

Support the ***XL/XE?***
Not me ...



but you can

*Page 6 supports your Atari with the world's
oldest and best dedicated magazine ...
as well as the world's best PD library ...
as well as providing commercial software ...*

**Don't be like the guy above
return the favour**

Keep supporting Page 6

Page 6 Publishing's **NEW**

ATARI USER

The Resource for the ATARI CLASSIC and the ATARI ST

Issue 70 - February/March 1995 \$2.50

FOR THE ATARI CLASSIC

- ⊙ **AUTO FUNCTIONS KEYS**
Add DOS commands at the touch of a key!
- ⊙ **WRITING A GAME**
All you need to get you started
- ⊙ **STILL WAITING FOR GO?**
The chequered history of Atari



EVEN EASIER RUNNING! *New an even easier way to
autorun binary programs*

FOR THE ATARI ST

MAKING MUSIC

*Will MIDI become obsolete
or is it possible to adapt to
future standards?*

PUBLIC DOMAIN *new versions of the coin-op classics*



PLUS ... TURBO TYPING ... THE TROSTER ON THE BRINDLES ... HOODING UP A VCR

This issue's

Thanks

Lee Ellingham puts it all together and lets us the gear but the real thanks goes to the following who made this issue possible

Sandy Ellingham who takes care of all the other work, advertising and mail order

For their regular contributions:

John A Dutton
Paul Brown
Ian Pilkington
Alan J. Palmer
Stuart Murray
Nick Sherington
Mark Stevens
The Pipster

For their contributions this issue:

Judy O'Sullivan
Lee Williams
John Young
Benjamin Arnold
Chris Tustin
Piero Andre Bartholomew
Ann O'Sullivan
A Long Hair
Robert de Letter
Judy McGowan
Peter Corrales
Piero Andre Bartholomew

Special mention to:

All those readers who took the trouble of sending us Christmas cards with their messages of support. Much appreciated.

Some of these folk have supported us from about the beginning and without them we could not be here. Some are having articles published for the first time. All can be thanked for sharing their enthusiasm with all who read *New Atari User*

HOW IT'S DONE

WRITE it shows just what you can do with your Atari. *NEW ATARI USER* has always been round entirely with Atari equipment, initially on the XL but more lately with things like CD and video disks, video cards, PCs and Macs. Hardware includes a Mega ST1 (supplied to IBM), IBM or Zenith, Super Turbo, hard disk, a SP Laserjet III, Casper 1240 printer, Philips MMS20 monitor.

FOUND it is a range of 1000 disk drives, disk monitors, DOS (MS-DOS), Protected software used in Thailand and Fiat-Seat-Porsche 3.0. Other software includes games, manuals, Turbo Basic and various custom written programs on the XL, DOS, Amiga sub-system. All CD ROM disks are transferred across to the SP via SANEALL. Programs are coded on the CD and printed out directly by pointing to after the opening is completed. All printing is done with high speed pages are laid-out with Paul Street Publishers. Each page is copied directly from that sheet to a SP Laserjet III which produces. Standard pages usually run on one sheet. All that is left to do then is the layout and printing.

WELL, it's not quite as easy as that but you get the idea

Editorial address: P.O. Box 54, Stafford, ST16 1DR, ENGLAND Tel. 01783 219839

Editor & Publisher: Lee Ellingham - Advertising: Sandy Ellingham

Page layout by PAGE 6 - Printed by Dolphin Press, Fife, Scotland 8003 771955

NEW ATARI USER is published bi-monthly on the last Thursday of the month prior to cover date

PAGE 6 PUBLISHING'S

MAKES

ATARI

LITERATURE

'The Magazine for the Dedicated Atari User'

ISSN No. 0953-7100

CONTENTS

Issue 70 - February/March 1995

REGULARS

EDITORIAL	4
MALBAO	8
THE TIPSTER	10
DISK BONUS	17
AN ADVENTURE DOUBLE	20
CLASSIC PD ZONE	24
SOFTWARE CLASSICS	30
TUTORIAL TIME	48
ACCESSORY SHOP	61
CONTACT	IBC

ST CORNER

MAKING MUSIC	56
Futureproofing the MDV standard	
ST PD ROUNDUP	60

ADVERTISERS

MICRO DISCOUNT	12
NOSAGA/FUTURA	27
GEAN GARRAGHTY	42

PROGRAMS

TICK-TOCK!	5
A type in Turbo clock	
THE CAVES OF CTULHI	18
Fast and adventure, platform style	
MINI TURBOS 2	28
Four quick to type mini programs	
AUTO FUNCTION KEYS	32
EVEN EASIER RUNNING!	39

FEATURES

WRITING A GAME	13
STILL WAITING FOR GO?	20
SIGHT AND SOUND	40
How to hook up a VCR	
X-STATIC	44
Tackling the problems of static	

REVIEWS

ARENA	35
STATIONFALL	36
GTRACKER	43
NOSAGA TAPES	46

The next issue of *NEW ATARI USER* is due to be published on 31st March
Editorial copy date is 27th February

SUBSCRIPTIONS

MAGAZINE ONLY

Annual subscription rates (8 issues)

UK	£15.00
Europe (Air Mail)	£17.00
Overseas (Surface)	£17.00
Overseas (Air Mail)	£25.00

Overseas rates reflect only the difference in

postal costs

DISK SUBSCRIPTION

A disk containing all of the info programs from each issue of *NEW ATARI USER* is available either separately by 12 disk subscription. Single price £24.95 per disk, a disk subscription costs you almost 0% a year. Subscription rates (8 issues)

UK	£20.00
Europe	£22.00
Overseas (sea)	£22.00
Overseas (air)	£40.00

Please make cheques payable to PAGE 6 PUBLISHING and send to
PAGE 6 Publishing, P.O. Box 54, Bedford, MK44 1DR

Editorial

The reaction to the change in size was not quite what I expected. I had expected one or two dissenting remarks yet, almost without exception, the comments were very positive with one reader writing to say that Issue 68 was the best ever! The single correspondent who made any form of criticism suggested that the price should now be reduced, but that fails to take into account the cost of producing a quality magazine and the costs incurred over the past couple of years of keeping the format in its previous incarnation for so long as we could.

So most people seem happy with the new style of New Alert User like debate about whether to call it Page 8 again (has not been settled) and it is now up to us - and you - to ensure that we can continue with a quality magazine for several more years. What we need now is a continuing supply of good quality articles and programs for us to feature and for you to share with your fellow enthusiasts. As I have said on many occasions before we need your contributions to keep up the interest in the magazine.

In some areas we are quite short of articles and programs. What we especially need are programs that are well documented. We have a vast number of programs received over the years which are good enough to be included in the magazine but which have no accompanying documentation. It is almost impossible to take someone else's programs and write about them, only the author knows how they came to be. The important thing is to write down all the information you can about any program that you submit. I have said many times before, and repeat it again, that you do not need to be a professional writer so don't worry if you can't write flowing prose. Just put down all the detail and if it needs knocking into shape then I'll do that when it is published.

We particularly need longer or more complicated programs that we can use for Disk Reviews as these are rare in very short supply. We also need shortish programs with covering articles to include in the magazine. These can be anything you want, from a routine to include in other programs, to useful utilities, fun demos or simple games. If you find it interesting and enjoyable, chances are others will too. If you can't come up with something to contribute, drop us a line and tell us what you would like to see published and we can then run a column with your 'wishes' which, hopefully, will spur others to come up with the articles and programs.

One of the most strange things to have happened in the past three or four months is that many of you have stopped writing. Since just before Christmas we have received fewer letters for Mailings, fewer Typist lists and fewer Contact orders than ever before. What's happening? Here all the regular correspondents can do of things to write? Have you all been too busy? Whatever the reason please get your pens or word processors out again and write to us. Mailing is an important part of the magazine that can keep people interested and apart there on to new things so let's have your reaction to letters published and new subjects raised the others to meet to.

The drop in the Contact column has few quite amazing but some many of the past notices were from people selling their 8-bit systems. I am not really bothered. The more people who hang on to their Atari Classics the better! Perhaps the drop coincided with the decision to charge for the service, but that has now been reversed and the column is free to subscribers. Use it to get in touch with your fellow enthusiasts.

That's all - now let's hear from you with all those great programs and articles which I know are out there just waiting to be shared with others.

Lee Ellingham

TURBO TYPE-IN

Save the expense of buying a clock for your computer room, just buy your Classic into a neat three-piece! Although this is just a straightforward simulation of an analogic clock which has little direct use, the routines may well prove useful for timing routines within your programs.

Once the program is up and running, you just type in the start time in twelve hour format and, after the screen has been setup, just press any key to start the clock ticking. The program waits until the correct amount of pulses at location 20 BYFLOR type 81 have passed, then updates the 'seconds' based which in turn updates the 'minutes' and 'hour' hands. An array of Sin and Cos values is used for value spread.

The time of one 'program second' is set at 60/200 on line 20. This is the amount of pulses to be counted before the 'seconds' hand is to be updated, and is set to 60 for a standard UK, IL. Those in the U.S.A. etc. will have to leave or raise this value to suit. Notice that seconds and minutes are increased in steps of 6, this is because they are angles not real values and are calculated from the real time. (i.e. 360 degrees/60 seconds or minutes = 6) The 'hour' hand is moved at the same time as the 'minutes' hand so that it moves during the hour, if this was not so the 'hour' hand would slip from hour to hour giving a rather jolty movement.

by
Andy Guillaume

TICK-TOCK!

```
00 10 REM *****
01 10 REM *****
02 10 REM *****
03 10 REM *****
04 10 REM *****
05 10 REM *****
06 10 REM *****
07 10 REM *****
08 10 REM *****
09 10 REM *****
10 10 REM *****
11 10 REM *****
12 10 REM *****
13 10 REM *****
14 10 REM *****
15 10 REM *****
16 10 REM *****
17 10 REM *****
18 10 REM *****
19 10 REM *****
20 10 REM *****
21 10 REM *****
22 10 REM *****
23 10 REM *****
24 10 REM *****
25 10 REM *****
26 10 REM *****
27 10 REM *****
28 10 REM *****
29 10 REM *****
30 10 REM *****
31 10 REM *****
32 10 REM *****
33 10 REM *****
34 10 REM *****
35 10 REM *****
36 10 REM *****
37 10 REM *****
38 10 REM *****
39 10 REM *****
40 10 REM *****
41 10 REM *****
42 10 REM *****
43 10 REM *****
44 10 REM *****
45 10 REM *****
46 10 REM *****
47 10 REM *****
48 10 REM *****
49 10 REM *****
50 10 REM *****
51 10 REM *****
52 10 REM *****
53 10 REM *****
54 10 REM *****
55 10 REM *****
56 10 REM *****
57 10 REM *****
58 10 REM *****
59 10 REM *****
60 10 REM *****
61 10 REM *****
62 10 REM *****
63 10 REM *****
64 10 REM *****
65 10 REM *****
66 10 REM *****
67 10 REM *****
68 10 REM *****
69 10 REM *****
70 10 REM *****
71 10 REM *****
72 10 REM *****
73 10 REM *****
74 10 REM *****
75 10 REM *****
76 10 REM *****
77 10 REM *****
78 10 REM *****
79 10 REM *****
80 10 REM *****
81 10 REM *****
82 10 REM *****
83 10 REM *****
84 10 REM *****
85 10 REM *****
86 10 REM *****
87 10 REM *****
88 10 REM *****
89 10 REM *****
90 10 REM *****
91 10 REM *****
92 10 REM *****
93 10 REM *****
94 10 REM *****
95 10 REM *****
96 10 REM *****
97 10 REM *****
98 10 REM *****
99 10 REM *****
100 10 REM *****
```

Mailbag



MAGAZINE FORMAT

Editor's note: We actually received many letters on the subject of the future format of the magazine. Yours appears here, and thanks to everyone who wrote, but there were not passed on to Allan as many of the comments were similar and I did not think a whole Mailbag of nearly identical letters would be very interesting. We have had a good number of comments about issue 69 went out, mostly on the telephone, and all for one have been most favorable. Check the editorial this issue for more detail. Thank to Allan ...

Brad Rogers from Southampton sent these thoughts before the new format appeared: "Obviously the magazine will remain as a subscription only publication. If printing the magazine in A4 format is cost effective, then so be it. However, I would prefer to see listings left in the magazine (perhaps listing a disk subscription), so my preference would be for A4 format, but cheaper paper. Newspaper would be too easy to contemplate though I would like to see the order forms kept separate from the magazine, since I look for mailing magazines. Yes, I know about photographers, but not everybody has free access to one. If the

order forms were just a blank pre-form, rather than a cut-out one, then there would be no need to print new forms for every issue. This implies that I have no objections to putting the list of new top tips into the magazine. The name? My preference is the 'PAGE 8', since that's how I will refer to the magazine. BT coverage? If the post is anything to go by, it seems to me that Page 8/NEU will be the only mag providing coverage."

Alan before getting issue 68, Frank Adin from Gosport, Hants wrote: "...in the A4/A5 format, it is the contents that matter, and if it is all our heads go in AS, if not then look to A4. TWANG has an A4 format ... good value for money and the MAJ is very much looked forward to."

Thanks for your thoughts Brad and Frank, what did you think of issue 68?

AU TOOLKIT

Brian Arnold of Wokingham has sent me a plan for help: "Has anyone managed to transfer to disk the old Atari User TOOLKIT tape? I have had no success at all, even by using TRANSDISK IV. I end up with a screen full of garbage, and get the same result if I try direct loading of the tape."

I can see the Atari User Toolkit was available on disk and it should work.

POWER PACKS

From Southampton, Brad Rogers provides his response to enquiries in issue 68. His information about power packs used by Atari 8-bits:

"This list is by no means exhaustive, but for what it's worth, here goes:

Description	Voltage	Current	AC/DC
1000E Computer	5V	2.5A	DC
410 Tape Deck	5V	1.5A	DC
500 Computer	8.0V	1.5A	DC
850 Interface	5V	3A	AC
1080 Disk Drive	5V	3A	AC
SCPD Display	5V	2.5A	DC
Card			
SPMD Disk Drive	5V	3A	AC

So, M. Tomlin is using a variable PSU for his disk drives. It should be stated that the above are minimum requirements, and smaller PSUs can't do any harm. Further, it may be inferred from the above list that all Atari 8-bit disk drives use the same power unit. It may should prove not to be the case. Don't blame me!

Thanks for the information. Don't you require precise further details in this table?

8-BIT VIRUSES?

Self-named W.A.C.O., W. Tern is of Haslemere in Surrey, ... was wondering if any Atari 8-bit users has had trouble with a computer virus? I would like to ask the readers if I have any input on this



THUNDER ISLAND

Brian Arnold of Wokingham, West Sussex writes "Thunder Island" in issue 68 was ... a very good type-in, but I found it something of a nuisance to have to keep the article handy in order to refer to the Game Options table with its many levels. I therefore thought it would be a good idea to have this table on the title screen, for ease of reference. I obtained LANTERN as LAMP, and with a good deal of abbreviations managed to get it all in. Lines 345-350 should be re-typed as shown below. No other changes are needed. I hope others will find this useful.

```

340 POS. C10,C4-T "ONE PLAYER/ONE
351 POS. C4,C6:7 "SELECT FOR PLAYERS SELECT FOR LEVEL"
352 POS. C4,C8:7 "1 PLAYER/ONE 2 PLAYERS/ONE
353 POS. C4,C9:7 "LAMP ES=med:END LAMP: LIMP: ES=med:END"
354 POS. C4,C10:7 "Lge 1 2 3 Lge Lge 1 2 3"
355 POS. C4,C11:7 "Med 4 5 6 Lge Med 10 11 12"
356 POS. C4,C12:7 "Med 7 8 9 Lge Med 13 14 15"
357 POS. C4,C13:7 "2 PLAYERS/ Med Lge 16 20 21"
358 POS. C4,C14:7 " 10 11 12 Med Med 4 5 6"
359 POS. C4,C15:7 "3 PLAYERS/ Med Lge 15 17 18"
360 POS. C4,C16:7 " 20 20 20 Lge Lge 23 23 24"
361 POS. C4,17:3 " Med Med 25 26 27"
362 POS. C3,18:7 "SELECT TO PLAYERS Med 7 8 9"
363 SKILL:0:1 LEVEL:0:1
370 POS. 27,C8:7 SKILL:FOR 2-C:1 TO 100NEXT X
  
```

Editor's note: You will have to experiment with the spaces to get the table correct. Using a typewriter like this means that the characters have proportional widths so do not match exactly with what will appear on screen.

So let's boldly go where no letter column has gone before and dig in to this month's postal mixology ...

Allan J. Palmer



MONITOR FOR AN XL?

Peter Fazio of *Visual Source* would like to thank "...all those who contribute to *New Atari User*." The articles provide a valuable service to those of us who are still in the dark.* Thanks Peter, it's gratifying to know that people also appreciate other people's efforts. Peter goes on to report that his colour TV came with his Classic Atari in case direct mail is "...contemplating the purchase of a monitor. What type of monitor can be connected to the XL computer? Can you suggest any models and where they can be acquired from?"

† Right, let's have it from the assembled masses - what sorts of monitors are used out there? (Don't forget Peter you'll need to make a cable that provides the appropriate connections - something I'm sure we've covered in previous issues of the magazine).

EXPANDING THE ATARI

Peter Fazio of *Visual Source* asks "...back in issue 32 of *MAIL*, a column called 'Expanding Your Atari' was started by Mark Fowler. Was the series ever completed or was it left open?"

† I think, Peter, that no justice

in articles were forthcoming, and there was concern about the safety aspects of reconnecting an Atari to other electrical equipment. Perhaps our editorial Publisher can call a few users... The major problem was that there were a number of errors in the articles which one or two readers brought to my attention. As I have never been a hardware buff, there was no way of checking whether the remote key articles were accurate as I decided to give the series the chop. Better that than have someone blow up their beloved Atari!

DISK BOXES

In reply to queries in previous issues about the availability of 5 1/4" disk boxes, Kevin Cooke from *Kevin's Denon* reports that he has found a good source in *Denon Distributors* - you should find a DCS advert in any recent issue of *MAIL* with contact details.

VIDEO CONNECTIONS

In the last issue, I asked if anyone had ideas about using a Classic Atari converter to a video recorder. Kevin Cooke of *Kevin's Denon*, again responded on *Mailbox*: "I do not own the Video Title Shop program at present but hopefully I'll get the chance

to try it out in the future. However, the video link was also covered in handy when playing games and trying to write the solutions for the *Tipster*. By playing the game through a video recording it and then watching it from the video at your own pace, you can see exactly what moves you made, making it easier to draw maps and write solutions. I was also interested to see the link to create an advertisement as part of my GCSE coursework in my Media Studies lesson at school last, unfortunately, I didn't get around to making the cable until after the deadline date. I may still use the link for my final project though and, if I do, I'll try to send you a copy of it."

Thanks for the comments, Kevin, and good luck with your project.

LIGHT GUN GAMES

Following Jason Kendall's enquiry about light gun games for the Classic Atari, Kevin Cooke (not of *Kevin's Denon*) sends these notes: "Jason should perhaps take a look at *Parlor Robert's* article in *MAIL* issue 54 detailing *CROSSBOW*, *BARRAGE*, *BLASTER*, *CRIME BUSTER*, *LIGHT GUN BLASTER* and *CANISTER VILLE*. I also own *ALION BLAST*, a 1980's readers clear that works

with the light gun. *ALION BLAST* is available from *Denon Gaming*, *BARRAGE*, *BLASTER*, *CROSSBOW* and *CRIME BUSTER* may still be available from *Denon*. Peter's store *Denon*, and *LIGHT GUN BLASTER* is available on Page 65 of *FD Library* disks 4, 5. The only game I have yet to track down is *CANISTER VILLE* - does anyone know where it is available from?"

† Once again, Kevin, thanks for your input!

Well, I'm afraid that's it that's ALL the mail received in time for this issue but even now I'm starting your *Jet*' original deadline - so you might not actually see this in issue 59 - and if you don't you can't actually be reading this can you? However... in this the first issue of a *Classic Atari* disc period? Send for *Agony Auldin* and finally from the *X-Files*? Well, knowing our luck we'd probably end up with *Mr. Hobbit* and *Donny Decker*!

Don't forget to write...

Air your views on all things Atari or help your fellow users with their queries - even ask for help yourself. It's all interesting, if only you write it down. Here's the address:

MAILBAG
NEW ATARI USER
P.O. BOX 54, STAFFORD
ST16 1TB

FOR THE FUTURE?

What would you like to see in future issues of *New Atari User*? Are there specific materials you would like to see? Is there a program that you have never seen before on the Atari or one which might help you with a particular task? Perhaps you are stuck on a section of a program that you have been writing for years. If that's the case someone reading *New Atari User* could help you.

One idea we have had for a while is a sort of programmer's clinic or 'How do they do that?' in which readers could write in with questions for simple programming routines and others could provide the answers. For example how to you write a timing routine that continues counting as you input text from the keyboard? How can you disable all keys except Y and B? How do people mount the directory on a disk so that it can't be read with DOS?

There are hundreds more questions like these and we could run them as an extension of *Mailbox* by publishing a selection of programming questions, followed the next issue by, hopefully, some of the answers. Whatever the question, someone, somewhere knows the answer.

That's one idea for a future column but there must be many more so write in and tell us so we can give you what you want. The address is below.



MAIL is better to write to MAIL!

HEY! HEY! it's The TIPSTER

Your regular Tipster can't wait to start! Here's a round-up of Christmas puzzles from last month, broadly run and other legends that help to keep Christ-mas merry. By the time he emerges he'll be trying to get that Father of his to perch on his usual (safety) wire - here this issue's volume out to a great Tipster - Mr. Les Williams - who provided enough feedback on issue 68's tips to fill the column. Your regular Tipster will be back next time - provided of course that you keep those hints and tips coming - but meanwhile his goodwill is here and here, and thanks, in Les.

Right, let's get! Check out issue 68 of New Adventure and we'll be up a bit of these notes.

THE BRUNDLES ★ ★ ★ ★ ★

On my disk there is no problem with Level 61 (ie. it scrolls to the left to reveal the house. I agree with Peter's comments about Level 60 - if you Nubkiss the lock-up to even more spectacular than exploring just one Brundle! As a follow-up here are most of the other notes.

61 HALLE	71 FORCE	81 BOHEM	91 OPMO
62 MUSIC	72 SUDAN	82 ETHIO	92 FLOOR
63 RADIO	73 CUBEL	83 SAMBA	93 BORIN
64 PSYCH	74 SOMO	84 ORDER	94 BUTER
65 SOUND	75 TUTOR	85 CENTS	95 PARSE
66 CODEX	76 STYLE	86 POUND	96 BLACK
67 HEART	77 ELTON	87 OCEAN	97 EPROM
68 CHILD	78 RESET	88 TEKNO	98 MICRO
69 WALLS	79 BOARD	89 DUDNO	99 ?
70 JOYCE	80 FRESH	90 SPOON	100 ?

Level 99 is impossible with the 60s text limit! Even if the 'V' key is depressed immediately the START key is depressed, and held down until the fall rate is 99, the last drop takes 25% - there it then takes 99s for the Brundle to walk from the drop-point to base, a minimum (and limit) of 70s is required. Ls, 70s-90s is more realistic. Any known fix with a disk editor?

The WORMIN PARADISE

Start here . . .

Coloured tile system.

The ET system colour coding, and how to use the system, is a stroke!

The colour coding is based on the resistor colour code (if the player is not familiar with this code I don't know how it could be improved).

The tile coding is therefore:

BLACK-0	BROWN-1	RED-2
ORANGE-3	YELLOW-4	GREEN-5
BLUE-6	VIOLET-7	GREY-8
WHITE-9		

When you go into the ET system it will be seen that there are 7 colour codes. The first colour shows you which system you are in (there are systems around the ET Roundabout e.g. system 0 (Black) is the southerly one, system 3 (Orange) is the westerly

64

One you have verified that you are in the required system, the first colour can be ignored. When you arrive at the walkway of the required system, go N 10 times to get to the ET hub (there is a quicker way, but I will leave it for you to find). In each system there are 1,000,000 locations, i.e. 4,000,000 in all of which only 41 have to be visited! I have found that the only locations you need to use are the Easterly ones shown in the table below, the numbers being the resultant easterly counts.

ET Hub	0*	501441	19094
Inner Ring	0	177147	384284
Inner Ring	0	29049	119098
Inner Ring	0	19863	38388
Inner Ring	0	6581	13122
Central Ring	0	2187	6278
Central Ring	0	729	1498
Central Ring	0	243	486
Inner Ring	0	81	162
Inner Ring	0	27	54
Outer Ring	0	9	18
Outer Ring	0	3	6
Walkway	0	1	2

* = Start point

Notes:

- (1) To get to 12162 go 5 5 5 5 5 5
- (2) To get to 2187 go 5 5 5 5 5 5 E
- (3) The sum of the locations visited must equal the required address e.g. 5 5 5 5 5 5 E 5 5 5 5 5 5 will get you to the star of address 18098 i.e. 12123+2187
- (4) For directions S-E, you can use SE.

RETURN TO EDEN

Take the LOG to the island, leave the DRY BULB on the ground and SQUEEZE LOG.

A worked example.

Assume the address you require has been given the colour code BROWN GREY BLACK GREY BROWN BLUE RED.

Decoding gives 1808162 (i.e. the address is 808162 in system 1. Go to the ET hub and work out the required directions as follows:-

E	808162		438
	521441	SE	343

SE	276721		187
	177147	SE E	152

	9574		28
SE	29049	S SE E	18

	40525		7
SE E	38388	SE E	4

	1188		1
S S SE	729	SE	-1

	430		0

Now go S, and you will then enter the required address - I hope!

WARNING! If you start the adventure anew all the addresses will have been changed!

Curfew

The only purpose I can remember for the curfew is to reveal the address of the local Postbox and to make the player backtrack. If this happens you are stuck in jail and the key is then frozen away! If you spend your first night at your home in bed when the curfew begins you earn 40 points. It is also to your advantage to watch the TV - many useful commercials are broadcast. (SAY HOME on any road and you get a free tile home!). Note your colour coded address and, by using the earlier explanation of the ET system, see if you can find your own way home from the ET hub. I hope you looked in the criminal's wallet before handing it in!

End here

but turn the page for more **

MICRO DISCOUNT

265 Chester Road, Streetly, West Midlands. B74 3EA, England
Tel: 021-353-5730 or FAX: 021-352-1656

DISK SOFTWARE		NEW	
ARTIFACT	£ 9.99	BEARINGS	£ 9.99
BAND BROWS	£ 9.99	BOLD MUSKIEAN	£ 9.99
BATTLE SHIPS	£ 9.99	SPYGLASS FORCES	£ 9.99
BUMBARO	£ 9.99	TRAVELER	£ 9.99
BUSIDE	£ 9.99	TECHNO-NOVA	£ 9.99
BUSSING	£ 9.99	THE LARY	£ 9.99
CALLER QUEST	£ 9.99	CLASHMAN	£ 9.99
CHARMED HOUR	£ 9.99	THE BRUNNLES	£ 9.99
CHICK MYLES	£ 9.99	BRUNNLES EPIC	£ 9.99
CHICK MYLES II	£ 9.99	CHICK MYLES	£ 9.99
CHICKMY	£ 9.99	CHICKMY (2 DISKS)	£ 9.99
CHICKO	£ 9.99	YICKY	£ 9.99
CHICKO II	£ 9.99	WISH MASTO	£ 9.99

The can now start their software in your PC

PC XFORMER only £21.00

NEW AVAILABLE!
MENU PRINT £6.95

The new disk cataloguing system from David Davies

FULL DETAILS OF ALL THE SPECIAL OFFERS IN DATA-BASE CATALOGUE No. 19
95 pages for a single issue or £22.80 (postal order) cat
for 12 issues: £24.00 Europe; £19 elsewhere Ab

REVIEW

The TIPSTER

Fooled Ya!

It's only some help needed!

HELP ME!

Now it is my turn to seek help for an Adventure phase. In LEATHER GODDESSES OF FRODOB

(a) Where can I find the Photo of Jean Harlow?

(b) How do I get past Thorwald when outside the spaceship when I get his sword I can't do it.

???

IT'S OVER

And so ends this great edition of The Tipster. The next one is up to you. Christmas is over, that is 1985 and we need another whole year of tipping, hinting, suggesting and solving from you lot. Dig out your favourite games and tell us how you crack them. Dig out your not-so-favourite games, work out where you get stuck, and ask for help - someone knows the answer.

Write it all down - send it all in. There aren't editors that The Tipster does. Going to take it easy in 1986 but that's not the case is it? Don't let us catch you - start writing now!

Send it all in

THE TIPSTER
NEW ATARI USER
P.O. BOX 54
STAFFORD
ST16 1DR

XL/XE TUTORIAL

WRITING A GAME

Programming a game of your own can be quite complex but it need not be difficult. Ann O'Driscoll shows how to get started with a simple idea

Writing your own computer game is not as difficult as some people imagine. The trick is to start simple and build it up from there. This article explains how programming a small, straightforward maze game might be approached. While it doesn't have "extras" like user defined graphics, it does have some of the features found in "real" games like sound, scoring and a reason for playing. In other words, the framework is there for the program to be developed into your own personalised game.

In approaching any program from scratch, it's usually a good idea to jot down a few lines on what you want the program to do, before you go near the keyboard. This would include deciding on the type of game screen you want, whether movement routines should use the keyboard or joystick and, of course, the overall purpose of the game itself. For instance, in a maze game the starting point might be a character who can't move through walls, but who that a number of obstacles are possible

Should something follow the character, or that he has to find the way out quickly? Or perhaps he should collect "treasures" from certain places within the maze? Should there be a time limit? What happens when the player wins or loses?

Let's suppose that, following an analysis like this, we decide that our game will have the following features: The "action" will take place on a Graphics 1 screen. The "W" symbol will be used for the walls of the maze and the inverse "W" symbol to represent the maze character. We will put "dots" or fall stops on all the places in the maze where there is not a wall, and the character, moved with the joystick, must move over or "eat" the dots. The game will end when all the dots are gone. A timing routine will be included to give some incentive to play, and we'll put a "Play again" option in too. Next, we'll put these ideas into a program, step by step.

STEP 1 - Build the Maze

The maze shape is defined by the GDATA statements at LINES 600-640, with each GDATA line representing a separate row of the maze. The "W" symbol is used for the walls and the "." for the spaces in between. Because the maze is symmetrical, the first line is the same as the last, the second is the same as the second last, and so on. Our maze is 15 rows long (35 lines of data) and 15 columns wide (15 character spaces across for each line). This size just about suits the Graphics 1 screen (20 long by 20 across), we might

change the raster size if we need another graphics mode.

LINE 25 of the program DIMensions a string called WB which is big enough to hold a single row of the raster data.

LINE 50 puts the computer into Graphics 1 mode (and turns off the cursor) and **LINE 60** places the raster data on this screen. The "PRINTOUT 000" command simply tells the computer to start looking for the data at **LINE 800**. The FOR NEXT loop reads the first row of data (at **LINE 800**) and prints it on the screen beginning at column 2, row 2. It then reads the next row (**LINE 810**) and prints this underneath at column 2, row 3 and so on until all the data has been read.

STEP 2 - Create the Eater and move him

Our "eater" is very simple - an inverse "C" character which we divided on number. **LINE 90** sets up a string called A\$ to hold the character. This means that, if we want to show the eater on the screen, we can use "C" *A\$*P to do so. **LINE 90** sets the initial co-ordinates or "starting point" for the eater at the middle of the raster (columns 9 and row 9) and prints it on the screen.

In BASIC games, simple animation or movement effects can be achieved by printing a character, rubbing it out and then printing it again at a new position. "Rubbing-out" either means putting back the old background or something else. In this program, we want our character to "eat" the data in his path one by one, so we will print a space when he leaves. Also, if he moves into a blank area he begins with, we will "erase" him when he goes by reprinting the space again. **LINE 95** sets up a string called B\$ to hold our blank character to be used in the rubbing-out routine. Row

```
100 1000 *****
101 1000 *****
102 1000 *****
103 1000 *****
104 1000 *****
105 1000 *****
106 1000 *****
107 1000 *****
108 1000 *****
109 1000 *****
110 1000 *****
111 1000 *****
112 1000 *****
113 1000 *****
114 1000 *****
115 1000 *****
116 1000 *****
117 1000 *****
118 1000 *****
119 1000 *****
120 1000 *****
121 1000 *****
122 1000 *****
123 1000 *****
124 1000 *****
125 1000 *****
126 1000 *****
127 1000 *****
128 1000 *****
129 1000 *****
130 1000 *****
131 1000 *****
132 1000 *****
133 1000 *****
134 1000 *****
135 1000 *****
136 1000 *****
137 1000 *****
138 1000 *****
139 1000 *****
140 1000 *****
141 1000 *****
142 1000 *****
143 1000 *****
144 1000 *****
145 1000 *****
146 1000 *****
147 1000 *****
148 1000 *****
149 1000 *****
150 1000 *****
151 1000 *****
152 1000 *****
153 1000 *****
154 1000 *****
155 1000 *****
156 1000 *****
157 1000 *****
158 1000 *****
159 1000 *****
160 1000 *****
161 1000 *****
162 1000 *****
163 1000 *****
164 1000 *****
165 1000 *****
166 1000 *****
167 1000 *****
168 1000 *****
169 1000 *****
170 1000 *****
171 1000 *****
172 1000 *****
173 1000 *****
174 1000 *****
175 1000 *****
176 1000 *****
177 1000 *****
178 1000 *****
179 1000 *****
180 1000 *****
181 1000 *****
182 1000 *****
183 1000 *****
184 1000 *****
185 1000 *****
186 1000 *****
187 1000 *****
188 1000 *****
189 1000 *****
190 1000 *****
191 1000 *****
192 1000 *****
193 1000 *****
194 1000 *****
195 1000 *****
196 1000 *****
197 1000 *****
198 1000 *****
199 1000 *****
200 1000 *****
```

we can use "C" *A\$*P to indicate that the eater has left a particular screen position.

The program uses X2 and Y2 to show the current columns and row positions of the eater and X1 and Y1 to show the previous or "old" column and row positions. Moving the joystick right or left updates the X2 position up and down movements update the Y2 position. X2 and Y2 must keep within the raster limits too (neither X2 or Y2 can fall below 0 or go above 19 because this is where we've put our eater on the screen. The compact routine at **LINE 1000-1170** takes care of all of this. First, the computer is told to stay at **LINE 1000** if the joystick is stationary (0=5), **LINE 1000** adds 1 to the value of X2 if the joystick is pushed

```
1000 *****
1001 *****
1002 *****
1003 *****
1004 *****
1005 *****
1006 *****
1007 *****
1008 *****
1009 *****
1010 *****
1011 *****
1012 *****
1013 *****
1014 *****
1015 *****
1016 *****
1017 *****
1018 *****
1019 *****
1020 *****
1021 *****
1022 *****
1023 *****
1024 *****
1025 *****
1026 *****
1027 *****
1028 *****
1029 *****
1030 *****
1031 *****
1032 *****
1033 *****
1034 *****
1035 *****
1036 *****
1037 *****
1038 *****
1039 *****
1040 *****
1041 *****
1042 *****
1043 *****
1044 *****
1045 *****
1046 *****
1047 *****
1048 *****
1049 *****
1050 *****
1051 *****
1052 *****
1053 *****
1054 *****
1055 *****
1056 *****
1057 *****
1058 *****
1059 *****
1060 *****
1061 *****
1062 *****
1063 *****
1064 *****
1065 *****
1066 *****
1067 *****
1068 *****
1069 *****
1070 *****
1071 *****
1072 *****
1073 *****
1074 *****
1075 *****
1076 *****
1077 *****
1078 *****
1079 *****
1080 *****
1081 *****
1082 *****
1083 *****
1084 *****
1085 *****
1086 *****
1087 *****
1088 *****
1089 *****
1090 *****
1091 *****
1092 *****
1093 *****
1094 *****
1095 *****
1096 *****
1097 *****
1098 *****
1099 *****
1100 *****
1101 *****
1102 *****
1103 *****
1104 *****
1105 *****
1106 *****
1107 *****
1108 *****
1109 *****
1110 *****
1111 *****
1112 *****
1113 *****
1114 *****
1115 *****
1116 *****
1117 *****
1118 *****
1119 *****
1120 *****
1121 *****
1122 *****
1123 *****
1124 *****
1125 *****
1126 *****
1127 *****
1128 *****
1129 *****
1130 *****
1131 *****
1132 *****
1133 *****
1134 *****
1135 *****
1136 *****
1137 *****
1138 *****
1139 *****
1140 *****
1141 *****
1142 *****
1143 *****
1144 *****
1145 *****
1146 *****
1147 *****
1148 *****
1149 *****
1150 *****
1151 *****
1152 *****
1153 *****
1154 *****
1155 *****
1156 *****
1157 *****
1158 *****
1159 *****
1160 *****
1161 *****
1162 *****
1163 *****
1164 *****
1165 *****
1166 *****
1167 *****
1168 *****
1169 *****
1170 *****
1171 *****
1172 *****
1173 *****
1174 *****
1175 *****
1176 *****
1177 *****
1178 *****
1179 *****
1180 *****
1181 *****
1182 *****
1183 *****
1184 *****
1185 *****
1186 *****
1187 *****
1188 *****
1189 *****
1190 *****
1191 *****
1192 *****
1193 *****
1194 *****
1195 *****
1196 *****
1197 *****
1198 *****
1199 *****
1200 *****
```

right (0=7), provided X2 isn't at the maximum value. The same line subtracts 1 from the value of X2 if the joystick is pushed left (0=1), provided X2 is above the minimum. **LINE 1170** follows the same principles for up (0=14) and down (0=13) movement, and updates Y2 accordingly.

LINE 1000 of the listing prints the raster of the new X2, Y2 position. **LINE 1170** then turns these co-ordinates into the "old" co-ordinates so that the eater may be rubbed out, and **LINE 1000** reads the program back to get the next X2 and Y2 values. At this stage we are still on the map to complete the movement loop routine, which now looks like this:

LINE 100-110 Update X2 and Y2
LINE 100 Rub out at X1, Y1
LINE 100 Print raster at X2, Y2
LINE 110 Set X1 = X2 and Y1 = Y2 (to store last position)
LINE 100 Go back to **LINE 100**

STEP 3 - Put in the START Routine

As **LINE 90** has our raster stack in the middle of the raster, now might be a good time to move him into the game by introducing the START routine.

LINE 90 clears the text window and writes the player to press the START or OPTION console keys. **LINE 100** waits until one or other is pressed. **LINE 100** waits the game if you press OPTION, otherwise the main play loop begins. **LINE 110** has a short raster routine to get the player ready and then **LINE 120** "outputs" the eater into the middle of the joystick movement routine (to **LINE 1000**). If you test the program at this stage you will find that, while the eater moves quite well, it erases everything it passes by - including the raster walls. Also, while it eats the data, the "game" goes on forever, even when the screen is cleared. We can take care of these problems if we check the raster's screen co-ordinates when he moves:-

STEP 4 - Detecting Screen Positions

Having updated the screen co-ordinates at **LINE 100-110** and rubbed out the old location at **LINE 100**, we must find out what is at the raster's new screen position. Obviously, we can't have him walking through the walls of

the maze. We also want to know when a dot is "taken". The Atari uses the LOCATE command to give the ASCII code for the character resulting at particular screen co-ordinates. It takes the form:

LOCATE column, row, _ASCII code

All the ASCII codes are given at the back of your computer manual. The ones we're interested in are the hatch symbol (ASCII=93) for the walls and the full stop symbol (ASCII=46) for the dots.

LINE 200 checks to see if the new position contains maze wall (I=93). As moving into a space occupied by the wall is not allowed, the computer gives a "disappointing" sound. Next, the "old" or last co-ordinates are restored - in other words, the computer is told to forget about the proposed move and the wall co-ordinates are dropped. Then the program is sent on to **LINE 205**.

LINE 210 checks to see if the new position contains a full stop (I=46). Our game specification says the asterisk character must "eat" or move over all the full stops, so we'll need to keep a track of when he eats these. The simplest way to do this is to have a counter or score which goes up by 1 when X2, Y2 hits a dot. **LINE 215** does this, having set the score at 0 before the game started (**LINE 120**). **LINE 220** prints the score over the dot. There are 11 dots in the maze altogether. When the game starts, our counter is "littered" on a dot in the middle of the maze. This means he must eat 110 dots to clear the maze and end the game. **LINE 230** sends the program to the game over routine where SC reaches 110. Otherwise, the X1 and Y1 co-ordinates are set up and the joystick movement loop continues, as explained above in Step 2.

STEP 5 - Put in a Timer

As it stands, the game isn't much good for more than 10 minutes if you're not too keen to play - there are no "timers", there's no

"high score", and it doesn't really matter if you take all day to clear the maze. With just a few extra lines of programming, we can remedy this by introducing a timing routine.

LINE 235 sets two of the Atari's "realtime clock" registers for memory locations 19 and 20 to zero before the game starts. **LINE 240** reads them at the end to see how many seconds have elapsed - The contents of memory location 20 go up by 1 every 1/50 seconds and, when it reaches 255 (after 250/50 or 5.0 seconds) it resets memory location 19 up by one, goes back to 0 itself and starts incrementing again. It follows that the value in memory location 19, found by **PEEK19**, tells us that that location 20 has gone from 0 to 255 that many times. Each time took 250/50 seconds, so **PEEK19 X 250/50 plus PEEK20/50** gives us seconds taken to complete the game. This is what **LINE 260** calculates. **LINE 270** compares this value with the previous "best time" (BT) and updates it if appropriate.

STEP 6 - Final Routines

Now all that remains is for us to put in the "game over" and "play again" options. **LINE 280** looks after the two possible "game over" sounds. The second value in the Atari's command controls the pitch. The game uses one pitch (P=02) when the previous best time is beaten and a different pitch (P=120) otherwise. These values are set in **LINE 310**. The initial time to beat is set at 100 in **LINE 40**. Finally, **LINE 340** directs the program back to **LINE 60**, the maze re-initialise and the computer waits for START (new game) or OFFON (Back up) to be pressed.

... and that's about it. Additional features like a title screen, obstacles which present a clear path through the maze, or perhaps a "level 2" or "level 3" to be completed within a certain time - may all be incorporated once the basic building blocks are in place.

DISK BONUS

AN ADVENTURE DOUBLE!

THE SINCLAIR EXPERIMENT

by Antony Weir

Somewhere in the heart of England, the notorious professor Sinder works on his amazing discovery - Communications - built into a box and he has threatened to transport the Earth back to before the beginning of time if his demands are not met. Realising that this would mean the annihilation of the 25.86, the WLD (World Security Organisation), sent you and a certain Miss F to bring Sinder to justice and destroy his machine. You were both caught by Sinder's henchmen. You have managed to escape, but Miss F is still a prisoner. You find yourself alone and unarmed in an unfamiliar town, with your companion in trouble and a mission still to complete.

The Sinclair Experiment is the usual type of text adventure with the standard two word vocabulary. You can be shown how to use the first four verbs but note that verbs must be typed in full. To play, simply type the disk with SINCLD but ensure that the disk is left in the drive as the program accesses various files during play.

There is both a Cheat mode and a Help facility. The cheat mode enables you to go direct to certain locations, while testing CONTROL, type LOO, Press ESC and type ESC CONTROL, -, followed by a space. Then type in the number of the location you wish to go to.

There is a separate HELP program that can be called up from the main game. To use it, first save your current status (SAVE STATUS). Now press P at the location where you need help. Remember the number and type HELP; you will see a menu giving you three types of clue. Give your location number and you will receive some sort of hint as to what to do next. You can then go back to the menu and select option 0 to return to the main program. Restore your position (LOAD STATUS) and you can carry on.

SPACEWRECK

by John Young

In this adventure you find yourself marooned on a wrecked spaceship drifting in an asteroid field, your objective is simply to get yourself rescued.

Commands can be either one word or verb-noun, and you need only type the first few letters of each. The state of play can be saved to disk, this being advisable before doing anything that may be dangerous. The following is a list of often-used commands, but sure a few others are possible.

ONE WORD: NORTH (N), EAST (E), SOUTH (S), WEST (W), UP (U), DOWN (D), SAVE, LOAD (RESTORE), INVENTORY (I), QUIT (Q).

VERB-NOUN: TAKE (T), DROP (LEAVE), EXAMINE (LOOK), OPEN, CLOSE, PUT (P), REMOVE, GET.

If your attempt to communicate is not understood, by rephrasing it, and remember that all valid commands must have spaces in two words. A list file, 1000000 anything.

Even if you have never played an adventure before you should find these two programs enjoyable. Give them a go!

THE ADVENTURE DOUBLE is available only on the New Atari User Issue 70-disk. Disk subscribers will have received their copy with the magazine but the disk can be ordered separately for £2.95 from PAGE 6, P.O. BOX 54, STAFFORD, ST16 1JH. Access or Visa orders can be accepted by telephone on 0795 213025. **THE MAGAZINE DISK OPTION CONTAINS EXTRA BONUS PROGRAMS NOT LISTED IN THE MAGAZINE**

THE CAVES OF CTULHI

Robert de Letter demonstrates with his first ever game that you do not need fancy machine code programming to write a quality game - just imagination and Turbo Basic!

Ever since I bought my first Atari in 1984 I always wanted to write a game. Some utilities I wrote have been published in Page 9 as has a word game (Jazz and Count). Some time ago I finally decided to write a platform or run and jump game. The Caves of Ctulhi is based around a German Public Domain program "The Dungeons of Soloth". I always loved that game so I decided to use it as a basis and enhance the original to use some of the standard features of the Atari. I re-wrote the whole character set, added a wizard, some more dungeons, most sound effects, booby traps, magic and an exit to the next cave. After a couple of weeks I decided to re-write the whole program in

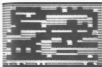
Turbo Basic to try and speed it up. I now really have seen the speed of that language! One of the reasons I like this game is that it is written for an older people! No dull chasing monsters and no clock whose only purpose is to reach the zero counter in no time at all, at you think, however, that it is going to be zero, think again, it isn't!

There are no fancy player versus graphics controlled by machine language as all player movement is done by COLOR, PLAT and LOCK commands. The COLOR command accepts both Atari and Internal codes, so several colours can be plotted in a Graphics 1 screen. Turbo Basic allows plenty of speed using just Basic commands, in fact in some instances I have had to slow the program down.

THE STORY SO FAR ...

In the Byteman era, Colman was sent out by his King to find the "Necronomicon", the hotted book of death, a book that gives you unlimited power; Colman has journeyed to the remote the book which was last located in the Colorado hills, but one of the Guardians of the book, the beautiful witch Wiscodine, has tricked Colman and he is stranded in "The Caves of Ctulhi". He must go through 10 caves before he can enter the Omega Nexus where he believes the book may be.

The doors of each cave are guarded and only be opened by letters. Colman must collect 10 gold pieces in every cave to



lose your own open the door to the next dungeon. In each level you also have to meet the invisible Wizard who will give you an amulet. You can open the door without an amulet, but don't forget it, there is no way back! When you have reached the final cave you must give CTULHI 10 amulets to become free.

Finding the wizard is not a difficult task, but the wizard is placed randomly in every cave. The sooner you meet him the higher your score is. In the seventh dungeon you have the chance to gain an extra amulet. I will not tell you how, although it's very easy you will probably never find it.

Over an amulet is power it is placed at the top of the screen. In the third and sixth caves you gain a life. I realize, professional players do not need an extra life but they players may want

lose interest if they die three and three again. You can only move left and right but you can jump by pressing the trigger and moving the joystick in the desired direction. Most caves need a certain strategy in order to collect all the gold pieces. You will find teleports, disappearing bridges and some nasty things. That's really all I have to tell you about the caves.

KEEPING SCORE

At the top of the screen you will see (from left to right) your score, the amulet symbol, Turbo Basic's internal clock (TIMER ... just to see how long it takes to find the wizard, your lives and the number of the cave.

The less time it takes to open the door the higher your bonus points are. If you quit the game and decide to play again press RESET before entering the program again.

As I said earlier I have had to slow the game down, but if you want to see Turbo Basic in all its glory leave out some of the PAUSE commands, especially PAUSE 140 in line 205.

I had originally planned to have a good fight against the dragon in the final cave but I ran into a memory conflict, if somebody has a solution, please let me know.

The game starts with a smacking "Curtain Raiser" written by Daniel Lea and published earlier in New Atari User. If you are still an avid user of our wonderful 8-bit computer, Daniel, I wonder if you have some of these magnificent little games?

So, that's all. Enjoy the caves and Good Luck.

THE LISTING

The Caves of Ctulhi is included on this issue's disk ready to run. If you would like to type in the listing (remember it is written in Turbo Basic) a printed copy with full TYPO 3 codes can be obtained free of charge from New Atari User. Check the inside back cover for details of how to obtain a copy.

STILL WAITING FOR GO?

THE HISTORY OF ATARI

Atari have gone from being a small games console manufacturer to being a small games console manufacturer. But something must have happened along the way? Pierre Andre Berthault-Meca investigates and reports

Finally, before you read this article, I would like to apologise for a phrase in an article I wrote for *New Atari User* a few issues ago which has been very badly received in France. The line "I hate French people, they only think of themselves" was written when I was very angry at certain French companies not supporting the Atari. Let me assure French readers that I am very proud to be French and I'm also very proud of my culture, so don't worry French readers I'm not a threat to the nation!

Now the purpose of this article is to take a look how Atari have fared over the years, so let's begin at the very beginning and take a trip through good times and bad to see where we are today.

1944 Nolan Bushnell is born.

1969 Nolan Bushnell studies electricity in his college. During the summer of the same year, he takes a job in charge of an attraction park. He will say later "I always had a weakness for electricity so I told myself that technology would also lead to pleasure..."

1971 Inspired by the computer work of his colleague at university, Nolan Bushnell creates and manufactures his

first video game "COMPUTER SPACE". Too advanced for its own epoch, the game will be a commercial failure.

1972 Not discouraged by this downturn, Nolan Bushnell founds his own company which he calls ATARI (atari is Japanese means electronic in the GO game) and releases "PONG" on the market. At this time the market was represented only by the arcade games that you can see in a pub or bars. PONG was an incredible success! Legend says that Nolan Bushnell created ATARI with \$250, a bottle of rum and a garage. He will say later "Everything is true except the garage, it was the bedroom of my daughter that I transformed into a laboratory."

1973 The "PONG" game is so successful that ATARI decides to start developing a "VIDEO-COMPUTER SYSTEM" while continuing to release new games onto the arcade market.

1976 ATARI releases the "VIDEO-COMPUTER SYSTEM 2600" or "VC2600". This new video game machine is so successful that by 1984 18 million units will have been sold in the world and by 1990, 20 million!

1978 With the sales of the VC2600 and its controlling position in the arcade market, ATARI has become a \$45 million empire. In the same year, Nolan Bushnell sells ATARI to WARNER COMMUNICATIONS. A condition of the sale is that Nolan Bushnell won't form any company able to compete with ATARI within the next 8 years.

1978 WARNER, now owner of ATARI, decides to release the ATARI 400/800 computers but only in the American and Canadian markets. The development of these computers started under Nolan Bushnell's direction but WARNER HESITATE to increase their final release simply because

APPLE had not yet released the APPLE II and WARNER didn't want to delay their entry into this new market. In a few years time the 400/800 will be sold in Europe.

1979 Does though they are very expensive, the ATARI computers find their public. The fact that they have great graphics (128 colours with the CIA chip), four sound channels and incredible games (STAR WARS was already there) makes them much more attractive than the APPLE II (see colour and no sound). At this time, with the 400/800 computers and the VC2600, ATARI really was the master of the computer games market.

1982 ATARI decides to release a new range of home computers, the XL line. Totally compatible with the 400/800 range, the XL will have a new graphic chip - the GTIA chip - which can give 256 colours at the same time! A revised Operating System and a new design. The first machine to see the light of day should have been the ATARI 1300XL. In parallel with the 1300XL, ATARI released the VIDEO-COMPUTER SYSTEM 5200. Totally compatible with the VC2600, the 5200 has improved graphics and sound and competes with the CBS COLLECCONION systems in the United States.

1983 The ATARI 1300XL, has not really been well received by the critics. ATARI therefore decide to spread on the launch of the 6000XL, the 8000XL, the 1300XE and its disk drive based version, the 1300LED. The sales didn't take off and to the tell the truth, the real winner in the home computer market this year is the COMMODORE 64. We must even admit that a lot of 400/800 users have gone over to the COMMODORE camp. Even Ted Mear, the world famous programmer of *Montezuma*, moved to the CBS. The ATARI machines were really equal to level in graphics and sound over

letter than) the C94 and the price was the same so why did Atari not succeed? The C94 was, of course, totally new and the ATARI XL machines were called by the critics the 'new old range of ATARI computers' but that's not all.

Do you know a chap named Morgan, James Morgan (not Don, James Bond?) This man was president of ATARI for one year and a half. When WARNER realised what a disaster the launch of the XL range has been, they decide to engage James Morgan who was, at the time, president of Philip Morris, the cigarette manufacturer. When James Morgan arrived, he made redundancies (under WARNER there were 9000 employees and when Morgan left there were only 5000 left). Unable to reduce the cost of manufacture of the computers, the first decision he took - still very contested today - was to freeze all hardware and software development for three months. This period was really crucial, as all the competitors were launching new improved hardware and ATARI was definitely losing the battle against COMMODORE, as it turned out. Formerly, Morgan, attempting to stay in the market of the 8000 home computer where COMMODORE was predominant, made ATARI a one year delay in the market. Also, a bad choice of city manufacturer means that the XL machines are only available for seven months of 1984 and the impossibility of making a profit in 1984 leads WARNER to sell ATARI.

1984 In June, at the Consumer Electronic Show in Chicago, ATARI releases its new VIDEO GAME SYSTEM: THE ATARI 7800. The critics said only one thing "terrifying". The ATARI CLASSIC possibilities in sounds and graphics were really surpassed. The ATARI 7800 will enjoy some success in its own market, before the Sega and Nintendo invasion. Even in 1984, the 7800 is still a good buy, with many incredible and recent games. During July and August, negotiations take place between TRAMBL, TECHNOLOGY, a company created by

Jack Tramiel (the president of COMMODORE) and WARNER COMMUNICATIONS which has decided to sell ATARI to anyone who can pay for it. (During 1984, WARNER needed a lot of capital in finance a fight against Rupert Murdoch, the press magnate, who wanted to take control of WARNER BROS.).

One month before these negotiations, ATARI announces catastrophic results. In 1983, for each dollar of material sold, ATARI loses 10 cents and its market activity is equal to only half of the activity of 1982. ATARI lost 328.6 million dollars on a turnover of 1.1 billion dollars. In the first four months of 1984, the loss was 'only' 35 million dollars. ATARI had drilled a long way from the 333 million dollar profit and 2 billion dollar turnover of 1983.

An agreement was signed with Jack Tramiel for Warner to sell Atari for 8040 million but the transaction was very unattractive for WARNER which was not receiving actual cash, only stocks.

One week only after having bought ATARI, Tramiel made 900 redundancies in the States. There were only 200 people left in the Sunnyvale headquarters (only essential services, development and the director). The factory in El Paso (Texas) closed and the contract with the firm which was manufacturing the 8000XL was broken. The 8000XL would, hereafter, be manufactured in Taiwan. Tramiel said "The video games market, at the home computer market, is still full of possibilities, and we had to give ATARI a new mentality for a new departure".

1985 During the Consumer Electronic Show in Las Vegas (only six months after the purchase of ATARI by the Tramiel Family), ATARI was showing six new computers: the ATARI 8800, 1000, 1050 and the ATARI 1300X for the video title (only the 8800 and the 1300X will be released) and the ATARI 520ST and 1040ST for the eastern IBM and APPLE - a real declaration of war against IBM and APPLE - a real success but at the price of the old ATARI 8000 - a fight that ATARI will win in Europe. 1985 represents the last year

of disk based software produced by ATARI for the 8-BIT.

1986 The ST is a fast seller in Europe. The 1300X has a dismal success.

1987 At the Consumer Electronic Show in Las Vegas (January), ATARI releases the XL VIDEO GAME SYSTEM which is making ripples than a 8000 with a separate keyboard and a light gun. The 8000, as we call it, has never been a hot seller. ATARI could have modified the internal hardware to improve the graphics and sounds but they did nothing. The only good news from the launch of the 8000 comes from the fact that a lot of "hidden but goodies" games become available on cartridge. Atari also releases the MEDIA ST systems. In Europe, the ST really becomes predominant and the COMMODORE AMIGA is really far behind. In France, many consider the 8000 to be an error. If ATARI really wanted a game system, why not simply improve the ATARI 7800 (video capture Sega and Nintendo?)

1988 ATARI releases the STACY which is an ST portable. The critics will find it very useful but ATARI instead tries to create another new market in presenting the METROPOLIS, an IBM compatible portable which is no bigger than a VCR top! On the 8-BIT market, ATARI presents the 2600 II, the new famous double density drive.

1989 The last cartridges are released for the ATARI CLASSIC and the last hardware improvement for the 8-BIT is the XEPROM extension which gives the CLASSIC real 80 columns ability. Word processing WYORWOC (What You See is What You Get) is no longer success. Action for 8-BIT comes. ATARI also releases the LYNX (developed by EPYON, a portable colour video game system, and improves the ST internal hardware: The ST becomes the STE (486K releases etc.).

1990 No more development for the ATARI CLASSIC computers. ATARI will release the ATARI TT, the PALCDR and the JAGUAR. ATARI will also make a lot of effort to release great games for the LYNX (which is, as the 7800 was, a success even if the sales may stay behind Sega and Nintendo).

1995 Software for the ST goes the same way as the XL/RE with most companies announcing their last ST title (and many more not even bothering). ATARI concentrates entirely on the Jaguar. Manufacturing is now done by IBM and games are developed by outside companies.

AND THEN? With the exception of the ATARI CLASSIC and the ATARI ST, it seems that, in the next recent years, ATARI has released a lot of machines which haven't been a great success but have found a small public. Can we hope that ATARI will be, as in the past, one of the top video games entrepreneurs with the Jaguar? I would hope so, as the Jaguar has had some incredible reviews in France and in the States. But Atari has only this year to get it right as companies like Sony and Nintendo will launch machines as good as the Jaguar by the end of the year. These companies can afford to spend more on advertising than Atari's entire turnover.

1996 Will ATARI join Commodore (who would have expected them to go into liquidation?) or will they finally turn their success with innovation into the long awaited success in the market place?

I hope you have enjoyed this travel through ATARI history. In my next article I will explain everything about the cartridges released by ATARI for the 8-BIT. A lot of operations will be asked. You will know everything, preferences, variations, boxes and different packaging, unavailable cartridges etc.). See you there!

The CLASSIC PD ZONE



As a part of the latest cultural exchange between Earth and Altair it has been agreed to take part in a musical show case on the planet Deimos. Issues throughout the Classic PD Zone are the Planet of Song. Here is the complete showcase from Earth.

SWEET MUSIC

Let's start with music that runs its very being to the Altair computer. **MUSIC SHOW** showcases music specifically written for computer games and comprises a collection of 28 music tracks taken from 18 commercial games of the 1980s.

After a very impressive introduction, featuring a colorful kaleidoscope pulsating to the main music from Deimos, you are presented with the best of two worlds. At these moments you can play popular tracks by Adam Osborne, Clark Moray, Rob Holdren and a host of other Altair 8-bit programmers. The tracks come from games such as Winter Olympiad 88, Drawman, BMX Simulator, Sokoban, and Max, Warlord, etc. Obviously, if you own most of the games then Music Show will not have anything new to offer you. I suppose there is still the advantage of having all the tracks together on one disk.

If you don't own many of these games and you're a fan of computer music then you really should listen to some of the tracks included. There are six excellent tunes from Drawman, two from Milk, two which are not to be missed, and some excellent main

themes from Storm, Entertainer and Jet Set Willy.

Music Show is a good disk for showing off your Altair 8-bit's musical capabilities.

CLASSIC PD ZONE RATING: 73%

AND THE BAND PLAYS ON...

If you prefer music that's not written for computer games you can check out a couple of other music disks.

MUSIC PLAYER 1 contains 18 tracks - 8 classical and 9 contemporary. They range from compositions by Bach and Beethoven to modern rock tracks. You simply move the cursor up and down the list of tracks and select one by pressing Return. Once selected, you move onto the main playback screen. Here the track is played both audibly and visually. A large horizontal graphic equator pulsates to the track whilst an on-screen keyboard displays the notes being played.

MUSIC PLAYER 2 is exactly the same program, only the tracks are different. This time there are 14 tracks for you to enjoy.

Overall, the Music Player disks are quite enjoyable. The graphic equator and on-screen keyboard certainly bring life to the tracks. Nothing new, but a good effort nevertheless.

CLASSIC PD ZONE RATING:
MUSIC PLAYER 1: 70%
MUSIC PLAYER 2: 68%

AND ON...

Kennel Kavan of K2-Soft is known to enjoy composing music on his Altair 8-bit. If you own any of his PD or commercial programs you will no doubt have heard his work.

GUYBY COLLECTOR contains the SuperSynthesizer file player by Kennel Kavan and a collection of 28 musical tracks. Some of the tracks are good, some are average and some, unfortunately, are awful. Just listen to the terrible versions of the Dallas theme and Axel F. - you'll soon be reaching for the power switch at the back of your computer before you've had a good laugh.

Thankfully, most of the tracks are either good or average. All of them are written in BASIC so could easily be used in your own programs. They range from original compositions to cover versions of popular songs (Cygnus Part 2, Teletex, Spanish Eyes, Popcorn, etc.). A good example of a musical showcase programmed in BASIC.

CLASSIC PD ZONE RATING: 67%

...AND ON!

For many, the name Gary Gilbertson conjures up images of wonderfully original compositions. If you have experienced the songs during the opening sequences of DataDisk II: Alternate Reality then you'll know what is expert from the next disk.

A.M.P. MUSIC is a demo disk of eight songs, all written by Gary Gilbertson. Playback is via Philip Price's Advanced Music Processor (A.M.P.). Back in 1982, Price and Gilbertson authored the now classic shoot-'em-up hit of the Beta Lyrae (released by DataDisk in 1983). A.M.P. V3.0 came out soon after. Next came many more versions of A.M.P. and a host of new songs throughout

1982 and 1983. Their greatest work was still to come. Alternate Reality: The City was released by DataDisk in 1985. Gary Gilbertson went on to write the music for Alternate Reality: The Dragons (1986). Philip Price produced many different versions of A.M.P. It follows V3.1 was his final revision.

Gary Gilbertson's work is impressive no matter which version of A.M.P. is utilized for playback. The mix of programming and musical talent is there for all to see on A.M.P. Music. In action A.M.P. is a joy to watch as well as listen to. It centres around a black screen and four thin bars. These are coloured blue, purple, red and green. Each represents a channel of sound during playback. They move left and right across the screen as the notes change, and increase and decrease in height dependent on the level of volume.

The early versions of A.M.P. look basic. The bars are too thin and look like cocktail sticks. They flash quickly and are hard to follow at times. The mid-late versions of A.M.P. are much more impressive and very similar to presentation. They begin with a title screen displaying the version number and song title. The playback screen is more polished. The bars are thicker (they look like coloured pencils) and their movement is smoother. There is also the advantage of lined lyrics which are displayed at the centre of the screen line by line superimposed over the bars. It all works very well.

The eight songs on the disk are split into two groups: Four from 1982 (with playback on early versions of A.M.P.) and four from 1983 (played on the more familiar revised). All eight songs on the disk are excellent. The four from 1982 are quite simply superb. Here are some

with
**Stuart Murray as
your Tour Guide**

brief descriptions beginning with those from 1993:

Four is a long collection of different pieces. It sounds very much like a Star Trek movie soundtrack. **Passionately**, **All Nine I am** wonderfully breezy tunes with sing-a-long lyrics. You can't help but join in! **The final track from 1993 is Day for Things**. It is a love song with infectious lyrics. e.g.

"Can this really be,
You're eighteen
I'm ninety-three
It must be love!"

The lyrics for **Passionately**, **All Nine I am** and **Day for Things** have the advantage of high-lighted syllables whilst each line is displayed. This allows you to sing-a-long with ease.

The four 1993 tracks alone make the disk excellent value for money, however there is more A.M.P. magic to enjoy with the songs from 1992 included as a bonus. **Alive** is a speedy, unpredictable instrumental track with great atmosphere. **Arch Magy** and **Post Magy** are again instrumental tracks. They are both very fast and sound like part of a laser lightshow. **Post Magy** is longer and has more going on. It even slows down to the mobile and transforms into a love song.

Prog sounds like a song from a stage musical. It has some lyrics which scroll slowly across the top of the screen (Unfortunately not to tempo with the music). You could see Philip Price was moving towards his more familiar version of A.M.P. at the time.

With eight excellent songs together on one disk, A.M.P. Music is outstanding both in quality and value for money. If you enjoy computer music you really should get this disk. Gary Callumson is a master at work!

CLASSIC PD ZONE RATING: 80%

MORE A.M.P. MAGIC

If you would like to hear more A.M.P. tracks by Gary Callumson then check out **MORE PASSIONATE MUSIC**. It contains the four songs he wrote for **Darkness** (**Blindness**), **Wastrel's** **Cosmic** (**Tunnels**) and **Mirror** (**Ready**) as well as a first cut of **Alternate Reality** which sounds nothing like the final version. Also on the disk is a very interesting text file containing a brief history of A.M.P.

CLASSIC PD ZONE RATING: 84%

I hope our friends from Atari4 enjoy Earth's musical atmosphere. Let's just hope that when we arrived the **Pluto**ians discover there is no need to use our special edition **Atari4** sound deflectors. The last time these were made standard better was during a mission back on Earth many, many years ago. The mission was to **Highland**, US, where three **Atari4** representatives had to negotiate with **Page 0 Publishers**. The radio was playing the CD's when they arrived! Only one representative returned to **Headquarters**, and he was on the edge of insanity grasping his ears and pleading for silence. (Must have been one of those **Resilisk** bands like **Sheriff J&J**)

Stay it loud, "It's not cool period!"

The disks reviewed here been:

DISK 09 - MORE PASSIONATE MUSIC
DISK 131 - A.M.P. MUSIC
DISK 192 - MUSIC SHOW
DISK 206 - MUSIC PLAYER 2
DISK 212 - MUSIC PLAYER 3
DISK 2603 - SONGER SOUND

NORTH OF SCOTLAND ATARI USER GROUP

FUTURA THE NOSAUG NEWSLETTER

Regular Columns

- **BIT NEWS**: What have Atari done for me and the world?
- **SOFTWARE EVALUATIONS**: How have you got on with your software?
- **SOFTWARE NEWS**: Latest news of the Atari software industry
- **ANNOUNCE A SERVICE**: Using a mouse with your Atari 400
- **BIT TRIPS**: Interesting and humorous facts about your Atari
- **SHOOTER**: The South African Professional sports editor from Pretoria answers your questions
- **THE TORNO-SAGA**: A VR - Programming article from the USA
- **Atari 400/500**: Atari 400/500 information and reviews of 400/500 software
- **NEWS AND OPINIONS**: The news column you prefer
- **FUTURE SCOPE DISK**: Long range view of Atari
- **YVS FUTURE**: The column for Atari 1024 enthusiasts
- **THE BLACK AND WHITE**: New Japan Column

Prices: £1.95 each - £18 for a 6-issue disk subscription
Disk issue disks 1 - 12 are still available at only £1.95 each
Disk 17 at a large S&L for the Future Sample Issue

Please make cheques/p.o.'s payable to S.J. Murray and send to
NOSAUG, P.O. BOX 10001, PETERHEAD, AB42 6ZH

NOSAUG - AN ATARI 8-BIT USER GROUP

Forthcoming Columns

- **BIT WIKES**: Comedy gathering around Atari
- **IF ONLY I COULD**: What you should do with your Atari 400/500
- **THE 64 BIT BIRTHDAY**: Increased software potential - 256k Atari work

The regular columns are complemented by a collection of new material articles covering areas such as: use of Atari 400/500, 256k disks on stock Future disks (and how to do it), a guide to editors and new organ rules programming.

FUTURA ISSUE 14 - OUT NOW!
FUTURA ISSUE 15 - OUT MARCH 95

Special Offers:

- Any 6 issue issues for only £7.95
- All 12 issue issues for only £18

NORTH OF SCOTLAND ATARI USER GROUP

NOSAUG PD LIBRARY

OVER 150 DOUBLE-SIDED DISKS FEATURING THE VERY BEST IN PUBLIC DOMAIN AND SHAREWARE FOR YOUR ATARI 8-BIT

The catalogue is available under the terms of the following:

THE NOSAUG DISKS - 1/2 of programs are sent free Post Free Charge 1/2 (Disk, User Manual, 25k Memory) from An Canada: **Memorex**, **Unicom**, **Starburst**, **Lotus**, **Quark**, **Magellan**, **Atari**

Software: **ATARI/NOVA** Vol. 2, **Amiga** Challenge, **Amiga**, **Am**, **Blizzard**, **Atari**, **Compaq**, **IBM**, **Star**, **Amiga**, **Am**, **Blizzard**

OS&T (OS&T) Vol. 1 - **Amiga**, **Compaq**, **IBM**, **Star**, **Amiga**, **Am**, **Blizzard**

THE WILLS PROJECT 1994 - **Fun** Magazine

M&M - Excellent disk magazine from the USA

A&M - An excellent magazine from the USA

All NOSAUG PD disks are priced at only £1.50 each (post amount)

Send £1 or a large S&L for a copy of the new NOSAUG PD catalogue

Please make cheques/p.o.'s payable to S.J. Murray and send to
NOSAUG, P.O. BOX 10001, PETERHEAD, AB42 6ZH

NOSAUG - AN ATARI 8-BIT USER GROUP

TURBO TYPE-INS

MINI TURBOS 2

Quite a few issues ago we re-introduced the idea of 'five-liners' or mini programs in the hope that it would encourage you to submit your own collection of 'mini' programs. Only a few of you did but Andy Guillaume gives it a second go with this new collection for you to enjoy. Don't expect to receive in a few lines but do expect a bit of fun for just a few minutes typing.

```
00 1 ROM [XXXXXXXXXXXXXXXXXXXX]
00 2 ROM [XXXXXXXXXXXXXXXXXXXX]
00 30 GRAPHICS 00 FOR 012345 TO 12345678
00 40 PMOVE 0,0 HMOVE 00000,00000,00000
00 50 PMOVE 100,0 HMOVE 00000,00000,00000
00 60 PMOVE 200,0 HMOVE 00000,00000,00000
00 70 PMOVE 300,0 HMOVE 00000,00000,00000
00 80 PMOVE 400,0 HMOVE 00000,00000,00000
00 90 PMOVE 500,0 HMOVE 00000,00000,00000
```

LINE COMMENT/USAGE

20 Plots Graphics data into 1600
arrays

30 Setup variables

40-90 Set X-position, Width, Colour

```
00 1 ROM [XXXXXXXXXXXXXXXXXXXX]
00 2 ROM [XXXXXXXXXXXXXXXXXXXX]
00 3 ROM
00 30 FOR 00000 TO 12345678 H,00000000
00 40 HMOVE 10000,0000,0000
00 50 FOR 0000 TO 12345678 TO 123
00 60 COLOR 0000-1000,0000,0,0
00 70 HMOVE 1000,0000,0000
00 78 HMOVE 1000,0000,0000,000,0,0000 TO
```

MINI 1

The first mini, which I have called **INTERFERANCE**, is just another small GBI 20 effect that produces a sort of interference pattern.

LINE COMMENT/USAGE

20 Setup Colour sets

30-80 Draw screen (Random Dots)

70 Move random colour set into palette and loop

MINI 2

The next mini, **MINI PMS**, shows a quick method of setting up Player Missile Graphics. It uses the **MOVE** command to clear the PMS DMA area by moving blank screen data down. The loop serves to set up each of the 8 Player Parameters and again uses **MOVE** to define them.

50 Erase then Plot Player

60 Set PMSASE, GRACITL, SDRACITL, GPWHW

MINI 3

Do you fancy a neat little demo effect in your program? Well the next program, **WAVE**, shows a wave effect on a line of text. This is accomplished by a brain force method and again uses **MOVE** to copy the appropriate GBI 8 line to the relevant position. The positions are calculated first and stored in arrays of frame number and X-position of each angle for reuse again. Then eight lines of the message are drawn using the **TEXT** command and stored using **MOVE**, each line being shifted one pixel right to give a smooth effect. The program then loops for each line of the GBI 8 data, increasing the angle accordingly and loops around again to continue the effect.

Try changing the Angle Step. All on line 65 for smoother or steeper angles.

by Andy Guillaume MINI 4

To end all with, here about a crazy effect that's of no use except to wear your friends into thinking that their Atari has gone to heaven! The last mini turns your editing screen upside-down, so you have to look at the picture upside-down in a mirror for normal viewing!

A hardware 'feature' at **DRACT** (750) turns the characters upside-down, but I've never thought of a use for it before. Change the 6 in line 80 to 2 to slip into a different parallel universes!

```
00 1 ROM [XXXXXXXXXXXXXXXXXXXX]
00 2 ROM [XXXXXXXXXXXXXXXXXXXX]
00 3 ROM
00 30 GBI (GRAPHICS 00 FOR 012345678,0000
00 40 PMOVE 700,0,0
00 50 FOR 0000 TO 12345678 ON,ON,0,0
00 60 00000000
00 70 GBI (GRAPHICS 00 FOR 012345678,0000
00 80 PMOVE 700,0,0
00 90 FOR 0000 TO 12345678 ON,ON,0,0
00 100 00000000
00 110 PMOVE 100,000,000000,000000,000,0,0
00 120 FOR 0000 TO 7
00 130 PMOVE 100,000,000000,000000,000000,0000
00 140 PMOVE 100,000,000000,000000,000000,0000
00 150 FOR 0000 TO 7
00 160 PMOVE 100,000,000000,000000,000000,0000
00 170 FOR 0000 TO 7
00 180 PMOVE 100,000,000000,000000,000000,0000
00 190 FOR 0000 TO 7
00 200 PMOVE 100,000,000000,000000,000000,0000
```

LINE COMMENT/USAGE

30-80 Setup Array tables

80-90 Setup GRmode and 'TEXT' data

90-120 Loop for each line to display

..100 Get frame, position per angle

..120 One loop. Reduce angle for next display frame

130 Loop back to restart sequence

```
00 1 ROM [XXXXXXXXXXXXXXXXXXXX]
00 2 ROM [XXXXXXXXXXXXXXXXXXXX]
00 3 ROM [XXXXXXXXXXXXXXXXXXXX]
00 4 ROM
00 30 GRAPHICS 00 FOR 012345678,0000,0000
00 40 PMOVE 0,0,0000,0000,0000,0000,0000
00 50 FOR 0000 TO 20 STOP -02
00 60 PMOVE 000,0000,0000,0000,0000,0000
00 70 PMOVE 000,0000,0000,0000,0000,0000
00 80 PMOVE 000,0000,0000,0000,0000,0000
00 90 PMOVE 000,0000,0000,0000,0000,0000
```

CLASSICS

THE HIGHEST LEVEL

This issue brings to you a review of two games for the luxury 8-bit. To be more accurate, this month's Software Classics column is a review of six games, but in two issues, each offering outstanding value for money.

Many of you will be aware that my real interest is adventures, but in order to keep this column well balanced I have not reviewed any adventures I have chosen to review this issue are Lancelot and Silicon Dreams. Before writing the reviews I checked some old issues of Page 9 in order to price the games and this is what I turned up - Lancelot was released in 1988 and cost £15. Silicon Dreams was originally sold as three separate adventures: Snowball, Return to Eden and The Worms in Paradise at £13 each. So, the total cost of buying these adventures was £39! You can now buy the whole lot from New Asset User for a steal. This has to be the best sale of this New Year.

I bought these adventures more or less as they were released, however Silicon Dreams was subsequently improved with a more advanced parser, so I again, and worth it.



Both sets of adventures were written by David B. who was one of the world's best adventure writers. They were even put on a par with Tolkien, in some American magazines.

SILICON DREAMS

Silicon Dreams is a trilogy of three entirely separate adventures set in the twenty third and twenty fourth centuries. Part one takes place on a vast colonization ship Snowball. The vast amount of space to be crossed by the ship necessitates a need for information. However, you are woken prematurely and realize that something must be wrong, disastrously wrong.

Snowball is a huge game, and I do mean huge. The original version boasted some 7000 separate rooms. At the time, playing Snowball on a 486 PC, I didn't believe that the adverts could be accurate. I don't think the editor believed this either, as he raised the point with the Asante brothers at Level 9 in an interview back in issue 24. Their reply was 'they are all rooms in which you can leave objects' - not that you would want to do so! course! The updated versions of all three games, including Snowball, boasts over 12 million rooms. Hence help you if you get lost!

Second in the trilogy is **Return to Eden**. This is one of my personal favorites, with some really excellent puzzles to solve. Having just saved the Snowball, you are found guilty, unjustly, of trying to sabotage the ship. Your only option is to escape to the planet Eden, and evade the anger of your own shipmates! Once you have escaped to the planet, your adventure really begins. Eden is home to a plethora of strange flora and fauna that pose great difficulties to your very survival. Indeed, your only chance is to find your way to the city of Enoch. Be prepared for the adventure!

of a lifetime.

The concluding part of Silicon Dreams is **The Worms in Paradise**. The adventure takes place some 100 years after the previous two adventures. You are a citizen of the Enoch megacolon of Eden, a place that is almost perfect, but not quite. So one in their right mind would want to challenge the system. Would you? Again, this is a fantastic science fiction world created by the Asante brothers at Level 9.

The Silicon Dreams trilogy are standard text adventures, but with graphics there are some six hundred illustrations covering the three games. My only criticism of the art is the inclusion of graphics, which I feel add little to the atmosphere. The analogy I draw is that a great novel would not benefit from pictures. However, this criticism is a little unfair as the graphics can be switched off if, like me, you prefer passages generated to your own mind, prompted by rich prose.

LANCELOT

The second game reviewed this issue is Lancelot, again by Level 9. Lancelot can only be described as a masterpiece, and a tribute to the detailed work of the Asante brothers.

As you will have guessed, Lancelot is the story of King Arthur and the Knights of the Round Table. It is refreshing to see the story from a different perspective, i.e. that of Sir Lancelot, an Arthurian tale usually centred around King Arthur. Your five periods begin your three adventures that will last a long time unless you are a true expert.

It will be immediately obvious to anyone who is familiar with the Great manuscripts that an awful lot of research has gone to in this game. You will find that the entire plot, people,

places and events follow the romance closely, particularly Le Morte D'Arthur. The real magic in this game is the way that the puzzles and problems set in the adventure tie in with the story so seamlessly. When you play the game you actually feel embedded in the plot, and the 14th Century story, told through generations, comes alive.

The setting for the first part of Lancelot is in and around Camelot, where it is your aim to become knighted and rise to the position of best knight through valorous deeds in Logis. The game kicks off with trying to reach Camelot, but to do so you must first pass the Black Knight. The second part of the adventure takes place in Logis where your task is to free all the captive knights, and enable Galahad to return to Camelot. So, with all the big work done, you finally come on to the concluding part of the adventure - the quest for the Holy Grail - the goal that many have dreamed of.

Lancelot is truly captivating, and will keep you amused for months. The game is Level 9 at its best and is not surpassed by any adventure in my opinion. One of this game's strengths, as with Silicon Dreams, is the user interface. Some of the useful features incorporated include an UNDO feature, NAME screen, GO TO and RUN TO options which make the game that much friendlier to operate. The XL/XE version is text only.

I can only say that you really should try these classic adventure games, even if you've already purchased an adventure before. At under £1.79 per adventure you get a real sense of classic on disk, with excellent instructions and a novella in each box. They give your brain some exercise, and be hooked! Usually games such as these are only available on disk but unusually both Lancelot and Silicon Dreams are still available on both disk and cassette, so that every Atari owner can enjoy them. No occasion!

reviewed by Mark Stinson

AUTO FUNCTION KEYS

Boot up Benjamin Arnold's program when you start a programming session and you will have many DOS and other functions available at the press of a key

Auto Function Keys is a machine code program which sits inside your computer from startup and provides many facilities to go with normal BASIC. The main part of the code is over 2 Kbytes long, yet due to advanced programming techniques only page 6 of available RAM is actually taken up by the program. However, once the routine is running under no circumstances must you use any program which uses the shadow RAM under BASIC. This includes programs such as EDIBASIC in SpartaDOS or the Atari User Toolkit.

THE FUNCTION KEYS

The program gives you the following options:

CTRL+4	Keyboard Click on/off
CTRL+5	Cursor on/off
CTRL+6	Left margin on
CTRL+7	Catalogue drive 1
CTRL+8	Binary load
CTRL+9	Help
CTRL+0	Go to DOS
SHIFT+CTRL+4	Control Panel
SHIFT+CTRL+5	Rename file
SHIFT+CTRL+6	Erase file(s)
SHIFT+CTRL+7	Protect file(s)
SHIFT+CTRL+8	Unprotect file(s)

COMPATIBILITY

I have tested the program on SpartaDOS 3.0 and Atari DOS 2.0, but it should work with all versions of SpartaDOS and Atari DOS. It may also work with others such as M5DOS. It will work on the Atari 8000, 6550 (both versions) and 1300C. It should also work on an expanded 8000. However, it will not work on the old 480/800 due to the different memory map.

SETTING UP

Everything you need is contained in the program **SETUP.BAS** which is on this issue's disk or available from New Atari User as a type-in listing. Either run the program from the issue disk or type it in and save it to a separate disk. Following this, format a fresh disk and write DOS to it. Then, load **SETUP.BAS**, insert the new disk and type **ROM**. Three files will be written to the disk - **RAM-DISK.DSK**, **FILES.COM** and **INT.OSM**. Next, you must do different things depending on the DOS you are using.

For Atari DOS, rename the file **INT.OSM** to **STARTUP.DSK**, reboot and there you are done.

For SpartaDOS, the procedure is different. If you are using SpartaDOS 3 then you must create a **STARTUP.BAT** batch file containing the commands **KEY OFF** followed by **INT.OSM**. After this, the program is ready for use. If not using SpartaDOS 3 you must rename **INT.OSM** to **INT.COM** and create a **STARTUP.BAT** file which simply does **INT**.

During loading the screen turns black, but once loaded, the program performs almost identically with other DOS. The only major difference is that when entering from DOS in DOS 2.0 you must press **reset** to clear the system and to re-run Function Keys. In SpartaDOS this isn't necessary.

A WARNING

Before I come on to describe each function, it is important to say that if you are going to use page 6 for another program, please type **FORCE 0,1** and press **reset** before commencing. If at any other time the system crashes, you may be able to restore it safely by holding down **Options** as you press **Reset**, typing **FORCE 0,1** and re-entering Function Keys.

EXPLAINING THE KEYS

The first two keys (**CTRL+4** and **CTRL+5**) are self-explanatory. They work as soon as you press the key, and are toggles. The only quirk on **CTRL+6** (left margin) is that once the left margin has been moved, it may move in either direction. Catalogue (**CTRL+7**) is easy - it simply does a full catalogue of the disk in drive 1, it will also give an expanded catalogue if SpartaDOS is being used.

CTRL+8 (Binary load) is very useful, as it fills a function which is missed out of BASIC - the facility to load machine code. After pressing this, you are prompted for a filename e.g. **DOUBT.OSM**. The routine will find out the load address, but will not load if it is not a binary file. Once it is loaded, you can run it with **USR**.

Help (CTRL+9) is simple - it gives a complete list of all the functions, and DOS (**CTRL+0**) is just as easy. However, be careful as in DOS 2.0 you must accidentally press this and lose your program.

Leaving Control Panel aside for the time being, the remaining functions are easy. From **SHIFT+CTRL+5** to **SHIFT+CTRL+8**, they can rename, delete, protect and unprotect disk

files. They can all use wordboards except reverse. They all ask for a filename, and then do the job. Currently, SHFT+CTRL+9 and 0 are disabled (i.e. they do nothing).

A CONTROL PANEL

Control Panel (SHFT+CTRL+4) is very useful. For example, some people don't like the normal colours of the Atari screen and Control Panel will give you the chance to change them for good. You are presented with a screen, and must type in the number of your choice. Each one is presented with the current value in HEX. You type in the number (press the left hand side of the screen) or 0 to exit. However, to bring about the changes you must press Reset. To type in the new value, always type in two HEX digits.

The two margin selectors only take effect in graphics 0 and therefore, neither can be larger than 607 (59). Also, be sure that the left margin is less than the right margin!

The three colour options are self-explanatory, and can be anything from 000 to FF (0-255).

The last two are different. 00 several can only be 0 or 2 (type 00 or 02 and makes no difference to SparrowDOS 1 or 2). If it is 2, you can hear click, printer, cassette etc. sounds. If it is 0, there are hardly audible. Cursor status is also useful. The usual values are as follows:

- 00 : No cursor, inverse goes to normal
- 01 : No cursor, inverse switches
- 02 : Normal writing
- 03 : Cursor on but inverse goes to black
- 04 : No cursor, inverse goes to normal and text upside down
- 05 : Cursor on, inverse normal and text upside down.

with a built-in Control Panel

If you do anything silly, you can always press option whilst holding Reset and in-out.

PERMANENT CHANGES

The disadvantage with the above systems is that you must reset the values each time you switch on, but there is a way around this as well. Permanent changes can be achieved by altering the SCTRL.DMS program.

On line 2970, there are 6 values - 35, 2, 26, 202, 144, 5. Ignoring the first, they are left margin, right margin, Pen colour, Paper colour, Boarder colour. Just alter these to the values you require.

The first number is special, and must be dealt with as binary. In binary 35 = 0010 0111. The first four bits are the cursor status (0010) and the second four bits are the 10 sound (0111) (and these can also be changed and the number re-calculated).

Once you have made changes to the SCTRL.DMS program, reset it and run it again to make the changes permanent.

THE LISTING

AUTO FUNCTION KEYS is available ready to run on the Issue 70 disk and also as a TYPED coded type-in listing which can be obtained by subscribers free of charge. Check out the inside back cover for details.

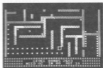
Review

ARENA

Here's a relatively new game from

Andy Galloway, whose good work has previously featured on Page 6 issue disks and in the PD library. A direct version of ARENA was included as a disk bonus with issue 68 of MAIL, but the full release must be acquired directly from Hologram Software.

You are employed as the Supervisor of a futuristic power plant. Unfortunately, due to the activities of certain rebellious forces, several valuable power poles have escaped from the main reactor housing. They are floating through the hazardous rooms of the plant and you have responsibility for guiding them back to the main reactor. The poles move in a predictable, but not particularly helpful, pattern - they keep travelling in a straight line, and have left if there's something in the way. You can't control their movement directly but, using a joystick, you can build and destroy walls in the open space to influence the subsequent course of events. It's important you don't allow poles to collide with reactor construction! Since these level is vapourise every-



screen position is occupied by a status panel tabulating you of the ever decreasing bonus score (because it hits you, you've lost a bit), the number of poles requiring capture and the number that are currently 'in' or 'out' of the destination reactor.

Above this panel you'll observe the walls, rooms and other scenery representing the power plant - this area scrolls vertically to reveal over two screens worth of playfield for each level. An orange outline cursor identifies the position where walls may be constructed or removed. Bonus poles scattered through the levels can stare you white pants, time and lives. You tentatively have three lives left to avoid the frustration of inevitable mishaps, a password system is invoked after every level level. A high score table is maintained on disk.

Although at first ARENA appears to be fast-paced, it's really more of a logical puzzle. It's wise to carefully consider each layout before you commence the process of building walls and manoeuvring poles. With fifty screens in water, this is a game that should keep you occupied for hours.

ARENA may be obtained from Hologram Software. Write to Andy Galloway, 204 High Street, Alconer, Warwickshire, CV49 5NS in order to check the price.

reviewed by Paul Dixon

- Title: ARENA
- Publisher: Hologram Software
- Format: Disk
- Price: £55.00

ding on, control." Graphics are functional rather than spectacular, the level

STATIONFALL

Another Infocom Classic

Anyone who knows me, or who may have read any of my articles and reviews will have undoubtedly guessed my bias towards adventure and particularly my preference of the Infocom range.

I make no apologies for my leaning towards Infocom which, sadly, no longer produce adventures for the Classic. If you are even remotely interested in adventure and have never tried an Infocom then you must buy one now, while there are still some available. I have started up on all those available from the various suppliers, and still have 12 to play. Why not contact Derek Pons of Micro Discount, or Page 8 and try one out? If you can obtain an Infocom you would be hard pushed to find a better adventure than *Stationfall* which is quite simply brilliant.

Stationfall is the sequel to the hugely successful *Planetfall* (although you need not have played this to play *Stationfall*).

Along with the disk you will find the new format selection of goodies contained in each Infocom. There is the ever helpful official technical manual, which is a must for all players, especially the beginner. Along with this there is a supply of forms which will be needed during the game, a full set of station blueprints, and a badge sporting the captain

'boldly going where angels fear to tread'. With badge sewn firmly on to your tunic, and administrative forms in hand, you commence your adventure....

BOLDLY GOING

Once you have the disk loaded up you find yourself on the *SPS Duffy*, a huge Polarisation Starship among whose crew you are but a lowly 1st Class (which is a step up from your rank as *Extrag 7th Class in Planetfall*).

Reading through your paper work you find a robot authorisation form, spaceship activation form, and an assignment completion form. You will see that this latter form is an instruction to fly to Space Station *Quasara Deba Quasara 777-G 99/99* to collect '14 pallets of request for stellar patrol, issue regulation black form headers repair form forms' - thrilling stuff. If only life were that simple.

Before you depart on your mission you must start the robot pilot to appoint a companion on your mission. There are three robots to choose from, but however hard you try you always end up with the one star on this epic mission, *Floyd*. *Floyd* is a bittersweet little robot, who was also your companion in *Planetfall*. He really is the central attraction to *Stationfall*, and hours of fun are to be had watching his comic behaviour. He is playful, mischievous, and at times accessible on your mission, which makes him all the more 'human'.

reviewed by
Mark Stinson



THE DEPARTURE

The mission over, you are now ready to enter space, your mission to the space station and to get there safely you must fly a spaceship presently docked on the east side of the *SPS Duffy*. The track is mostly automated so that you need not worry about elementary spaceship physics. You will, however, be required to enter the time code on the track's keyboard. If you make an error here you will certainly regret it if I remember the reverse direction learning you life after a short trip and the track coming to a halt in empty space. You have no fuel, and your only relief is by way of an emergency beacon, operated by pressing the appropriate button. Having pressed that button I learned, with a cold shudder, to a recorded voice as it tried to calm me: 'there is nothing to worry about, nothing can go wrong, unless you miss a ship'....

However, if you are successful in programming the spaceship accurately, you will shortly be greeted with the incredible sight of a *Light Space Station* looming up before you. You can see that attached to this miracle of technology is a wondrous looking space village which has grown to an uncontested manner over the years (obviously no *Thorn Planets* in this week of the woods!).

Before long the ship glides gracefully into a docking bay. Having collected your belongings, such as fuel and forms, you are ready to

begin the quest. You leave the ship with *Floyd* in tow, and enter the Space Station.

THE SPACE STATION

The Space Station is pretty big, so there's plenty to explore. One of the first things that strikes you as you roam the place is the distinct lack of human activity. This is particularly strange when you study the blueprints and find that the ship's complement is usually 40, comprising 30 crew, 6 officers and a Station Commander.

The station is split into three main areas: the *Control Command Module*, which is on 6 levels; a *Scientific Study Module*; and also the village. At various locations in the station you will find lifts and passages to aid you on your quest. For example, this space are dotted about and these can be very useful sources of information when read on the machine in the library. The Commander's log also makes interesting listening, and gives you a further indication that something must be awry.

It appears from a recent entry that the crew were tracking an alien ship as it approached the Space Station. The ship, it transpires, was brought into one of the docking bays for examination. The remains of a long dead alien believed, and a curious pyramid were found aboard the ship. Extensive biological/chemical investigations revealed less a second priority to the main mission of the Station -

SIGHT AND SOUND

Chris Thorley explains exactly how to connect your Atari Classic to your VCR so that you can video your favourite games while you play or enhance your home movies

use rates for producing video titles for my home movies. You may also be stuck on a certain part of a game and by recording your gameplay you may be able to spot something happening on one part of the screen that could be missed when you are concentrating hard on something else. Of course, you can also use a video to provide irrefutable proof of that fabulous high score. With a good VCR, and a bit of patience, you can also produce your own animated sequences.

As you can see there are many uses that your Atari and VCR could be put to. Now, where to start?

TUNE IN

Firstly you need to tune a channel on your TV to your VCR. This may be done by using the test signal (two white vertical bars) produced by the VCR itself. Once you are satisfied that you are fully tuned in you can now connect your Atari to your VCR. This is simply achieved by connecting the switch box at the back of your Atari to the RF or aerial (or socket at the back of your VCR (Diagram 1). I should, of course, say that your Atari, VCR and TV should be turned off when making these connections! You should now load a program into your Atari (see

a cartridge if you have one). Next, ensuring all connections are made, your VCR is turned to your TV and you have a program loaded, turn on your TV and VCR. If you are very lucky you should now see the loaded program on your TV screen. If not, don't panic. This probably means that your Atari is not tuned in to your VCR. Select a channel on the VCR and carefully tune it until you get the picture from your Atari on the TV. Simple, isn't it?

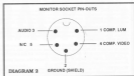


DIAGRAM 3

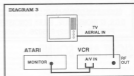


DIAGRAM 4

DOES IT LOOK OKAY?

Well, we've now got what we wanted. Or have we? One of the problems with this method of connection is that the output from the Atari's RF modulator doesn't appear to be very stable, especially when connected through a VCR. You'll notice, after a short period of time, that the picture starts to drift off-tune. Evidence of this may be a bending of the picture in one of the top corners of the TV, or an increased level of background noise through the TV's speaker. The reason for this 'drifting' is the method used to connect all these pieces of equipment together. Your Atari sends to the RF modulator a composite video signal. This is in turn converted to an RF (TV-type) signal. This signal is then received by the input circuitry of the VCR which converts this signal back down to composite video. This process is then repeated when the VCR sends a picture

to the TV. The original signal from the Atari is inevitably being degraded by all this processing and it comes as no surprise that another method of connection was thought of to overcome this problem.

THE MONITOR CONNECTION

The solution to this problem lies in the use of the Monitor socket, on the rear of the Atari, next to the switch box socket. Pins 2 (audio), 3 (ground) and 4 (composite video) require connecting to a suitable 5-pin Din type

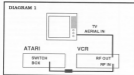


DIAGRAM 1

Dean Garraghty Software

★ PD Library ★ Commercial Software Publishing
★ Magazine Publishing ★ Hardware/Software bought & sold

NEW: THE QUICK SUPPORT DISK - Another support Disk for our QUICK programming language. This one contains tutorials, notes, and demonstration programs on Page-Make graphics including animation, character sets, tags in colour, double manipulation screen items on the disk, character sets, fonts, tags, 24 or 48 column screens, and an answer to 10,000 papers. The disk is made in 2000 users. Price: £4.95 inc. p&h.

• **FILE TRANSFER SERVICE** - We can now transfer both text and other types of files to and from Atari and IBM PC. Files can be transferred to/from the Atari on Single, "Medium", and Double Density formats. Files on the PC can be accepted converted to 20" DD and HD, and 30" DD. Please phone for details and a price quote.

KODAK Branded 3 1/2" DDD Blank disks, Teflon coating to resist finger prints and smudges. Fastest data read by program. £2.75 (1 box), £2.50 (2 boxes) including p&h. Bargain! Call for prices on 10" disks. 2.50 each (not including p&h) plus storage tape: £10.50 (including p&h).

STAMINA SWITCHABLE SCREEN - Shows like a real monitor! Bargain at £2.95 inc. p&h. Perfect for use with Quick, SAM etc.

WANTED: Your unwanted Atari hardware/software. We buy disks, tapes, carts, books, magazines, manuals and any Atari related hardware. Please! Write for an immediate offer! Stocks of used hardware/software are always available for sale.

NOTE: We are now located in East Pease for Post products in my company's name. Address and further details.

All prices quoted include UK p&h. For a free copy of our 24 page catalogue of PD and Commercial software, please send £ a 2p stamp (2 000's for non UK customers) to:

D.G.S., 62 THOMSON AVE., BALBY, DONCASTER, DN4 0NU, ENGLAND
PHONE: (01302) 855026. Mobile: 0378-590259

SIGHT AND SOUND

continued

plug (Diagram 2). These should be connected to jacks at the other end that will allow connections to your VCR. In my case they are audio type jacks, one for video and one for audio (Diagram 3). On reception, and selection of the correct channel since you are now using a different input path, you should notice a much more stable picture and improved sound quality. As a comparison you can leave the switch box connected and switch between the different inputs.

START RECORDING

You should now be able to make acceptable video recordings on your VCR. To get the most out of your Atari and VCR you will have to find suitable programs to run. One such

program does exist that will allow you to create visual masterpieces at a stroke (well, almost). That program is Video Title Shop, and is one that I gave a favourable review in MAG 62. You should also give your art packages a try, maybe even recording your artistic prowess on video to show to your non-Atari viewing friends.

Well, that's all for now. I would welcome any comments, critical or otherwise, regarding the article, even hints and tips on how to improve on my own efforts. Also, if you have seen across any programs that would suit ideal for an Audio/Video application I would love to hear from you. One last point, I won't accept responsibility for any technical malfunctions in computers and/or VCR's as a result of this article. If in doubt, consult a qualified person before connecting any electronic equipment together. Good luck!

Review

GTRACKER

Forget that boring office job. No need to use the lottery. You, too, can be a mega-rich rock star and groove into the pop scene overnight with a little help from your faithful Atari 8-bit. Well, maybe it's not quite that easy but with GTRACKER possibilities abound!

GTracker is a sequencer, which means it's a program that can play digitised sound samples in a user-specified sequence. The reason for doing this is that sound samples consume large chunks of memory (or disk space) and are therefore impractical to use for more than a few seconds. By sequencing a relatively small selection of digitised music 'clips' you can put together an impressively lengthy composition. All you need is some sample data and a set of sequence instructions. GTracker enables you to create the latter, whilst the samples must be supplied by you in 'Tapey' compatible format. Four example routines are supplied.

The GTracker File Editor is required to create a 'TR3' sequence file. This file is simply a list of commands that tell the sample player which memory addresses should be used, and for how long, in order to achieve the desired sounds. There are four types of instruction, though only one of these is needed to create the principal function - it consists of start and end memory addresses together

You don't need an ST to enjoy sampled sound - your Atari Classic isn't as humble as you might think!

with a speed parameter. An End instruction prompts the sample player to stop playing. Repeat adds it to loop back to the beginning of a sequence, and Delay performs the obvious function. The GTracker TR3 File Player - located on the flip side of the disk - translates your sequence and sample files, enabling you to demonstrate the success, or otherwise, of your efforts.

That's all there is to it! It has to be said that you probably need to be 'tame' sound sampling already if you want to get the most out of GTracker. It's not a complex system and it's not particularly user-friendly, but you should be able to achieve some good results.

Visiware say they are hoping to release stereo and 16 specific versions of GTracker soon, and updates will be offered to existing users. Public Domain disks containing sample files are also promised. Meanwhile a PD version of GTracker is available from Page 6 for those who want to see its capabilities.

GTracker may be obtained from Visiware Software, Write to Andy Gullimore, 204 Wagh Street, Aberdeen, Warrackchurn, DD4 5AD to order or to check the price.

reviewed by Paul Dixon

HARDWARE HACKING

X-STATIC

Many dedicated Atarians have the occasional desire to poke about in the innards of their computer or peripheral devices. Peter Kerrison dedicates this article to all those for whom things may have gone wrong once in a while

One area of electronics which is now showing itself to be a major "occupant killer" is static electricity. Static discharges are all around us all the time, but as they have to be in excess of 3,000 volts before you feel it (that's just a tingel) and over 5,000 volts before you see it, most people don't substantiate the damage it can do. Static discharges cost companies hundreds of thousands of pounds a year, in fact when the problem was investigated it was found to be on a much larger scale than anyone appreciated. By examining components under a scanning electron microscope static damage is easily recognized. It was discovered that components can be degraded by static, conse-

ling patterns sensitivity before certain bit patterns cause problems, decrease in performance characteristics, premature failure or intermittent problems. This is added to the problem of destroying the component completely.

As this 'degrading' ability of static is not fully appreciated, it is still not given the respect it deserves by the majority of people who handle components and printed circuit boards on a regular basis. Many computers are now embarking on educational programmes for their staff to teach them how to handle static sensitive devices both new and faulty but don't want initial problems compounded by static induced problems.

The difficulty that arises in educating people to use anti-static measures is that they don't really believe in them. Oh, they will push an EPROM into conductive foam or wrap a circuit board in aluminium foil, but only for transportation. These sort of safeguards must be used every time the device is removed from its circuit.

An VLSI chip (Very Large Scale Integrated) achieves greater circuit densities than the insulating layers between individual conductive paths become thinner and can therefore be damaged by relatively low voltages. Typical voltage levels necessary to damage a component are:

MOSFET	100 - 200
CMOS	250 - 2000
TTL	300 - 2500

while typical voltages generated are:

ACTION	COMMON	HIGH
Walking across carpet	12,000	30,000
Walking on stony floor	4,000	12,000
Working at a bench	500	2,500

To bring the problem to a personal level, this could have happened to you already without knowing. Have a think - has last chip you changed - did you touch it? Works, a month, 6 weeks better? According to the latest re-

search you could have damaged it then.

Although the generation of static electricity cannot be prevented it can be controlled in a limited area. If the time to be dealt with is conducted then the problem is very easy. Charge on a conductive material will equalise itself over the whole surface area. Merely grounding the material will remove the charge.

On non-conducting materials this practice will not work as the charge can vary greatly from one point to another. This has to be dealt with using an ionised air blower - a device which bathes the area with positive and negative ions which are attracted to the charged areas of non-conductors and neutral them out.

We can now go on to describe the measures that can be taken against static. Both in order to produce a really static free area and also to guard against the more common static associated problems.



WHAT CAN I DO ABOUT IT?

In an ideal world

Really all static sensitive devices should be handled in a static safe work area. This can be defined as an area where static electricity is discharged at the same rate at which it charges. Therefore no static build up can occur. In order to achieve this we have to drain all conductive materials to earth. This can be achieved by using a conductive work surface connected to ground via a 1 MegOhm resistor (its limit current flow). You should use a conductive mat and wear a wristband - both connected to earth via 1 MegOhm resistors.

This will protect the components and circuit boards from any static charge as conductive materials used in the work area.

This only takes care of the conductors. For the non-conductors an ionised air blower should be installed to completely bath the work area. Any components or circuit boards carried away from the area should be placed in static shielding bags and sealed for complete protection. This would complete the static safe work area - at some cost it is true but for companies spending thousands of pounds on components and circuit boards it is a wise investment.

In the Real World

What about us? We can't go installing ionised air blowers, I hear you cry? Well for the average Atarians who wants to share off the anti-static lightning bolt's a few ideas.

1. Make yourself a conductive work surface that is connected to ground with a 1 MegOhm resistor. Not too tough for a bright lad like you!
2. Get a wrist strap and use it! Something like a BM Charge Guard 2000. It is comfortable to wear, easy to use and effective.
3. Make yourself a clip to connect between the ground of the unit you are working on and the conductive work surface. A couple of crocodile clips will do.
4. Only use a soldering iron with a grounded tip.
5. Those non-conductors? Keep them away - no exceptions! Use a piece of the same age down to a chip by a polypropylene coffee cup.

When you have seen the damage it can do, you realise that these simple precautions can save a lot of heartache.

All parts and figures supplied by IOM UK plc courtesy of their Hazard Officer at Donhead, Avon, Bristol, probably the world leaders in static control.

Reviews

NOSAUG PD COMPILATIONS

EDUCATION

The Public Domain tape from NOSAUG contains ten games sharing a common educational theme. They are mainly aimed at young players who have recently been introduced to the confusing world of numbers and alphabets. The programs use Basic so you can examine the listings and perhaps pick up some programming tips for an additional charge!

First up, **Spellblast** is a variation on the hangman theme. You are asked to guess and

then spell a word chosen from one of three alternative categories - computers, animals, and musical instruments. The player's objective in **Alpha Box** is to manoeuvre a small vehicle over the numbers 1 to 9 or letters A to Z in sequence, while avoiding the screen boundary and other obstacles. Meanwhile **Alphabet Train** presents a fun way to learn spelling. A word is displayed and the player writes corresponding letters from railway signs which scroll horizontally into view. Correct letters are deposited onto a track and if there are no mistakes the word is whisked off screen to make room for the next one.

The Counting Game asks, simply, how many symbols are shown? Success is rewarded by a chime jingle and graphical congratulations. **Marathon Maths** involves a race between two players. The first one to highlight the solution to a multiple-choice maths question gains several points towards a finishing post. If the answer's wrong however, the opponent gains ground instead. In **Math Attack** you can select the type of questions (multiplication, division etc.) and also see

known values. The program generates problems and waits while you enter the results. **Copy Cat** is an exceedingly addictive (well I was hooked!) Street Racer game. Using a joystick, you have to repeat the demonstrated sequence of coloured lights and corresponding sounds. **The Reading Program** is another memory jigger intended for slightly older users. A short story is displayed and then removed from view. You must answer questions based on the story - not as easy as you should think. **Fun With Words** comprises an anagram cycle and a simple hangman game. Last but not least is **Guess My Number**, a space filler that requires you to guess a number!!!

In the event that you don't find any of these programs useful, the good news is that they're supplied on a good quality C64 cassette!

- Title: C64 EDUCATION
- Publisher: NOSAUG
- Format: Cassette
- Price: £2.95

Reviewed by Paul Nixon

UTILITIES 2

If you want to draw, compose music, print cassette labels, calculate exchange rates, check air route games or design video titles, **UTILITIES 2** from the NOSAUG PD cassette library is one for you!

Artists types will enjoy **Keystroke Artist**, a drawing tool based upon straightforward keystroke commands. It may not be feature packed but it's not bad for a quick doodle. Audio Magazine's **Audio Music Processor** is well regarded by disk users but has not previously been released on cassette. Thanks to some hard work by NOSAUG, anyone can now sample the musical delights of this excellent machine-code utility. It enables users to

be composed, quickly and with minimal effort, by anyone who can read sheet music. The music player utilises all available notes over a range of five and a half octaves, and is accompanied by an attractive light bar display. Four good tunes are also supplied on tape.

With the help of **Current Exchange** you can discover how much your foreign currency is worth, but first you'll need to type in the up-to-date exchange rates. Why not use a calculator instead? Or a more practical note, the **1999 Cassette Label Maker** is - as its name suggests - for 1920 platter cassettes. Its function is to create blank labels for placing

labels cassette boxes - handy if you need to re-use old tapes.

If you're keen on arcade games, but find them too hard, **The Tapesetter** (originally published by M&S) claims to have an answer - that is, if you're down to one of the four most recognised titles. All you do is choose the game that's giving you grief, run The Tapesetter and then load up the game itself. In **Happy Builders** you become someone to bricks and dynamite. In **Partner** you gain infinite lives and in **Shiver** power you can start at level eternal! Finally, **Video Titles** allows pages of text to be input and stored in a sequence to reveal for your video letters and credits. The text is loaded and

CONTRIBUTIONS

FOUR contributions are the
W/loaded of New Atari User

All of your contributions are
welcome but at the moment
we need more

GAME LISTINGS

BONUS PROGRAMS

However don't stop sending in
other articles and programs. If
something interests you, you
can be sure it will interest
someone else so write it
up and send it in - NOW!

gradually to give your titles a professional appearance. Printed instructions provide hints on the installation of video connections and editing techniques.

Overall, **Utilities 2** is a mixed bag but is worth having for the **Audio Music Processor** alone. Contact NOSAUG for details of other PD tapes available.

- Title: C64 UTILITIES 2
- Publisher: NOSAUG
- Format: Cassette
- Price: £2.95

Reviewed by Paul Nixon

TUTORIAL TIME

by Ian Finlayson

DAISY-DOT II GOING DEEPER

In issue 68 I gave an introduction to the use of Daisy Dot II, and at the same time John Bunting described how to use Daisy Dot in a much more advanced way with Page 6 Writer and Spantastic. If you have hardware that will accommodate a RAM disk it is a good idea to experiment with it - you will find you can gain significant speed increases with any program that accesses the disk drive regularly as disk access to the RAM disk is almost instantaneous. Anyway I will continue at a more basic level expanding on my last article and showing how to change the format of your documents on the fly.

We saw in issue 68 how to set the overall format of the document as you prepare to print it. These various formats and fonts can be turned on and off inside your document if you want to highlight a word or sentence by boldfacing, italicizing or centering for example. There are 17 commands which can be embedded, and all are done in a similar way. Go back to your favourite word processor - the commands have to be put into your text, before you go to DDB for printing.

A SIMPLE EXAMPLE

Let's take one specific example before looking at all the available commands. We will embed them and underline the phrase "within 7 days" in the sentence "Your reply is required within 7 days or further action may be taken".

To start to insert a command in your text all you have to do is type a backslash \. You may not find this as easy as you expect. In Teletype, for instance, [SHIFT] moves the cursor back one word! You have to type [ESC][SHIFT] to put the backslash into your document. If you are using another word processor that has a special function attached to the [SHIFT] combination look in the detailed instructions to find out how to generate a \ on its own.

After the backslash you type the required command string. Don't worry about upper or lower case letters, both are treated the same by DDB. The command for bold is **B** and for underline is **U**. Both these are "toggle" commands - that means you use the same command to turn the feature on and to turn it off. So to get the format we want for our sentence it should look like this:

"Your reply is required \U\within 7 days\U\ or further action may be taken"

GENERAL USE

Embedding other commands is done in the same way, though they are not all just a single character. You can see in the table the form of each command. The table script in brackets shows what kind of input is acceptable. Do not type the brackets and do not leave any blank spaces that are not part of the original text as DDB considers spaces to be part of the text, not part of the embedded commands.

A word of caution about the embedded formatting commands is necessary. Although DDB ignores these your word processor does not, so if you put long commands into a text file your word processor will treat them as text and insert a carriage return to start a new line. When DDB receives the formatting command the line can become too short and it will look rather peculiar. If you want to avoid this problem try as far as possible to add format paragraph by paragraph. The commands can then be put in on the blank

DAISYDOT 2 - Embedded Commands

Action	Form	Notes
Font change	F (D:Filename.Ex)	Ds:Filename.Ext is name of font file (must be available to DDB at print time). DDB assumes .MLG if Ext is omitted
Density change	D (1-4)	1 - Single, 2 - Double, 3 - Double Draft, 4 - Quadruple
Spacing change	S (D-S or A-N)	From 0 - no space to 9 approx. 1.5 characters spacing
Left Align	L	
Centering	C	
Right Align	R	
Justify	J	Makes both left and right margins straight. Do not justify last line of a paragraph (add L at end of paragraph)
Right Margin	M (D-S or A)	1 - 0.5", 2 - 1", 3 1.5" etc. 0 - none, A - 5" (on 8.5" paper)
Bold	B	toggle
Double Wide	W	toggle
Underline	U	toggle
Append	A (Ds:Filename.Ex)	Insert on its own line - Chained text of Ds:Filename.Ext at end of document
Position Tab	P	Sets a Tab at current column position
Execute Tab	T	Adds spaces to next tab stop
Erase Tabs	E	Erases all Tab Settings
Include file Verbatim	V (Ds:Filename.Ex)	Includes file Ds:Filename.Ext byte by byte in the document (e.g. to embed picture file)
New Page	N	Forces start of new page

line between paragraphs. This is particularly important for the long commands - those that include a filename. Where it is essential to format small bits of text within a paragraph try not to use too many commands at once. For example **INDENT 1** to turn on **INDENT**. Underlined, single density text followed by **INDENT 2** to revert to normal effectively adds two more lines "needed" to the line in your word processor.

DaisyDisk II does not have a **WRITE** (what you see is what you get) capability so inevitably there has to be a lot of trial and error. Keep some old paper handy for your first print out and check that the layout is entirely satisfactory before printing final copy. At first it may seem a bit tedious but you will soon gain experience and the improved final appearance of your document is well worth the effort.

DETAILED NOTES

I do not expect you to want many ^ characters in your documents (unless you are going to write an article about DDE) but if you do it can be achieved by preceding each ^ with another ^, so ^^ prints as ^ and ^^ ^^ prints as ^^.

Most of the embedded format commands are easy to use if you follow what is in the table, but one or two are probably not fully self-explanatory so here are a few simplifying remarks.

ALIGNMENT The individual commands are probably self-explanatory, but it may not be so obvious that you can use more than one alignment command in the same line. Let's take an example. If you are writing a long document you may like to have a top line on each page which has the Chapter number on the left, the document name in the middle and the page number on the right. This can be done as follows:

Start the next line with the alignment command that is to use in the main body of the document (L or M usually). If your word processor has the ability for leaders and followers you can put a line like this into the leader to be automatically printed on every page:

TABS - Aligning text normally in columns can be difficult if you try to do it with spaces, but DDE makes it easy. First turn off existing tabs with **NT**. Then as you type in the brackets for your columns you can set up the tabs, for example:

SURNAME UPFORNAME MADDRESS

Now as you type in the text for the columns just put in the ^Ts to align to the tabs.

Printout - The **PRINT** command is covered.

Easy isn't it? Just one further point - if you want to centre or right justify the whole block of columns it is essential that each line is the same length - otherwise everything will turn out ragged again. To achieve this just put an extra ^P at the end of the line (ending) line at the point where you want the line to end and a ^T at the end of all the other lines.

GRAPHICS - Embedding a graphic is possible using **W**, but this is something I have not yet tried. There is a basic program on side B of the DDE disk called **Illustrator**. This allows you to change the size of Microcomputer files to suit your document. As I understand it the graphics capability only allows full width graphics - DDE can not wrap text around a graphic. If you have used graphics in DDE why not write a short article or a letter to the **Start User** and share your experience.

That's all for this time. I will go on to the DDE font editor and other extras in the next time. Meanwhile if you have any specific tips or questions about DDE please write to me, Ian Phillips, at 60 Roundstone Crescent, East Preston, West Sussex BN20 1JG and I will try to include you in the next article.

The Accessory Shop

ISSUE 70

CONTINUING CLASSICS

Although there is no new software nowadays there is still a chance to buy the classics from previous years. Stocks are dwindling though and this could be the last chance to complete your collection. Buy now!

ASTEROIDS

Asteroids isn't just your little space shooter - it's a game that offers a real challenge. You start with a fleet of spaceships which become progressively smaller, faster and more dangerous. Watch out for enemy lasers! Best PC 1.5 to 4 players.

ROM CARTRIDGE
OUR PRICE £5.00
LIMITED STOCKS

DEFENDER

An action classic from the arcade. Many have learned how your plane attempts to capture enemies and asteroids. There are no destructible enemies - they take you down! (Despite the name, hardly anyone ever keeps an eye on the rate for the real attack rate: 1 or 2 players).

ROM CARTRIDGE
OUR PRICE £5.00
LIMITED STOCKS

GALAXIA

Games of Chance, Simulations and Horrors tend to be easy to attack and protect the Commodore who guide the way. Your only hope is to beat the rest of the best before they destroy you. This horror action game that will give you creepy nightmares. 10 level levels.

ROM CARTRIDGE
OUR PRICE £5.00
LIMITED STOCKS

MILLIPEDE

Simply means to get the wrong species, leaving less, leaving less, leaving less. (Although, I suppose, you can get some of the wrong species and you have to beat it to get on at that time. You can't get it and you can't. Use your PC for it with your own system).

ROM CARTRIDGE
OUR PRICE £5.00
LIMITED STOCKS

KABOOM

The best bomber in town and great at blowing up buildings. (Although, I suppose, you can get some of the wrong species and you have to beat it to get on at that time. You can't get it and you can't. Use your PC for it with your own system).

ROM CARTRIDGE
OUR PRICE £3.95
LIMITED STOCKS

MUSIC PAINTER

An exciting educational program that helps to teach music by using colour. Instead of the usual notes, the notes are drawn to look like flowers. Instruments, make the notes large or small or make you can sing. For musical knowledge required to make your own great band.

DISK ONLY
OUR PRICE £4.95
LIMITED STOCKS

POLE POSITION

The racing game for the Atari Classics. Very little has improved on this exciting formula. But things would fun to young and old alike.

ROM CARTRIDGE
OUR PRICE £5.00

TENNIS

Forehands and backhands, strong opponents, rapid moves, one ball pattern and long ball - you've got it all in this classic tennis game. The whole game is in one ball. The whole game is in one ball. The whole game is in one ball. The whole game is in one ball. The whole game is in one ball.

ROM CARTRIDGE
OUR PRICE £5.00
LIMITED STOCKS

10-PRINT

One of the 1000 games just there to have the best quality and classic program. It is a classic game with all the special features just as you find it. There are lots of special features in any type of 1000. But it is a classic game with all the special features just as you find it. There are lots of special features in any type of 1000.

DISK ONLY
OUR PRICE £4.95
SHADE 2 ENGLISH

ROM CARTRIDGES

All brand new in original boxes, mostly shrink wrapped

ONE ON ONE

Play basketball with two of America's top players in this great graphics simulator which features realistic offensive and defensive moves, unique tactics, and creative, a one click, team instant replay and a challenging basketball! Like the game of basketball itself, One-on-One rewards you for playing with your head as well as your hands. Master the precise moves, plan your strategy and score your ultimate Jump Shot! Shoot!

OUR PRICE \$9.00

US FOOTBALL

American Football is a big game in this country and you can now play it home. Control the defense, pass with amazing accuracy, run with speed and agility, make tackles, catch defenses and intercept passes and more. You can play on the computer or a portable game or challenge a friend to a dramatic adult two-game or your own in-pocket edition. At the brink of the game.

OUR PRICE \$9.00

SUPER BREAKOUT

Breakout was the original arcade hit which addictive game and the enhanced version will provide even more addictive fun. Breakout!

OUR PRICE \$3.95

There are very few ROM cartridges left now for the Atari - complete your collection while you can

DISKS ...

SILICON DREAMS

Taking the role of film fantasy you are a leading participant in the colonization of Eden, a planet prepared for human habitation by an advanced guard of intelligent robots who battle with the native and highly aggressive fauna. In this highly civilized and realistic environment you must move your mind into the nearby third century. Silicon Dreams is three excellent graphics adventures... SNOGEM!, PULVER!, TOLKIN TO EDEM and THE SECRET OF PARADISE from the masters, Level 9.

OUR PRICE \$5.00

FIGHT NIGHT

Fight Night brings you all the thrills of the boxing ring and has four live ring-mad local fighters to add to the extensive list of 100 other well known actors. The Boxing Commission has asked you and your opponent to create your own perfect boxer, setting stamina, weight and style. Train, your own man into the ring to an expert boxer against the computer or another opponent.

OUR PRICE \$6.00

POLE POSITION

Everyone has heard of Pole Position, the racing game that inspired almost every racing game since. It may be the original and some other games may have added features but this Pole Position still remains to challenge after many years. One of these games that has won the right to be one of the great games and graphics to make a classic that will last forever. It is not a slow motion, fast and furious race.

OUR PRICE \$5.00

HARDBALL

All the thrills of American baseball can be yours on a summer afternoon in the ballpark. Sit behind home plate, along the left field line, down the right field line or get the manager in the dugout. Look out the pitcher's mound as he throws his fast ball. You control almost every aspect of the batter, pitcher and fielders as you win and learn your way to the top of the league. All exciting game for one or two players.

OUR PRICE \$5.00

BASIC CARTRIDGE

Some programs, especially some early public domain programs don't run on the XL and if they will if you plug in the old version of Basic.

OUR PRICE \$2.95

ZORK I

The dragon-classic and the adventure game that changed the way all future adventures were written. The Great Underground Empire of Zork is well documented by now and thousands of players have become addicts graduating to Zork's more sophisticated adventures. Zork I is the ideal introductory level adventure for beginners or those with a little experience. If you have never wanted to play Zork you will love now is the time to do it. It's never been cheaper to expand your original Classic original Zork I packaging with excellent manual and a map.

OUR PRICE \$2.95

DISKS ... DISKS ...

PANZER GRENADIERS

In this exciting software package you make the decisions for a regiment of the elite armored Infantry units in the Panzer Grenadiers. Your forces can include main, attack, Panzer IV, Panther and Tiger tanks. The Russian armor is attacked by the computer army will feature challenge you with its own variety of strategy, tanks and anti-tank guns. Three levels of difficulty, graphics colors, three graphics.

OUR PRICE \$5.00

LANCELOT

Lance is a sequel to the line of wizard and the knight of the Round Table in a three part adventure spanning the complete saga of the quest for the Holy Grail. Superior graphics and superb audio-line art adventures in all of atmosphere and highly recommended.

OUR PRICE \$5.00

RAMPAGE

Be rough and tough all the way as you control three incredibly nasty characters which tear a rampage. Appearances including King Kong, Godzilla and first man through an age of destruction in Chicago, New York and San Francisco. You have 100,000 of destruction in 30 different cities. Time for some rampage!

OUR PRICE \$3.95

THE E FACTOR

The E factor represents the amount of one the energy source on the planets in our galaxy will be. Many planets need energy for life to be sustained. This game is unique. You must find the resources, mineral and guide your way through the universe that will determine such as space mines, alien fighters and energy resources. Can you complete a mission before another planet dies in your universe?

OUR PRICE \$3.00

DRUID

Know the class in which, as Lord of the Great Druid, you wander through the Dungeons of Adventure and star mighty Druids by your side as you quest to destroy the four demon princes. As you delve deeper into the dungeons you will find magic (including books of magic) objects to use and the graphics in life which will feel and involve you. Excellent graphics and so. This package makes the one of the best made games.

OUR PRICE \$3.95

GAUNTLET THE DEEPER DUNGEONS

If you love the original Gauntlet then then you will love the deeper dungeons in an all new to award winning the Deeper Dungeons. Over 100 new dungeons are here for you to explore. This is the way to make your interest in Gauntlet and play on for many more hours in them. This is a data disk only and requires the original Gauntlet disk.

OUR PRICE \$2.95

NEW YORK CITY

Welcome to The Big Apple. This burning jungle of steel, concrete and glass towers with lightning lights and noise from its shores of danger. From the city's gateway of Central Park, there is no life in the world but New York, and you are you about to find that out as a young man who only finds a broken time to see at the top, but have you had a time to see the world, it is like more danger more than a man's surprising trip to the east.

OUR PRICE \$3.95

RAILBLAZER

The year is 1880 and you are the conductor in the most competitive and by far the most popular sport in the universe. Jump immediately into head to head action against 10 fantastic horse shoe balls against a national club. Enter via, you'll be in the heart of the country! Excellent graphics and top screen action have made this one of the most exciting.

OUR PRICE \$3.95

JUNGLE FIRST

A fun and funny space shoot 'em up featured two dinosaurs early arcade machine of the same name. Exciting and fun, you will attack from all sides and you'll be quick to find their body and earn your bonuses. If you feel that you are going to die then you can use the fast return and enjoy this through a succession of exciting and fun adventures. The best shoot 'em up award as any arcade game feature.

OUR PRICE \$3.95

JUGGLES RAINBOW

It's time computer experience for children aged 7 and 8 has reached the corners of above. Below, left and right you have recognition showing children to enjoy learning with sound and music and games they can watch as they progress.

OUR PRICE \$2.95

THE LIVING DAYLIGHTS

Control James Bond through eight fun and funny levels from a classic in his signature and you are now in the 007 (bond), the 008 (you as family) and enemy features (very interesting). You can also against that brilliant international art dealer and negotiator, James Bond. Excellent graphics and superior the quality making 007 Command. This may feel a little with the beautiful Czech artist Karel, but can you trust her?

OUR PRICE \$2.95

NIBBLER

Striking through an unknown land Nibbler (also known as a thousand world of wonder) danger. As time goes on the body grows larger and he ends coming into focus. Can he be stopped?

OUR PRICE \$1.00

CASSETTES at just 95p each!

160

A great dice challenge. Eight opponents. Unlimited money. You can win. You can lose. You can't cheat. You can't bluff. You can't bluff. You can't bluff.

BOMB FUSION

A tactical game has started to make a name for itself. It's a game of strategy and tactics. It's a game of strategy and tactics.

DESPATCH RIDER

Just the growing heat of these storms was ready for the rider. It was a game of strategy and tactics.

FEUD

To win a feud you need to be good. You need to be good. You need to be good.

FOOTBALL MANAGER

Features include transfer market, league tables, injury, discipline, tactics, promotion and relegation.

GHOSTBUSTERS

Has already been a success. It's a game of strategy and tactics.

GUN LAW

Four rounds of fiery action. It's a game of strategy and tactics.

HENRY'S HOUSE

It's Henry that starts. It's a game of strategy and tactics.

INVASION

Imagine your units and resources to be the best. It's a game of strategy and tactics.

KIKSTOCK

The storm of our mobile world. It's a game of strategy and tactics.

KNOCKOUT BOXING

Boxing is a game of strategy and tactics. It's a game of strategy and tactics.

LOS ANGELES SWAT

SWAT is a game of strategy and tactics. It's a game of strategy and tactics.

MILK RACE

It's a game of strategy and tactics. It's a game of strategy and tactics.

MR DIG

It's a game of strategy and tactics. It's a game of strategy and tactics.

NINJA

It's a game of strategy and tactics. It's a game of strategy and tactics.

ON CUE

It's a game of strategy and tactics. It's a game of strategy and tactics.

PANTHER

It's a game of strategy and tactics. It's a game of strategy and tactics.

PENGLON

It's a game of strategy and tactics. It's a game of strategy and tactics.

PLASTRON

It's a game of strategy and tactics. It's a game of strategy and tactics.

PROTECTOR

It's a game of strategy and tactics. It's a game of strategy and tactics.

ROGUE

It's a game of strategy and tactics. It's a game of strategy and tactics.

REVENGE II

It's a game of strategy and tactics. It's a game of strategy and tactics.

ROCKFORD

It's a game of strategy and tactics. It's a game of strategy and tactics.

SIDEWINDER II

It's a game of strategy and tactics. It's a game of strategy and tactics.

SPEED HAWK

It's a game of strategy and tactics. It's a game of strategy and tactics.

SPEED ZONE

It's a game of strategy and tactics. It's a game of strategy and tactics.

It's a game of strategy and tactics. It's a game of strategy and tactics.

It's a game of strategy and tactics. It's a game of strategy and tactics.

CASSETTES ...

SILICON DREAMS

It's a game of strategy and tactics. It's a game of strategy and tactics.

STAR RAIDERS

It's a game of strategy and tactics. It's a game of strategy and tactics.

TALE OF BETA LYRAE

It's a game of strategy and tactics. It's a game of strategy and tactics.

DECISION IN THE DESERT

It's a game of strategy and tactics. It's a game of strategy and tactics.

LANCELOT

It's a game of strategy and tactics. It's a game of strategy and tactics.

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

OUR PRICE £5.00

MORE 95 p CASSETTES

STAR RAIDERS

It's a game of strategy and tactics. It's a game of strategy and tactics.

TALE OF BETA LYRAE

It's a game of strategy and tactics. It's a game of strategy and tactics.

CROSSFIRE

It's a game of strategy and tactics. It's a game of strategy and tactics.

COLOSSUS CHESS 4

It's a game of strategy and tactics. It's a game of strategy and tactics.

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

MORE 95 p CASSETTES

STAR RAIDERS

It's a game of strategy and tactics. It's a game of strategy and tactics.

TALE OF BETA LYRAE

It's a game of strategy and tactics. It's a game of strategy and tactics.

CROSSFIRE

It's a game of strategy and tactics. It's a game of strategy and tactics.

COLOSSUS CHESS 4

It's a game of strategy and tactics. It's a game of strategy and tactics.

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

OUR PRICE £2.95

ORDER ITEMS FROM THE ACCESSORY SHOP WITH THE ORDER FORM ENCLOSED WITH THIS ISSUE OR WRITE TO PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR TELEPHONE ORDERS ACCEPTED ON 0766 2106 USING ACCESS OR VISA

MAKING MUSIC

with John S Davison

MIDI FUTUREPROOFING

MIDI has now been with us for a long time, around eleven years in fact, and it's a tribute to its designers that it's managed to keep up with users' requirements during this time. They knew it was unrealistic to try to think of every possible function to include in the original specification, so unforeseeable requirements were bound to arise once MIDI got out into the real world and people began using it in earnest. A degree of "futureproofing" was required to allow additions to be made later, and they delivered this through the "System Exclusive" class of MIDI messages.

Actually, futureproofing wasn't originally the prime role of System Exclusive, but it's turned out to be a convenient vehicle for defining extensions subsequently made to the basic MIDI specification. Its original intended use was to provide an open-ended means of supporting manufacturer specific hardware features based on particular makes of synthesizers, drum machines, and other MIDI devices. These included the uploading and downloading of single notes or banks of notes between a storage device and synthesizer, and remote editing of voice parameters to produce new patches. However, there are now two subclasses of System Exclusive - those used for manufacturer specific operations, and the so-called "Universal" operations through which major MIDI extensions have been implemented.

Different manufacturers use their own prop-

rietary methods of handling things like dumping voice patches and voice patch editing, so it's not with their own internal hardware design, MIDI doesn't specify or restrict the hardware design or architecture of the device using it, so this doesn't transgress any MIDI standards. It does mean that manufacturers can take advantage of any new developments in second generation technology in new models, so this too in its way can be thought of as futureproofing from the hardware aspect. A brand new synthesizer model using a completely unique, innovative method of generating its sounds will still work with the basic MIDI functions - but specific support software data has to be written using System Exclusive to achieve the type of voice patch library and editing functions mentioned above. Let's take a quick look at how this works, using a voice dump message for an E-mu Proteus synthesizer as an example.

SYSTEM EXCLUSIVE

System Exclusive messages form part of the MIDI message stream like any other message, so the first requirement is that they should identify themselves. This is achieved by a special System Exclusive status byte having the hexadecimal value F0, which effectively warns the system that what follows may be specific to a particular manufacturer's device. Following this the message needs to indicate the manufacturer and model of device involved in the operation. A specific hexadecimal code value has been allocated to each registered manufacturer. For example 41 for Roland, 43 for Yamaha, and 08 for E-mu. Device model id is also coded, and the Proteus may be identified by the value 04, for example. There may be more than one Proteus synthesizer in your system, and this is handled by allocating a single byte serial number to each one. Then, by including the appropriate serial number in the message the operation can be aimed at

the required device, and will be ignored by all other devices in the system. Together, these bytes represent the System Exclusive "header".

Beyond this header the content may vary depending on the requirements of the operation. In our example the next byte would be a code indicating that the data following represents Proteus preset voice data, and after this would be sets of data blocks carrying the preset voice number and parameter values defining it as required by the Proteus sound generation architecture. Finally, a marker is needed to indicate that the end of System Exclusive data has been reached, achieved via a status byte with the value hexadecimal FF.

There's one more thing usually included in System Exclusive messages carrying lots of data - and that's a simple form of error detection. MIDI cables aren't the most reliable means of transferring data from one device to another, so some means of detecting transmission errors is needed. This is usually achieved via a simple checksum technique, for example summing the value of all data bytes, dividing the result by 128, and using the remainder as the checksum value. The sending device appends this value to the end of the data and the receiving device recalculates the checksum from the data it receives and compares it with the appended value. If the two agree, then the data transfer is deemed to be correct and the receiving device sends a positive acknowledgement (ACK) message to the sender. If not, an error has occurred and the receiver sends a negative acknowledgement (NACK) to the sender and transmission then has to be repeated until an equal checksum comparison is obtained.

UNIVERSAL OPERATIONS

The other subclass of Systems Exclusive messages cover Universal operations, and these are further subdivided into three types, known as Non-Connectable, Non-Realtime,

COMMERCIAL ST SOFTWARE!

MUGSHOT



Have some fun with your ST creating lots of hilarious 'mugshots' to entertain your family and friends!

- Extremely easy to use
- Full documentation
- Several Print options
- Great for the kids!
- Colour or Mono

Treat the kids for Christmas in a fun program that will keep them quiet for hours.

Now available from PAGE 8 at the LOW, LOW price of just £3.95

DON'T MISS OUT!

and Realtime. The first, named as such typically in educational applications, so won't be discussed further here, but we'll see examples of the other two shortly. In fact, I've already mentioned two Universal Non-Realtime messages - the ACK and NAK messages cited above. They apply to data transfers between any two devices, so even when manufacturer data, and hence are "universal" in scope.

When samples arrived on the music making scene a few years back they brought a new problem with them. The new material for sound generation wasn't just a bunch of pre-



rameter required by a particular synthesizer's architecture, but also included "digital recordings" of the sounds themselves. And guess what? Different manufacturers use different formats to internally store all this sample data, so transferring (a.k.a. dumping) sounds from Sampler X into Sampler Y (of a different make) doesn't usually work. It's possible to record Sampler X's sounds onto audio tape and then re-sample them into Sampler Y, but there's an unacceptably loss in sound quality using this method. The answer is to use a "Sample Dump Standard" (SDS) to allow direct transfer of samples in a common format from one device to another via MIDI, and this has been added to MIDI in a Universal Non-Realtime Systems Exclusive based function.

A typical dialog between two MIDI devices involved in an SDS transfer begins with a SDS dump request from the dump receiver to the dump sender. The dump sender responds with a dump header containing the basic physical details about the dump, such as number of bits in each sample, sample rate, sample length, loop points, and similar - enough to enable the receiver to reconstruct the sample in its own internal format. This is followed by a series of "data packets", each carrying 120 bytes of sample data plus appended checksum for error checking. The used ACK/WAN interchange takes place following the transmission of each packet as required to achieve a successful sample transfer from one device to the other.

All of these are Universal Non-Realtime Systems Exclusive messages, so the data is in a standard format by the time it's transmitted. But there's a slight snag. How does the data get into that format? The answer is that each manufacturer has to include appropriate code to support SDS within the operating system of the device. Because of the complexities made in its implementation, not all manufacturers have given their support to SDS, which means it isn't the panacea everyone was hoping for. But, it does work between devices that support it, and has proved very useful to

sample users needing this type of function.

MIDI TIME CODE

As mentioned in the last issue professional music, film, and video studios tend to use SMPTE timecode for synchronization together various pieces of audio, film, and video recording equipment. When MIDI gained wide acceptance these studios needed to integrate it into their existing working methods so it too needed to embrace SMPTE timecode, but MIDI wasn't designed with this in mind. The original solution was to build special synthesizer equipment which read externally generated SMPTE code and converted it in-flight to MIDI clock and Song Position Pointer messages. This was expensive, and also tedious to use as SMPTE knows nothing about tempo, so tempo maps of each MIDI song also had to be built and input to the synthesizer for writing and changing the song's tempos at the appropriate points. Research tempo changes for synthesizers or calculators were not easy to achieve. Also, MIDI had no means of directly handling the hours, minutes, seconds, and frames timestamp format that SMPTE uses, which made life very difficult for those wanting to synchronize MIDI soundtracks with SMPTE recorded film or video sequences. The answer was another MIDI extension known as MIDI Time Code (MTC) - again achieved via System Exclusive.

Actually, MTC isn't itself a timecode. It's really just a mechanism by which SMPTE timecode can be carried inside a MIDI system. And since there, any software transporting of MIDI events (e.g. as in a sequencer) can be made to work in terms of the same units and hence permit synchronization with external SMPTE devices, MTC has been added to MIDI in a Universal Realtime Systems Exclusive based function - plus a special message to the System Common class. These allow timing/positioning information in SMPTE format to be sent toward a MIDI system just like MIDI

clock and SMP messages, allowing the required integration of MIDI and existing professional audio-visual operations.

An SMPTE interface is still required between a computer system and external SMPTE equipment, but this tends to be less expensive and easier to use than the old pre-MTC synthesizing kit. It also usually incorporates the facility for stepping a tape track with SMPTE timecode, so this hardware provides a user with a self contained SMPTE facility when used with an MTC equipped sequencer package and multi-track tape recorder. The major US MIDI software manufacturers such as E-Mu (for Creator/Notator) and Steinberg (for Cubase) produce SMPTE interfaces to complement their sequencers.

MTC SETUP

Another feature of MTC is used for linking specific MIDI events to given SMPTE frame positions. This is similar to some ways to the "scorewriter" programs available for the RT, in that you compile a "cue list" defining events you want to happen at specific times. The scorewriter program is normally used to fire off musical samples or sound effects to perform a piece of music, but its MTC routine has a much wider scope. Not only can it trigger a sample, but it can also perform such tasks as manually controlling the operation of a multi-track tape recorder or CD player via MIDI messages. Of course, these devices need a suitable control interface to enable this to happen, but many items of studio equipment now have these fitted as standard or as an option.

Communication between the devices involved is handled by the MTC Setup facility, implemented via Universal Non-Realtime Systems Exclusive messages. Event timing is available to an accuracy of one hundredth of a frame and data sent can include strings of MIDI data for whatever purpose you require. This whole area is probably useful for

COMMERCIAL ST SOFTWARE

GEOGRAPHY TUTOR



Help your children with their knowledge of the world or expand your own universe

GEOGRAPHY TUTOR presents maps and statistical databases of all of the countries of the world!

- Colour or Mono
- Fully screen image
- Check population size
- Discover each country's size
- View National Anthems
- Our options - identify countries, capitals and more
- Compare countries to find which are Muslim or highly populated etc.
- Many more options

This excellent educational program is now available from PAGE 6 at the LOW, LOW price of just £7.95 - order your copy NOW!

amateur use, but is very important in the professional world. Also, it does mean that the answer was not just using a subset of the technology the professionals use then copied into the higher realms of MIDI as his talents, aspirations, and requirements grew. And there's no last thing for the budding recording stars of tomorrow.



ROUNDUP

COIN-OP CLASSICS

If you want to play classic coin-op games on your ST then check out the many titles available as public domains or shareware. The Page 6 ST Library features many impressive coin-op clones. In this issue's PD Roundup I will examine some of the best titles available. So let's boot up your ST and travel back to the early 1980s when games cost playability and 10p's were 10p's!

by
Stuart Murray

DEFENDER

Defender is the original shoot-'em-up. In it you had to protect innocents by destroying wave upon wave of alien crafts with your spaceship Defender.

For Defender there is **OFFENDER** (1985) - an almost exact clone of the arcade coin-op. The vector artwork, screens, laser beams, smart bombs, power-ups, lasers, pods, etc. are all there, along with digitized sound effects. The gameplay is a touch sluggish but certainly fast enough to keep you blasting.

CYBERNETIX is a fast, smooth and glossy version of Defender. The gameplay follows closely in that it doesn't feature the element of depleting innocents. The objective is simply to blast at it! However, there is the advantage of multiple power-ups.

Cybernetix boasts digitized sound and speech, colourful graphics like rotating 3D asteroids are particularly impressive, lots of different alien and killer gameplay impossible, freeze and chal-

lenging, this one will stay in your drive for ages!

ASTEROIDS

Asteroids holds great affection for me. I must have spent a fortune in ten penny games playing the original coin-op. The concept, like all great games, was simple. Destroy the swirling asteroids with your ship before they crash into you. The coin-op featured simple vector graphics with little more than a few "blaps" and "bangs" for sound effects. However, it was addictive to the extreme.

ASTEROIDS is written by some producers of the classic coin-op, Simstar Developments. This clone brought the memories flooding back. It is based loosely on the original. The jaggy, vector graphics and sparse sound effects create the "feel" of an old arcade machine. The gameplay is fun and addictive, although perhaps a little less fast early on. Even the enemy spacecrafts look like the originals!

PACMAN

As hard to describe this old friend! Pacman took the world by storm back in 1982 and is still a great game today.

PACMAN ST was featured the last time PD Roundup covered games (July/Nov 1993). It is the closest version to the coin-op and is an essential addition to your software collection!



For something a little different check out **PACMAN II** (1985). This is an amazing Pacman clone with 100 levels, digitized sound and surprises by the bonus level! There are six ghosts plus bonus appreciation by other creatures. The levels are creatively designed with each having a personality of its own, e.g. the level entitled "Doctor Who" features Daleks and "Enteravision" samplers. Other highlights include purple boards, secret maps and a rather hard "kill to later" rule for each ghost. The gameplay is smooth and responsive. The constant changes keep the game fresh. However it is Pacman with personality.

MRS MUNCHIE (1985) is a very good clone of Ms Pacman. It has all the original playability plus many extra features, including digitized sound effects, 20 different maze styles, 200 levels and a Top 10 highscore chart. There are many game characters. As well as Mrs Munchie there are six ghosts. The Marchimaster, Happy Dev, Lightning Bolt, Mean Dog plus lots of pick-ups (including the very useful Zap smartbombs). Joystick response is a little slow but not so as to affect the addictive gameplay. For young children there is a lovely Kids Mode featuring slower gameplay.

Another ghosts and lives had guys to worry about. Mrs Munchie is just another example of a classic coin-op title which is still as enjoyable today as it has always been!

SPACE INVADERS

As the main instigator of the coin-op revolution, Space Invaders is probably the best known coin-op of them all. It is well represented on the ST. Two of the latest versions are Space Invaders and ST Invader Invaders.

Edige UK's **SPACE INVADERS** is the closest to the original. It features two modes of play, Classic Mode

is presented as the original coin-op and Modern Mode features sharper graphics. I liked the Classic Mode a lot - it plays just like the coin-op (except the missiles travel faster) and features almost identical presentation, including the trailer design, space-ships, bases, etc. It's like being back, within the realm of Space Invader machines again!

ST REVIEW INVADERS is a colourful version. Animated aliens and a more ground level create a "funny" feel to the game. There are also some digitized sound effects. Very playable.

GALAXIAN

Simstar Developments have also produced **GALAXIAN**, a clone of the original coin-op in which you had to fight off waves of invaders which swarmed at you in formation. Galaxian was always a tough game to play - much more so than Space Invaders. You had to carefully maneuver your ship to avoid the swooping aliens. Also, you could only fire one missile at a time. This made pinpoint accuracy a necessity.

Simstar's version is as tough as ever. It has all the elements of the coin-op (even the original title design is displayed at the main screen). Be sure to remove the bottom border of the screen (use the Options menu) as this gives

you the full play area.

For another version of Galaxian check out **INSECTROID**. This is a music version! The style is different, you must shoot waves of scanning insects. There are many different types of insect (both big and small) and sampled sound effects are used to good effect. Features: artwork!

ROBOTRON

Robotron was a fast action arcade game in which you had to defend the human race against the Robotron aliens. This involved racing about the screen reacting to the screen reacting to the screen reacting to the screen of Green's, Halls, Electrodes, Prags and Spheroids. The gameplay was a bit!

In 1981, Jeff Minter decided to create the definitive version of Robotron. The result was **LLAMATRON**, which is described as, "90% ultra-violence in its very control". Llamatron is packed with sampled sound effects. There are screens, explosions and armed sound effects! The gameplay is pure Jeff Minter! You control a "really hard-knuckled" laser-spitting beam. The bosses have been replaced with sheep, horses, comets and giant! The enemies are now Coca Cola cans, hot-air balloons, hamburgers, etc.

Even some original Space Invaders make an appearance! Add in this lot of power-ups

and you have a real cracker of a game!

The ultimate objective of Llamatron is to destroy the Core Terminal (level 99) and get to Lord Illusion on level 100. Along the way you'll experience software programming at its best. Llamatron is Robotron gone crazy!

CENTIPEDE

Master Developers have also authored a version of that 'king of the trashball' coin-op, Centipede. Back in 1982, the 10y's were flailing and the trashballs cranking, whenever Centipede was in the arcade. Centipede was basically Space Invaders in

the garden. Instead of killing aliens, you had to kill centipedes, scorpions, spiders, etc. It was faster than most shoot 'em ups of the time and very addictive to play!

Master's **CENTIPEDE** (1MB) is a very professional piece of programming. It captures the whole feel of the arcade coin-op. The action is smooth and the presentation is polished. Great stuff!

AND THERE'S MORE...

Check the Page 6 ST Library for details of more classic coin-ops. You can never have too much of a good thing!

ROUND-UP RATINGS:

OFFENDER (1MB) (ST862)	83%
CYBERNETIX (ST863)	84%
ASTERIODS (from ST740)	87%
PACMAN 5T (ST815)	88%
HACMAN II (1MB) (ST840)	88%
MRS MUNCHIE (1MB) (from ST804)	79%
SPACE INVADERS (from Budget 24)	82%
ST REVIEW INVADERS (from ST888)	74%
GALAXIAN (from ST888)	82%
INSECTROID (ST860)	70%
LLAMATRON (ST860)	96%
CENTIPEDE (from ST888)	80%

All disks are available from the **PAGE 6 ST Library** - check the latest catalogue or website or phone 0785 218928 for further information

Page 6's New Atari User

contact ... contact ... contact ...

FOR SALE

8008 (SYSTEM) 8008, 1980 Disk Drive, loads and loads of games, cartridges, magazines and books. All good working order. £75. Tel. 0506 437990

4-BIT SOFTWARE: A collection of around 240 disks, cassettes and ROMs (all genuine originals). Please write for extensive list to Paul, 17, Spring Road, Clifton, Shafton, West Yorkshire SO17 5PG

MICROPROSE ST GAMES: P-19 Death Fighter and Formula One Grand Prix, both originals in 'as new' condition. Best offer will be accepted. Write to Paul, 17, Spring Road, Clifton, Shafton, West Yorkshire SO17 5PG

WANTED

ADVENTURES: For the ST or XL02, any of the following - Spelldrifter, Beyond Dark, Plundered Hearts, Webbringer, Moonmist, Leather Goodies, Mid Frontier Voyage, Phantail or Suspended. I can offer some great ST and XL02 titles in return. M. Simson, 7 Alceston Lane, Wellington, Tel. ford TF1 2LT, Tel. 0952 841262

WANTED

MAGAZINES: If there someone in the UK who is willing to help me to complete my collection of PAGE 6 magazines? I only need issues 1 to 8 inclusive. Good price and postage paid. Could also swap for other magazines (MUT, Asti, Use or other issues of PAGE 6), hardware (eg. The Alan Vega Box), or original software (eg. ROM, disk or cassette). Please get in touch when you wish and make an offer to: JOHN VAN DER SPONG, Shafton Lane 1, 2004 CG, Shafton, The Netherlands

FREE TO SUBSCRIBERS

The **CONTACT** columns in free of charge to subscribers who wish to sell their equipment or contact other readers. Space is limited so we request that entries be kept as short as possible. Excessively long notices may be heavily edited or ignored. Next year **CONTACT** section on a separate sheet of paper (not as part of a letter)

CONTACT, PAGE 6 PUBLISHING, STAFFORD, ST16 1LR

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP

PROGRAM LISTINGS

As most program listings would take up several pages of **NEW ATARI USER** we no longer publish those listings within the magazine. The programs are available ready to run on the Issue Disk which is available for each issue, details of which are found on the **DISK, BONUS** page. If you prefer to type the programs in yourself, every listing, complete with **TYPO** codes, is available to subscribers free of charge. Either drop us a line or telephone and ask for the listings you require quoting the issue number and the title.

Write to **LISTINGS, NEW ATARI USER, P.O. BOX 54, STAFFORD, ST16 1DR** or telephone **0785 218928**

Page 6's New Atari User