8:16

The Alternative Atari Newsletter

£1 50 | 2nd Quarter 1992 | Issue 15

ATARI

BAPAUG

3D Models on the Atari Classic 8-bit

Ever wondered if those Lynx Accessories are worth it?

Yes. Then find out inside.

Plus:

- Show Reviews
- NET_News
- Software Roundup
- Notice Board
- User Group File

Gralin International

8bit Hard Drive Interface £99.95

The K I Hard Drive interface will allow you to connect a 20MB SCSI drive (not supplied) to your Atari XL/XE computer. It comes complete with the MyDOS disk operating system and can also be used with SpartaDOS. To complete the system you will need to purchase a PSU (3watts minimum) and cables. XE users require the XE Adaptor board.

Hard Drive Interface .....£99.95 XE Adaptor Board £15.00

Gralin's Product Line ...

MidiMaster II £29.99
SIO-MIDI interface for XL/XE computers. Re-designed hardware, with improved reliability. Software supplied on disk. Requires cables for connection to MIDI keyboard.

Replay Sound Sampling System £34.95
Sound sampling cartridge, that allows you to play of sampled sounds from within your programs. Software includes easy to use samplers DigiDrum & DigiSynth.

DigiDrum II £5.99
Improved version of the DigiDrum software supplied with Replay. Now load your own samples & kits.

Datari Serial Interface & Multi-Viewterm ...£29.99
SIO-RS232 interface complete with comms software.

Turbo 816

16 bit 65816 CPU Upgrade for Atari XL

This upgrade replaces the 6502 within your Atari XL with a 65816 CPUwhich will add 16-bit working registers, a 24 bit address bus, numerous new addressing modes and instructions (available to new programs written to use them) while maintaining compatibility with existing hardware. Kit includes Turbo OS PROM (which can be installed to replace old PROM or on switcher board such as RAMROD XL to maintain old OS for full compatibility), Turbo 816 adaptor board, CPU ribbon cable and installation guide on disk. Disk also includes support information on theTurbo-816 expansion bus, memory map and Xfer tables and function calls along with MAC/65 compatible macros for 65816 instructions, MAC/65 include file and several example files. Also available; memory upgrade cards, Turbo-Calc cartridge based spreadsheet (also compatible with standard XL/XE), Turbo-Clock internal real time clock with 32K battery backed SRAM, Alf-Assembler for writing 6502/65816 compatible code & source code for graphical operating environment (Turbo-View).

Prices for other items.

Turbo-Clock, + SRAM.....£47.50
Turbo-Calc £19.95
Turbo-View/Calc Source Code ..£29.50

Special Launch Price. £80.00
including free ..... Alf-Assembler
(Normal price: £99.95)

64K Turbo-SRAM £47.50
256K Turbo-SRAM £95.00

3-D Modeler for Atari XL/XE

ChromaCAD 3 D Model Builder 91 .....£24.95
With ChromaCAD Model Builder you can build any 3-D model of your dreams. Start at the bottom and draw the contour lines of the model as you work your way up. Supports computer assisted drawings of lines, circles, arcs. Displays models in contour line form. Manual is 136 pages. Requires 48K Atari.

ChromaCAD Surface Shader XE91 .....£24.95
Display models produced by Model Builder program in surface-shaded format from any point of view, using upto 3 lights. Lights can be individually varied in intensity and individually set to strike the model from any direction. Up to 15 models can be individually oriented in 3 D space and displayed together to produce one compound multi-model scene. Program also supports negative, mirror and stepped zoom rendering, automatic clipping, highlighting, ambient lighting and stable viewing of models. Manual is 69 pages. Requires 130XE. Comes complete with Model Disk #1 (contains 10 models) and stereo 3D glasses.

Come and meet us at the 35th Longleat Amateur Radio Rally Sunday 28th June 1992
Longleat House, nr Warminster Wiltshire
Other attractions include a craft fair, Country Park and the lions
Bring the family for a great day out

1st XLent Word Processor £25.00
A full featured, friendly and fast word processor. 1st XLent WP uses a joystick and icon interface for unprecedented ease of use. Also has toggle between full-screen working and a 80-column print preview to see what your document will look like when printed.

Rubber Stamp £15.00
A collection of XLent creative utilities that let you build a library of high resolution icons, includes converted Print Shop icons. Create up to 4 icons at once, and use the only 16x16 character set editor for your Atari. Control the height and width of characters to get 32 different character sizes. Print upto 99 graphic labels with label printer. (Disk only)

Page Designer £15.00
Allyou really do is lets you plan an 8 1/2" x 11" page on your screen and then print it. Mix text, graphics and fonts for two-column newsletter. Two text modes; 40 column allows an Atari character set; 80 column puts twice as much information on the same page. (Disk only)

Typesetter £20.00
Design freedom to create letterheads, posters, title pages and more. Use the joystick or keyboard driven sketch pad to create and place clip art, logos and graphics anywhere on a page. Lets you control your printer, practically down to every dot on the page! (Disk only)

Blazing Paddles £15.00
Excellent drawing program that supports joystick, light pen, touch tablet and paddles. Features include all the general drawing tools–lines, box circle, etc plus the ability to mirror areas, scroll the screen with wrap round, add text, use defined shapes. (Disk only)

Super Data Base 1 2-3 .....£35.00
Imagine the possibilities with a software package that write other stand alone software packages! Super Data Base 1 2 3 is so versatile that its different applications are virtually limitless. Menus are used extensively. Applications that can be developed include inventory, sales analysis, customer and personnel files, invoicing, mailing lists and much more! Once your application is produced, Super Data Base 1-2-3 itself is put away and the new application program is used. When a new application program is needed the Super Data Base 1-2-3 disk is brought out to write it! (Disk only)

Bookkeeper Kit & CX85 Numeric Keypad £19.95
Powerful accounting system for non-accountants. Produce balance sheets, monthly year-end or on demand profit and loss statements. Generate general ledger reports, customer/vendor lists and more.

Cables

850/P.R.Connection->Printer ... £9.00
850/P.R.Connection->RS232 ... £6.00
SIO Cable £4.99
Joystick Extension Lead £2.99

Memory Upgrades

1-4MByte for 800XL, 65XE or 130XE (please specify model).
Without RAM chips £49.95
With 1M Bytes RAM £85.00
256KByte upgrade for 800XL, 130XE compatible.
Without RAM chips £24.95
With RAM chips £39.95

Operating System Upgrades

RAMROD XL board + OSNXL £34.95
Blank RAMROD XL board (ideal for Turbo-816 upgrade) £14.95
80 Column OS Chip with WP & Comms software £22.95

Atari Technical Reference Notes only £22.50

Atari ST Software

Geography Tutor £12.50
Mugshot £7.99
Xformer Interface £19.95
Atari 8bit emulator for Atari ST complete with cable for connection of 8bit disk drive. Software now includes utility that allows you to use 8-bit drive as an ST drive.

MicroPrint Parallel Printer Interface ..£31.95

5ft cable. Connects to serial bus. Compatible with all software.

Music Software

Guitar Wizard £14.95
Music Construction Set £12.50
Song Writer £9.99

Service Manuals

850 i/f Module (Atari) £19.95
1020 Plotter (Atari) £14.95
1050 Disk Drive (Atari) £24.95

Lynx Software

Serpyard Dog £28.49
Slime World £28.49
Awesome Golf £28.49
Checkered Flag £28.49

Cartridges

Archon £5.95
Barnyard Blaster (Requires Lightgun) ..£5.99
Battlezone £5.99
Blue Max £5.99
Deluxe Invaders £6.49
Moon Patrol £5.99
Galaxian £5.99
Missile Command £3.99
Pac Man £5.99
Pole Position £5.99
Fight Night £5.99

Adventure Creator £14.95
Grandma's House (Disk) £9.99

Ordering Information

£1.50 for orders under £50.00. Overseas P&P extra. Cheques / POs / IMOs payable to Gralin International. Above is a selection from our product guide + new items. Please send all orders to Gralin International, Dept E1, 11 Shelbo Road, Parkstone, Poole, Dorset, BH12 2BN

Free Product Guide Available

Who to blame!:

Colin Hunt ..... Editor
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Ferndown, Dorset BH22 8RE

Please send ST to Paul and all the rest to me (Colin).

We are currently looking for an 8-bit Editor. If you are interested please write, including some background information. You don't have to have had any experience as an editor, but you will need lots of commitment.

8:16 is produced by the 8:16 SIG within the BaPAUG for the enjoyment of everyone who loves their Atari computer

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If you can send articles/letters electronically we can also be mailed at the X.400 ID. (C:GB, ADMD:TMAIL.UK, O:SPRINTINTL, PN:Colin, SN:Hunt) If you understand it, you'll probably know how to use it

This issue of 8:16 was produced using an Atari 130XE, 1050 disk drive, 520STFM (fitted with 2MB Xtra RAM), Mega 4, SM124 monitor, Quantum 1M external drive, Reference 100 harddisk, Apple Macintosh SE, Deskjet 500 and Laserwriter Plus printers. The software used was AtariWriter Plus on the 8 bit, 1st Word Plus, Gem Kermit, Timeworks Desktop Publisher, Pagestream V2.1 and Xformer II on the ST. Microsoft Word, MacDraw, Mac Kermit and Aldus Pagemaker Version 4 on the Macintosh

Files are transferred from the 8bit to the ST by directly reading the 8bit disks using a 1050 disk drive connected to the ST printerport and saving the files on a ST disk with help from the Xformer II software. Standard old Kermit is used to transfer these files to the Mac (where needed)

The opinions expressed within 8:16 are those of the authors and are not necessarily held by the BaPAUG.

The BaPAUG is a non profit making organisation.

Copy date for the next issue of 8:16
(cover 3Q92)
is 25th July 1992.
Issue date is 27th August, 1992

Sorry for the delay in producing this issue of 8:16, but we were short of articles and took a long time deciding if we should run with only 24 pages, or wait for more material.

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Three pages of hints and tips for the major game releases on the Atari Lynx handheld entertainment system

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Mega NET_News this issue with info on PD C compiler, laser printers and the 8-bit, history of Atari, un-documented 6502 op-codes, 2600 Connection and a lot more
Compiled by Colin Hunt.

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Ever wondered if those Lynx accessories are worth purchasing. Well, the wait is over as Thomas reviews them all
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Your article could be listed within the Contents list of the next issue of 8:16. So why not send it in.

8 Bit Articles ST Articles

The Bournemouth and Poole Atari User Group is a member of The Association of Atari User Groups.

Notice Board

Deskjet 500 Printing Service

We have recently been advised that a printing service is available from Paul Cooper using the Deskjet 500, and supporting Timeworks DTP, STWriter, 1st Word and Write On. Prices are 25 pence per page for Timeworks and 10 pence per page for the WPs. P&P is extra at 25 pence per 10 pages.

For further information contact

Paul Cooper
432 Milwards, Harlow, Essex CM19 4SR
Telephone (0279) 626023

Competition #2 Winner

Yes we had a winner for out last competion. Yes, it was too hard we only had the one entry However as the person in question got ALL the tangauges right it has been decided to give him both the 8-bit prices And our winner is.

Simon Trew

The answers plus the bonus from competition #1 (yes we will print it one day) and a new competition will be printed within the next gripping installment of 8 16

Show News

Some information on up and coming computer (related) shows

28th June, 1992
35th Longleat Amateur Radio Rally
Longleat House, nr Warminster, Wiltshire
Organised by Radio Society of Great Britain, City of Bristol Group
Notes Grain International attending craft fair 120 trade exhibitors

10th-12th July 1992
The 6th International Computer Show
Wembley Conference & Exhibition Centre London
Organised by Westminster Exhibitions (081-549 3444)
Notes Many ST product suppliers and developer including the Association of Atari User Groups will be exhibiting At the previous show Atari UK were also present.

WANTED

Do you produce Atari related products?
Want some free advertising?
Then send a press release or information to 8 16 and we will pin it up on the Notice Board

Frontier Software Collapse

It is with great regret that we have to inform you of the demise of Frontier Software manufacturer and supplier of several ST hardware add-ons, including Xtra RAM and Forget Me-Clock.

For an update on the availability of these products see news item relating to Marpet Development.

AgendA ST Link

Within the April issue of the Newsletter of the AgendA Users Club along with the announcement of the AgendA Model 2 a versatile handheld computer on the lines of the Portfolio was the news of a GEM based program that allows you to easily transfer files between your Atari ST and AgendA The main features of the program include a backup and restore operation, the ability to run as an accessory or program the ability to use the AgendA as an interactive keyboard for use with most ST applications and the ability to search and review storage card files, and the AgendA files within them

For more details contact.

Microwriter Ltd, 2 Wandle Way
Mitcham Surrey CR4 4NA
Telephone 081 685 0300

Price Increases

For a long time now we have been trying to keep the price of 8 16 low However, we can no longer sustain the old price without effecting the groups other activities and have therefore, with great reluctance increased the price of 8 16 to a level that accurately reflects our costs to produce New prices are detailed below Please note that without these increases, this issue of 8 16 would of been the last.

8 16 Subscription Rates
Annual (4 issues)

U K	£6.50
Europe	£10 60
Elsewhere (sea)	£10 60
Elsewhere (air)	£16 80

8 16 Commercial Advertisement Rates

Full page	£55 00
Half page	£30 00
Quarter page	£18 00

Phone (0202) 677895 for details

Marpet Development Take Over Frontier Products

With the sad demise of Frontier Software, it is with pleasure that we can inform you of the continuous availability of their excellent product range, via Marpet Developments.

Marpet Development is a new business owned by Martin Walshand Peter Franklin, both previously employees at Frontier Software

The ST product range, including prices inclusive of VAT is:

Forget Me-Clock II £17.99

Printer-Q Parallel Printer Buffer Units:

- 128K capacity £58.74
- 256K capacity £70.49
- 512K capacity £93.99
- 1MB capacity £117.49

Xtra-RAM Atari ST Memory Expansion:

- Unpopulated £29.99
- Populated to 0.5Mbytes £49.99
- Populated to 2MBytes £99.99

Xtra-RAM Deluxe Atari STF/STFM & Mega ST Memory Expansion:

- Unpopulated £34.99
- Populated to 0.5Mbytes £64.99
- Populated to 2MBytes £109.99
- Populated to 4MBytes £179.99

Xtra-RAM STe Memory Expansion:

- 0.5MByte £29.99
- 2MByte £79.99
- 4MByte £149.99

Marpet Developments
Meadowfield Farm Felbeck Pateley Bridge North Yorkshire HG3 5ET
Telephone 0423 711671

Atari Explorer ON-LINE

Atari Corporation and Rovac Industries (publishers of the Z*Net Newswire and Z*Net Online Magazines) have recently announced a brand new online magazine for the Atari Community called **Atari Explorer Online**

According to the press release the goal of Explorer Online will be to serve the needs of all Atari users Portfolio Lynx ST/TT and 8 bit

"When we decided that we wanted to do an online magazine it just didn't make sense to completely re invent the wheel " stated Bob Brodie Atari s Director of Communications "In the online Atari community Z*Net has set the standard for quality and accurate reporting and it only made sense to invite them to participate in this new venture Ron Kovacs and John Nagy are among the finest most dedicated journalists on the Atari scene today The entire Z*Net staff will be part of the new team at Atari Explorer Online We re very excited that they have chosen to join us in making Explorer Online the best it can be "

The start of Atari Explorer Online also signals the end of the Z*Net Online magazine for the Atari ST Community Current plans call for Kovacs firm Rovac Industries to continue to publish their popular Z*Net PC and Z*Magazine publications "While there is a certain sense of loss with Z*Net discontinuing we re very excited that Atari has invited us to be a part of this exciting new venture" said Ron Kovacs Editor in Chief of Atari Explorer Online "Atari Explorer is one of the finest magazines on the market and it s very flattering to our efforts that Atari has chosen us to help them with their online magazine "

Cheshunt Computer Club

Since the last issue of P 16 was released we have received some more detailed information about the Cheshunt Computer Club.

Meetings are held on Wednesday evenings 7 10 pm within the VIP Suite at the Wolsey Hall Windmill Lane Cheshunt, Herts Admission is £2 at the door and there is no annual membership fee Meeting dates for the rest of this year are 24th June 22nd July 26th August 23rd September 28th October 25th November and the 23rd December

For more information contact the membership secretary Derryck Croker (0923 673719)

KE-SOFT Catalogue

Just before the last issue of Page 6 arrived on the door with the KE-SOFT advert, a copy of the KE-SOFT catalogue arrived with some very interesting titles **War In Russia** (Disk - £4), **QIX** (Cart - £3), **Summer Games** (Disk - £4), **Caverns Of Khafka** (Cass - £2/Disk - £3), **Orge** (Disk - £4) plus many more For more info write to **KE-SOFT** K Ezcan, Frankenstr 24, 6457 Maintal 4 Germany

Datalist

Convert Your Machine-Code Routines into BASIC Data Statements

By Terry Chamberlain

Machine-code routines are often useful when you are trying to get the best out of your 8-Bit Atari, either to speed things up, or to use facilities like Player Missile graphics which are not supported in BASIC. While the dedicated programmer might be prepared to write everything in machine code, it is usually much simpler to use BASIC to handle the everyday tasks such as keyboard input or text output to the screen, and reserve the machine code for the tricky, or time critical, jobs.

Having written your machine-code routine, however, and assembled it, there is no standard way with any of the available Atari assemblers to translate it into a form that you can incorporate immediately in your BASIC program.

DATALIST is a little utility to help you do this. It will take any machine-code object file in standard binary load format, and convert it to a series of BASIC DATA statements which it LISTs to a separate output file. You can then ENTER this file, with its DATA statements, directly into your BASIC program.

The inspiration for DATALIST came from Nick Higgs' HEXSAVER utility in "New Atari User" (Page 6) Issue 42. HEXSAVER didn't quite do what I wanted at the time, but the method fitted the bill admirably, hence the program presented here.

DATALIST is straightforward to use. Simply RUN the program and follow the on-screen prompts. You are asked first for the name of the object file; enter this in the form "D:FILENAME.EXT", place the disk containing the file in the appropriate drive, and press Return. Next enter the name of the list file for the DATA statements, the line number you require for the first DATA statement, and the increment for subsequent DATA statement line numbers.

The object file is then read in, you are prompted to put the disk to receive the output file in the drive (you can, of course, write to the same disk), and DATALIST then proceeds to generate as many DATA statements as required to hold your routine. Sixteen byte values are placed in each DATA statement, followed by a checksum. If there are less than 16 bytes left at the end of the file for the final DATA statement it is padded out with zeroes.

DATALIST ignores the first six bytes of the object file (the load address plus file length) and only converts the actual code bytes which follow.

Once the conversion is complete you have the option to quit or to restart the program to convert another routine. These options are also presented should the program trap an error, allowing you to try again.

To use the DATA statements in a BASIC program, load the program as usual and then ENTER the listed file produced by DATALIST. Assuming that you specified the correct line numbers, the DATA statements should then appear at the appropriate point in your program.

You can use a pair of FOR...NEXT loops to read the machine-code DATA values into a BASIC string (if the code is

```
1000 REM ****************************
1001 REM *                          *
1002 REM *          DATALIST        *
1003 REM *                          *
1004 REM *   Convert Machine Code   *
1005 REM * To BASIC Data Statements *
1006 REM *        With Checksum     *
1007 REM *                          *
1008 REM ****************************
1009 REM * Terry Chamberlain  Mar92 *
1010 REM ****************************
1011 REM
1100 DIM OF$(15),LF$(15),C$(24),R$(62)
,A$(16384)
1110 FOR I=1 TO 62:READ A:R$(I,I)=CHR$
(A):NEXT I
1120 DATA 104,104,104,10,10,10,10,170,
134,207,104,157,89,3,104,157,88,3,169,
84,157,73,3,169
1130 DATA 0,157,72,3,169,7,157,66,3,32
,86,228,16,4,192,130,208,13,160,207,18
3,73,3,133
1140 DATA 213,169,72,3,133,212,96,132,
212,169,64,133,213,96
1150 TRAP 3000
1990 REM ****************************
1992 REM *  DISPLAY INPUT PROMPTS   *
1994 REM ****************************
2000 CLOSE #1:OPEN #1,12,0,"E:":POKE 7
10,176:POKE 712,0
2010 POSITION 2,2:? " OBJECT-TO-DATA T
RANSLATION UTILITY "
2020 A$(1)=CHR$(0):A$(16384)=CHR$(0):A
$(2)=A$:C$=A$(1,24)
2030 POSITION 2,5:? " OBJ CODE FILENAM
E > ";:INPUT #1,OF$
2040 CLOSE #2:OPEN #2,4,0,OF$
2050 POSITION 2,7:? "DATA LIST FILENAM
E > ";:INPUT #1,LF$
2060 POSITION 2,9:? " START LINE NUMBE
R > ";:INPUT #1,L
2070 POSITION 2,10:? "LINE NO. INCREME
NT > ";:INPUT #1,M
2190 REM ****************************
2192 REM *     READ OBJECT FILE     *
2194 REM ****************************
2200 POSITION 5,12:? "READING ";OF$
2210 N=USR(ADR(R$),2,ADR(A$)):IF N>163
84 THEN N=N-16384:CLOSE #2:GOTO 3020
2220 A$=A$(1,N):CLOSE #2
2230 POSITION 3,14:? "INSERT OUTPUT DI
SC - PRESS <RETURN>";
2240 CLOSE #1:OPEN #1,4,0,"K:"
2250 GET #1,A:IF A<>155 THEN 2250
2260 ? CHR$(156):CLOSE #1:CLOSE #2:OP
EN #2,8,0,LF$:P=7
2390 REM ****************************
2392 REM *   WRITE DATA LIST FILE   *
2394 REM ****************************
2400 IF L>32767 THEN 3010
2410 POSITION 5,14:? "WRITING LINE ";L
2420 T=0:A=T:Q=P+15:IF Q>N THEN Q=N:T=
```

relocatable) or into a specific area of memory (if it uses absolute addresses) and then execute the routine with a USR statement. This is illustrated in the sample BASIC routine given below:

```
RESTORE D: E=0
FOR I=0 TO L: C=0
FOR J=1 TO 16
READ A: MC$(J+16*I,J+16*I)=CHR$(A): C=C+A
NEXT J
READ A: IF A<>C THEN E=D+N*I
NEXT I
```

where D = Line No. of the first DATA statement
E = Error value
L = Number of DATA statements - 1
A = Value read from DATA statement
C = Calculated checksum
MC$ = String to hold machine code
N = Line No. increment

If any DATA value is incorrect then the line number of the statement containing the last encountered error will appear in variable E at the end of the routine. The use of a checksum is really only intended to help someone who is typing your DATA statements into their own machine from a listing. DATA statements produced directly from DATALIST and ENTERed to your program will not contain errors!

DATALIST itself uses a machine-code routine loaded into the string R$ to read the object file into another string A$. It can handle object files up to 15K bytes in length. Note that this limit is built into the machine-code part of the program and cannot be altered simply by changing the size of A$. It should, however be adequate for the majority of applications.

```
I
2430 C$=A$(P,Q): S=LEN(C$): ? #Z;L;" DAT
A ";
2440 FOR I=1 TO S
2450 C=ASC(C$(I,I)): A=A+C: ? #Z;C ";";
2460 NEXT I
2470 IF S=16 THEN 2490
2480 FOR I=1 TO (16-S): ? #Z;ASC(CHR$(0
)); ";": NEXT I
2490 ? #Z: A=IF T=1 THEN Z510
2500 P=P+16: L=L+N: GOTO 2400
2510 CLOSE #2: POSITION 5,16: ? "LISTING
 COMPLETE": GOSUB 3100: GOTO 2000
2990 REM ***************************
2992 REM *      ERROR HANDLING     *
2994 REM ***************************
3000 POSITION 5,18: ? "ERROR " PEEK(195
) " AT LINE " PEEK(186)+256*PEEK(187):
GOTO 3030
3010 POSITION 5,18: ? "ERROR - LINE NO
 OUT OF RANGE": GOTO 3030
3020 POSITION 5,18: ? "ERROR " N " READ
ING OBJECT FILE"
3030 TRAP 3000: GOSUB 3100: GOTO 2000
3100 CLOSE #1: OPEN #1,4,0,"K:"
3110 POSITION 5,20: ? "Q=QUIT"
3120 POSITION 22,20: ? "ANY OTHER KEY",
3130 POSITION 22,21: ? "  TO RESTART"
3140 POSITION 35,21: ? " ";
3150 GET #1,A: IF A=81 THEN POP: CLOSE
#1: CLOSE #2: GRAPHICS 0: END
3160 RETURN
```

```
0100 ;*****************************
0110 ;*                           *
0120 ;*          OBJFREAD         *
0130 ;*                           *
0140 ;* Reads Object File into a  *
0150 ;* Specified BASIC String via *
0160 ;*    a Selected IOCB, and   *
0170 ;* Returns either File Length *
0180 ;*  or Error Status to BASIC  *
0190 ;*                           *
0200 ;*****************************
0210 ;* Terry Chamberlain  Mar '92 *
0220 ;*****************************
0230 ;
0240 *= $0600   ;Arbitrary Address
0250 ;           Code is Relocatable
0260 ;
0270 PLA        ;Discard No. of Params
0280 PLA
0290 PLA        ;Get IOCB #
0300 ASL A
0310 ASL A
0320 ASL A
0330 ASL A      ;Multiply by 16 for
0340 TAX        ;- use as IOCB Index
0350 STX $CF    ;- and Save
0360 PLA
0370 STA $0345,X ;Load ADR(A$) to
0380 PLA        ;- IOCB locations
0390 STA $0344,X ;- ICBAH and ICBAL
0400 LDA #$40
0410 STA $0349,X ;Set maximum buffer
0420 LDA #$00   ;- length to 16384
0430 STA $0348,X ;- in ICBLH & ICBLL
0440 LDA #$07   ;Load Command
0450 STA $0342,X ;- to GET RECORD
0460 JSR $E456  ;Call CIOV
0470 BPL BASEXT ;No Errors
0480 CPY #$88   ;Check for EOF Error
0490 BNE CIOERR ;- else real fault
0500 BASEXT
0510 LDX $CF
0520 LDA $0349,X
0530 STA $D5    ;Store actual number
0540 LDA $0348,X ;- of bytes loaded
0550 STA $D4    ;- in FR0 and
0560 PTS        ;- Return to BASIC
0570 CIOERR
0580 STY $D4
0590 LDA #$40   ;Set Return Value
0600 STA $D5    ;- = CIO Error+16384
0610 PTS
```

Articles Wanted

We are still very short of articles for future issues of 8-16, in particular for the Portfolio and ST.

Please help us to help you by submitting any articles on any computing subjects you are interested in - remember if it interests you it will interest someone else.

As an incentive we will provide two free issues of 8-16 for every article published.

Show Reviews

The Atari Canadian Exposition 92

An 8-Bit Perspective by Mike Jewison

Over the weekend of April 4/5 Toronto played host to ACE 92 the Atari Canadian Exposition, sponsored by Atari Canada had the Toronto Atari Federation. Having previously read Ben Poehland s review of the WAACE show in issue 14 of 8-16 I had no illusions about finding some treasure trove of long lost 8 bit hardware and software. I went in expecting the 8-bit pickings to be meagre at best and I was not disappointed. Or more correctly I was disappointed but not surprised.

Expecting that my most likely source for finding 8-bit kindred spirits was at the user group tables, I decided to hit them first. The host group for the show the Toronto Atari Federation (TAF) had selections from their large public domain library as well as a number of other goodies (obtained from Atari Canada) for sale. Another user group from Hamilton (just west of Toronto) was demonstrating someone s home built SIO2PC a shareware interface which allows you to use an IBM PC as a file server for your 8 bit Atari. I've built an SIO2PC myself so I was familiar with the device but many of the people stopping by the table had never heard of it and were impressed with its versatility and speed (it runs at up to three times the speed of a normal Atari disk drive).

Right across the aisle were Bill and Patte Kayl of Unicorn Publications publishers of Atari Interface Magazine. AIM is the only Atari-specific magazine to which I currently subscribe, and I had a number of short conversations with Patte about the current sad state of North American 8 bit magazines (I left whenever I started to create a backlog at their table). AIM is currently the only North American magazine offering an 8 bit Disk-of the Month and they had copies of their disk catalogues available for perusal.

The only commercial operation at the show which offered any 8-bit support was Best Electronics. Best is, in all likelihood the world s single largest supplier of hard-to-get replacement parts for almost any piece of Atari hardware ever produced. Brad Koda the owner didn t have a lot of 8-bit stuff at the show but I did have him send me a copy of their current catalogue. Anyone who owns an 8 bit Atari owes it to themselves to get a copy of Best s catalogue when I received my copy a week after the show I simply couldn t believe the quantity of parts he has in stock. [Best Electronics, 2021 The Alameda Suite 290 San Jose, CA 95126-1127 USA]

At this point I had pretty much exhausted the 8-bit end of things and just decided to cruise the floor for a while. Even though 8 bit support was pretty much non existent, let me say that for an ST/TT owner this was the place to be. A number of the big ST developers (D.A. Brumleve Codehead, Gadgets by Small, Clear Thinking ICD, Branch Always, Gribnif et.al.) were there and a number of them had impressive displays. Gadgets by Small was running their accelerator card in what they touted as the world s fastest ST. They had it running a graphics display which did look pretty fast, too.

Atari Canada had set up a huge hardware display. They had TT's, Mega ST's Lynx s, and even an ST Book. Many local resellers had excellent prices on their Portfolios. It s almost enough to make one wish they owned an ST (but not quite).

Probably the most disheartening aspect of the show was the display labelled "Atari History Museum of Computing". There, I saw a 400 800 810 1027 XE XEGS had XM301 most of which I still have and use. It saddens me somewhat to think that the equipment I use for most of my everyday computing needs (and which I might add, fulfils those needs admirably) are considered museum pieces by Atari. As 8 bit support continues to dwindle it becomes even more important to support those commercial operations which still give us the service we rely on. Let s see now where did I put that Best catalogue....

5th International 16 Bit Computer Show

Review by Michael Nyman

(Midland Amateur Radio ST Group)

With the 16 Bit Computer Show and the Computer Shopper Show both being held at the Wembley Conference Centre it is sometimes impossible to tell one show from another and it is inevitable that one should compare the two. The December Computer Shopper Show was a large affair taking up two halls and had much hardware as well as software on sale. The 5th International 16 Bit Computer Show which was held at Wembley between the 14th and 16th February was a much smaller affair taking up less than one hall. At the front was the usual amount of junk software and computer accessories but I must state that disc had risen in price and there were considerably fewer of them. The show was noisy and crowded and had little going for it, with perhaps the exception of the Association of Atari User Groups. Power Computers, City Beat, Gasteiner and Silica were there, but they are always there. However when one fought ones way to the rear of the exhibition one came across a large area with the Atari logo above it. This was Atari and also on hand were a large number of serious companies with serious products, including Hi-Soft, Titan Design Compo System Solutions and Copy Care just to mention a few. Atari had also arranged a number of small presentations from many people in the industry which ran at regular intervals. Two thirds of this area was taken up so with the rest being devoted to games machines specifically the Lynx. Not bad proportions at all. The advantage of this set up was not only that Atari had a large presence but that some of the serious companies mentioned above also took stands of their own which made it a very good Atari based exhibition. This, with the addition of a couple of the large PD libraries and the other companies mentioned in the beginning of this review made the show a very worth while visit for Atari fans although I wonder how our less fortunate friends who use other makes felt about it.

There were a few sad absences, the greatest of all was the ST Club, followed by Evesham Micros and finally Condor Computers. I am not really surprised about the lack of Condor as they have had troubles of their own more of which I will mention in the next issue of 8-16 when I will talk about Supercharger re-visited.

3D CAD Modeling on the Atari Classic 8-Bit

Bob Woolley (SLCC)

Reprinted with permission from Atari Interface Magazine February 1992

You know what I would like to do on my computer? I want to do one of those bouncing Fuji demos, only with the letters SLCC (San Leandro Computer Club) instead of a Fuji.

You know the demo I'm talking about – the Fuji Bonk one, where the Atari Fuji spins and bounces around the screen? They really did a nice job on that one – as the Fuji spins, each surface changes shade according to its orientation towards the incident lighting. And when it is perpendicular to the viewer, you can see the background through the openings in the Fuji!

On mine I think I'll have the individual letters rotate at different speeds and at an oblique angle. Maybe once in every two seconds or so I'll make the letters line up to spell SLCC ... Sound neat? No? OK so you do your own club's letters. Sounds too hard? You aren't an artist with a lot of time on your hands? Neither am I. But, I've got a copy of ChromaCAD.

I am going to refrain from referring to ChromaCAD as an outstanding program "on an 8-bit," since it is really in a class by itself on any platform. The producer of ChromaCAD, Marvin Seaman, states right in the introduction that he plans to port his creation to "all the more popular 16 bit and 32 bit computers." (When will he have time to sleep? This is a major piece of software.) While it may run faster on the larger machines, the form and function will be preserved across hardware implementations.

So, dust off the old 8-bit and take a fascinating trip into the world of solid modeling on your computer. When the TT/MAC/MSDOS version comes out, you'll already be a pro at this stuff.

Overview

First, let's try to present an overview of just what this program does.

Imagine any object sculpted in soft clay – a car, a computer, a can of Diet Coke even. Also imagine a thin shell applied to the clay, sort of a dipped ice cream cone effect.

Take that creation and run it through a giant egg slicer. You now have a quantity of thin disks that, once stacked in the proper order, form the original object. Carefully remove the clay from each slice, leaving the shell. Go around each slice and break the shell into small triangles – make them small enough so they are essentially flat. Record the location of the corners of each of these triangles in a list. From this list, you can now re-create the original object in three dimensions at any time.

> I am going to refrain from referring to ChromaCAD as an outstanding program "on an 8 bit," since it is really in a class by itself on any platform

That is basically what you do with ChromaCAD.

Your first thought may be – "You are going to need a lot of slices to make anything significant." You are quite correct. The slices are actually a series of connected triangular wedges taken from the outer surface of the object – one of the models supplied with the program has 8000 wedges! Get the idea?

You can specify one of six "Paints" for each triangle in your model, each paint being one of over 4000 colours, giving you an almost unlimited palette. When rendered, these paints will assume their calculated intensity according to the amount of light striking each wedge, producing a very realistic view of the original object.

So? Why go to all this trouble? Just take a picture of the thing and slap that in one of those nice colour scanners and display it on the screen!

Exactly. But where do you hold the camera when you take the picture? What size lens? Where do you place the lights? How strong do you make the lights? How do you change colours, shades, and contours? More to the point, where do you get the object to begin with?

The whole focus of this program is to create and render a three-dimensional object in any context you wish. All of the preceding parameters (light placement, colours, etc.) can be specified during ChromaCAD screen generation. You can even generate a view of the object as a stereo/3D image to be viewed through a pair of red and blue 3D glasses supplied with the program.

Once you have the thing defined, you can look at it from any point of view, even from inside the object itself! And if you get tired of looking at it, you can print it on your favourite printer (or, possibly at some point, your camera recorder, plotter or whatever). This is not a program that automates the drawing of an object, it is a program that creates an object in three dimensions. Two programs, actually.

Model Builder and Surface Shader

The Model Builder is used to enter the co-ordinates of the object using a joystick and the keyboard and will run on any Atari. The Surface Shader is used to produce a view of

these models with the proper shading and perspective and requires an extended memory machine (like a 130XE).

Common to both programs are the menu system and command structure. Each program is available separately and comes with its own manual. Both manuals are somewhat intimidating since they contain extensive examples and require a significant time investment. But, data again, these are not trivial programs (you will produce quite a few blank screens until you get the hang of it). Do yourself a favour and go through the manual carefully it does have everything you need in it.

Features

Features? Sure Each model may contain up to 158 slices or lines, as Marver refers to them The figurine you may have seen in advertisements for ChromaCAD has only 50 lines, so this is not as limiting as you may think. The detail in each line is only limited by the available disk sectors, up to 1040 sectors on an Enhanced density disk Again, the figurine in the ads is only around 450 sectors Both quantities (lines and sectors) are displayed in the program, so you always know where you stand

The construction volume is a cube 18 000 units on a side, which should be sufficient for those larger – than life projects! One command presents you with an orientation view that will give you some idea of where you are (literally) without having to wait for the actual object to be drawn.

Wait? Uuuuhhhhh Yes. In the Builder you can request a wire frame view of your model which can take a little time in a complex structure In the Shader you get a fully shaded view – which can take a whole lot of time (30 minutes for the figurine) Give it a "Q (quick view) before you commit yourself to a full rendering. Oh, boy A 160x200 four colour screen Wow...

Now The Shader allows four different modes of showing your model You can use a six colour (dithered) artifacting mode GR 15 GR.8 and a stereo mode for 3D In each mode the program can flip between as many as 8 screens (all of the same view) to simulate 8 luminance levels. This effect is not too pleasing to your eye since there is considerable flickering, but a camera will average these screens very nicely thank you (Marver is a photographer by profession)

In addition the printer drivers will produce much higher resolution than is available on the 8-bit screen including a graded intensity using a worn ribbon...

Sample output from the soon to be released printer driver

Complex Constructions

Internally... screens are generated using model data files and a Menu There are ten menus on each data disk, all of which can be combined into one composite screen By that, I mean ten different models from ten different points of view can be drawn as one construction the ChromaCAD title screen is a good example of this. In this way, simple objects can be combined to form other, more complex structures – although multiple disconnected models can be built on a single menu if you wish

Just how is this accomplished? In the Model Builder you begin with a BaseLine – your starting point What you are doing here is drawing the outline of the first slice of your object This can be a single point if you like or the complete shape of the object...

The cursor is moved to the first data point with either the joystick or a menu entry (of the X and Y co ordinates) and the point is plotted with the period key The rest of the points are plotted in order around the desired outline where they eventually close.

This BaseLine is then stored and the next elevation is plotted (referred to as the HighLine) During HighLine generation, the outer surface of the model is defined as a sequence of triangles whose vertices lie in both the LowLine and the HighLine

Each triangle is tagged with one of the six surface paints – at generation time. These paints are similar to the colour registers used in the 8-bits, in that the actual values are generated through indirection they can be changed at any point (even after rendering. I'd like to see how Marv is going to do that on a VGA screen! [grin])

Of course the builder program does not generate solid views of your model. Whenever you want some idea of what your object looks like, you can orient yourself in space and request a wire frame view

The menu entries used for these construction views can then be stored and used (after adding colour and lighting information) directly in the

Shader program — a much faster path to setting up your output than experimenting in Shader.

In a simple construction (with vertical sides) tools are available to easily complete the HighLine data points. Straight line and circular/elliptical segment macros are also supported in the program. This HighLine/LowLine process continues until the complete object has been defined and you are ready to move into the Surface Shader program.

Fun with Shading

If this sounds like a lot of work, I agree. The Builder is where you do the bulk of your work. The Shader is where you have all your fun.

Once the model is "built," you move to the Shader program. While in the Builder, the ten available menus can be set up to display views of your objects. If these are "ready to go," all you must do in the Shader is specify the paint colours, lighting and mode. Or you can generate all new viewing sequences and positions.

The available colours can be changed after the view is generated, while the lighting and mode are fixed during rendering (although you can request fewer screens in your current mode). The ability to change colours is important since each time you request a new screen to be built takes many minutes. Not much work to Shader, just a lot of waiting.

The end result is a screen to look at. Really, a screen to photograph. For those major projects, Marver has some photo-specific features, such as tiled output and timed display.

Tiled output just breaks the object view into as many as 81 screens and presents them one at a time. Just so you don't have to stand there for half a day to take 81 shots, you can have the joystick ports snap your picture for you.

Timed display compensates for the lack of precision in some cameras when using long shutter openings (I'll take Marver's word for all this). Instead of opening the shutter for a proper exposure, ChromaCAD will display the screen for a fixed time (leave your shutter open continuously).

My first thought was that the figurine in the ads must be a tiled shot — it isn't. Wow. I'd sure like to see one! I have seen the figurine printed on dot-matrix. It looks great, but you can judge for yourself as I've included a sample printout of the figurine.

Opinions?

This program actually does what you expect. I think I spent some time expecting to find the "hook" in this software and just never did. Not that this is The Program to End All Programs. You know what I mean — you hear about a program that says it does this, that, and everything else, but when you go to do something on it, it just doesn't meet your expectations.

This is a 3-D model building and rendering program. That's what you are going to get. Not little, dinky, simple models. Big, complicated constructions. Real stuff. It is absolutely amazing. Slow, but amazing!

What would I want to change? It would be nice to know how far along the program is while it is generating (rendering) a screen. (The screen is blanked for speed.) The processor has to calculate the visibility and intensity of each wedge in the model, so total time is dependent on size, complexity and orientation. You will learn from experience what to expect, but some indicator would still be nice.

I never had any kind of lock-up on the system, so just be patient. It's going as fast as it can. I did try an OmniMon chip on the program, which has much faster math routines. No difference at all. Marver wrote this in Forth and uses his own integer math (sigh).

As it now stands, the programs do not contain a printer driver or a way to save a screen as a DOS file. Both of those routines will be available soon (I have seen the printed output already) and will probably be PD. In the meantime, I could pull out a single view using OmniMon to store $4150-$5FFF as a GR.15 screen. From there, I can do my visual demo or print with existing utilities. [Ed. These utilities will be on an upcoming AIM 8-bit Disk of the Month as soon as they are available.]

Marver has been very responsive to requests for these add-ons — he has already modified Shader to run on a Rambo upgrade. Under Rambo, you can only flip two screens instead of the normal 8, but this is a limitation of Rambo, not ChromaCAD.

It would also be nice if a number of constructions found their way onto the boards as PD. Oddly enough, this series of programs is the result of a bet between Marver and his son. Four years after the wager, Marver won his $5. I think I'd like to make a few bets with Marver myself!

THE HOME COMPUTER

Over the last ten years, the computer has established a permanent place in the home, and the number of home computer users increases dramatically every year.

Many people have yet to tap the full potential of their home computer and are constantly looking for new ideas and applications.

The most popular systems have proven to be the ST, Amiga and PC, and at the International Computer Show, you will be able to see, try and buy a whole range of products and services which will help you to maximise your use and enjoyment of these machines.

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What about Multi Media? It is now possible to create, reproduce and store sound using your home computer thus enabling you to unleash your own musical creativity and improve your musical performance. Video and visual interfaces are another rapidly [illegible] change your home videos.

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Atari Software Roundup

Written and put together by T. Holzer

Lynx

More carts than you can shake a stick at:

Rolling Thunder

Ace Atari coin-up conversion.

Switchblade 2

Gremlin Graphics hit the Lynx. Remember 25 years ago they used to support the XL?

Rod Ace

Game about Rod Stewart and how he became an ace singer. (No, I don't think so. Ed.)

Dracula

Digitized graphics taken straight from the film classic will make this cart probably a classic as well.

Battlezone 2000

Revamped stone age coin-op with filled vector graphics.

Dino's Quest

Help your cave mate along the way in this platform game.

Road Riot 4WD

Another racing title, play along with comlynx and friends.

Golf Challenge

One more for the hole in one.

Bad Boy Tennis

Ivan Lendl in one of his better moods.

As usual: Atari Corp. £29.99 each. Other titles available soon include: Basketbrawl, Ramart Returns, Hockey, Hydra, Kung Food, Lynx Casino, Pinball Jam, Rampart, Shadow of the Beast and Steel Talons.

PS. Winners don't use Game Boys !!

VCS

Some older titles; all available now.

Ikari Warrior

From coin up of the same name. Simultaneous 2-player option.

Xenophobe

I wonder if this game is like the Lynx version (full screen) or as in the arcades (split screen)?

Atari Corp. .. £9.99 Each

PRO

A few carts this time. Classic stuff!

Ninja Golf

Did I hear this one right? Golf playing Ninja's??

Alien Brigade

Okay, not really new, but a fantastic, if not the best light gun game.

Crosshow

Another light gunner. Better than the 8 bit cartridge of the same name.

Barnyard Blaster

One more for the gun. Weakest of the three, but still good.

Again, all Atari Corp; £12.99 each.

PS. Did you read the article in the magazine. Page 6 about light gun carts for the 8-bit? You thought that was good? Wait until you read about these three gun carts in a future issue of 8 16. I'll also be doing a comparision with the 8 bit and VCS titles of these games and I will take a (quick) look into the world of Nintendo and Sega gunner games.

XL/XE

Nothing what-so-ever. However, I've been told that Atari UK do have about 10 completed games they are trying to sell the rights to. If only they had the faith to release them themselves. Dreams, dreams and dreams.

The End (The Doors)

ST/TT

As expected loads of titles, including:

Magic Storybook

Written in STOS, this is an excellent educational program from Soft Stuff. Look out for review in future issue of 8 16.

Timeworks Publisher 2

Updated version of Publisher ST with new fonts, printer drivers and features, while maintaining the style of the original. Several pages (including this one) within this issue of 8 16 have been produced with this and printed on a Deskjet 500. Review within future issue.

Lynx Hints & Tips

CRYSTAL MINES 2

I know this a brand new game But we thought you might want the codes, for this frustrating level game

1 TSLA	2 UEPT	3 MTFQ	4 IRTB
5 ZCXP	6 DPRX	7 OIGT	8 YHYR
9 VYHK	10 ITC	11 QCFK	12 BXNG
13 MOXA	14 IDWJ	15 RFVC	16 GHSI
17 SKHU	18 TRFN	19 LQRE	20 AURV

STUN RUNNER Level 12

At the beginning of the level, go up the right hand side of the tunnel and you will get a boost. Continue to stay on the right (as high as possible) and you will get a warp to level 12.

NINJA GAIDEN - Level 2

At the beginning of the level there will be three red topped men and a man with a log If you dont want to bother killing them, go straight to the bar and get on it. THANKS TO HARRY AND ALEX MARSHALL FOR THE ABOVE TIPS

BILL AND TEDS

A time paradox occurs immediately you enter Rome. To avoid this replace the staff note where you found it, by the pillar in egypt.

RYGAR Final level

How to defeat the Gameboss To successfully fire upon the Gameboss you have to go quite near to him, jump up and shoot him in the head/shoulder area This should be done extremely quickly When you are this close to him, he will jump towards you. You must react quickly and run away Then come back and do it all over again After about ten times he should drop dead and you will be rewarded a lovely bonus. Finally a congratulations screen appears. THANKS TO JAMES O DWYER FOR THIS TIP

CALIFORNIA GAMES

Sprinting gives you the highest score, so try and remember not to jump much.

ROADBLASTERS

Start on the first level, hold down button B and drive along the left hand shoulder of the road Hit the first tree, and you will be greeted with a Digitized picture of one of the programmers. By pressing Option 1 you can select which level to start on Press Option A to continue, and you will have to complete Level 1 before starting on your selected stage. If you drive along the right hand side, a digitized picture of the co programmer will appear If you complete Level 50, you will hear some wicked music. THANKS TO DALE BIRKETT

A.P.B

The best strategy is to obtain your quota first, then pick up money bags When your quota is full, everything is double points If you pick up a $5000 money bag, you get $10000

XENOPHOBE

Did you realise that every item you pick up is worth 1000 points. At the end of each Level, 1000 points is given for each item left in your inventory

GAUNTLET 3

Did you realise that there is three different endings to Gauntlet 3 the third encounter

CALIFORNIA GAMES

Interested in riding the pelican in the surfing game? Run your last man off the bottom of the screen, a few seconds before the time runs out. The pelican will fly across the screen, and until your time runs out your man will drop out from the top of the screen and land on the pelican. Sounds like fun.

GATES OF ZENDECON

Ever wanted to know about all the strange creatures in Gates of Zendecon? Well you asked for it.

Gunners little guys on towers that shoot at you.
Hearts large realistic hearts that release blood cells.
Shark blades unkillable pocket knife little creatures
Saucer flakes a flying saucer full of little flakes.
Mortars mobile launchers.
Programmers – digitized faces, easy points
Flies nasty little things that just get in your way
Lettuce Tossers vines that throw up lettuce and grab at you.
Mists multi coloured mists that can t be killed.
Dust clouds nasty brown clouds that pull you down.
Robots – big saucers with arms to grab your ship.
Smashers – large metal plates that must be passed when open
Meteors small balls of fire that fall at 45 degree angles.
Torpedoes short torpedoes that move horizontally.
Lifes – like John Conway s life game
Platforms small flat boxes with lights that bounce up and down.
Spaceships as in flash Gordon, shoots MIRVS
Turtles – with helicopter packs and torpedo launchers
Rockets long thin rockets that fly horizontally
Missiles little fat missiles that travel horizontally.
Death blossoms – nasty plants that breed unkillable jelly things (technical term)
Men o War similar to the sea creatures, must shoot tops
Drippers small worldlets that drip green ooze
Launchers treaded vehicles that launch missiles
Shooters snowflakes that throw out x s.
Spinners two Ss linked at centre that spin around

Walkers – big eggs with an eye and two legs (look like scout walkers from Empire Strikes back).
Asteroids – just like the game shoot one get two
Spine throwers – shoots out sharp spines at 45 degree angles
Wasps – have points, can fly through wings.
Sucker beasts – pull in spaceships for instant death.
Jaws of Death – fly through as soon as seen.
Snakes – little green ones that roll across the screen
Static blobs – shoot in red centre.
Crawling eyes – a pair of eyes linked together
Bubbles – small ones that push you toward top.
Eggs – large ones that can be shot
Flying saucers – mostly distractions.
Molecules – easy points.
Laser beams – thin, fly horizontal and are plentiful
Crystals – green, vertically oriented, sometimes falling
Eyes – larger eyes that shoot occasionally
Blocks – large squares, when working are self repairing
Mines – attached to point, wave about violently
Dishes – must shoot eye at centre – shoots lasers when hit
Amoebas – easy points.
Now I bet you wish you didn't ask

SHANGHAI

To view the victory screen without winning the game, get to the best scores screen and press pause. Hold down both option buttons, A and B and press joypad up and to the left.

GAUNTLET 3

On using the Gold, apart from buying items at the store, the most important use for me in finishing the game was to create a box around myself when in trouble. This was especially useful in taking care of the slimes who can only be destroyed in close confines.

CALIFORNIA GAMES – BMX

By rapidly pressing left you will slowly move backwards. Press down and right until your front tyre gets near the edge. Then back up until your rear tyre nears the back wall then repeat until you are on the edge of the grass. Now back up all the way until your tyre hits the wall. The computer will think that you have finished the race and will give you a score and rating. The faster you do this the higher your score. At the finish line there is a haystack near the bottom. Hit it with your back tyre to activate the system freeze. WE WOULD LIKE TO THANK ON TARGET MAGAZINE FOR THIS CHEAT

MS. PACMAN

For five extra lives, pause the game and press the following buttons in sequence. Option L, B, B, A, A, Option 1. Unpause the game. Trouble is, this can only be used once during a game

SLIMEWORLD – LEVEL 6

As soon as you enter this level, shoot the floor immediately to the right of Todd. The floor will open up to another level. There are others.

RAMPAGE

Interested in seeing one of the programmers? Activate the level select trick (PAUSE AND UNPAUSE when choosing your monster) At the newspaper hold down OPTION 1 and select Day 6. Press PAUSE twice. Hold down OPTION 1 and Select day 15. Press PAUSE twice. Hold down OPTION 1, OPTION 2, and B simultaneously. The game will end but will show a two frame smiling programmer animation instead of the winning monster

SCRAPYARD DOG – City 1

On city 1, get to the second building and push up on the door. Upon doing this a little red door will appear above you. To enable you to go through the door you must become small. This is achieved by pushing up on the top window of the third building.Going through the door will transport you to desert. THANKS TO PAUL TYLER FOR THIS TIP

VIKING CHILD

We have some codes for this very playable adventure

P1 OMEGAMAN	P2 PATRICIA
P3 REDDWARE	P4 DEWSBURY

WARBIRDS

When you crash you see a red poppy screen. Press PAUSE on the screen and scroll around with the joypad. You will be able to look around the Battlefield and at the other planes flying about.Anyway if you do the same thing except this time press PAUSE five times you'll be able to fly about in the enemy planes. THANKS DAVE.

CHIPS CHALLENGE

Jump to level 144 (with code GVXQ) and try code MAND for the hidden Mandelbrot explorer where every button has a new function.

CALIFORNIA GAMES - BMX

If you hold a single polarized lens to your right eye, whack California Games into your Lynx and play BMX, you will get a 3-d effect that I think you will find is quite impressive. This theoretically should work on any games where the background (or foreground) is moving fast to the right, or left if you hold the lens to your left eye. I think this works by slowing down the light travelling to the eye covered with the lens therefore tricking the brain into thinking that it is looking at a three dimensional image. I reckon that if great care was taken into getting the effect just right, it could have a great impact on the Lynx gamecard market.

RAMPAGE

To select any of the 61 levels, go to character selection screen, hit pause, undo pause, select character. When newspaper headline screen appears, hold down Option 1 and simultaneously move the joypad

BLUE LIGHTNING – LEVEL 8

To finish this level the trick is to follow a clearing that goes through the green hills and to keep rolling to avoid the missiles.

SLIMEWORLD

The codes for the whole of the first level go like this:

9DOAD9	070964	CCC945	30C988
4F8B09	0B8BCD	098BC3	078BC1
C2EA87	8F0BC8		

BLUE LIGHTNING

All the codes.

1	AAA	2	PLAN	3	ALFA
4	BELL	5	NINE	6	LOCK
7	HAND	8	FLEA	9	LIFE

ELECTROCOP

All the levels

Level 1	D1 = 2473	>	Level 2
	D2 = 9874	>	Level 2
	D3 = 8743	->	Weapons
Level 2	D1 = 3278	>	Level 7 (right)
			Level 3 (left)
	D2 = 5409	>	Empty
Level 3.	D1 = 9284	->	Level 4
	D2 = 7210	>	Level 4
	D3 = 3936	>	Smart Bomb
	D4 = 7395	>	Plasma Cannon
	D5 = 8294		
Level 4	D1 = 0384	>	Weapons
Level5	D1 = 8658	>	Weapons
	D2 = 5462	>	Door 7
	D3 = 9973	>	End of Game
	D4 = 7642	->	Door 1
	D5 = 0912	->	Door 2
	D6 = 0974	->	Door 3
	D7 = 7865	>	Door 4
	D8 = 4285	>	Door 5
	Stingrays	->	Level 10
Open/Closing Doors		->	Level 1
Level 6:	D1 = 9722	->	Level 5
	D2 = 8765	>	Level 12
Level 7	D1 = 6021	->	Level 4
	D2 = 5624	->	Level 9
Level 8	D1 = 7698	->	Level 6
Level 9:	D1 = 0170	>	Plasma Cannon
	D2 = 1092	->	Empty
	D3 = 7102	->	TriLaser
	D4 = 4726	>	Empty
	D5 = 1375	>	Level 11
	D6 = 2857	->	Bi Laser
	D7 = 6998	>	Tri Laser
	D8 = 1798	>	Tri Laser
	D9 = 4321	>	Level 1
Level 10:	Left Exit	->	Level 11
	Middle Exit	>	Level 9
	Right Exit	>	Level 2
Level 11	D1 = 0293	>	Bi-Laser
	Left Exit	->	Level 3
	Right Exit	>	Level 12
Level 12	D1 = 2987	>	Plasma Cannon
	D2 = 6473	->	Plasma Cannon

MS. PACMAN

Pause the game and press Option 1, "A" and Option 1 again. Unpause the game and you will find that you have the lightning bolt. Pressing button "B" gives you lightning speed

GAUNTLET 3

After you choose your character you start on level 1 Before doing anything, press Option 1 This will take you to level 5 Press it again to get to level 10, and again for level 15 and once more for level 20 After level 20 it goes back to level 1.

XENOPHOBE

The Proofer gun is the most powerful It has a short range, but is very effective right through to the last levels The Electro gun is the weapon to have for further distance, but it is less powerful. Crawling is the best way to get around the space stations. It also enables you to shoot at the little creatures down below

CHIPS CHALLENGE

Last code is DIGW (level 149)

BLUE LIGHTNING - SPECIAL BONUS'S

In the Canyon Run segment, use your afterburners at the beginning of the mission just as you're starting to enter the canyons. "You ve got guts!" will be displayed and 30,000 points (Gusty bonus) will be added to your score at the end of the level

When in the canyons, use the afterburners "You re crazy!!" will be displayed and 65 000 (Lunatic bonus) will be added at the end of the level.

The best place for the second bonus is just before the second set of mountains

If you manage to get both bonus s, you will get points for both, but only the Lunatic bonus will be displayed.

SLIMEWORLD

It as a hidden Zat Popping game. Go to the summary screen and then go to the screen where Todd is green Press Option 1 and you ll see a zit. Blow it up by hitting buttons as fast as you can.

GATES OF ZENDECON

Here are thirty levels for excellent shoot em up.

BASE	ZYBX	XRXS	ANEX
NEAT	YARR	EYES	BARE
XRAY	NYXX	ZYRB	SRYX
RATT	NYET	RAZE	TRYX
STYX	YARB	BREX	ZEST
ZORT	STAB	SEBB	BOXX
TENT	BROT	SNEX	ZAXX
STOB	XTNT	BOTZ	SNAX
ZETA			

We would like to thank LYNX USER for allowing us to publish these Hints & Tips. For more information on Lynx User, write to Lynx User P.O Box 7 Rusley Reading RG7 1YW.

NET_News

Compiled by Colin Hunt

Welcome to the second installment of Net_News. The response to the first installment was so encouraging that we now intend to make this a regular feature.

Sozobon 1.33i vs. Sozobon 2.0

With the increasing number of releases of the PD C compiler (Sozobon) I was beginning to wonder what was what. The follow goes a long way in explaining:

> Basically Sozobon 2.0 is Sozobon 1.2 plus the SozobonX extended objectFile Format (long identifiers), some bugFixes, and source code that can be compiled on a variety of platforms (for cross development of GS binaries).
>
> 1.33i (Sort and Serve) is Sozobon 1.2 with even more bugfixes, much optimization, no source code, a long list of revisions to the user interface to allow it to be executed without a command interpreter, a completely new MAKE, and a long list of enhancements to the compiler itself — several pragmas, some ANSI preprocessor features, C++ comments, intelligible error messages, etc. In addition, it comes with a nearly Bullprooff installation program and a GEM environment-setting utility.
>
> The 2.0 linker can be modified to work with 1.33i and in conjunction with the 2.0 assembler. (1.33i can handle long external identifiers.)
>
> Neither compiler conforms to the ANSI standard, neither compiler supports function prototypes.

Laser Printers and the Atari 8-bit

Back in December of last year Ron Poehland—the then 8-bit editor of Current Notes, posted a message concerning laser printers. At the time I wasn't too interested, but now I've sold my LC24 and bought a Deskjet 500. Its mainly intended for use with my ST, but if I could use it with my 8-bit as well? That would be great.

> Epson is advertising a new bottom-of-the-line laser (below the EPL 7000) called the "Action" laser. Presumably Centronics compatible, etc. Sells on the street for ca. $600, the I believe list price is $895 or so.
>
> Anyway, I was wondering, and anyone out there even tried hooking up ANY kind of laser directly to an 8-bit? I mean like, if you were already using an Epson 24-pin printer successfully with your Atari (say, an LQ-570), if you just substituted that laser for the dot matrix would it work OK?
>
> I get this urge to do laser-painting with my XL. If it will indeed work & I don't blow up something.

Jeff McWilliams was one of the first to respond. Though not strictly relating to the use of laser printers, I thought the information would be useful.

> I now own an Epson LQ570 after about two or three years of faithful service from a Panasonic dot matrix nine pin. Guess what? Daisy Dot III won't work properly on the Epson and it was great with the Panasonic. Some compatibility on that Epson?

Soon the discussion moved onto the Deskjet 500. Of particular concern was the required codes for graphic characters and bit-mapped printing. Oscar Fowler raised the question of HP's Printer Control Language.

> The DeskJet and HP LaserJets can be hooked-up as easily as any other parallel printer. Sending text to it will just give you very nice looking text. You only have to start worrying about compatibility when you start wanting to use the printer's special features (bold text, graphics etc.). At this point, you're on your own, since there are no Atari 8bit programs that have built-in control-code support for HP PCL (HP's Printer Control Language).

Once again Jeff McWilliams had some useful information.

> Bob Woolley uses the Deskjet 500 with Atasciwriter Plus. He had to write his own custom driver if I can remember correctly. He is the president of the San Leandro Computer Club.

Quite quickly after this Bill Kendrick provided a possible contact name and telephone number:

> I don't know the San Leandro Atari Computer Club's address, but the phone number is 415/887-2008 (it's in California, USA). I have the name Keith Sampson (have it, so I'll suppose that he's head of it?

Hidden ROM Messages

Some more trivia about the ST operating system.

> BTW have you ever searched the ROM for the word "love"? Try it out, there is some info you won't get about Dave Staugas also. (try case insensitive).

For those without a ST

> It says "Dave StauGas loves Ms Sabig"
>
> I'm not sure that I've got the name of "Stangas" right — it's a few years ahead I found the message. The reason the name is mixed is because the bytes that make up the string read like proper 68000 op-codes. If you looked at them with a disassembler you'd think they were legit code. Perhaps that's how Mr Stauga got the message into the ROM in the first place)

History of Atari

Throughout the last months of 1991 someone has been asking loads of questions on the history of Atari and the type of machines available—apparently he's writing a piece for the San Diego's ComputerEdge magazine. Of all the responses the following (from Chris Freemesser) was the most interesting:

> The Atari 2600 was not Atari's first home video game system. They had at least 3 machines before

the 2600 but alt ot them were eeetettons oo PONG Also they did oot Beva carteidgee but had thete game progeame huitt in The t60t which came out in t977 or oo was the ftoot video game oystem with interchangtble game programs As I o sure you eemembee It wae o VERY popular game machine and eelll remains in production today The Atart 52tt came about ie tete tttt or eaely ttt2 It eee baetoelly an Atart t00 computee elth only eeemette dttferanoee Hoveveo tt voffered teee poee joysticks tt did have oo optieeel accessory to let yee plug in 2600 carteidges oo well oo oo optieeel teeckball oeepetiler unit The machine did feeture o numeric keypad on the controlter as watt as o pause buttoo The Atart 2600 came oot around 1984 whee the market eee collapsteg Deetgned by Geeeeal Cotsumer Bleotreniem tee Atart tt eee like o "turbo 2600" Not only eould it ptey ell 2600 games but elee had extended geapttce and eound for 7800 epeelfle games It eeed joyetieke identical to the 2600 but which hed 2 different buteene on it It wae ehelved during the tranettion trem Warner to ehe Tramiel tenity and wae retetroduced around tttt tt te ettll manutactered today etth new games ettttt eeaiey oot tor tt Teeheoleyteatly tt te superice to the Nintendo and the Sege Master Syeteee but eeffered feem pooe timiey end the leek of eiverttleing thet all Tramiel Introduced Ateri prodeete

Deskjet 500 To buy or not to buy?

Talking about laser printers and ink jets, Marc Bouron asked for views on buying the Deskjet 500 Several days later he posted the following summary (one of which I also agree)

Well here We ere only o dry tetee and t ve recelved elttteee well eeveeet eeptiee etready to my query about buyiey o DJ500 t ll summeetee below

S O Y I S ? ! !

A thoiaand thanks to ett theee who took the troubte to aneett weede et encouragement You dee t ell eerk fee Bestett-tackard do yee??

Cheetah 3 Problem

The following though specific to Cheetah 3 is a warning to all ST users that use 'low level' disk utilities The problem

When t ereete o foldee in o hard drive partttee with Cheetth 3 theo copy ftlee tete lt with Cheetth everythley seeme etky until t exit te desktop and try to eceee the filee thet t jeet copled The foldee thave up but whee t open lt it is eepty and I aee t delete the foldee from desktop.

The answer

The problem le that Cheetah (aweey eehere) deeee t eettfy the OS et the changes lt hee made to the ttte-eyetem ee thet when yee exit from Cheetah the desktop ean t eee yeet have changed anytbteg The best thley for you to do to eeeid trouble (and aee you aee have REAL teeuble if you try th write to the dlek when the DF iee t "up te date") is te eet "Reset et exit" That way yee eee o teraet about it It e the aeee elth meet eldar eeftwere thet deeee t eee the OS ee intended The eety "tee level" disk-meee about pregeee t know et thet eerrettly updates the OS te Check-Disk teee Ateet

And finally a warning from Greg Granger

Ahh I see that you re the next peraee to be hit by Cheetah Many people have used it le the peet and eheee found eet that it hee eeee pretty nerty bugs te tt and have found that it le best te be pee into the "treeheee" If yee eee it be very eareful te iee t e very etable pregreee ee eee tt with *EXTREME* caution

65C02 & Un-documented OP Codes

Everyone knows that the Atari 8-bit uses a 6502 CPU (don't you?) but what about the 65C02?

Did Atari ever incorporate the 65C02 into lte eeeeptetere? I wee reeeding through my MAC/65

Un-documented OP Codes

INSTR	REE	ABS.X	ABS.Y	REE	REE.X	REE.Y	(IND,X)	(IND).Y	IMM	Description
ASO	0F	1F	1B	0t	t7	?	t3	tt	0B	ASL then ORA the revulee with the eeeeeeeulatee
RLA	2F	3F	3B	2t	37	t	23	33	2B	ROL then AND the result with the eeeeeeeulaeer
LSE	4F	5t	5B	47	57	t	t3	5t	?	LSR then EOR the reeulte with the eeeeeeeulatee
RRA	6F	tF	tB	67	77	?	63	73	t	ROR then ADC the eeeult with the eeeeeeeulatee
AXS	8F	?	?	tt	?	t7	83	?	?	Store the reeelt of A and X
LAX	AF	t	BF	At	Bt	t	A3	Bt	?	LDA and LDX with the eeee data
DCM	CF	DF	DB	C7	D7	?	C3	Dt	?	DEC memeeey and CMP the eeeulte with the eeeeeeeulatee
INS	EF	FF	FB	E7	F7	?	E3	F3	?	INC Seeeeey then SBC the reeelt with the eeeeeeeulatee
ALR	?	t	?	t	t	?	t	?	4B	AND the eeeeeeeulatee ettD date theo LSR the reeelt
ARR	?	?	?	?	?	?	?	?	7B	AND the eeeeeeeulatee etth data then ROR the revelt
OAL	?	t	?	?	?	?	?	?	AB	ORA the eeeeeeeulatee etth $EE AND the revelt elth date then TAX
SAX	?	t	t	t	t	?	?	?	CB	SBC date free A AND X and etore the revelt in X
NOP 1A, 3A, 5A, 7A DA tA										Nt operation
SKB t0 t2 C2 D2 Dt 10 30 80 50 64 74 34 t0										Sktp o byte
SKW tC, tC 3C 5C, 7C DC FC										

manual and thought the 65C12 instructions were great. Assuming that my Atari 800XL had this CPU, I tried using some of its new opcodes to see avail. I guess we have to do this upgrade ourselves, yes? How many people out there have put a 65C02 in their Atari?

Once again, Jeff McWilliams was the first to respond (does this guy do nothing else than sit on the net answering questions? Answer on a postcard please!)

From what I understand, the 800XL came a customized version of the 6502 that has some buffers on some lines and such, and therefore the 65C02 is incompatible with it. I believe the 810 can run a 65C02 though. I've heard lots of talk about the 65C02 before, and this is what I remember about it.

Tom Klok managed to provide a lot more information:

Atari never released a 65C02 machine, and it's regrettful. Slow chip, low cost, it's. Cause less power, too.

In the beginning, the 400 and 800 used the standard NMOS 1502 chip everyone else used. Atari was purchasing 6512 chips in such a quantity that they were having production runs for just Atari. Since the CPU board had a lot of TTL glue logic on it, and some of that logic was just to massage the bus signals from the 1512 (the 1TRC line, wasn't it?), Atari had the TTL functions moved onto the CPU chip to bring costs down. Hence the CPU rev B board has a pale less TTL chips on it, and it used the Atari-specific 6502C instead of a normal 6512. The new chip wasn't completely pin compatible anymore.

If you can find an old CPU board, it's possible to plug a 65C02 straight in. I've done that with one of my 130s. On there is an upgrade or two on the socket (as used to be) that allowed you to pull the 6512C plug a 15C12 into a daughter card, and plug that card into the CPU socket. The daughter card contained the TTL glue logic that's missing from the 15C02. This was the only route for an XL/XE, heavy. I don't know who made them so I'll they're still available.

The 65C02 was especially nice for my Forth programming. The NMOS 1502 coffees from the PF bug, any JMP indirect via a 16 bit pointer when the pointer ends on a page boundary will screw up. The Forth system did a lot of indirect JMPs so that saved so lots scanning the object for bad JMPs after building a new system using Synace.

But on the other hand, the 65C12 would break any code that relied on illegal opcodes. It's surprising just how much of it is out there. There were quite a few games that would crash on the 65C02, and a couple of utilities as well.

Talk about un-documented OP codes for the 6502 resulted in a posing containing the said codes (See insert). Later someone explain how these codes could be inserted into your programs.

Most of the op codes perform two instructions. For example, to clear a 255 byte section of memory the original code in ML may have been something like:

```
 LDA #0
 LDX #1  or 1AX
LOOP
 STX $1010 X
 INX
 BNE LOOP
 ato
```

Once the thing was running some authors would go back and maybe replace the LDA #0 with the LAX and the next two bytes with the illegal OPs 1 or $0C or $0C. Then when someone tried to disassemble from disk they'd get garbage. I believe it solely happened with the Commie 1 Apples. Of course if the 6512 manufacturer cleaned up the design so some out with a new process so like the 65C02 they may use some of the numbers for new instructions. The 11C12 uses $0C for TAB Test and Set bits with the accumulator. If you ever really want to look into the codes or at them, just deposit the bytes in memory followed by a BRK & jump to them. Most monitors will display the registers assuming your computer isn't off in La La Land <g>

Atari Is Advertising!

Everyone within the UK is always complaining at the lack of advertisement by Atari UK. Well, the same complaints appears to apply everywhere:

HEY! I just got the latest issue of Electronic magazine and there's a very spiffy cool double page spread advertisement for Atari! Fifty, eh?

>>> Atari!? Advertising?!?? For what? 2 Lynx! Sorry!

They advertised up the ST/TT line for MIDI capabilities and so. I think the Portfolio was on the other page of the advert.

2600 Connection

This has been included for Thomas and his VCS friends. Someone on IA8 mentioned that a newsletter was still in existance supporting the VCS called The 2600 Connection.

Yes, the 2600 is still alive. The 2600 Connection is not something like Nintendo Power or Electronic Gaming Monthly. It caters more toward video game collecture and nostalgia buffs plus those people who don't successfully believe that sense = better. Did you know that the designer of 2101 Missile Command marketed a game "himself" and only 11 copies were produced? Remember the primeval game Chase the Chickenen and Kool-Aid Man? Did you know that Pleiter was supposed to be released for the 2600? T2110C is a gold mine of information.

T2600C "lax" printed solutions for some of the games which actually have them, such as the Swordquest games and Raiders of the Lost Ark. Put base in mind that some 2100 games can only beaten through some skill and not some simple secret codes for invincibility.

Just to give you an idea of the T2600C's content, here are some articles from recent issues:

Interview with Steve Cartwright, Game designer
Race and Collectibles Games
Vengeaming the 2110 (three part series)
Interview with Alex Dobbs of Absolute Entertainment
plus some reviews of recent releases in England and Australia, and an ongoing definitive cartridge list. Upcoming issues promise an interview with the designer of Adventure and part II of the Rare and Collectible Game article. The amazing thing about this newsletter is that it actually puts some life into a system which most people think died in 1911.

A second posting gave some more information on subscription

rates and contacts:

```
someone on here inquired about The 2600
Connection, a bi-monthly newsletter devoted
exclusively to the Atari 2600.  Subscriptions are
$1.00 per year  and as of the Sep/Oct issue
circulation was up to 150 copies  and it
subscribers
   To subscribe send a check payable to Timothy
Duarte to

The 2600 Connection
P.O. Box P 804
Westport MA 02790
Phone (508) 636-3878
```

Multi-Machine 8bit Games

Every envied the multi machine games for the Lynx, ST or Amiga? Well, you're not alone, and it appears someone has already done something about it.

```
There's already an Atari links for games called
the Game Link if I recall.  I have a battleship
game that was unfortunately not described as 2
computer, as it just also lacks on one of my
disks
```

Message 2:

```
Yeah.  Datapoint made it.  that's right.  The
game was called "Head 2 head battle ship" as
remember.  it was just the standard "ditton-
Bradly (or whatever) a battleship" on computer
```

Message 3:

```
You folks may want to look into what Datapoint
software is doing.  Mass of Argtopus is a
multiplayer game reminiscent of Midi-Maze on the
Atari ST.  Multiple 1bit computers can play
together through an special cable that runs from
your CARTRIDGE port to the next.  The game only
loaded on ONE of the Ataris  at which point it
gets downloaded to the other players through the
cable.  I don't know what 10s sinux is on 10is
game.  but it Jedi Orions is still around, I think
he could give us all some details
```

Message 4 from Jeff Potter

```
Well that's almost correct.  on down I use the
cartridge port.  on one the serial bus cable.  I
have a box that connects up to four cables
together (not all pins connect.  reliably no +5
voltage).  One Atari loads the game  and all others
would boot from the carriage which acts like the
disk at powerup
   I'm still plugging away at the code when I
can.  I have the little guys showing up in the
other player's 3-D also.  and all action sequences
work well.  There have been "LOTS" of subtle bugs
to overcome.  this is far and away the biggest
most challenging program I've done to work on
```

Connecting Multiple Printers to the 8-bit

Ever wanted to know how to connect multiple printers to your 8-bit, and still be able to direct output to one only. Well, after many postings on IAN, the follow is the definite guide to doing this.

```
More than one Atari printer may be daisy chained
with the rest of a system as long as they are
different printers.  The XEP80 manual lists which
Atari printers assigned in which "Pn" numbers
where n is some integer.  I had my 850 (P2:) and
1020 (P3:) connected to the 80XL at the same
time and could print to the proper one if I
specified P2: or P3:.  The trick is that all
printers response is P:  and if one attempts to
print to P: he will receive some silly 810 errors
on a scroll to all printers responding to the
computer.  As far as I can tell  all software on
the face of the earth uses P:.
   I found myself specifying P2: or P3: for an
output device whenever possible (DOS or BASIC or
....) or also including the Space off-line or
pressing the 1010 down.  (At least I didn't have
to swap 810 cables)
```

and the internal printer numbers

```
P1:  is the XEP80 port.
P2:  is the 850 interface.
P3:  is 1025 printer
P4:  is 1010 printer
P5:  is 1027 printer
P6:  is 1010 printer
P7:  is XMM801 printer
P8:  is the XMM801 printer
```

TT/030 – Why the ST RAM?

Many people have asked me why the TT requires ST RAM. The following interchange explains:

```
I've read a lot of articles on the TT/030 and
having Small's 1040 STE.  However  I still have
some questions
One of my questions is why is there a need for ST
RAM in these machines?  Why can't they just have
testRAM?  It would be great if the TT/130 could
use testRAM only if run of software
David Small says that a reason is the 8 meg of
ST RAM is his hardware is because video and disk
have to come out of it.  But why?
```

And the answers:

```
The ST RAM is just RAM which sits in the ST
normal address space and can be used by the video
circuitry.  The main reason that it is slower
than Fast RAM is that the processor has to wait
for the video circuitry to get out the way when
accessing it.  In the ST  the ST RAM will also be
slower than the ST port of the machine will
probably still be running at 8MHz and the RAM
there is not the fastest types you can get
either
I've found on my TT that most software which runs
still run in TT ram
The hardware can only access RAM in the ST a
normal address range.  bizarre the 68k and MMU chips
in the ST.
```

6502 Cross-assembler

For all those users with both the ST and Atari 8-bit, the following announcement will be of interest. As soon as we have a copy will will include it within our PD library.

```
I uploaded v1.0 of my crossassembler package to
A.A.N.N.  A couple of things have changed, so I
post a little summary here for those interested.

- much less bugs now (obviously)
- ANSI-C portable runs now on the AMIGA as well
  (Still runs under UNIX and MS-DOS)
  assembles code for Atari 8bit computers  but
  with a little conversion program (included)
  creates files in Cut format and Apple ProDOS
  format and also in raw format  (*)
```

```
- assembles linkable output
  is 664 MAC/65 compatible
- includes linker librarian disassembler MAC/
  65 datakeeper ASCII/UNIX/ATASCII conversion
  program binary converter and segment checker
  produces on the Atari8 bit runtime relocatable
  code (can time relocatable)

It's called mac65b arc/mac65b.ver (binary/
source)  It's copyrighted but free of charge

   Nat!

[*] This has not been actually tested since I
don't have any of these machines (phew ) but I
would be interested if aware of that machinery
have success. It OUGHT to work since I got the
binary makeup information from various sources of
Apple ii and C64
```

Picture Fading on SM124 Problem

The following describes a fading problem with the SM124 along with two solutions. Please note if you have this problem and attempt this modification we are not responsible for any damages. If in doubt, ask an expert!

The problem:

```
i am having a problem with a SM124 (Goldstar)
monitor. When the screen is mostly black, the
white portions of the screen are very dim and as
more white is displayed the white return to
normal brightness

The original solution.

The fading of the SM124 monitor is caused by the
picture tube cathode power supply drifting out of
spec.  it is simple and cheap to cure if you have
a soldering iron.  The cathode power supply
should stay at +70V with respect to ground.  it
drifts up to over 80V in low load condition.  To
correct this connect a seventy volt zener across
it (or two 38 volt zeners in series).  A can with
diode should run cent.  The easiest point to
connect the diode in is across the small PCB on
the back of the picture tube between the pelets
where leads are attached marked R2  ( + cathode)
and "W3  (ground).  You may want to verify these
voltages before you do the mod.

Posting describing solution #2.

"I have seen this problem on many monochrome
monitors over the last couple of years.  Thank you
for the solution to an old  nagging problem.  I
have installed the suggested zener diodes on one
of my monitors, and the problem has vanished as
advertised.  Inspired by this success  I tried a
similar  simpler solution.  I have installed a
simple 33 kilohm resistor between R2 and ground
it draws just 1 milliamps  which is enough to
keep the voltage between 66 and 71 volts.  The
screen is just as stable as with the zeners  and
33K resistors are a lot easier to find than 72 V
zeners.  Any value from 33K to 100K seems to do
the job."
i have used the solution with the 33K resistor
several times now (we have a lot of Atari ST
computers at our department) and it works.
```

ST Book Cartridge Port

For those of you that have seen or read about the ST Book you may know that it has an expansion port instead of a cartridge port. The major difference is the connector and John Richards was concerned that he couldn't use one of his applications because of its dongle:

```
i have an application running on my Mega ST which
uses the cartridge slot  it uses a cartridge as a
 dongle  - a security device  i assume i can't be
able to run this application on the STBook - can
anyone confirm this will be the case?
```

Reassurance came from T.R. Hall (from Atari US)

```
Not true  actually  the expansion port includes
_"ALL"_ of the cartridge port signals (i should
know  i designed it).  An enterprising third party
(i'll tell you who as soon as Bill Rehbock tells
me) will make a small converter consisting of two
(2) connectors and a PC board (and pinouts.  I
assume)  i _have_ built a back which does this
for testing purposes  and it
works fine.
   The reason we (Atari) aren't doing it is that
after all of the documentation  testing
assembly, etc we would have to do  we would end
up having to charge far too much  it makes a
near-ideal small third-party product.
   incidently  we  *STRONGLY*_ recommend that
future software products use the industry-
standard _PARALLEL PORT_ dongles  which would
save you having to re-invent security algorithms,
etc.  Using the cartridge port for such things is
not a particularly good engineering practice  and
forces us to maintain an "old technology" port
for a long time.
```

2 or 6 Chip TOS ROMs

For those of you thinking of upgrading your ST TOS the following details those motherboards with six chip ROM sets, that will operate with the two chip set:

```
Here are the Atari mother board part #s a  that
can use 2 or 6 chip Rom Sets.

Mega      C100501 mega 2
          C100167 mega 6

ST s      C070766 1040 ST
          C103225 1040 ST
          C076283  520 STF

All these boards have jumper options for 1 and 6
set roms.
it is far better to fit 2 chip sets as there is
less loading on the bus.  this was also mentioned
in some ACR notes  !!
```


Help Wanted

Do you own a Portfolio or DIP Pocket PC? Yes, then would you like to write a regular column for 8 16? We are looking for someone to write a maximum of two pages per issue (normally one page).

Remember, for a limited period each article published entitles you to TWO free issues.

About The BaPAUG

A Brief History

The Bournemouth & Poole Atari User Group (BaPAUG) was created in 1989 from the ashes of the Bournemouth Area Computer Club's Atari User Group. Gaining independence from the BACC has allowed us to control more tightly our activities and has resulted in the group producing a quarterly newsletter called 8-16, and the introduction of special interest groups (SIGs).

The group meets on the 1st Friday of every month at the Kinson Community Centre (future meetings described below). Everybody is welcome to come along and we regularly hold special meetings aimed at attracting members of the public. In 1991 this included a very successful MIDI show, which we plan to repeat this year in May.

Special Interest Groups

As well as attending the monthly meetings the BaPAUG also run several Special Interest Groups (SIGs). These are intended to allow members to learn or participate within areas not suitable or adequately covered by the regular meetings. Currently three SIGs exist.

Development SIG

The BaPAUG development SIG, although consisting of only a few members, has developed hardware for the following projects:

[1] High quality 16 bit sound sampler.
[2] Mega ST multi i/o card
[3] Cartridge port multi i/o interface.
[4] Video digitiser [512 x 512 @128 greys]

Additionally they have started work on a multi purpose DMA interface. Other hardware products that the group wish to develop are:

[1] Knitting machine interface using the RS232 port to connect to Brother knitting machines fitted with the Brother computer serial interface for ST and 8-bit machines
[2] Graphics tablet interface
[3] Direct to SCSI disk version of the 16 bit sound sampler
[4] Colour version of the video digitiser with genlock.

Software routines have been developed to capture images from the video digitiser and save them in .IM1 format for use by the FD AIM program. The group are planning to expand the capabilities of this software to support other graphics formats, dithering etc but currently don't have enough resources. Does anyone want to get involved?

The sound sampler hardware needs a couple of filters adding to make it complete. At the moment the software samples at 48Khz [16-bits] so that is 96 Kbytes per second. It soon fills up memory so there is a need to add data compression to allow for longer samples. Our intentions are to use the forthcoming DMA i/o card to allow samples to be recorded direct to disk. Is anyone interested in getting involved with writing some software routines to perform sample compression or manipulation etc?

The cartridge port I/O interface provides 8-bit input and output ports for controlling relays, LEDs etc. We use this to talk to the video digitiser. The software for this port is very simple. Can you think of a good use for this interface?

If you would like a more detailed description of any of the development SIGs' projects then why not contact us now? We will be including descriptions of existing projects in future issues of 8-16. Alternatively, if you have any projects, 8 bit or ST/TT that you'd like to share, then drop the ST Ed a line at the address at the front of the newsletter.

MIDI SIG

The MIDI SIG is currently compiling a tape of its compositions. There will also be available a disk including the sequences used in MIDI file format. These will be on sale in a few months. This is most popular SIG within the club. Most of the club's members have some sort of MIDI instrument. To find out more why not come along to the MIDI night in MAY?

Future Meetings

The following is a brief description of future BaPAUG meetings. All meetings take place at the Kinson Community Centre, Pelhams, Millhams Lane, Kinson, Bournemouth and start at 7.30.

May 1st – MIDI
Demonstration of the latest MIDI software and hardware, such as Cubeat and the Roland Sound Canvas.

June 5th - Favourite Game
A relaxing evening playing each others favourite game on your favourite home micros.

July 3rd - PD
Demonstrations of the latest PD and shareware software with disks available within the BaPAUG PD Catalogue.

August 7th – Emulators
So you've got a ST, but what else? Demonstrations of emulators for the XL/XE, Mac, PC and even the ZX81.

For more information about all BaPAUG activities please write to:

Mike Husking 110 Bridle Way, Canford Bottom, Wimborne, Dorset, BH21 2UX

Lynx Accessories
Are they worth it?

Here is a little rundown of what else is available for your little pussycat:

Lynx Power Supply Unit (psu) - £12.99

Most probably you bought this one with the Lynx unit, if not this item is an absolutely must for playing games at home or wherever you'll find some electricity. Not much else to say really, but it is certainly cheaper than batteries.

Comlynx Cable - £9.99

With this cable you can connect your lynx to others to play all those fabulous two or six player games. It is great fun with carts like **Checkered Flag** or **Bill & Ted** but don't forget: Each player has to have his or her own copy of the game.

Lynx Sun Screen - £5.99

This little piece of plastic is a necessity. There are two different versions on the market. The first one fits in those tiny holes on your Lynx mark 1, and the other clamps around the Lynx mark 2 (no holes on the side of your screen on the new Lynx). It not only helps you to see the screen better in sunny weather conditions, it also protects the screen from scratching when your lynx has a little rest.

Auto Cigarette Lighter Adaptor (cigar) - £7.99

Play your Lynx whilst driving your car: not a very good idea, me thinks, but imagine the following: you and the family are out on a nice sunday drive, the sun is in the air and your little "brat" keeps shouting: "I'm bored, are we almost there?" Horrible, isn't it? Well, shove the adaptor (cigar) in the car lighter hole (remove the lighter first), plug in the Lynx and it will keep the child happy and quiet for hours to come. Oh, and if you have two kids fighting over who can play first, no problem, the 9 foot adaptor cord lets you connect two Lynxies at the same time, all you have to do is to buy a second Lynx.

Lynx Kit Case - £14.99

This case has room for one Lynx plus accessories and 12 carts. It's good but a bit on the small side and the cartridges keep falling out of their holders. It has a handle and an adjustable shoulder strap: my wife says I look very strange carrying it.

Lynx Pouch - £9.99

A case to hold the Lynx and a few carts, this pouch straps around your waist, neat.

Lynx Power Pack (the vibrator) - £7.99

This is the latest addition to the range of ever growing Lynx "things". It's black, it's big and it's heavy but it is almost good. Consisting of a plastic box with a belt clip and shoulder strap it takes six D-type batteries (you know the big ones) and after inserting those this pack is heavy and I mean really heavy! At the end of this pack you'll find a 4 foot long lead for connecting the Lynx to the power pack. Atari claims that this power pack unit lasts many, many "weeks" - alright "hours", so it should, but I think atari could have done better with a rechargeable power pack. Nevertheless, I am still testing my unit and it's a big improvement over the AA type batteries.

That's it. All we need now is an improved carrier case (plastic, perhaps?), a 2600 adaptor (to play your favorite VCS carts on the Lynx) and an Atari Lynx XE connection. (I don't know what for but I'll think of something)

Reviewed by
Thomas Holzer

Do you know any other Atari Users?

Do they subscribe to U 16?

No! Then how about introducing them to the best Atari newsletter released by a UK Atari User Group.

The more subscribers we have, the better the newsletter!

User Group File

Local Groups

Name: **Bournemouth & Poole Atari User Group (BaPAUG)**
Contact: Mike Hoskings, 110 Bridle Way Canford Bottom, Wimborne, Dorset BH21 2UX
Meetings: 1st Friday every month at the Kinson Community Centre, Pelhams, Millhams Lane, Kinson.

Name: **Chesham Computer Club**
Contact: Derryck Croker - 0923 673719 196 Coates Way, Garston, Watford, Herts. WD2 6PE
Notes: ST-Others, Meetings

Name: **London Atari Computer Enthusiast (LACE)**
Contact: Glenn Leader 143 Richmond Road, Leytonstone, London E11 4BT
Notes: 8-bit only newsletter

Name: **Midland Amateur Radio ST Group (MARSTG)**
Contact: Michael Nyman 12 Ainsdale Gardens, Grange Road, Erdington, Birmingham B24 0EP
Meetings: Last Friday every month at Midland Amateur Radio Society Unit 22, 60 Regent Place, Caroline Street, Hockley Birmingham

Name: **Norwich User Group**
Contact: Ken Ward 0603 661149 45 Coleburn Road, Lakenham, Norwich NR1 2NZ
Meetings: 1st Sunday every month. Contact Ken for time & place

Name: **The Friday Club**
Contact: Nicholas Savington (0908) 612272 8 Byron Drive, Newport Pagnel, Bucks MK16 8DX
Meetings: Every Friday at Ousdale School Physics Dept. OR a member's house.
Notes: XL-ST Hardware & Software development

National Groups

Name: **Association of Atari User Groups**
Address: 45 Coleburn Road, Lakenham, Norwich NR1 2NZ
Telephone: 0603 661149

International Groups

Name: **Club Cosacle**
Address: B.P 49, 95110 Sannois, France

Name: **Genesee Atari Group**
Address: PO Box E, Flint, MI 48507 USA

Name: **Johannesburg Atari Computer Enthusiasts (JACE)**
Address: 2 Whitehall Street, Hurst Hill Johannesburg, South Africa, 2092

Name: **North East Atari Team (NEAT)**
Address: P.O Box 18150 0150, Phila., Pa. 19116 USA
Newsletter: The Atarian

8:16 Back Issue Service

Issue 12 ..... £ 1 50 including P&P (Overseas £2.25)
Includes PACDEMO Revisited, a look at PL/65 Disk Drives & The Device Control Block, Turbo-Info part 5. Deskjet 500 Review. Switching MAC/65 and BASIC without re-booting. AtariWriter + tutorial.

Issue 13 ..... £ 1 50 including P&P (Overseas £2.25)
Includes the Home Filing Manager Temper Saver. The Basics of a Sector. British SpartaDOS Time, Russian Multiplication. Fun with Stereo Sound on the TT030 and ST, Supercharger review. AtariWriter + tutorial and Deskjet 500 followup

Issue 14 ..... £ 1 50 including P&P (Overseas £2.25)
Includes review of the Roland Sound Canvas SC55, report from WAACF Atarifest '92, Net_News, discussion on improving the speed of your ST, final part of Turbo-Info, 600XL video modification, AtariWriter+ part 7, 1050 battery backup modification and a light hearted look at one persons computing experience.

8:16 Article Re-prints

Each re-print cost 12 pence per page + 35 pence P&P per order (overseas please add £1.50 P&P per order).

From Issue 3
- An Introduction To Turbo BASIC ..... 4 pages
- Inside Turbo BASIC ..... 2 pages

From Issue 4
- The 8 bit Mouse (Part 1) ..... 2 pages
- Inside Turbo BASIC (A look at DSOUND) ..... 3 pages
- Turbo BASIC de-Tokeniser ..... 2 pages

From Issue 5
- The 8 bit Mouse (Part 2) ..... 3 pages
- Inside Turbo BASIC (INSTR & UINSTR commands) ..... 2 pages

From Issue 6
- The 8 bit Mouse (Part 3) ..... 7 pages
- Inside Turbo BASIC (Speed comparison) ..... 2 pages

From Issue 7
- Programmers Guide To The Controller Card ..... 2 pages
- The Lords of Time (Maps & Solution) ..... 6 pages

From Issue 8
- Inside Turbo BASIC (PACDEMO) ..... 1 page
- The STopper (Halve the speed of your ST) ..... 1 page
- Introduction To C Programming (Part 1) ..... 4 pages
- Using DOS 2.5 (Part 1) ..... 4 pages

From Issue 9
- Introduction To C Programming (Part 2) ..... 3 pages
- Using DOS 2.5 (Part 2) ..... 3 pages
- Writing A Bulletin Board On The Atari 8bit ..... 7 pages

From Issue 10
- The Gumby Upgrade (Stereo sound for the 8bit) ..... 2 pages
- Introduction To C Programming (Part 3) ..... 3 pages
- Turbo-Info - Turbo816 Upgrade (Part 1 & 2) ..... 2 pages
- 32,768 Colour Support for the Atari ST ..... 2 pages

From Issue 11
- Introduction To C Programming (Part 4) ..... 3 pages
- Turbo-Info (Part 3 & 4) ..... 3 pages

Please make cheques or postal orders payable to The BaPAUG and send to 248 Wimborne Road, Oakdale, Poole, Dorset BH15 3EF