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PAGE 6 PUBLISHING'S

ATARI

USER

Issue 39 £1.50
August/September

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SUBMISSIONS

PAGE 5 welcomes and encourages its readers to submit articles, programs and letters for publication. Proposals must be submitted on disk or cassette, unless stated otherwise. Material to be submitted as per files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it. Appropriate payment will be made for all published programs and articles.

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The next issue of
NEW ATARI USER
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ST SOFTWARE AVAILABLE

ATARI SHOWS SCRAPPED

Just as we were getting used to the twice yearly Atari Shows, comes the news that Database have cancelled the ATARI 8000 SHOW, together with other machine specific shows, in favour of a new Christmas 'festival' show presented in conjunction with COMPUTER SHOPPER magazine and there is great doubt over the future of independent shows for the ATARI next year. Unless Atari start showing a great deal more interest in their users, either by supporting an independent organiser or arranging their own shows, the ATARI SHOW just gone was the last.

At the present time Database have no plans for further Atari shows and the reasons lie squarely at the door of Atari. Database Exhibitions manager Michael Meakin told us that they were disappointed that they had had to make the decision not to continue the shows but that without Atari's support, they were not viable. The last show was delayed from April until June in the hope that Atari could be encouraged to come but still they did not turn up. Other manufacturers continue to support their users. There will be shows and just for Commodore, BBC and Amstrad because these manufacturers support their users and will book large stands at the shows, whether they have new product or not.

We can't help wondering what Atari are trying to achieve by not supporting the shows. What good does it do to be a major contributor to the demise of the only show the Atari users? There are rumours that Atari are planning to launch their own show but, if it comes about, how successful will that be? About as successful as the Games-Centres?

Database claim that the new Christmas show will have as many visitors as the three cancelled shows put together but somehow we doubt that a great many of those will be Atari users. Quite likely, the place will be swamped out with Commodore, BBC and Spectrum stands and, unless there is an Atari specific area at the show, we'll be back to the old days of the PCW Show where 'found the Atari stands' was the best way to spend the day. Page 6 is discussing with Database the possibility of having a 'show within a show' as we believe that Atari users need the support that Atari are failing to provide but no agreements have been made at present.

Meanwhile, XL/XE owners will be welcomed to the Alternative Micro Show in Stafford in November where FNCE will have a stand. We are hoping to encourage quite a few more Atari supporters to attend and will bring you more news next issue.

A NEW LABEL WITH SOME CLASSICS AT BUDGET PRICES

KIXX is a new label dealing in re-releases and among their first scheduled releases are four Atari titles previously available only at full price. The famous GAUNTLET is included and others include ACE OF ACES, FOOTBALLER OF THE YEAR and HARBORBALL. These have all been reviewed some time ago but a new batch of budget releases is always welcome. These ones retail at £2.99.

NEW CATALOGUE

Suzano Software have sent us a copy of their latest and updated catalogue which includes news of almost 20 'coming soon' titles together with several 'clearance' bargains. There are over 200 titles listed, all for the Atari 8-bit, plus lots of things like joysticks and peripherals. There are even money-off vouchers for orders placed before the end of September. If you want a copy, drop Suzano a line at P.O. Box 78, Macclesfield, Cheshire SK10 5TB or give them a call on 0625 25228.

WIN ON THE GEE GEES!

Blue Ribbon are another company who seem to keep balls with Atari and, although they don't seem to have a great number of releases, another Atari title is more than welcome especially if it is a non-game title. Their new release is BUKA-ROBBI, a horse racing simulator that can help predict how far both that and National Hunt races are UK necessities

so giving you the chance to pay for a new disk drive or whatever! TURF-FORM is quick and easy to use, requiring only information found in most popular daily newspapers and will produce speed and times ratings giving the horses chances of victory on the chosen course. TURF-ROBBI is priced at just £2.99, a small price to pay to beat the bookies!

NEW ZEPPELIN DEAL

Atari supporter Zepplin Games has secured the rights to the Yosemite back catalogue for the Atari 8-bit and will soon be bringing out **PHANTOM** and **MIRAX FORCE** on budget titles. Hopefully other titles will follow and Zepplin have confirmed that they will continue to support the Atari with new games.

LEVEL 9 MOVE

Level 9, one of the few companies to have kept balls with the Atari 8-bit through all their releases, have moved down to the South Coast where the weather is a little bit better and the property is cheaper than in the Home Counties which they hope will allow them to attract more staff. Can the Austin engine be expanding other all this time?

The sun air is helping to complete outstanding projects and hopefully should be out about mid-August. When we spoke to Level 9, Pete Austin was fixing a final few bugs.

SOME MORE NEW RELEASES

Alternative have finished **POWEMAN PAT** which has now been released on other formats, and are now converting to Atari 8-bit with imminent release as a budget title at £1.99. Codemasters have another one out, **ERIE MACHINE SIMULATOR** which will be available at £2.99 and are working on **MOUNTAIN BIKE SIMULATOR**.

Releases later on in the calendar should include **SYSTEM 8** from CDS, and **BLACK-OP** and **GUN FIGHTER** from Roberts.

MORE NEW GAMES FROM ATARI

After says Atari aren't supporting the XLXE? Following on from Tiger Attack and Nascar, reviewed last issue, are five new games to be released over the coming months.



HEAR NO EVIL
- looks like a thriller



BLACK LAMP
- a well known adventure



SUPER SOCCER
- also just before Christmas



CYGNUS X1
- some great looking graphics

CYGNUS X1 was originally to have been released by Atari but has now been picked up by Atari for release at £2.99 and should be available from your usual retailer round about now. The others are still in production and we will bring you reviews of them all as they come out. Meanwhile here are a few pics to whet your appetite and prove that these games really do exist! Thank you Atari, keep 'em coming!



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FOR BETTER OR WORSE?

Apparently the letter 'Why? Well, while I was happily flipping in the latest issue (June/July) I discovered some bugs which are just plain stupid. Although I probably won't be the first to write about it I would like to point them out. It starts on pages 12 and 13. There are four listings numbered 1 to 4. According to the programs themselves they have the numbers 1, 2, 3 and 4 but if we believe the remarks underneath they are numbered 1, 2, 2 and 3. Not a humor, but still annoying.

Next we hop onto the MCO-TSII on page 26. According to the programs you printed listings 1, 3 and 2 in this rather odd order. However the remarks state the listings are printed in the right order.

Now for the real horror story, starting at page 44, the Root Time Clock. You printed 2 listings, one for Disk and one for Cassette users. How nice! Both programs have been split into two parts, resulting in a total of four parts. Obviously the intention was to print all four pieces but that's not quite what happened. Indeed there are four pieces but still the first part for Disk uses 8 instead of 4 pins, that this is about the only time that 4-1 makes 4. I hope to see

issue 28 and please, please, please make sure it will be perfect!

N. Lummen Aalsmeer, The Netherlands

Golly to the first mouse one that the other major, and unobjectionable, package happened after the artwork left us. What was said when we saw that issue does not bear repeating in print? Suffice it to say that I was quite amused. A great deal of care is taken with the listings and they are checked and double-checked as they are proofed up and they visit all parties when sent for origination. The listings were then stopped off for errors to be added and printed back in the wrong place. It was I? happens again, believe me! Apologies for the inconvenience. For more details see the Update column this issue.

DOS OPTION K

As far as I know mosty Amstrats have never used option K in the DOS menu. BLASTOOM in issue 27 is a complete machine language program that must still be run in Basic. You can get the source code but you don't need it to create a binary file. Just use option K in the DOS menu! Here's how to do it.

Prepare a freshly formatted disk, boot up your machine and load BLASTOOM but do not RUN it. Change line 340 to 340:DISK. Now RUN BLASTOOM.

When the computer has stopped at line 340, go to DISK (don't switch off and reboot). Insert your formatted disk and choose option K in the DOS menu. Type BLASTOOM.COM, 0000,0000,0000 and press RETURN. A binary file of 20 sectors will be written.

Now you can run BLASTOOM with option K in the DOS menu or with any menu program, without using BASIC.

John van der Spoel, Zwijndrecht, The Netherlands

UPDATE YOUR SUPRA

For over a year now SupraDivers have been fitted with an internal battery backed clock/calendar facility. This is an extremely useful feature which, via the supplied SUPPARED.PRG, sets the Atari 512's SMMOS clock at boot up or after a reset. However, it does not set the GIMMOS clock, which is used by some programs such as Ward Perfect. Martin Dryden has kindly supplied Frontier Software with a small program which sets the

WHY NO ST LISTINGS?

I thoroughly enjoy the magazine, especially the tutorials but find that the ST section is far too short, and too full of games reviews, when you read the 8-bit section, which I do, there seems to be three or four listings in each edition, covering all sorts of subjects. I would be happy to see some of these listings or their equivalents for the ST. After all not everyone who has an ST has had previous experience with computers, and not all ST owners wish to play endless games on it. For better to type in a listing and learn from that program what your computer can do!

J.A. Chauderton,
Leyland, Lancs

The great thing about the 8-bit Atari is that everyone who buys it gets an excellent version of BASIC built into the machine and knows that anything other more experienced users have written will run on their machine without them having to go out and buy any extras. The sad thing about the ST is that Atari made a huge blunder by supplying a disk based version of BASIC that was full of bugs and got such a bad reputation that no programmer wants to use it. What then happens is that lots of people go off in their own favourite direction and many languages are used. The end result, as far as using the program might be the same, but the problem with printing a listing is that maybe only a small percentage of readers

will have the language concerned. There are other problems too. On the 8-bit Atari some amazing programs can be written in a mere 40K yet on the ST it seems that it can take up to 120 lines of code merely to achieve a similar result and there is just not sufficient room in a magazine to print such listings. Many of the better programs also have support files such as pictures, resource files and sound files which cannot be printed. It is possible to write great programs on the ST which can be typed in on ST BASIC as Paul Jay demonstrated with MAD but these submissions are rare and besides, you learn nothing from typing in a lot of machine code data. Mind you, in the case of MAD you did get an incredible

GENERIC disk from the ERICC disk. When placed in an AUTO loader after the SUPPLARD.PRG, only minor (inconsequential) regarding the GENERIC disk are effectively eliminated! This program and its source code is available for free distribution - simply supply us with a formatted, single sided 1.5" disk. Further, our hard disk drive Super Utilities software disk is now at version 1.07. If an update would like to update to this version, please return your original Super Utilities disk and \$2.00.

Mailin Mail Marketing Manager Frontier Software

This letter sounds like an attempt to get a bit of free publicity for me and I think that they were forget to include a few cups of their tea until now through this entire magazine is created with the help of a Super Drive III, no hard feelings and we'll even give you Frontier's address which is P.O. Box 171, Nagsburg, North Park, color 8021987.

MIXING GRAPHICS

In one of your recent magazines the statement was made that it is possible to mix any of the graphics modes on screen. So far, I have only mastered

program. In what language is support? No magazine seems to have found the answer to this. Perhaps the most promising language is BASIC which has the ability to draw picture files and the like as a separate and files on you will see elsewhere in this issue. Length of the listings might still be a problem but I look so promising that we intend to publish this listing in future. If we get any submissions!

Thanks to all the overseas readers whose letters appear in this issue and the many others who also write to us from far and wide. Does anyone in England read the mag?

mixing Graphics 0, 1 & 2. Any chance of an article?

D. Frank Bath

We have covered this before but a long time ago, are you still willing to publish any programming articles of this kind if anyone can come up with a fresh stand on things. It is a long time since we received any kind of contribution along these lines, perhaps all the users who know how to do it think that it's all old hat by now? Not to folks who have recently bought their machines. Perhaps it's about time we started covering some of the old ground again?

BLOCKBREAKER JOYSTICK ROUTINE

Your magazine PAGE 65 puts in a bit of expert. An so, DR BLOCKBREAKER 'out an tin box, you mean in the display just do possible. Comment complete or you please des joystick? Please note or suggest any solutions or modified in program?

Success reinforcements.

Maximize Cognition Freely Trey, Chaffin, Fronzy

In joystick routine not alone in issue 25. In issue not still available, regards in back issues page. But you thought I couldn't answer that one, didn't you?

UNBELIEVABLE!

Just a note to thank you for selling my 8-bit system to COM-TACT Inc./July. Subscribers care have the advantage on language, in the column. Let me tell you what happened.

When my Page 6 necessary Shop order form came through I knew the subscription. Attention would have their mag while retransmission would have to wait another day at least. At 6 pm, the time showed in the mag, the phone went CRAZY. In the first night, up to 11 pm, I had 127 callers! It was crazy. As soon as the phone was put down it rang again. Now four nights later the running total of calls is 531 plus whatever my number did not record. I have the names and

telephone numbers of so many fellow Atari users all wanting to be rang if the order fell through. Had to ring most a most in Middlesex.

There is a major shortage of 8-bit drives. Callers did not want a 2F50 because it was unavailable but mostly because it did not match their 50 machines. Thanks a lot again.

Adam, Lytham St. Anne

Wow!

LIKED IN GREECE

Congratulations for your magazine. I am a proud owner of Atari 800, 1000 and 1040ST computers. I read every month your magazine and I think it is perfect. It contains everything an Atari owner would like to know.

Almost a year ago I was about to buy my first computer, because I thought Atari 8-bit computers had of best but their prices. But since I started reading your magazine I felt that there is still much power left in their chips. Atari computers are still the top of home computers.

Once again congratulations. Keep up the good work.

Babin Pournaras, Athens, Greece

FROM ONE SIDE OF THE WORLD

I am a new subscriber to your magazine that wants to talk with you (with some difficulty because I do not speak English). Congratulations! In a short time I'm impressed with your seriousness and very good quality. In fact offers is not very common virtue I have three other magazines subscriptions. The only complaint I have is that you are not a monthly magazine.

Help! Some file games do not run in a Sparibus or Mydos double density format. How could I know it before I spent time writing ... and deleting? I have an 800K, with RAMBO II, and I can't run either PRINT POWER or THE PANTS. Could you tell me what other prog-

rams need the Amic chip? Do you know some micro-catalogs for binary files that permits double density and maybe double sided? I am using Microdos from Analogy but it doesn't write bytes 129 - 255 and I must re-write them. I would like to buy ATARI BASIC by Albrecht. Where must I write to and how much does it cost? Thanks in advance.

Luis Edwards, Tijuana, Peru

Thanks for your comments. Luis, I am afraid that we can't help much on your specific question regarding the problem with the computers in your system site, in the past, we only use the standard Atari equipment. Experiences such as the RAMBO II are not so common in this country as in the U.S.A. but I am sure that some of our readers will be able to help. If anyone can answer Luis's queries please write c/o Page 6 and we will pass the letter on. The only one we can directly answer is your last question concerning the ATARI BASIC book. Unfortunately this is now out of print so your only chance is to get a second hand copy. When new it cost around £11.95. Maybe a notice in the CONTACT column will do the trick?

... TO THE OTHER

I am writing in response to your invitation for overseas Atari Users to write and tell of their situation. I have owned my Atari 50 for just over a year now and although I am in a very poor situation, I have such fun with Atari, so the IT still amazes me. In my area, there is only one other person I know with an ST. There are no 8-bits at all. There is no support whatsoever from either Atari or my dealer. I can get no software from the dealer, so I have to order everything by mail order. The problem is that the prices just everything out of reach. The computer is cheap enough (compared to an Amiga it is \$300 cheaper) but the price of a game ranges between £40 and £80! Buying a game is a big occasion. We didn't even get the software bundle that UK Atari owners enjoy. Although there are plenty of

Asari (born in Victoria, the User Club (ACC) is 200 kilometres away and starts one Sunday every month. The journey itself is long enough that I have to go to school so, as yet, I have not been to a single meeting. Your magazine is always compiled to meet overseas magazines and from what I have seen of it so far, I think my newspaper will be arriving in a copy of New Atari User for some time.

If any of our little complaints, don't hesitate to write, please!

**David Quinlan,
c/o Newby St,
Nambour VIC 3616
Australia**

GIVING IT ALL AWAY

In response to David McLennan's letter agreeing with the idea of findings on tape, I thought I'd tell you about an idea that struck me while reading the letter. Why not stick the findings on tape on the cover of the magazine like Your Stroke do regularly. It would not be expensive and you could order the copies in the same quantity as the magazine (i.e. 1 per copy of NEW ATARI USER). The disk users the tapes could be used as audio tapes therefore an advantage for disk users. As for the current system of a free disk for every subscribed issue you could stick to that as well.

**Shaggor Allen,
London**

Quiet market, bring me the original music! Would not be expensive? Neither is a new bunch of you can afford it. We could probably get the tapes duplicated for about 20p each so that's 24,000 times 20p which comes to a mere 48,000 per issue or 120,000 a year. And we would be giving that away? Good job I'm sitting down to answer these letters. Aspire want to sell their Porsche to fund this idea? The economics of magazine production means that if you sell about 80,000, like Your Stroke, you can afford to do this for free. If you sell 2, you can't. So sorry Shaggor no free cassette, not unless you want to buy 60,000 copies. And neither anyone gets the wrong idea we don't give away a free disk to every subscriber either!

TURBO TIPS

I would like to congratulate you on your support for Turbo Basic, which I consider to be the most superb Basic I have ever used. I would also like to inform your readers about a feature that does not appear to be documented. If you are a programmer who can't keep up with your listings when you list them, by pressing the OPTION, SELECT or START keys. By doing this, the listing will scroll past at a greatly reduced speed. Before I go I would also like to congratulate you on a magazine that, no matter how impossible it may seem, seems to double in quality each issue!

**Stephen Firth
Preston**

PIRATED SOFTWARE

I read "Games They Must Release" with interest as I own a good deal of this software plus many more such as Mr De's Castle, Mario Bros, Vanguard and Blitzkrieg.

The problem I have with this software is that it is all pirated and not available on the open market. Could you please tell me if the copyright laws in North America apply to us here in Britain and if I could re-release this excellent software into the public domain or sell it myself? I am sure there would be a good market for this software as all of it is top quality.

Among the software available in the U.S.A. I also have a copy of Lunar Business Simulations, the follow up to Lunar Business follows which is a very good piece of software. If you are interested in any of this software, please contact me as I will be only too pleased to help.

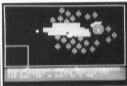
**Name and address
supplied.**

Some of the games you mention were never released anywhere yet the author's copyright still applies worldwide and there is nothing that can be done with the software without the copyright holders express permission. And to save you all writing (as happened last time we mentioned pirated software) we will not print your requests for copies of these games!

DISK BONUS

PROFESSIONAL GOLF

by K.F. Baker



Win your chance to take part in a series of professional golf tournaments, either alone or with up to four players, and you'll be playing against the world's top professionals including Greg Norman, Jim Furrer and the rest. You can play all over the world too, as the courses range from Tross in Augusta.

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At the end of each hole you will receive course news about how all 3611 players in the tournament played the hole together with a complete overall scorecard showing your position. At the end of each round you can save the game to continue the tournament later.

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Professional Golf comes as the bonus on this issue's disk. Disk subscribers will receive a copy automatically with their magazine but the disk is available separately for just £2.95. Just send a cheque or P.O. with a written order to PAGE 6, P.O. Box 24, Hatfield, Herts AL9 9JH or use the order form elsewhere in this issue.

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Accounting Plus LVI	10.00 10.00 0	Calendar LVII	10.00 12.00 0
Accounting Plus LVII	10.00 10.00 0	Calendar LVIII	10.00 12.00 0
Accounting Plus LVIII	10.00 10.00 0	Calendar LIX	10.00 12.00 0
Accounting Plus LIX	10.00 10.00 0	Calendar LX	10.00 12.00 0
Accounting Plus LX	10.00 10.00 0	Calendar LXI	10.00 12.00 0
Accounting Plus LXI	10.00 10.00 0	Calendar LXII	10.00 12.00 0
Accounting Plus LXII	10.00 10.00 0	Calendar LXIII	10.00 12.00 0
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HAWK QUEST

A NEW CLASSIC THAT ATARI OWNERS MAY NEVER SEE

This is a review with a difference. The game I'm about to describe is not currently available in Britain, the States or indeed, anywhere else in the World. In fact, I can safely assume that no-one outside the Dundee Atari Users Club, New Zealand, will have even heard of it! No game has been set in release date is planned, and yet HAWK-QUEST is a game of the highest possible quality, far superior to much of the 'unavailable' US software reported in last Eurobottom's article last issue. In terms of

ability to find anyone with the enterprise to create them, Hawkquest is a superbly written, in-depth package of the sort that Atari owners would clearly love to see, but rarely do.

There can be no doubt that the authors of Hawkquest are both dedicated Atari enthusiasts who know their machines inside-out and who have a genuine desire to benefit the Atari cause. New Zealand residents Andrew Bradford and Harvey King are well-known Atari enthusiasts. Harvey King has been also responsible for Lost Hawk, an excellent Sussex-style title that was released by Red Hat Software at the beginning of 1987 (and reviewed by Ian Short in PAGE 6 issue 26). Harvey is well known to older PAGE 4 readers through his valuable contributions to the magazine and by his talent for designing superb graphics for computer games. Quite recently he joined forces with our programmer Paul Lip to bring AT owners M4D - one of the best type-in listings to have ever appeared in a magazine.

Andrew and Harvey have put a tremendous amount of time and effort into perfecting the Hawkquest project and the evidence is obvious from the moment you boot up the disk.

There are two different games that together make up Hawkquest and they are related by the fact that success in the second game is dependent on a player's ability to complete the first. The plot reveals that your home planet, located in a far-off region of the universe, has developed a unique power generation to meet the population's energy requirements. The key to the technology lies in a special Energy Crystal that cannot, unfortunately, be duplicated but which, in itself, is capable of infinite supply - what's more, it's completely non-toxic and pollution free! But all good things eventually come to an end and it's not long

ground defenses - normally protected by guards, robots and traps (not vital). In a desperate bid to save your powerless people from almost certain extinction, you have taken on the task of retrieving the pieces and gallantly lead the battles with a modest supply of antiquated but cunning, laser guns, bombs and a packed launch. Cadaver: Mission Hawkquest. After loading the first disk - a sequence that's accompanied by an attractive picture of your helicopter in combat - you are presented with a title screen, featuring - yet another artistic drawing of a helicopter! From here you can choose to either view the highscore table, select a level of difficulty or enter the demonstration mode - a nice choice for the first-time player!

Alternatively, pressing the Start button prompts a switch of screen to the cockpit of your space-cruiser. In the lower half of the screen there's an instrument panel from where you can view the inventory. Of course, this will be empty until you've managed to locate some parts of the missing Crystal. There are various other lights and animated dials on the panel which are purely for cosmetic effect - and they really are very good, adding an extra sparkle to the presentation. Above a central information window where all test messages are later displayed, there's a map of the surrounding star system showing each of the five planets where the Crystal segments are supposedly hidden. By moving a small cursor over a planet's surface, you can obtain details of its name, dimensions, defence system and similarly mind-boggling statistics relating to its environment. There further options positioned to the right of the map can be selected in the same way. These allow you to view facts about the current game in progress and to load or save game positions. It's a good idea to save your position after completing the first phase of the game so that in a subsequent session, there's no need to re-start from the very beginning. This feature wins a gold star in my book - so often I have not bothered to persist with a game because it couldn't be completed in a reasonable amount of time!



graphics, playability and addictions. Hawkquest is a truly outstanding package. So why has it travelled no further than a mere group on the opposite side of the world? Quite simply, nobody wants to publish it! Of the few companies nowadays interested in releasing Atari software, most will only consider budget-priced cassette material which they can produce with the minimum of effort, at minimal cost. One or two will issue a disk to accompany the tape, but none, it seems, will touch a solely disk based program. Hence the problem, as Hawkquest requires disks - two of them - and despite the writers' attempts to have their work distributed, they've been un-



THE CASSETTE DATABASE NOW IT WORKS!

If you have typed in the first two parts of the address book database I have some good news and some bad news for you. First the bad news - there is quite a lot more typing to do this time. Next the good news - when this listing is added the database starts to be useful, all the functions work except sorting.

As the program has developed I have been a little surprised at its complexity. Not that the individual modules have been particularly difficult to program, but the inter-relationship between the modules is quite tight. You will see this time that I have changed selection 3 on the main menu to include both viewing and editing records. This is because it became apparent as I went along that these two functions would be functionally very similar.

The procedure for combining the two previous program chunks and this one is as follows. Type each listing, check it carefully with Type, I used list it to tape with "LIST C", then ENTER back in turn. Be sure to enter them in the same order as they were published, on the later listings deliberately overwrite some of the earlier lines. The combined listing can be inserted in a LISTED format ready to add the next installment and can also be saved separately with SAVE if desired for future use. Now on to a description of this edition's listing.

BITS AND PIECES

First you will see there are a few lines which are not part of the main modules:

Line 11 - This sets the values for the starting line numbers of two extra subroutines introduced this time for entering records from the database and printing a record.

Line 10010 - This new line for selection 3 in the main menu will replace the old.

Lines 2000 and 2005 - replace the old lines. The old 2000 was nonsense and I only found the fault when testing the more complete program this time. The new 2000 is a better way of clearing out data than I had used before, it completely removes DATA while the old routine only reduced it to a string of blank spaces.

Line 4000 - this is changed as I have found that my previous use of it as a variable for the total number of records was not suitable when going into the middle of the database to look at, modify or delete records. It is now used for the number of the record currently being looked at - this has to be set to the last record plus one when we are going to add a new record.

Lines 8000 and 8013 - these are changed for the same reason as 2000 and 2005.

ROUTINE TO VIEW AND EDIT RECORDS

Starting at line 4000, this routine first clears the screen and prompts for a record number to be viewed. The input is trapped so an error will not occur if a nonnumeric entry such as a letter instead of a number is entered, and a check is made to see if the number is valid. If too high a number is input a prompt is given

This issue Ian Finlayson's database finally reaches a stage where it can be used with only a few routines left to add refinements

and the program returns to line 4001 for another try. If zero or any number less than one is input the program returns to the main menu.

Assuming a valid record has been chosen the program goes to the new subroutine RETRIEVE at line 13000. This gets the record R4 from the data [DATA] and then splits it into the individual fields F13 to F85. Then the two subroutines SCROLLDOWN and F80, which were introduced in the last article, are used to clear the screen and display the data from the record on it.

Next we print below the displayed data the following prompts:

- 0 to edit the record
- Q to quit (return to main menu)
- % to go to another record
- + or - to step up or down one record

The keypress is checked and the program branches accordingly. If you follow the steps they are all quite simple except the edit option which starts at 4100. This can be compared with the Add Record routine from last time and you will see that it is very similar except that it starts with an existing record in place ready to be modified.

DELETE RECORDS

The routine for deleting records starts at line 5000. I debated whether to provide a routine to delete a block of records but decided to stick to deleting one record at a time. It would be too easy to make a mistake and delete records inadvertently otherwise. The sequence is very similar to the Edit/View routine as it displays the record first and then gives the option of deleting the displayed record, stepping to another record or quitting back to the main menu. There are two program lines, which actually do the deleting of data, line 5102 deletes the last 131 characters of data if the selected record is the last in the database. In all other cases line 5115 is used to move all data from behind the record selected for deletion forward by 131 characters so that that record is overwritten and thus eliminated. Finally, if there are no records left in the database after the deletion there is a prompt and return to the main menu, otherwise the next record is displayed.

PRINT ROUTINE

The print routine allows the printing of one record, a block of records or all records. All three options use the same Print Record sub-routine at line 13000 to do the printing. The single record print uses the same format as the View/Edit routine to display a record before it is printed while the other two use For Next loops to repeat the printing process without displaying individual records on screen.

continued on page 22

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Ian Finlayson's Cassette Database

The format of the printout is in the print subroutine, and this can be easily changed to suit your requirements. I have chosen to print Forename and Surname on one line, and also County and Postcode on one line further down. All other fields have a line of their own and an additional separator line is put in between the bottom of the address and the Telephone and Date fields. This subroutine can be quickly and easily tailored to meet specific requirements. For instance you need not print fields 7 and 8 at all if you just want an address list. If you have not got a printer change line 13600 to "Open #L&A/B" and the program will print to the screen instead - the records are displayed very briefly so it is easier to use the "ViewList" option to look at them unless you put a delay loop in the print subroutine.

Lines 13604 and 13614 need some explanation. They are there to strip off trailing blank spaces from the fields which are first on a line shared with another field. If this is not done there will be an unpredictable space between the end of the first entry and the start of the second entry on the line. This looks very ragged, particularly with a short forename before a surname. Someone called Jim would have twelve spaces between his forename and surname while Constantine would only have four! You may wonder why the forename field is so long. I have done it deliberately as it allows flexibility to put in titles and initials if required, such as "Dr Thomas L" for example.

AND NEXT ...

Next time I will finish off with a routine to sort the database into order and do a bit of tidying up, also give a brief set of instructions for inclusion in the opening part of the program. Many thanks to those who have written to me about the program, especially Keith in Norwich who has pointed me a tip that I will use in the tidying up process next time. I hope the



addition of these modules to the program makes the use of the whole database much easier. If you are having difficulty with it, or including a stamped envelope for a reply. Before writing please study the listing carefully and read the accompanying article. Be as specific about your problem as this makes it much easier to give detailed help. I have not got time to expand the whole program in detail to every request.

Write to Ian Finlayson, 68 Roundstone Crescent,
East Preston, West Sussex, BN16 1SD.

Kenny Dalglish

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CATCH DAY

Try your hand at Championship fishing with this multi-featured simulation by Robert Davies

Catch Day is the most priced European fishing competition ever and you have been invited to represent your country. You must battle your way through a qualifying round against two other expert anglers in order to qualify for the final. This first round and the final each last about 2 hours during which time you must catch the greatest weight of fish. If you fail the qualifying round then you are out of the tournament as only one person can qualify. If you reach the final then you battle it out against the winner of Group 2 for the coveted title of Catch Day champion. That's what you have to aim for, read on for how to do it.

The on screen prompts will be self explanatory and all responses are just a single key for a number or letter. A joystick will be required to throw the groundbait and cast your hook and to play the fish when it bites. Once you have cast, the fish will begin to bite and you must press the trigger exactly as a fish bites in order to hook it, then play it to the bank by using the joystick. Once landed you will be informed of the type of fish and its weight and can then cast again. At this point you may simply cast again with the same bait, groundbait again by pressing **START**, change bait by pressing **SELECT** or change your style of fishing by pressing **OPTIONS**. The timer will continue to count the minutes so you must make your decisions quickly.

Keep on catching fish until the timer reaches 2 hours (about 2 minutes real time) and hope that you have caught enough. Your total weight will be displayed and, after a short delay, the overall results will be displayed. Your target weight is about 100lbs which will be dependent on the type of fish caught and the waters. The target will be easier to reach on some waters than on others. Some fish will not be found in certain waters.

Practice makes perfect and you will undoubtedly be game more after one or two plays. Good luck with Catch Day. If you are not an angler it sure beats sitting on a wet and windy river bank all day and if you are committed to the sport then Catch Day will keep you occupied in the evenings. Night fishing for real is sure to come!



READY TO RUN (or ready to catch?)

If you don't fancy all that typing, you can get Catch Day ready to run on this issue's disk, which also contains all the other listings in this issue plus the BPS/2 program. Just send £2.95 to Page 6, P.O. Box 54, Stafford, ST16 0DD and ask for Issue 39 disk. You may use the order form on page 49.

PAGE MARSHAL

Are 8-bit owners being left out of the current vogue for desk top publishing or page layout programs? John S Davison takes a look at a new page layout program that may solve your problems

The arrival of a new application software product for the 8-bit machines is something of a special event these days, so I was quite excited to receive a review copy of Page Marshal from Value Software. Its author, Richard Pranger, describes it as a "text-with-graphics page processing desktop publishing system". That's quite a statement, but simply calling it a desktop publishing system would be slightly misleading. It's designed as a tool to assist in the production of single page printed documents containing mixed text and graphics. The term "graphics" here doesn't mean pictures produced with a point program, video displays, or image scanner, but the sort of artwork needed to depict such things as flowcharts, graphs, business forms, organization charts, statistical charts, printed circuit board layouts, electronic circuit schematics, and even musical scores. Specialized use perhaps, but the basic software is flexible enough to be usable in more general circumstances.

The package consists of a 5.25" disk and an 88 page doc-metric printed instruction manual. Side 1 of the disk contains the program code, while Side 2 holds the fonts and mouse libraries. The programs were written in Turbo Basic and BASIC languages, but you don't need Turbo Basic to run them, so there's an appropriate run-time environment provided.

Two different versions of the main Page Marshal program are



Page Marshal contains special character sets for various specialist applications such as music and electronics

PAGE MARSHAL is available only from Value Software, 115, Vale Road, Parkdale, Surrey SM6 1EG. Price is around £30 but check current advertisements.

supplied, one for 8085/8088 machines and the other for the 18081. The 18081's extra memory is used on a RAM-disk to hold fonts, making it run quicker when printing multi-part documents. There's also a utility program supplied, allowing manipulation of Page Marshal files in various ways, and for each specialised task a custom-tailored component or electronic circuit diagrams, and selective editing of printed circuit board designs.

Obviously, you can't use Page Marshal unless you have all the right hardware. You need an 8-bit 8088 with at least 64k memory, a disk drive, an Epson compatible printer driven via an 8088 850 interface (or equivalent), and a joystick.

! DANGER - CRAZY PRINTER!

The review got off to a dismal start. The program loaded okay, but then I couldn't get the page editor to put anything on the screen. The program locked up several times, and after several re-boots I gave up trying to create my own document and loaded one of the sample documents provided instead. But then nothing would make it to print out correctly - it just drove my printer crazy!

Just before disappearing under a deluge of paper uncontrollably cascading out of the printer, I received a flash of inspiration bright enough to enlighten the cat! I flipped a DIP switch on my Star 9610 printer to put it into ROM mode. Result - perfect! Instantly I then discovered that the editing screen worked too. It seems you need to load a font before anything shows up in the editing screen - the program DOESN'T use the standard character set as a default. A font had been automatically loaded as part of the document load procedure, and here that poor wretched worked fine.

The point is that the manual says nothing about loading a font before editing and is totally inoperative on the subject of printer DIP switch settings. In basic content it fine, but its style is more that of a reference manual than a proper user guide. It really needs a "Getting Started" section, to step users through the stages of producing their first document.

Page Marshal is based on a system of character elements called macros, rather like the predefined character sets you find in word game programs. The characters are shaped so they can be placed together in blocks (known as macros) to make up the shape you want. The program is supplied with over 30 different pre-defined character sets (fonts), each containing 128 characters. These are provided in the usual 9 score format, as produced by first editors such as Superfont and Fontedit. Value say they'll be producing their own first editor for use with Page Marshal soon.

Many of these fonts offer the same character arrangement found on your 8088's keyboard, but in different character styles. For instance, there's one which looks like handwriting script, and another which has characters in outline form. Others are for special purposes, having non-standard character layouts which can be used specifically to create large graphical reserves. For example, there are fonts for building flowcharting, electronic component, and musical notation symbols.

Each macro is designed so as to fit a 6 bit cell, so prints out at about

for some size as a normal printed character, and this is the program's main restriction. Most desktop publishing programs give you a choice of font sizes within each font style, enabling you to print big bold headlines across the top of your page, for example. Page Matched doesn't, although there is a font provided from which you can construct larger size characters. However, the quality of the final result isn't as good as the smaller fonts.

BUILDING A PAGE

You build your page in an 80 x 80 character area using the program's edit facility. The whole page can't be viewed at once at all, but using a joystick it can be smoothly scrolled through a 40 x 20 screen window, allowing any section to be worked on. The joystick also contains a cursor which delineates an 8 x 8 pixel area, indicating where the next character will be positioned. With the program in 'macro-mode' a character is placed on the page by selecting it from the keyboard and pressing the joystick's button. Moving the joystick with the button held down results in a trail of characters being shown. Once on the page a character can be selected later by 'grabbing' it with the cursor instead of reselecting it from the keyboard.

Unlike the traditional point program, you build your page layout concerns in character mode rather than graphics mode. This means that simple operations like drawing straight lines can't be done by 'rubber-band'ing as used in programs like *Artistic*, but have to be built in sections from characters with the right shape. To make this easier Page Matched has a special line-drawing mode. This allows vertical and horizontal lines to be drawn by moving the joystick in the appropriate direction while holding down the fire button. When you change direction not only does the character shape automatically change from vertical to horizontal line (or vice-versa), but the current corner characters get inserted too! This is great for drawing form layouts, but I found it worked too quickly, making accurate positioning of corners difficult.

Each page has a 48 x 80 character library area associated with it, and this is usually saved along with the page on disk. You can use this area as a workshop for building macros, which may be up to 32 x 14 characters in size. Once created, the program can be put into 'macro mode' allowing a macro to be picked up and positioned anywhere on your page. Using the utility program, the library area can be stored in disk without its associated page, from where it may be loaded into any other page's library area.

Building macros from the special fonts is a bit like doing a jigsaw puzzle, and could become a time intensive. Fortunately some of the work has been done for you as the package also contains several libraries holding sets of pre-defined macros. For example, there are libraries containing ready-built musical notation and electronic component symbol macros. You can incorporate these into your page design as they stand, or modify them to your own purpose.

Text may be quickly placed on the page by using the program's 'type' mode. This allows you to type directly onto the screen from the keyboard, the cursor advancing one position for each

character typed in the normal way. You can use multiple fonts within a page, changing fonts on every line if you wish. You're also supposed to be able to import text directly from an ASCII file, although I couldn't make this work with print files produced by *Interwriter Plus*.

Page Matched always drives the printer in graphics mode, even when it's printing a page containing only text. This is how it manages to print out those fancy font styles, and is a little like GDS on the ST in this respect. The only snag is that you must use an Epson compatible printer, as there are no alternative printer drivers supplied. Once the DIP switches were set correctly, my first 9010 (Epson compatible) printer worked perfectly, producing really high quality results.

Only one page design can be printed in a printing run, so you can't link together multiple pages to print a multi-page document without user intervention. However, you can produce from 1 to 2000 copies of a given page and there's a feature allowing you to skip over a specified number of pages after printing each one to help cope with multi-page sets.

IN PRODUCTIVE USE

After that shaky start I found Page Matched surprisingly

pleasant and easy to use. It's driven via a menu to select major functions such as document, font, and text load; document save and print; disk directory print; printer setup screen colours setup; and entry to the utility programs. Once within a function you find prompts, a further menu, or have to toggle between modes using OPTION/SELECT/ACTUALLY keys. It's not an intuitive user interface, but it's soon learned.

You do need to know the keyboard layout for whatever font you're using. Although it looks a long time I printed out the supplied 'key finder' tool which could be every font on the disk. This not only shows every character in a font, but also where to find them on the keyboard. These charts are invaluable when building your own macros.

The printed results are impressive, and with care you can produce clean and crisp pages which are very clear, clean, and professional looking. The more I use the program the more uses I can find for it, so over time it could become one of those indispensable programs like the keyboard's classic Print Shop package.

As with most programs of this type you can always think of additional

features you wish the author had included. My greatest wish-list would add good quality larger font sizes, a built-in font editor, the ability to import picture graphics from elsewhere, better multi-page document handling, and access to DOS facilities. I'm sure I'll discover others too, but don't let this obscure the fact that Page Matched is already a very useful package. It's rather overpriced in its current state, but it does exceed the scope of your 8 bit machine considerably and can be recommended to anyone needing its specialized printing capabilities.

Next time we will take a look at MEMORANDUM a 'link up publishing' program that has been out for a while in the States, where it is widely supported, and which is finally being imported for 8 bit users in this country by Callisto Computers.



The sort of layouts you can expect from Page Matched

MACHINE CODE LIBRARY

by Stephen Williamson

Part three introduces Player Missile Graphics with routines that you can use in your own Basic programs

The Player Missile system is used to plot and move sprites, but Atari BASIC has no commands that support player missile graphics. The machine code library routines in this issue are designed to set up and control player missiles from a machine code program and also from within a BASIC program. Even if you do not have a working knowledge of the player missile system, you should be able to use the routines in your own programs without much difficulty. All the machine code source code listings work with standard Atari assemblies such as MASC 65 or the Atari Assembler Editor cartridge.

A player is a grid or stripe on which pixels can be plotted. In the case of single resolution mode the stripe is 8 pixels wide by 126 pixels long and takes up 104 bytes of RAM. There is a double resolution mode (128 x 8) which takes up less memory but the pixels are much smaller making it impossible to achieve fine graphic detail. Because of this, double resolution mode is seldom used by most applications. The player missile routines in this article are for single resolution players only.

There are 4 players, conventionally num-

bered 0 to 3. Pixels can be plotted at any vertical position within the player stripe and the stripes can be positioned at any horizontal co-ordinates on the screen. A special chip in the Atari known as ANTEC takes care of displaying the player missile shape on the screen and restoring city background areas over which the player or missile passes.

Missiles are similar to players except that they are only 2 pixels wide. Obviously this restricts their shape so that the most common use is for bullets or missiles in shooting games (hence their name). Like players, there are 4 missiles. It is possible to combine the missiles to make a 3rd player. To keep things simple I have restricted the player missile routines to players only, but they can be easily adapted by machine

code programmers to include missiles. The high byte of PMSAVE is stored at location 54279 to tell ANTIC where the player missile stripes are (see lines 194-200). Address 559 (names as DMACTL) switches on DMA (Direct Memory Access) which enables ANTIC to control the player/missile system as well as setting the size of the screen. Figure 1 is a list of the options available. Pick the combination of options that you want, add up the values and store at address 559. The routine stores a value of 62 in address 559 (standard screen, enable missiles, enable players, single line resolution and enable DMA). Although the routine does not set missiles it does set them to enable them. Priority selection controls which graphics appear 'in front' of others. The possible choices are listed in Figure 2. The priority

'Atari BASIC has no commands that support player missile graphics'

code programmers to include missiles.

INITIALISING THE SYSTEM

Listing 1 is the source code for a machine code routine to initialise the player missile system. The first thing that must be done when writing up the player missile routine is to reserve an area of memory 2K long that will contain the player missile stripes. The start of this area is known as PMSAVE and, due to limitations of the Atari hardware, must be on a 2K boundary i.e. any RAM address that can be divided by the number 2048. I usually make PMSAVE 5884, at the top-end of RAM and below the area that I use for the screen memory, but you can allocate another area by changing the value in line 120.

is set to 1 (see line 1650) which, according to the table means that players 0 to 3 will appear in front of colours 0 to 3 and the background. Most games use a 4 or 2 colour graphics mode so this makes the use of priorities and collision detection easier to manage. The priority value is stored at address 613 (see line 110,178). This takes the value from the register labelled PRIORITY. To change the priority after the PRIORITY register at line 1658. By storing zero in address 612 the collision detection system used by player missile graphics is closed (lines 140,141). Although the routine does not screen cells size detection, it is good practice to clear the registers when initialising the player missile system.

Lines 190 to 480 fill the player missile

OPTION	VALUE
No screen	0
Narrow screen	1
Standard screen	2
Wide screen	3
Enable missile DMA	4
Enable player DMA	8
One line resolution	12
Enable ANTEC DMA	32

Figure 1
SOURCE VALUES STORED AT 559

```

01 00000000 00000000
02 00000000 00000000
03 00000000 00000000
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strip with zero to clear out any garbage that may have collected there. Though the player missile RAM area is 32 long the first 168 bytes are not actually needed for the player missile stripes. The value 3 is added to the value of the 80-byte of PMSAGE at line 179. This means that when using the indirect instruction line 179, the program only clears from PMSAGE+168 (or 3 pages above PMSAGE), leaving the first 168 bytes free for other use. The missile stripe is then found at PMSAGE+168, Player 0 at PMSAGE+1024, Player 1 at PMSAGE+1280, Player 2 at PMSAGE+1536 and Player 3 at PMSAGE+1792.

Lines 180 to 179 assign various addresses as registers that store the parameters which the program needs to set up and control the player missile system. The listing details how these registers are used, for example lines 181 to 184 are labelled CO44, CO43 etc, and hold the colour value of each of the players and 185 to 191 are the horizontal coordinates of the player missile stripes.

Listing 1 - Source code for a machine code routine to initialize the player missile system - other listings overlaid

OPTION	VALUE
PLAYER 0-3, COLOURS 0-3, BACKGROUND	1
PLAYER 0-1, COLOURS 0-3, PLAYERS 2-3	2
COLOURS 0-3, PLAYERS 0-3, BACKGROUND	4
COLOURS 0-1, PLAYERS 0-3, COLOURS 2-3, BACKGROUND	8
4 MISSILES COMBINED AS FIFTH PLAYER	16
OVERLAPS OF PLAYERS MAKE 3RD COLOUR	32

Figure 2 - PRIORITY VALUES STORED AT 623

The registers LDPO to LDML hold the length of the shape data. They should be equal to the number of bytes used for each shape. Finally, it is stored at location \$1277 to switch on the PM action lines 750-760.

To customize the routine for your own use all you need to do is change the values of the registers in lines 1080 to 1088. If you do not want to use a particular player then set the horizontal and vertical registers (HP and VP) to zero and the length registers (LDPO to LDML) to 1 (not zero).

MOVING YOUR PLAYERS

The second routine (listing 2) moves selected players around the screen with a joystick.

The routine starts at line 1800 as it needs to be merged with the first program to operate correctly. The ONICOFF registers (see lines 1860 to 1870) decide which players are affected by the joystick. A value of 1 means that any joystick movement will affect the corresponding player, and a value of 0 means that the player is unswitched. The current position of a joystick plugged into port 1 is found at address \$121 \$112 for port 2. Figure 3 shows the values for each of the 8 directions.

Lines 1900 to 1940 check to see if the joystick is at the rest position (a value of 0). If so, then the program does not need to check any further and sets the routine (EXIT). The program then reads the joystick direction and, after checking the status of the player ONICOFF flags, alters the horizontal and vertical registers (HP and VP) accordingly. A delay loop is needed (lines 1940 to 1980), otherwise the player will move too fast. The load instruction of listing 1 is used to replot the player at the new position.

In order to test the routines, assemble them in memory, then write a short routine:

```

1000 J000 J000
1010 LOOP=J00, M010
1020 JMP LOOP

```

If using the Atari Assembler Cartridge or BASIC all you can use the debugging mode to run the routine.

In most applications before the program goes back to the move routine, other routines are executed to check collision detection, limit the cases in which the players can move, increment scores etc.

The routine as it stands plots 4 players on the screen. Players 0 and 1 flag are set so that these two players move. Player 0 is shaped like a foot and player 1 is the eye and mouth.

The routine is designed to be flexible and will suit a lot of applications on its stands - whilst also being easy to adapt to more sophisticated instructions. Try changing register values and parameters to see how they affect the program.

```

1000 J000 J000 J000 J000 J000 J000 J000 J000
1010 J000 J000 J000 J000 J000 J000 J000 J000
1020 J000 J000 J000 J000 J000 J000 J000 J000
1030 J000 J000 J000 J000 J000 J000 J000 J000
1040 J000 J000 J000 J000 J000 J000 J000 J000
1050 J000 J000 J000 J000 J000 J000 J000 J000
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1070 J000 J000 J000 J000 J000 J000 J000 J000
1080 J000 J000 J000 J000 J000 J000 J000 J000
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1880 J000 J000 J000 J000 J000 J000 J000 J000
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1900 J000 J000 J000 J000 J000 J000 J000 J000
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1920 J000 J000 J000 J000 J000 J000 J000 J000
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1970 J000 J000 J000 J000 J000 J000 J000 J000
1980 J000 J000 J000 J000 J000 J000 J000 J000
1990 J000 J000 J000 J000 J000 J000 J000 J000
2000 J000 J000 J000 J000 J000 J000 J000 J000

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2010 J000 J000 J000 J000 J000 J000 J000 J000
2020 J000 J000 J000 J000 J000 J000 J000 J000
2030 J000 J000 J000 J000 J000 J000 J000 J000
2040 J000 J000 J000 J000 J000 J000 J000 J000
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2100 J000 J000 J000 J000 J000 J000 J000 J000
2110 J000 J000 J000 J000 J000 J000 J000 J000
2120 J000 J000 J000 J000 J000 J000 J000 J000
2130 J000 J000 J000 J000 J000 J000 J000 J000
2140 J000 J000 J000 J000 J000 J000 J000 J000
2150 J000 J000 J000 J000 J000 J000 J000 J000
2160 J000 J000 J000 J000 J000 J000 J000 J000
2170 J000 J000 J000 J000 J000 J000 J000 J000
2180 J000 J000 J000 J000 J000 J000 J000 J000
2190 J000 J000 J000 J000 J000 J000 J000 J000
2200 J000 J000 J000 J000 J000 J000 J000 J000
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2220 J000 J000 J000 J000 J000 J000 J000 J000
2230 J000 J000 J000 J000 J000 J000 J000 J000
2240 J000 J000 J000 J000 J000 J000 J000 J000
2250 J000 J000 J000 J000 J000 J000 J000 J000
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2500 J000 J000 J000 J000 J000 J000 J000 J000

```

Listing 3 - BASIC program using the machine code routines

continued overleaf
with listings 4 and 5

Listing 1 is a BASIC program that uses the machine code routines and is a good example of how a BASIC program can interact with machine code. Lines 10000 to 10070 assign variables to the registers used by the machine code routine and load the machine code data to RAM. Refer to lines 1290 to 1790 in listing 1 for an explanation of when each of these registers is used for. The data is essentially the same as the machine code in listings 1 and 2 apart from the inclusion of 7 PLA instructions so that the routine can return to BASIC.

Lines 80 to 170 are an example of how to use the machine code routine, but of course they can be adapted to suit your needs. Lines 80 to 150 load the shape data and lines 160 to 240 set the parameters for POKING data to the various registers. Note line 280 which sets the delay timer that allows how fast the players move.

Line 300 calls up the initialization routine and line 320 calls the move routine. The program then sets up a loop to continually obtain the move routine. If you want to use this as the framework for your own game then after line 320 include commands to go to subroutines for collision detection, finding how far players can move etc. Depending on how long these extra routines are, you may need to reduce the value of the variable DELAY to speed things up a bit.

The only instruction in the BASIC section is that the machine code must reside from 10000 to 10070 and PBASE must reside at 50000 so make sure that other parts of the program do not clash with this.

USING THE ROUTINES IN BASIC PROGRAMS

Listing 4 is the source code for a machine code routine for use in a BASIC program that is completely relocatable so that it can be loaded to a string variable. All registers to control the routine are assigned to the page 6 area (between 1836 and 1794). The length of a player shape is restricted to a maximum of 60 bytes.

Listing 5 demonstrates how to use this routine. Lines 10000 to 10140 load the machine code to a variable \$ITPMH and assign variables to the page 6 registers. Line 230 calls up this routine and passes the parameters PBASE, SOMCTL and PRIORITY to the routine. Refer to Figures 1 and 2 to decide the values of SOMCTL and PRIORITY. As before, remember to set PBASE on a 2k boundary.

Lines 240 to 290 is an example of how to control the players. Lines 320 and 360 read the joystick direction values and line

```

10 REMOVING DATA 100000
20 REMOVING DATA 100000
30 REMOVING DATA 100000
40
50 REMOVING DATA 100000
60 REMOVING DATA 100000
70
80 REMOVING DATA 100000
90 REMOVING DATA 100000
100 REMOVING DATA 100000
110 REMOVING DATA 100000
120 REMOVING DATA 100000
130 REMOVING DATA 100000
140 REMOVING DATA 100000
150 REMOVING DATA 100000
160 REMOVING DATA 100000
170 REMOVING DATA 100000
180 REMOVING DATA 100000
190 REMOVING DATA 100000
200 REMOVING DATA 100000
210 REMOVING DATA 100000
220 REMOVING DATA 100000
230 REMOVING DATA 100000
240 REMOVING DATA 100000
250 REMOVING DATA 100000
260 REMOVING DATA 100000
270 REMOVING DATA 100000
280 REMOVING DATA 100000
290 REMOVING DATA 100000
300 REMOVING DATA 100000
310 REMOVING DATA 100000
320 REMOVING DATA 100000
330 REMOVING DATA 100000
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430 REMOVING DATA 100000
440 REMOVING DATA 100000
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460 REMOVING DATA 100000
470 REMOVING DATA 100000
480 REMOVING DATA 100000
490 REMOVING DATA 100000
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510 REMOVING DATA 100000
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980 REMOVING DATA 100000
990 REMOVING DATA 100000
1000 REMOVING DATA 100000
1010 REMOVING DATA 100000
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1080 REMOVING DATA 100000
1090 REMOVING DATA 100000
1100 REMOVING DATA 100000
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1120 REMOVING DATA 100000
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1180 REMOVING DATA 100000
1190 REMOVING DATA 100000
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1840 REMOVING DATA 100000
1850 REMOVING DATA 100000
1860 REMOVING DATA 100000
1870 REMOVING DATA 100000
1880 REMOVING DATA 100000
1890 REMOVING DATA 100000
1900 REMOVING DATA 100000
1910 REMOVING DATA 100000
1920 REMOVING DATA 100000
1930 REMOVING DATA 100000
1940 REMOVING DATA 100000
1950 REMOVING DATA 100000
1960 REMOVING DATA 100000
1970 REMOVING DATA 100000
1980 REMOVING DATA 100000
1990 REMOVING DATA 100000
2000 REMOVING DATA 100000

```

Listing 4 - Source code for a relocatable machine code routine for use in a BASIC program

270 stores the appropriate horizontal and vertical registers. Line 280 calls up the part of the machine code routine that moves the players.

The advantage of listing 4 is that the machine code is completely relocatable and therefore there is no danger of clashing with other areas of RAM used by the program. PBASE can also be variable. It is much shorter than the first routine. The disadvantage is that the joystick read routine is in BASIC which restricts the speed at which the players move.



Figure 3 - JOYSTICK DIRECTIONS



You like it!

Will you certainly prove the need for a column such as this if your responses are anything to go by or was it the fact of a couple of tickets for Alton Towers that did the trick? As promised in the last issue, I've included the full solution to 'Clash Of Death' and would like to thank all those readers who promptly answered the majority of pleas for help. In this latter respect I would particularly like to thank Steve Beach of Birmingham for being first in coming to the rescue of a struggling Simon Ashby who was in trouble with 'Draconus' - and for good measure, Jonathan Simpson provides a useful snip!

Thanks to all who sent in information and tips on Atari games and those who sought help through these pages. Don't worry if your tips were apparently ignored this time, they are all being stored up and we'll fit 'em all in eventually! Now let's get on with it.

DRACONUS IS BEATEN!

Let's start off with the one that we had most questions on last time. The three problems encountered in issue 35 are all related as, without the Necromancer's Staff the spells cannot be collected, and without the spells the Tyrant Beast cannot be defeated. To get the staff, first collect the Eye of Seryks and then proceed back up to the top level and the room where the Morph Helm was found. In the upper half of the room - at the far right - a section of wall has now disappeared (the Eye of Seryks was through all thiswall!). The Necromancer's Staff is in the next room. Once this is obtained, the spells can be collected and these in turn can be used against the Tyrant Beast he still takes a LOT of beating, though!

Now on to a veritable host of tips from your fellow readers! A whole host of hints and cheats that will help you get a whole lot more out of some of your favourite games. Paul Perry of Lickfield, Staffs starts us off with these cheats.

It's easy to go through the levels on Tynesoft's **PHANTOM**. If you have the cassette version and cannot complete a level, simply QUIT the game and the program will then allow you to load up the next level from tape, so you can go on through ALL the levels on just ONE tape!

A lot of programmers put their own cheat codes into games so that they can play test them and have one or more written by the same programmer. First is **HENRY'S HOUSE** (Atari track). On the title screen, enter "CFM" while the music plays, and a picture of a little boy will appear. You now have infinite lives! **MIRAX FORCE** (Tynesoft) works in the same way. Simply type in "CFM" on the title screen for that little boy to help you out again, this time by disabling the collision detection.



On to some getting hints and rather than cheats. Simon Budge of Chichester has been playing a couple of quite different games and has discovered ways to get a lot more out of them. Do you want to be first off the block in **SPEED ACE!** (at peak

HACKER

The password to log on is **AUSTRALIA**

The security checks are:

(1) **MACOS(A)PE@LTD**

(2) **AK-838M9**

(3) **HYDRAULIC**

(4) **AUSTRALIA**

Don't that just spoil the challenge!

SURPRISE ... SURPRISE!

Here's a couple of mysteries sent in by A.C. Thompson of Coedman, Gavett. It would be nice to tell you what happens but The Tipster is getting too old now to except all those falling boules. You should see the boules on my head! Try them for yourselves, and see what surprises are in store.

Ready BOLDERDASH II. If you can enter your 'EXIT' exactly as your time clicks to zero, you will have a brilliant surprise! This only works on the early stages though and requires precision timing. You see games get a lot of practice on level 1! **BLUE MAN** is the other one. Try bombing your own boules in this game. Instead of handling and you may find a hat or two for up-and-coming programmers to illustrate how games are programmed!

Another one from Graham Plumb concerns **ATARI ARTIST.** On the main menu, if you position the cursor over the center of the Atari logo and press the fire button, a piece of music is played!

KEEP 'em COMING!

Let's get requests for help amongst the tips and try to give you all something to work on for next time. Let's be honest from you on these problems that your fellow Atlantans need help with. First off **QUEST FOR ETERNITY**, lots and lots of people wrote about this, here about a solution, whole or partial?

From Kevin Wray comes a request for help with **SPINY HAROLD** - anything at all well-armed at least has to get to the second level? We were able to help with his fellow James query but it's over to you for the hedging tips.

Sell the sign of any information on **OPERA HOUSE** and **DARK CRYSTAL** - are they THAT difficult or has anyone actually completed either of these? Hang on a minute. The latter tells me that Dark Crystal is hard but that he managed the first section and also knows how to get to the next part. He's not lying on yet, maybe I can twist his arm for something! for next time!

GIVE AWAY TIME

The two free tickets for **ALFON FERRER** go to Jonathan Simpson for his stack of *Discosmos*. He must have fought long and hard to have got all the way round. We want a full map of the Black Hole next time, Jonathan!

Next issue we are giving away **A BONY WALLEMAN PERSONAL FILE #11!** Handled games junkies can put in their favourite tapes and listen to their leading sounds all day long! This goods will go to the first tip, that or map chosen to be the best of the bunch so keep 'em coming. Not about some suggestions too for some more give aways. How computer stuff can everyone has most of the programs available, but something more unusual and not too expensive like a trip to Disney-land, the Spire's pocket money sleep enough for that it isn't even free to John Towers! It's the fun of it all that counts. Send everything to THE TIPSTER, NEW CLARETON, P.O. BOX 54, STAFFORD, ST20 1JH

A TIPSTER EXCLUSIVE!

Every reader sending new hints, tips, cheats, maps etc. to

THE TIPSTER will receive an EXCLUSIVE TIPSTER badge!

There is no other way you can get one of these badges so you had better get exploring all those Atari games and send in some info, pronto.



the joystick upwards at the options screen and keep it there as you press 'O' to start the game. This will give you a much faster start in Atlanta's **LEAGUE CHALLENGE** you can get better results by NOT playing! In order to gain a better place in the league, it is important to have fit players so if you don't mind NOT trying to win the Cup, you can have NONE of your team playing in the final match of the season to CLP match, and then all of your players will be fully fit to compete in the league games! There's a test to see how good a simulation it is, I wonder if the League management come down on you like a ton of bricks, stop on a halfpenny and loan you from further Cup competition!

Graham Plumb from Borewood, Staff has come up with some tips on a couple of very popular games. **INTERNATIONAL KARATE** is one that some people find hard but if you hold down '3' on the keyboard and a number between 1 and 4, you can change the speed of the game. '4' is the slowest and '1' the fastest. **ENCOUNTER** is newly re-released by Atlanta now and there will be a lot of new players of this all-time classic which can be very, very hard unless you are a good player. Here's a couple of tips that should get you a lot further in the game. Watch out for the missiles and as soon as you see a missile flying towards you, put your back into full reverse and start firing. Once you have completed a screen you have to go through a Black Hole. Look between the sights card, when you see an asteroid appear, move the joystick to one side and you should be able to avoid it without having to move around too much.

THE CLOAK OF DEATH SOLUTION

As promised here is the full solution but **BE WARNED** this is the complete solution and could spoil the game for you if you need too far, read it at your peril. That keep cheap Britain (Swamy) provided the solution for you all.

H - GET CHEST - E - LOCK DESK - GET BIBLE - S - LOCK FIREPLACE - W - W - GET CHAIR - H - DROP CHAIR - STAND ON CHAIR - LOOK - LOCK CUPBOARD - GET MATCHES - GET KNIFE - S - E - DROP BIBLE - LOOK - GO CORRIDOR - DROP CHEST - KICK CHEST - LOCK CHEST - GET KEY - W - GET CANDLE - E - OPEN DOOR - LIGHT CANDLE - DROP MATCHES - GO DOOR - GET IRON - UP - E - DROP KNIFE - GET BIBLE - UP - W - PULL CORO - DROP IRON - E - DOWN - GET KNIFE - GO CORRIDOR - GO DOOR - E - GET HAMMER - GET SAW - S - DROP SAW - GET NAG - H - E - DROP BAG - W - W - UP - E - UP - H - E - LOOK SHELVES - PULL BOOK - GO PASSAGEWAY - UP - E - REMOVE NAILS - DROP HAMMER - GO HATCH - GET WIRE - S - PUSH TABLE - W - DOWN - W - S - W - GO BASKET - GET DOBLET - E - E - S - DOWN - GO CORRIDOR - GO DOOR - E - S - DROP BIBLE - GET SAW - GET BAR - CUT BAR - MAKE CROSS - DROP SAW - GET BIBLE - GET CROSS - H - W - UP - S - W - H - LOOK SINK - GET WATER - S - E - UP - H - E - BRIDGE CLAS - DROP DOBLET - GET PAINTING - OPEN SAFE - UP - LOOK SAFE - GET KEY - DROP CROSS - DROP BIBLE - W - S - DOWN - E - GET COAL - W - GO CORRIDOR - GET MATCHES - GO DOOR - E - E - DROP COAL - LIGHT COAL - OPEN GATE - E - _____ to freedom!

4. CRUNCHING SOME NUMBERS

Because of an early deadline caused by the advent of the Atari 386c, I thought I'd change the format slightly this time, and start off by trying to answer some of the questions posed in your letters.

Finally, Mr. L. Waldman of Leigh via Leo asks if Turbo Basic is available on the IBM Atari 408. Although I don't know for sure, I think a version of the language for the 408/808 machines is available from the Public Domain Library of "Monitors" on disk only. This is an excellent quarterly magazine published by "The U. R. Atari Owners Club", an independent user group, and I thoroughly recommend you at least take a look at it. You should be able to get further details by contacting the editor, Ray Smith, at P. O. Box 1, Rayleigh, Essex SS6 8AB. I am sure the editor will back me up when I say that this is one of the better independent publications for the Atari machines.

Next, Luis Barreto from Postogal wonders why he can't save files on his DOS 3 formatted disks after he loads Turbo Basic. The answer is that TB is saved under DOS 2.5, and the two formats are incompatible. DOS 2.5 is the more popular system, as well as being the widely accepted standard, so I recommend that you use it, rather than the more recent version 3.

From Manchester comes a query from Mike Folcower regarding documentation for TB. As far as I know, all that is currently available (in English) is the pamphlet translated by the West-View New York Atari Users' Group, which gives some basic information on the available commands. It comes with the language if you order it from the Page 4 Accuracy Dept. Incidentally, I will get people asking where they can get Turbo Basic from Public Domain libraries, including the Page 4 one, each 8, so you should have no trouble in that respect.

HINTS

Finally, a couple of hints suggested by readers. Andrew Thompson from Carlisle in Great Britain found the vector address for the Basic statement table. If you look at memory locations starting at **00F0E11405** through to **00F0E1140A**, and locations **010471** to **047196** (the boot's yet discovered vectors for those - can anyone help?), and print out their contents, you should be able to see the entire command set.

Also, an English language version of the TB compiler is now available thanks to an old friend from the ARK, Martin Holborn from Lower Penn. If you are interested, and would like to be able to make sense of those German prompts, drop me

or Len a line, and we'll see what we can do.

Please carry on writing, even if only to offer comments on the article. I try and answer all the letters as quickly as I can. A word of thanks to all those who did bother to write - there are too many names to list, but you know who you are. Thanks.

MORE NEW COMMANDS

As I said, I am writing this at very short notice, and, unfortunately, I can't reproduce from the list. Consequently, I haven't been able to write any substantial new programs, but have managed to dig-out an old graphics demonstration which I translated from an 80 effort - this appears as Listing Two. Also, I managed to dictate Listing One to one of my brothers on the phone!), so it's thanks to Andrew and Scott Cameron that it appears at all! This program shows the use of the commands **G**, **R** and **PRINT**, and supplies a procedure which will convert a string entered in G, **R** into a number, with the entire text changed to upper case (set G, **TIPS** to **TIPPS**), to lower case G, **TIPS** to **TIPPS**), or with lower case changed to upper, AND vice versa (G, **TIPS** to **TIPSW**). Make sure you OPEN any characters at end A-Z. Using spaces, full stops etc. will cause unexpected results! It is easy to change the program so that all these characters remain unchanged, but I leave this to you. Hopefully these listings will be of some use.

This issue, I thought I'd try and cover some of the TB commands which deal with arithmetic, as well as the so-called 'logical' commands listed on earlier.

ARITHMETIC COMMANDS

The number system we normally use makes use of the 10 characters 0, 1, 2, 3, 4, 5, 6, 7, 8 & 9. This system is known as decimal, or base 10, and although it is ideal for most 'human' purposes, when dealing with computers another system, known as hexadecimal, or base 16, is often employed. This is preferred by most technical literators and programmers alike, and often bigger numbers to be represented in a more compact fashion. Hexadecimal uses not 10, but 16 characters to represent 'digits' in the number. The system gives 0, 1, 2, ... F but then the next characters A, B, C, D, E and then F. Conceptually, A=11, B=11+1=12, A base of 16 means that we have a 'units' column, a 'sixteens' column, a 'two-hundred-and-fifty-six' column, and so on, with each column representing an increasing power of 16. This compares with the decimal system we are all familiar with which has a 'units' column, a 'tens' column, a 'hundred' column etc. Here, each column represents a power of 16, with the rightmost column, the 'units', less in the power of zero.

As a quick example, the number 'ABC' in hexadecimal is equal to 3008 & 720 + 12 + 1728 = 2448 in decimal - i.e. 2448 = 316 + 12 = 2748. So 2748 in decimal is 'ABC' in hexadecimal. I'm sorry if this is vague, but I haven't the room to go into a full explanation - any Arithmetic book should give you some more help, if you need it.

Luckily, Turbo Basic supplies us with a mechanism to change from hexadecimal to decimal, and vice versa. The command **HEX2DEC** will return a string corresponding to the hex version of

3. Since these numbers are stored as strings, they can't be manipulated by arithmetic operators (+, - etc.) unless they are changed back to decimal first. This can be done by using **DECIMAL** which yields the number (in decimal) represented by the hex string, **HE**.

A quick group of examples :

```
1) PRINT HEX$(10) gives the answer '0C'
2) 10 DIM B$(10)
   B$(0) = "ABC"
   B$(9) = "10"
   PRINT DECIMAL$(10)
DECIMAL will give the answer '21607' which is ABC...10.
```

If you want to use hex numbers in loops, for example, then you can also do something like :

```
FOR L=4000 TO 4007F
```

which is exactly the same as writing :

```
FOR L=1000 TO 1007
```

100 decimal, or 6400 hexadecimal, represents Page 8, barely enough. Now you know!

The **D** sign before a number tells the computer you are using a hex representation, and it will convert such numbers to decimal before using them.

The above will be instantly obvious to some of you, but a complete mystery to others, and I apologise for this. However, it is difficult to appear interesting to such a wide audience. Ah well, never mind!

INT and **MOD** are commands which allow you to do integer division. That is to say, when you divide one integer by another (**A/B**), you get a quotient (how many times **B** goes into **A**) and a remainder, **R**.

```
10 D=A/DIV B
   R=D-A*MOD B
```

will store the quotient in **C**, and the remainder in **D**. What possible use these commands can they not be for obvious, but perhaps a short example will prove useful. If you see :

```
10 A=1: B=0: I=0
```

in a loop, say, then **A** will 'count' from 0 to 9, and then automatically go back to 0 again! If you replace the **B** by **X**, then **A** will count from 0 to **X-1**, and then reset. Why this happens, I'll leave to you to work out. I've used this technique as a couple of my 'out-of-cycling' demonstrations.

NUMBER-SPLITTING

Another pair of complementary functions are **FRACT** and **TRUNC**, but these are of use for real numbers (those with possible fractional parts), or opposed to integers. **TRUNC(A)** will return the whole-number, integer component of **A**, whilst

```

10 D=0
20 D=0: B=0: PRINT B: B=1: GOTO 30
30 D=D+B: PRINT B: B=1: GOTO 30
40 D=D+B: PRINT B: B=1: GOTO 30
50 D=D+B: PRINT B: B=1: GOTO 30
60 D=D+B: PRINT B: B=1: GOTO 30
70 D=D+B: PRINT B: B=1: GOTO 30
80 D=D+B: PRINT B: B=1: GOTO 30
90 D=D+B: PRINT B: B=1: GOTO 30
100 D=D+B: PRINT B: B=1: GOTO 30
110 D=D+B: PRINT B: B=1: GOTO 30
120 D=D+B: PRINT B: B=1: GOTO 30
130 D=D+B: PRINT B: B=1: GOTO 30
140 D=D+B: PRINT B: B=1: GOTO 30
150 D=D+B: PRINT B: B=1: GOTO 30
160 D=D+B: PRINT B: B=1: GOTO 30
170 D=D+B: PRINT B: B=1: GOTO 30
180 D=D+B: PRINT B: B=1: GOTO 30
190 D=D+B: PRINT B: B=1: GOTO 30
200 D=D+B: PRINT B: B=1: GOTO 30
210 D=D+B: PRINT B: B=1: GOTO 30
220 D=D+B: PRINT B: B=1: GOTO 30
230 D=D+B: PRINT B: B=1: GOTO 30
240 D=D+B: PRINT B: B=1: GOTO 30
250 D=D+B: PRINT B: B=1: GOTO 30
260 D=D+B: PRINT B: B=1: GOTO 30
270 D=D+B: PRINT B: B=1: GOTO 30
280 D=D+B: PRINT B: B=1: GOTO 30
290 D=D+B: PRINT B: B=1: GOTO 30
300 D=D+B: PRINT B: B=1: GOTO 30
310 D=D+B: PRINT B: B=1: GOTO 30
320 D=D+B: PRINT B: B=1: GOTO 30
330 D=D+B: PRINT B: B=1: GOTO 30
340 D=D+B: PRINT B: B=1: GOTO 30
350 D=D+B: PRINT B: B=1: GOTO 30
360 D=D+B: PRINT B: B=1: GOTO 30
370 D=D+B: PRINT B: B=1: GOTO 30
380 D=D+B: PRINT B: B=1: GOTO 30
390 D=D+B: PRINT B: B=1: GOTO 30
400 D=D+B: PRINT B: B=1: GOTO 30
410 D=D+B: PRINT B: B=1: GOTO 30
420 D=D+B: PRINT B: B=1: GOTO 30
430 D=D+B: PRINT B: B=1: GOTO 30
440 D=D+B: PRINT B: B=1: GOTO 30
450 D=D+B: PRINT B: B=1: GOTO 30
460 D=D+B: PRINT B: B=1: GOTO 30
470 D=D+B: PRINT B: B=1: GOTO 30
480 D=D+B: PRINT B: B=1: GOTO 30
490 D=D+B: PRINT B: B=1: GOTO 30
500 D=D+B: PRINT B: B=1: GOTO 30
510 D=D+B: PRINT B: B=1: GOTO 30
520 D=D+B: PRINT B: B=1: GOTO 30
530 D=D+B: PRINT B: B=1: GOTO 30
540 D=D+B: PRINT B: B=1: GOTO 30
550 D=D+B: PRINT B: B=1: GOTO 30
560 D=D+B: PRINT B: B=1: GOTO 30
570 D=D+B: PRINT B: B=1: GOTO 30
580 D=D+B: PRINT B: B=1: GOTO 30
590 D=D+B: PRINT B: B=1: GOTO 30
600 D=D+B: PRINT B: B=1: GOTO 30
610 D=D+B: PRINT B: B=1: GOTO 30
620 D=D+B: PRINT B: B=1: GOTO 30
630 D=D+B: PRINT B: B=1: GOTO 30
640 D=D+B: PRINT B: B=1: GOTO 30
650 D=D+B: PRINT B: B=1: GOTO 30
660 D=D+B: PRINT B: B=1: GOTO 30
670 D=D+B: PRINT B: B=1: GOTO 30
680 D=D+B: PRINT B: B=1: GOTO 30
690 D=D+B: PRINT B: B=1: GOTO 30
700 D=D+B: PRINT B: B=1: GOTO 30
710 D=D+B: PRINT B: B=1: GOTO 30
720 D=D+B: PRINT B: B=1: GOTO 30
730 D=D+B: PRINT B: B=1: GOTO 30
740 D=D+B: PRINT B: B=1: GOTO 30
750 D=D+B: PRINT B: B=1: GOTO 30
760 D=D+B: PRINT B: B=1: GOTO 30
770 D=D+B: PRINT B: B=1: GOTO 30
780 D=D+B: PRINT B: B=1: GOTO 30
790 D=D+B: PRINT B: B=1: GOTO 30
800 D=D+B: PRINT B: B=1: GOTO 30
810 D=D+B: PRINT B: B=1: GOTO 30
820 D=D+B: PRINT B: B=1: GOTO 30
830 D=D+B: PRINT B: B=1: GOTO 30
840 D=D+B: PRINT B: B=1: GOTO 30
850 D=D+B: PRINT B: B=1: GOTO 30
860 D=D+B: PRINT B: B=1: GOTO 30
870 D=D+B: PRINT B: B=1: GOTO 30
880 D=D+B: PRINT B: B=1: GOTO 30
890 D=D+B: PRINT B: B=1: GOTO 30
900 D=D+B: PRINT B: B=1: GOTO 30
910 D=D+B: PRINT B: B=1: GOTO 30
920 D=D+B: PRINT B: B=1: GOTO 30
930 D=D+B: PRINT B: B=1: GOTO 30
940 D=D+B: PRINT B: B=1: GOTO 30
950 D=D+B: PRINT B: B=1: GOTO 30
960 D=D+B: PRINT B: B=1: GOTO 30
970 D=D+B: PRINT B: B=1: GOTO 30
980 D=D+B: PRINT B: B=1: GOTO 30
990 D=D+B: PRINT B: B=1: GOTO 30
1000 D=D+B: PRINT B: B=1: GOTO 30

```

Listing 1

FRACT(A) returns the other bit - the remaining fraction after the decimal point, e.g.

```
10 A=25.75
   B=TRUNC(A)
   C=FRACT(A)
```

will put the value 25 into **B**, and 0.75 into **C**.

The last of the new arithmetic operators is the function **RAND**. **RAND(N)** will give a pseudo-random number in the range 0-**N**.

LOGICAL COMMANDS

To round off this time, I'll briefly try and describe what are known as the 'bitwise operators'. Turbo Basic supports three such operators : **OR** (**|** in Turbo Basic), **AND** (**&** in TB), and **EXCLUSIVE-OR** (represented by **ENOR**). These operators 'take' two operands or values, and act upon them, just like $x_1 \cdot x_2$ and $x_1 + x_2$. You can have '1001101', '1001101', and '1001001101', just as you can quite legally have '100 + 10'. Unlike $x_1 \cdot x_2$ and $x_1 + x_2$, however, the so-called logical operators operate on individual bits (rather than the whole numbers themselves). I'll elaborate briefly but, again, spare details how much I can spare.

Every number stored or manipulated in the computer is stored not as a decimal value, or as hex, or as binary, but as a series of voltage levels, or 0's and 1's. This can be represented by using another base (not again, I hear you say!) - Base 2 or binary. In binary, the only characters used are 0 (which corresponds to the OFF in the computer), and 1 (ON). Each memory location can contain any number from 0 to 255 on the 8-bit

This range can be represented by 8 binary digits (bits), and this 'unit' is known as a BYTE. Hence, each location contains a byte of information, but out of interest, this is why it is necessary to use 2 bytes to represent the addresses themselves. The numbers 0 to 255 are not sufficient, so we need to use 2 bytes - a high byte and a low byte. This gives us a range of 0 to 65535. The explanation so far is an over-simplified picture, but should convey the basic idea.

If a certain location stores the value 190, this is, in binary:

01100100

$(0*2^7) + (1*2^6) + (1*2^5) + (0*2^4) + (0*2^3) + (1*2^2) + (1*2^1) + (0*2^0)$

The logical operators do a calculation on individual bits, or digits of the binary number, rather than on the numbers themselves. So each of the operators compare the corresponding bits in both operands, and decide whether or not to set the relevant corresponding bit in the result.

The OR operation (|) sets (switches ON) or 'mode equal to 1' the result bit if either or both of the corresponding bits in the two operands are 'on' themselves. Good grief, an example is in order!

01100100 (which is 190 in decimal)

OR

11000000 (which is 200 in decimal)

00001100

11101100 (which is 236 in decimal)

So, in Turbo Basic, if we write

```
10 A=FREEZE
20 B=FREEZE
```

Then PRINT A&B will give the result 236.

If you assign values directly to A and B above, make sure that the numbers are between 0 and 255, as these three commands only work on 8 bits, or a byte.

The AND operation (&) only sets the result bit if BOTH the operands bits are 'on'.

01100100

AND

11001000

00001000

01000000 (which is 64 in decimal)

So, PRINT A&B will give the result 64 (A is 190, and B is 200).

The EXCLUSIVE-OR (XOR) is the same as OR, except that if the two bits are the same, then the result bit is always 0 (OFF). So, in the above example, PRINT A XOR B will give 172.

WHY USE THE LOGIC COMMANDS?

Confused? In practice, these commands are useful for setting, clearing or toggling bits in a byte. For example, if we want to display only characters in the ASCII range 0-127, then we can do what is known as 'mask-out' the bit representing 2 to the power 8, or 128 - the 'leftmost' or 'most significant' bit in the byte. This way, we can strip characters with an ASCII value of 0-255 down to 0-127. The AND (&) is used generally to clear bits, the OR (|) to set them, and the XOR to toggle them.

I'm very sorry if I've lost anybody, but this is a subject which really needs an article all of its own to explain. Listing 1 demonstrates the technique by toggling between upper and lower case etc. The only difference between UPPER case letters and LOWER case is that in the letters, an extra bit is set to 1 e.g. 'A' in ASCII is 65, which is 01000001 in binary and 'a' in ASCII is 97, which is 01100001 in binary. The ONLY difference is the third bit from the left which is 'on' in lower case letters, but 'off' in upper case. It is on this basis that Listing 1 works.

ODDS & ENDS

'It' and on a hopefully understandable note, by describing it contained present on the '33 Spectrum' (though amongst other machines - SIBINGS). This function returns the empty string ('') until you press a key, at which point it returns the key you pressed. So, to wait until someone presses a key, you could write

```
WHILE (INKEY="" ) : WEND
OR REPEAT UNTIL (INKEY<>"")
```

To find out which key has been pressed, by the following example :

```
10 DIM K(1)
20 DO
30 K$=INKEY
40 IF (K$<>"") THEN PRINT K$
50 LOOP
```

FINISHING OFF

Well, that about wraps things up for another month. A bit of a rush-job, but hopefully normal service will be resumed next time, when I hope to cover some more Turbo Basic commands, as well as answering some more questions. Feel free to write to me, especially if you found anything hard to follow. As ever, comments, suggestions and hints will be gratefully received. Let me know what you'd like me to cover. Anyway, bye for now.

Write to me c/o 11 Main Bank, Innes, Perthshire,
PH1 6SE, SCOTLAND.

TURBO BASIC



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The dinner dance is over and leftovers litter the floor. Now it's party time for the mice - and boy, are they rough! You'll have to battle just to get a mouse. Don't have too many cocktails though, they'll make you drunk. The bottles, however, are safe enough, they just get in the way.

During the course of the mouse party nasty salmonella and listeria bacteria will increase and eventually some throes could give you food poisoning - with fatal consequences. Keep your fingers crossed!

The game ends when all mice are gone and the winner is the one that consumes the most. The scores are displayed in player order from left to right at the top of the screen in the same colours as the mice.

On loading, the game goes straight into demonstration mode. Press the button on joystick 1 or 2 respectively to start a 1 or 2 player game. Use your joystick to move your mouse around the screen unless it is drunk, in which case you'll have to wait a few seconds until it sober up. The computer controls the remaining mice not selected.

On earlier computers with 4 joystick ports up to 4 people can play since 4 joystick mode has been enabled by pressing START and SELECT together when the game is in demonstration mode. Once set, 4 player mode is enabled until the computer is turned off.

Press the appropriate joystick button to select the number of players each game. If you prefer to take the easy option just sit back and let the computer control all 4 in demonstration mode which comes into play about 2 minutes after each game ends. Just enough time to get out the winnings and place your next bet!

TRYING IT IN

Both cassette and disk users should type in Listing 1, SAVE or SAVE a copy, then RUN the program. The program will check each line of data and inform you of any errors. Correct any errors and RUN the program again until all errors are eliminated. When this is done answer the cassette/disk questions accordingly to create a boot tape or binary disk file.

Cassette users should load the boot tape created by firstly removing all cartridges and then turning on the computer while holding down the START key (XL and XE owners should hold down OPTION as well). Press RETURN and the tape will load and run automatically.

Disk users should type in Listing 2 and save it on the same disk as the binary file created by Listing 1. RUN the Listing 2 program with the disk in the drive and the game will load and run automatically.

A special note for disk users - if any other programs have been used prior to Listing 2 being loaded it is recommended that the computer be turned off and on again before the program is run to ensure that the game isn't corrupted by any data left in memory.

MOUSE PARTY



**A new action game
from Bill Halsall for
up to four players**

Mouse Party can be played by 1 or 2 players on the XL or XE but owners of the Atari 400 or 800 computers can have up to four players at once

Mark Hutchinson's

RANDOM NOTES

In telephone ring yesterday and the voice of the Lord and Mander said, "Remember that article you were to write for the magazine next month? Well, I need it now, get going!" It would seem that the last *ATARI* show came at a very bad time for production of the magazine which, by the way, for me will always be *FACE* at the short notice threw me into a panic about what to write so I looked over some past issues for inspiration and found some interesting items.

For instance, I have written in the past how *ATARI* give very little backing to their computers, especially the 8-bit, and how a national user group would be beneficial and even better if they had their own "show". In and behold, the need seems to have been seen at the Alternative Move Show in London and it may well grow when the next Alternative Move Show is held in London in November. All those people who complain about their lousy SL's, et al., have no excuse for not turning up - not on ST in sight, let's just hope that there is enough to interest *Random*! The outstanding surprise of the 8-bit show was just how much support is available for machines that stopped production years ago. They continue on regardless because their users are unable and stick together. The *ATARI* 8-bit are alive and kicking but which will die out first the computers or the users?

Computerhouses are importing software from America, of which vintage I do not know, but again I have always advocated this in the magazine and elsewhere and I am glad to see it happens. I just hope that they import titles as much as games. Maybe you think that it is not such a good idea to import old programs. Well, maybe some of the "new" programs are not so new. Remember not so long ago *ATARI* launched "Venerable Manager" with their 8-bit computers? Could this be the very same program that was advertised in *NIKKO* magazine in issue 5 way back in September 1982? For those who remember *ANALOG*, do you remember that it stood for *ATARI Newsletter And Lots Of Games*?

I bet you think that the interactive video disk from Microdeal on the ST a couple of years back was an innovation and that only the ST could handle it. Wrong! New Media Graphics Corp. had a system called *StarMaster 8000* incorporating a Pioneer VP-8000 laser disk player, a Z80 controlled interface, 1M memory, a floppy drive, *ATARI* basic and all necessary coding and documentation for only 18,000 - not a bad price for an add-on to the old 400 in November 1982. And you will think that there was no support for our 6-bit? *StarMaster* happened to be the much wanted *AT&T* CD-ROM? Will it come out of materials for the upcoming time and be displayed at a stand like at the next show? Do they realise that heavy competition is now available? *StarMaster* Europe have introduced a re-writable, 5.25", optical disc drive with 64Kbits (ops, Megabytes) of user memory with an access time of 7.5ms, a built data transfer rate of 920K/s. The drive's formatter/controller provides a PCB and a built data of 1.5M's. The only problem will be the price.

How many of our readers program APC? Years ago *ATARI* set up the *ATARI* Program Exchange where people like you and me could write software and send it into *ATARI* for vetting. If it was good enough, and at that time the standard was not too high, *ATARI* would embed the program under the AFX label. I have still seen some AFX items in the

shops at one or two pounds instead of the twenty pounds they originally cost. Some are mediocre, some are good. You pop your money, etc. If some of the retailers would contact *FACE* and let us know what items are available, what they plan for the future, how they code the users, etc., we would certainly like to publish a column about program availability - but not in the form of free advertising for the retailer, this is a two way street!

That is enough for now about America. What about early issues of *FACE*? What could be reconstructed from December 1982, the first edition, that might still be relevant today? Strangely enough, nothing. Well, the magazine was only starting off and very little advertising was available. However a listing from Stan Ockers, the "inventor" of *ATARI* basic programming was given and I can see no reason why it cannot be published again.

As an aside, the Editor made this comment in the first issue. Type GRAPHICS in direct mode and press RETURN. Press the TAB key about 25 times and then press RETURN. Now try hitting various different keys. Well, does it still work on the new machines?

An interesting item from issue 2 was the "Photograph Plot Window", an instrument to aid drawing in the *GRAPHICS* mode, now long gone, what. Issue three gave us three cassette based programs from T&G Software and "Up, Up And Away" from Pulzar. So where are they now? If you are the writer or you are holding the copyright of such programs, please contact us at the magazine right away, we might be able to make these programs available again.

Whenever I have asked for comments in this column I have received letters from various places around the world. Unfortunately all have asked totally different questions but I just want to show the wide interests of *ATARI* users, however one point does crop up more often than others. Peter Roalson's letter is a typical example. He asks the questions, "WHY *ATARI* ever went up to the top that the 8-bit machines are more than just games machines?". NEVER *ATARI* have still not found the answer. They founded the power of the ST then shot themselves in the foot by setting up the summer games deal, how crazy can you get! Jack Donald gave us promises about power, price, falling ramblings, deal and availability of products. When was the last time you heard of any of the promises?

I must apologise to the people who wrote in asking about the *AT&T* drive. At that time I did not know that the problems were due to lack of support from DOS. Come back Bill Wilkinson! Also to Paul Clark, Linda and some others who did not ask questions but would like some correspondence - I will get round to it soon.

So, that is it for another issue. Please keep writing and don't forget, an *S&E* gets you a direct reply. In 1982 users would normally have ended a letter by saying "copy backing". This was when we programmed for fun and experimentation, now it means something a lot worse. How times change, see you next time. Don't forget to write, your letter might be the one to give me the inspiration for the next column.

The address is
E. Hollywood, Ebbw Vale, Gwent, NP23 5RL.

STAR WARS

In early 1987, Demco announced they had signed an agreement with Atari Inc. (the coin-up company) for the rights to publish some computer versions of the classic movie *Star Wars*. An 8-bit Atari game was promised by the end of the year, but Christmas came and went without any further news from the company. Eventually, Demco admitted they'd had second thoughts and it looked as though, once again, we were going to miss out on a major piece of software. Then came the very welcome news that Jappan Games had finished work on their own *Star Wars* conversion for the Atari, and had passed it on to Demco for its marketing. And this is it.

Although the game is supplied in the attractive "standard" Demco packaging you can basically forget the bulk of what is printed on the inlay card as it was produced be-



fore the Jappan game was anticipated. The card contains references to "stereo" and "speech synthesis" neither of which apply in the real - and loading instructions, in four languages, are given for five different machine formats - but not the 8-bit Atari. Fortunately, the lack of relevant info isn't too

much of a disadvantage as outliner Ken Copeland has included adequate playing hints with the game itself. It's just a pity they seem to disappear from view before you get a chance to read them; incidentally, music on the title page is quite good, but hardly strong.

Star Wars, of course, is a shoot 'em up featuring vector graphics and a variety of battle sequences. Your aim, as Luke Skywalker, is to defeat Darth Vader's Empire by destroying the very Death Star, the nemesis. Your aim is to detect both Vader's Empire by destroying the very Death Star, the nemesis. Your aim is to detect both Vader's Empire by destroying the very Death Star, the nemesis. Your aim is to detect both Vader's Empire by destroying the very Death Star, the nemesis.

At either side of the screen there are two laser cannons and in the center, a small laser which is used to line up enemy craft before annihilating them with laser fire. In the first sequence, Luke is approaching the Death Star and must avoid the welcoming party of its fighters to survive. Oncoming fleets must be eliminated, otherwise they'll reduce the strength of the *X-Wing's* shielding. The ship can only take eight hits before it explodes, and the game ends.

After reaching the surface of the Death Star, you're confronted by a series of defensive towers, and must shoot



THE FORCE COMES TO ATARI

down the turret for additional points. As before, turrets are the major cause for concern. Finally, you slide into a deep trench in search of the ultimate target - the exhaust port. Destroying the port will destroy the Death Star, but before you can reach it there's a multitude of stretch barriers and missile emplacements to

cross your path, and then explode into a spiral of pieces as you blast them from the sky. Sound, it's almost, is not really up to the standard I'd expect from Demco, and the ending - a large "Game Over" written across the display, although somewhat unattractive due to other drawings on the screen - is a definite invitation

Reviewed by Paul Rixon

to rethink. Not only must you fire at the installations but also slide the ship around the obstacles. There are many levels to be explored and the initial ones don't include all of the stages mentioned above. From a good job, as you need to be quite expert before tackling many of the later scenes. From the title page you can choose to begin on wave one, three or five - corresponding to easy, medium or hard difficulty levels.

On the face of it, *Star Wars* is - and always has been - an essentially simple concept in strength lies in the fast paced, action paced nature of gameplay. Demco's have made a good job of the graphics, as you can see from the screen shot. The trench scenes, in particular, are very nicely done, and the fighters are well animated as they approach from the distance,

for instance.

Strongly, Jappan's game isn't the best *Star Wars* to appear on the Atari. A single conversion was published on 800M cartridge by Parker Brothers' (a name we've seen before) though I've a feeling it belongs to that category of games that they never released in the UK. But second time around it's a wholly better creation from a company who have shown how games can and should be produced on the Atari. If only the others would follow, this is definitely not a game to be missed.

Title:	STAR WARS
Publisher:	Demco
Price:	£12.99 on disc £9.99 on cassette
Rating:	3
Control:	Joystick

A NEW LIFE IN THE STARS

Here's yet another proof 'em up from a company who have brought us great games such as *Red Max* and *Grand Prix Simulator*. Programmed by Maurice Capeland, **TRANSMITTER** is a horizontally scrolling "Narnia" clone with plenty of action to keep those dedicated alien addicts occupied.

The story is set far into the future, at a time when the sun has degenerated into an unstable giant. Man has adapted by burrowing deeper and deeper into the Earth's surface, using the heat from its core to survive and constructing multiple layers of deadly

machinery to guard his retreat. Finally, the last few descendants have assembled a space craft and deserted the dying planet for a new life in the stars - the end of the story? Not quite! Unfortunately, the machines left behind in the abandoned tunnels have been known to hop continents on their travels through the galaxy. As a service to space-kind, you've (barely) volunteered to return to the Earth and eradicate these dangerous devices.

Your transport for the mission is described as a Total Aggression Fighting Machine. Not your every-day Renault 5! - the Deatol runs on a Nucleonic Transmuter - a gadget for converting raw energy into usable pre-programmed attacks. Energy is created when molecular breakdown occurs or, in other words, when you blast something! What this means is (again!) there is that if you

shoot through hills, you can pick up added goodies for your ship such as laser fire, extra speed and a boost to your fire power. Once you reach the end of the trail, the game becomes much easier to complete, but you must be careful to avoid all obstacles as you can't refuel these abilities from one life to the next.

Visual delights include a large score panel in the lower screen portion with an inventory of accumulated actions, with above, a variety of scrolling landscapes and animated sprites forming the basis for the game itself. After the initial shoot 'em up stage there's a bonus round where you are attacked by waves of spectral objects. If you've managed to obtain suitable the power these will pose no problem, but no amount of weaponry will aid in the following sequ-

ence where you have to negotiate a jagged vector graphical section of passageway, floating a rather slow and the becomes a bit frustrating if you lose a life - but it is a great incentive not to do so very often!

Transmitter is a perfectly playable game but with such a huge amount of other identical software on the market, I can't help feeling a little unimpressed by the familiarity of it all. Not to worry, as Commodore apparently have some new ones lined up for the coming months, and if these are up to the standards set by previous releases then they're certainly going to be worth looking out for. *Transmitter* is good!

Title: TRANSMITTER
Publisher: Commodore
Price: \$2.99 on cassette
Players: 1
Control: Joystick
Reviewed by: Paul Dixon



In the beginning, there was Pong. Then there was Atari - and now there's VIDEO CLASSICS, an attempt by Hasbro to re-create the excitement of that very first arcade game. The company are offering no fewer than six different challenges - Tennis, Football, Squash, Solo Squash, Four-ball Bill and Asteroids - in a single package. The games are selected from a cleverly animated options menu, so you only have to suffer the loading sequence once per session and you can return to it at any time using Reset. The computer is a fair opponent, being neither too easy nor impossible to defeat. A two-player option is also provided.

Tennis points and the next serve are awarded to a player when his opponent misses a return shot - that's about all there is to it! Football is essentially similar to Tennis (believe it or not!) except that each player requisites two balls, one for moving down the screen or before, and the other travelling vertically over an open goal-mouth.

Squash, as you might expect, involves both players at the same end of the court. The time you can move just about anywhere within the screen boundaries (but with a few exceptions and precise judgement are essential if you venture too near to the back wall. Solo Squash is a bit mysterious - it

appears that points are scored when you MISS the ball and it bounces out of play. If you miss frequently enough, you even get an opportunity to record your achievement in the highscore table! I'm quite an expert at this one!

The remaining two games are slightly more original. In Four-ball Bill each player controls one ball on a vertical edge of the screen and a second on a horizontal. There are no walls at all on the occasion, so both players need good hand-eye co-ordination in order to keep the ball in play. Finally, Asteroids is an interesting variation on the tennis theme. The green backdrops is replaced by a scrolling star-cosmic with chunks of cometic debris thrown across the playfield. Consequently, the ball can rebound towards you when you least expect it. Making successful play is much a case of luck as of skill.

Sound throughout consists entirely of a musical backdrop which is similar in style to the popular Hot Hubbard compositions found in software such as *Lifehack* and *Jet Set Willy*. Even ignoring the great music, I have to admit that this is one of the few games that has got me completely hooked - okay, it's MILDLY simple in design but inherently addictive and thus a glass-half full of the best price. Once you have video Classics you may not need another game for some time and you might well find yourself addicted to one of the simplest games to have been released in recent years!

Title: VIDEO CLASSICS
Publisher: Hasbro
Price: \$1.99 on cassette
Players: 1/2
Control: Joystick
Reviewed by: Paul Dixon

KEEP IT SIMPLE ... MAKE IT GOOD

Tennis needs little explanation - it's a case of two moving balls, a ball and a scrolling background in various shades of green.

Ten points and the next serve are awarded to a player when his opponent misses a return shot - that's about all there is to it! Football is essentially similar to Tennis (believe it or not!) except that each player requisites two balls, one for moving down the screen or before, and the other travelling vertically over an open goal-mouth.

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Title: VIDEO CLASSICS
Publisher: Hasbro
Price: \$1.99 on cassette
Players: 1/2
Control: Joystick
Reviewed by: Paul Dixon

RETURN OF A CLASSIC

Affairs are making no secret of the fact that **ENCOUNTER** isn't a new game but a re-release of the Paul Wicks classic that launched Navigator - who have since turned their attentions over to the ST - to fame and fortune. Long term PRAGE readers may remember a review by the Editor which appeared in issue ten, over five years ago! Incidentally even though to an old Atari crowd it's called **Encounter**, in which the player took control of the last remaining combat tank on Earth, there are no tanks in **Encounter**, but the underlying principle - and associated enjoy-

ment - remains the same. From the forward command window of a small probe vehicle, you observe a vast green plain littered with mysterious cylindrical obstacles. Nudge forward on the joystick and you move into the landscape, the cylinders growing in size until you eventually pass or hit them. Swivel sideways and the whole display scrolls accordingly, shift into reverse and the cylinders shrink into the distance while new ones appear from behind until suddenly, a huge fluid - as you look into an unseen obstacle. Underneath the window you'll find a large, easy-to-read instrument panel, with a radar screen and three coloured warning lights. A small white dot appears on the radar and the yellow light glows up of impending danger. The dot closes position as you head towards it brightly coloured alien saucers line it up in your

sight and blast it into a spectacular shower of pixels. One down, ten more to go!

This time, you see a blue light. As you head towards the enemy, you're attacked by a stream of optical missiles. You dive behind a cylinder and the missiles are deflected into the distance. Several alien encounters later, your sensor are activated by a flashing red indicator and low blaring noise as an enemy heading missile locks onto your position. You aim the probe into reverse in a desperate attempt to gain vital seconds. There's no escaping this one, you must let the missile before it gets you! With a feeling of some relief, the last alien craft is disabled and a strange black void appears in the vicinity. After loading and entering the void, you're prop-

elled of incredible speed through a hot of incoming meteorites. Somehow, you manage to avoid them. A new level begins - new scenery, new items ...

The main talking point of **Encounter** was, and still is, the amazing three dimensional visual display. However, there is much, much more to the game than the super graphics - every aspect has been professionally created by a man who has Atari programming down to a fine art. **Encounter** was previously marketed as **ENVS**, but now that Atari have cut this by two thirds there can be no excuse for not obtaining this remarkable piece of British software. You certainly won't regret it.

The: **ENCOUNTER**
 Publisher: **Affairs Software**
 Price: **£2.99**
 Plays: 1
 Control: **Joystick**
 Reviewed by **Paul Swan**



British Telecom don't receive a lot of praise for their activities in the comms field but, when it comes to producing computer software, no one can deny that the BT label can usually be regarded as a sure guarantee that something worth having lies within the plastic box. In **ENCOUNTER**, one of the more recent games to join the Shattered collection, is certainly no exception to the rule. In fact, it's one of the best shooting shoot 'em ups currently on the market.

The plot is fairly typical for a game of this nature - as fearless commander of the elite Eagle II Ray fighter squadron, your dangerous mission is to

liberate a planet from the evil clutches of the occupying 'Axis' forces. To accomplish the task, you must battle through a series of

heavily guarded sectors, avoiding or, preferably, eliminating the hordes of alien attack craft as you go. At the end of every sector lies a huge, detestable boss, this must be destroyed before access to any subsequent screen can be gained.

There are three sectors to a level, each featuring a different variety of enemies, from tiny drones to huge monstrosities blocking the entire passage! Some of them weave across your path in search of a collision, others fire missiles directly at your ship. It's important to avoid any contact with the enemy as only few hits are permitted before your craft explodes into a glistening foun-

tain of particles. Although eight ships are available in reserve, the allocation is by no means an over-abundance - you'll probably need every one of them!

The **Encounter** clearly won't score any points for originality but its evening strength lies undoubtedly in the graphics department. The author has used many of the Atari's unique abilities to create a superb backdrop to accompany the fast-paced action. Background scenery varies considerably throughout the many stages and an interesting effect of depth is provided by four different speeds of smooth, horizontal scrolling. Above the main playfield there's a large, colourful status panel giving details of your score, power level and number of remaining lives. Much attention is detail. For obviously been paid throughout. Introductory music, which

doesn't continue throughout the game itself - is another plus point. The juicy, fast firing enemy fire must surely rank among the best available on the Atari, so even if you fire of the game itself you will still gain much pleasure from the fire screen alone!

Some budget games seem to be thrown together with a minimal amount of effort, but the Shattered label has been to a class above all opposition with consistently high standards maintained throughout the range. The **Encounter** is one of the best in the bunch and anyone interested to shoot 'em ups should get themselves a copy without delay.

The: **ENCOUNTER**
 Publisher: **Shattered**
 Price: **£2.99**
 Plays: 1
 Control: **Joystick**
 Reviewed by **Paul Swan**

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See PAGE 5 Magazine Issue 27 page 28 for further details of this racing program. The various lists at the bottom and top of the disk version except that the number of horse produced is limited. AVAILABLE EXCLUSIVELY FROM PAGE 5

## CONTACT

4th ed. 8.7.85

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## MIDI? MOLEX!

Apologies for the language but it's quite appropriate. Most of us may have noticed last issue that we were hoping to have an exclusive offer on the MIDI Molex interface for the XL/XX but unfortunately we have run into a spot of bother.

The interface requires a unique plug, which is the one that plugs into the serial port like the disk drive or cassette deck, and whilst we can get hold of them we have to purchase huge quantities which will make the whole thing totally uneconomic. Does anyone know where we can get hold of these plugs in reasonable quantities? Perhaps there is a retailer out there who stocks them or can point us in the right direction?

We need your help now so that we can continue to support the XL/XX. Once we can locate the plugs, XL/XX owners can have a MIDI interface and can enjoy the exciting world of MIDI music.

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Independent User Group

## UPDATE

**AMAZING (ISSUE 37):** Thanks to everyone who came up with the answers to this problem, especially Algie who advised that the problems arise for two reasons. Firstly line 128V lost its last character during printing but TTPO 3. was should have spotted this and secondly line 88 takes no account of people logging it off screen before collecting all of the answers. Algie suggests the following amendments.

```
8800 IF ME=0 AND DL=0:DIAMAX=TERN P00
8810 LOCATE BEX-1,MY,2
7000 D=1:D=00070:800
1280? MX=16:MY=11:Y=TERN-13:DIAMAX=17
```

This modification will cost you a life if you exit before collecting all the diamonds but that serves you right!

See the letters page for an explanation of the cook-up on the next two listings which were outside our control.

**MCQ TEST (ISSUE 38):** The first column of the listing on page 25 is in fact the first column of listing 2, which is on page 30 and the first column on page 30 belongs on page 25.

**REAL TIME CLOCK (ISSUE 38):** The first column on page 43 is a duplicate of the first column on page 46. The cassette version on page 46 is correct but the disk version has the first half of the listing missing. We obviously don't have space to list it all but will send a photocopy of the correct listing to any interested reader.

# The ST FILE

## PROGRAMMING with STOS Type-in listings on page 70



**RACE**, ST which also represents classic in the most thrilling, exciting and realistic race racing game ever to have been released on a home computer.



**CASTLE MANBORG**, Palace Software's follow up to its Challenge



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Another big screen from Denmark, this time a **LICENCE TO KILL**



**TOTAL ECLIPSE**, a puzzle from Maine States

## ST NEWS

By alternatively, a guide to Microgame as, since they bought International, they seem to have about 75% of all the new ST releases of the moment! BUT it is a monthly journal, produced in conjunction with Florida's well known model legs on wheels game, PRINCE! was promised quite some time ago and should now finally be out in the UK but it is also the first release by Microgame Japan's first ever a trip to buy your software. MICROGAME is a collection of the arcade games of the same name while MANBORG MANBORG is, as you might have guessed, based around environmental issues and produced in conjunction with Greenpeace. Presumably some of the ST/STX one need to pay will be going to Greenpeace? TOTAL ECLIPSE is a conversion of an established 16-bit title with various and puzzles in ancient Egypt. POWER OF BABEL is a 3D puzzle game in which the player controls three robot spiders interacting with various obstacles. ROCK MANBORG is a humorous revivally snuffling idler game with around 120 screens of action and fun. ACTION FURY is coming up next month and is a conversion of the legs assembly game, another revivally snuffling about ten up. BRIDGE BRIDGE is a revivally! You shall between coastline and urbanisation. Insects, unity and madness as you try to unravel intricate puzzles in relation to a reworked 5th ORIGINAL CROSS is THE ultimate martial arts fighting simulator (yes, another one) but this has a first class fighting style and a its usual tournament. SFFACE is a sort of Bambi character who has to rescue his companions from a labyrinth of dark and gloomy dungeons. Diplomatic alternatives? Well, just kill it, stamp it, slash it, and there's a nice world the year thanks to come out to. Under development for release later in the year are MICROVISION, set in the 23rd century when a global climatic crisis has turned temperate zones to an arctic climate and you must survive (without your others) trying to survive, and MICROVISION, set in a game hellacious direct actionist where you must rescue him, capture the desert and rebuild his community. There's just too few that will be released will have another 100 titles coming. So much for Microgame, what about the others? On a more serious note, ORION seems to be busy again with the release of Spectre 23, the ultimate Macintosh resolution, which will run on all the latest and best Macintosh software. They also have an approach to their popular text editor Emacs called, surprisingly, TEMPLE 2 and are venturing into the C world with the MICRO CENTERPULVER. Denmark, of course, should have MICRO 10 8414 out plus MICRO 10 which is released (normally before release!) in this issue. MICRO came from Australia, a lot of the world as does MICRO 1.4.4, a new flight simulator based on a real life bombing competition held by the United States 40 Force! Finally (assuming out of reach) Electronic Arts have a new role playing adventure game and later in the year called rock (micro) or BRIDGE developed by a company who have previously released board games and written fiction for various adventure magazines and based on the Clive Barker material developed by JLP, Liverpool.

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# GOLD RUSH!

**G**old Rush! tries to capture the hardship and adventure of California in 1848-49. You take the part of James Wilson, an East Coast city slicker, seeking fame and fortune. With your parents dead and your brother missing, you spend the early part of the game selling your Brooklyn home and preparing to head west.

There were, historically, three ways to get from the East Coast of America to the West in 1848, each with it's own set of perils. In the first fourteen minutes of Gold Rush!, you have to decide if you will attempt to make the treacherous journey overland, the long boat trip south around Cape Horn, or the shorter, but possibly even more dangerous trip to Panama and across the isthmus - that's a narrow strip of land between two larger land masses, folks!

If you elect to take the overland route, careful timing is required to ensure that there will be plenty of grass on the plains to feed your animals. Hazards include steep mountainous terrain, long trails through the desert and of course, Indians. The ocean trips take less personal planning, but you may be overcome by disease or storms as you sail the world's most menacing waters. You may even lose food and water stopovers before the long voyage is over.

If you decide on the shorter trip through Panama, there are natives and wild animals to worry about, not to mention quarantine and cholera. The choice of travel modes makes Gold Rush! almost three completely different adventures in one. I would advise you to take a shot at all of them just to experience the joy of dying in all it's mystical forms!



One way or another, your travels should end at John Sutter's fort. Once you reach the fort, you can watch his slaves in your brother's stead, picking up gold

along the way.

This is probably the last Sierra adventure you will see that was developed with the old AGI (Adventure Game Interpreter) system, and is the development of King's Quest 1, 2 & 3. Since the release of King's Quest 4, we have seen the impressive results of SCI (Sierra Creative Interpreter), that gives double-resolution graphics and enhanced sound and music.

As Gold Rush! has been under development for some time, it did not make economic sense to go back and re-do it with the new system. At first, I anticipated disappointment with regards to graphics and sound, but I was pleasantly surprised. Even though the resolution is clearly no match for SCI, the graphics are quite good. There is an almost excessive amount of spot animation, such as people and carts making their daily rounds in your home town, and the battle of the little townfolk when you reach Sacramento. Keep an eye out for other miners as you head out from Sutter Fort, for they are liable to bring claim-jumpers out there!

Gold Rush! does have some serious weaknesses. The first is the tedious nature of all three of the trips to the West Coast of America. There is an attempt to spice it up a little

by breaking each of these long automated sequences into smaller segments, and by giving a running narrative of the hazards of the trip. Each of these segments is separated by mini-adventures that you have to actually control, but they are short and fun.

In California, gold is found on average at a time, and there are 90 chances to locate, with the closest being at least nine miles (increased away from the fort). However, you only need a few hundred dollars in gold to buy some supplies (the rest is there for people who enjoy the thrill of discovery), and some screens add up to five gold strikes, which spends up the process quite a bit and consumes life, since gold wasn't just lying everywhere for the taking, even if it seemed like it.

Another personal criticism, being a mapping buff, is the weird layout of some screens. Around Fort Sutter, you might walk off the screen going north, but when the new one is displayed, you find yourself going

north, or even east! This was obviously done to increase the number of locations that could be spaced into the fort, unfortunately, it just serves to confuse.

Included in the game packaging is a 98-page historical textbook entitled "California Gold". The primary reason for this is copy protection. When the game is first run you will be asked a question and directed to the section of the book where the answer can be found.



As usual, the Sierra sense of humor is never far away; answer the questions correctly and you'll be presented with the hangman's noose! You don't have to read the book to play the game, but it contains a few small hints that might make things easier. It is, however, very interesting reading and increases the educational value of the game.

In conclusion, I would expect avid players of Sierra's games will not want to miss this one. As a game with educational value it is a clear success.

reviewed by John R. Barnsley

## A FEW TIPS TO GET YOU ON YOUR WAY!

**In Brooklyn:** Clear your account and sell your horse.

**If going by sea:** Buy fruit.

**Put flowers on your parents' graves.**  
**Load Wheels:** Unload the team and LOCK WHEELS on the steep hill. Attach abandoned wagon for food. Buy mature mules.

**Get the Bible from the man.**

**Cape Horn:** Get nothing BEFORE the storm. (Don't get pig meat, string, paper clip, pole, metal scrape and fish). Don't forget that Bible!

**Living West:** You MUST locate the cartpaths of the RIGHT trail! (You need - 1 too easily and Too late - obviously) To check on conditions, go behind the wagon and walk north, where the plain's mud recedes. SHAVE GAMES and then TAKE TO CAPTAINS.

**California:** Run ONLY in the western river - NEVER near anyone's boat!

## GOLD RUSH!

Sierra On-Line

£24.95

# 3 The Sequencer

So far in this beginner's guide to MIDI we've looked at the basic concepts of MIDI and at the hardware used to produce music in a MIDI-based system. This time we're looking at MIDI software packages, of which there are now dozens available for the AT.

Most of the available software falls into three main classes, namely sequencing, score patch editing, and music score printing. More recently automated composition and arrangement tools have begun to appear, but these are aimed more at the professional musician so we'll ignore them here. The only manual then for the MIDI beginner is some form of sequencer software, so let's concentrate on that now and leave the rest for next time.

A musician uses a sequencer as a writer would use a word processor - as a means of rapidly creating, recording, and communicating abstract ideas to a wider audience. The sequencer goes one step further though, it can actually PERFORM the work in that audience. Software based sequencers are identical in concept to their hardware based cousins briefly described in the last issue. As a quick reminder, a sequencer behaves like a multi-track tape recorder which records MIDI data rather than musical sound. This data can then be edited as required, either to correct musical errors such as wrong notes or timing, or to change the nature of the music in a more creative way. The edited file can then be used to drive a MIDI equipped synthesizer to play the music it represents.

### SEQUENCING FOR BEGINNERS

The simplest type of sequencer runs in playback mode only and is the MIDI equivalent of the AT sound chip based 'music player' programs. Obviously with these you can't actually create your own music from scratch, but they can produce spectacular results when using good quality music data files generated elsewhere. An excellent example is the MIDI player program found on Page 4 public domain disk ST108. It's supplied with 42 music files created with Activision's Music Studio programs. These are usually designed for playback using Casio's CT181 synth, but work OK with many other types. The program also has facilities for



ACTIVISION'S Music Studio - the lowest priced commercial sequencer probably suitable for the beginner

**Now that you know a bit about the background of MIDI and have decided what hardware you may require, it's time to look at what software you might need to start creating music**

changing MIDI channels, note ranges, and program numbers to customize the files for your own synth, giving you some creative scope. For used it with my Yamaha PS1-880 and it works a treat at £2.95 for the player plus music files it's an absolute bargain! To be really creative you need a sequencer with both record and playback facilities. There are a bewildering number of these on the market, priced from around £100 for public domain programs to many hundreds of pounds for something like Steinberg's fabulous Pro-24 package, now a standard in the professional music industry. This type of sequencer comes in two basic flavours - for step-time and real-time recording, with some programs able to handle both aspects.

### NO KEYBOARD SKILLS NEEDED

The step-time facility allows you to enter musical notes one at a time, as if you were writing music rather than playing it. Input can be through a MIDI keyboard, but is more usually done using computer keyboard and mouse. A step-time package is likely to be of interest to people with more technicians and patience than playing skill, as step-time input can be tedious and time consuming. Its big advantage is that it opens up a whole new world of musical creativity to the non-keyboard player.

Step-time programs are usually inexpensive, two examples being Electronic Arts' Music Construction Set and Activision's Music Studio each available for around £25. For used both and much prefer Music Studio, as MCS can only handle three MIDI channels and three note polyphony, revealing its sound chip ancestry. Music Studio handles 16 MIDI channels and can use the PS1-880's polyphonic and multi-channel capabilities to the full. Both programs can also create music using the AT's internal sound chip or via MIDI, so you can get started in a limited way even before buying a MIDI synth.

Operationally they're similar too, using a graphical user interface. The main workflow displays lists and table music notes onto which you place individual notes of selected pitch and duration using the mouse. Both programs associate colours with MIDI channels and programs, so by using notes of different colours you can drive your synth multi-timbrally (assuming it's

capable of doing to play several different instrumental sounds simultaneously. Knowledge of music theory helps, but even without it's possible to simply transcribe sheet music onto the screen—and find it plays back perfectly through your synth! You, you can create music on your synth without even touching its keyboard!

If you don't fancy keying in your own music, you can always buy Page 6's public domain Music Studio data disks. There are nine five of these, between them holding over 200 different music files (and offering something for all musical tastes). Using Music Studio's excellent editing facilities you can easily change the data to produce your own interpretation of the music for playback on your own particular synth. At £2.95 each, they're unbeatable value and will keep you occupied for a long, long time.

### MUSICIANS DO IT IN REAL-TIME

With a real-time sequencer you actually play the music in from a MIDI equipped keyboard, so you need to be more of a musician than with step-time software. The sequencer records your efforts as a tape recorder would, but with one important difference. As it's handling MIDI message data rather than the actual sound of the instrument, you can record the notes as slowly as you wish and then play them back at the correct speed—without the pitch change you'd get if you tried the same trick on a conventional tape recorder. This is great for handling those fast licks that your fingers would never manage to play at normal speed!

Multi-voice arrangements can usually recorded as several separate parts (or voices), with each part placed on a separate sequencer 'track', a term borrowed from the world of tape recording. The sequencer has many tracks, often 24 or more, each of which can be recorded as and played back independently of the others. Each track can be set to a MIDI channel, and the MIDI instrument receiving data on that channel set to a given MIDI program number to produce a given sound. Complex multi-instrument arrangements can be built up track-by-track in this way, and indeed this is how much of today's chart music is produced.

For instance, to record a piece using drums, bass, piano rhythm, and solo rock guitar parts using the multi-instrument PS-680 you might work in the following way. First you'd allocate a sequencer track to each of the parts. You could record the drums part first using the PS-680's permutation pads. You might then record the bass part to fit it while the sequencer plays back the drum track. Next, while playing back bass and drums, you could record an appropriate piano rhythm part. Finally you'd record the rock guitar into track while playing back bass, drums, and piano. Got the idea? On playback of the completed work the PS-680 sounds like a live piece band!

You don't have to record a complete part in one-go-either, as some sequencers allow you to chop each part into sections (or blocks), record and edit the sections separately, and then bring them together in whatever order you want. This is extremely useful for the beginner, as it allows you to easily build up complex arrangements a few bars at a time.

### EDITING AND QUANTISING

Editing is a very important aspect of MIDI music production, and the facilities available in different sequencers vary enormously. Before buying a particular sequencer make sure you'll be comfortable with the facilities offered, and with the way they've been implemented. Some of the things to look out for are described below.

The simplest (and least satisfactory) form of editing requires you to completely re-record the track containing the error. At the other end of the scale there's MIDI 'pencil editing', allowing you

to individually change any MIDI data item recorded by the sequencer. Some sequencers take a middle approach—allowing editing access to selected MIDI data types, or perhaps via a 'patch-in/patch-out' facility. The latter allows you to re-record just a section of an existing track between accurately defined start and end points.

Event editing facilities give you direct access to MIDI event data, for example individual Note On/Off message data, so you can correct 'human notes'. Again this can be tedious work if you're dealing with raw MIDI data in text form, but some sequencers also provide a graphical interface, presenting the data either in musical notation, or in a grid format to make it easier for those who can't read music.

Editing can often be done at the 'block' level, allowing certain operations to be performed on groups of notes. For example, notes could be transposed into a different key, made louder or softer, their tempo changed, or even the basic sound with which they're played could be altered. Together, these facilities provide incredible creative flexibility, allowing widely differing versions of a piece of music to be quickly created from a single MIDI data file.

If you can't play accurately in time, then you need the sequencer's 'quantiser' facilities. These allow recorded notes to be individually moved forwards or backwards so they all line up



The PS-24 MIDI Sequencer—your private domain sequencer that's a bit limited but worth a look

accurately on the beat or sub-beat. Trouble is, the results sometimes sound 'robotic' or 'mechanical', making the music sound like it's being played by a robot (which it is, of course). Some programs now provide the facility to introduce a small randomised error into the quantisation to make the sound more 'human'.

I've tried several real-time sequencers from cheap and cheerful public domain programs, through MicroVid's Superconductor, to the mighty Steinberg Pro-24. You definitely get what you pay for here—Pro-24 is really my favourite. It's got just about every feature I could ever need, but there's no way I could justify spending nearly £200 on it for home use. Superconductor at £20 isn't bad, but has problems when simultaneously recording one track while playing back existing ones, seemingly caused by its lack of a soft-scan. There's capability to record music. Public domain sequencers, such as the widely available Woodingdon sequencer, tend to be limited in scope, but with patience can produce reasonable results.

Well, I've run out of space again, join me next time to hear about other types of MIDI software and to find out how you might set up and use your own low-cost home MIDI recording studio. Who knows, it might just get you started on the road to stardom!

## THE JADE STONE



**A** new adventure for the ST from one of the established companies seems very odd to the general way up of the £25 or £30 level these days - a bit expensive if you are not really sure whether you can go to enjoy it or are having trouble seeing that much from your pocket money. So it is very refreshing to see a new series of games launched by Page 6 at the budget price of £9.95.

The first of these is *The Jade Stone*. It is a good-sized text adventure with a number of fine half-screen illustrations which add nicely to the atmosphere. The game is set in a fantasy land where Lord Jade and the evil sorcerer Malibus can almost be said to be dead. You are Jade's beautiful daughter and have not only to defeat the sorcerer but also to rescue your step-father from his evil clutches.

It transpires that the only hope you have

of achieving this is to find the magical Jade Stone, but to do this you will need to pass a number of tests and acquire magical artifacts from those of the local deities. The fact that you start off penniless and there seem to be a number of items you want to buy doesn't make this any easier!

How can you acquire some money? How do you get past the brigands guarding the road south? How can you get past the priests into the temple? And so

on - all the ingredients of a traditional text adventure. This one is very professionally written and presented, it understood most of the things I tried straight away, it is necessary resident to responses, even with the graphics on, are instantaneous. There are lots of useful features such as **EXIT** to find all visible rooms, **OOPS** to take back a move, and **VOCAB** to see lots of useful words.

*The Jade Stone* was written using Jean Elie's **STAC** (ST Adventure Creator). This is an excellent utility with lots of powerful commands to enable you to write your own graphics adventure without having to be a programmer. It automatically provides facilities such as **SAVE/RESTORE** of your game position to disk and **RAMSAVE/ RAMLOAD** instantaneously to memory. It does however have a few idiosyncrasies that may occasionally bewilder you.

There are two mutually opposed philosophies of how far the player should go when trying to interpret the commands that you, the adventure, have typed in. One approach is to only accept a sentence if every word in it is understood, the presence of words is correct, the words form a grammatical structure which the program understands, and it is clearly delimited by a full stop on the **RETURN** key. Anything else is rejected with a clearly stated message as to why the program could not interpret it. The second approach is to extract any words from the input that the program recognises, ignoring any others as irrelevant, rearrange them into an order that the program can use and assume that that is what the player meant. This philosophy, which is the one which **STAC** uses, allows the program to respond to far more of your input, but to my mind is much more suited to de-motivations of artificial intelligence than to adventure games. Unsubstantiated English is such a normal and sophisticated language that this approach can often result in misinterpreted or misleading responses. For example **SEE THE DOG SO GET THE COIN** can be misread by **STAC** as **GET DOGG**. This approach looks good in theory, appears good when you first use it, with the computer appearing to understand everything you are typing in, but can lead to much frustration when you really get down to trying to solve the adventure. So, if you should encounter any frustra-

**Z**ak is a reporter on an equivalent of the Sunday Sport, indeed some of his comic headlines could well have come from the paper itself! Zak is looking for a better outlet for his talents and, following a promise from his boss that he can write his novel after the next assignment, the adventure begins. Zak seems to be caught up in a Sci-Fi movie where some less than bright aliens wish to prevent the human race from so much more pleasurable state and they have set up a flying saucer station to achieve this. Our hero meets, with your help, present this. Control of the game is through a novel method of using the mouse to click on keywords in a menu vocabulary, on objects in the detailed screens and by responding to the prompts given on screen. A good example of the friendliness of this comes when using a credit card. Click on the word **PAY**, the prompt is returned the on what? Click on **credit card**, the prompt is Use cash card to pay, so you

## ZAK McKRAKEN

click on **PAY** and Zak will go through all necessary transactions, including small talk and tallying up. Indeed Zak regularly remembers to tidy screens up and often helpful hints if he thinks things are not going to plan.

Zak is also the master of the effective one liner and the game is littered with little asides. Unfortunately these do not change and they can become wearing after several viewings, as too can the cut away close screens. This is I fear the one downfall of this game, that eventually with repeated playings the humour will make the game pall and thus deter the player from completing it by restoring steps or restoring the game.

The game is installable on most disk types and those the production routines are built into the game in rather a clever manner.

This is a graphic adventure rather than an adventure since everything that is needed is on screens and it is up to Zak or one of his friends to manoeuvre them. There are places to meet allies and once they are found the option to swap between characters becomes available and necessary. This all makes for a novel and interesting approach to adventuring. Perhaps the way the story runs itself of three main quest periods but there is plenty of room for puzzles and few opportunities for vocabulary problems.

**ZAK McKRAKEN**  
Lucasfilm  
£24.99

Reviewed by Damon Howarth



# DOMES OF SHA

## Three Adventures for the price of one

time like that when playing The Jade Stone, don't blame the authors, Linda Wright, Home STAC! Fortunately Linda has put in enough vocabulary and hints, but enough word combinations so that this surely proved a problem in this adventure.

There are plenty of clues to help you along the way. As long as you examine everything and note anything that might be a clue you should be able to solve most of the game fairly easily. There are a few tricky places where you have to use an object (e.g. the something CAREFULLY) or study the pictures for clues, but generally the logic is not too demanding - you don't need to solve any really hard logical puzzles, just work out the appropriate place and means of using each item you acquire.

- **GAMEPLAY:** Standard text adventure of good quality, plenty of useful facilities - very enjoyable
- **GRAPHICS:** Some very nice pictures accompany some of the locations.  
**SOUND:** None - not needed
- **VALUE:** Excellent value for money if you want an inexpensive introduction to the world of adventure - recommended for beginners.

## AVAILABILITY

### THE JADE STONE

Written by Linda Wright  
Published by Martin Games/  
Page 6 Publishing  
Price £9.95

### DOMES OF SHA

Written by Jack Lockberby  
Published by River Software/  
Page 6 Publishing  
Price £9.95

Both Adventures are only available by mail and may be obtained direct from  
Page 6 Publishing, P.O. Box 34,  
Stafford, ST16 3DR.

You may use the order form on page 49 or order by phone

**M**ore budget-priced adventures from Page 6 Publishing - three for the price of one this time! This Tri-Pack is made up of three text-only adventures in the traditional style - Domes of Sha, Hammer of Grimbold and Mutant.

**HAMMER OF GRIMBOLD** is set in the land of dwarves; you have to defeat the evil wizard Vulk in order to retrieve the magical Hammer of Grimbold and return it to its rightful owner - the King of the Dwarves. Unfortunatly Vulk is safe in his mighty Citadel some distance away and before you can get there you are going to need to find your way across a treacherous river, past a rather antagonistic troll and across a bottomless chasm, whilst avoiding death at the hands of the mysterious Hooded Men. Then you discover that the place is so heavily guarded by men that it seems impossible to enter anyway! Once you finally discover the way in to Vulk's Citadel you find your troubles only just beginning as the place is full of Giant Rats, Dragons, Tompkins, and, of course, more evil!

I found this the easiest of the three - a good beginner's adventure - as long as you examine every item carefully and work out what it is for you shouldn't have too much trouble - but if you do get stuck you can always try one of the other adventures in the pack!

**MUTANT** is set on a South Sea Island so it is rather more like real life in its settings, and its puzzles - albeit still laced of every turn from riddles, oliganines and puns, but the SAMSAVIRABHARAD and OOPS facilities (as in all three adventures) ensure that this is not too intense for the player. If you can survive these perils and work out how to get past dangerous landmines, deadly snakes, bottomless swamps and blocked tunnels, and find your way through head-high elephant grass, then you should have no problems in destroying the Mutant and saving Mankind!

**THE DOMES OF SHA** takes you to another exotic setting - a small planet in the far corner of the galaxy, where you and your pet, Grant (a friendly and not over-intelligent bear who loves you very much), must discover the strange secret of

the Domes which surround your valley and save your people from extinction. Again lots of problems to solve and places to explore. This one is probably the hardest of the three and has some very non-logical puzzles in it - like what to do in the 'Well' rooms and how to use the 'Burler'? (No, the Burler hasn't got anything to do with the Well - that was just a coincidence)

All three adventures were written by Jack Lockberby with the help of his son I believe for other machines such as the Spectrum and the Commodore, and have been very successful on those machines. These versions were created using Sean Ellis's STAC (ST Adventure Creator) and benefit from its excellent facilities such as quality SAVES/LOAD routines and instant responses. They are also subject to the idiosyncrasies of its parser (see Jade Stone review for details) which can cause a little frustration from time to time!

The review copy which I played was an unformatted version with a few bugs (all now fixed, hopefully) and a few places where you had to guess quite hard at the way the game existed and commands phrased - Jack is looking at enhancing some of these so you should have lots of fun playing the game when you buy the final version.

When you create a game with STAC all your vocabulary, rooms and item descriptions and all the messages which you wish to display in response to the player's commands are stored in a LINK file. It is interesting to see that the Jade Stone LINK file is as big as Jack's three games' LINK files put together, but that each of these has its many locations as The Jade Stone! This is caused by the Jade Stone having more descriptive text and deeper subroutines dealing a lot more of the things you type in, whereas Jack's Tri-Pack gives you more places to explore and things to do. You pay your money and you take your choice!

- **GAMEPLAY:** Traditional text adventures, a little limited in vocabulary in a couple of places, but generally very playable
- **GRAPHICS/SOUND:** None - not needed
- **VALUE:** Good fun, plenty of variety, and very good value for your money



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## Microprose SOCCER

**T**his is a fast moving sports action game putting you in direct control of the player in a football match, either Association Football or Six-a-Side Soccer under American rules. The latter is played on an enclosed pitch, so the ball can bounce back into play off the walls. Within these there are several further choices. A single player can take on the computer while two players can play against each other in Friendly, League Tournament or World Cup tournament matches.

The pitch is viewed from directly above, which means you always have a distinctly strange appearance. You see the top of their heads and shoulders with various appendages popping in and out of view as they move. As the players run about the pitch you receive control of your man nearest the ball. You only

see part of the pitch at any one time, so it essentially works in what ever direction necessary to see the ball.

Joystick control is used, giving your man eight-way directional movement. If the ball is in free play your man gains possession by touching it, and if you continue moving him he runs along dribbling it. When the fire button is pressed the joystick no longer controls direction of movement, but instead determines the type of kick performed. Chip shots, straight passes, left or right cutting forwards shots, or spectacular backwards overhead kicks are all possible. Strength of kick is controllable, from a light tap to a full strength boot down the pitch. Throw-ins, corners, and goal kicks are all possible too, the only thing missing seems to be penalties.



If the opposition is in possession of the ball you can perform a normal or sliding tackle, the latter made more difficult if it saves during a match. If you fail to regain the ball your opponent will eventually get a shot at goal, when you'll receive control of your goalie who can dive left or right or jump in the air to stop the ball. If a goal is scored you'll see a clever TV style action replay showing what happened.

Other features of the game allow the setting of match duration between 2 and 10 minutes, action replays, and weather, the naming of your own teams, and the saving/loading of league position tables.

### FACTS

Title: **MICROPROSE SOCCER**  
Publisher: **Microprose**  
Price: **\$39.95**  
Developer: **John S. Coakley**

### SIGHT & SOUND

*It looks good and sounds good, but the perspective view makes it look a bit strange. Graphical scoring is good, but a 1-1-1 view might have been better.*

### GAMEPLAY

*Any one's handling play will keep football fans occupied for hours. All expansion options, with a lot of variation, are included except for penalties.*

### VERDICT

*An excellent example of a sports-action game, one-way enough for everyone. If you're looking for simulated football action, this is where to find it.*

### FACTS

Title: **KICK OFF**  
Publisher: **Amiga**  
Price: **\$19.99**  
Developer: **Domon Newsprint**

### SIGHT & SOUND

*Graphics are good with some nice scoring. Sampled sound is quite well used and adds atmosphere to the game.*

### GAMEPLAY

*Difficult to win unless you are a good player, but the computer always levels the score.*

### VERDICT

*On the whole a good soccer game that works in the Foot System. Compared very favourably to other football games.*



## KICK OFF

tips, chips, volleys, headers and controlled passing are possible, but so is the real game.

**A**s the name suggests this is a football simulation in the same vein as Microprose's International Soccer. Once loaded the game is a little bewildering and it takes considerable use of the on-screen instruction sheet to get going. The play itself is better than many of the games and I liked the characterisation of the referees whose interpretations of various foul calls come variety to playing style.

Following my first attempt of playing it seemed to me that the training mode was a necessity as the actions are fast and on-screen simulated handling of the joystick is imperative. There are many possible variations of play, back

success comes from practice. The pitch is well sized and looks comfortable and the inclusion of a small representation of the whole pitch allows the player to plan sweeping passes and spot defensive holes. Players are in proportion to the ball and pitch, the one under control moving a line down under his boots. Possibly the most enjoyable feature of the sort of game is the two player option, happily the one has it and as a head to head it plays very well. The system even allows individual players to handicap themselves with differing ball skills. This can also be done with solo play but my advice is to keep the machine a couple

of levels lower than you! The other pleasant thing about the game is the eight player league option, which allows for any combination of one to eight people to participate in a season that is playable to disk. This option gives the game a longevity option some others may not have. As to the side of play I found that against the computer on even levels, and even by playing one level higher, scoring goals was difficult while the AI found the various defenses somewhat easy to beat. Cheers!

The crowd noise and the possibility of player ejection for cynical fouling adds to the atmosphere and even the off-scuttly makes the game quite addictive. Kick Off compares well to its competitors and very favourably to International Soccer.

## CHICAGO 30's



**A**fter the busy 20's, Chicago has become a paradise for gangsters and various other lawless individuals. Trouble continues throughout every day and night. As Detective Elliot it is your mission to enforce some low-end order within Chicago. Your objective is to put an end to the illegal alcohol trade and out of the main source of income to the "Marlon" gang operators. As you move through the four stages of the game, i.e. the deals, the sub-urbs, the city and the suburbs, you will come across a large number of gangsters under Al Capone's umbrella and you must eliminate these gangsters with your machine gun and salvo of grenades. The storyline behind the game shows tremendous potential even though it's not the most original of themes, however, the implementation of the

theme is, to be quite honest, downright awful. The game loads with a badly drawn representation of the Suburbs from the cover of the box. A credits screen then appears shown on a colored screen, complete with cutouts and a truly obnoxious soundtrack in form. The entire game from now on takes place on the cinema screen.

The game itself is a horizontally scrolling affair whereby you walk from left to right shooting the various gangsters which pop up from behind windows, balconies and crates etc. The graphics are unimpressive. The scrolling of the backdrop is reasonably smooth but the animation of the characters is poor and of poor quality. The sound is also pretty unimpressive, consisting of a feeble tune on the loading screen and some

rather limp sound effects during gameplay.

One little "quirk" of the game which I feel should be noted is the fact that once you have finished a game you are given the option of whether to play again, you have to hit the "screen" merely turns black and is followed by a display of Countdown numbers as seen on the start of a film, and then the game starts again! Is this the only way they can make you have another go?

In many ways the game feels as though it has been neglected/unfinished. The graphics are nowhere near the quality one would expect on the CD and the sound is no better.

### FACTS

Title: CHICAGO 30'S  
Publisher: US Gold  
Price: £19.95  
Reviewer: John Davidson jr

### SIGHT & SOUND

Graphics don't live up to the CD's capabilities. Sound lives like other.

### GAMEPLAY

Engaging and unimpressive.

### VERDICT

A reasonable theme goes to your implementation. CD load! (Just) fine, and should have done a lot better on this one.

### FACTS

Title: THE REAL GHOSTBUSTERS  
Publisher: Activision  
Price: £19.95  
Reviewer: John Davidson Jr.

### SIGHT & SOUND

Graphics are quite good but cut out at the end. Sound effects seem to be lacking but the theme tune is there, if only you could turn it off!

### GAMEPLAY

A busy game but sometimes quite tedious as the screen gets too busy. Personality seems to have suffered as the expense of looks.

### VERDICT

Looking particularly impressive but from again nothing really new. An average game that will be of interest to Ghostbusters fans but perhaps not others.



## THE REAL GHOSTBUSTERS

curful and lively but at times the screen is too busy, creating great difficulties with play-ability. There have been times when all the lives have suddenly disappeared to I know not where. Presumably some Noisy has been touched, but it is difficult to see exactly what was the cause so that you can avoid it in future.

The Ghostbusters tune starts at the beginning and goes on and on and on... It's a good version of the five year old tune, but it has of been done before. Unfortunately. I've yet to find a way of turning off the tune without turning the volume right down. There is little evidence of the promised ghostly sound effects. Presumably if they are present, they are obliterated by the tune.

The instructions which accompany the game are sparse to say the least, showing more advertising material than game hints. The most annoying aspect of the game is the time it takes between "game over" and the beginning of your next go. Each time a game is finished, over thirty seconds of the "Classic Introduction Screen" has to be sat through before another game can be played. This may be a welcome rest if you get a long go of the game, but as there seems to many times that all my lives disappeared in a matter of seconds, I got rather fed up. Whilst probably attractive to young "Real Ghostbusters" fans, the game can only be described as unimpressive overall. It does not excel in any department but equally, none of it is really bad.

# TIMERUNNER

**R**est for one is software house that have supported Atari for a long time and who are now turning their hand to the ST. Captain Cumble is an old friend of the ST but alas, he believes that this is his last visit to the ST. The story, lavishly supported by motivating plots, is that following his escapement from world saving the Captain and his staff another how clean time corridor. Unfortunately some tapes have elongated and these machinuous little creatures, although not as prevalent, need rounding up before they cause unintentional havoc. Cumble tries to the corridor and sets off. This begins a platform-and-leapers game with no ladder. Cumble's movements are dictated by use of his jet pack and the safety of the ground he walks on. For example in the first level it is most

inadvisable to step on anything other than the green carpet part of the haunted house.

The game has "cutey" graphics, with a touch of whimsy in them, for example on the first screen there is a large portrait over the face of the children's hero Rob. Items must rank among some of the most sympathetic creatures ever seen in computer-aided and the art work on-screen is detailed and strong. Control of the gaunt Captain has to be good since many of his adventures along the way need very accurate placement. There are many things to boost the hero including the need to find hidden keys to secret areas, stop leeches eggs from hatching and clearing time corridors on his way between levels. The Captain



uses shields that give various useful and some not so handy bonuses to him. To make the Captain's life just that bit harder he also needs to search for a time gate to enable him to access a level inside the time tent. Should you reach a new level then a password will be allocated enabling you to return there should you eventually die. The game seems full of such thoughtful touches and shows their well thought out in that way. The artist must be congratulated on his perception as the graphics do a great deal to bring out the underlying humor of the game, and the music too is just apt and adds to much of the fun.

## FACTS

Title: **TIMERUNNER**  
 Publisher: **Real Real**  
 Price: **\$19.95**  
 Reviewed: **Damon Roworth**

## SIGHT & SOUND

*Extremely attractive graphics with good colors and for sound, the sound has generally deteriorated badly for the less its, but effects are good*

## GAMEPLAY

*Strong and uncomplicated, the controls make for ease of use and the fact is the uncomplicated is not necessarily complicated*

## VERDICT

*I loved it better than Back Lane and greatly enjoy it. Don't waste the money and buy it. Well worth a place in anyone's collection*

## FACTS

Title: **VINDICATORS**  
 Publisher: **Demon Software**  
 Price: **\$19.95**  
 Reviewed: **John Davidson JR.**

## SIGHT & SOUND

*Graphics are colorful and bold with arcade quality but scrolling must be better. Very impressive sound, good graphics and excellent spot effects*

## GAMEPLAY

*Quite good for one or two players with a few nice options like being able to start on higher levels. Improves as the game goes on*

## VERDICT

*Highly presented and a good conversion of the arcade one. Good but a fairly ordinary game that might not have long term appeal*



# VINDICATORS

**A**n armada of alien space ships approach the Earth from the east tangent stripes and the only way to destroy them is to initiate the enemy with your ST-88 Strategic Battle Tank known as the Vindicator. You control your tank through a scrolling backdrop of each space station, destroying enemy tanks and gun installations on the way to the control room at the end of each level. As you pass through the corridors you collect essential fuel and weapons along with your points, and also the ever useful battle ship and keys. At the end of each level, once the door has been opened with the appropriate key, you can

exchange these for improvements to your tank, ensuring you have collected enough of them. Improvements include increased speed or more powerful shots, more shots or force shields and armor. You can also select a higher starting level at the beginning of the game, and you are rewarded for accepting the challenge by being credited with a number of bonus battle ships. Control of your tank is with the joystick or through the key board. There is also a simultaneous two player option whereby two tanks can fight together against the invading enemy. Shooting the other player can transfer some of your fuel to them, which can be useful in a tight spot as you do not stop drive without fuel.

Graphically the game is both colorful and bold. The games are well animated as they move over a clearly drawn backdrop. The scrolling of these backdrops, although not as smooth as it could be, is impressive. In general, all the objects on the screen stand out well, and the overall appearance is one of arcade quality. In terms of sound, the game is very impressive. It loads with a fine example of sampled music. Throughout the game, all the spot effects, such as the gun shots and explosions, are excellent. There is also a brief sampled tube between levels, whilst being striking, both graphically and in terms of sound, the game itself is nothing out of the ordinary. It holds your attention well enough to start with but soon loses its initial appeal.

# XYBOTS

**T**his is a two-player co-operative game although it is possible to play solo. The story of this 3D shoot 'em up mode are Major Rock Hardy and Captain Ace Gunn who are trying to locate the sinister Xylid in its laboratory like lab. The action takes place in a 3D mode with a small map showing the location of players and attacking robots. In two player mode each combatant may make their own way on the split screen thus overcoming some of the problems found in Gunfire type games which recent parties needed to stick together.

Playing is the same for both parties and, in fact, it makes little difference to play if there are one or two involved. Movement is by joystick and needs some nifty twitching of the stick combined with the button pressing to change the

perspective of the monitor. The player view is similar to that found in the dungeons of *Resix* (see except for the fact that the character can be seen or though being froked with a hand held camera. It quickly becomes obvious that successful dispatch of guards needs either a head on approach or well timed energy shots round corners. The robots, of times, carry useful items with them such as keys, energy charges, better weapons and most importantly coins. These coins may be exchanged for a multitude of things at the end of level shops. All items here have uses especially the map protectors which do mean that the likelihood of a surprise boss death totally diminishes. The hand weapon that the heroes are supplied with is a



powerful weapon but rapidly wears out and thus all power packs need careful conservation. There is little sound in the game apart from the useful spot effects and although the loading sequence music is edgy on the ear, it is nothing overly special. The sprites are large, considering that each player only has half a screen to play in, and the animation and scrolling are smooth. The game evokes a feeling of almost roleplaying with its action points, which is very positive.

The stories with the major Xylid one on one are fast and furious and there is an atmosphere of comic strip tension around the game.

## FACTS

Title: XYBOTS  
 Publisher: Demark  
 Price: \$19.99  
 Reviewer: Damian Hewarth

## SIGHT & SOUND

Large and timely graphics with the focus of the comic strip about them. Sound effects are OK but the music is somewhat lacking.

## GAMEPLAY

Easy independent 'ludic' system, for more comfortable than other Leatherneck or Gunfire controls sometimes in this category though.

## VERDICT

An interesting variation on an old set of themes, it's edgy although it's somewhat of the edge.

## FACTS

Title: DARK SIDE  
 Publisher: Micro Status  
 Price: \$24.95  
 Reviewer: John S. Davison

## SIGHT & SOUND

Excellent looking graphics with solid 3-D objects that move smoothly. Excellent sound when used in the atmosphere of the game.

## GAMEPLAY

Not just a finger tapper game, a little teamwork is needed to appreciate the plot which has many interesting twists.

## VERDICT

Overall a like Dark Side, it's positively and positively pleasing. Has addictive gameplay qualities, and requires you to think.



**T**wo centuries have passed since the time of Dillier, and the Kelos (the Goddes) seem to have spent it dreaming up something nasty to unleash on the Kelos (the Gooddes) in revenge. The Kelos take the form of a giant particle beam weapon powered by a series of Energy Collecting Devices, which they've sneakily built on the dark side of Ilcoap. They obviously intend using it to try Swift, and in just a few minutes time there'll be enough power collected to do just that. Guess who's got the job of destroying those ECD's to save the planet from oblivion? It's not just a case of leaving them to themselves though.

# DARK SIDE

First they have to be found, and then deactivated in the correct sequence. If you take one out in the wrong sequence it immediately regenerates and is soon back in action again. The first few ECD's need to be destroyed as quickly as possible, as each one removed lowers the power collection rate, signifying you more time to find the rest.

Ilcoap is split up into sections, each containing a variety of three dimensional structures. Some of these may be ECD's, but others are buildings, which can be entered and explored, assuming you can figure out how to open the doors. That is, the work for ECD's uses up fuel and shield energy, and if you run out the game's over. Supplies

can be obtained from experimental points located inside the buildings. You'll also come across telepod crystals which enable you to use the faster telepod machines to gain access to restricted areas, and Powerports which offer instant teleportation. Proving around most sectors you'll also find a Power, a sort of semi-intelligent force, which gets mighty irate if you do anything to upset it.

Control is via a mixture of keyboard and mouse or joystick. The button operates a laser, which can be used for opening door mechanisms as well as destroying things. The 3D graphics are all colour filled, with no primitive wire-frame structures to spoil the realism. The program manipulates them rapidly, so screen updates a quite fast and smooth.

# GRIDRUNNER



**T**his latest release from Jeff Minter is possibly one of the most playable games to be released so far on the ST. Many of you will know of the game, as it has appeared in many games on a number of different computer formats but the graphics have now been improved dramatically and there are a few new 'twists' in the game play.

Once loaded, you have a number of choices. First you can set the games 'options', such as whether the pointer mode is to be a 'feeder' mode or a graphics demo, along with the chance to change the font the message which appears on the title screen. Secondly you can study the inbuilt 'game secrets' option which gives some useful advice on how to defeat your enemies. Once you have decided to begin a game

you are launched into your selected level and the battle begins...

The ship you use to do battle within the grid consists of two main parts, the main ship and the detachable nosecone. The main ship is moved around the screen using the mouse, the nosecone however stays wherever it is left on the screen and can be 'colled' towards the main ship using the right hand mouse button. Upon pressing the left hand mouse button, both the main ship and the nose cone fire simultaneously. The main use of the nosecone is to augment shots which are fired through it. A single shot fired into the nosecone re-emerges as three separate shots along with the nosecone's own wide beam shot. The augmented shot can be directed forwards, to the sides,

to the rear and to the forward and rear diagonals making the destruction of the 'strong' 'shoes' and various bosses easier and more spectacular. Graphically the game is stunning, as can be expected from Jeff Minter. The back drops and games are of extremely colourful and all of the action takes place at the fastest speed possible. There are many notable graphical touches, too numerous to mention here, but many make starting use of colourview whereby all of the ST's colour palette is cycled through. The game's sound is also of a high standard, consisting of a variety of throbbing base background sound effects.

## FACTS

Title: **GRIDRUNNER**  
 Publisher: **Lightsoft**  
 Price: **£9.95**  
 Developer: **John Davidson jr**

## SIGHT & SOUND

Impressively stunning, colourful and fast! Exactly the use of light and sound that a fast paced exciting game should have. Leaves you gasping!

## GAMEPLAY

Efficient! Probably one of the most playable games so far on the ST! Everything you would expect from the man who made *Footage* so far!

## VERDICT

Superb! Extremely playable. Great graphics. Good pace. Go on and buy one now!

## FACTS

Title: **JOURNEY TO THE CENTRE OF THE EARTH**  
 Publisher: **Chigot/SLS, Ltd**  
 Price: **£19.95**  
 Developer: **Danish Research**



# JOURNEY TO THE CENTRE OF THE EARTH

## SIGHT & SOUND

Digitised stills are superb, the audio pictures could be better. Musically very good but not spot on and sampled sounds add to the atmosphere.

## GAMEPLAY

Extremely smooth, the mouse commands help. The arcade controls feel patchy at times and the cut games are down the main production.

## VERDICT

An interesting look into Victorian Science Fiction, a game well worth considering for both adventures and the ST lovers.

**J**ules Verne would appear to be a safe bet for ST. Acquiring and this game seems to contain most of the elements of the book. The player's role is to become one of four famous historical scientists, each of whom have their own strengths and weaknesses. Once a character is chosen the action follows a pretty, but unexciting, path as it which has to appear on every level which is a little annoying when early death occurs. There are some quite startling digitised graphics, some of which have been put into the gameplay and the mammoth picture made me wonder if the programmers had found a time warp

commercial. Game play takes place from a central mouse driven menu which

allows the player many opportunities to issue commands. These can range from medication which brings up a screen with a neatly annotated make body and a medical kit, to rock sampling which allows the player to gauge his depth. Your state of health is shown by a slowly fading pot of the chosen character and by an area of dots that would do some flight simulator proud. It is possible to monitor your physical and general condition, your vitality, notions, direction and water levels, each can bring up a different control screen. The main screen consists of a direction chooser and a map of the journey with various pit-

falls marked. Some of these routes lead to single arcade games, while ones include a rock climbing game and a game of dodge the digitised mammoths. Both of these are more than adequate sub-games and rock up damage and death on the character. There is not a lot of interactivity in play except for the fact one is played vertically and the other horizontally. Sadly these sub-games do not seem to come up to the quality of the overall production of the game although there is some interesting use of sound which ranges from sampled lining of your sleeping professor to a patchy sound of a pounding woolly mammoth foot. All map movements are accompanied by a re-creating film facilities and the accompanying music is easy on the ear but less than atmospheric.

## BIO CHALLENGE

**F**ollowing the degeneration of civilized humans into a weaker species it has been decreed that mankind must be transported, a to be transported, into new plastic bodies. Bio Challenge is the B&B's testing ground for this new concept and thus you are taken to far off planets to search for parts of a lost ancestor, find various mutants like fangs and conquer them to see if the new bodies can cope. Posing only to choose between one or two player options and to show a very appreciable action sequence which encases the body in the "B&B" the game begins with a digitized level introduction.

The Klip is controlled by joystick and a horizontally scrolling background and its main aim is to discover variable numbers of vital elements in the allotted time span. This is five minutes

on the introduction level and after on level others, later levels having more parts of the computer to discover and more planets to search. Surprisingly the creature does not have to run of any kind until it reaches the end of a level and its main defence is in spinning like a top as it leaps in the air or in descending floating iron boxes or charge stars to fall on the local fauna. This adds a necessary drive the recovered remains of the body, when returned to the mother sphere, provide the energy to run the creature into a living pocket and thereby dispose of the guardian of the end of a level. The control system is adequate and needs to be learnt, as does the method of descending floating boxes at the right time. Action is not particularly fast



paced and on the early levels the time factor is not too tight. The main aim of the Klip is to keep his oil reserves at the optimum by picking up the sticky containers that are thrown across the various planets. Helpful items include the ether sky conditions, these only appear when the creatures die not on screen and if broken gives various bonuses to the Klip, such as time extensions or powered armor that greatly enhance its combat capabilities. Unfortunately with more of the functions, less oil level and control finding, the other cluttered information bar makes confusing reading and, especially in the early stages, is not too helpful.

### FACTS

Title: **BIO CHALLENGE**  
Publisher: **DELPHI SOFTWARE**  
Price: **£19.95**  
Developer: **Domini Howarth**

### SIGHT & SOUND

Above average graphics are wide in scope than adequate base for the game. Digitized speech is good with the beginning graphics. Not sound for

### GAMEPLAY

Control takes a bit of getting used to, action is smooth although there are occasionally sluggish sections.

### VERDICT

A pleasant game, not entirely to my taste although it started to give me an air of play. It probably needs a larger look for the prospective buyer.

### FACTS

Title: **LED STORM**  
Publisher: **Capcom/ U.S. Gold**  
Price: **£19.95**  
Developer: **Domini Howarth**

### SIGHT & SOUND

Digitized musical and quite acceptable, though perhaps a little small, sound adequate but repetitive. Spot FX reasonable.

### GAMEPLAY

Very good, fast and multi-levelled, good, quite control, neat, exciting. Technically proficient.

### VERDICT

I found it less than exciting though it had a certain addictive quality. Probably a good introduction to the arcade hit, but should do well.



## LED STORM

**Y**ou are expected to know the scenario of the arcade conversion (or rather game beforehand) since the accompanying instructions are surprisingly brief and little detail is included. The idea is to race along on elevated highways picking up various cashed bonuses and energy capsules before your time limit runs out.

The control consists of movements in the free-roaming way for race games, the only difference being that the function about the car to jump. Negotiating the highways is made harder by local obstacles who tend to get in the way, although they may be kept over. Sharp bends, oil slicks

barriers that need to be cleared and there are additional hazards. If all that is not enough there are also mine mines and holes carrying high explosives which will destroy you on contact. The loading screen and accompanying pounding sound leads add to the expectations and the game starts very well with no loss of performance. The car that you use is not armed but can destroy enemies by landing on them following a leap. These need timing well otherwise the player will end up in more trouble than he started. My mind kept going back to the infamous killer Cars in Menky Python! The race is fast and furious and needs the car of full throttle most of the time since the time limit is none too

generous and the collection of the bonus fuel and time tokens is sometimes only hazardous. It often becomes necessary to leap holes in the road, but if the hole the hole could bring another vehicle at the cost of much energy. The soundtrack is reasonable but lacks the power that I felt would help the game and the spot effects are quite reasonable even if some. The car sets off in Bugs Bunny style by contracting and then accelerating rubber band style. Fortunately the joystick control is very sensitive and nothing lets you down on the way. The most annoying part of the game seemed to be the fat trucks which always managed to stop you just before a level is completed thereby increasing the frustration. The Manic Frogg did a little to the game's colour but little else.





# ST GAMES ... ST GAMES ... ST GAMES...

## ROUNDUP

With so many games having been released in recent months it is impossible to review them all so here is a roundup of recent releases. We will come back to some of these with a more in depth review in coming issues

### MILLENNIUM 2.2

**Electric Dreams Price £19.99**

This is a space strategy game which involves a lot of data. Don't see, hard to get into.

**GRAPHICS & SOUND:** Variable, from the very good to the more or less adequate. Pictures of bases and combat sequences excellent, representative image patches. Good loading sound but very little during the game except background effects and some of them can be annoying.

**VERDICT:** A good game with annoying bugs that make it crash, remember to save often. Not much help given at start up, some explanation of ship types needed. Worth a look, definitely needs detailed play.

### COSMIC PIRATE

**Palace Software Price £19.99**

A tenacity single space trading/robbing game. Hunt down resistant loot and get a bit of the loot. Then practice, get better, and do it again until you are a master pirate. Lots of levels, with plenty of shooting in it.

**GRAPHICS & SOUND:** Indisputably ugly, some scenes are very good, the 3D action are adequate, some sprites are very good indeed. Overall they are good enough for their purpose. There is not a great deal of sound during most of the game, just the expected bangs etc.

**VERDICT:** I liked it if the game has some odd quirks, if you have a second drive concerned if it disturbs there will be all sorts of fun to be had. I still can't make my mind up if it is little without the camouflage or just a good excuse for a wonderful shoot 'em up. Worth having.

### SPACEBALL

**Rainbow Arts Price £19.99**

Basically this is a cross between *Fake Tennis* and *Wrecked-A*. One or up to 8 players in a league. Game is different in both innovations. It plays very well in either.

**GRAPHICS & SOUND:** Good clear and clean moving sprites with a selection of excellent backdrops. Sound is basically crisp, bang noises but with a good loading soundtrack. Adequate for the game.

**VERDICT:** An entertaining diversion, good as a two player game and enjoyable as

one player against the odds. Well reworked classic game, try it first.

### KULT - THE TEMPLE OF FLYING SAUCERS

**Excelsior Intermatique**

**Price £24.95**



The follow up to *Captain Blood*, this is an enthralling, novel and difficult time machine. Sort of graphics adventure with a dark side to it impossible to describe in a few short words and worthy of a much longer review.

**GRAPHICS & SOUND:** Graphics are almost rival sounding, and fully interactive, sprites are large and beautifully formed and everything moves so smoothly. Good opening with music, spot sound effects are well sampled and atmospheric.

**VERDICT:** A difficult and absorbing delve into the world created in *Amazing Science Fiction*, the City Computers that are close are the *Psychosis* graphics adventures. This is in a class of it's own with all the brilliance and imagination of *Captain Blood* in it. Buy it, you will not be disappointed.

### TYPHOON THOMPSON

**Redburn Price £19.99**

A responsive and somewhat different means of control in this water quail. The skimmer is difficult to master but fun to use. Otherwise simple mechanics make the game playable.

**GRAPHICS & SOUND:** Generally the graphics are fine, the screen is uncluttered and good for arcade games. The sprites are good and, although a bit small, make for good perspectives. Sound is effective with a digitised opening track and good rises from guns and worried creatures.

**VERDICT:** Based on the envy of the game, some fairly cute pictures and fast action. The chase 'em round is fairly hot, violent, clever, simple and collectible.

### AIRBORNE RANGER

**Microprose Price £24.95**

A fast and furious combat game and somewhat strategic. The controls work well and include a template for the keyboard. An extensive game of sound.

**GRAPHICS & SOUND:** Graphics are a bit blocky in the Command mode but all the action is recognizable and there do not cause any handicap to play. There is not a lot of sound but the effects are quite suitable.

**VERDICT:** A freezing man's command game, it will take a lot of getting into, it has been out a bit now and the general feeling is that it is well worth getting your hands on. Deserving of a much longer review.

### FORGOTTEN WORLDS

**Capsoft/3.5 & Gold Price £19.99**

An arcade conversion of a 'Laddy' shoot 'em up. It works well and has lots of effects and plenty to watch out for. Controls make for wild shooting of fun but familiarity and a friend help.

**GRAPHICS & SOUND:** Spectacular backdrops and big smooth sprites, everything is shoot 'em up needs. There is a gully soundtrack, with effects and digitised speech well converted.

**VERDICT:** Everything about this makes of a good conversion, but somehow I could not get into it. I can't say why but it lacked that spark of inspiration. Shoot 'em up needs will probably be overplayed with it, however.

### TIME SCANNER

**Activision Price £19.99**

Pitbull action in a big way. Mouse and keyboard compatible. You must attempt to complete five stages of pitbull to escape a time warp.

**GRAPHICS & SOUND:** For a game like this the graphics need to be good and they are. They feel like a well gifted user of the Intermatique's pitbull construction kit was involved. All a tight and tight, and tastefully graph in pitbull style. Sound is

well used and controlled. It gives the atmosphere and noises of a pinball machine together with good special effects.

**VERDICT:** A very good game. As an old pinball wizard I found it addictive and enjoyable. I did wonder about its long term playability but then I haven't made the final screen yet. Probably the best pinball game about.

## MAYDAY SQUAD

**Typesoft Price £19.95**

A special combat mission game, select your own three person SAS squad and save an embassy. Some of the combat sequencing can get tricky in tight situations.

**VIEW & SOUND:** Fairly good, chunky people in 3D context, good stills and Newscaster headings at the beginning and the end. Sound is nothing spectacular, basically all that would be expected in a game of this ilk.

**VERDICT:** Very playable although I feel that after prolonged use, Airborne Ranger would be far more challenging. It claims to be roleplaying but I am not sure and was not altogether happy playing it. I think I'd buy before buying this one.

## G. NIUS

**Infogrames Price £19.95**

One of those platform and dodge games which is already known to it or its users, there is a two player option although not in co-operative mode.

**VIEW & SOUND:** Graphics are well formed, chunky and blend well with the varied and well drawn backgrounds. Very comfortable to look at. The press releases claim the sound to be greatly enhanced, but I am not sure what that is. A pleasant introductory ditty and perfectly appropriate effects. More than adequate for their purpose.

**VERDICT:** I was not too impressed with this, and had difficulty deciding if I was in a dilemma made for the last couple of games. The provided option screen seemed to be missing. The G. Nius's cutie though, but he does have his problems. Maybe others will enjoy the challenge more than I did.

**Roundup  
conducted by  
Damon Howarth**

# GALDREGON'S DOMAIN

Pandora

£19.95

**John Sweeney goes adventuring again with a Dungeons & Dragons type program**

In *Galdregon's Domain* you play the part of a barbarian hero. You have to explore the countryside to find treasure and dungeons, gather information from the people you meet along the way and complete a number of quests in order to save the world from the forces of evil. The game is completely menu driven, the right button for you between three views, the left button selects movements and actions.

The main view is a picture of what you can currently see ahead of you - either a view down a corridor or a view across the countryside. The graphics are excellent with plenty of variety in the 'wall' designs in the various 'dungeons' and scrolling views as you walk across the countryside (woods, forests, towers, or castles). Below the view is a set of icons to allow you to use potions, scrolls or weapons, move, or flip between a menu and a Status Display at the bottom centre of the screen. You can also use the mouse to select menu items such as Open, Unlock, Take, Drop, Talk, Save or Restore. The Status Display shows your current health, strength and stamina, all of which need to be carefully watched throughout the game and kept high by use of food, potions and friends (again, you need to keep the Status Display up all the time as you require since items do not appear in the picture - only as an indicator on the Status Display).

The second view (right mouse button) shows you, whether your current set of armour and top windows for viewing the items you are carrying and the items in the current location. Whenever you kill an enemy you use the F10 key on the boards to see what you can find. There are a few other items scattered around - although most are, disappointingly, just simple objects.

The third view is a map of the countryside, showing forests, towers, mountains, or Castles. It simply shows, and various standing stones, flow of the forests, the temple, the Castle, the cave and the labyrinth are actually 'dungeons' which you need to explore (although in detail). The countryside and the dungeons are populated with a wide variety of intelligent, man, woman, monster and gnomes, some friendly, some neutral, some deadly. These appear in front of you in the main view and, again, the graphics are excellent. You basically have three choices, talk, fight, or run.

Unlike heroes of the lance where the philosophy is 'if it moves - kill it', you should talk to everyone you meet - you need to know who they are, and a lot of them will give you information. The text appears on a single line below the view and scrolls softly off to the left. Once you have ascertained whether you have met a good guy or a bad guy you might assume that you should then follow the more interesting philosophy of 'if it moves and it's evil - kill it' or in times of loss, how I may have missed something, but followed that philosophy and wasted many hours being a man guy and getting nowhere. As far as I can tell the philosophy in *Galdregon's Domain* is 'if it moves - talk to it, kill it or run'.

Pointing over actually 'moves' in *Galdregon's Domain*. Although the graphics are excellent there is no animation at all, the characters appear in front of you both forwards, you fight them by selecting a weapon and clicking on the character you wish to fight, eventually if you wish the character will be suitably impressed by a picture of it (oops).

The game is not perfect. Death comes too easily and forces a complete reload. The positioning of icons and use of menus has not been thought through carefully enough - you can often do while trying to issue a command such as Switch Weapons or Load Game. Let's assume it takes too long to issue the command.

The original version would not work off of my old 512KB with extended 8192KB objects drive and had a number of other bugs. If you have problems make sure the version you have isn't 'V2' during the loading sequence, but even that version only occasionally loads on my 8386. Most of the time the startup message says 'No Drive-File' - you decided to break the law' and won't let me out of the castle.

Your objective is to acquire the gems and return them to the king, unfortunately the gems are possessed by the particularly nasty monsters. The game is full of a lot of weapons, potions, scrolls, information and special items, and you will need lots of these in order to conquer the monsters. There is also one set of armour scattered widely throughout the land - you will need most, if not all, of it to win.

Despite its limitations and occasional unhelpfulness, *Galdregon's Domain* is quite a nice little Dungeons and Dragons introductory game - well worth looking at if you enjoy a bit of mapping, fighting and questing.

# Mini Office Professional

## Spreadsheet and Communications

reviewed by Matthew Jones

Some years ago, when I still used my trusty IBM Database Software produced in collective programs comprising of several modules under the title 'Mini Office', which originated on the BBC micro. They were aimed at people who did not need full-blown and expensive programs, but just needed to do a basic task of work. The result was a very modular system. Now, Database have released on ST version under the title 'Mini Office Professional'. With the professional range, Database has broken with tradition and is selling modules individually, each costing about the same as the complete right-of system. So the question is, does the Professional series match its name, and are they value for money? Two modules have been released so far, Communications and Spreadsheet.

Each module of the Mini Office Professional series comes in a box a little wider than a floppy, which contains a manual, registration card, and two single sided (as opposed to double) disks. The Spreadsheet also contains a quick reference card, the Communications contains a 'getting you started' card. In each case, one of the disks is a 'startup' disk containing useful accessories, and the other contains the program.

## THE SPREADSHEET

The spreadsheet module has the thicker manual, with 120 pages covering Quick Start Tutorial, a short introduction to get you started, Basic Concepts, describing quite well what a spreadsheet is, how it works, and why you use it, a Tutorial, which has a much more thorough example (possibly a bit far too simple), a Program Reference is written on the Disk Accessory provided, and a chapter which tells you about backing up the disks, using GEM and installing printers. In general, I was impressed with the manual, it is well written and easy to read.

Nothing is perfect however, and I thought that it skipped over a few topics too quickly, and it ignores some important ones completely. For example, one important aspect of spreadsheet preparation is the copying of formulas. The program offers two different ways to do this - absolute, where cell references are copied unchanged and relative where they are altered to suit the column (i.e. a reference to

cell A3 copied to column B would become B3). Unfortunately there are times when you need to do both at the same time, adding the VAT rate held in a cell onto a table of figures for instance. Tacked away in an appendix in the reference to this - the ability to mark a reference as absolute, but if you didn't expect one, you'd never find it!

The spreadsheet program is actually very powerful, and does indeed deserve the 'professional' name. It can support up to five spreadsheets (though in a 512K machine they will be need to be small to fit in at once), and has a large 'control panel' filling the top third of the screen. The spreadsheets are displayed in windows below this, displaying 34 rows at a time. The control panel has a large formulae editing window, and buttons which are used to select the cell type, text justification and the number of decimal places for results. Entering data is done by moving the cell cursor to the desired input cell and typing. The text is entered using the normal point-and-click window, and terminated by pressing return. If you do not want to type all the cell references, you can point using the mouse.

There are some good ideas in the spreadsheet, one is the Group facility (it may not be original but I've not seen it before). This allows you to specify that only certain rows and columns will be displayed when one of seven groups is selected. This allows you to cut and perhaps detailed information when you wish to print out or present data.

The spreadsheet is powerful in its programmability and the functions provided. For the latter, there are table look-ups and set theories which make possible very complex 'What If?' models. The programmability allows very intricate applications to be written, some demonstrations are supplied, and I was quite surprised by their capability with brevity. One demo creates



a graph which contains only the formulas from a table of data on people.

Unfortunately, getting all the power out of this spreadsheet is going to be slow. I found it very slow entering data, so I did a little test. I typed in the numbers '1' thirty times, and then it had time to set my watch to 'zero' and record 30 seconds while it caught up! I then turned off the auto scroll, in case scrolling was the problem, but it still took 30 seconds to complete. This really is slow, and due to spending a lot of time updating the screen - much of it unnecessary since nothing had changed in the bottom displays. Since it is really quick, I would hope for an update soon (both programs are of version 1.00). Another slight niggle is the scoring-out of a repeating character method, which allows you to put in lines unnumbered tables (it may actually be there, but I couldn't find it).

None of the problems are serious enough to stop the use of the programs - the power outweighs the problems and they will probably be fixed.

When I express my opinions in the communications module, I ought to express my 'interests'. As you may know, I did the programming for the conversion of Visim to the SoftTeam on the Mac, and in fact am still working on Visim on the Mac. I hope this does not colour my review adversely, and I think it makes me all the more qualified to make comment.

The manual for the communications program has a similar layout to the spreadsheet but is not as good, despite being by the same

authors. The writing is good, but it does not provide the information that is required for such a complex task as telecommunications. Given that driving a modem is quite enigmatic, it is not good enough to state that if your modem is not included in the supplied files (only two are, the Hayes- and MicroLink modems) then you will need to look in your modem manual to fill in the dialog. It took months to write reliable drivers for Lu810ms, so how is a user expected to survive with just that simple comment? Further, provision of a 'direct connect' modem driver would be useful for those using the program as a simple terminal.

Another item that should be included is a print-out of the Atari serial port. The correct cable for the Atari is an important part of getting on line, and while most people can use a 'straight-through' cable, some

## COMMS

cannot so customers would be useful.

The comms program supports both telnet-type and viewdata (Prestel). After loading it opens a GEM window which acts as a teletype terminal. In normal use, with an auto-dial modem, you select the dial option, and click on a service from the dialog. The program then dials up, and when connected it will send a login script for you, before leaving you online.

The phone book is changed via another dialog, which allows you to specify the terminal type (TTY, V152, VT100 or view, desc) as well as the predominant baud rate, stop bits, parity etc. The possible baud rates are 300, 1200/PS, 1200, 2400, 4800, 9600. A nice touch in the phonebook is space to enter notes about a service.

Another dialog allows you to define strings used when function keys are pressed. One set applies to all terminals and services.

In use, the teletype screen can be configured further. As well as the ability to change any of the options set in the phonebook, it is possible to specify the terminal width and the use of a large or small font. Why these were left out of the phonebook, I cannot guess.

The teletype mode performed adequately, but it does not support scroll-back for viewing previous screens (which I think is regrettable). I had a seemingly unresolvable problem connecting to the University EAS. Information I typed was received by the computer okay, but sent back with a parity problem. Other information sent by the EAS, was fine, and adjusting the parity settings, etc. just made it worse. This may not be a problem with Mini Office Comms, but I do not have comparable problems with other terminal software.

The program uses only a small input buffer, which is easily over-run or higher

speeds, which will lose information unless you use flow control. Another potential problem for some users is that the break button, displayed in a panel with other options like Local Echo and Auto LF at the bottom of the screen, produces what they call a 'soft' break. To them, this is sending Control-P twice, which will interrupt the MicroLink computer properly. The rest of the comms world considers a true break to be a half second zero signal on the control port, but guess that Database via MicroLink, and it may be more useful to its users, it is fair enough.

Mini Office Comms is not all bad though, it does have some good features, among which are the ability to show control codes (useful for working out what is going wrong on VT100 screens) and the ability to transfer files using S modem, Kermit and plain ASCII S-modem (is just the plain variety, with no Y,Z or window variations). The Kermit implementation includes facilities to GET files from a remote server.

A final feature is a modified cursor button on the window, which changes the TTY screen to be a viewdata screen.

The viewdata mode displays three windows, one occupies half the screen displaying the comms session, the others contain buttons which send useful character sequences down the line, either Prestel commands, or characters (double height, red, etc) but some of these did not always respond.

The program includes no message preparation facility, other than the neocopy command which is not suitable for viewdata. It does however have a frame save and viewer, good for offline viewing.

The main problem I encountered with the comms module was the general operating speed, and especially the 1200/PS baud resolution. Selecting to send a mailbox brings up a screen which the cursor scrolls across for about 15 seconds after the signal stopped coming from Prestel. Five more, when typing of the split speed, the transmission interrupts the reception, so you risk losing the reception of the echo if you type too fast. Since you will lose your position on the line, and think you misspell a word if this happens, sending a mailbox is impractical unless you are prepared to type ridiculously slowly. The tab-type mode suffers similarly. FastCom did not suffer from these problems, so it is possible to fix, and it spoils an otherwise good emulation.

A facility that the program offers is Prestel microsoftware download, but I could not get it to accept a single program from Prestel.

## UTILITIES

Each program comes with an identical disk with four disk accessories, a calculator, memoepad, text-editor and disk utility. The latter allows operations such as file-moving, linker create, rename, print file and directory. The text editor is a medium-duty one, but adequate for the job. Entering too much on a line caused an alert to appear that I could not get rid of, but I was punching it hard. The memoepad is based on the text editor, and can contain a file of reminders.

I liked locating the utility disk, but was unable to load the programs due to lack of memory on my 512K machine. A program is provided to alter the memory requirements of the accessories, but you ought to be able to run programs 'out of the box'.



## CONCLUSION

Although it may seem that I have found a lot of faults in the programs, they are good. The spreadsheet could do with a little tuning, but it has a lot of power now and is very good value for money. The communications need a little tuning too, especially with regard to the 1200/PS baud rate which is currently unacceptable. It is currently usable for some purposes, but most people will want to wait until it has been tightened up. Database are due to release three more modules: a Document Processor, a Database, and Presentation Graphics and it will be interesting to see if any lessons from the first two modules have been learnt.

### MINI OFFICE PROFESSIONAL SERIES

Spreadsheet £24.95  
Communications £24.95

Published by Database Software

## STOS

## GETTING IT DOWN ON PAPER

**Peter Hickman introduces a new programming series with a utility that will help you submit programs together with an animated picture that you can type in**

**F**or some years now FACIL has had a reputation for publishing high quality program listings for the 8-bit machines, while ST systems have had little except reviews and small programs written in ST BASIC (and those with bugs away at the back) and Assembly Language. Well now STOS has arrived and with it comes the opportunity for everybody in the 8-bit community to have a hand at teaching hell programmers like Paul Jay at their own game.

While STOS is the almost perfect language for magazine listings as far as basic programs go, you may have been wondering how you can include all those juicy optics, music, and screens when they can't hold on MSX files on disk and not DATA statements within the main program. Well, the guys at MUX/MINDMEN have thought of this problem, and on your Amstruc

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**TABLE 1 - Data to recreate a picture bank**

IBM PC DOS 2.0 (Enhanced) - PICTURE1.BAK  
 Name: PICTURE1  
 Mode: 128x64 - 128x64

| Address | Hex  | Binary | Character |
|---------|------|--------|-----------|
| 0000    | 0000 | 0000   | 0000      |
| 0001    | 0000 | 0000   | 0000      |
| 0002    | 0000 | 0000   | 0000      |
| 0003    | 0000 | 0000   | 0000      |
| 0004    | 0000 | 0000   | 0000      |
| 0005    | 0000 | 0000   | 0000      |
| 0006    | 0000 | 0000   | 0000      |
| 0007    | 0000 | 0000   | 0000      |
| 0008    | 0000 | 0000   | 0000      |
| 0009    | 0000 | 0000   | 0000      |
| 000A    | 0000 | 0000   | 0000      |
| 000B    | 0000 | 0000   | 0000      |
| 000C    | 0000 | 0000   | 0000      |
| 000D    | 0000 | 0000   | 0000      |
| 000E    | 0000 | 0000   | 0000      |
| 000F    | 0000 | 0000   | 0000      |
| 0010    | 0000 | 0000   | 0000      |
| 0011    | 0000 | 0000   | 0000      |
| 0012    | 0000 | 0000   | 0000      |
| 0013    | 0000 | 0000   | 0000      |
| 0014    | 0000 | 0000   | 0000      |
| 0015    | 0000 | 0000   | 0000      |
| 0016    | 0000 | 0000   | 0000      |
| 0017    | 0000 | 0000   | 0000      |
| 0018    | 0000 | 0000   | 0000      |
| 0019    | 0000 | 0000   | 0000      |
| 001A    | 0000 | 0000   | 0000      |
| 001B    | 0000 | 0000   | 0000      |
| 001C    | 0000 | 0000   | 0000      |
| 001D    | 0000 | 0000   | 0000      |
| 001E    | 0000 | 0000   | 0000      |
| 001F    | 0000 | 0000   | 0000      |
| 0020    | 0000 | 0000   | 0000      |
| 0021    | 0000 | 0000   | 0000      |
| 0022    | 0000 | 0000   | 0000      |
| 0023    | 0000 | 0000   | 0000      |
| 0024    | 0000 | 0000   | 0000      |
| 0025    | 0000 | 0000   | 0000      |
| 0026    | 0000 | 0000   | 0000      |
| 0027    | 0000 | 0000   | 0000      |
| 0028    | 0000 | 0000   | 0000      |
| 0029    | 0000 | 0000   | 0000      |
| 002A    | 0000 | 0000   | 0000      |
| 002B    | 0000 | 0000   | 0000      |
| 002C    | 0000 | 0000   | 0000      |
| 002D    | 0000 | 0000   | 0000      |
| 002E    | 0000 | 0000   | 0000      |
| 002F    | 0000 | 0000   | 0000      |
| 0030    | 0000 | 0000   | 0000      |
| 0031    | 0000 | 0000   | 0000      |
| 0032    | 0000 | 0000   | 0000      |
| 0033    | 0000 | 0000   | 0000      |
| 0034    | 0000 | 0000   | 0000      |
| 0035    | 0000 | 0000   | 0000      |
| 0036    | 0000 | 0000   | 0000      |
| 0037    | 0000 | 0000   | 0000      |
| 0038    | 0000 | 0000   | 0000      |
| 0039    | 0000 | 0000   | 0000      |
| 003A    | 0000 | 0000   | 0000      |
| 003B    | 0000 | 0000   | 0000      |
| 003C    | 0000 | 0000   | 0000      |
| 003D    | 0000 | 0000   | 0000      |
| 003E    | 0000 | 0000   | 0000      |
| 003F    | 0000 | 0000   | 0000      |
| 0040    | 0000 | 0000   | 0000      |
| 0041    | 0000 | 0000   | 0000      |
| 0042    | 0000 | 0000   | 0000      |
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| 0046    | 0000 | 0000   | 0000      |
| 0047    | 0000 | 0000   | 0000      |
| 0048    | 0000 | 0000   | 0000      |
| 0049    | 0000 | 0000   | 0000      |
| 004A    | 0000 | 0000   | 0000      |
| 004B    | 0000 | 0000   | 0000      |
| 004C    | 0000 | 0000   | 0000      |
| 004D    | 0000 | 0000   | 0000      |
| 004E    | 0000 | 0000   | 0000      |
| 004F    | 0000 | 0000   | 0000      |
| 0050    | 0000 | 0000   | 0000      |
| 0051    | 0000 | 0000   | 0000      |
| 0052    | 0000 | 0000   | 0000      |
| 0053    | 0000 | 0000   | 0000      |
| 0054    | 0000 | 0000   | 0000      |
| 0055    | 0000 | 0000   | 0000      |
| 0056    | 0000 | 0000   | 0000      |
| 0057    | 0000 | 0000   | 0000      |
| 0058    | 0000 | 0000   | 0000      |
| 0059    | 0000 | 0000   | 0000      |
| 005A    | 0000 | 0000   | 0000      |
| 005B    | 0000 | 0000   | 0000      |
| 005C    | 0000 | 0000   | 0000      |
| 005D    | 0000 | 0000   | 0000      |
| 005E    | 0000 | 0000   | 0000      |
| 005F    | 0000 | 0000   | 0000      |
| 0060    | 0000 | 0000   | 0000      |
| 0061    | 0000 | 0000   | 0000      |
| 0062    | 0000 | 0000   | 0000      |
| 0063    | 0000 | 0000   | 0000      |
| 0064    | 0000 | 0000   | 0000      |
| 0065    | 0000 | 0000   | 0000      |
| 0066    | 0000 | 0000   | 0000      |
| 0067    | 0000 | 0000   | 0000      |
| 0068    | 0000 | 0000   | 0000      |
| 0069    | 0000 | 0000   | 0000      |
| 006A    | 0000 | 0000   | 0000      |
| 006B    | 0000 | 0000   | 0000      |
| 006C    | 0000 | 0000   | 0000      |
| 006D    | 0000 | 0000   | 0000      |
| 006E    | 0000 | 0000   | 0000      |
| 006F    | 0000 | 0000   | 0000      |
| 0070    | 0000 | 0000   | 0000      |
| 0071    | 0000 | 0000   | 0000      |
| 0072    | 0000 | 0000   | 0000      |
| 0073    | 0000 | 0000   | 0000      |
| 0074    | 0000 | 0000   | 0000      |
| 0075    | 0000 | 0000   | 0000      |
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| 0077    | 0000 | 0000   | 0000      |
| 0078    | 0000 | 0000   | 0000      |
| 0079    | 0000 | 0000   | 0000      |
| 007A    | 0000 | 0000   | 0000      |
| 007B    | 0000 | 0000   | 0000      |
| 007C    | 0000 | 0000   | 0000      |
| 007D    | 0000 | 0000   | 0000      |
| 007E    | 0000 | 0000   | 0000      |
| 007F    | 0000 | 0000   | 0000      |
| 0080    | 0000 | 0000   | 0000      |
| 0081    | 0000 | 0000   | 0000      |
| 0082    | 0000 | 0000   | 0000      |
| 0083    | 0000 | 0000   | 0000      |
| 0084    | 0000 | 0000   | 0000      |
| 0085    | 0000 | 0000   | 0000      |
| 0086    | 0000 | 0000   | 0000      |
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| 0089    | 0000 | 0000   | 0000      |
| 008A    | 0000 | 0000   | 0000      |
| 008B    | 0000 | 0000   | 0000      |
| 008C    | 0000 | 0000   | 0000      |
| 008D    | 0000 | 0000   | 0000      |
| 008E    | 0000 | 0000   | 0000      |
| 008F    | 0000 | 0000   | 0000      |
| 0090    | 0000 | 0000   | 0000      |
| 0091    | 0000 | 0000   | 0000      |
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| 0098    | 0000 | 0000   | 0000      |
| 0099    | 0000 | 0000   | 0000      |
| 009A    | 0000 | 0000   | 0000      |
| 009B    | 0000 | 0000   | 0000      |
| 009C    | 0000 | 0000   | 0000      |
| 009D    | 0000 | 0000   | 0000      |
| 009E    | 0000 | 0000   | 0000      |
| 009F    | 0000 | 0000   | 0000      |
| 00A0    | 0000 | 0000   | 0000      |
| 00A1    | 0000 | 0000   | 0000      |
| 00A2    | 0000 | 0000   | 0000      |
| 00A3    | 0000 | 0000   | 0000      |
| 00A4    | 0000 | 0000   | 0000      |
| 00A5    | 0000 | 0000   | 0000      |
| 00A6    | 0000 | 0000   | 0000      |
| 00A7    | 0000 | 0000   | 0000      |
| 00A8    | 0000 | 0000   | 0000      |
| 00A9    | 0000 | 0000   | 0000      |
| 00AA    | 0000 | 0000   | 0000      |
| 00AB    | 0000 | 0000   | 0000      |
| 00AC    | 0000 | 0000   | 0000      |
| 00AD    | 0000 | 0000   | 0000      |
| 00AE    | 0000 | 0000   | 0000      |
| 00AF    | 0000 | 0000   | 0000      |
| 00B0    | 0000 | 0000   | 0000      |
| 00B1    | 0000 | 0000   | 0000      |
| 00B2    | 0000 | 0000   | 0000      |
| 00B3    | 0000 | 0000   | 0000      |
| 00B4    | 0000 | 0000   | 0000      |
| 00B5    | 0000 | 0000   | 0000      |
| 00B6    | 0000 | 0000   | 0000      |
| 00B7    | 0000 | 0000   | 0000      |
| 00B8    | 0000 | 0000   | 0000      |
| 00B9    | 0000 | 0000   | 0000      |
| 00BA    | 0000 | 0000   | 0000      |
| 00BB    | 0000 | 0000   | 0000      |
| 00BC    | 0000 | 0000   | 0000      |
| 00BD    | 0000 | 0000   | 0000      |
| 00BE    | 0000 | 0000   | 0000      |
| 00BF    | 0000 | 0000   | 0000      |
| 00C0    | 0000 | 0000   | 0000      |
| 00C1    | 0000 | 0000   | 0000      |
| 00C2    | 0000 | 0000   | 0000      |
| 00C3    | 0000 | 0000   | 0000      |
| 00C4    | 0000 | 0000   | 0000      |
| 00C5    | 0000 | 0000   | 0000      |
| 00C6    | 0000 | 0000   | 0000      |
| 00C7    | 0000 | 0000   | 0000      |
| 00C8    | 0000 | 0000   | 0000      |
| 00C9    | 0000 | 0000   | 0000      |
| 00CA    | 0000 | 0000   | 0000      |
| 00CB    | 0000 | 0000   | 0000      |
| 00CC    | 0000 | 0000   | 0000      |
| 00CD    | 0000 | 0000   | 0000      |
| 00CE    | 0000 | 0000   | 0000      |
| 00CF    | 0000 | 0000   | 0000      |
| 00D0    | 0000 | 0000   | 0000      |
| 00D1    | 0000 | 0000   | 0000      |
| 00D2    | 0000 | 0000   | 0000      |
| 00D3    | 0000 | 0000   | 0000      |
| 00D4    | 0000 | 0000   | 0000      |
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| 00D7    | 0000 | 0000   | 0000      |
| 00D8    | 0000 | 0000   | 0000      |
| 00D9    | 0000 | 0000   | 0000      |
| 00DA    | 0000 | 0000   | 0000      |
| 00DB    | 0000 | 0000   | 0000      |
| 00DC    | 0000 | 0000   | 0000      |
| 00DD    | 0000 | 0000   | 0000      |
| 00DE    | 0000 | 0000   | 0000      |
| 00DF    | 0000 | 0000   | 0000      |
| 00E0    | 0000 | 0000   | 0000      |
| 00E1    | 0000 | 0000   | 0000      |
| 00E2    | 0000 | 0000   | 0000      |
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| 00E5    | 0000 | 0000   | 0000      |
| 00E6    | 0000 | 0000   | 0000      |
| 00E7    | 0000 | 0000   | 0000      |
| 00E8    | 0000 | 0000   | 0000      |
| 00E9    | 0000 | 0000   | 0000      |
| 00EA    | 0000 | 0000   | 0000      |
| 00EB    | 0000 | 0000   | 0000      |
| 00EC    | 0000 | 0000   | 0000      |
| 00ED    | 0000 | 0000   | 0000      |
| 00EE    | 0000 | 0000   | 0000      |
| 00EF    | 0000 | 0000   | 0000      |
| 00F0    | 0000 | 0000   | 0000      |
| 00F1    | 0000 | 0000   | 0000      |
| 00F2    | 0000 | 0000   | 0000      |
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| 00F6    | 0000 | 0000   | 0000      |
| 00F7    | 0000 | 0000   | 0000      |
| 00F8    | 0000 | 0000   | 0000      |
| 00F9    | 0000 | 0000   | 0000      |
| 00FA    | 0000 | 0000   | 0000      |
| 00FB    | 0000 | 0000   | 0000      |
| 00FC    | 0000 | 0000   | 0000      |
| 00FD    | 0000 | 0000   | 0000      |
| 00FE    | 0000 | 0000   | 0000      |
| 00FF    | 0000 | 0000   | 0000      |

3) Following the prompts enter the data from TABLE 1 onto the screen; the program will automatically know when mistakes are made and will stop when all the data has been input.

4) Again, follow the prompts and using a blank disk save the data as PICTURE1.BAK.

5) Type in PROGRAM 2, save it onto the same disk as PICTURE1.BAK and then type RUN.

So there you have it, the simple way to get your STOS programs published in WPCRTARD USER. If you have a program written using STOS send it in and share it with all of the other STOS owners started of type-in listings.



**MORE STOS LISTINGS!**

The reason we have not published many type-in listings for the IT is that the programs have either been say it coded, as with ST BASIC, or have become a support files that cannot be printed. Now that STOS listings can be printed complete with pictures, sounds, etc. to be typed straight in we will start to publish whatever STOS listings you send in. Peter Mickman will be running the STOS column in future issues which will include hints and tips as well as program listings. Start writing now and send your programs, hints and tips, to Peter Mickman, c/o WPCRTARD USER, P.O. Box 58, Bedford, VT 05441.



```

80 rem      I HOPE YOU TYPED THE DATA FROM TABLE 1 INTO THE INPUTS ACCIDENTLY!!
81
82
83
84 key off : mode 0 : curs off : flash off : hide
85 dia COL#031
86 for LOOP#1 to 15 : erase LOOP : next LOOP
87 reserve as work 7,1854
88 reserve as screen 8
89 dia 8
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