEY$
130 GO TO ink*1000
999 REM ** add to file **
1000 CLS : PAUSE 50: PRINT AT 0,10;"ADD TO FILE": OVER 1: AT 0,10;"": OVER 0
1045 INPUT "type in the tape number you require to add to (01 to 99)": b$
1050 IF VAL b$<99 THEN BEEP .5,10: GO TO 1045
1055 IF LEN b$<2 THEN LET b$="0"+b$
1060 LET in=2: LET cn=17: LET c$=""
1065 PRINT AT in,10;"tape number": GO SUB 1400
1067 POKE 23650,0: REM CAPS LOCK
1070 INPUT "Side 'A' or 'B' ": b$
1075 IF b$="A" AND b$="B" THEN BEEP .5,10: GO TO 1070
1078 POKE 23650,4: REM lower case
1080 PRINT AT in,2;"side": GO SUB 1400
1081 INPUT "tape counter start position (000 to 999)": j$

```

```

1082 IF LEN b$<3 THEN BEEP .5,10: GO TO 1081
1083 PRINT AT in,2;"tape counter": GO SUB 1400
1090 INPUT "program name": i$
1095 REM ** where i$ comes in **
1100 IF LEN b$<10 THEN LET b$=b$+i$ ( TO 10-LEN b$)
1110 PRINT AT in,2;"program name": GO SUB 1400
1150 INPUT "loading instructions (code etc use 2 letters)": b$
1160 IF LEN b$<2 THEN BEEP .5,10: GO TO 1150
1165 PRINT AT in,2;"loading inst": GO SUB 1400
1170 INPUT "are you happy with this entry (Y/N)": b$
1180 IF b$="N" OR b$="n" THEN GO TO 1000
1190 IF b$="Y" AND b$="y" THEN GO TO 1170
1200 LET a$=a$+c$: GO TO 100
1400 LET c$=c$+b$: PRINT AT in,cn+b$: LET in=in+2: RETURN
1999 REM ** delete from file **
2000 CLS : PAUSE 50: PRINT AT 3,3;"DELETE FROM FILE": OVER 1: AT 3,3;"": OVER 0: AT 5,3;"(1)Delete a tape": AT 7,3;"(2)Delete a program": AT 9,3;"(3)Menu"
2010 LET x=2000: GO TO 8700
2050 CLS : PRINT AT 3,3;"Delete a program"
2060 INPUT "Enter name of program, use 10 CHRS spaces": b$
2070 IF LEN b$<10 THEN LET b$=b$+i$ ( TO 10-LEN b$)
2075 LET zi=7: LET zo=16
2078 REM ** search & delete **
2079 IF LEN a$<20 THEN LET a$="": GO TO 2115
2080 IF b$=a$ ( TO zo) THEN LET a$=a$ ( TO 10-LEN b$) : GO TO 2080
2090 FOR n=k TO LEN a$-1 STEP k
2100 IF a$ (n+21 TO n+20)=b$ THEN LET a$=a$ ( TO n)+a$ (n+21 TO ): IF n<LEN a$ THEN GO TO 2100
2110 NEXT n
2115 CLS : PRINT AT 3,3;b$: "has been deleted": PAUSE 100: GO TO 2000
2500 CLS : PAUSE 50: PRINT AT 3,3;"Delete a tape"
2510 INPUT "Tape number to be deleted (01 to 99)": b$
2520 IF LEN b$<1 THEN LET b$="0"+b$
2530 IF LEN b$<2 THEN GO TO 2510
2540 LET zi=1: LET zo=2: GO TO 2079
2999 REM ** search routine **
3000 CLS : PAUSE 50: PRINT AT 2,10;"SEARCH FILE": OVER 1: AT 2,10;"": OVER 0
3005 LET v=0
3007 REM ** field of search **
3008 REM ** print out layout **
3010 PRINT AT 5,3;"Choose the number you require to look for"
3015 LET fog=1
3020 FOR n=8 TO 18 STEP 2

```


6050-6070 save and verify data
 6500-6999 save program with data and verify
 7000-7999 load data
 8010 subroutines

Variables

a\$ data
 k data within a\$ capable of holding information of program

x set for return to part of program from pseudo sub-routine at 8700
 zi, zo search routine delete. Set for program 2075 or tape number 2540 to utilize the same search routine starting at 2078
 fog variable for printing

PRINT

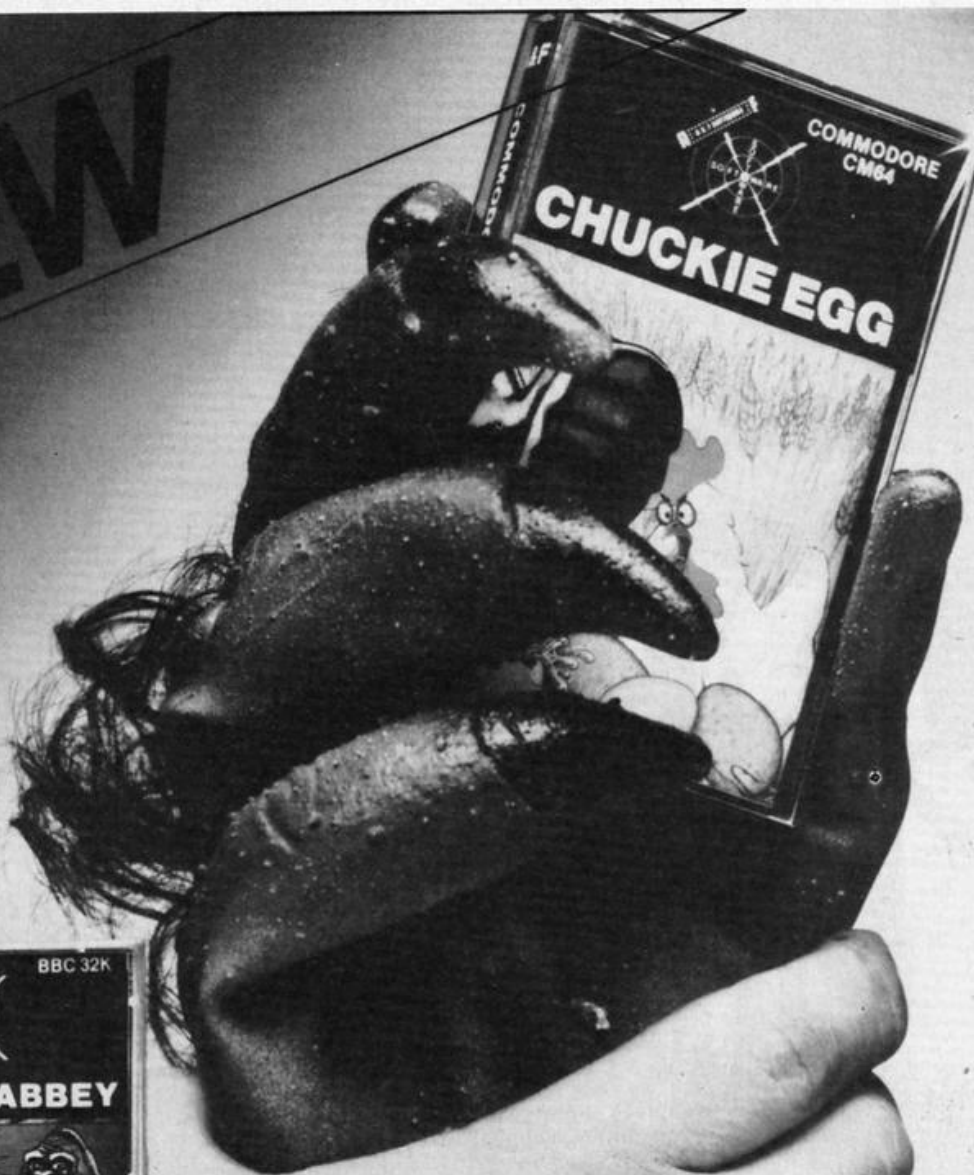
b\$ temporary store
 f\$ set the program name to 10 chr\$ if less than 10
 n for — next
 ink holds numeric input from keyboard from Main Menu
 ln, cn line column number for printing during input sub-routine
 c\$ temporary store in input routine before adding to a\$

fr,num search routine for sub-sections of a block of a\$
 e\$ LPRINTs your tape name on spine of inlay card
 tp set to how many blocks of a\$ are of the same tape to be LPRINTed
 j\$ bends on inlay card
 bal pointer to see if Side B is to be LPRINTed on inlay card
 fg set to tp and used in Sort
 v flag to see whether item being looked for is present

```
3030 PRINT AT n,0: FLASH 1: fog: LET fog=fog+1: FLASH 0: NEXT n
3040 GO SUB 8010
3045 LET fr=1
3047 REM ** input field req'd **
3050 INPUT "number" : num
3060 IF num=1 THEN LET fr=0
3070 IF num=2 THEN LET fr=num
3080 IF num=3 THEN LET fr=3
3090 IF num=4 THEN LET fr=6
3100 IF num=5 THEN LET fr=16
3110 IF num=6 THEN LET fr=18
3115 IF fr=1 THEN BEEP .5,10: GO TO 050
3120 INPUT "Search for? " : b$
3125 CLS : GO SUB 8010
3126 PRINT AT 3,1: "press any key to resume search"
3128 REM ** search routine **
3130 FOR n=1 TO LEN a$ STEP k
3140 IF b$=a$(n:fr TO n+fr-LEN b$-1) THEN GO SUB 8500
3150 NEXT n
3155 IF v=0 THEN PRINT "Item not found try option 4 from menu press any key for menu": PAUSE 0: GO TO 100
3160 PRINT "Search complete press any key to go to menu"
3170 PAUSE 0: GO TO 100
3199 REM ** display file sequen.
4000 CLS : PAUSE 50: PRINT AT 3,3: "DISPLAY FILE SEQUENTIALY": OVER 1: AT 3,3: "Menu": OVER 0: AT 5,3: "Press 'c' for next program" : "e" to
exit to menu"
4005 GO SUB 8010
4010 FOR n=1 TO LEN a$ STEP k
4020 GO SUB 8500
4030 IF INKEY$="" THEN GO TO 4030
4040 IF INKEY$="E" OR INKEY$="e" THEN GO TO 100
4050 IF INKEY$="C" AND INKEY$="c" THEN GO TO 4030
4060 NEXT n
4070 PAUSE 100: CLS : PRINT AT 3,3: "COMPLETE going to menu": PAUSE 30: GO TO 100
4999 REM ** LPRINT routine **
5000 CLS : PAUSE 50: PRINT AT 2,10: "LPRINT FROM FILE": OVER 1: AT 2,10: "Menu": OVER 0: AT 4,3: "(1) Lprint cassette inlays: AT 6,3: (2) Lprint a list of all programs: AT 8,3: (3) Menu"
5010 LET x=5000: GO TO 8700
5079 REM ** LPRINT a list prog's
5080 FOR n=1 TO LEN a$ STEP k
5090 LPRINT a$(n:6 TO n+15)
5100 NEXT n: GO TO 100
5499 REM ** cassette inlays **
5500 CLS : PRINT AT 3,3: "LPRINT CASSETTE INLAYS": OVER 1: AT 3,3: "Menu": OVER 0: AT 5,3: "If you do not know which tape number you want press 'a' to go to the main menu to find it or any other key to go on"
5510 PAUSE 0
5520 IF INKEY$="a" OR INKEY$="m" THEN GO TO 100
5530 INPUT "tape number to be LPrinted (01 to 99) " : b$
5540 IF LEN b$>2 THEN GO TO 5530
```

```
5550 IF LEN b$<2 THEN LET b$="0"+b$
5551 INPUT "Your own tape name": a$
5555 CLS : PRINT AT 10,8: "PLEASE WAIT"
5556 REM ** search for tape **
5557 LET tp=0: IF b$=a$( TO 2) THEN LET tp=1
5558 REM ** and place in front part of a$ **
5560 FOR n=1 TO LEN a$-k STEP k
5570 IF a$(n TO n+1)=b$ THEN LET c$=a$(n TO n+19): LET a$=c+a$( TO n-1)+a$(n+k TO ) : LET tp=tp+1
5572 NEXT n
5575 IF b$=a$(LEN a$-k)+1 TO (LEN a$-k)+2 THEN LET a$=a$(LEN a$-k)+1 TO )+a$ ( TO LEN a$-k): LET tp=tp+1
5580 IF tp=0 THEN CLS : PRINT "This tape not found!": PAUSE 100: GO TO 100
5581 IF tp=1 THEN GO TO 5650
5585 REM ** sort front part a$ **
5586 REM ** integer bubble sort **
5587 REM ** why not try a shell-metznar? **
5590 LET fg=tp
5600 LET cp=1: LET ic=0
5610 IF a$(cp+k+1 TO cp+k+6)=a$(cp-1+k+1 TO (cp-1)+k+6) THEN LET b$=a$(cp+k+1 TO cp+k+6): LET a$(cp+k+1 TO cp+k+6)=a$(cp-1+k+1 TO (cp-1)+k+6): LET a$(cp-1+k+1 TO (cp-1)+k+6)=b$: LET ic=1
5620 LET cp=cp+1: IF cp=fg THEN GO TO 5610
5630 IF ic=0 THEN GO TO 5650
5640 LET fg=fg-1: GO TO 5600
5645 REM ** and lprint it **
5650 FOR n=0 TO 5: LPRINT : NEXT n
5660 LET j$=""
5670 LPRINT j$: LPRINT : LPRINT "TAPE NUMBER: " : a$( TO 2) : " " : "ie# : LPRINT : LPRINT T j$: LPRINT " SIDE A": LPRINT : LPRINT "POSn. PRG."
5680 LET bal=0
5690 FOR n=1 TO tp*k STEP k
5691 IF bal=1 THEN GO TO 5700
5692 IF a$(n+2)=b$ THEN LPRINT " SIDE B": LET bal=1
5700 LPRINT : LPRINT a$(n+3 TO n+5) : " " : a$(n+6 TO n+15) : " " : a$(n+16 TO n+17) : " " : a$(n+18 TO n+19)
5730 NEXT n
5740 GO TO 100
5999 REM ** save routines **
6000 CLS : PAUSE 50: PRINT AT 3,3: "SAVE FILE": OVER 1: AT 3,3: "Menu": OVER 0: AT 5,3: "(1) Save whole program: AT 7,3: (2) Save current data only: AT 9,3: (3) Menu"
6010 LET x=6000: GO TO 8700
6050 SAVE "tapefile" DATA a$()
6055 CLS : PRINT AT 10,2: "REWIND TAPE, CHANGE LEADS TO VERIFY"
6060 VERIFY "tapefile" DATA a$()
6070 GO TO 100
6500 SAVE "tapefile" LINE 100
6505 CLS : PRINT AT 10,0: "REWIND TAPE, CHANGE LEADS TO VERIFY"
6510 VERIFY "tapefile"
6520 GO TO 100
6999 REM ** and load **
7000 CLS : PRINT AT 10,0: "LOADING DATA FILE"
7010 LOAD "tapefile" DATA a$()
7020 GO TO 100
7999 REM ** finished **
8000 RANDOMIZE USR 0
8010 PRINT AT 8,9: "TAPE": AT 10,9: "SIDE": AT 12,6: "COUNTER"
8015 REM ** subroutines **
8020 PRINT AT 14,6: "PROGRAM": AT 16,1: "PROGRAM TYPE": AT 18,1: "LOADING INST"
8030 RETURN
8500 PRINT AT 8,14: a$(n TO n+1): AT 10,14: a$(n+2 TO n+5): AT 12,14: a$(n+3 TO n+5): AT 14,14: a$(n+6 TO n+15): AT 16,14: a$(n+16 TO n+17): AT 18,14: a$(n+18 TO n+19)
8505 LET v=1
8509 PAUSE 0
8510 RETURN
8700 IF INKEY$="" THEN GO TO 8700
8710 IF INKEY$="1" THEN LET n=500: GO TO x+n
8720 IF INKEY$="2" THEN LET n=50: GO TO x+n
8730 IF INKEY$="3" THEN GO TO 8700
8740 GO TO 100
```


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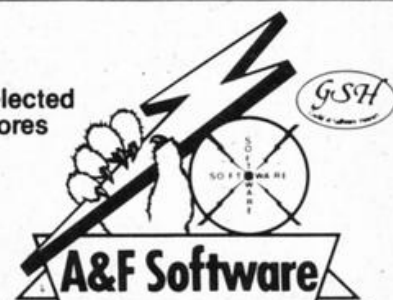
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