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Vol. 4 No. 3

July 1988

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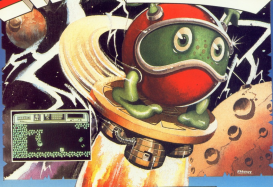
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such accolades as Game of the Month in Computer and Video Games, and was awarded a Crash Smash.

■ What reviewer Bob Chappell said about the Atari version:

"Starquake is top-notch fare... quality dripping from every byte"

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All major listings in this issue are accompanied by checkmarks to help you overcome typing mistakes. For full details of how they work, see the article on Page 36 of this issue.

Gallup Software Chart

THIS MONTH	LAST MONTH	TITLE (Software House)	COMMENTS	PRICE
1	▲	ZYBEX <i>Zeppelin</i>	New software house has a success on its hands with Zybox. More new products are planned too.	2.99
2	●	REVENGE 2 <i>Mastertronic</i>	Goff Minter's long-awaited sequel to <i>Revenge of the Mutant Camels</i> — as strange as ever.	1.99
3	▼	GRAND PRIX SIMULATOR <i>Code Masters</i>	This simulator has been ousted from its number one spot — but it will be around for a long while yet.	1.99
4	▲	RIVER RESCUE <i>Alternative</i>	Budget house Alternative has a profile output and this release of an old title has proved to be popular.	1.99
5	▼	SPEED ACE <i>Zeppelin</i>	Zeppelin's second title in the Top Five but now leading down. New one to look out for is <i>Orion</i> .	2.99
6	▼	SPOOKY CASTLE <i>Atlanta</i>	You can read the review in this issue of <i>Mean</i> ! It's even difficult to get off the bottomless.	1.99
7	▼	STEVE DAVIS SNOOKER <i>Blue Ribbon</i>	Another one which made a repackaged comeback. Good for its genre and deserved the number 3 position it achieved in May.	1.99
8	▲	LEAGUE CHALLENGE <i>Atlanta</i>	An unusual game from Atlanta, but excellent value at the price for football enthusiasts.	1.99
9	●	MATTA BLATTA <i>Silverbird</i>	Budget houses continue to dominate the charts, and this is the new one from the rebranded Telecom budget range.	1.99
10	●	FOUR GREAT GAMES 3 <i>Micro Value</i>	Micro Value presents you here with four full priced games — our favorites being <i>Rebound</i> and <i>Phantom</i> .	3.99
11	●	ATTACK OF THE MUTANT CAMELS <i>Mastertronic</i>	If you have never taken on these monstrous beings this is your chance. Worth buying at the price.	1.99
12	▼	SPACE SHUTTLE <i>Firebird</i>	An old but good scenario, and again at the price you cannot go wrong. A nice simulation.	1.99
13	●	KIX START <i>Mastertronic</i>	For materialise specialists. Not too special, yet a good introduction to this sort of game.	1.99
14	●	SPY VS SPY <i>Dunobyte</i>	Spit action penny into the world of Spavatcher and espionage. Great game for two players.	9.95
15	▼	BMX SIMULATOR <i>Code Masters</i>	CodeMasters is renowned for its simulations with nice graphics, good sound and fun.	1.99
16	●	COPS 'N' ROBBERS <i>Atlanta</i>	Outbox earned back as a game and as a concept. Read our reviewer's comments in this issue.	1.99
17	▼	WINTER OLYMPIAD <i>Tynesoft</i>	Action-packed events for the sportsman, and if you can't face the snow there is <i>Summer Olympiad</i> to look forward to.	9.95
18	●	WARHAWK <i>Firebird</i>	Great music but let down by the graphics. Let's hope that the Silverbird range improves.	1.99
19	●	UNIVERSAL HERO <i>Mastertronic</i>	A maze complex is at your disposal with good use of sprites throughout this addictive multi-level adventure.	1.99
20	●	TRANSMUTER <i>Code Masters</i>	A space-like type game which plays well and sounds smooth — a nice simulator title from Code Masters.	1.99

Sales up, income down

ATARI Corporation's results for the first quarter of 1988 show an increase in net sales worldwide compared with the same period last year - but a \$90 million drop in net income.

The figures, however, are distorted by the inclusion of results from the Federated Group - the American chain of retail outlets which Atari acquired in October 1987.

With the Group's results taken out of the equation, Atari's figures show a 98 per cent increase in net sales from \$65.1 to \$127.3 million, but little change in net income.

Despite the figures, Atari president Sam Tramiel remains optimistic. "The Federated Group is now representing a break even point", he said.

"The fourth quarter, the season's strongest, should show a modest profit". The shortage - and price - of drum chips has also hit results. "The company has opted to absorb the additional drum costs rather than increase prices", he continued.

"It is the company's view that the drum shortage and related high cost will begin to ease later this year".



ATARI determined to capture as much of the Christmas market as possible, is to spend \$400,000 on TV advertising to boost sales of the 1300AE and VCS 2600 games consoles.

Plans to promote the machines before last December's rush failed when the EEA objected to the content of the proposed commercials.

A spokesman for the EEA told Atari User the objection to the earlier scripts had been that the advert did not comply with its code of practice.

"Children's ability to distinguish between fact and



Atari plans big TV drive

fantasy will vary according to their age and individual personality", he said.

"With this in mind, no performance of toys and games must be simulated by the excess use of imaginary backgrounds or special effects".

A spokesman for Atari

said: "We were caught out last year by the EEA's rules on advertising.

"However, our proposed campaign meets all its criteria and the new commercials are sure to attract a tremendous amount of interest from first time computer buyers".

GAMES MACHINE ROMS FLOODING IN

in this country even though it is very popular in other parts of Europe.

"We plan to make as many titles as possible available as the machines can get the recognition that it truly deserves", he said.

Palen Electronics has signed agreements to import around 400,000 units, which it feels will be

required to meet the demands of existing users.

"The market for the VCS 2600, and for new cartridges, is potentially massive", said Cook.

All of Palen's games will retail for £3.99. Titles include Microsurfer, Fire Fighter, Cannon, Atari Attack, Seahawk, King-Pu Master and Star Voyager.

Online charges held

DESPITE this month's surprise Microsoft/Prestel price increases, MicroLink has denied reports it is to force it into also raising its charges.

From July 1 Microsoft/Prestel subs go up 21 per cent from \$80 to \$97.95 a year for home users, with business users paying \$719.95.

Peak time charges are to rise from \$5 a minute to 7p,

and free off-peak usage has been scrapped - users will now have to pay 7p a minute.

Full peak time rates will now apply on Saturdays between 8am and 6pm.

However, MicroLink says its annual subscription will remain at £28 for home and business users alike and it will continue to operate off-peak rates for the whole of Saturday and Sunday.

Atari pioneer returns

THE Atari wheel seems to have gone full circle: Nolan Bushnell is returning to the company he founded - to design video games.

After selling Atari in 1976, Bushnell set up his own toy company, Acbie, which has been less than successful of late. Acbie will now assume the role of research and development facility, drawing royalties from the sale of technology, while Bushnell concentrates his activities on video game design.

The move comes as Atari gears up for a new drive into the home entertainment market, currently worth an estimated \$1 billion in the States - and still growing.

The games - an as yet unspecified number - will be developed exclusively for Atari's 2600 and 7800 consoles and the first releases are expected to be on the market before the end of the year.

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Tele-booking – Reserve train and theatre tickets, check flight details worldwide, or order from a vast range of products – from flowers to floppy disks.

Telesoftware – Download directly into your Atari any programs from the ever-growing library now available on MicroLink – both games and utilities.

Company searches – Obtain facts about any British limited company in seconds, and fully analyzed financial information on over 100,000 major companies.

Translation – Access the biggest and most up-to-date multi-lingual dictionary in the world, with over 200,000 words.

News – Use the powerful search commands to pinpoint vital business information from the world's leading news services, newspapers and periodicals.

Redtelexing – If you also have a portable radiotelex you'll be alerted each time an urgent message arrives in your mailbox. So you're always in touch.

Gateways – Get through to New York in just five seconds – or key into the BBC computer in Luxembourg, which links you to 600 databases throughout Europe.

All you need – again from your Atari – is a modem, which plugs into your telephone wall socket, plus suitable communications software.

We have provided two possible options on the left.

Whichever equipment you use, you will be able to call MicroLink, open your mailbox, save to disc any messages waiting for you, and disconnect in as little as two minutes.



Two recommended packages

If you have an 800 interface:
Plus! Nightline manual modem + cable (7TH/70 PLUS) Mini Office II (475.00)
Total price: £136.10

If you don't have an interface:
Modem 9600/300 V31, V23 modem + external interface + cable + external software.
Total price: £140.00

With either combination you can also log on to other databases and bulletin boards all round the world.



More than 90 per cent of subscribers can connect to the MicroLink computer at local call rates.

YOU CAN GET MORE out of the computer and send it to the address before. You will receive full details of services and costs, together with an application form. Complete this and within days you and your Atari will be able to use all the services of MicroLink and Telecom Gold.

Please send me full details about MicroLink, and information sheets about the following hardware and software options (please tick):

Plus package Minicore package

Name _____

Address _____

Postcode _____

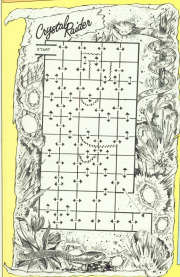
Send to: MicroLink, Boston House, Allington Park, Allington, Mansfield NG19 4AP.

Crystal Raider

This month's hints start in the form of a map to the superb Crystal Raider game by MasElectronic. Unfortunately, the author forgot to put his or her name on it, but thanks anyway.

The map shows all the rooms and their entrances and exits. Some are split into two sections and others allow you to bypass large sections of the game to get to the exit quickly.

Following the map carefully should make it possible for you to complete this intriguing game.



Your HINTS & TIPS

We welcome letters from readers giving their help with games on the Atari that they would like to pass on to other readers. The address to write to is:

Hints and Tips
Atari User
Europa House
Arlington Park
Arlington
Massachusetts 02160 440

Basil the Great Mouse Detective

AFTER recently completing this superb game from Gamma Graphics I decided to compile a list of all the items you need to collect to complete the various levels.

Level one: Items:	The shops and docks Dagger, gun, silver, flowers and key.
Level two: Items:	The sewers Bone, hat, card, tooth and fruit.
Level three: Items:	Ratigan's den Letters, padlock, candle, cigar and flowers.

—David Harris, Yvelley, Camberley.

Mini Office II



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Make a speedy recovery

MICK RANDLE gives you an all-singing, all-dancing routine for retrieving damaged files

Isn't it strange how something as cool and calculating as a computer can provoke so many human emotions? There's the shoot-'em-up player's exhilaration in combat followed by his excitement of achieving a high score. Or the adolescent's concentration on a problem and his satisfaction in solving it.

Then there is the Basic programmer's determination to master the computer and his elation when his program works correctly.

But there's also the anger when his program subsequently fails to load, followed by abject despair when he remembers that he did not make a back-up copy. All manner of nerves seem to queue up to corrupt a program file saved on a magnetic medium.

After calming himself down the programmer considers what can be done to save the situation. If it was stored on cassette there's very little he can do except rewrite it from scratch.

If it was stored on disc he could dig out a utility program in an effort to reconstruct the damaged file. Even then he has less than a 50:50 chance of success.

That is where this utility - Recovery - allows him to salvage his Basic program file by recovering all data up to the damaged section and writing it out as a new Basic file.

Atari Basic permits you to save your programs in either text format or tokenised format - see the articles in the March, April and May issues of Atari User. The text format, which is also known as the list format, is invoked by the LIST "C:" or LIST "D:FILENAME" command, while the tokenised format is invoked by the SAVE or SAVE "D:FILENAME" command.

Tokenised files are usually preferred since they are shorter and they load considerably faster than text files, but they do suffer from a disadvantage when it comes to data corruption.

When loading a program file, the operating system will abort the load process if it encounters corrupted data. If it was saved in text format all data up to the damaged section will be retained in memory, making the best of a bad situation.

However, if the file was tokenised all data will be lost. This loss shows itself as a being cruel, particularly when most cases of corruption occur at the very end of a five-minute session file.

The reason is that the first few bytes of a tokenised file contain pointers for the computer's operating system. These tell the computer to expect a file

of a specified number of characters. Data corruption causes the load process to cease, which results in too few characters being loaded.

This confuses the computer which takes the easy way out and resets its pointers to their default values, ignoring the code that has just loaded. The end result is that you have absolutely nothing to show for those long hours you spent programming.

This utility will help to reduce the disaster to manageable proportions by reading a tokenised file into a memory buffer from disc or tape. It will stop reading at the damaged section and recreate the missing operating system pointers to account for the shorter file length.

It will then write the modified file to disc or tape. This new file can then be loaded back into memory in the normal way by using CLDND or LOAD "D:FILENAME".

Unfortunately, it's not possible to read past a corrupted section, but it is a damned sight better than having to re-write the whole program from scratch.

Program 1 is the full utility listing and I have avoided the use of awkward-to-type control characters,

except for the machine code string in line 180. Data statements are the alternative but they are exceedingly boring to enter and they delay program initialisation considerably, so I opted for the string.

If you don't feel up to typing line 180 you can enter Program 1, which will create a disc or tape file in list format. After running the program, type NEW and read the file into memory by typing ENTER "C:" or ENTER "D:LISTFILE".

Now list the file to the screen, just to be sure, then enter the rest of Program 1.

Leave out the REMs if you wish and, as always, use Get It Right to check your work - but remember that this will affect the cumulative checksum value. And don't forget to save a copy of the new program before running it.

The program is designed to be used to operate by the most inexperienced and will work on all 8 bit Atari computers, although 16k machines may not have sufficient memory to recover long files.

On running the program, you are met with a message telling you how



From Page 12

much buffer space is available. You are then asked to tell the program whether your corrupted file is stored on cassette or disc. Enter C or D as appropriate without pressing the Return key.

If you respond with a D for disc, you are asked to enter the filename of the corrupted program. Use the Delete key to edit the filename if you mistype a letter and press Return when finished.

Disc users should ensure the control disc is in drive one, and cassette users should place the correct tape in their program recorder then press the Play key. Press Return when prompted and wait for the program to do its job.

The program will read as much data as possible from the corrupted file and place it in a memory buffer. On reaching the damaged section, disc users will probably hear their drive grinding around as it tries to read the bad data - don't worry this is perfectly normal.

Similarly, cassette users may hear weird popping and beeping sounds from their monitor speaker. Just remember that patience is a virtue. After a few seconds the sounds will stop and the program will display the number of bytes it has managed to read from the file, together with confirmation that the file is damaged.

If the data corruption is marginal, it may be possible for the whole file to be read. In such cases, the number of bytes recovered will be displayed and the program will report that the file is intact.

Be careful! If the number of bytes recovered is the same as the maximum possible file length - it will probably mean that the buffer is full and you have insufficient memory to read the rest of the file.

The utility will then calculate how many bytes are missing from the original file and rebuild Basic's pointers to correspond to the new shorter file.

Disc users are asked to enter a destination filename. You should not use the original disc, which must now be treated with suspicion because if one program was corrupted others may have suffered the same fate, and writing to the disc could possibly corrupt more files.

Cassette users should prepare their program recorder by installing a cassette and pressing Play and Record.

After pressing Return, the file will be re-loaded to tape or disc. It can then be re-loaded in the normal way by CLoad or Load filename.

Now you have the task of rewriting the missing part of the program.

Hints and tips

Data corruption has occurred when the data stored on the tape or disc is different to the data sent out by the computer. There are many causes, such as a dirty or physically damaged magnetic surface.

Disc users can minimise the risk by always writing with verify, during which the computer checks the data by reading it back from disc immediately after it has written to it.

Cassette users can only keep their fingers crossed, since Basic doesn't possess a verify routine for cassette files - unless you have typed in the cassette verify routine from the June issue of Atari User.

Have you realised how some people are rarely troubled by data corruption, whereas others seem to be plagued with it? By observing the following precautions, the risk of corruption can be minimised.

- Always keep your discs or tapes absolutely clean. Never touch the magnetic surface. Human body oils and contamination are guaranteed to attract dirt and dust, and dirty surfaces cannot record data correctly.

- Always return discs and tapes to their boxes when you have finished

with them to avoid the risk of airborne contamination.

- Keep your magnetic head clean - and that doesn't mean get the scrubbing brush out. You can buy head-cleaning tapes and discs from your computer dealer.

- Try to keep data cables away from power cables. My recorder refused to save while a main cable sat too near to its arrival lead.

- Before using a new tape, always fasten it to the end, turn it over and fasten it again. This evens out the tape tension which helps the recorder to maintain a constant speed and sometimes a troublesome tape will load afterwards.

- Use about C15 or C20 tapes and record only one program per side. Shorter tapes help to maintain speed/stability.

- Try to use good quality tapes. I prefer TDK but less expensive tapes will do the job so long as you avoid the cheap and nasty type - you only get what you pay for.

- If you still have problems with your program recorder, have the head alignment checked by your local dealer. This is a common cause of cassette problems but special equipment is required to adjust them correctly.

Sometimes the data corruption occurs very near the beginning of a file, which does not give you much to work on. In such cases you may just as well re-write the program from scratch.

If the file will not even begin to load then I am afraid that it must be considered a write-off. In practice most

corruption seems to occur near the end of very long cassette files, so you should not have too much work to do.

This utility is not a miracle cure, but it is certainly a powerful weapon against the lead-inve grundle and a valuable addition to the Basic programmer's toolbox.

```

1 REM HELLO WORLD PROGRAM
2 REM BY BOB BARRILL
3 REM 1/1/82 BDB
4 REM RECORDER A 16000000000000000000
5 REM FILE 1 000000 1000 0 DISK
6 REM *****
7 REM 0000 00 0 0000 00 00 00000000 0
8 REM 0000 00 10000000 10000 1000000 00
9 REM BREAK KEY
10 REM 0000 0000 000000 000 100000 000 00
11 REM 0000 0000 00 00000 000000 000000 0000
12 REM 0000 00 0000 000000 000000 00000000 0000
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Make every word count...

LEN GOLDING gives you a superb utility to cut out the chore of totting up all your word processor files

COUNTING words in an article or short story is about as stimulating as counting sheep, and has been known to produce similar results. Unfortunately, most editors insist on at least an approximate word count and if you're paid by the word, you'll have a healthy interest in the figure yourself.

Most of the latest generation word processors contain a rudimentary word count facility, but many of the earlier ones, including Amstariter — do not.

Moreover, if you're setting type or planning page layouts without the aid of a desktop publishing system, you'll often need some indication of word lengths and total number of characters to be printed, in these circumstances a simple total words figure isn't much use.

This program is designed to take the drudgery out of word counting and to

give you facilities which are not available in most commercial word processors.

It analyses the text to show how frequently words of a particular length occur and gives a total letter count, as well as the total number of words you have used.

Although it was designed particularly for Amstariter, it can also analyse any text file saved in Ascii format, so it will work with most word processors such as Mini Office II.

Also, text sent down telephone lines via a modem or other communications device is usually transmitted in Ascii format, so you can use this program to analyse the received data.

It's extremely easy to use. You simply Run the program, enter the name of the file you want to check, insert the disc containing that file, press Return and stand back.

The chosen file is OPENed by Basic,

a USER statement then calls the machine code routine which handles all the analysis at about one thousand words per second.

This routine starts by loading the entire file into memory, at an address just above the Basic program. If any fault occurs during this process you will hear a beep from the TV speaker and the routine will hand control straight back to Basic.

If all is well, the routine will begin to read the text — if an error occurs the routine will simply prompt you to re-enter the filename again.

It skips over any initial formatting commands, end-of-line characters and blank spaces until it finds the start of the text itself. This is defined as the first character whose Ascii code is above 64 — it is usually an upper-case letter.

It then works its way through the text, incrementing the counter whenever it reaches the end of a word. Three things can mark a word end — a space, carriage return (Ascii 10) or an embedded printer code. None of these are counted as part of the word. If several end-of-word characters occur together — such as a string of spaces or carriage returns — only the one immediately following a word will trigger the counter, the rest will be ignored.

When it reaches the end-of-file, the routine hands control back to Basic which then closes the MD channel, performs various calculations and prints the results on screen.

There are a few points worth noting

Save to Page 10

```

10 DIM TEXT(255)
20 OPEN "C:\LEN\1001.DAT" FOR INPUT AS #1
30 INPUT LINE TEXT
40 IF TEXT="" THEN GOTO 100
50 FOR I=1 TO LEN(TEXT)
60 IF TEXT(I)="" THEN GOTO 100
70 IF TEXT(I)="" THEN GOTO 100
80 IF TEXT(I)="" THEN GOTO 100
90 IF TEXT(I)="" THEN GOTO 100
100 PRINT "TOTAL LETTER COUNT = 123456"

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15 155 155	100 100 100	100 100 100
16 166 166	100 100 100	100 100 100
17 177 177	100 100 100	100 100 100
18 188 188	100 100 100	100 100 100
19 199 199	100 100 100	100 100 100
100 100 100	100 100 100	100 100 100
110 110 110	100 100 100	100 100 100

► From Page 17

about the program's operation. It starts counting from the first character whose ASCII code is over 64. This means that if, for any reason, your text starts with a character lower down in the ASCII table, that character will be ignored.

The routine will skip over embedded printer commands, no matter how long or short and whether or not they are separated by spaces from the surrounding text. However, if one occurs in the middle of a word it will effectively split that word into two and count them separately.

This could happen if you need to change character sets - say to produce an accented it in the middle of a word - but you can avoid this problem by inserting your printer codes just before and after the word. Subscript or superscript characters will always be counted separately from the word they are tagged on to.

Once the routine has started counting, numbers and inverse characters - other than those used in embedded printer codes - will be treated as normal text. Symbols also qualify and

are all counted as three-letter words as in:

CLM 10% 515 "X" @80

Punctuation marks are treated as letters. In the sentence:

Try it - it's easy!

the isolated hyphen will count as a one-letter word, and easy! counts as five letters. On the other hand:

Manic-depressive

counts as a single 18-letter word.

Headers and footers are handled differently depending on the text file format. With AtariWriter files, any words contained in headers or footers are counted only once. In ASCII format, they are counted again for every page on which they occur.

With long text files the word lengths will average out, so a total word count will give a fairly good indication of how many pages the printed text will take up. But with very short pieces - a character count is likely to prove more useful. This program gives the total

letter count, ignoring spaces between words, and a block character count which includes the spaces but assumes that the text is all one paragraph.

This is no more than a rough guide to actual type-setting space, since allowances must obviously be made for the start and end of paragraphs, different space widths if your text is right-justified and different character widths if you're working with a proportional system. However, it does give a better approximation than a word count alone.

The text analysis can also give you a very rough indication of the reading level required for the piece. A story or article with few words above five letters is likely to suit non-fluent readers.

Popular articles and fiction will normally be biased heavily towards words of eight letters or less. If you have a high preponderance of 18-plus words - like preponderance - the text will be difficult to read and even worse to understand.

You might get away with it in a technical or professional journal, but there's no way you'll sell it to an editor of a popular magazine.

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Atari Data Bank	£19.99	£18.99	£1	£12.99

Turn to page 53 to take advantage of this superb offer

LOTS of letters to catch up with an account of the fact that I've been holidaying at the South Pole for the last four weeks. I just love getting a nice ice tea (ours write) - it doesn't hurt get the wind up Docs when they see my deathly pale mug looking towards them out of the mist.

I met a couple of explorers while I was there - you should have seen their faces when they saw my flag - two loose lamps remnant on a field of oil - fluttering from the top of my luxury, fuel-lined igloo.

They were even more aghast when they heard: "Who's a pretty boy, then?" emanating from the beak of a rather fat penguin that I had befriended and taught to speak. Laugh - I thought I'd burst in a puff of purple smoke!

So without more ado, let's catch up on the backlog of mail and deal with your latest letters, requests and responses. Special mention first of two heroes, M. Row and M. Kenry from Enfield. These two adventurers have supplied me with much detailed and helpful information on Alternate Reality: The Dungeon, Well done, dynamic duo - you are hereby Rouloc's most admired personalities of the month.

Grateful thanks also to Douglas Sharp of Burgess Hill for his tips on Leather Goddesses of Phobos, and all other readers who have kindly taken the trouble to write in with tips for a variety of adventures. Space prevents my thanking you all individually and from publishing every tip received - but keep up the good work.

An old Suedi Adams adventure, Pyramid of Doom, is causing Jeff Hansen of Leicester a little difficulty. He keeps getting torn to bits by the iron statue of the Pharaoh in the throne room, and eaten alive by the

Help is only a letter away

by
Rouloc

purple worm in the portal. What a life!

A more modern adventure is also giving Jeff some grief - he wishes to know how to deal with the evil presence in the translucent rooms in infocorn's superb Enchanters. The answers to these problems are at hand. Patrick Niemeijer from Holland has furnished his list of cherished adventures and role playing games. See how your own favourites match against it.

Patrick explains that adventures such as Stationfall and Guild of Thieves are missing from his list because they are very difficult to obtain in Holland.

Mark Powell of 21 Hillside, Bell Lane, Lewes, East Sussex BN7 3LA kindly offers Alan User readers help with any of the following adventures: Hollywood Hijax, HH20, Prize of Magic, Red Moon, Lords of Time, Golden Baton, Mystery Funhouse, Pyramid of Doom and Woodoo Castle. Don't forget an SAS when you write.

Mark reckons the Eden Transport System (ETS) in Worms in Paradise to be mind-boggling. Even after studying the list sheet, he is none the wiser. He thinks it is a shame that the ETS is so unnecessarily complex, as the game itself is brilliant. Is there a simple way to go where you want, he asks. Can any of our readers help him?

The opaque cases in Guild of Thieves are proving obstacles to



Calvin Leighton from Shenwood. For Calvin and other stumped would-be Guild members, see this month's tips.

Michael Snow of Bracknell is wrestling with Quest for Eternity but doesn't know how to fix the spaceship - can anyone help? I suggest that this is Michael's first adventure, if so, I suggest you try something a little more friendly, Michael, like Lords of Time or Dungeon Adventure. Quest for Eternity is rather hard and inflexible and I would not recommend it to a beginner.

The same goes for Alex Yeo of Beds. He's teaching Cloak of Death, another tough and old fashioned breed of adventure. Alex is trying to get into the haunted bedrooms, but without success. Does anyone know how?

He has some help for Sam Ingram of Wolverton - Alan User, April - with Quest for Eternity: To get the computers to work, type ENTER ASP on the terminal. Thanks for that, Alex, perhaps you can now help Michael Snow with his problem.

Ron Rainbird from Holmes Chapel, Cheshire, isn't terribly impressed with the ending to The Powers. Up until the

PATRICK NIEMEIJER'S 10 FAVORITES

Adventures:

- 1 High Inker's
- 2 Evanchanter
- 3 Dallas Quest
- 4 Deadline
- 5 Jewels of Darkness
- 6 The Pawn
- 7 Dark I
- 8 Silicon Dreams
- 9 Myrdon's Quest
- 10 The Incredible Punk

Role-playing games:

- 1 Alternate Reality I and II
- 2 Ultima IV
- 3 Sample of Apathal Trilogy
- 4 Ultima III
- 5 Saturn of Hercules

4 From Page 10

business with the blue key he was enjoying the game, but when he found among other things that you could only use the key once and that there were two many red bearings, he mentally placed it on his "forget it" list. "What was the object of the whole game?" Ron asks. Good question.

I'm apt to agree — The Pawn doesn't really hang together as a cohesive story, and the puzzles are a bit arbitrary. But the good news for Ron is that *Guild of Thieves*, The Pawn's successor, follows a far more logical line and is altogether a much, more satisfying adventure.

Incidentally, Ron has already made it to the final dungeon in *SD's Wizard's Crown* but is unable to solve the maze on the second level. Any suggestions?

Pressure on space means the promised tips on *Ultima* will, I'm afraid, have to wait a while — rotten old Roulon seems to love teaching his readers that patience is a virtue for adventures!

That's all for this month. Exciting adventuring!

HINTS AND TIPS

Exchanger

- Need help in the translucent rooms?

Use the pencil and eraser to trip the evil greasies. There is more than one solution but the following will work: Start at room M, Connect P and F, Connect M and R, Erase M and V, Erase P and F. Now go to room P and collect the powerful scroll.

- Winding stair going on forever?

It's an illusion. Step it with the Kubrak spell but watch your step!

Pyramid of Doom

- Iron Statue tearing you to pieces?

In the throne room, throw rope, go rope, then throw tube.

- Purple worm a pain?

Don't hang around too long — purple worms are dangerous! Make sure you search the dead

explorer and the pile of rubbish in the prison cell.

Guild of Thieves

- Want to open the opaque case?

Roll a five on all the dice. Didn't you notice that the pattern of rooms resembles the five spot side on a die? Shades of Tarzan and the frog answer in *Mordant's Quest*? Put the dice in the respective coloured slots and the case will open.

Leather Goddesses of Phobos

- Require the headlights?

In the bedroom in Cleveland, cut up the sheet, tie the pieces together, tie the resulting rope to the bed, throw it — the rope — out of the window and get Tiffany/Tweel to climb down it.

- Angling for 82 degrees?

Put the un-tangling cream in the T-remover and see what you get. Use the product on the special angle.



MILES BETTER SOFTWARE

221 Gannock Road, Chesham, Bucks,
Saults WB1 3DL. Tel: (0494) 488778



UK Retail	Cover	Price	UK Retail	Cover	Price	UK Retail	Cover	Price
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Ball of Fire XIX	12/84	12.95	BALL OF FIRE XIX	12/84	12.95	BALL OF FIRE XIX	12/84	12.95
Ball of Fire XX	12/84	12.95	BALL OF FIRE XX	12/84	12.95	BALL OF FIRE XX	12/84	12.95
Ball of Fire XXI	12/84	12.95	BALL OF FIRE XXI	12/84	12.95	BALL OF FIRE XXI	12/84	12.95
Ball of Fire XXII	12/84	12.95	BALL OF FIRE XXII	12/84	12.95	BALL OF FIRE XXII	12/84	12.95
Ball of Fire XXIII	12/84	12.95	BALL OF FIRE XXIII	12/84	12.95	BALL OF FIRE XXIII	12/84	12.95
Ball of Fire XXIV	12/84	12.95	BALL OF FIRE XXIV	12/84	12.95	BALL OF FIRE XXIV	12/84	12.95
Ball of Fire XXV	12/84	12.95	BALL OF FIRE XXV	12/84	12.95	BALL OF FIRE XXV	12/84	12.95
Ball of Fire XXVI	12/84	12.95	BALL OF FIRE XXVI	12/84	12.95	BALL OF FIRE XXVI	12/84	12.95
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Discs from Q to A

Peter Davidson asks the questions. Steve Evans, business development manager of Micro-stat, has the answers.

Q What is the difference between a single and double sided disc, and can I use a single sided one as double sided?

A All manufacturers aim to produce double-sided, double density discs and the discs are then tested to see which category they should be sold in.

Obviously, double sided discs can be used as single sided, but often a single sided disc will work in a double sided drive.

Business users who need reliability should use high quality double sided discs, but home users will probably have no problems using single sided discs in a double sided drive.

Q What is the difference between single and double density and which should I get for general use?

A Again if all discs were of the highest quality possible the density would be 80% - sometimes known as quad density.

During certification they are given the appropriate labels and as with the single/double sided question, using the cheaper disc (in this case 40%) usually works on most drives.

Q What does the term tpi that you keep using mean?

A Tpi stands for tracks per inch and is the number of tracks that were put on and read from the disc as it was made.

The most common sort of disc is a double sided 80 tpi disc, usually known as a double sided double density disc.

Q Some discs are thicker than others. Do thick discs have any advantage over thin ones?

A There is an IBM standard that determines everything about the disc, including thickness. Volume production houses and some companies attempt to save money by using thinner PVC for the discs.

This accounts for the variation, but if you buy a good, branded disc you should have no problems.

Q Is it OK to cut a notch and new timing hole on the other side of the disc and flip it over in a single sided drive?

A Discs designed to be flipped over are now available and there is no harm in using these or normal discs with extra notches on the correct place. There are stories that it is bad for the disc to rotate backwards in its

slowness, but this is only true of discs with cheap sleeves.

Q Is there any advantage in having a disc that is welded all the way round rather than just sealed in spots?

A Floppy discs are often bent slightly as they are put into the drive. So it could be said that the spot welded ones are better because they allow more flexibility. It all depends what point the advertiser wants to put over.

Q Is a hub ring necessary or is it just a gimmick that advertisers use to make us buy their discs?

A They are necessary on some makes of drive but not those usually used on the Atari 8 bit. However, if you regularly use discs with hub rings in your drive you may find that ones without will slip.

Q Are all discs made of the same material?

A Most discs are made by striking ferric oxide to the actual disc using a mylar base. High density discs for the IBM PC/AT and clones use cobalt and a slightly different mylar base giving them a "cobalt coating".

Q What is the difference between soft and hard sectored discs, and can either type be used on my Atari computer?

A Both types are completely different and not interchangeable. All modern discs are soft sectored which means that the sectors are recognised by software rather than by physical attributes of the disc.

Q Occasionally I have had discs that stick in their sleeves. What causes this and how do I avoid it?

A High pressure round the edge of a disc can bring the disc into the

sleeve. Do not put too many discs in a box or subject them to pressure in any other form.

Q What does formatting do to a disc?

A Formatting "draws" the tracks and sectors on to the magnetic surface of the disc and also puts other information that the disc operating system needs on to it.

Q What does the term Clipping Level mean?

A I liken this to dropping a ball - it will only rise part of the way back to where it was dropped.

When a disc is made a signal is put on to it and the level of this signal is 100 per cent. The level that can be read back is called the clipping level.

On both discs (used by software houses for disc duplication) this level is usually around 80 per cent, while for a good quality disc the figure is 90 per cent.

Disc drives respond to levels of 30 per cent and lower, so there is quite a large margin.

Q What advice would you give to someone purchasing a disc?

A Business users need high reliability and should therefore buy discs that are certified for the use that they intend to put them to.

Home users are more concerned about the price, and providing backups are kept, reliability is not so important.

A reasonably priced single density disc will probably work even as an 80 track double sided disc and even if you have to reject some, they will work out a lot cheaper than double sided, double density ones.

The best way is to buy one of a particular make and see how well it performs for your applications.

RETURN OF T

In the January 1988 issue of *Atari User* I looked back at some golden oldies from years gone by. At the time of the article the new Atari XE Games System was already an tale and there was a distinct possibility that some of these old favourites would re-emerge on to the software market.

However, Atari had different views on this subject and has re-released on rare cartridge five classic games formerly available on disc and



Archon: The Light and the Dark

You are about to enter the ultimate battle in the Universe – the struggle between the powers of light and darkness. The fate of the world rests in your hands.

This is a futuristic version of chess fought over two battle-grounds – strategy and combat screens. The first is divided into squares like a chess board, with you and your opponent taking turns to move your pieces – legions of mythical and legendary creatures.

The combat screen is an enlargement of a strategy square occupied by one of your pieces and one of the enemy's. This is a one-on-one battle zone where opponents fight for their lives.

The aim of each side is to control five power points or to annihilate the opposition. Pieces can move in one of three ways – on the ground, in the air or by teleporting. A useful tip is to remember that your creature will fight better on a square of its own colour – however, some squares change colour throughout the game.

You have control of 18 pieces in your regiment, each having its own characteristics and fighting skills. This leaves room for a lot of thought and timing to be employed during the game. To stand a chance of winning a conflict you will have to learn the individual abilities of each piece.

Each side is controlled by a powerful magician – Wizard on one and Sorcerer on the other – representing good and evil respectively. Each can cast spells to affect the game – teleport, heal, shift time and many more.

Archon is ideal for players of strategy games who want just a little bit more for their money. Just try it and see.

NEIL FAWCETT takes a look at Atari's re-release of some classic arcade games

Rescue on Fractulus!

The Earth forces are at war with the evil Jaggies who have seized control of Fractulus, the most inhospitable planet this side of the Kalamari system. Up in space the brave Star-stroop pilots have been holding their own, but down on the planet's surface things are looking a little desperate.

The Jaggies have built defensive gun emplacements all over the rugged mountain tops and canyons and tanklike saucers constantly buzz the whole area. If this isn't bad enough the atmosphere is pure cyantric acid – and will burn through your spacesuit in minutes.

However, there's always some good news. You have been given the newly modified Valkyrie Class Fighter equipped with a Direct Mirror Shield, Elictric Navigation System – a computer-enhanced view-screen which allows you to see through the acid atmosphere – and the AMB torpedo which will destroy a target if it hits anywhere near it.

This is the best sci-fi shoot-'em-



up crossed with a hint of flight simulator I have played – you can tell it's of Lucasfilm Game Design by its all-round brilliance.

It's got everything: Wonderful graphics, superb sound effects and even an alien party that harnesses an your cockpit until it breaks and you have to death. If you like a nice little screen as a game take a look at this one – it's stunning.

The game starts with you in your fighter looking forward at the launch tube of the Mothership, which is positioned above the planet. As you launch, the tunnel zooms towards you at high speed until you are spotted under computer control to descend through the yellow acid atmosphere and into battle.

Now the fun begins. Manual control is returned to you and you must fly your V-wing fighter just like a real plane – forward on the joystick to descend and back to climb, right and left bank you in the relevant direction. Pressing fire will launch one of your AMB torpedoes, of which you seem to have an ample supply.

In addition to the joystick controls you must learn some keyboard options. For those of you who have an XE Console without the keyboard you can use the function keys. If you are using a computer like the 130XE you have a choice of these or the actual keyboard. All the controls and touch notes are explained in the excellent manual that you receive with the game.

Fractulus is totally addictive and opens for the real games players among you. If you do get it have fun, but above all: Get those spacers off the planet – fast.

THE ROMS...

cartridge. They are Blue Max, Rescue on Fractalus, Ballblazer, Archon and Fight Night.

In an attempt to support the 8 bit market, Atari has priced the roms at £16.99 - I remember when a Star Raiders cartridge cost £26 - which is affordable by the average man in the street.

The packaging for each is beautifully presented with full colour artwork and also included is an easy-

to-read Game Manual detailing the scenario in full.

A point to bear in mind is that it is very difficult to damage a rom cartridge. Providing you don't plug it in while the computer is still switched on, you will have a very happy medium for program storage that will last for a very long time.

Fight Night

This game helped to fill a gap that had for a long time been ignored - boxing simulations. Written by Accolade last year, it offers you the chance to create a boxer and then enter into competition with other fighters.

You have five different modes of play - construction, main event, sparring, training and tournament.

You control your boxer using the joystick, and have the choice of eight different moves - guard up or down, fake or throw a punch and more.

In the construction mode you can create up to 24 boxers by selecting from a range of heads, bodies, feet and shorts - rather like Frankenstein did - with the exception of the



shorts, that is. The game offers well animated graphics and adequate sound effects.

It also has its amusing moments, especially when your opponent throws one of his special punches - which can be anything from spinning around to sock you one or logging you one on the top of your head.

Fight Night is an amusing and entertaining sports simulation that will give hours of fun.



Ballblazer

It is the year 2697 and you are about to become a contestant in the newest and fastest built sports game in the Universe. This is your chance to become the ultimate champion.

Strapped into your Rocofol, a hovercraft like vehicle capable of speeds of up to 50 metres a second, you must gain control of the Plasmorb and shoot it through your opponent's goal.

The game uses a split-screen similar to the one used in Speed Ace by Zappalin which shows a simultaneous first-person perspective for each player. Once the game gets going the sheer speed is awesome.

There are three play modes: Regulation game, practice mode and spectator mode. A game lasts for three minutes and offers the ultimate in two player, head-to-head competition.

A very original game that offers a challenge to both your nerve and speed of reactions. For another programming delight from Lucasfilm Games.

Blue Max

Originally released by Broderbund software in 1983, the game is based around the flying exploits of Max Chetworth, a World War I fighter ace. You control Max - using a joystick - in his fighter-bomber biplane as he seeks revenge for the annihilation of his squadron.

Your mission is to shoot down aircraft, bomb ground installations and penetrate the enemy city. Once there you must bomb the three red or blue flashing targets and land on the next runway to complete the game. Don't worry if you miss a target - you can land and prepare for another assault.

The main play area scrolls diagonally from right to left. This,

coupled with the shadow of your aircraft, gives an illusion of depth to the screen. Enemy planes constantly butt you and added to this hazard are anti-aircraft gun emplacements which fill the sky with a hail of flak - survival isn't very easy.

Your biplane is very manoeuvrable, allowing you to adjust your altitude at any time. This means you can shoot enemy aircraft at any level or reduce your height to between 21 and 26 feet for air-to-ground strafing runs. Be very careful when doing this - if you drop below 18 feet it's kaboom!

Unlike most shoot-'em-up games, you only have one life. However, your plane can survive hits by enemy fire or flak a number of times before it crashes.

A status line at the bottom of the



screen reports the plane's condition. For example, F indicates that you have a fuel leak and G means that your machine gun is damaged and will only fire intermittently.

Blue Max is a fun game to play and is very addictive. I played it first time around and now it's available on rom I can recommend it to everyone.

Through the Gateway

Gateways are connections to other computers. MicroLink has a number of these, to British, European and American databases, and one which has come in for a lot of publicity recently is the USA-based *Memotalk* Videotex service.

This offers similar features to MicroLink, but as it's mostly used by American subscribers it is intriguingly different in style.

But the number of MicroLink subscribers using the gateway has made an impact. The UK SIG (Special Interest Group) has passed a message on to MLUG commenting on this, and asking us for our ideas and reactions to the service.

They also have online parties, a number of subscribers get on line at the same time and use the *Memotalk* CHAT facility to discuss anything that seems worth talking about.

So if you've ever fostered a secret ambition to invade America, this might be just the way to do it.

Linkup

Most MicroLink members - even the active ones who regularly chat, mail and use the Bulletin Board (BB) -

only know their fellow MicroLinkers as names and numbers. And most subscribers have questions and suggestions about the service, judging from the enthusiastic discussions on features and performance that pepper the BB.

So how about meetings, where users can get together in convivial surroundings and perhaps get to button-hole a MicroLink official specially imported for the occasion? That's the idea behind the Linkups.

So far, volunteers have said they'll organise Linkups in Manchester, Birmingham and London. As everything is being sorted out on the BB, dates, times and venues are extremely flexible as things become more definite they'll be published in *Magshot*. And if the Linkups are as successful as they should be, they could well turn into regular events.

For the latest details on Linkups, mail *MAG5818* or check on the board.

Umbrella organisation

Starting a small business is encouraged these days, but anyone going it alone for the first time soon discovers a huge range of problems - bureaucratic, financial and

practical - which can sap the energy of even the keenest start-up.

ExpertLink is a new service aimed at both new and established businesses. Run along the lines of the bulletin board, it provides access to two teams of experts, one based at the University College of Swansea and the other based just about everywhere.

The first group consists of professors and lecturers with qualifications in a wide range of subjects from law to ergonomics. The second has an even wider base of experience - the MicroLink subscribers themselves. Many of these run small (and not so small) businesses, and have solved the problems themselves.

Subscribers can either post a question for public discussion or send it for confidential consideration by the UKS team. And anyone can volunteer answers, or pass on a useful contact name, or even offer a service themselves.

Quick!

Your tortoise is an fire. What do you do? This month has seen some more unusual bulletin board entries, some of which could conceivably solve your problem.

For answers of insect-derived reptiles, either the

Tortoise Trust (*MAG3833*) which has been offering advice and leaflets on the care of the tortois or the Monopside Fire Museum (*MAG-108838*), which consists of loose fire engine enthusiasts, might sort things out.

Other ideas currently under discussion on the board are chess games via Email, a poetry corner, and geology with computers. Someone's even trying to sell their latest music album, while MicroLink has made nobody a rock star yet there's always the first time.

More mundane matters like how to get sorted out, like how to send mail to New Zealand or how to download software to an IBM PC, it just goes to show; all you have to do is ask.

Shots in the dark

This page of news has to be prepared weeks in advance of publication - an inherent problem with such archaic technology as ink and paper.

Things change fast on MicroLink. So a weekly MicroLink User Group newsletter is published on the system itself. This can reflect what's happening faster, as well as dealing with individual problems, promoting discussions (hopefully!) and giving updates on new features.

It's called *Magshot*. Written by Rupert Goodwins (*MAG5818*) it's posted on the Bulletin Board (1-888) in the SIG category late on Sunday evening each week.

It's also sent via MicroLink/Telecom Gold electronic mail to a list of people who would either get a copy mailed to them than use the BB. This also means that Telecom Gold users who aren't MicroLink subscribers can see what they're missing. Again, contact *MAG5818* if you fall into the latter category.

Getting carried away

...is one of the reasons the Cambridge Computer 286 has been so popular. A number of MicroLink subscribers either have one or are interested in the board. And in the tradition started by Brian Yaffet-Lewis' (*MAG11237*) Archimedes User Group, a 286 group has started up on MicroLink.

This one's organised by Vance Burton. Everybody in

the group keeps a list of all the other members, and the Email system makes it easy for anyone to send a request for help or a new discovery to everyone else.

And if nobody in the group can solve a particular problem, then as soon as Cambridge Computer comes up with the answer it can be distributed to everyone.

The Archimedes group

has been doing great things since its inception. Discounts for members on a range of commercial software have been arranged, and contact made with several suppliers. It must also be the only automobile discussion forum which is entirely free from commercial considerations; the only people making the news are the users themselves.

Software

SCENE

Lodesagold

Product: Lode Runner
Price: £19.99 / £19.95
Supplier: Software Express,
214-218 Abury Road, East
Birmingham
Tel: 021-228 2565

MANY years ago when I first got my Atari 800 and 800 disc drive I bought a game from America called Lode Runner. At the time it was a disk-only game, and I used to make my late desk-owning friends go green with envy every time I played it.

For me it is one of Bunker-Bond's greatest games and now it has been released on rom cartridge everybody can play it.

The storyline involves your exploits as a highly trained Galactic Commando charged with returning a vast hoard of gold stolen by the power-hungry leaders of the repressive Bungleling Empire.

You have just discovered the enemy's secret subterranean catacombs and you must make your way into

them and recover the gold. It is stored in several locations ranging from the pockets of the guards who chase you to lying on the floor or buried in the walls.

You will have to dig your way into the walls to get at it — but be careful, it's very easy to entomb yourself.

You have been equipped with a laser drill pistol that allows you to dig holes in the floor in which to trap the guards.

When they fall in they drop any gold they are carrying, allowing you to collect it. But be very careful, if you fall down your own hole they'll get you or cover you with earth.

Once you have collected all the gold from a particular level you will hear a short tone and a ladder will appear leading to the top of the screen. Climb up it to the next level.

The best part of the game is that you can create your own screens. This means the only restriction to the playability is your own imagination — the more you



Fair game — it's easy to get entombed!

keep designing the longer the game goes on. If you want to keep your newly-created levels you must have a disc drive attached containing a blank, newly formatted disc.

Even if you don't fancy designing your own screens the 160 levels which the game features will keep you occupied for a very long time. The packaging says there are only 76 but someone has miscounted.

Your lode runner can be controlled by a joystick in part one or by the keyboard. I found the latter offers more control when you're in a tight situation. To change this option press Control+L at any time.

When you start the game you are given five lives but if you press Control+F it will increment this number to a maximum of 255 which is more than enough.

You can also alter the speed of the game by pressing the cursor left or right keys.

Control+A will sacrifice a life if you are trapped, Con-

trol+G will toggle which direction your drill works when you press fire and Control+R will end a current game. If you press Control+U it will advance you one game level.

The handbook feature can be accessed at the main title screen by pressing Select. This will move you into the Play Level select option where you can move the joystick up or down to play any of the 160 screens.

The graphics and sound effects are average and the game's strength lies in its playability. Never have I been as addicted to a game as I was with Lode Runner.

Addictiveness, playability and the option to design your own screens make it a winner in my books. If you like a challenge for Lode Runner, you won't be disappointed.

Ray Sharp



Watch out for the traps in the middle!

Sound	8
Graphics	7
Playability	10
Value for money	8
Overall	8

Software

SCENE

Tasteless trivia

Product: Cops 'n' Robbers
Price: £1.99 (tape)
Supplier: Atlantis Software
Limited, 28 Station Road,
London SE78 5AD.
Tel: 01-771 9642

In *Cops 'n' Robbers* from Atlantis you play the part of the infamous jewel thief Fingers Lonsagen who is about to break into the Atlantis Diamond Company and steal all the most diamonds which are lying around.

There is also an abundant supply in the mine, which is rumored to be haunted by ghosts.

Your problems start when you set off a burglar alarm which brings the police on to the scene and they are

now combing the area looking for you.

You have a .38 Magnum and a limited supply of bullets with which to shoot the police as you make your way through the buildings.

Now shooting policemen is not my idea of a good thing to teach children to do. Alas, from a distant planet OK, but not your neighbourhood bobby.

However back to the game. After you have collected the diamonds you have to take them back to your getaway car.

Your perspective of the game shows a plan view of the mine and buildings with a side view of your man which unfortunately makes



the game look very childish. The graphics are pathetic and the sound effects dismal. The game is playable but not for long.

It appears to have been thrown together quickly to get it on to the market. Sadly for the author and the company involved, it's a disaster.

Ray Sharp



Sound	2
Graphics	2
Playability	3
Value for money	3
Overall	3

Ghosts and ghoulies

Product: Spooky Castle
Price: £1.99 (tape)
Supplier: Atlantis Software
Limited, 28 Station Road,
London SE78 5AD.
Tel: 01-771 9642

OVER the years the horres of many games have had stupid names. But in *Spooky Castle* from Atlantis I feel they have gone too far. How do you fancy being called *Ghostless Gary*?

Now for the story. The beautiful Princess Clare has been abducted and imprisoned by demonic ghosts deep within a castle.

Bather unwisely King Michael has offered her hand, and only her hand, in marriage to the person who finds her and brings her back.

The local village idiot - that's you - decides to undertake this hazardous mission. So you journey through the castle trying to



avoid nasty bats which drain your energy and the deathly ghosts.

One thing not mentioned on the cassette inlay is that you can fall off the battlements if you get your jump wrong. There were times when I thought I had got it right, but still died. A bug in the program?

But don't worry too much, there is always something to help you. Potions and crosses which give you extra energy and lives are scattered around.

The 17 rooms that you visit are locked and each contains the keys that will

allow you to leave them. You start with five lives - and you'll need every one.

Even though this is a budget game I found myself wondering if it was really worth the price. The graphics are below average and the sound effects are, to be honest, boring.

However, the main problem is that it is so difficult to play. Instead of getting steadily harder as the game progresses this one starts by being difficult and rapidly becomes impossible.

I like a game that challenges my gamesmanship, but I soon tired of this one.

It is another platform game in the same mould as *Great Chase* but not as good. The ridiculous timing often frustrated annoyed me, and I'm sure there could have been a better title design than just a Graphics 0 screen with writing on it.



So, the masochists among you may spend your £1.99 on it - but don't blame me if you end up in a padded cell through sheer frustration.

Pete Winkler

Sound	2
Graphics	2
Playability	0
Value for money	2
Overall	2

Software

SCENE

Gem of an adventure

Program: *Jinxter*
Price: £19.95
Supplier: Rainbird, 7th Floor,
24 Mark Dorking Street,
London WC1A 9PE
Tel: 01-259 3081

THIS is your lucky day. Just when you might have begun to think the supply of good Atari adventures had all but dried up, along comes Rainbird with a magnificent offering.

Jinxter sets you loose in a puzzle-filled universe where your luck is all that stands between your success and failure.

The nasty green magicians have snaffled a magical charm bracelet, dismembered it and scattered the lucky pieces around the country. Your job is to recover them and save civilization.

You'll have some help if you get into any fuss. A Guardian from Beyond The Realm Of Time is never far away but he's not at all what you might think.

Imagine a misanthropic Arthur Daley who has little else but cheese sandwiches on his mind, wears a herringbone overcoat, and uses such literary expressions as "wossname", "harrmian" and "doodah" and you'll have some idea of this fellow but very funny character.

Jinxter has been written by Michael Bywater of Funck and the Magnetic Scrolls team - the latter responsible for the award winning *Guild of Thieves* and *The Pawn* - you might expect it to be imaginative and funny. And it is - very.

The adventure comes on two discs and features full-screen size, attractive black and white graphics of several of the locations. These pictures can be scrolled up and down at will - they simply overlay the text - by use of the Start and



Select keys.

The game is expansive - far too big to be contained into the Atari's memory all at once - and so makes frequent accesses to the disc. This naturally retards progress somewhat, but you can speed things up considerably by switching off the graphics.

You begin on a bus and, depending on how you handle the ticket inspector and where you decide to get off, you should soon find yourself at Never Ending Lane.

At this point the Guardian should put in his first appearance. He will pop up from time to time, particularly when you are in difficulty.

In fact, an unusual feature of this adventure is that you

can't get killed. Well, there is just a teeny exception to that rule but I'll let you discover it for yourself.

Whenever you're in danger of shuffling off this mortal coil, up pops the Guardian either with some timely advice or to heal you out of your tribulation.

But beware, every time he assists in this way or you put a foot wrong, you'll use up a bit of your luck - and you'll need it all for the deconstruction.

Magic features prominently in *Jinxter*. Every charm you find has its own magical ability, and the spellcasters' names are like nothing you've seen before in an adventure.

Wasenacolin, Doofee, Dojine, Thingy and Doodah are the names of the

charms, and these are the words that you'll have to use to work your magic.

There are lots of imaginative puzzles and stimulating sequences in *Jinxter*. In particular, you'll enjoy solving the riddle of the bakery where you won't be allowed to leave until you've baked a decent loaf of bread.

The game is packed with wit and humour and has the most richly detailed and futuristic prose seen on your Atari.

The command parser is a delight to use and the vocabulary seems huge - having a response for almost everything in the game.

The usual ability to save and load a game state are included - and you're certainly going to need them to complete the epic with full marks.

The program is handsomely boxed and comes with an adventure reference card, a copy of the Independent Guardian - which contains, among other things, a host of coded clues, a staff memo and a liver mat advertising Old Mouse Sotter ale.

Jinxter is a hoot from beginning to end and is the best adventure for the Atari since *Guild of Thieves*.

Rainbird and Magnetic Scrolls are clearly the tops when it comes to adventures for your 8-bit Atari, and *Jinxter* confirms their deservedly high reputation.

This one has bit written all over it. Buy it without a moment's delay - this really is your lucky day!

Bob Chappell

Presentation	B
Atmosphere	B
Realism	ND
Value for money	B
Overall	B

FORT APOCALYPSE

by Bryan Stevens

KEY

==== Rescue platform



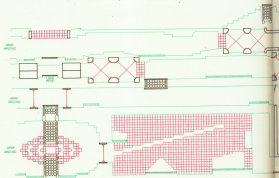
"Shootable" blocks: Shoot or bomb these to progress into lower levels to rescue men.

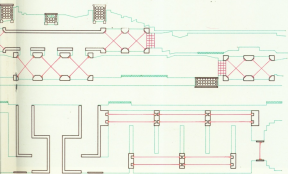


Transporter: Randomly transports you to another.



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ATARI
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All the colours of the rainbow

LEN GOLDING continues his Basic series
by looking through the graphics window

THIS month we depart from the familiar programming screen and embark on a journey into the world of multi-coloured graphics. We'll explain how to print coloured letters, numbers and symbols anywhere on screen, using **COLOR** and **PRINT**, and how to change their colour with the **SETCOLOR** command.

Let's start by examining the new screen format. Try running this program:

```
10 GRAPHICS 1
20 PRINT "A, B, C"
```

The screen splits into two - a large black area at the top and a smaller blue area at the bottom. The black area contains the word **TEST** in large, upper-case, multi-coloured letters while the word **READY** appears in the blue area.

The black area is known as the graphics window - the small blue area is the text window. A normal **PRINT** command will always send its output to the text window, which is why the **READY** message appears down there.

If you want to print anything in a graphics window, you must specifically instruct the computer to do so - that's what the **#G** is all about.

PRINT #G always means: Print to the Graphics window. You can't use this command in Graphics 0, because its entire screen is one big text window, so there's nowhere for graphics data to be displayed.

You can remove the text window from Graphics 1 and Graphics 2 screens by adding 16 to your **GRAPHICS** command number. This will give you a slightly bigger graphics-only window. Try changing line 10 to:

```
10 GRAPHICS 16
```

and run the program. The result is a

bit odd: The screen goes briefly dark all over and, if you're quick, you might just see **TEST** printed as before, but then the screen returns to Graphics 0.

It does this because Basic has to print the **READY** message somewhere. If there's no text window open, it automatically jumps back into Graphics 0. This isn't normally a problem since games and other real programs never come to an end - there's always some kind of loop which keeps them running indefinitely. You can then simulate this by inserting an infinite loop into our short test program:

```
10 GRAPHICS 16
20 PRINT "A, B, C"
30 GOTO 10
```

Now the screen will stay in Graphics 16, but the computer is completely tied up. You have to press **Break** or **Reset** to regain control. Basic will then transport you back to Graphics 0.

You'll get a similar result if there's no text window open when Basic tries to execute an **INPUT** command, or if a reportable error occurs. For this reason, it's always best to keep the text window while you're developing a program.

Graphics Modes 1, 2, 17 and 18 allow you to print letters and other keyboard characters on screen, but you can use only the upper case or the lower case set at any one time. However, the text is larger than in Graphics 0 and you have four colours to play with. Table 1 shows the screen characteristics for the four new modes.

Text in a graphics window will normally be printed in upper case unless you switch to a different character set - as we'll explain shortly. If you try to print lower case or inverse letters they will still come out in upper case, but the colour will change.

Upper case letters will give you

Colour register	Default colour	Characters affected by this colour register	Sample SETCOLOR command (using the default colour values)
0	Orange	Upper case letters and numbers	SETCOLOR 0,0,0
1	Yellow	Lower case letters and brightness of text in the text window	SETCOLOR 1,0,10
2	Blue	Inverse numbers, inverse upper case letters, and text window background	SETCOLOR 2,0,0
3	Violet	Inverse lower case letters	SETCOLOR 3,0,0
4	Black	Graphics window background	SETCOLOR 4,0,0

Table 1. Colour in Graphics Modes 1 and 2

orange, lower case yellow, inverse upper case blue and inverse lower case violet.

These default colours can be changed using the SETCOLOR command - Table 1 gives all the relevant information.

Can you see now why the word TEST came out as it did? By changing the program so that the word is printed all in orange, or all in yellow.

The POSITION command works very nicely with graphics windows so long as you stay within the screen boundaries. For example:

```

10 GOTO 10
20 PRINT "A"
30 PRINT "A"

```

will print TEST in yellow upper case letters in roughly the centre of the screen, but you can't use POSITION to place characters in the small text window.

If you want to produce any non-standard layout down there you'll have to build it from scratch, using PRINT to start a new line and spaces to shift text horizontally.

Commas and semicolons will continue to work as PRINT statement modifiers in both text and graphics windows:

```

10 GOTO 10
20 PRINT "A,B,C"
30 PRINT "A,B,C"

```

In each case the comma causes a

jump of 10 character widths to the right.

The LOCATE command also works well, but it doesn't behave in quite the same way as it did in Graphics 0. Instead of just returning an Ascii code, LOCATE also tells us the letter's colour. This will be easier to understand if we first look at two new basic commands: COLOR and PLOT.

It's unfortunate that COLOR - note the spelling - and SETCOLOR look so similar, since they really have very little in common. Unlike SETCOLOR, the COLOR command does not change a colour register; instead, it specifies the parameters to be used in a PLOT statement.

Confused? Let's look at it in more detail.

COLOR and PLOT always go hand-in-hand. In Graphics 1 and 2, COLOR is used to select a particular character/colour combination. PLOT is then used to position that character on screen and print it. For example:

```
10 PRINT PLOT 0,0
```

means something like this: (Select the character whose character/colour code is 0), then print it, in the specified colour, at coordinates 0,0 of the graphics window.

You can see that PLOT behaves rather like a combined POSITION and PRINT statement. It's more convenient because once you've specified the COLOR parameter you can PLOT it as many times as you like, to different

Start on Page 24

4 From Page 33

positions on screen. But how do we know what COLOR code to choose for a particular character/colour combination? For the answer - look it up in Table II.

The only colours you can choose from are those currently held in colour registers 0 to 3. Let's assume that they are holding their default colours, shown at the top of each column in Table II.

We're using the upper case character set, so ignore the lower case (LC) columns for now. Every one of the 64 upper case characters gives you a choice of four different code numbers, each corresponding to a different colour. The code for a yellow I is 1, a blue 7 is 191 and an orange A is 85. So

if you ran this program:

```
10 COLOR 1
20 COLOR 191, 85
```

you will get an orange letter A printed at centre screen. If you change the COLOR number to 208, the A will turn violet.

Experiment with different values in the COLOR and PLOT commands until you feel comfortable with the upper case character set and can print any of the 64 characters, in any of the four colours, anywhere on screen.

- That's enough for now. Next month we'll take another look at the LOCATE statement and give you a simple game to demonstrate the techniques we've covered so far.

COLOR REGISTER						
	0	1	2	3	LC	LC
Group	Yellow	Blue	Violet	Orange		
32	0	160	128			
33	1	161	129	1		
34	2	162	130			
35	3	163	131	1	1	
36	4	164	132			
37	5	165	133	2	1	1
38	6	166	134	3	1	1
39	7	167	135			
40	8	168	136	4	1	1
41	9	169	137	5	1	1
42	10	170	138	6	1	1
43	11	171	139			
44	12	172	140			
45	13	173	141			
46	14	174	142			
47	15	175	143	7	1	1
48	16	176	144	0	1	1
49	17	177	145	1	1	1
50	18	178	146	2	1	1
51	19	179	147	3	1	1
52	20	180	148	4	1	1
53	21	181	149	5	1	1
54	22	182	150	6	1	1
55	23	183	151	7	1	1
56	24	184	152	8	1	1
57	25	185	153	9	1	1
58	26	186	154			
59	27	187	1	1	1	1
60	28	188	156	1	1	1
61	29	189	157			
62	30	190	158	2	1	1
63	31	191	159			

Table II: Character codes used with the COLOR command

COLOR REGISTER						
	0	1	2	3	LC	LC
Group	Yellow	Blue	Violet	Orange		
64	96	192	224			
65	97	193	225	1		
66	98	194	226			
67	99	195	227	2		
68	100	196	228	3		
69	101	197	229	4		
70	102	198	230			
71	103	199	231			
72	104	200	232			
73	105	201	233	1		
74	106	202	234	2		
75	107	203	235	3		
76	108	204	236	4		
77	109	205	237			
78	110	206	238			
79	111	207	239	1		
80	112	208	240	2		
81	113	209	241	3		
82	114	210	242			
83	115	211	243	1		
84	116	212	244	2		
85	117	213	245	3		
86	118	214	246	4		
87	119	215	247			
88	120	216	248			
89	121	217	249	1		
90	122	218	250	2		
91	123	219	251	3		
92	124	220	252	4		
93	1	221	253			
94	126	222	254			
95	127	223	255			

LC = Upper-case set

LC = Lower-case set

1 These codes are not used

This Toolkit is a MUST!

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TO ORDER PLEASE USE THE FORM ON PAGE 53

✓ Get it right! II

For new and old readers alike we reprint our superfast checksum program and explain it in detail

A number of readers have written asking what the strange tables of figures alongside each listing in the magazine are used for. Well they're designed to show you where an error is in a line you have just typed in. They work in conjunction with a special program last printed in the November 1987 issue of *Am! User*.

Since probably quite a number of new readers won't have seen the original article we have decided to reprint it for their benefit and for those of you who missed it the first time around. In fact, this version is slightly shorter, since it no longer scans the 256 byte buffer area - which was in any case overwritten by data as soon as the program was used.

Get It Right II is a checksum generator program written completely in machine code for high speed operation and ease of use. There is no need for you to constantly save and reload your program since it sits permanently in memory always ready for use.

In addition it does not require the use of page six, or indeed any of the zero-page locations, making it compatible with almost any program you might type in.

The first thing you need to do is type in the program listing. This is a fairly simple Basic program which will create a boot cassette or autorun disc containing the Get It Right routine itself.

You should be especially careful when typing in the DATA statements since they contain machine code routines which must be entered accurately for the program to run at all.

When you're sure you've typed it in correctly, run the program and you will be asked if you want to make a cassette or disc version. Press C or D accordingly and the computer will prepare the appropriate machine code. This will take roughly 40 seconds. Cassette users should now

To make a GIR II disc version

- 1 Format a new disc and write your own choice of Dos files to it - for example using the H option on the Dos 2.0 menu
 - 2 Boot the system with this disc in place
 - 3 Type in and run the program. Select option D for disc
 - 4 The file AUTORUN.SYS will be written to the disc in drive one. This disc will now become your GIR II Master Disc.
- You could create a different filename by altering line 3030 - see your Dos manual for possibilities.

place a fresh tape in the recorder and wind it to the beginning.

When you hear the two beeps press the Record and Play buttons followed by the Return key. The computer will now create an autoboot tape version of GIR II for you. This will take another 40 seconds.

Disc users should make sure there is a formatted Dos disc in drive one with at least 10 free sectors available for the AUTORUN.SYS file which will be created. This disc will become your new boot disc so you should have already written any Dos files you require to it - Option H on the Dos 2.0 menu.

This checksum routine has been designed to work with most types of Dos with a LOWMEM value below \$3000 - such as Dos XL or SpartaDos - and it will automatically adjust itself to suit your particular memory configuration.

If you don't wish to save the final program as an autorun file you could alter the filename on line 3030 to suit your own system. SpartaDOS users could call the file D:GIR.COM and access it when required by simply typing GIR from the command processor.

From this point on you won't need

the full Basic program again. Instead you should use the master disc or boot tape which you have just created each time you power the system up. The disc version is automatic - simply turn the computer on with your newly-created GIR II master disc in drive one and the checksum program will load into memory.

Cassette users should place their new GIR II boot tape in the recorder, rewind it to the beginning and press Play. Then turn the computer on while holding down the Start button and press Return after the beep. Loading will take about 40 seconds, after which the checksum program will initialise itself. You should not hold down the Option button when loading GIR II.

After loading is complete using either disc or tape you will see the message:

```
007-01-0001-01 ... loaded 00
```

followed by the normal READY prompt.

Obtaining a checksum from the new system couldn't be simpler. After you've typed in the Basic program you wish to check you should enter the command:

```
1007 00
```

and the checksum will appear on the screen.

To momentarily stop and start it simply use the Control+3 keys in the

To make a GIR II Cassette version

- 1 Type in and run the program. Select option C for cassette
- 2 Rewind a fresh tape then press Record and Play. Hit Return when asked
- 3 The program will take about 40 seconds to save. This will now become your GIR II Master Tape

same way as you would with any other listing — or hit the break key to abort it completely. Alternatively you can specify output to a printer by entering:

```
LIST TO P
```

You will notice that each line consists of three parts. The first is the line number in question followed by the actual three-digit checksum. This segment is the most important since it will always match the value printed in the magazine if you have typed the entire line correctly.

The final digit on the line — enclosed in brackets — is a special cumulative check digit. This gives a quick estimate of the running total of the checksums given so far in the listing. Any lines following one containing an error will also have the wrong cumulative digit. You can use this feature to help you find any errors by simply looking through this final column until you find a mismatch.

You will notice that most checksum lines consist of both numbers and letters, but don't worry — there won't be any eight's to confuse with zero's, or

- To checksum a program to the screen, use:
LIST "Q"
- To checksum a program to the printer, use:
LIST "Q,P"
- To checksum a single line to the screen, use:
LIST "Q", line-no
- To checksum a single line to the printer, use:
LIST "Q,P", line-no
- To checksum a range of lines to the screen, use:
LIST "Q", first-line-no , last-line-no
- To checksum a range of lines to the printer, use:
LIST "Q,P", first-line-no , last-line-no

indeed any other tricky digits such as one and the letter I, zero and the letter O or two and the letter Z. These are always avoided by the program.

To make typing easier for you, anything coming after a REM statement will be ignored by QIR II. Thus the two lines:

```
10 REM THE FIRST LINE
```

and:

```
10 REM
```

would produce the same checksum value — C91. However, don't feel tempted to leave the line out

To load QIR II from tape — every time you turn the computer on

- Place your QIR II Master Tape into the cassette recorder, rewind it and press Play
- Turn on the computer while holding down the Start button — but NOT the Option button
- After the single beep press the Return key
- Wait for the Loaded OK message and the READY prompt.

completely because the program might need to branch to it using a GOTO or COSUB statement.

You can even use QIR II to test individual lines — such as a block of DATA statements you might have been having trouble with. To check a single line — say 1000 — type:

```
LIST 10,1000
```

and to check a block of lines (say 100 to 500) type:

```
LIST 10,500,500
```

However, don't forget that the cumulative check digit will be incorrect in such cases as it obviously can't know what the values from the previous lines would have been. When checking through selected lines of a program, ONLY look at the main three-digit part of the checksum.

Both cassette and disc versions are completely protected from accidental erases — typing NEW or pressing

System Reset will not harm them at all. In fact, apart from the fact that your free memory space has been reduced by 800 bytes, you will probably never even notice that the checksum routine is loaded.

Qos 2.0 and 2.5 users should note that going to the Dos command menu will overwrite the memory space used by QIR II (Right II). In order to retain the routine when returning to Basic you should make sure you have enabled the 16MB 54V option on your boot disc. This is the default condition when using Qos 2.5 with a 10MB ramdisc.

More advanced programmers might be interested in the assembler source code listing for QIR II (which we printed in the December 1983 issue of Atari User. See Page 81 for the back-issue order form).

- So there it is — a faster and much improved checksum program. As you will have noticed, all program listings in Atari User are accompanied by QIR II checksum tables, so hopefully even those of you will now find it even easier to get it right.

To load QIR II from disc — every time you turn the computer on

- Place your QIR II Master Disc into drive one
- Turn on the computer. Do not hold down either the Start or Option buttons
- Wait for the Loaded OK message and the READY prompt.

```

1 REM *****
2 REM
3 REM 007-17-00001: 001200 1,1
4 REM 00900000: 01001 0010 1000
5 REM 0011710 00: 0000 011017
6 REM 000100 0070: 115450
7 REM
8 REM *****
9 REM
10 REM 00100000:0070:000001:00100000
000000:00101:00
11 REM 00000101 00900 050,0,0 1 001-01
00001 01 000100 000000 00,0
12 REM 01 01 000010 100 0000 0000,
13 REM
14 REM 01 01 01 011100 00 0000 00
15 REM 01 01 01 01 01 00001 000000 0
16 REM 0000 0000 0000 0000
17 REM 01110000 0000 0000
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100 REM 01110000 0000 0000

```




Neil Fawcett, Atari World of Games

The wonderful world of Atari

NEIL FAWCETT takes a trip underground to visit a famous software house

UMBRELLA at the ready, I journeyed to Manchester seeking Atari World. The long time Mecca for Atari users in the North West, and still one of the biggest stockists of 8 bit products, it is also the home of Red Rat software.

As a stranger to the city I had every excuse for getting lost – so I promptly did, eventually discovering Atari World on Fennel Street near Victoria Station only after I had walked past it twice. My excuse being that the premises are below street level – a subterranean location which provided inspiration for the name of the software house.

Inside I met Charles Partridge, Don Rigby and Karen Sutherland who run the shop and software scene. There also was Bryan King, the in-house artist, busy with various tasks.

Unfortunately Harry Nadler, Atari

Partridge and one of the original partners in Atari World, was away ill. He and Charles Partridge formed the company and opened their shop in 1985. In those days Atari World was purely 8 bit orientated, catering for what turned out to be a large market populated by devoted users.

A profitable first year provided the impetus for becoming further involved in the Atari market. With all those customers walking through the door every day the situation was tailor-made for software marketing, and so Red Rat was born.

The first two titles released were Technicolour Dream and Panic Express. Technicolour Dream is an artist program written by Keith Waterston and David Forward that puts to use the Atari's tremendous graphics capabilities. With it you can

actually draw in 256 colours.

Panic was authored by Don Rigby – a freelance writer at the time – and it surprised everybody by being a huge success. Sold as a back-to-back tape – it had a Commodore 64 version on the B side – Panic was number one in the French software charts for six weeks and eventually sold around 4,500 copies at £3.99.

The back-to-back tape idea was subsequently copied by several companies and has proved an ingenious money spinner. This clever innovation caught the ears of P.S.L. Marketing who approached Red Rat at a computer show in London and began distributing its games.

In the summer of 1987 the market changed. P.S.L. decided it didn't want

Turn to Page 48 for



Computerisation pictures created by Technicolour Dreams



4 From Page 39

any more 8 bit products so Red Rat got Microstar International to handle its goods.

After further approvals it now sells through United Software Distribution. The various ups and downs of swapping distribution companies didn't stem the flow of new titles. Many games were released - notable among them Screaming Wings, Laser Hawk, Space Lobsters and Astro Droid. One of the funniest games was Space Lobsters which was originally called Ooh ooh!

Astro Droid - my first major games review in Atari User - is a superb shoot-'em-up with excellent graphics. Laser Hawk didn't sell as well as it should, which is surprising as it is well written and very addictive.

Screaming Wings sold well, and again offers excellent value for money. It's now available on a compilation disc or cassette.

Today all the software development

work is done in Prescott, Merseyside, where Red Rat's six programmers and two graphic artists toil. At the moment, much of the work revolves around the ST due to a problem with the in-house 8 bit distribution.

The shop is doing very well despite one big handicap. It has become very difficult to get hold of enough 8 bit hardware to sell. Cassette decks, 850 interfaces, Atari 5MB 801064 printers and 1050 disc drives would go like hot cakes.

Unfortunately, the likes of the 1050 are virtually impossible to obtain and the late arrival of the new Atari drive is causing a problem.

Another big problem concerns 8 bit software. Even though the games Atari World stocks sell very well, it is practically impossible to get a distributor to take on any 8 bit Atari software. This is the main reason behind the decline in that area.

It's not the quality of the games or the number of titles coming out. It's simply down to distributors not taking

the products of software houses. This problem is affecting not only Red Rat but an awful lot of other companies as well.

Don Rigby said: "We intend to carry on writing software for the 8 bit Atari in the foreseeable future. We also plan to release Speed Run very soon and have several other ideas in mind."

"Our major worry is distribution - if we can't get a product to the people who want it there's no point in writing it."

You can only agree with Don Rigby and sympathise with other companies sharing the same problem. It's a shame Atari 8 bit machines have never had the recognition they deserve - after all, they are the best 8 bit micros ever produced and they've earned their reputation over nearly 10 years.

However, the good news is that the friendly bunch of Atari 8 bit fanatics in Farnell Street are determined to battle on in what is now a rather unfriendly market.

The truth about TELEX

How much does it cost to go on Telex?

You could go the conventional way and buy a dedicated Telex machine. The cheapest will cost you £1,400 (the 'strip'), the cheapest £2,800 (the Complete). You will also need a separate telephone line, costing £101 to install, plus £400 a year rental. That's a total outlay over the first year of a minimum of £2,500. (All prices include VAT.)

Or you could do what more and more Atari users are doing - use your computer to connect to a Telex machine. And just use your ordinary telephone!

How do I turn my Atari into a Telex machine?

All you need is a modem and appropriate communications software (see the advertisements in this issue), a telephone, and a subscription to Microlink. Microlink is just one of a growing number of services available to Atari users on Telex. With Microlink you can also read the news as it happens, go teleshopping, Microlink 'chat' Microlink you can also read the news as it happens, go teleshopping, create your own closed user group, send messages and documents, mail right round the world, download text programs directly into your mail... and much more!

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Circle 10 on
See Page 41

SOFTWARE Solutions

WELCOME to Software Solutions. Let's kick off straight away with a letter from Mr J.L. Magrath from Dewsbury in West Yorkshire who writes:

Can you please help me by explaining how to produce more interesting sound effects on the Atari than the Basic SOUND statement allows?

After all, four programmable voices immediately suggests harmonisation. The problem is that its harmonised lines pitched at commonly used frequencies require base notes below the Atari's normal range.

I would also be interested to know how the sound is generated and so appreciate why there are a finite number of distinct notes rather than an infinitely variable scale.

Advanced sound production is something which we plan to do a feature on in a future issue of Atari User, but in the meantime let's discuss the

points you've raised in your letter.

Firstly, sound is created by our good friend the POKEY chip and controlled internally via a series of special memory registers located between addresses \$D000 and \$D00F. When you issue a SOUND command Basic adjusts these locations accordingly in order to create the tone you require.

However, the POKEY chip is far more versatile than a simple four parameter SOUND command could ever hope to be, so you'll need to POKE some of these registers directly in order to give more flexibility to your music.

Each of the four registers is controlled by two locations in memory, one for the frequency and the other for the volume and distortion value - see Figure 1. These control registers are one byte long, and can only accept a value between zero and 255 - hence the limit of 255 total steps with the SOUND command.

Let's do a quick translation of a normal SOUND command into internal register values. When you type

SOUND 5,75,18,8 you are accessing internal sound register number one. This is because internal numbering starts at one whereas Basic, for some reason, starts at zero - thus SOUND 3,5,0,0 would affect internal register four, not three.

The frequency value - 75 in our example - is placed straight into the AUDF1 register \$D000. The volume value (8) and the distortion control (18) must then be combined together before they can be placed into the AUDC1 register \$D001. To do this, simply multiply the distortion value by 10 and add it to the volume value. This would would give 18 times 10 (or 180) plus 8 - a total value of 188.

Before setting these locations it's always a good idea to POKE \$D7F6,0. This is required because the POKEY chip is also responsible for handling the output frequencies for the cassette IC, and a value of three stored in this register will reset POKEY ready for normal audio use.

When you do a SOUND 0,0,0,0 Basic will initialise AUDCTL location \$D00F to zero. It is this action which limits your audio flexibility. Figure 1 shows the available functions of AUDCTL. You can see that it is really the most powerful of all the audio registers.

It would take too long to explain in full, but briefly it controls the clock frequency used to generate tones, plus the polynomial counters which divide those tones into small packets to give special sound effects - or distortions.

Basically at higher clock frequencies the notes you hear will also become higher. The normal clock frequency is 64 kHz, so if you alter this to 16 kHz by using POKE \$D086,1 then all the notes you can obtain from any SOUND command will become lower.

Similarly, POKEing in a number with

Address	Name	Function
\$D000-\$D001	AUDF1	Channel one audio frequency (as SOUND 3,freq,n)
\$D001-\$D002	AUDC1	Channel one control (lowest four bits = Volume, highest four bits = Distortion) Channel two audio frequency (as SOUND 1,freq,n)
\$D002-\$D003	AUDC2	Channel two control (as for channel one)
\$D003-\$D004	AUDF2	Channel three audio frequency (as SOUND 2,freq,n)
\$D004-\$D005	AUDC3	Channel three control (as for channel one)
\$D005-\$D006	AUDF4	Channel four audio frequency (as SOUND 3,freq,n)
\$D006-\$D007	AUDC4	Channel four control (as for channel one)
\$D007-\$D008	AUDCTL	Audio control register (filters, clock rates, etc)
\$D00F-\$D00F	SACTL	Serial port control (PCOE) with 2 to remove any leftover cassette IC sounds

Figure 1. Sound control registers

Turn to Page 67 P

4 From Page 47

32 added to it will switch register one to 1.78 MHz, thus giving a much higher tone from that register only. Adding 64 can do the same for sound register three, although registers two and four will always remain at the default rate.

Don't forget that the SOUND command will always zero this control register. If you don't want to POKE all of your values directly into the frequency registers you should place your POKE \$20A6,N somewhere after

the SOUND command. Bits one, two and seven of this register control the filter system, and are only at use if you want to create distorted special effects sounds.

The final two bits in the register, bits three and four, will probably be the most useful ones to you. They allow you to link up two of the sound registers to act as a single 16 bit sound generator with an available frequency range from 0 to 65535 - covering roughly nine octaves.

Adding a value of 8 will join channels three and four while a value of 16

will join channels one and two. You may then use the two joined frequency registers to control a single pitch - the second one giving coarse control while the first allows fine adjustment.

The short program listing given will demonstrate this effect. Note that I have only set the volume on one of the sound registers and only selected the 1.78 MHz clock rate.

Hopefully, this will have given you something to ponder over and you might find a bit of experimentation will give you some amazing results.

Bit to add	Value	Function
0	+1	Switch main clock rate from 64 MHz to 18 MHz
1	+2	High pass filter for channel two, clocked by channel four
2	+4	High pass filter for channel one, clocked by channel three
3	+8	Join channels three and four (use as one 16 bit register)
4	+16	Join channels one and two (use as one 16 bit register)
5	+32	Clock channel three with 1.78 MHz
6	+64	Clock channel one with 1.78 MHz
7	+128	Switch 17 bit poly counter to a 9 bit poly counter

Figure 5: Bit usage of \$A0C70 register (\$20A6 - \$27A6)

```

10 REMARKS SOUND T12.1
20 SOUND 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
30 POKE $27A6,24+16+32+128+256+512
40 FOR CHANNEL=0 TO 15
45 POKE $27A1,548+994,5576,5,50,0,0,0,1
57 VOLUME=0%:GOTO $27A6,740:GOTO $27A6,740
61 FOR $27A6:GOTO $27A6,740
65 FOR $27A6 TO 128:STEP 1
70 POKE $27A6,128+194+194+5276+5276
80 PRINT "3.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0"
90 NEXT $27A6
100 NEXT CHANNEL

```

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Independent User Group

THIS is a computer version of a board game invented in Korea more than 1,000 years ago. The aim is to move four counters around a circular board and the winner is the first player to complete one circuit with all his counters.

The original game is played on a wooden board on which 28 points are arranged in a circular pattern with a cross shape in the middle. The distance that a counter — or horse because it's shaped like one — can move is decided by throwing four sticks made of bone, charred and curved on one side and white and flat on the other.

In this simulation four rectangles are displayed at the top of the screen representing the bone sticks and below is the board depicting the 28 points in a circular pattern. Five are larger than the rest and are known as cardinal points.

They represent the four cardinal points of a compass — North, South, West and East — with the central point linking them.

Moves are decided by the position of the sticks that randomly fall on either the white or black side, and were as follows:

1 White	1 move
2 White	2 moves
3 White	3 moves
4 White	4 moves and an extra throw
4 Black	5 moves and an extra throw

When you are awarded an extra throw the two scores are added together, but they can't be treated as two separate moves. All four horses can be on the board at any time and you choose the one to move using the joystick plugged into ports one and two.

Select the horse you want to move by moving the arrow — with the joystick — on to it and pressing fire. You can stack horses on top of each other, allowing you to move them with only one roll of the sticks.

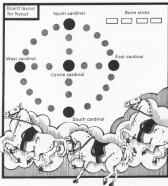
Horses enter the board from the start position on the immediate left of the north cardinal and move in an anti-clockwise direction. You must leave the board by landing on the north cardinal point then moving off it to the finishing position at the top right-hand side of the screen.

If at the end of a go a horse lands on another horse or one of the west, south or central cardinals the following additional rules apply:

■ A horse finishing on the west cardinal takes a short cut and moves along the horizontal bar of the cross-shaped pattern in the middle of the

NYOUT

STEPHEN WILLIAMSON brings an old Korean board game to the Atari



board. Similarly, a horse finishing on the south cardinal heads north along the vertical bar.

■ A horse moving east which lands on the central cardinal point takes a further short cut and heads north along the top half of the vertical bar.

■ If a player's horse finishes its turn by landing on an own horse or horses, in subsequent turns they are moved together in a stack with the number in it shown below the relative counter.

■ If a horse lands on a point occupied by one or more of an opponent's horses, all are knocked off the board and sent back to the starting position to begin again.

The winner is the first person to

move all four horses to the finishing position off the board. Although it should only take one game to understand how to play Nyout, like Backgammon and similar board games, strategic play is a strong element.

The computer is programmed to play an intelligent game and should beat an inexperienced player. It considers every possible move during its turn and gives a score for each potential move. For example, a horse that can land on another counter or a cardinal point is given a better move value than one that will finish on an unoccupied space. A random factor is built into its strategy so that the computer's play does not become too predictable.

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2988 144 021	2988 271 111	2988 462 111
2978 141 141	2978 907 011	2978 847 141
2978 017 011	2978 913 011	2978 848 011
2978 016 111	2978 903 011	2978 290 111
2948 017 121	2948 903 011	2948 999 111
2978 099 011	2978 749 111	2978 749 111
2948 708 171	2948 999 111	2948 747 041
2978 980 011	2978 999 111	2978 276 111
2978 734 011	2978 913 111	2978 997 111
2978 747 041	2978 999 111	2978 971 011
2988 867 041	2988 736 011	2988 897 021
2978 867 041	2978 993 111	2978 867 021
2978 867 041	2978 779 111	2978 813 011
2978 904 081	2978 999 111	2978 769 111
2948 981 011	2948 941 111	2948 769 111
2978 978 081	2978 919 111	2978 897 011
2968 587 051	2968 449 111	2968 100 111
2978 609 011	2978 759 111	2978 970 011
2968 587 011	2968 803 111	2968 817 041
2978 632 011	2978 979 111	2978 897 011
2978 547 071	2978 879 111	2978 547 011
2978 578 021	2978 897 111	2978 813 011
2978 591 011	2978 847 111	2978 794 011
2978 638 011	2978 899 111	2978 897 011
2948 971 081	2948 469 111	2948 903 011
2978 648 011	2978 849 111	2978 907 011
2948 971 011	2948 049 111	2948 703 011
2978 647 011	2978 944 111	2978 897 011
2978 646 011	2978 841 111	2978 878 011
2978 662 011	2978 897 111	2978 903 011

2988 014 081	2988 278 111	2988 839 011
2978 029 111	2978 113 171	2978 903 011
2978 029 111	2978 049 111	2978 777 011
2958 025 161	2958 999 111	2958 816 011
2948 769 151	2948 813 121	2948 876 071
2958 699 151	2958 477 161	2958 916 011
2968 878 121	2968 816 111	2968 878 071
2978 915 181	2978 899 111	2978 903 011
2988 829 121	2988 916 111	2988 963 021
2988 829 171	2988 999 111	2988 999 011
2988 839 111	2988 841 111	2988 974 011
2978 825 171	2978 977 121	2978 999 011
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2968 889 111	2968 913 111	2968 779 011
2948 978 181	2948 448 111	2948 978 071
2978 985 141	2978 899 111	2978 999 071
2968 999 111	2968 977 111	2968 977 011
2988 911 111	2988 911 111	2988 911 011
2978 912 141	2978 769 111	2978 769 111
2988 144 171	2988 779 111	2988 978 011
2978 979 181	2978 813 111	2978 813 011
2968 999 171	2968 719 111	2968 719 011
2978 979 111	2978 811 111	2978 899 011
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JUST a few words to what the appetite of all Atari 8 bit users who would like to do something else than just play games on their micro.

With the aid of a short wave radio the Atari can listen to morse code and display the translation on the screen, decode radio teletype signals and listen to weather satellites. This information can be displayed as a picture along with temperature and cloud information.

Although it all sounds very expensive it doesn't for I use my 80000, to decode morse, teletype and fax pictures on a simple home made interface that plug into the joystick ports and they all cost me less than £10 each to build.

Perhaps if people realised the quality of the Atari and its broad spectrum of capabilities it might be better thought of. — **M. Wright, Chislehurst, Essex.**

● Thanks for the letter.

Tune in to Morse on your Atari

Other readers might be interested to see your interfaces and gadgets. So, write in and tell us more, we are always interested to see what Atari enthusiasts around the country are doing.

Basically unfair

OVER the last six or seven issues of Atari User I have seen frequent mention of the Basic XE/XL programming languages. Nearly all reports on them have stated that they are far superior to

the old 8k Basic built into an XE/XL micro.

So if they are so good why don't you publish listings in the magazine for these super languages? — **James Ben, Jesmond, Newcastle upon Tyne.**

● The Basic XE/XL language cartridges offer a far better programming environment due to the number of extra routines — sort, procedures and many more — you get with them. They are also a lot faster than your old Basic.

We would like to publish such listings but it would be unfair to readers who only have the standard Basic. It

there was a sufficient user base of readers with these cartridges we could consider a section in the future.

Spectral answer

WHAT a wonderful idea it was of yours to run two maps showing the caves and monsters of the Eblorian. After following the routes plotted in the May issue and then the lists in the June one I finally completed the game.

But now I have a little question for you to answer for me if you can.

What does the word Eblorian — used in the title of the game — mean? I know it doesn't have any important relevance, but I was curious to see if the people at Atari User are on the ball. — **Sean Canning, Manchester.**

● Right on the ball! Eblorian means ghost or specter.

Cure that keyboard glitch

CAN you please help me with a problem I have with my 1300E computer? My Option Key has stopped working and I can't figure out what to do.

Do you know of a quick cure to my predicament or will I have to send it to someone to repair it? — **Richard Head, Westminster, London.**

● Unfortunately the 1300E keyboard can suffer from two small problems that luckily, rarely raise their ugly heads. The first is that the metal tracks that connect the keys to the main PCB tend to oxidise. This stops them making a circuit when a key is pressed.

The second glitch is the cause behind this oxidation problem. The function

keys are fed with their own power supply and it's this that causes the build up of oxide on the track.

It may be possible for you to fix both of these yourself but the job of doing so is quite involved.

However, for the stout of heart, here goes: Remove the lid from the micro — the four screws on the underside hold it in place — and then gently unplug the keyboard membrane from the connector on the main board.

Unscrew the main PCB and twist open the metal tags so that you can remove the casing. Now you will have to locate resistor R69.

You'll find it in the bottom right corner of the board where the ? and Shift keys

would be, but don't worry, it's labelled underneath. Now carefully unsolder it.

If it is replaced by a 1k (2.2kV) resistor the track oxidising problem will be solved.

If this doesn't effect a cure immediately you may have to take the keyboard to bits and clean the tracks — a can of PCB Cleaner (code 51-11108) from Citri will do the trick.

Be very careful not to take off the tracks altogether, as they are very easily damaged.

This is not an easy task to undertake and quite possibly a little too much for a novice. However, a service engineer familiar with Atari equipment will be able to do the job for you.

No match

PLEASE can you tell me the address of Ocean Software? You see I want to buy *Monday* (at least, I've looked for it everywhere but I haven't seen it advertised, so now I want to write to the company directly. — **Robert Maddison, Dobwalls, Cornwall.**

● The address is: Ocean, 8 Central Street, Manchester, M2 5NS and the phone number is 081-632 8533.

However, Ocean hasn't brought *Monday* out for the Atari and doesn't plan to do so.

Happy with cartridges

IN the January issue of Atari User there was an article about the re-release of several games by Atari on cart cartridges. Being new to the Atari range of cart-

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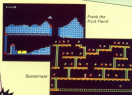
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- Spacebase** — Fly your spaceship through the deadly caverns below the lunar surface.
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- Frank the Frog (Frank)** — Help Frank eat his favourite food in this platform game.
- Duck Dash** — Dash round and chase up all the ducks before the sixth hit the farm.
- Frogjump** — Control the frog, break the busy road in this classic arcade game.
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