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PAGE 6

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ISSUE 12

November/December 1984

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Editorial

Where are you Atari?

"There no doubt that much more will develop between my writing this and publication". Those words came from my last editorial concerning the takeover of Atari. Well, two months have passed and what has happened? Nothing much. True prices have been reduced to make the Atari line the best value computer system that's ever been, but if it is not advertised what is the point? Stop dragging your feet, Atari, and for the sake of our and your, future advertiser. Don't let our and wait for the customer to come to you, the past two years have proved that it won't work.

Many thanks to all those of you who write to Atari as requested. It turns out that Product Support is still alive although not in quite so lush a form. I had calls from Robert Katz and Les Player, both on the technical support side, to say that support is still there but may take a little while to get up and running again. I promised to publish a letter from Robert Katz outlining what has happened and what will happen but the letter has not arrived. Pity.

Your letters were much appreciated at Atari and took them a little by surprise. There is no doubt that some people, at least, at Atari know that you still care. All it needs now is for Atari to recognise that it cannot survive in isolation and that encouragement of third party supporters of Atari will play a vital part in their campaign to become the world's number one. Atari is still the least supported computer in this country and what is the point in buying a great computer if you then sit at home thinking that you are the only one who did!

Apologies...

Sorry about the last issue. Many subscribers received their copies late, several had missing or duplicated pages and the print quality was awful, such that the listings were virtually unreadable in places. I won't go into details, just say that it was entirely down to the printer. This issue we have a new printer and, hopefully having made the right choice, such problems are behind us. I have just about calmed down!

Finally, thanks to all of you who write with congratulations on the 'arrival' due on 27th September. He actually arrived a couple of weeks early on 11th September. This issue has been the hardest of all to put together!

Les Ellinger Editor

ALPHABET

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News and Views

Lots of rumours in the press, particularly the Financial Times, about what Atari 'might' be doing, including bringing out new 8, 16 and 32-bit machines. The 16 bit machine is said to be one which Atari had developed before the takeover. Latest reports suggest that Atari have tripled their output of 800XLs in Taiwan ready for the Christmas market. Several sources over here report having seen a 1450XLd at Atari headquarters for evaluation. Certainly Atari have ascertained that they are keeping under wraps and maybe by the time that you read this, we may all know what.

Atari have cancelled all of their Service Centre contracts for In-Warranty repairs and will in future replace any faulty unit that is under warranty. The intention is that you return the unit to your supplier who will replace it from stock. One problem is that exchanges will only be like for like so if your dealer runs out of 400, 800 or 600XL machines, so it is likely, you will have to return the unit directly to Atari. Service Centres will still do out of warranty repairs and Atari will continue to provide technical backing, training and spares.

We recently received some information from Broadcasting Support Services concerning BASICCODE 2+ which is used by Radio 4's Chip Shop for broadcasting software. Twelve different micros are supported but not Atari. If you are interested in downloading broadcast software write to Broadcasting Support Services, 352, Western Avenue, London W3 6XJ and tell them. Or you can ring 01 992 5522.

Micro Research who have advertised printer interfaces in previous issues have gone into liquidation so don't bother to reply to their ads!

Several new items have been announced by Optimized Systems Software Inc., the only American company to send us product information. The MAC/65 Toolkit is an extensive collection of macros designed specifically for use with either disk or cassette versions of the MAC/65 assembler. The ACTION Toolkit enhances ACTION programming capabilities with routines which allow plots/mouse graphics, turtle graphics, joystick input, advanced I/O operations and much more. THE WRITER'S TOOL is a new word processor with built-in spell-check, insert and typewrite modes and compatibility with any DOS in any density. Single key commands cover all enhanced printer commands and the package supports most Atari-compatible printers. Comes as a step by step tutorial, reference manual, handy reference card, cartridge and disk. Availability of these products in the U.K. is not known at present but you should try the retailers in the GOTO DIRECTORY or you can write to O.S.S. for more information at O.S.S. Inc. 1221-B Kantwood Avenue, San Jose, CA 95129, U.S.A.

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NEW BLACKTHORN INTERFACES

Pictured here are the new cassette interface from Blackthorn which offers a normal low-cost data recorder to be used with your Atari, and the redesigned printer interface. The printer interface has been reduced in size to approximately 5" x 2 1/2" x 1 1/2" and has longer cables of 22" to the computer and 35" to the printer. It is now powered directly from the computer and works on both 400/800 and XL models. The printer interface is £69.95 and the cassette interface £16.00 fully inclusive.

Competition Winners page 11

Readers Letters

LOCK-UP

Dear Len,

Most people who own an Atari computer have experienced the famous 'Atari lock-up' bug where the keyboard will cease to allow you to type anything even if you press system reset. Usually it occurs when deleting a line or part of a line near the beginning of a program. All you can do is switch off and start again.

The 400 and 800 models do it but what about the XL range? I tried a 600XL out in a store last Christmas and the same thing happened. Nevertheless I traded in my 400 for a 600XL elsewhere and Atari promised me that the new range did not have the lock-up problem, but my local Service Centre tells me that the new range is just as bad and my machine is just as bad. In fact I have a program that I can make two alterations to and it will lock up every time.

It seems unbelievable that a company like Atari could continue to make a product with a fault for over four years and then launch a new model with the same problem. I have phoned Atari but they still insist that I am wrong and yet even their own Independent Service Centre disagree.

Stephen Taylor
London

"There are still some bugs in the XL but Atari insist that the original lock-up problem, which was a bug in BASIC, was cured. There were however several (thousands?) 600XL's released just before last Christmas that had a faulty chip causing a very similar lock-up problem. This became known as the 'waffle pack' lock-up' and Atari exchanged all machines that had the fault. It could be that your machine is one of these. There again it could be that the bug is still in BASIC for Atari have now released in the States, a Revision C BASIC on cartridge for the XL series. Customers in America can get a copy by quoting their serial number and sending \$25 to the Customer Relations department. Wouldn't it be nice if Atari UK made this available but seeing as we

never saw the Revision B Operating System or the Revision B BASIC there seems little hope.

HOUSE OF SECRETS

Dear Len,

Thanks for publishing my program House of Secrets. I even had someone phone who had typed it in successfully to compliment me on what a good program it is!

The reason for writing it was that several people had problems in fitting in some of the long lines such as: 318. The answer is to POKE 82,0 before typing and leave out all spaces between the commands or numbers, e.g. line 318 would look like 3180PX GOSUB350,400 etc.

You can also abbreviate commands with the exception of ON GOSUB or ON GOTO which produce errors.

I think these hints are worth mentioning as they are useful tips on their own.

David Blease,
Weymouth

"There is also one line in the program which ends in quotes and will not go in even with all these tricks. The answer is to leave off the final quote, they will be inserted automatically when you LIST or RUN the program.

POLE POSITION

Dear PAGE 6,

The following points may be of interest in reply to Roy Lynch's letter in issue 10 concerning Pole Position.

It is possible to complete a full eight lap race on the Atari GP circuit as we have done it dozens of times registering a top score so far of 113,200 in an overall time of 460.99 seconds. The technique is simply to slow-down as and when necessary (very frustrating) with a view to keeping the Bonus Time counter below 39 seconds up to lap 5 and under 34 seconds on lap 5 and above as you cross the line.

The time mentioned above was achieved with the aid of what we call 'The Boost', a situation where your speed goes over and beyond the

standard maximum of 195 mph and something that seems to occur randomly during game play on Atari GP level. We have recorded speeds up to 233 mph with the aid of this feature in qualifying laps. We would be very interested to learn of anyone else who has come across this and what speeds they have achieved.

We have also noticed that it is just possible to squeeze between a car and a signboard when overtaking on the outside on a bend but we have also come across a slight bug in the program in that if you go onto the grass around the inside of bend 3, the front end of a 'mystery car' shoots in at the bottom right of the screen for about 1/6 seconds.

This superb game has given us hours and hours of interest and excitement. If you have not already bought it, do so!

Marc Duffield
and Christopher Barlow,
Huddersfield

SPINNER MODES

Dear Len,

I am just getting into Adventures and found issue 10 excellent. I also like the new listing format. MUCH easier to read.

Readers who do not have paddles might be interested in the following modification to SPINNER:

```

400 POKE 760,0:POKE 764,0:POKE 767,0:
+POKE 760,0:POKE 760,0:POKE 760,0
401 FOR D=0 TO 31
402 IF PEEK(33279)=0 THEN SP=SP-1
403 IF PEEK(33279)=5 THEN SP=SP+1
404 IF SP=0 THEN SP=0
405 IF SP=30 THEN SP=0
406 NEXT D:POKE 77,0
407 IF PEEK(33279)=4 THEN P=1:2000:0
+POKE 768,1:IF P=252 THEN P=0
410 IF PEEK(33279)=4 THEN P=1:2000:0
+POKE 768,1:IF P=252 THEN P=0
420 GOTO 400

```

This enables you to change the speed by using the OPTION and SELECT keys.

Peter Boulter,
Tunbridge Wells.

More letters on page 8

48K Spectrum & Atari 400/600/800



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by Richard Wilcox

Richard Wilcox Software

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Readers Letters

PROBLEMS

Dear Les,

I recently had two problems with my 800 which other readers may experience and if they are handy with a soldering iron and a screwdriver they can easily save themselves a lot of money on repairs.

The first fault was an intermittent loss of power which came back on a random basis when you fiddled with the cables, the on/off switch and the lid. The problem was a faulty micro-switch on the lid which is easily accessed by removing the top of the computer. The switch is a push fit plus three solder joints. It cost me £26 to have this repaired at a Service Centre but a microswitch costs only 92p!

The second fault was a computer lockup, again on a random basis, followed by the screen going bright yellow or dark red. The only way to regain control was to push the BASIC cartridge in and then gently withdraw it as turning the computer off and on had no effect. The problem was a loose chip. All you have to do is to unscrew about 14 screws and pull two connectors, lightly push all the IC's into their sockets and then put the computer back together again. Just remember which order you took it apart!

Obviously do-it-yourself repairs are not recommended if the unit is still under warranty but why pay someone else to just push a few chips back into their sockets?

John Dinning,
Elgin, Scotland

MORE PROBLEMS

Dear Les,

I recently had a problem on my 400 which may have occurred on other Atari machines and the solution, being very simple, may help others.

After I had typed in a program, I LISTED it okay but when I came to run it all sorts of nasty things happened so I LISTED it again to find that the

listing had turned into a load of garbage with ROM statements and lines which made no sense at all. I corrected the lines and re-ran it but the same thing happened. I took the machine to a Service Centre who kept it for a week and then told me that diagnostic tests revealed nothing wrong with the computer. Lacked if it could be the BASIC cartridge so the engineer had a look. He pushed a small screwdriver into the bottom of the cartridge to enable the guard to be moved back to reveal the contacts which were absolutely filthy. The remedy was to use a good quality pencil eraser and rub gently along the contacts until they shone like new again. This cured the problem which has never occurred again.

B. Sutcliffe,
Leicester

"800 owners should also do this on their Rompacks and OS board to cure any similar problems. After just removing and reinserting the boards or BASIC cartridge cures all sorts of strange problems."

410 MODIFICATIONS

Dear Les,

One of the weakest links in the Atari Computer System is the 410 cassette with its frequent inability to load boot tapes.

Various solutions have been proposed and the most definitive article appeared in ANTC February 1984 Vol.2 No. 11 pages 76-77 which outlined and developed a similar article in ANTC April 1983. A supplementary reference may be found in the article "Top Ten" from ANTC July 1983 Vol.2 No.4 pages 90-91.

In essence one must replace two resistors of 240 K ohm and 330 K ohm which have a tolerance of 10% or 5% with the same resistors of 1% tolerance. They are apparently available from Maplin Electronics - see page 326 of their 1984 Buyers Guide.

So far so good - but then in "Tangle Angles" ANTC April 1984 Vol.3 No.1 page 103 in Mr Hatcliff's letter headed "Look for Gold Rings", mention is made of replacing six resistors!

Can anyone clarify this? How many resistors require replacement and are they readily locatable on the printed circuit board?

Kevin Fleming,
73, Woodend Cres.,
Aberdeen, AB2 6YQ

"I don't know the answer. Over to you more technical readers."

XL RESET

Dear Les,

Thanks for the 'Reset Routine' in issue 11 and in response to your appeal for an XL fix, here goes.

Replace all occurrences of the inverse 8 and inverse lower case v in the machine code string with inverse 0 (zero) and inverse lower case i respectively. What you have done is to replace the illegal 'Put character' routine (E0UTCH) entry address with the new address used by the XL OS. The E0UTCH address has been moved from \$F6A8 to \$F2B8.

Those readers who prefer to read in decimal DATA rather than risk typing in word looking strings should change the equivalents of the above hex addresses i.e. low byte address 164 becomes 176 and high byte address 246 becomes 242.

XL computers should now return to the protected program when System Reset is depressed.

John F. Fodder,
Halesowen

We received a bumper crop of letters this issue! Many thanks to all who write. Keep your letters coming as other readers like to hear of your Atari experiences. We also received a very interesting letter from Alan Sharples on the question of copying utilities and hope to publish this one a reply next issue. ■

THE CREATOR

by David Eaton

4
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Listing Conventions

The program listings in PAGE 6 are prepared so that the listings match exactly what you see on a normal 38 column screen. Inverse video and CONTROL characters appear as they do on the screen.

To obtain CTRL characters use the key shown in the following chart.

+	CTRL	,	[
!	CTRL	A	[E
!	CTRL	B	[H
^	CTRL	C	[N
~	CTRL	D	[O
^	CTRL	E	[S
^	CTRL	F	[5
\	CTRL	G	[Z
^	CTRL	H	[F
^	CTRL	I	[P
k	CTRL	J	[V
^	CTRL	K	[B
^	CTRL	L	[J
-	CTRL	M	[H
-	CTRL	N	[H
-	CTRL	O	[H
^	CTRL	P	[H
+	CTRL	Q	[H
-	CTRL	R	[H
+	CTRL	S	[H
+	CTRL	T	[H
^	CTRL	U	[H
^	CTRL	V	[H
^	CTRL	W	[H
!	CTRL	X	[H
!	CTRL	Y	[H
!	CTRL	Z	[H
+	CTRL	-	[H
+	CTRL	_	[H
!	SHIFT	=	[H

!	ESC	ESC
+	ESC	CTRL -
+	ESC	CTRL _
+	ESC	CTRL +
+	ESC	CTRL =
^	ESC	SHIFT C-M-00
+	ESC	DEL/ETX
^	ESC	TAB
[	ESC	SHIFT 0 DEL/ETX
[	ESC	SHIFT 1 DEL/ETX
[	ESC	CTRL 10 0
[	ESC	SHIFT 1 00
[	ESC	CTRL 2 00
[	ESC	CTRL 3 00
[	ESC	CTRL 4 00
[	ESC	CTRL 5 00
[	ESC	CTRL 6 00
[	ESC	CTRL 7 00
[	ESC	CTRL 8 00

Make sure that you SAVE a copy of any listing before you attempt to RUN it.

A
view from

JEFF MINTER

Reproduced, with permission, from the L'Espresso magazine 'The Nature of the Beast'.

We now have the consensus of Home Brewers running on Z80 and over ATARI machines. The character graphics and 'feel' of the game are virtually identical to the C64 version, but you haven't got a multicoloured neighbour due to limitations of PMO. Still, there are advantages, such as 4-channel sound instead of only 3, and some very colourful hi-scenes and intro screens thanks to Atari's unsurpassed colour generation. Everything is there, from the 'English Country Garden' theme to the sounds of dog barks and mouse noise.

I must say that the more I see and work with Atari, the more I like it. The potential of the machine is enormous, and the colour effects knock out your eyeballs! At the moment Atari owners are a nice but dedicated breed and there isn't a lot of good cheap software about. However, due to recent developments this may all change soon. Jack Trammell has just taken over Atari, and also Atari have a new graphics chip, MOORE, which makes CTM seem tame. Reports from the American press, where the new chip has been seen in the 7800 video games from Atari, say that the new chip is capable of generating unlimited (for that?) sprites. With potential like that, if built into a four-cost 64K micro (which Trammell is very likely to do, to compete directly with the C64) no sane game designer is going to be able to resist if I imagine *Rescue of the Maroon Corsairs* done using, say, 80 sprites plus all of Atari's amazing colours. ATARI owners may be the obscure ones now, but in a year's time maybe things will be different!

Now one, Jeff. The Obscure ones ah? Like it. We are just waiting for our new leader to Set The Controls...

COMPETITION WINNERS

A total of 13 entries were received for the competition based on the scrolling demo in issue 9. Not a lot but then it was a fairly difficult programming task and every entrant is to be congratulated for having a go.

Three entries vied for the main prize, RESCUE MISSION by Geoffrey Thompson was a great Scramble type game written in machine code, FLIGHT OF THE SWAN by Christopher Jephcott was a good original idea close to the concept of the original program but using completely redefined characters (love the name!) and GRABBIT by C.J. Mitchell was an excellent Frogger type game. As all the games were quite different from each other, picking a winner was difficult and in the end I decided to lend another Touch Tablet (or Compiler) and award the prize to both Geoffrey Thompson and Christopher Jephcott. Rescue Mission gets the prize simply because it was the best game and Flight of the Swan, which kept close to the original, was the most original idea.

Highly commended were Gabbit which missed out only because the idea was not as original as Flight of The Swan and an untitled game from K.M. Casey which had a ballooning theme.

Other entries were received from Colin Fuller, G. Anderson, Andrew Starkie, David Eaton, David Blake, K. Vaughan and Fred Key and, whilst some of the entries did not use scrolling, all were appreciated.

Finally two youngsters submitted entries, Simon Curran aged 10 and Warren Barnes aged 13. Although they did not win the main prize they should be congratulated for their entries.

There were due to be five runners up but in fact items of software were sent to all the entrants as thanks for their efforts. Perhaps next time YOU will enter!

We will run another competition next year and perhaps the readers could suggest a theme for the competition. If you have a good idea for a programming competition please drop me a line.

Editor

Line Lister 3

by S. Cant

In the very first issue of PAGE 6 was one of the most popular little routines we have published (credited but actually written by Les Ellingham) and the routine was improved by Len Lawson in issue 5. Now comes the third and best version from S. Cant of Ranton, Staffs.

Once you have typed in the listing, save it by using LIST "C" or LIST "D: LISTER" and then tag it onto the end of a program you have typed by using ENTER "C" or ENTER "D: LISTER". Type GOTO 32700 and the first line of your program will come up for checking. Each subsequent line can be called up by hitting any key.

```
32700 @P0EN(1,04)+200#P0EN(1,17)
32710 L=P0EN(04)+200#P0EN(04)+2:1P L:327
@@ THEN ? "THE END" END
32720 ? "D:LIST L:04#P0EN(04)+2:P0EN
764:200
32730 IF P0EN(764)+200 THEN 32730
32740 GOTO 32710
```

If you have not used a Line Lister before do try it, you will find it invaluable for checking your typing.

Special Interest

ADVENTURE

4. BLADE OF BLACKPOOLE

If you've read the Adventure columns in the last three issues, you would have noticed that a large part of each column was devoted to an informal history of Adventures. It was something that I've always wanted to do and I hope you found the subject as interesting as I did. Now that I've got it out of my system, let's take things easier for a while.

There is an absolutely huge number of Adventures available for the Atari. I am trying to cover a broad cross section of these to give you a feel for what's available. If you'd like me to feature a particular Adventure, then drop a line to the Editor and he'll pass it on to me. I have completed over 25 Adventures myself, so I have a good base to draw from. If you just need a hint, again drop a line to the Editor and he'll put it in CONTACT. If I can't give you any help, then maybe somebody else can.

I'd also like to know how you feel about the hints that I supply in each column. Is the coding system alright? Are the hints too easy? Too hard? Too many? Too few?

Anyway, enough chat chat. Let's get down to business.

Review: This issue, we'll take our first look at an illustrated Adventure. I've chosen *Sirius* ("Blade of Blackpoole" because it deserves more recognition than it has received so far.

Sirius is best known for their arcade games for the Apple. Several of the better ones such as "Bambits" and "Blayzes" have been translated for the Atari, but "Blade of Blackpoole" was their first translation of an Adventure. It is an illustrated Adventure somewhat like the well known Sierra On-Line series, but of a much higher quality. The game was designed by Tim Wilson and runs on an Atari with 48k and an 810 disk drive. If you've got a drive other than an 810, my before you buy. The copy protection is such that it may not work on some non-810 disk drives.

The game comes on a double-sided disk. Side A is copy protected, but side B is not. When you first boot the game, you are given the option of making a backup copy of side B. Make sure you do! From that point on, you need the original disk only to boot the game. The backup of side B is used for everything else. I wish other manufacturers would adopt this policy as it has three big advantages. Firstly, it doesn't matter if your copy gets damaged, because you still have the original to make another backup. Secondly, the SAVE GAME routine is carried out directly to the backup disk. This saves all the dreaded disk swapping inherent in other disk-based Adventures. Thirdly, the manufacturer maintains sufficient copy protection to prevent the average user from illegally copying the program and giving it to friends. Bonus *Sirius!*

When you've completed the backup procedure, you



by Garry Francis, Australia

can proceed with the game. Following the title screen, you are dumped into the first location. The top two thirds of the screen is devoted to high resolution pictures of your surroundings in ANTIC mode 14 (BE to you (see *Frederic*) or GRAPHICS 7+ as it is often incorrectly referred to). The pictures are always drawn as though you are facing north. They are not as high in quality as (say) DataSoft's "The Sands of Egypt", but they are much better than the kindergarten-style of Sierra On-Line. I particularly liked the soft, pastel tones chosen for the colours. One thing you'll notice is that the pictures are drawn last. Very last I'd like to see their fill algorithm!

At the bottom of the screen, eight lines are reserved for text. Unfortunately, this is always in upper case - probably due to its Apple origins. Overall, the only really bad point about the display is an occasional screen flicker.

The room descriptions are usually two or three sentences long, but I found that they never provide any useful hints. They just add atmosphere to the game. Upon subsequent visits to the rooms, only the first sentence of the description will be printed. You can opt for lengthy descriptions all the time by typing LONG or revert to the default by typing BRIEF.

Talking about input, "Blade of Blackpoole" has an excellent input routine. You can use multi-word input like TALK TO THE BARTENDER or MOVE THE ROCKS WITH THE STAFF THEN GO NORTH. Despite this, I tended to use the traditional two word input whenever possible. When you've finished typing your command and you press RETURN, a response comes up immediately! Now that's what I like to see! Another thing you'll notice about the input routine is the absence of the keyboard click. I missed this at first, but you soon get used to it.

On the negative side, the program is marred by the occasional bad spelling (or American spelling such as tanned), center, etc.) and some really pathetic grammar and punctuation. Why do text-based programs like Adventures always fall down in this area?

The remainder of this review contains quite a few game playing strategies, so if that bores you, don't read any further! The instructions tell you that the object of the game is to recover the magical sword "Mjanglein" from a secret chamber beneath the lake at Blackpoole. You must then return it to the altar from which it was stolen. (There is actually a further requirement, but this will be explained to you within the game.) You begin at the edge of a small lake (this is NOT Blackpoole). Nearby, you will find a town where you can search your first or buy goods essential to the completion of the game. You do not have enough gold pieces to buy everything available and you will not know which items are useful until much further into the game, so be prepared to restart if you buy the

wrong items. Experienced players beware. Your Adventure's instinct may be misleading!

Inventory control is very important. You can only carry six items at a time and several of the items you find are useless, so carry only what you need. About halfway through the game, you will have to get to the top of a cliff. You will later find that you should have carried six specific items up the cliff in order to complete the game. If you find that you don't have the items, then there is no way to return to the bottom of the cliff. Therefore, always maintain a saved game prior to ascending the cliff. I'd also suggest that you save the game before executing any magic unless you are familiar with the consequences.

The HELP or HINT command is very useful, although some hints are so obscure that you will not understand them until after you have solved the puzzle that they refer to. If you run into trouble, try everything you can think of. The game has a huge vocabulary and will quite often return a humorous response.

As you work your way through the game, you are awarded points for achieving certain tasks. Keep track of your score. The maximum is 500, but I could only get 490

points at the completion of the game. The last 20 points are some sort of bonus, but I couldn't figure out how to get it. Could somebody please help me?

In summary, "Blade of Blackpool" does not have a very original theme, but it is very well implemented. Unlike some other fantasy Adventures, the objects and surroundings are very consistent to the story. There is very little violence, but a fair share of riddles and magic. It is easy to map, but hard to solve. I would put it in the intermediate category, although a couple of puzzles are extremely difficult.

Hints: If you come to a grinding halt, try HELP or HINT in each room. If that doesn't help, try the hints below. (Note that I haven't given any hints where they're available within the program.) If you're extremely desperate, a complete solution may be found in "A Shortcut Through Adventureland" by Jack Cassidy, Pete Katz, Richard Owen Lynn and Sergio Watson (published by Datasoft, 20660 Northolt Street, Chatsworth, CA 91311-6152, U.S.A.).

Can't know what you're supposed to do? 11 25 42 37 32

37 7 21 36 34

Can't take any of the items from the wall room next to the tavern?

25 44 34

Can't get out of the quicksand?

11 25 32 24 8 28 37 33 21 26 32

Can't catch the bees?

36 34 38 13 37 1 48 34

Can't get past the carnivores plant?

7 44 41 34

1	THAN	13	IS	25	DO
2	NIGHT	14	DRINK	26	COMMON
3	STRONG	15	SAVE	27	USE
4	DABBLING	16	SOME	28	WEAR
5	SHED	17	TRY	29	MAKE
6	MEMORISER	18	PLACE	30	RETURN
7	TALK	19	SPELL	31	SCROLL
8	BREASTSTROKE	20	AND	32	THIS
9	HINT	21	BY	33	KEY
10	I	22	HIGH	34	DON'T
11	WHAT	23	ABOUT	35	TAKE
12	BACKSTROKE	24		36	

Can't get past the monster on the river?

48 3 42 48 48 3 14 34

Can't move the boulder?

17 48 32 45 34

Can't open the large metallic door?

48 31 32 34

Still haven't found Mergolyn?

37 31 47 21 31 2 38 34

Can't find the key?

38 31 17 35 44 31 2 18 34

Keep hitting your head when you take a dive?

28 34 45 38 41 34

Can't find a bow?

17 31 27 34

Can't find an arrow?

4 31 31 32

Lost all your belongings?

18 37 45 23 4 38 42 47

Can't get the last 20 points?

47 38 18 47

37	WARNED	49	PRAYER	61	IT
38	CAN	60	PROTECTS	62	GONNOLIER
39	BUTTERFLY	61	THE	63	BOTHER
40	MINE	62	7	64	LIGHT
41	CAME	63	MAVE	65	YOU
42	HAGG	64	SOMETHING	66	SHOULD
43	MONSTER	65	BOOK	67	!
44	INVENTORY	66	TAVLER	68	A
45	FREQUENTLY	67	SABSTER	69	NEITHER
46	TO	68	SMITH		
47	FUTTON	69	SAY		
48	NEEDS	60	FIND		

RESCUE MISSION

by Geoffrey Thompson

This game, a winner of our scrolling competition, requires a minimum of 32k memory.

THE GAME

You are flying an unarmed helicopter carrying vital medical supplies through lengthy caverns in order to reach your agents who have been wounded behind enemy lines. The caverns are well protected with anti-aircraft batteries, space mines, robots and lasers so the mission is dangerous and difficult and the caverns are lengthy. The only aid you have apart from your own skill is a radar scanner at the top of the screen to show your position in the cavern. The joystick controls the helicopter in any direction and you have three helicopters, each with a limited supply of fuel. The space bar will pause the game at any point.

TYPING IT IN

Cassette users can type in the main listing as it stands. Make sure that you save a copy before you try to RUN it. Type RUN and the program will check each line of data and tell you if you have any errors. If all is well, you will be asked if you are ready to run. A 'Y' will begin the game.

Disk users should type in the main listing but substitute the lines shown in Listing 2. It may be easier to type in the main listing first and then type Listing 2 at the end as the lines will automatically overlay those to be replaced. Make sure that you save a copy of the program before you RUN it. Before you type RUN, ensure that you have a formatted disk in drive 1. The program will check the data line by line and write a file to disk with the filename "D:RESCUE.DAT" and then ask you if you are ready to run. A 'Y' will begin the game. To RUN the program subsequently, type in Listing 3 and save with whatever filename you wish on the same disk as "D:RESCUE.DAT". You can then RUN the program by typing RUN "D: [your filename]".

```

15 OPEN #1,4,8,"D:RESCUE.DAT"
20 POKE 558,7
30 POKE 552,8:POKE 551,81
40 POKE 556,255:POKE 557,255
50 CLOSE #1:GOTO 100
60 CLOSE #1:GOTO 120:END

Listing 2

```

```

10 OPEN #1,4,8,"D:RESCUE.DAT"
20 POKE 558,7
30 POKE 552,8:POKE 551,81
40 POKE 556,255:POKE 557,255
50 CLOSE #1:GOTO 100:END
60 CLOSE #1:GOTO 120:END

```

Listing 3

```

8 REM #####XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1 REM 8 RESCUE MISSION 8
2 REM 8
3 REM 8 by Geoffrey Thompson 8
4 REM 8 for 8
5 REM 8 PAGE 6 Magazine - England 8
6 REM XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9 POKE 719,8:POKE 720,1:POKE 721,1:POKE 722,1:POKE 723,1:POKE 724,1:POKE 725,1:POKE 726,1:POKE 727,1:POKE 728,1:POKE 729,1:POKE 730,1:POKE 731,1:POKE 732,1:POKE 733,1:POKE 734,1:POKE 735,1:POKE 736,1:POKE 737,1:POKE 738,1:POKE 739,1:POKE 740,1:POKE 741,1:POKE 742,1:POKE 743,1:POKE 744,1:POKE 745,1:POKE 746,1:POKE 747,1:POKE 748,1:POKE 749,1:POKE 750,1:POKE 751,1:POKE 752,1:POKE 753,1:POKE 754,1:POKE 755,1:POKE 756,1:POKE 757,1:POKE 758,1:POKE 759,1:POKE 760,1:POKE 761,1:POKE 762,1:POKE 763,1:POKE 764,1:POKE 765,1:POKE 766,1:POKE 767,1:POKE 768,1:POKE 769,1:POKE 770,1:POKE 771,1:POKE 772,1:POKE 773,1:POKE 774,1:POKE 775,1:POKE 776,1:POKE 777,1:POKE 778,1:POKE 779,1:POKE 780,1:POKE 781,1:POKE 782,1:POKE 783,1:POKE 784,1:POKE 785,1:POKE 786,1:POKE 787,1:POKE 788,1:POKE 789,1:POKE 790,1:POKE 791,1:POKE 792,1:POKE 793,1:POKE 794,1:POKE 795,1:POKE 796,1:POKE 797,1:POKE 798,1:POKE 799,1:POKE 800,1:POKE 801,1:POKE 802,1:POKE 803,1:POKE 804,1:POKE 805,1:POKE 806,1:POKE 807,1:POKE 808,1:POKE 809,1:POKE 810,1:POKE 811,1:POKE 812,1:POKE 813,1:POKE 814,1:POKE 815,1:POKE 816,1:POKE 817,1:POKE 818,1:POKE 819,1:POKE 820,1:POKE 821,1:POKE 822,1:POKE 823,1:POKE 824,1:POKE 825,1:POKE 826,1:POKE 827,1:POKE 828,1:POKE 829,1:POKE 830,1:POKE 831,1:POKE 832,1:POKE 833,1:POKE 834,1:POKE 835,1:POKE 836,1:POKE 837,1:POKE 838,1:POKE 839,1:POKE 840,1:POKE 841,1:POKE 842,1:POKE 843,1:POKE 844,1:POKE 845,1:POKE 846,1:POKE 847,1:POKE 848,1:POKE 849,1:POKE 850,1:POKE 851,1:POKE 852,1:POKE 853,1:POKE 854,1:POKE 855,1:POKE 856,1:POKE 857,1:POKE 858,1:POKE 859,1:POKE 860,1:POKE 861,1:POKE 862,1:POKE 863,1:POKE 864,1:POKE 865,1:POKE 866,1:POKE 867,1:POKE 868,1:POKE 869,1:POKE 870,1:POKE 871,1:POKE 872,1:POKE 873,1:POKE 874,1:POKE 875,1:POKE 876,1:POKE 877,1:POKE 878,1:POKE 879,1:POKE 880,1:POKE 881,1:POKE 882,1:POKE 883,1:POKE 884,1:POKE 885,1:POKE 886,1:POKE 887,1:POKE 888,1:POKE 889,1:POKE 890,1:POKE 891,1:POKE 892,1:POKE 893,1:POKE 894,1:POKE 895,1:POKE 896,1:POKE 897,1:POKE 898,1:POKE 899,1:POKE 900,1:POKE 901,1:POKE 902,1:POKE 903,1:POKE 904,1:POKE 905,1:POKE 906,1:POKE 907,1:POKE 908,1:POKE 909,1:POKE 910,1:POKE 911,1:POKE 912,1:POKE 913,1:POKE 914,1:POKE 915,1:POKE 916,1:POKE 917,1:POKE 918,1:POKE 919,1:POKE 920,1:POKE 921,1:POKE 922,1:POKE 923,1:POKE 924,1:POKE 925,1:POKE 926,1:POKE 927,1:POKE 928,1:POKE 929,1:POKE 930,1:POKE 931,1:POKE 932,1:POKE 933,1:POKE 934,1:POKE 935,1:POKE 936,1:POKE 937,1:POKE 938,1:POKE 939,1:POKE 940,1:POKE 941,1:POKE 942,1:POKE 943,1:POKE 944,1:POKE 945,1:POKE 946,1:POKE 947,1:POKE 948,1:POKE 949,1:POKE 950,1:POKE 951,1:POKE 952,1:POKE 953,1:POKE 954,1:POKE 955,1:POKE 956,1:POKE 957,1:POKE 958,1:POKE 959,1:POKE 960,1:POKE 961,1:POKE 962,1:POKE 963,1:POKE 964,1:POKE 965,1:POKE 966,1:POKE 967,1:POKE 968,1:POKE 969,1:POKE 970,1:POKE 971,1:POKE 972,1:POKE 973,1:POKE 974,1:POKE 975,1:POKE 976,1:POKE 977,1:POKE 978,1:POKE 979,1:POKE 980,1:POKE 981,1:POKE 982,1:POKE 983,1:POKE 984,1:POKE 985,1:POKE 986,1:POKE 987,1:POKE 988,1:POKE 989,1:POKE 990,1:POKE 991,1:POKE 992,1:POKE 993,1:POKE 994,1:POKE 995,1:POKE 996,1:POKE 997,1:POKE 998,1:POKE 999,1:POKE 1000,1:POKE 1001,1:POKE 1002,1:POKE 1003,1:POKE 1004,1:POKE 1005,1:POKE 1006,1:POKE 1007,1:POKE 1008,1:POKE 1009,1:POKE 1010,1:POKE 1011,1:POKE 1012,1:POKE 1013,1:POKE 1014,1:POKE 1015,1:POKE 1016,1:POKE 1017,1:POKE 1018,1:POKE 1019,1:POKE 1020,1:POKE 1021,1:POKE 1022,1:POKE 1023,1:POKE 1024,1:POKE 1025,1:POKE 1026,1:POKE 1027,1:POKE 1028,1:POKE 1029,1:POKE 1030,1:POKE 1031,1:POKE 1032,1:POKE 1033,1:POKE 1034,1:POKE 1035,1:POKE 1036,1:POKE 1037,1:POKE 1038,1:POKE 1039,1:POKE 1040,1:POKE 1041,1:POKE 1042,1:POKE 1043,1:POKE 1044,1:POKE 1045,1:POKE 1046,1:POKE 1047,1:POKE 1048,1:POKE 1049,1:POKE 1050,1:POKE 1051,1:POKE 1052,1:POKE 1053,1:POKE 1054,1:POKE 1055,1:POKE 1056,1:POKE 1057,1:POKE 1058,1:POKE 1059,1:POKE 1060,1:POKE 1061,1:POKE 1062,1:POKE 1063,1:POKE 1064,1:POKE 1065,1:POKE 1066,1:POKE 1067,1:POKE 1068,1:POKE 1069,1:POKE 1070,1:POKE 1071,1:POKE 1072,1:POKE 1073,1:POKE 1074,1:POKE 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1158,1:POKE 1159,1:POKE 1160,1:POKE 1161,1:POKE 1162,1:POKE 1163,1:POKE 1164,1:POKE 1165,1:POKE 1166,1:POKE 1167,1:POKE 1168,1:POKE 1169,1:POKE 1170,1:POKE 1171,1:POKE 1172,1:POKE 1173,1:POKE 1174,1:POKE 1175,1:POKE 1176,1:POKE 1177,1:POKE 1178,1:POKE 1179,1:POKE 1180,1:POKE 1181,1:POKE 1182,1:POKE 1183,1:POKE 1184,1:POKE 1185,1:POKE 1186,1:POKE 1187,1:POKE 1188,1:POKE 1189,1:POKE 1190,1:POKE 1191,1:POKE 1192,1:POKE 1193,1:POKE 1194,1:POKE 1195,1:POKE 1196,1:POKE 1197,1:POKE 1198,1:POKE 1199,1:POKE 1200,1:POKE 1201,1:POKE 1202,1:POKE 1203,1:POKE 1204,1:POKE 1205,1:POKE 1206,1:POKE 1207,1:POKE 1208,1:POKE 1209,1:POKE 1210,1:POKE 1211,1:POKE 1212,1:POKE 1213,1:POKE 1214,1:POKE 1215,1:POKE 1216,1:POKE 1217,1:POKE 1218,1:POKE 1219,1:POKE 1220,1:POKE 1221,1:POKE 1222,1:POKE 1223,1:POKE 1224,1:POKE 1225,1:POKE 1226,1:POKE 1227,1:POKE 1228,1:POKE 1229,1:POKE 1230,1:POKE 1231,1:POKE 1232,1:POKE 1233,1:POKE 1234,1:POKE 1235,1:POKE 1236,1:POKE 1237,1:POKE 1238,1:POKE 1239,1:POKE 1240,1:POKE 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CONTACT

GHOST TOWN: How do you get past the statue on Foot Hill? Please help. Paul Steele 0782 279088 after 6pm.

B.C.'s QUEST FOR TYRES: I know how to get past the first water ditch by taking a lift off the head but how do I get past the second? Please help. Paul Steele (as above).

PEN PAL/SWAPS: I would like to get in touch with another PAGE 6 reader so we could become pen pals and swap adventure hints etc. I own an Atari 400 and disk drive. Bobby Earl, 37 Northwood Road, Prenton, Birkenhead, Merseyside, L43 0SR

CANTARI USER GROUP: Canterbury and District Atari Computer Club has recently started and we would like more members. Meetings once a month at a local hall to exchange home-written programs, ideas and info. Further information from S. Fawcett, 6 Wife of Bath Hill, Canterbury, Kent, CT2 8PG

EXCHANGE: Atari 'Video Easy' cartridge and Acoustic MPU 2000 games computer with 4 cartridges. All very good condition. Will swap for anything Atari. Please contact Eddie Cooney, 10 Tower Street, Golspie, Sutherland, Scotland, KW10 6SH

THE HULK: I cannot pull the ring in the first door. Can you help? Also has anyone got an Editor/Assembler to sell? P. Fragapane, 18 Fancos Street, Redminster, Bristol, BS3 5PT. Tel. 0272 663475 (after 6pm)

COLOSSAL ADVENTURE: Could anyone tell me how to use to get the platinum pyramid out of the 'power room' through the crack? David Rutter, 30 Barnhays, Backwell, Stoke-on-Trent, ST2 6JT. Tel. 0782 281599 (after 6pm)

DATASOFT-COMPILE: Can anybody tell me how to convert my Datasoft Compiler to read and write DOS 3 files? Is it possible? A.R. Truelove, 38 Warren Crescent, Colwyn, Wills, SA11 9BL

PAGE 6 BACK ISSUES: Issues 1 & 2 required to complete my collection. Martin Moran, 14, Laeman Gardens, Derry City, N. Ireland

SAVAGE ISLAND II: I have found two rooms apart from the stamped metal one using the loop and I have moved the lever to the gun. Where do I go from here? Anthony Hughes, Twin Oaks, Oak Farm Lane, Falmace, Sevenoaks, Kent, TN85 7JU

ENCHANTER: Can anyone tell me how to overcome Bell? I have found my way to him in his secret room but my spells are useless against him! David Blease, 31, Melcombe Ave, Weymouth, Dorset, DT4 7TF. Tel. 0205 771230

Autotect ... an 810 drive modification

Some owners of the 810 Disk Drive may not know that you can use the reverse side of a single-sided disk simply by cutting a notch on the side of the disk opposite to the existing notch. It is quite easy to do but it is fiddly and can be dangerous, especially if, like me, you use a scalpel! In the States a 'Nibble-Notch' is available but costs around \$19 for owners shipment which is a bit expensive for a ticket collection punch! An alternative, which does much more than just allow you to write to the reverse of a disk, is the Autotect Disk Modification from Magical Electronic Services.



The Autotect package.

The Autotect consists of a plug-in circuit board, a switch box with LED, a low cable tin and a four page set of instructions for fitting and use. As well as being able to write to the reverse of a disk without cutting a notch, you can, depending on how you connect the board, have automatic write-protect without using write-protect labels and there is also a switch that enables the drive to be quietened down. One of the aims about using a device which ignores write-protect labels is that you may inadvertently delete a wanted file but the Autotect overcomes this problem by having a constantly flashing red LED when write-protect is off. You can still write over a file but your eyesight would have to be pretty poor not to notice that LED!

Two configurations are possible depending on how you connect the board. Firstly, with the LED on red you can write to any disk with or without a notch or write-protect label and, with the LED on green, all disks are write-protected. The alternative is to have the drive act as normal, i.e. as if it had not been modified, when the LED is green and have the write enable facility on all disks when the LED is flashing red. I prefer the latter as I find it easier to stick a write-protect notch on those disks I know I want to protect but occasionally I want to add something to those disks and I can then simply flick the switch and add the file or write onto the other side of the disk. Either way, the choice is yours and the instructions are quite explicit

Reviewed by Les Ellingham

on the correct way to connect up the Autotect for each operation.

The board has a switch which can be set to one of three positions to quieten down the noise of the drive when the drive head moves across tracks. Three positions are given as the drive may not function correctly with this facility. It certainly does quieten the drive but I found that even in the 'less quiet' position my drive just kept on spinning forever. It may work on other drives but I don't really consider this feature to be particularly important anyway and I have just left mine in the 'off' position.

The switch box and LED fits on to the outside of the drive and looks very neat, being the same colour as the drive and slightly larger than a matchbox. Having a look inside the box reveals a simple rocker switch and LED and, if you don't mind drilling a few holes, these could easily be removed and fitted to the front panel of the drive



Fitted and looking quite neat

with the switch where the Atari logo is and the LED inside the busy light. The unit nevertheless looks good stuck on the outside, much better in fact than you might think.

The instructions are quite clear except on one point and fitting the unit is relatively easy with no experience or tools required other than a screwdriver to remove the drive lid. The exception referred to is in fitting the connector from the switch where the instructions say that 'the black side of the plug should be facing up'. In fact mine had no black side and a piece of intelligent guesswork was required.

I have now been using the Autotect for several weeks and quite simply would not want to be without it. Definitely one of the best additions to my system and highly recommended.

INDUS GT *disk drive ... a World Champion?*

Same old problem, every time you write a large program you have to wait 15 minutes to save it on cassette. So what do you do? Save up your pennies for a disk drive. Until now British users could only look with envy at the choice of four independently made drives for the Atari available to users in the States but now Hi-Tech Distribution Ltd, based in Birmingham, are importing the INDUS-GT disk drive made by Indus Systems of California and very nice it is too!

The first impression is one of amazement at the packaging. No huge grey cardboard boxes here, the GT comes packed in a shrink-wrapped plastic briefcase type box inside which is a set of drawers allowing you to see it as a *disk-box*. Also inside are five disks, five manuals and a large wad of grey foam, again shrink-wrapped. After removing this layer of foam and plastic, you get to the disk drive, in the now familiar wrapping. The drive itself is finished in matt black with a frosted plastic door covering the drive entrance. It is around half the height of an 810, two thirds the width and the same length. The overall impression is of a very well made piece of equipment.

On the back of the drive are two serial port connectors, the power socket and switch and a four-way dip switch. This switch is used to configure the drive, the first two switches being used to set the disk drive number, the third allowing you to set the density on power up, with the final one arched at the moment. On the front of the disk drive is the catch for the door, which once opened gives access to the disk and the control panel. This panel contains a numeric display to the left, three indicators in the middle and four switches on the right. The display is put to several uses, one of which is to show the current sector being accessed. It can also show an error code, if an error such as a bad sector occurs, as well as the drive number and density. The first two indicators light when the disk is powered up and when it is busy, the third light is the present indicator and lights whenever a disk with a write protect tag is in use. In addition, if a disk is inserted without a write protect tag you may write protect it by pushing the button marked 'Protect'.

The other three buttons change the display mode. Pressing the button marked 'Track' will clear the display back to the current track after an error or after pressing one of the other buttons. The button marked 'Drive type' is used to display both the drive number and the density in use. The GT will work in 810/1050 double density mode, 1050 dual density mode or full double density mode, allowing you to store approximately 90K, 120K and 180K respectively on a single sided disk. The mode you are using may be changed in one of three ways. You may set the density entered on power up by changing the switch on the back of the drive or you can use the front panel

Reviewed by Colin Boswell

switches by pressing the 'Drive type' and 'Track' buttons together and finally you can change the density from software, although the manual discourages changing modes without reformatting as few Disk Operating Systems can handle it. There is one more button marked 'Error' and it is used to display or clear the last error encountered. Error messages are displayed in the form of a letter showing the type of operation together with a number showing the type of error.

After obtaining permission from the importers, I opened up the review drive to inspect its innards. Inside it is clean and neat, with well constructed boards and all wires grouped together with cable ties. There are two boards and on the side of the main board are two expansion connectors which will be used to provide unspecified additions at a later date. The mechanism itself is very quiet in operation, barely thing above a quiet hum when accessing the disk. All connectors are of good quality and the serial lead supplied is a massive five feet long so there is no danger of pulling the GT off its perch. The power supply is manufactured specially in this country and is around the same size as the 810 power supply although there is some twenty volts difference! One problem that may occur if you run two or more drives, is that the plastic dust door on the GT may jam or be trapped shut if stacked and therefore the GT must be on top of any 810 or 1050 and two or more GT's may be a problem to stack.

Unlike the 1050 which only comes with a single disk containing DOS 3, the Indus comes with a package of four disks and five manuals, one of which is the drive operating manual. The Disk Operating System (DOS) supplied is DOS XL, written by Optimized Systems Software (OSS), who produce such programs as BASIC XL and ACTION, so it has a fine pedigree. Although, as supplied, DOS XL does contain an Atari type menu, I tend to use it in command line mode which is virtually identical to CP/M type systems, down to the use of the COM extension for machine code files. (Imagine being able to go from BASIC to DOS, type DIR for a directory listing, and back to BASIC without waiting for any CAJ/SYS files to load!) Configuring DOS XL to work with both single and double density drives at the same time is relatively easy, enabling you to use a number of different drives at once. Unfortunately, the manual supplied with the GT version of DOS XL is no match for the original written by OSS so I recommend that anybody who buys the Indus GT should try and get hold of a copy of the OSS manual. The only problem with DOS XL is that it does not

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support 'dual density' mode, although with double density available, I do not see the need.

In addition to DOS XL, the GT is provided with three software packages. The first is called the 'Estata Word Processor' and, as its name suggests, it is a simple text editor. On loading 'Estata' you are presented with a title page. Pressing any key takes you to the main menu which is split into three sections. The top line displays various numbers relating to the text size and also shows any error messages. The bottom line is the command line and is used to execute special instructions such as load and save text and the rest of the screen is the blank 'paper' on which you will write your documents. When typing in text, the software will automatically scroll the text if you go over twenty characters. This is better than other editors such as Atanwriter, which actually wrap the text on the screen and change it to fit in the margins at Print time, since it gives a better idea of what is on the screen.

In use, the word processor is relatively simple to get to grips with and provides a useful way of handling your daily correspondence. Since the maximum line length is 255 characters, a number of other possibilities exist such as the production of tables or forms. Although some of the commands are a little obscure and the error messages terse, the manual is quite useful and comes with a handy

reference card. If this were available 'off the shelf' it would certainly give some other systems a run for their money!

The second package is called 'Data Manager' which is, not surprisingly, a small database. Although limited in scope, it provides a good introduction to database technology and could probably be used to catalogue stamps or recipes and the like.

The final package has a jockey title 'Albert E. Spreadsheet' and is a jockey program. Supposedly a spreadsheet, it is written in BASIC and is consequently slow. This could be forgiven if it were not so cumbersome to use. There is a slip of paper supplied with the manual saying that the program has been copy protected against piracy so I suppose someone must consider it of some value!

In conclusion, the Indus GT is a very nice piece of equipment and Hi-Tech are to be congratulated for importing it. During the review period it has never given any problems and it stood up to some quite rigorous testing. With one exception, the software supplied with the drive is of good quality and, in my view, the DOS supplied is the best available. The only question mark arises over the price. At nearly £400, the Indus is a hefty investment although the software included does make it better value for money. I would certainly have one, if someone would lend me four hundred pounds! ☐

THE HARD(WARE) FACTS

AN ALTERNATIVE LIGHT PEN

I believe it was Marconi who said that invention is 1% inspiration and 99% perspiration. To relieve some of the h and work in trying to get a recognisable graphics image on the screen, I needed some inspiration for something that would be better than POREs and DRAWTCs.

What about a light pen? There are, after all, locations for it (54284 and 54285) but I could not find one for the Atari, although rumour has it that the one for the Apple might work. I could of course have built my own light pen but fortunately graphics tablets came along. Could this be the answer? Not at £90 at time, at least not for me. I put on my thinking cap and came up with the 1% inspiration for a minimum cost device in the hope that someone could write the software and make it work with the Atari. Although this particular version is untried, I did make a working bar-decoder some six or seven years ago but there was little interest at the time. Anyway this simplified version should enable you to produce pictures on a screen.

This is no ordinary light pen. Light pens react to the presence or absence of light from a particular area of a CRT screen when drawing across the screen with the pen. This idea is to place a drawing flat on a table and use the special pen which has its own light source to manually scan across the page line by line to detect light and dark areas of the image. This will produce an equivalent electrical output along the wire to the computer and the signal would be interpreted by software to produce an exact reproduction on the CRT screen. The idea is shown in a simplified form but if you have the time and a

Microcra set or something similar, you could perhaps produce a rotating drum around which the picture is fitted. The drum would be fitted on to a threaded rod and driven at constant speed! The pen would be fixed in position vertically and moved horizontally to scan a different part of the picture as the drum rotates. The result would be the same as scanning by hand but would possibly be more accurate and faster.

Due to limited space, I will only describe the 'pen-reader'. The circuit diagram is quite simple and the only tricky bit is getting the spacing right from the paper to the lens. (Figure 1).

The preset pot used for sensitivity adjustments is the type with a screwdriver slot and is best set to midway and then adjusted after construction so that it reacts properly during the transition from black to white. A PEEK at locations 54284 and 54285 would give the necessary reading. There is obviously software needed for this but this should present no problems to PAGE 6 readers!

The light sensitive transistor has three connections but the base (centre) connection is not used. Looking at the flat side with pins pointing down the E (Emitter) is on the left, B (Base) in the centre and C (Collector) on the right. The light sensitive part is that circular lens type part and must be fitted so that the light reflected off the page, as seen through the hole in the box, passes through the 8mm lens and falls on this spot on the transistor. I would again emphasise that this particular version is untried and it is probable that some hardware experts among the readership will be inspired by this article to come up with a

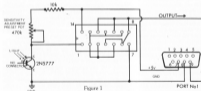


Figure 1



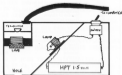
Figure 2

by John J. Smith

better solution. If you do, please let me know. I want to try out your idea!

The 'gun' used to read a drawing is not really a gun at all but instead consists of a small box or other suitable container approx. 4" x 2" x 1". It sounds a little large but remember that it has to contain all the parts. These are as follows.

- Light sensitive transistor 2N6777
- Lens - Fresco cine movie projector type.
- Lamp - 1.5 volt or 1.1 volt torch bulb with lens cap on one end.
- Battery - 1.5 volt cell type HP7
- Resistor - 470K preset pot.
- Integrated circuit - 74C04



The inside of the box should be painted matt black to prevent reflections. The hole in the bottom of the box should be approximately 1/2" from one end and the size of the hole approximately 1/4". Size of the hole equals definition to sensitivity and should be adjusted by experiment.

The lens has a threaded portion on the outside allowing a certain amount of zooming enabling adjustment to be made. This adjustment is critical and is best explained by using figure 2. When the lens is the correct distance from the page the black line will fill the whole lens as magnification is quite powerful on this type of lens. Moving it across the stripes will appear to make the lens alternate from dark to light. The distance from the page should be measured and the transistor mounted behind the lens at equivalent distance in its own light proof box looking down at the hole through which the page is read. Make sure that the lamp is slightly behind and to one side of the lens and positioned so that it is aimed at the hole. A tall piece of plastic or PCB will help.

There it is then, an idea for a cheap graphics device. There you have the inspiration, can you provide the persuasion and make it work?



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GANGSTERS

by Graham Askew

Gangsters is an arcade type game for 1 or 2 players. Each player starts with three men and an extra man is awarded for a score reaching 2500. There are 9 levels of increasing difficulty to choose from initially with each level successfully completed leading automatically to the next until the highest level is reached.

Player 1 controls a blue gangster and Player 2 a green gangster and play commences at the top left floor of the building. Remaining men are shown above the building in the centre with scores at either side indicated by an arrow. The levels being currently played or searched are shown below the building at either side with the time in the middle. The object is to reach the exit door at the bottom right of the building after searching for and collecting bottles of booze. The whole floor of the building must be covered within the time limit and 50 points are scored for each bottle collected. Bonus points are awarded for any time left depending on the level.

To hamper your progress a rival gang are sending their own men in at the bottom exit to stop you taking the prize. If one of them comes across a bottle he collects it and prevents you from colouring the floor and collecting any more bottles yourself. In addition if, while in this temporary state, an enemy gangster runs over any floor area you have already searched, he will turn it back to its original colour. It is essential that you track him down and shoot him with your machine gun by pressing the joystick fire button, thus gaining an additional 50 points and being able to carry on with your search. If you kill an enemy, another will immediately come looking for you. Remember, they are not stupid and, since they carry a machine gun as well, they will shoot at you as soon as they come within range.

Some additional features: You lose a man either by being shot or by running out of time. With each level the enemy action is better, there are more bottles to be picked up, and the enemy gangsters will chase you more precisely and relentlessly. There can be some nasty shoot outs between you and any intervening bottles! You can shoot bottles out of the way but there is no score for spilt booze! A high score is incorporated and, at the end of the game, options appear set of the previously selected figures.

The game features a very colourful main screen (160 colours) obtained by prolific use of Display List Interrupts initialised in machine code. It is essential to type in the title page in inverse video where shown in order to get the DLI cycling of colours there.

Background sound during the game is achieved by means of more machine code operating as a Vertical Blank Interrupt routine and great care should be taken in ensuring that the program is correctly typed in order to avoid crashing the system. The safest course of action is to SAVE the program before running it.

MAIN VARIABLES

BO	BO points character
BOC	Bottle shape
CL	Clear floor / search
DL	Engineering of display list
DL1	Draw exit screen display
FL	Floor colouring determination
G	Enemy gangster screen position
GB	Character behind enemy gangster
GC	Enemy gangster climbing
GD	Enemy gangster control position
GA	Enemy gangster killed?
GL	Enemy gangster facing left
GR	Enemy gangster facing right
GS	Enemy gangster's shape
H	High score
H1	Low memory DLI position
H2	High memory DLI position
I	Interrupt request enable location
L	Level for each player
LI	Ladder shape screen
LI1	Level
LI2	Left margin of screen
NUMBER	Number of men each player
MSL	Machine language for transfer of character set to RAM
MP	Background music/sound volume
NP	Number of players
PP	Player screen position
PC	Character behind player
PC	Player colour
PP	Player vertical position
PL	Player shape facing left
PR	Player shape facing right
PL	Player to shape
RM	Right margin of screen
S	Screen
S	Sprite 0
SO	Sprite 0
S1	Sprite 1
S2	Sprite 2
S3	Sprite 3
S4	Sprite 4
SC	Sprite enable/disable
T	Time
VB	Video 0 disturbance location
W	Wall shape
X	Width of player
Y	Y-axis player
Y	Y-axis enemy gangster

There are many variables in the program, thus allowing it to fit in 16K. It should be noted that 0=0 and that this alone saves approximately 900 bytes of memory! The program will probably still work in 16K if the occasional 0 (zero) is typed instead of O (but careful attention should be paid to this point).

There is a very smooth transition from the 'READY' prompt to the main screen achieved through page flipping.

When RUN the screen will go blank for about 6 seconds which is very fast considering that initialisation consists of the transfer (in machine code) of half a character set from ROM to RAM, redefinition of characters, setting up of a lot of variables and the implementation of multiple DLI/VBI routines.

Enough reading! Get that liquor and be prepared for a shoot-out!

Reviews

FILESIXTY Keyboard

Until recently the only alternatives to the flat membrane keyboard on the 400 computer were either to buy an add-on keyboard similar to that found on the 800 and XL series which would normally be fitted by the supplier, or to upgrade to an 800 or XL machine. With the introduction of the FILESIXTY replacement keyboard, a third alternative has become available.

The keyboard consists of a self-adhesive silicon rubber keypad which fits precisely over the existing keyboard of the 400. The keys are raised and of a gray colour with the function of each key shown in white on the top of the key. The keys 'sit' on a brushed steel base which is inset into the gray silicon rubber so improving the keypad's rigidity.

The manufacturers claim that the keypad is moisture and dustproof and will not discolor and that the keys have been tested for up to 35 million depressions. Perhaps the most useful feature is the printing on the steel base of the graphics character available for each key when used in conjunction with the CTRL key. No more hunting for manuals!

Reviewed by Phil Griffin

The review sample was easily fitted to my trusty 400 although I found that most of the adhesive preferred to stay on the peel-off backing sheet rather than the keypad. The first thing to say is that the keyboard looks superb and really looks at home on the 400 improving the look of the machine. As far as actually using it, I felt that the best test was to key in a magazine listing and see how things went.

The keys felt quite solid in use and sprung back positively when released, similar to those on a calculator. It soon became apparent however that for the best results you needed to be really precise in pressing them. Hitting a key at an angle normally produced insufficient pressure to register the keypress which made me become extremely dependent on the computer's inbuilt key-click. I also found that it was possible for keys to occasionally get stuck under the metal fascia which was simple to remedy but an annoying delay.

Reviewing an item like this is always a difficult task. What one person dislikes another will love and much depends on whether you find the existing keyboard easy or difficult to use. Personally I am not so sure that the replacement keyboard gives an advantage in use over the standard 400 keyboard but then I am quite used to the latter keyboard.

Initially, the keyboard will be available by mail-order only but distribution is being extended to selected retailers in the near future. Probably the best thing to do is to go along to your local stockist, when appointed, and try one yourself and then decide on its suitability. The keyboard retails at £14.95.

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Adventure Quest



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Reviews... The Software Reviews... The Software Reviews

HOVER BOVVER Llamasoft 32k cassette 1 player £7.50



Not as dynamic as *Attack of the Mutant Cereals* but another original idea and a challenging game with a true English theme...mowing the lawn on a hot summer's day in England! This one might even give the youngsters a taste of what awaits them when they pack up their computers to become true middle-aged, middle-class Englishmen!

George Bennett (shame about the name!) wants to mow the lawn but his lawnmower has rusted up so he borrows Jim's from next door. No need to ask, Jim won't mind, but he does and soon comes after you to get his mower back. Well, the job's got to be done, see him off Rover...Fill! The Gardener looks on with a smile at the antics but his smile soon turns to frowny as you slip off the lawn and cut up his prize flowers. Tl get that blasted mower-off of him! he says and aims off in hot pursuit. Rover remains faithful in seeing them both off but not for long, his loyalty will hold only for so long and the sound of that mower is driving him spare! Pretty soon he'll come after you as well! This is getting hard work and to make things

worse, the faster you move, the hotter the mower gets until it gets to a boil! Wait for the mower to cool down, keep the neighbour and the Gardener away and you may finish the first lawn but there are 15 more to go and not a chance for a break to go down the pub!

The game is well thought out and well programmed and has good intro and ending screens together with a high score table and sufficient levels of difficulty for even the most expert player. There are nice interludes where you go and borrow a mower (if Jim gets his back, you can go and borrow Jill's then Tom's) and good music throughout which you can switch off if you wish. *Player/Misses* are used to good effect and I love it when the dog goes berserk and bites the neighbour! The flowers could have been made a little more interesting but really that is the only criticism of a challenging and playable game with a somewhat different theme.

I only managed to mow three lawns before I let Tom have his mower back and went down the pub instead, but I am sure you will be mowing for hours on end.

PICTURE TORMENT P.F. Software 16k cassette £3.50

Picture Torment is the latest from P.F. Software and maintains the high standards set by the earlier releases reviewed in issue 11. The program is a sort of Rabbit's Picture Puzzle with the choice of dividing the picture into 9, 16, 36 or an incredibly complex 81 pieces, each with five levels of difficulty that scramble the picture with increasing complexity. Additionally, with the 36 or 81 piece puzzles, you can choose to rearrange them in single or double column format. After selecting your level press START and the picture will scramble. Two diamond shapes appear on the top and left hand sides of the screen representing each column or row. Use the joystick to position these alongside the column or row you wish to move and then hold down the joystick button and move the joystick in the appropriate direction.

The program is similar to Picture Puzzle (reviewed in the last issue) but will run in 16k. The real bonus comes when you flip the tape over and get a fully fledged drawing program that allows you to create your own pictures for use in Picture Torment. The utility has options for Plot, Draw, Colour, Fill, Circle, Square, Load, Save and Wipe and will allow you to create some pretty good pictures to tangle with. One suggestion made by the author is to use the program to teach young children number sequences by drawing the numbers 1 to 9, perhaps with accompanying illustrations representing the



numbers, and then use the 9 piece option and level one or two to get them to put the numbers back in the right order. Even if you can't draw, this is easy to do and I drew out the numbers in about 5 minutes, it really does work well. There is no reason why you can't extend this idea by using the 36 piece option and the letters of the alphabet or perhaps rows of shapes such as squares, circles, and triangles.

Another bargain program, complex enough for adults yet simple enough for youngsters. An incredible bargain at £3.50.

Reviewed by Les Ellingham

Reviews... The Software Reviews... The Software Reviews

ORC ATTACK Creative Sparks 16k ROM £9.95

The idea for this game presumably came from J.R.R. Tolkien's "Lord of the Rings". You control a soldier who must defend the castle wall from the attacking Orcs and their allies. The Orc's strategy is to climb the wall using scaling ladders which they carry in sections, requiring three sections to reach the top of the wall. At higher levels, the dangerous Ninja Orcs appear who can climb the wall without ladders. There are also bonus screens when the Orcs have a set while their allies have a try. These include a wizard who can raise the dead, demon trolls who hurl knives and spider-like creatures called Spine Warts.

To defend the castle, the soldier must use the rocks and

swords which are lying about. He can drop the rocks which split the ladders in two and send the Orcs hurtling to the ground. He can also use the sword to hack at the Orcs when they reach the battlements. All the time he is hampered by other Orcs who fire crossbows from below. If things get tough he can use his secret weapons - a pot of burning oil. This sets the ground on fire and burns the ladders spelling certain death for the Orcs. At the end of each attack, a pyramid of the dead Orcs is formed at the bottom of the wall.

The graphics for the Orcs and their foes are very cute and the game is well worth £9.95 for a ROM cartridge.

NECROMANCER Synapse 32k cassette 1 player

The age of darkness is upon us, shrouding the sun in a gloomy half fog. Men move cautiously, hearts of the forest scuffle silently, fens cover to cover and the spell of black magic hangs over the darkened houses creating permanent twilight!

So the scene is set for Necromancer, the magical arcade/adventure game from Synapse. You control Iluminis, the white wizard, who must defeat Tetragorn, the evil wizard, who rules supreme. To do this you must firstly raise an army of trees/elves like the Tree Ents from Lord of the Rings in the forest. You move a wisp and, by pressing the joystick button, plant a tree. To obtain more wisps you must hit an eye pod which occasionally jumps across the screen with your wisp. You are hampered by the ogres who stomp down the trees before they are fully grown but you can destroy them with your wisp. A more deadly foe is the Forest Spider who poisons the full grown trees causing a sad face to appear on the trunk. The trees can be cured by wiping away the face if you are quick enough otherwise it's another sad case of Dutch Ent Disease!

When you run out of strength you go on to the vaults

where you must prevent the spider larva from hatching out by planting your walking trees over the vaults where the the larva grows. The tree's roots will grow through the stonework and the tree crashes down onto the larvae. You must watch out for the Hands of Fate which may grab you or a tree and pull you screaming into the sky. The Hands leave behind question marks which when touched lower a ladder to the next level or leave you with a mystery prize, not always pleasant. You must also be aware of the Solvating Spider from Sp8 who spits deadly venom, while the Ceylolan Jester Rings give you extra strength.

After leaving vault 5 you enter Tetragorn's lair. Here you must fight Zombie Spiders and a Mother Spider while removing all of the 13 headstones as that Tetragorn, who you also have to fight, can not regenerate himself. When you achieve all of this the forest explodes in a rainbow of colours.

The game has reasonable graphics and a nice little tune but what is more important is that it is totally original, very playable and quite addictive. One of the better Synapse games, definitely worth a look.

TAIL OF BETA LYRAE Datamost 48k 1 player

This is without doubt one of the best Scramble type games available for the Atari. It certainly beats Asterix and Shalt Raider.

The game is not particularly original. You must pilot a fighter craft into the enemy defences and destroy as many enemy installations as possible. It is the amazing graphics, animation and unique sound that make it stand out.

The game begins with the view from the fighter's cockpit as it hurtles through space. Then you enter the enemy defences where you destroy a huge variety of

enemy buildings. You must avoid hitting the mines and being shot down by artillery and surface-to-air missiles. The rolling landscape gives way to an underground cavern which is very treacherous in places until finally you reach the City where you encounter laser cannons.

The graphics are brilliant and the landing when you reach 5000 points is the best sound available on the Atari. No instructions came with my game and I am not sure if there is some final goal. I have yet to see what lies beyond the City...

Reviewed by Craig Fuller

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JAMES BOND Parker Bros 48k cassette

James Bond is one of the newer games from Parker Brothers but is really four games in one since it puts 007 in four different scenarios. You may choose which one you want in each scenario, Bond drives his Lotus Esprit while being attacked by various foes.

Each scenario is named after a film:

November - has Bond attacked by large missiles launched from the sea and air mine-launching submarines while he tries to destroy space mines as they fly overhead.

Diamonds are Forever - where Bond must fight off some very deadly bomb-dropping flying machines while shooting the diamonds in the sky.

For Your Eyes Only - has bullets from below, helicopters

and submarines, as well as some tricky mountains which must all be faced by the indomitable Bond.

The Spy Who Loved Me - in which 007 meets some smaller missiles and some deadlier helicopters as well as the odd oil rig he must drive under.

The graphics are not brilliant and the scenarios have little relation to the films but the game is very playable. There is also some nice animation at the beginning showing Bond getting into his car accompanied by the famous Bond music.

The game is not remarkable but Parker Brothers have produced a reasonable computer game from the screen originals.

Craig Fuller

TANK COMMANDER Creative Sparks 32k cassette 1/2 players

For those of you who are too long in the tooth or slow on the trigger for conventional shoot-ery-eps and cannot get into war games such as Eastern Front, this may be the answer. Tank Commander is a great mixture of strategy and action. You will find yourself in command of a lone tank that must venture forth from its base in the foothills of the western mountains onto a coastal plain defended by computer controlled enemy forces. You are given a birds-eye view of the action which takes place over a terrain consisting of about ten smooth scrolling screens. The terrain includes ranges of low hills, forests, swamps, rivers and roads as well as civilian housing and various military installations. Each mission is different and may require you to rescue a secret agent or go forth and destroy enemy tanks, fuel dumps or command posts. You start with a limited supply of fuel and ammunition which have to be replenished periodically by returning to base.

Your tank is joystick controlled and may take a little bit of getting used to. Forward and backward movement of the handle causes the tank to move forward or reverse, whilst left and right cause the vehicle to turn on the spot. Left or right movement whilst pressing the trigger rotates the gun turret and releasing the trigger fires a shell.

Your tank can travel over any terrain except the hills and rivers. The latter may only be crossed via road bridges. A realistic feature here is that your vehicle's maximum speed varies with the type of terrain being traversed with maximum speed being attained only on the roads. Beware of minefields when travelling across open country and keep an eagle eye out for enemy tanks. These are fairly fast moving and can attack in groups as well as individually. Although fairly fast moving, enemy tanks are slow to fire, at least on the lower skill levels, and are not too difficult to out manoeuvre and destroy.

A more serious threat are fixed gun emplacements usually located near to the enemy command posts. Not

only are they difficult to spot, but their guns have a greater range than your own. Use the small range of hills to cover when trying to get close enough to destroy these gun emplacements but, beware, the occasional shell may find its way through. The most dangerous weapon possessed by the enemy is a rocket-firing aircraft. Your tank cannot shoot down this aircraft and must try to dodge the missiles. All is not lost however, a warning tone sounds immediately prior to an enemy attack and, providing your reflexes are fast enough, you can press SELECT to call up your own fighter plane. Movement and firing of your aircraft whilst it is on the screen is controlled with the same joystick. Your own strikes will help drain your fuel and ammunition reserves.

When located, and in range, enemy targets can be shelled and blown up from any angle. Explosions produce realistic sound and visual effects. Avoid hitting civilian houses since this reduces your points total. At the end of a successful mission you are awarded bonus points and a new mission, harder than the last and with a different landscape. You start each mission with five lives.

The game has a couple of very useful features. Pressing OPTION at any time during play reveals a map of the complete battlespace and pressing the Space Bar will pause the game. Although generally good, the instructions do not point out that you must press the ESC key to reverse play (at least you have to on a 800NL). Loading instructions do not mention that both the OPTION and START must be pressed when switching on XL models during a level load.

Tank Commander can be played by 1 or 2 players and has 5 levels of difficulty. It is a game that combines arcade action with a degree of strategy to produce an absorbing blend. At a price of £8.95 it should become a firm favourite.

John F. Foden

Reviewed by Craig Fuller and John F. Foden

...a utility for indentifying variables

```

4010 FOR A=1 TO COUNT:PO=AN#
4015 POSITION 8,12:Y=50:PO=29,PO:LINE
I=1
4020 IF LI=15 THEN LE=POSITION 8,21:
T="XXXXXXXXXXXXXXXXXXXXXXXXXXXX" :JC
T "X",0:50:100 CL:END
4025 NEXT A
4030 GOTO MENU:GOTO MENU
4035 REM
4040 REM ***** PAPER *****
4045 REM
5000 TRAP 0:TRAP 5005:POSITION 12,11:T
"XXXXXXXXXXXX " :INPUT 00:GOTO 5010
GOTO 5000
5005 POSITION 8,11:T "XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX" :FOR A=1 TO 5
50:NEXT A:GOTO MENU
5010 GOTO MENU:PRINT " VARIABLES
FOR PROGRAM " :JC:PRINT "*****
*****" :LPRINT
I
5015 FOR A=1 TO COUNT:PO=AN#
5020 LPRINT 50:PO=29,PO=28:I" "
50:PO=29,PO
5025 NEXT A
5030 T=CHR(42):GOTO MENU
5035 REM
5040 REM ***** BISC *****
5045 REM
6000 TRAP 0:TRAP MENU:POSITION 8,21:T
" " "PO
5110 12,12:T "XXXXXXXXXXXX" :INPUT
000
6005 00:"0":00:CL:END(00)+1=00:IF 00<4
00<4,33:405 OR 00<4,40:"0:" THEN GOTO
MENU
6010 GOTO MENU:T=CHR(42):OPEN 02,0,
0,0:PRINT 02:0:CLOSE 02:IF CHR(42):
GOTO MENU
7000 GRAPHICS 0:REM
7005 REM
7010 REM **** SEE ROUTINES ****
7015 REM
10000 FOR B=1 TO 5 STEP -1:POSITION 8
,11 "
" :PRINT 0:RETURN :REM > CL:END
10005 POSITION 8,21:T "XXXXXXXXXXXX
XXXXXXXXXXXX" " :GET 02,0:PO=0:1
TO 25:PRINT A:RETURN :REM > MENU ?
10010 T "*****" :RETURN :REM > LINE
10015 T "
" :RETURN :REM CL:END
10100 POSITION 8,21:T "
XXXXXXXXXXXX" " :RETURN :REM
> MENU

```

This is the second of two Variable utility programs. The first WARSORT1 which you will need to use this program appeared in issue 11.

This is a program which takes the noted variables put to disc by WARSORT1, allows you to add a 30 letter description of their use and then print them to screen, paper or disc.

A description of the program follows:

GET THE VARIABLES

Line 100 begins by dimensioning the string variables used in this program. 'AN' is then made equal to 10 (this is the length of the individual variable strings within the long string). The screen is made full width, and a channel opened for input from the keyboard.

Line 110 assigns various well used routines to variable names.

Line 120 assigns variables to the colours used. The numbers used are the numbers to be POKED into the registers.

Line 1000 sets the Graphics mode to 0, clears the canvas, POKES in the colours, sets a TRAP sending the program to the MENU on detecting any fault and empties AS.

Line 1010 sets 00 to equal 'D:XXXX.DAT', sets the print position and prints the heading Title and underlines it.

Line 1015 begins by a precautionary dosing of channel 1, opens channel 1 for input from the above program and prints a couple of messages on screen.

Line 1020 waits for an input from the keyboard, this will be contained in 'A'. 'A' is checked and if 155 (RETURN) then the program goes on to line 1035.

Line 1025 adds the character represented by the ATASCI number in 'A' to AS.

Line 1030 sends the program back to line 1020 for another character.

Line 1035 - when RETURN was detected in line 1020 it signified that the file had been fully loaded and this line then closes the channel.

Line 1040 clears the canvas, doses the screen, prints the heading title and doses a line.

Line 1045 makes 'COUNT' equal to the length of AS divided by the length of the individual string as represented by 'AN'. 'LI' (the screen line number) is set to 5, 'PO' (the screen print position) is set to zero, 'COL' (the screen column number) is set to 1.

Line 1046 starts a loop 'W' running from 1 to 'COUNT'. 'PO' (representing the position of the individual variable string within the long string, changed on each pass - of course) is set to equal the pass through the loop times the length of the individual variable string.

Line 1047 sets the screen print position, prints the variable and adds 1 to the line counter.

continued overleaf

VARSORT 2 continued

Line 1048 checks 'LF', if 1? then 'COL' is checked, if 1 then 'LF' is reset to equal 5, 'COL' to equal 2, 'POI' to equal 14 and the program sent to line 1060.

Line 1050 checks 'LF', if 1? then 'COL' is checked, if 2 then 'LF' is reset to equal 5, 'COL' to equal 3, 'POI' to equal 28 and the program sent to line 1060.

Line 1055 checks 'LF', if 1? then 'COL' is checked, if 3 then 'LF' is reset to equal 5, 'COL' to equal 1, 'POI' to equal zero and the program sent to line 1072.

Line 1060 sends you back for another pass through the loop. When the loop is finished and the variables are printed on screen in three columns, the program passes on to line 1074.

Line 1072 prints a message at the bottom of the screen asking you to Press any Key for another page - this occurs only when the screen is full - pressing any key clears the screen and Line 1073 sends you back for another pass through the loop and so prints more variables.

Line 1074 - when all variables are printed this line prints the total number and the length of the containing string.

Line 1075 prints a message at the bottom of the screen and goes to the Menu.

ADD DESCRIPTIONS

Line 2500 sets the graphics mode to 0, so clearing the screen in the process, POKEs the colours for this section, clears the cursor, empties BS.

Line 2505 establishes the title for this section, centres it, prints it, skips a line and draws a line.

Line 2510 starts a loop 'L' running from 1 to the length of AS divided by the length of the individual string (AN), establishes 'PO' to represent the position of each individual string within the long string (AS), 'PL' to equal the position of the individual string (composed of both variable and description) within 'BS'. The BREAK key is then disabled.

Line 2515 causes the variable (and its number in the list) to be printed at roughly a third down the screen.

Lines 2520 to 2525 ask you to enter a description of the variable on the screen.

Line 2530 prints a line of 30 dots and then takes the print position back to one space before the first dot and then asks for an input, which will be held in E3.

Line 2535 makes F3 equal to the variable at present on screen, E3 is added on to the end of F3 and E3 is emptied.

Line 2540 clears the screen and then prints near the top the contents of F3. At the bottom of the screen you are asked if an alteration is needed, 'N' would send you on to line 2545, but any other key will send you to line 2543 which clears F3 and sends you back to line 2515 to have another go.

Line 2545 makes BS (at the position defined by variable 'PL') equal to F3 and then goes back for another pass through the loop. This continues until the loop is finished and all the variables now have a description tagged on to the end and are all placed in the long string (BS). The program then goes to the 'Press any Key for Menu' subroutine.

MENU

Line 3000 sets the Graphics mode to 0, POKEs the colours for this section, clears the cursor, establishes the title for this section, centres it, prints it, skips a line and draws a line.

Line 3002 sets 'AN' to equal 10, 'BN' to equal 40 and places the print position at the start of the sixth line.

Lines 3005 to 3010 print the items on the Menu. The positions of these lines, after the initial POKe instruction is controlled by the first two characters in each line being an Escape-Tab and an Escape-Shift-Down Arrow.

Line 3015 skips a line (and draws a line) and then asks for you to input the number of your choice.

Line 3040 awaits an input, just the press of a key.

Line 3045 makes this input (by deducting 48) equal the number shown, if they don't match then the program simply goes back to the start of the MENU.

Line 3050 sends the program to the line number as contained in 'D'.

PRINT ON SCREEN

Line 4000 sets the Graphics mode to 0, POKEs the colours, clears the cursor, prints the heading and draws a line.

Line 4005 sets 'COUNT' to equal the length of BS divided by BN (i.e. the number of variables and descriptions) and sets 'LF' to 5.

Line 4010 starts a loop 'W' running from 1 to 'COUNT', makes 'PO' equal to 'N' times 'BN'.

Line 4015 sets the print position, prints the variables plus their descriptions (as defined by 'PO') and adds 1 to 'LF'.

Line 4020 checks 'LF', if 1? then 'LF' is reset to 5, a message printed at the bottom of the screen - Press any Key. Upon doing so the screen clears and line 4025 sends the program back for another pass through the loop.

Line 4030 - when the loop is done and the variables all printed you are asked to press any key for the Menu.

PRINT OUT?

Line 5000 sets a TRAP for line 5005, prints (on the

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MENU and above the item **Print** a request to input the title that you wish the printed copy to bear. The program then skips line 5005.

Line 5005 is the error line, requesting you to check the printer, and then sends the program back to the start of the MENU section.

Line 5010 asks you to Please Wait. The title is then printed to paper.

Line 5015 starts a loop 'W' and 'PO' is again set.

Line 5020 then prints the variable, a gap, and then the description to paper.

Line 5025 goes back for another pass through loop 'W'.

Line 5030 rings the Bell and then goes back to the Menu.

Line 6000 sets a TRAP to go to MENU. As in the print section, a request is printed above the item 'Disk' on the Menu asking you to enter the filename under which you wish to save to disk. This input is held in D08.

FILENAME SUBROUTINE

Line 6005 sets D8 to equal D then D08 is added to that. The filename is then checked and if found to have two D's

in a number where a letter should be the program will return to the Menu.

Line 6010 asks you to Please Wait, rings a bell, opens a channel to write to disk using the filename you have input, prints the data to disk, closes the channel, rings the bell and returns to the Menu.

SCREEN DISPLAY SUBROUTINE

Line 10000 creates a loop 'B' which prints a blank line from line 22 to line 5 and then returns.

Line 10005 is the 'Press any key for Menu' routine, which it prints at the bottom of the screen, waits for an input, pauses and returns.

Line 10040 prints a line of asterisks and returns.

Line 10090 prints a blank line and returns.

Line 10100 prints, at the bottom of the screen, a 'Please Wait' message and then returns.

These two programs are very useful for sending in programs to magazines as readers find descriptions of variables used to be helpful. Also I hope that the utilities will enable you to analyse your own programs and maybe improve your programming techniques.

Project

D-I-Y disk box

by Phil Brown

How about trying something for your disk based system which requires no programming knowledge whatsoever? Make yourself a disk box! Phil Brown sent in one he had made and it really is an excellent and sturdy storage box.

Since purchasing a disk drive I have been amazed at how fast one's disk collection grows and quite soon it becomes a problem to store them. A disk box is the obvious answer but with disks themselves being quite pricey, I did not wish to spend too much on storage. Looking through the catalogues revealed prices between £17 and £30 so I set about making my own and spending the balance on more disks! I have been so pleased with the results that I would like to share the idea with other readers, that is if you are interested in these disk boxes for less than £1!

The box is made of card, is dustproof, anti-static and holds the disks upright with room to fish through for selection. It was designed to hold 20 to 25 disks with covers for dividers. The card used came from a local art shop and is DALER ART BOARD which is available in several colours. One sheet will cost you about 80p and will make three storage boxes as detailed here. The only other cost is a tube of glue and your time but spread it out over a few days and you will still have plenty of time on the computer.

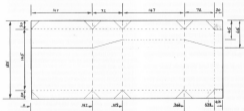


PARTS - Cut from 1mm DALER ART BOARD

- A. Main box - 185mm x 455mm (see diagram)
- B. Base - 145mm x 70mm
- C. Top - 146mm x 71mm
- D. 2 x side pieces (see diagram)
- E. Lip - 144mm x 20mm



Side pieces cut two opposite.



All dimensions in mm.

Cut solid lines - remove shaded areas.

Score dashed lines by cutting lightly about 1/3mm each side of lines and removing thin strip of card.

ASSEMBLY

1. Cut main box piece and draw, on the reverse, all bold and dashed lines.
2. Cut out the shaded triangular shaped pieces from the main box.
3. Score top and bottom 20mm flaps by cutting 1/3 way through the card 15mm to 15mm each side of the dashed lines and remove the strip of board.
4. Score main folds and ensure everything folds fairly easily with the scored lines on the inside. If it doesn't fold easily scrape some card out of the scored lines.
5. Cut the solid lines which separate the lid from the base and score, sparingly, the hinge line.
6. Using a wide black felt tip marker, colour the edges of the card which will improve the final appearance.
7. Gently ease the box into a rectangular tube and glue the sides together with a PVA glue such as Evostick W and use clothes pegs to hold for an hour or so.
8. Cut out base plate and top plate, inside side pieces and front inside lip.
9. Check the base plate fits inside the bottom

of the box. You will probably need to nick off the corners and cut a sliver off one edge at the corner to fit against the box seam. Glue the base plate from the inside, i.e. with the flaps sitting on your work surface. Put weights inside to hold the base until it is set. Make sure first that it is square.

10. Fit side internal edges so that they protrude approx 10mm above the sides of the box and hold in place with pegs. These side pieces must touch front and back because they stop you squeezing the box when it is in use.

11. Fit front inside lip to line up with the side pieces, gluing each end to the side pieces. Put aside until dry.

12. The top of the lid is left until last to ensure that the top closes square. Close the box and glue the top on to the folded lid flaps and put a weight on top until dry.

Put the box somewhere warm for 24 hours to fully dry out and then you can decorate it with your favourite stickers! The box will stay shut but you can secure it with an elastic band if you take it out with you.

You will now need some disks to put inside and you can buy these with the £25 you have saved from buying a commercial disk box!

Renumber by John Owen

Here is a simple routine, written in machine code for speed, that will renumber lines in your BASIC program. The renumber does not tackle line numbers embedded in statements so you will have to renumber these yourself. The best technique is to use variable names for line numbers such as MOVE=50. GOTO MOVE.

To use, simply LIST this program to disk or cassette and then ENTER it with your program in memory. It will attach itself to the end of your program. Type GOTO 32758 and give the starting line and line increment that you wish your program to be renumbered to and set back and wait a few seconds. If you want to use the routine a second time type GOTO 32759 to prevent CODES being DIMENSIONED again.

```

10 REM *****
20 REM XXX BASIC LINE RENUMBERER XXX
30 REM ***
40 REM XXX John Owen 24/4/84 ***
50 REM *****
60 REM
70 REM >>>> RENUMBERER MUST HAVE<<<<<
  >>>>LINE NUMBERS 32758-32767<<<<
80 REM
90 REM >> ONLY LINE No's RENUMBERED<<

```

```

32758 GOM CODES+1000
32759 RESTORE 32764:FOR R=1 TO 100
:READ U:CODES(R)=CODES(U):T=U:NEXT R
32760 IF NOT T=16018 THEN ? "ERROR:SO
:IN DATA STATEMENT(S) LINES 32764-3276
? VERIFY WITH SOURCE":STOP
32761 ? "FIRST LINE NUMBER":;INPUT LN
:PRINT ? "INCREMENT BETWEEN LINES":;INPU
T LINES%
32762 %=USR GADR(CODES):LNERR,LINES%:R
EM NOM CALL RENUMBER ROUTINE
32763 ? "RENUMBER COMPLETE":END
32764 DATA 184,249,55,104,133,284,184,
133,293,184,133,284,284,133,293,288,4,
185,284,249,38,185,134,193,287,185,137
32765 DATA 133,288,168,8,185,285,145,2
87,288,185,284,145,287,145,285,34,181,
288,133,285,145,284,181,284,133,288
32766 DATA 145,284,381,137,144,14,167,
1,133,285,133,283,167,8,133,286,133,28
4,249,284,388,177,287,34,181,287,133
32767 DATA 287,185,288,185,8,133,288,1
68,8,177,287,281,246,288,198,288,177,2
87,281,137,288,183,94

```


GOTO DIRECTORY

The GOTO DIRECTORY is a guide to retailers who provide product support for Atari. Many of these retailers will supply Mail Order so if you have trouble finding a supplier turn to the GOTO DIRECTORY.

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First Steps

by Mark Hutchinson

After having read my advice about using 'editing' characters, I am sure that a few of you have tried this in one of the other text modes. If so, you will have found that the characters are displayed on the screen rather than perform their editing function. This is because GRAPHICS 1 and GRAPHICS 2 are specialised display modes, whereas GRAPHICS 0 is primarily used for program input, and so has full use of the editor. If you wish to save memory by not using a host of POSITION statements, the answer is very simple. Call the GRAPHICS mode that you require, then fool the operating system into thinking it is GRAPHICS 0 by POKE \$7 0. This will allow you full use of the editing facilities. The only problem is that the OS believes that it has a 40 by 24 screen to scrub with, in actual fact, it has a good deal less. This is a minor problem as you, the programmer, will make allowances for it.

I am sure that some people who read this column use a NEC 8023 printer. I, and the Editor, would love to see a NEGATARE user group started so that we can find out more about this wonderful graphics printer and how to use it to the full. Any offers of help to myself or Les please. For those who are interested, this is my first sojourn away from my trusty typewriter to using TINYTEXT (courtesy of PAGE 6) via the Blackthorn interface and, after a few fumbling steps, I think I am doing quite well.

I recently received a letter from Paul Pratt asking about tutorials for a beginner. I think that leaving out the manuals was a terrible mistake by ATARI and I hope they change this practice for the expected forthcoming sales drive (some chance! \$4). The following recommendations are only my opinion and may differ from yours according to your needs. Please, before you purchase anything

(program or book) make sure that you peruse it well.

For the outright beginner 'ATARI BASIC, a self teaching guide' - Ablesoft (the Wiley manual) is still an excellent choice, even if it is based on the 400/800. So too is the ATARI basic reference manual. XL guides are in short supply so, although I have not read it, 'Getting started' (600XL) - P. Google must be worth considering. Next would come a good memory map, 'Hopping the ATARI - Compute, or the cheaper 'Master Memory Map' - R. Stuart. If you have not been able to afford the price of American magazines, then you could consider the series of Compute books, a compilation of past ATARI articles. Then you could progress on to the 'Technical Notes' and 'Do It AtARI'. Beware of books with games listings and programs of 50 games, you will find far superior listings in magazines.

Software is another league. Do you want a tutorial that is not hidden in a game, or do you want a game that you have to decipher to find out what is happening? The BAUG tutorials show you the how and why, then it is up to your imagination and willingness to use the information. The same goes for the Tricky Tutorials. In my opinion, the first 6 are good but the latest ones I find a bit warty and they rely heavily on machine code.

Once you have worked through that lot, you will be at the stage where you want utilities and as that is too big an area, I will now sign off.

Don't forget to write. It is your letters that provide the inspiration!

Write to Mark at BAUG SOFTWARE, P.O. BOX 10, BELFAST, BT10 0DB

More SCREENDUMPS from a picture disk in the MACE library. Authors unknown.



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