8:16

The Alternative Atari Newsletter

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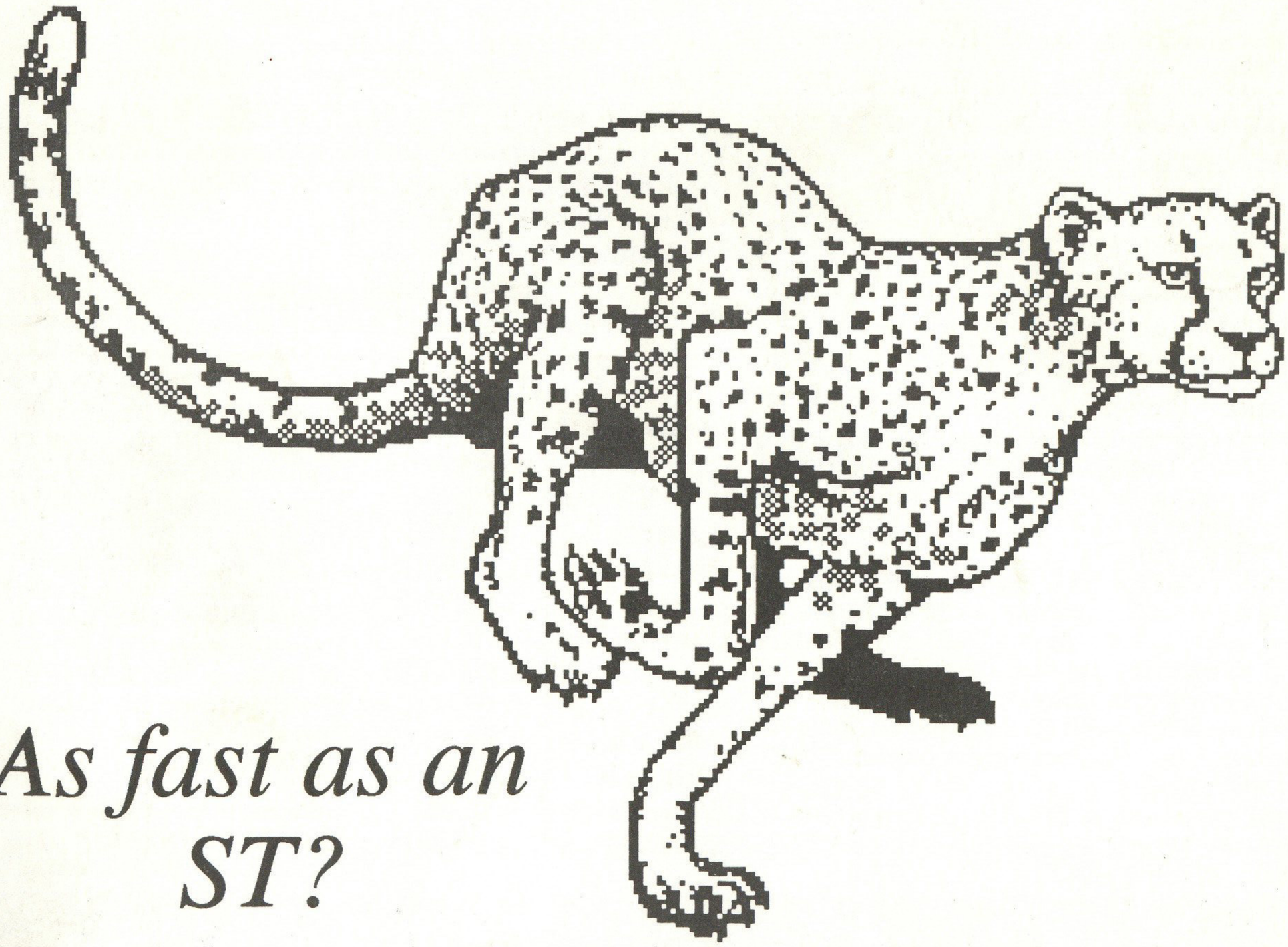
ATARI

BAPAUG

Roland SC55 Review
600XL Video Modification
1050 Battery Backup



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Some of these cartridges are now in short supply, so please (where possible) indicate alternatives.

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ST Clearance...

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We are very pleased to announce the availability of **ChromaCAD 3D Model Builder** (£24.95) & **ChromaCAD Surface Shader XE 91** (£24.95).

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Where possible please indicate alternative title

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Where possible please indicate alternative titles

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Barkonid	£9.95(D)
	£6.95(C)
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Visicalc (Disk)	£7.99
850 Interface	£49.95

P&P £1.50 on orders less than £50. Overseas extra.

FREE Product Guide now available

Who to blame!:

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163 Verity Crescent, Canford Heath,
Poole, Dorset BH17 7TX

Please send 8 bit articles to Ian, ST to Paul and all the rest to me (Colin). With this new editorial setup sharing the load, I may now have some time to write articles as well!

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:TMAILUK, O:SPRINTINTL, FN: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, Cumana 1M external drive, Reference 100 harddisk, Apple Macintosh SE, Star LC24/10, 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 printer port 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.

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Hi! To everyone! Everywhere!

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

Notice Board

Frontier Software Announce Further Price Reductions

As of 16th December, 1991 Frontier Software's range of memory upgrades and their Forget-Me-Clock II cartridge have new lower prices. The new prices (including VAT) are:

Xtra-RAM Standard un-populated	£29.99
Xtra-RAM Standard 1/2 MB	£49.99
Xtra-RAM Standard 2MB	£99.99
Xtra-RAM Deluxe un-populated	£34.99
Xtra-RAM Deluxe 1/2 MB	£64.99
Xtra-RAM Deluxe 2MB	£109.99
Xtra-RAM Deluxe 4MB	£179.99
Forget-Me-Clock II	£17.99

Frontier Software
P.O. Box 113, Harrogate, North Yorkshire, England

LACE Reforms

The London Atari Computer Enthusiasts (LACE) has reformed after two years absence as an Atari 8-bit only user group. Glenn Leader is still in charge, with other group members including Simon Trew and Algie Gray. The group has also resurrected their newsletter called Boot!, with issue 3 being released at AMS5.

For more information, contact Glenn at 143 Richmond Road, Leytonstone, London E11 4BT, or via The City BBS (021-352-1237).

Pocket Computer Experts

DIP (the creators of the Atari Portfolio) have just release a glossy, covering all the pocket computers within their range. These include the Sharp PC3000, Hewlett-Packard HP 95LX, Pocket PC (also sold as the Atari Portfolio) and Pico memory - compatible with the new industry standard PCMCIA technology.

DIP Systems Limited
32 Frederick Sanger Road, Surrey Research Park,
Guildford, Surrey GU2 5XN
Telephone: 0483 301555

DIGI-Studio

Dean Garraghty has recently released DIGI-Studio, a program for the Atari XL/XE for creating music using sounds sampled with Replay.

Available in two packages, package 1 includes a keyboard player and tune player (some tunes also supplied). The Keyboard Player allows you to use your computer keyboard like a musical keyboard using any of the sampled sounds provided. Look out for full review within a future issue of 8:16.

Package 2 (which is available soon) will allow you to program tunes using sheet music and save them to disk.

Dean Garraghty
62 Thomson Ave., Balby, Doncaster, DN4 0NU

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

New Software Company Release 8-bit Product

The following 'release notice' was recently posted on the Info-Atari8 Digest. It describes a new game soon to be available on the ST, Amiga and PC, which is already available for the Atari 8-bit. If you are interested, I suggest you write (remembering to send an International Reply Coupon) asking them if they will post to the UK and how much the postage will be.

"Old computers never die, they just develop faithful user groups. **Aerion Software** is debuting its first commercial product, **Fury: The Weath of Taljun Cathu**, which features 100 rooms scattered through five worlds: Tree, Stone, Alien, Insect and Fire. The player's on-screen ego must defeat the "Keeper of the Key" found in each world, then unlock the door to the room containing the Guardian of Passage, in order to reach the next world. Objects encountered include treasure chests, coins and food, as well as many hostile creatures. The game, scheduled for release for play on Atari ST, Amiga and IBM PC computers early in 1992, is now ready for the Atari XL and can be ordered directly for $19.95."

Aerion Software
P.O. Box 1222, Riverdale Station
New York, NY 10471-1222

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Elsewhere (air)	£16.00

8:16 Commercial Advertisement Rates

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Quarter page	£15.00

Phone (0202) 677895 for details.

Show Reviews

Vibratae-Uncles and 8-Bit Pariahs: Auguries of A Lost Soul At the WAACE Fest

By Ben Poehland (The 8-Bit Alchemist)

Hartley's "Vibratae-Uncles"

It takes a long time to become an Alchemist. A good millenium, at least. Following apprenticeships to Avicenna and Averrhoes, I went to England to spend a century with Merlin and round out my alchemical education under the tutelage of Thomas Hartley. These were all weird dudes, but Hartley was the weirdest. Kept telling me to stop thinking and listen to my bones.

Bones, he believed, contained antenna-like organs capable of detecting odd-wavelength signals the other senses don't perceive. He called them "vibratae-uncles" (VY-brady). The brain finds it stressful to decipher these signals, as their interpretation is best accomplished while the other physical senses are in some manner inhibited. Bone signals manifest as a vague sense of disquietude throughout the body, an uncomfortable feeling that something in an otherwise familiar environment is amiss. Things don't fit, meanings are obscured, connections are missed, reactions are obtuse, and Weirdness is the order of the day.

Via a metaphysical process involving temporary disconnection of the brain from the senses and reconnecting it directly to the vibratae-uncles, Hartley preached it was possible to "tune in" directly to your environment and discern what's really going on. He said I had the best set of vibratae-uncles he ever saw but gave me a mediocre grade in interpretation because I was lazy and kept ignoring the signals. I still regard these stupid uncle-things as something of a curse. They bug the dickens out of me and don't go away until I finally sit down and sift the signals. It's only been during the past century or so that I discovered writing as my way of tuning in to my vibratae-uncles. Which accounts for the difficulty I'm experiencing in recounting my attendance at the recent WAACE Fest.

Ignoring the Bones

I came away from last year's WAACE Fest feeling downright ebullient and had every reason to think this year would be even better. Over the past year I've met perhaps a hundred people whom I knew only as signatures on paper, account names on networks, or voices on the phone. The prospect of getting together with those folks, to assign real faces to the names, was very stimulating. Then too, to renew old acquaintances from last year, not to mention hobnobbing with the crew at Current Notes. Plus I had stuff to trade in the swap room along with a laundry list of goodies I wanted to buy.

I planned my trip in advance, taking advantage of lessons learned the previous year. This year's Fest was a week later than last year's, which meant it would be well-nigh impossible for me to meet our Publisher's deadline for 8-bit material in the November issue. In the last week of September I hunkered down to bang out "Squeezing the Beauty Queen" plus assemble the other 8-bit articles for November; the whole mess was delivered to Joe on GEnie by Oct. 7. I should have felt relaxed with that obligation satisfied, but instead I felt queasy.

At work, the week prior to the Fest was stressful, culminating in a marathon meeting (where I made several presentations to various corporate bigwigs) the day before I left for WAACE. All that week, the queasiness grew. But I was busy each evening packing up stuff to take to the Fest and planning my agenda. I had no time for vague forebodings and wrote it off to a combination of stress and guilt for not answering my magazine-related mail.

WAACE At Last

Last year the weather in Reston, Virginia was fabulous: a classic Indian Summer weekend. Not so this year; I started out from Pennsylvania in a cold, raw rain after fortifying myself with sinus pills. Driving was treacherous, with a slippery coating of wet autumn leaves on some roads. To numb my annoyance at the dirty weather I listened to the Senate's "Judge Thomas Sexual Harassment Hearings" all the way to Virginia. Five hours later I arrived at the hotel suitably numbed but still annoyed. The weather in Virginia was no better than it was in Pennsylvania. Then there was a snafu at check-in that left me ready to chew iron nails.

I started feeling a little better when I saw WAACE holding pre-registration for early arrivals and was able to get my registration squared away the night before the Fest officially opened. I don't think they did that last year. Whoever at WAACE was responsible for that deserves a hearty round of applause. Things improved even more when I encountered John Barnes who invited me to a WAACE-sponsored mixer later that evening. The door prize of the evening was when I ran into Ken Wickert and his wife, and Vern Smith, of the Syracuse ACE, both of whom had recently contributed articles to Current Notes. The four of us enjoyed a pleasant dinner, after which I attended the WAACE mixer. The main topic of conversation there centered around the Judge Thomas/Anita Hill thing (ugh!). Joe Waters wandered in, looking like he'd had a long day. I apologized for not covering the Fest in the November issue but was relieved when he expressed gratitude for my getting my material in early. Fatigue finally set in, but not before I'd done serious damage to the WAACE booze budget.

I fell asleep that night in a haze of adrenalin-pumping anticipation and alcohol-induced anesthesia. I didn't sleep well. Several times I awoke with a vague sense something was awry. I figured it was just the excitement.

First Day

Following a quick breakfast I checked in at the Current Notes booth in the vendor room to say hello to Joe and Joyce and pick up my CN ID badge. The Fest hadn't officially opened then, and many vendors were still setting up. Consequently I missed seeing who-all was there. It was the first of many missed connections that weekend.

I headed upstairs to get my stuff to take to the swap room. On the elevator I saw Paul Plant who informed me the swap room was already full. I was dumfounded. How could that be? The Fest wasn't officially open yet! Some kind of foulup, I never got the details.

Undaunted, I retrieved my stuff and battled my way into the swap room. It was

incredible. The Fest was barely 10 minutes old, and this room was a madhouse. Arms were flailing, hands clutching money and various trade goods waving about in such profusion you couldn't tell which arms belonged to which bodies. People dragging cartons out the door collided with those bringing stuff in. The background roar was tremendous; you had to shout to make yourself heard. The more people shouted, the louder the roar became. I left my stuff along a side wall and sought space on a table. I wasn't gone five seconds before the herd was clawing my cartons.

I decided to hawk my wares from the floor. I later discovered I wasn't supposed to do that. But this was survival. I drew considerable attention by setting up a demo of Super Video powered by a Squeezed Queen. People wanted to know how to fix their XL to make the display so clear. I not only sold the video monitors used in the demo, but in the process referred a number of people to the Current Notes booth with an admonition to buy Joe's back issues and take out a subscription. Many people came by just to shake my hand, see who this Alchemist guy really was, and thank me for keeping 8-bits alive in CN.

I never saw lunch. Late in the day my voice gave out; some kind soul fetched me a cup of water. Ron Mordosky of LVAUG came by and made off with a hundred pounds of AC line regulators. Another fellow wanted my autograph, but I declined, as that isn't my style. Jim Godfrey gave me some chip data and demo disks we had discussed some weeks earlier; I gave him a sample of rare magnet-core memory as a souvenir. It went on all day like that without letup. I wore off layers of skin shaking hands with people. And making change.

When it was over I staggered into the lobby in a daze, encountering John Barnes who always seemed to be everywhere. I commented how astonished I was at the level of activity in the swap room being double or triple what it was last year. (Several times the fires marshals restricted access to the room.) His response seemed obtuse: "What that tells me is that the market has imploded upon itself". I wasn't sure which market he was referring to but was too tired to care.

The Banquet

I flopped out for awhile, then donned coat and tie for the WAACE banquet. I was glad to decompress in the company of my Syracuse ACE friends, Ken and Vern. These banquets tend to be somewhat dull affairs, and Dull was just what I wanted. It was not to be.

I won't regurgitate the sordid details of the scene of adolescent behavior occurring at one of the other tables that evening, which at times was sufficiently boisterous to disrupt private conversations at my own table. I can only hope the subsequent embarrassment suffered by the parties who attended the banquet with the goal of celebrating puerile rites of passage has chastened their outlook on standards of public conduct. Needless to say, my sense of discomfiture returned with a vengeance. The vibratae-uncles fairly screamed, "Man, you don't belong here!". It was all I could do to stifle the urge to bolt and run.

Joe Waters stood up and announced Dave Troy as the recipient of CN's Author of the Year Award, which took Dave "toadally " by surprise. He gathered himself together for a moment at the podium, fingering the award and muttering how surprised he was. Then Dave did a weird thing: he shot a glance at me and said, "I thought the award would go to Ben Poehland". I wasn't ready for that. The vibratae-uncles were screaming again. It was Number Six of The Ten Most Weird Moments Of My Life.

Later that evening there was another mixer. The party spilled out into the hallway, as the room had grown stuffy. There I encountered Joe Waters and began expressing some concerns about my column, the conflicting roles of editor and columnist. During the conversation I was distressed to discover how divergent from mine were Joe's views of what an editor should be. Joe had just dropped a bombshell: "Well, Current Notes probably doesn't need an 8-bit editor anyway" when our conversation was rudely interrupted by two rowdy drunks who demanded his attention in a discussion of Washington politics (Judge Thomas again). I hung around awhile hoping this would run out of steam so I could explore Joe's comment further. But I was no match for two guys running flat-out on high-octane ethanol. Eventually I drifted back to my room, wondering whether I really knew any of these people and what was I doing here. As I fell asleep, the vibratae-uncles were beating me to death.

Day Two

First thing Sunday morning I decided to check out the vendor area for awhile before heading back to the swap room. I'd spent so much time talking to people and trading stuff the day before I hadn't had time to make purchases. I stopped by the Toad booth and cut a deal with Jennifer for a few software trinkets. Dave Troy was running a demo of Palette Imaging's new ChromaCAD program and commented he thought it was pure genius. Then I talked to Chuck Leazott at the ICD booth. He had a few P:R:C's and other odds'n'ends, but pickings were poor.

And that was it. No Best Electronics. No Alpha Systems. No Advanced Technology Systems. No 8-bit offerings from L&Y. Nothing. Zip. I got queasy again. I wandered aimlessly through the vendor area, past ST booths bearing unfamiliar names. I was a lost soul, a stranger in a strange land. The bone signals rose to a crescendo, flooding my brain with a thought: this was why the swap room was overwhelmed the previous day. It couldn't have taken an 8-bit enthusiast more than a minute to realize the vendor area offered nothing of substance, so they all headed for the swap room. This was a segregated Fest, and I was in the wrong place. I sauntered back to the swap room in despair, to seek comfort among the other lost souls.

On the way, I ran into Bill and Pattie Rayle of Atari Interface Magazine who swept me along to the Atari Explorer booth to introduce me to John Jainschigg. John said Explorer would go to seven issues next year and promised to address the situation from last February when the list of 8-bit items still available from Atari was "inadvertently" omitted. A hollow promise, considering Atari is dumping the 8-bits. I saw no 8-bit articles in the issues of Explorer on display at the booth and wondered who this fellow was trying to kid. But Bill Rayle struck a warmer, more resonant chord when he declared AIM intended to support 8-bits as long as there was any response at all. Pattie chimed in to say they were shipping 8-bit monthly disks at a ratio of 50:100 compared to ST disks, which I thought a very credible figure.

In the swap room I sold a few more items, purchased a couple more trinkets, and briefly demo'ed Super Video and the Squeezed Queen again. I was greatly cheered to see **Marv Seaman** of **Palette Imaging** who dropped by to chat. He showed me shaded model printouts from **ChromaCAD** that looked great. But the vibratae-uncles detected a bewildered, almost bitter tone to his countenance. People thought him a dunce for writing such a fabulous program for a worthless computer. (So, I wasn't the only one having a strange weekend!) As he departed, I wondered cynically if he would

change the name of his company to "Pariah Software". The swap room was dead by 4:00PM, so I packed up the remnants of my stuff and set out to see what remained of the Fest in its last hour. I never made it.

The Brodie Encounter

In the lobby I crossed paths with Bob Brodie who was leaving the Fest. We paused for a moment and eyed each other like two caged cats. Then he said, "You know, we haven't had much chance to talk...". "Oh, what the heck", I muttered; "I wasn't gonna see much of this Fest anyway", and followed him to his room.

We began a chat which lasted the better part of an hour and ended down in the vendor area where men were disassembling the booths. Following a discussion that cleared up a number of sensitive personal issues, Bob brought me up to date on various circumstances surrounding the upcoming Chicago Fest. He confirmed Atari had auctioned off some 8-bit stuff over the summer but claimed it was mostly low-grade junk- 2600 game carts, acoustic modems, etc. Atari still had the "good stuff"- mostly software- well in hand.

I pressed him for information on the volume of this material. He indicated the space of a very large room, with an estimated weight on the order of perhaps several tons: a lot of stuff! How much would it cost Atari to ship that stuff- or a portion of it- to Chicago? A lot of money, according to Bob, more than Atari could afford to spend unless there were realistic prospects of selling it off.

And those prospects were poor. Despite drastic reductions in booth prices, as of the week of WAACE only four 8-bit developers/vendors had signed up for the Chicago Fest. [Note: as of the week of Nov. 7, this number had increased to nine.] I was appalled. Over the summer I had compiled the names of 56 8-bit vendors/ developers at Bob's request for LCACE to use as an invitation list; I figured maybe 12 would sign up. Bob's frustration was evident as he sat there spinning out alternative ideas for Chicago; for awhile I wasn't sure if he was talking to me or babbling to himself. Maybe have the 8-bit developers hold "conferences" (like a series of scheduled demos), or sell off the inventory to local distributors like ATV or B&C and then turn the entire 8-bit area at Chicago into a giant swap room.

The thought of the Chicago show turning into another scene like I'd witnessed at WAACE was utterly demoralizing. I shared with Bob some frustrations I've experienced over the past year trying to get the developer/vendor community to advertise and more 8-bit users to subscribe to Current Notes. After exchanging notes in this vein at some length, it was apparent to both of us that our frustrations were mutual. Good lord, I thought, Now I'm agreeing with The Man From Atari. What planet is this? The vibratae-uncles were having a field day.

The 8-bit vendor community has fallen below the critical mass required to hold it together as a cohesive entity. There are still vendors and developers, and some new products are being introduced. But their numbers are few and dwindling, fragments still glowing on the periphery of an explosion long grown cold. They haven't attempted to compensate or rejuvenate the market by means of more aggressive advertising or attendance at shows. Most bewildering is the laid-back attitude Bob and I have both encountered, wherein some vendors don't seem to care whether they sell product or not. In the end, we could only stare at each other and shrug. There was nothing left to say.

I made plans to dine that evening with Bill and Pattie Rayle of AIM. By this time I was feeling a desperate need to compare notes of my Fest experiences with others who shared my interests; implications for the future of the 8-bit community were looming ominous. That all went out the window when I showed up at the appointed hour and found we had been joined by a fourth party, Mike Vederman of Double Click Software, who fairly dominated the dinner conversation. Mike offered some interesting perspectives on software piracy and the recent anti-piracy ads by IAAD. But I had my own agenda for that evening, and it didn't include software pirates or rave reviews of products for the ST. The growing sense of alarm I was beginning to feel for the future of the 8-bit went unexpressed that night. I returned from dinner greatly frustrated, feeling once again I had ended up someplace I didn't belong. The oblivion of sleep brought welcome relief from the incessant resonance of my bones.

Homeward-Bound Pariah

I checked out Monday morning after a brief exchange with John Barnes on the grim status of 8-bit representation at the Fest. On the way home the vibratae-uncles were finally at rest, leaving me in a somber, reflective mood.

I wondered why there wasn't more 8-bit support from within the ranks of WAACE itself. During 1990 there were a number of issues of CN bearing full-page ads for the NOVATARI 8-bit PD library, which was undergoing a thorough reorganization. But in 1991 that reorganization effort has run aground, and only one small ad for the PD library has appeared. That ad was placed at my request, and getting it approved by NOVATARI was about as much fun as a visit to the dentist. In the weeks before the Fest, several WAACE organizers asked me if I would do a demo or seminar or whatever to attract some 8-bit interest. Being at that time heavily engaged in production on the November issue of CN, I declined (though I ended up running impromptu demos in the swap room anyway). But the very fact that WAACE Fest organizers were turning to me- rather than to their own 8-bit contingent- for 8-bit support at the Fest was disturbing. Especially considering as how I'm an outsider as far as !

WAACE is concerned: I hold honorary memberships in the Syracuse ACE (thanks, Ken!) and OHAUG, but not WAACE.

The issue of segregation hovered over everything. Last year 30% of the traffic in the vendor area was 8-bit. This year, maybe 2%. To be sure, the segregation that occurred at WAACE was a spontaneous event caused by the gross imbalance of ST vs 8-bit representation in the vendor area. But the Chicago Fest is planned to be segregated from the beginning. The origins of this are again economic, as half-price stripped-down booths were offered to the 8-bit developers as incentives to make an appearance

This annoyed the ST vendors, so the 8-bit shindig is being moved to a separate area where the 8-bitters can congregate. In so doing, however, the community gets divided not just economically but socially as well: ST Brahmins rule the vendor area while 8-bit Pariahs are banished to a swap room, or conference, or whatever Bob Brodie chooses to call it. If the 8-bit vendors/developers allow themselves to be treated like second-class citizens who won't pay their own way, so also must the market they serve be regarded with disdain. Of course, when they don't show up at all, it's just plain pathetic.

Trapped between the twin forces of dwindling vendor support and uncertainty over the future of 8-bit support in WAACE and Current Notes, this Alchemist-cum-Pariah is taking a long hard look at the future.

Postscript

On November 3, 1991, my home was damaged by fire (faulty masonry in the chimney ignited studs inside a wall). Not only did I escape the blaze unharmed, I fought it with a garden hose before the fire department arrived and managed to save most of the structure. I was extremely lucky. Damage to my personal possessions was minor, and none of my computer equipment was damaged. Even so, preliminary estimates of the repair bill are in the range of $30,000. My insurance company is treating me well, and I'm confident the homeostasis of my existence will eventually be restored.

On November 4, I contacted Joyce Waters to let CN know I would be unable to fulfill my commitments as 8-bit Editor of the magazine after the December issue. I wish to make it clear that my resignation is due solely to the change in my personal circumstances wrought by the fire, and not by any events prior to Nov. 3. I have no idea when The Alchemist will again grace these pages, if at all.

All the projects/manuscripts I had in the works are indefinitely suspended, my plans to attend the Chicago Fest are cancelled. I'm presently laboring under great difficulty to get out the 8-bit material for this issue. Demolition/reconstruction is scheduled to commence about the middle of November, after which time I'll only answer the most critical postal mail. I'll try to maintain a presence on INTERNET and GEnie as long as possible.

I wish to thank the many people who sent cards, letters, and E-mail expressing their concern and support. I can't answer these personally, but I take great comfort knowing there are so many people out there rooting for me. I'm also grateful for the many kind offers of assistance, though fortunately I really don't need any. Except for someone to take over as 8-bit Editor... .

Insofar as this will likely be my last article for a very long time, I'll leave you with the thoughts that are uppermost in my mind. Beginning 1992 the Atari 8-bit community will be a community of orphans, shunned by the very company that spawned the machines we still cherish. If we are to survive as a viable entity, we need to grow up and stand independent of Atari Corporation and the ST/TT community. We need our own forum- something to replace ANTIC- that will serve as a primary channel for the 8-bit community to focus its user/developer/vendor resources free of the intimidating influence of the ST market. Our vendor community needs to abandon its laid-back attitudes and pursue the market more aggressively, with print media advertising, distribution of product catalogs, and appearances at shows. Our programming community needs to shuck off its tired old venue of videogames and cutesey utilities and produce a wide range of novel user-oriented applications software such as the Commodore/Apple communities enjoy. It is the serious users who will keep our machine alive, and programs written for the narcissistic pleasure of other programmers just won't cut it any more. Heed now these last words of The Alchemist, that we may save ourselves from oblivion.

Good-bye everyone, and God Bless.

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Report from the Chicago Computerfest

by Jeff Potter

Not having been to one of these shows before I was amazed when more than 200 people were lined up at the gate at the opening (10 am Saturday). We 8-bitters had our own room with about 10 exhibitors. Activity there was pretty good, exceeding what I had expected (I heard over 2400 eventually showed up for all areas, both days). Here's what I remembered:

Atari was reportedly going to "clean out the warehouse" of 8-bit equipment at this show. The really juicy stuff (old 1450's or other rarities) was missing, but some good bargains were to be had. About 10 XEP80's were scarfed up in the first hour or less for $10 each. Several dozen XEGS (without power supply) were sold at $25. Some other packages (Atari Chemistry Lab?, Light Lab?, Visicalc) were sold for $10 each. A bunch of light pens were for sale, until someone noticed some of them didn't work. The LCACE booth then started testing each of them. Near the end of the show on Sunday, the remaining working ones went on sale for $2.50 each (I got mine).

Bob Puff and Chris Freemesser were there, representing CSS. They had a bare-board Black Box connected to a 130XE, and were demonstrating its capabilities. I hear they sold a fair number of XF551 dual disk upgrades, which provide a 3.5" disk drive in addition to the original 5.25" drive. They also had a lot of older stuff on hand (I remember "The Pill", and the Richman's 80 column word processor). I loaded my newest COLRVIEW program onto his hard disk, and watched in awe as it took 3 seconds to load a 24k COLRVIEW image that my XF551 (in single density) took over 30 seconds. Bob said he made enough sales to cover his expenses, and enjoyed the show.

Chuck Steinman was there representing DataQue. He was selling TransKeys (adapter for IBM keyboards to 8-bit Ataris), and various upgrades in his Turbo-816 line. He also did a brisk business in Lynx cartridge wallets throughout the show, and handed out many dozen copies of AtariUser magazine. Chuck also held a seminar Saturday on the future of the 8-bit computers, where he introduced his plans for the 1600XLE and 130XEC models.

The ICD people showed up in the 8-bit room Saturday morning, and disappeared to the 16-bit room after only three or four hours. Late Sunday they announced a "blow-out" of the remaining stuff. They had a few MIO's offered at $199 or $249 depending on RAM (which I heard did not sell), and a few copies of SpartaDOS 3.2 and construction set. No more MAC/65 carts (sigh).

A distributor I hadn't heard of by the name of K.O. Distributors was showing two new games and a paint program. "Fred" (or maybe "Caveman Fred") was one of them, which seemed to play a little like a Mario Bros. game (you guide the caveman around as he jumps from place to place, throwing rocks at animals, etc.). "Mission Shark" was a jumping, climbing, shooting game, where you seem to be infiltrating some high-tech installation. Both games seemed to keep the kids who visited our room interested. I checked the games on my unmodified 48k 800, and both loaded and worked. He was also demonstrating (by videotape) a paint program called EscalPaint. This was showing some striking pictures which he claimed were converted from Amiga picture files (by a program not available through him) and touched up by his program. We later checked, and it appears

his file format is compatible with the .ILC format that my APACVIEW creates. Note that EscalPaint runs only on a 64k XL or XE system. All programs were written by a couple of programmers either in Germany or the Netherlands, for which K.O. is the U.S. distributor. Sales seemed to be pretty good there.

LJK (of Data Perfect/Letter Perfect fame) was there, showing a Video Titler program. It was good to see an old stalwart like LJK still showing up, but I'm afraid his sales were slow.

LCACE and one or two other clubs showed up, selling old stock of commercial programs, and libraries of PD disks. Mars Merchandising was also selling old stock of commercial 8-bit programs.

I was there, showing the demo of the "Maze of Agdagon" game (which is not finished). I had brisk sales of all my APAC and COLRVIEW graphics viewers/ etc. Happily, a good many people recognized my name and my product. I of course tried to show off the best images from my collection of GIF, Amiga, and ST Degas pictures to try to draw the "oohs" and "ahhs" from people who'd never seen such a picture from a lowly 8-bit machine.

A high point of the show was when a gentleman who runs a computer and electronics store in Akron, Ohio showed up with his digital camera (a Canon Xapshot). He would walk around and snap photos of us with this, then pop it open to show this little postage stamp-sized disk that holds 50 pictures. Then he would connect a cable from it to one of our monitors and show us any or all of the pictures with remarkable speed. The images had great fidelity, with no evidence of limited colour resolution. He said he sold these for $475, and software for other computers could convert these to GIF and let you touch up the pictures. I'm still wondering if he's going to be able to find us, so we can receive our pictures somehow!

The 16-bit area was much larger, and quite a bit busier. I'll leave the reporting on that area to another source. The Lynx and ST game area was impressive, with something like 50 ST's set up for playing Midi Maze.

I apologize to anyone I forgot to mention, as the show seemed to go like a whirlwind for me. I was glad to finally meet several of the users and developers who have been in contact with me over the last few years. I'm looking forward to the next show I can attend.

8:16 Back Issue Service

Issue 12 ..... £ 1.50 including P&P (Overseas £2.25)
Includes PACDEMO Revisted; a look at PL65. Disk Drives & The Device Control Block. Turbo-Info part 5. Deskjet 500 Review.

Issue 13 ..... £ 1.50 including P&P (Overseas £2.25)
Includes the Home Filing Manager Temper Saver, The Basics of a Sector, British SprataDOS Time, Russian Multiplication, Fun with Stereo Sound on the TT030 and ST, Supercharger review and Deskjet 500 followup.

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

Wanted - Articles for future issues of 8:16

We are very short of articles and programs for future issues of 8:16. Please help us to help you by submitting any articles on any computer related subject you may be interested in. Subscription increased by **TWO** for each of your articles published.

Software Roundup

VCS

Only one title, so here goes:

VCS with one game controller plus a 32 games cartridge, price: £39.99.

So that's it, the rumour was true, no more new titles for the VCS from Atari. All there is left for me is to say, "goodbye and may the 14 years of gaming history rest in peace".

There are some good titles on that cartridge, and where else can you get a gaming machine plus 32 games for the price of one Sega or Nintendo game?

Pro 7800

All titles from former Activision, distributed by Salu LTD.

Baseball
.....Screen shots look very good
Double Dragon.....Arcade hit
F18-Hornet.....Flight and fight
Rampage
.....Much better on this machine
Skate Boardin'
.....Better than VCS version
Title Match Wrestling
.....Good fun for two
Tomcat .....More flying and fighting

All should be priced around £12.99

Jaguar

Atari begins, as we speak, work on the Jaguar 64-bit games. Atari may have buried the VCS, but the next history chapter starts sooner than you think.

Lynx

Expect to see these software titles in your shop right now or pretty soon.

720 .....Skateboard stunts
Awesome Golf ....Already in the shops
Basketbrawl .....Conversion from 7800
Dirty Larry
...Platform antics, looks very good
Hyperdrome .....Future soccer game
Lynx Casino ....Play poker, black jack, slot machine and more
Ninja Gaiden III: The Ancient Ship Of Doom ..Whatever happened to N.G.II?
Pit Fighter.....Another Tengen arcade hit, digitized graphics
Rai-den .....Tengen coin-up
Scrapyard Dog
.....Expanded from 7800 version.
The Guardians: Storm Over Doria
.....First real RPG on the Lynx
World Class Soccer....The Lynx needs a good football game

Information taken from EGM by kind of permission.

So that's it for now, just don't go round complaining that there is not enough software available for the Lynx, and remember: there may be more software out on that "Game Boy" (queer name), but 99% of it is utter rubbish!!!

Compiled by ...
Thomas Holzer

BaPAUG News - Development SIG

Hardware

The BaPAUG development SIG 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 we have started work on a multi purpose DMA interface. Other hardware products we 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

Application software has been written for using the Mega ST multi i/o card to control 16 stepper motors for movie cameras driven by electronic motion control. The software allows movement profiles to be created and played back at a variety of frame rates from 0.5 Frames Per Second to 48 FPS. A commercial version of this software called CAMMO ST PROFESSIONAL is available for animators and TV commercial production. Details are available from the ST Editor.

Software routines have been developed to capture images from the video digitiser and save them in .IM format for use by the PD AIM program. We wish to expand the capabilities of the software to support other graphics formats, dithering etc but we don't have enough time. 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 we 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.

Technical Information

Technical details of the 8-bit and ST are available from the Hardware SIG. We have members who have experience with developing projects for the Atari machines who would be only too pleased to share their knowledge with anyone needing help. We don't know everything but we'll try to help out.

Prepared by ...
Paul Brookes

Music Scene : Roland SC55

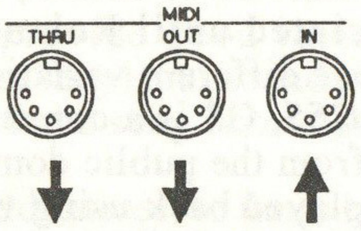
This latest 'black box' MIDI module from Roland, the Sound Canvas SC55, is likely to be a winner, providing a wide variety of high quality musical instrument sounds, several complete drum kits, GS compatibility, built in digital effects and even a remote control! Read on or you'll never know what you missed.

Opening the box...

Roland have provided all of the accessories needed to hook the Sound Canvas up to an amplifier and a MIDI keyboard or computer as soon as it is unpacked. In the box the following items can be found:

[1] A quality 9 Volt, 1200 mA mains adaptor with a 2 metre mains lead and a 2 metre dc lead. This generous combination should allow the SC55 to be placed virtually anywhere. The annoying thing for me is that I don't need another 2m of mains cable to add to the already abundant spaghetti! At least it is easier to crop than lengthen.
[2] 1 metre MIDI lead. No spaghetti worries here.
[3] Credit card sized remote control unit with lithium battery. This allows the user to remotely control the Sound Canvas and the partnering sequencer, the Sound Brush (not included).
[4] An 86 page all English language owner's manual, complete with full Roland GS MIDI implementation charts, drum maps etc.
[5] 1 metre stereo RCA cable. (2 phono plugs to 2 phono plugs).
[6] 2 RCA socket to 1/4 Jack plug adaptors.

Connections

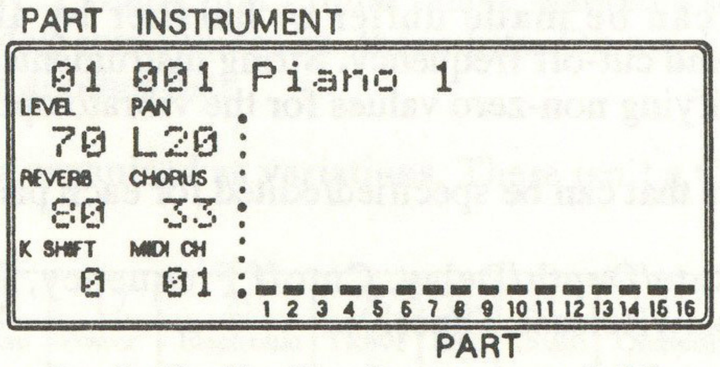


MIDI THRU MIDI OUT MIDI IN (2)
Audio In (2 Phono Sockets) Audio Out (2 Phono Sockets)
DC 9Volts In Headphone Socket (3.5mm Stereo)

Controls

Power Standby/On (with LED indicator for standby condition) : Rotary Volume Knob : 16 non-illuminated buttons for voice selection and tailoring of the SC55 sounds : 2 illuminated buttons for general setup options.

Liquid Crystal Display



The orange, back-lit display features variable contrast for wide viewing angles. 16 bar graphs show MIDI activity, whilst dot matrix characters show part number, voice number, voice name, volume, pan, reverb, chorus, key shift and MIDI channel for the currently selected part. The type of bar graph display is adjustable. There are 8 bar display types and 4 types of peak hold to choose from.

The Owner's Manual - Setting Up

Excellent diagrams and text describe without confusion, exactly how to connect up the Sound Canvas to a computer, keyboard, sequencer or even a CD-ROM MIDI decoder (which we haven't seen too many of in the UK yet). Audio outputs (2 RCA phono sockets) and Inputs (2 RCA phono sockets) are illustrated with example connections. The inputs are very useful if you already have a keyboard or module and you don't own a mixer, as they allow the external audio signals from the other unit to be mixed with that of the SC55, so only one set of connections to the amplifer is required. In case you are wondering, there is no facility to add Reverb and Chorus to the audio inputs, only the SC55 internal sounds. If you don't have a suitable amplifier or hi-fi available, then you can connect a pair of headphones to the Sound Canvas via the 3.5mm stereo jack socket provided on the front of the unit, directly below the volume control.

Reverb and Chorus

There are 8 types of Reverb available and 8 types of chorus. The settings chosen apply to all parts. However, if no reverb or chorus is required for a particular part, the reverb and chorus buttons can be used to set the level of the effects required for each individual part. This means that if you want one part to have plenty of reverb, you must choose a master setting with a large reverb effect. All other parts can have their reverb reduced. The same applies for chorus effects.

Reverb types are : Room 1-3, Hall 1-2, Plate, Delay, Panning Delay. Chorus types are : Chorus 1-4, Feedback chorus, Flanger, Short Delay, Short delay with feedback.

Controller Ranges

Bend range, modulation depth, key range, velocity sensitivity depth and offset can all be pre-set and stored by the sound canvas. Mono mode can be set for any part (except the drums) if required.

Polyphony and Partial Reserve

The SC55 can play as many as 24 notes simultaneously. However, like most MIDI instruments, the actual number depends on the sounds being used. Why? Well some sounds use more internal voices than others. The SC55 has 33 instruments that require 2 voices to operate. If you used only these instruments in your compositions you would only be able to play 12 notes simultaneously, not 24. Most of these two voice instruments are bright, rich sounds so it is unlikely that most music would call for more than two of these to be used at once. Examples of two voice instruments are : Honky-tonk piano, Bandneon, Orchestral hit, Synth Brass 1 & 2, Fantasia, Bowed Glass, Metal Pad, Halo Pad, Goblin, Brightness... Get the idea?

Instrument list

Something I really like to know before buying a module is what sounds are built in and how good are they? Well for those of you like me, here is the complete list of sound canvas capital instruments.

PIANO	Piano1, Piano2, Piano3, Honky-tonk, Electric 1, Electric2, Harpsichord, Clavicord.
PERCUSSION	Celesta, Glockenspiel, Music Box, Vibraphone, Marimba, Xylophone, Tubular-bell, Santur.
ORGAN	Organ1, Organ2, Organ3, Church Organ1, Reed Organ, French Accordian, Harmonica, Bandneon.
GUITAR	Nylon string, Steel string, Jazz, Clean, Muted, Overdrive, Distortion, Guitar Harmonics.
BASS	Acoustic, Fingered, Picked, Fretless, Slap1, Slap2, Synth1, Synth2.
ORCHESTRA	Violin, Viola, Cello, Contrabass, Tremolo Strings, Pizzicato Strings, Harp, Timpani.
ENSEMBLE	Strings, Slow Strings, Synth Strings1, Synth Strings2, Choir Aahs, Voice Oohs, SynVox, Orchestral Hit.
BRASS	Trumpet, Trombone, Tuba, Muted Trumpet, French Horn, Brass1, Synth Brass1, Synth Brass2.
LEAD	Soprano Sax, Alto Sax, Tenor Sax, Baritone Sax, Oboe, English Horn, Bassoon, Clarinet.
PIPE	Piccolo, Flute, Recorder, Pan Flute, Bottle Blow, Shakuhachi, Whistle, Ocarina.
SYNTH LEAD	Square Wave, Saw Wave, Synth Calliope, Chiffer Lead, Charang, Solo Vox, 5th Saw Wave, Bass & Lead.
SYNTH PAD	Fantasia, Warm Pad, Polysynth, Space Voice, Bowed Glass, Metal Pad, Halo Pad, Sweep Pad.
SYNTH SFX	Ice Rain, Soundtrack, Crystal, Atmosphere, Brightness, Goblin, Echo Drops, Star Theme.
ETHNIC	Sitar, Banjo, Shamisen, Koto, Kalimba, Bag Pipe, Fiddle, Shanai.
PERCUSSIVE	Tinkle Bell, Agogo, Steel Drums, Woodblock, Taiko, Melo Tom1, Synth Drum, Reverse Cymbal.
SFX	Guitar Fret Noise, F1 Key Click, Seashore, Bird, Telephone1, Helicopter, Applause, Gun Shot.

TABLE 1 : Sound Canvas Capital Instrument List

Variations

In no specific order, the following list contains more of the sounds....

Detuned Electric Pianos 1 & 2, Coupled Harpsichord, Church Bell, Detuned Organs 1 & 2, Church Organ 2, Italian Accordian, Ukulele, 12 String Guitar, Mandolin, Hawaiian Guitar, Chorus Guitar, Funk Guitar, Feedback Guitar, Guitar Feedback, Synth Bass 3 & 4, Taisho Koto, Castanets, Concert Bass Drum, Melo Tom 2, 808 Tom, Guitar Cut Noise, String Slap, Rain, Thunder, Wind, Stream, Bubble, Dog, Horse, Telephone2, Door Creaking, Door, Scratch, Windchime, Car Engine, Car Stop, Car Pass, Car Crash, Siren, Train, Jet Plane, Starship, Burst Noise, Laughing, Screaming, Punch, Heart Beat, Footstep, Machinegun, Lasergun, Explosion.

Additionally, there is one more set of variations. This is variation 127 and is the MT-32 set.

Acoustic Pianos 1-3, Electric Pianos 1-4, HonkyTonk Piano, Electric Organs 1-4, Pipe Organs 1-3, Accordian, Harpsichords 1-3, Clavichords 1-3, Celesta 1-2, Synth Brass 1-4, Synth Bass 1-4, Fantasy, Harmo Pan, Chorale, Glasses, Soundtrack, Atmosphere, Warm Bell, Funny Vox, Echo Bell, Ice Rain, Oboe 2001, Echo Pan, Dr Solo, School Daze, Bellsinger, Square Wave, String Sections 1-3, Pizzicato Strings, Violins 1-2, Cellos 1-2, Contrabass, Harps 1-2, Guitars 1-2, Electric Guitars 1-2, Sitar, Acoustic Bass 1-2, Electric Bass 1-2, Slap Bass 1-2, Fretless Bass 1-2, Flute 1-2, Piccolo 1-2, Recorder, Pan Pipes, Sax 1-4, Clarinet 1-2, Oboe, English Horn, Bassoon, Harmonica, Trumpet 1-2, Trombone 1-2, French Horn 1-2, Tuba, Brass Sections 1-2, Vibes 1-2, Synth Mallet, Windbell, Glock, Tube Bell, Xylophone, Marimba, Koto, Sho, Shakuhachi, Whistle 1-2, Bottleblow, Breathpipe, Timpani, Melodic Tom, Deep Snare, Electronic Percussion 1-2, Taiko, Taiko Rim, Cymbal, Castanets, Triangle, Orchestral Hit, Telephone, Bird Tweet, One Note Jam, Water Bell, Jungle Tune.

Most instruments have a variation that adds a different nuance to its sound. The list above shows the variations but doesn't explain how they relate to a particular sound. The structure of the instruments stored in the Sound Canvas is :

CAPITAL (0) .... VARIATIONS 1-126 .... MT32 (127)

For each Capital, there will typically be 1 or 2 variations of the patch. The exceptions are the sound effects which have several variations, between 2 and 9 for each Capital sound. This variation business is all tied up with the new GS standard. The idea is to standardise the way sound modules are controlled by MIDI with particular attention paid to assigning standard patch numbers to particular groups of instrumental sounds. GS contains standard instruments, the Capitals and also instrument variations that make use of device features and allow for future expansion. GS allows for 127 variations of the Capital instrument, although only some of these variations will be present on each GS compatible instrument.

Examples

PC	Capital 0	Variation 8	Variation 127 (MT32)
5	Elec Piano 1	Detuned EP1	Elec Piano 2
27	Jazz Guitar	Hawaiian Guitar	Synth Brass 3

SFX

PC	Capital 0	Variation 1	Variation 2	Variation 3
128	Gun shot	Machinegun	Lasergun	Explosion

GS also includes a multitude of drum and percussive kits as well as guaranteeing at least 24 notes of polyphony and 16 part multi-timbral sound. To be honest, the GS standard will not be fully appreciated until Roland release more GS instruments which use different variation numbers. For the time being on the SC55, GS is a convenient feature which allows MIDI songs from the public domain that were set up for the MT32 to be played back using variation 127 (MT32 set) and actually heard on the right type of instrument without having to tediously re-assign all of the patch numbers to make a song sound right.

This inter-module compatibility will be the strength of GS if it takes off. For now, however, the MT32 compatibility is very useful for ST users. Many programs and song files support the MT32. Of course you can't edit the Sound Canvas's MT32 sounds exactly as you can on a real MT32 as they are samples of sounds on the original instrument.

Certain parameters can be altered, however, for each of the SC55's 16 parts. This effectively allows sounds to be tailored very slightly to suit a particular style of music. Pianos for example can be made duller or harsher by altering the envelope and cut-off frequency. String instruments can benefit from specifying non-zero values for the vibrato options.

Parameters that can be specified/edited for each part are:

Vibrato Rate/Depth/Delay, Cutoff Frequency, Resonance, Attack/Delay/Release Times.

If you use a MIDI sequencer with the ability to send controller changes and system exclusive messages, then you can alter the sound of each part on the fly, so a solo violin could have a varying vibrato or attack throughout a song. I think that Roland have done this in the two demonstration songs built in to the SC55, which are quite easily the best demonstrations I've ever experienced, being of CD quality. Which brings me to the subject of sound quality.

Sound Quality

Have you ever listened to the Yamaha Clavinovas? Well when they first appeared I remember being very impressed with the sound on the upmarket models, but not too enthusiastic about the price! I recently hooked up then SC55 to a CLP50, a fairly standard Clavinova and the selected Piano 1. What a difference. Piano 1 is the 'dullest' of the piano settings on the Sound Canvas, yet in my opinion was easily better than any of the CLP50's sounds which sounded muffled in comparison. My pianist friend (the owner of the CLP50) was so impressed she wants to buy one! Piano 1 was her favourite, providing a sound comparable to her real acoustic grand piano. However, the piano sounds were soon forgotten as the other 300+ sounds were explored!

Pianos aren't everyone's cup of tea, so I'll consider some of the other instruments next. Solo string sounds on the sound canvas are excellent. The ensembles are a bit weak when compared with other Roland instruments, but the 3 string sections on variation 127 can be combined quite effectively with a little help from the reverb and chorus settings!

The Guitar sounds are a mixed bag. The acoustics are generally good, perhaps a bit 'clean'. The electrics sound too processed for my liking. Not the stuff Heavy Metal Freaks will rush out and buy (until they hear the drum kits....). The Bass guitars score slightly higher, providing very solid sounds with a good deal of variation. Nice with the HALL Reverb settings.

Organ sounds are all good. Cathedral Organ lovers may be tempted by the Church Organ sound with the Reverb type set to Hall 1 and the reverb level wound up (~80). The lesley sound (Organ 3) is welcome surprise!

The Pipe sounds are faithful but not quite Korg M1 standard. Sax sounds are a good attempt, but again they don't quite score enough marks to fool anyone.

The Brass sounds provide good variety and when used properly, an excellent big band sound is achievable. This is demonstarted by the demo song Jazz Lagoon.

Sound effects will add interest to those home videos. All are excellent except perhaps helicopter, but who's complaining?

Really there are too many sounds to cover here. All I can say is that everyone I know, who has heard this box wants to buy one. Two people already have and the others are sincerely interested, their enthusiasm just dampened by finances! But before I leave you to run down to your local Roland dealer, I must mention one last group of sounds that have been included and not as an afterthought either.

Drums, drums and more drums

There are 8 different drum kits in the SC55. They offer a great variety. I really don't think I have wanted a sound that isn't included somewhere in these kits. Oh no, I guess its time to type another list!

The kits are organised as variations. There isn't a Capital set as such.

1	9	17	25	26	33	41	49	127
Standard	Room	Power	Electronic	TR808	Jazz	Brush	Orchestral	CM64L

Now I know there are 9 sets listed, but Standard and Jazz have the same definitions so I'm not counting them as different sets. Still 8 kits is pretty impressive, but don't get over excited. Each kit has common elements and between 3 and 25 unique elements. The Standard kit comprises the following 61 sounds.

High Q, Slap, Snare Drum1, Sticks, Side Stick, Square Click, Hand Clap, High Tom 2, Snare Drum2, Ride Cymbal 1, Close Hi-hat, High Tom 1, Low Tom 1, Mid Tom 2, Cowbell, Open Hi-hat, CrashCymbal 2, Splash Cymbal, Muted Triangle, Chinese Cymbal, Ride Bell, Tambourine, Ride Cymbal 2, Metronome Click, Vibra-Slap, Mute High Conga, Open High Conga, Low Conga, High Timbal, Low Timbal, Open Surdo, Mute Surdo, Castanets, Belltree, Jingle Bell, Shaker, Open Triangle, Open Cuica, Mute Cuica, Low Wood Block, High Wood Block, Long Guiro, Claves, Short Guiro, Long Low Whistle, Short High Whistle, Scratch Push, Scratch Pull, Metronome Bell, Kick Drum2, Kick Drum1, Low Tom 2, Crash Cymbal 1, Pedal Hi-hat, Low Bongo , Mid Tom 1, High Bongo, Maracas, Cabasa, Low Agogo, High Agogo.

The other kits just have sections replaced by different instruments. All are excellent kits for the majority of home users and professionals alike.

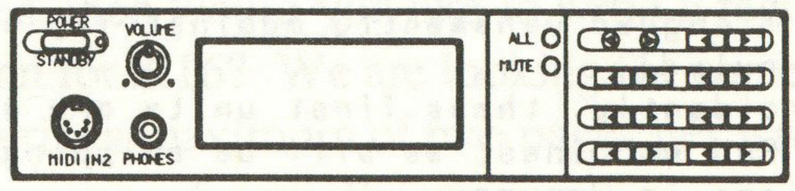
Noise

One feature of the original Kawai K1 that I disliked, was the audible noise evident in many of the sounds that relied on sampled waveforms. Kawai cured this to a large extent on the K4. Roland had a problem with hiss on the U110 sample player, but better filters improved this on the U220. The SC55 isn't the quietest instrument for solo sounds, but once a few sounds are combined,any noise present on individual samples is lost. The sample hiss is audible when amplification levels are high, and a single piano patch, for example, is being used. Introduce another piano and the noise remains the same, after all noise is random. However, because there are two pianos playing, the perceived noise is less. I'm a bit fussy when it comes to noise/hiss on samples and I can live with the SC55 so I imagine the majority of the world can do too.

The quality of the sound canvas is so good that a good sound system is required to get the best out of this little box. However the higher quality sound system used, the clearer that sample noise will become! Incidentally, when used with the Clavinova CLP50's internal speakers, the sound canvas sounded very impressive indeed. Full marks to Yamaha on their internal amplifiers/speakers on the CLP50.

Summary

The Sound Canvas really is a refreshing product. The price tag of around £400 to £450 is justified, after all, there are plenty of quality samples and all those drum kits. The built in effects are a very useful inclusion, adding a significant amount of realism to any sound canvas performance. Roland have really packed this box full of features. I like the two MIDI inputs because I can drive one from the computer and the other from a set of MIDI drum pads or a keyboard. Perhaps one of the only negative points is the size of the buttons and some of the ergonomics of the design which will deter, I imagine, some of the more senior members of the MIDI community on the grounds of failing eyesight and not so nimble fingers! I have enough trouble with the buttons after only a quarter of a century on this planet (Some say I'm rarely on this planet!). Try before you buy...
ST Ed.



THE ROLAND SOUND CANVAS SC55 - £450

NET_News

Compiled by Colin Hunt

Welcome to a new series within 8:16. Over the next few issues I will be bringing you any interesting titbits, gossip and useful information that has appeared on different electronic news networks throughout the world. In most parts this information will have be taken from INFO-ATARI8 & INFO-ATARI16 Digest (referenced as IA8 and IA16) which is posted to me on SprintNET. Occasionally there will be input from other sources. Please let us know what you think and of any ideas? What topics should I catch?

ST Book

At the end of November last year someone posted a message asking for information on the ST Book, in particular he wanted to hear about display quality and from anyone who had used it. One of the replies came from a very unusual source:

```
Date: 3 Dec 91 17:31:02 GMT
From: imagen!atari!trh@sun.com (T R Hall)
   Well, I guess I'm the best one to answer
about current status. [I'll have something
to say about their quality, too, but I am a
bit biased]. We have just done a production
proof run of about 80 units; there was a
minor "cock-up" [R.Miller's phrase], in that
a part value that had to change was not
done, and it popped a (very) small inductor
on a few (10) boards. This problem has been
fixed, and as I write this the units are
being prepped for packing. I expect them to
be shipped this week.
   We have scheduled a run of up to 1000
units starting Dec. 9, shipping about Dec.
20. We will continue to ramp up over the
next month.
   As to who has one, there are show units
in Germany and France, and both Sam Tramiel
and Bill Rehbock have been using theirs
extensively. In fact, Sam has taken his all
over Europe on his last trip there. He
writes out all of his memos and FAXes on the
STBook, as well as keeping his appointments,
schedule, phone and address book, etc.
   Bill Rehbock uses his much the same way;
neither he nor Sam has complained about the
screen. They both report battery lives of
over 8 hours (or, as Bill puts it, it "just
seems to run forever") using the Ni-Cad
battery pack.
   The list price, as far as I am aware,
will be ~$2000 for the base unit, with 40Meg
Hard drive and 1Meg RAM, and an alkaline
battery pack (which has a battery life of
about 3 hours). The Ni-Cad pack and AC
Adapter/Charger come as a pair for ~$200.
[Don't yell at me about selling them this
way; I argued vehemently against it, but was
over-ruled].
   Incidently, these first units are all
1Meg RAM machines; we will be shipping 4Meg
versions in January.
   I hope those who have used the units
(Bill in particular), both at Atari and at
Trade shows, will also post their
impressions.
```

TT040 News

Back in October (last year) the following was posted on IA16:

```
Atari IS making a multi tasking OS for the
TT as well as any other machine.
When you will see it? Well depending on
their resources you should see it when you
see the TT040 next year. (Remember, after
Atari got over the deal with federated you
have been able to believe what they tell
you. At least what I have been hearing
anyhow..)  Its unix is in beta test now. It
SHOULD be very bug free by the time its
released to the public next year. The Atari
developers tend to find any bugs in there..
;-) (UNfortunately the hard way sometimes.)
```

This was the first time I had heard of a TT040, however, more recently in a post related to the Chicago Computerfest was the following teasing info:

```
Most of the Atari people wore lapel pins
that said "040".  The party line was that it
probably meant what you thought it did, but
they couldn't comment further until Spring.
```

MultiTOS & TOS 2.06

Also in the Chicago Computerfest post was the following news about MultiTOS and the TOS 2.06 upgrade:

```
All discussion of programming techniques
around the Atari booth sparked discussions
of how they'd work with MultiTOS.  Again, no
specifics now, but a rather flat promise
that it would be finished in 1992.
The TOS 2.06 upgrade is scheduled to be
available "After Christmas", but chatter
suggested that it was running ahead of
schedule (my mind fills with snide remarks
at this point....same as you, I'm sure).
```

MiNT (MiNT is Not TOS) Problem

There is a lot of conversation about the use of MiNT between netters at the moment, some of which is shown below. But what is MiNT? OK it's not TOS, in fact it's a multitasking operating system extension for the ST. Even the desktop (GEM) can be run from MiNT. Out of interest, do any of our readers use MiNT? If yes, please let us know what you think. {If you want to try it out, MiNT is on disk STA10:Atari Interface Magazine; August 1991 Issue Disk within the BaPAUG PD Library and costs £2.50.}

The following thread all started because someone in Germany needed help:

```
Date: 12 Dec 91 13:48:24 GMT
Subject: "Stopped (tty output)"-MINT problem
I have just downloaded Mint v0.91 and
```

```
installed it.  I have a .ttp that is
compiled with Turboc 2.0 which does some
status output via stderr when running.
If i use this program with mint, there are
no problems if it runs in the foreground.
But if i run it in the background (using the
"&" feature of bash) i soon get an error
message like this :

[1]+ Stopped (tty output)foo_bar

Afterwards, the process of foo_bar has the
status "STOPPED"
WHAT THE HELL IS THIS ?????
(and how can i get around it)
```

Within a few hours, the first response was posted (from within the UK):

```
Date: 12 Dec 91 15:51:21 GMT
Subject: "Stopped (tty output)"-MINT problem

  And here goes the answer...
  Running a program in the background
basically means the shell runs the program
but does not give it access to the terminal
for input or output.
  The upshot of this is that the shell is
alerted when the program attempts to access
the screen terminal (MiNT calls it the tty)
and it stops the program and tells the user
what has happened.
  To prevent the program from being stopped
you could redirect its output (using >
diskfile). This file can be any file on any
filing system. If you want to keep  a copy
of the output you could use a normal disk
file or the printer (u:/prn or u:/devs/prn).
If not you can use the nul device (u:/nul or
u:/devs/nul) which is equivalent to
abandoning the output.
```

Later that day, even more information was posted (this time from Holland):

```
Date: 12 Dec 91 19:11:49 GMT
Subject: "Stopped (tty output)"-MINT problem

This is one of the wonderful features BSD
unix invented, and Mint has also added: a
process can also be in the STOPPED state,
i.e. it does not run but can be continued by
sending a SIGCONT to it. It will also
continue if you get the process back to the
foreground (use 'fg').
If you have the stty program: stty -tostop
will change the tty mode so that processes
running in the background will not be
stopped when they produce output.
```

The Colour Of Atari

Just some meaningless info that was recently posted on IA16:

```
A few months ago, I met a Micheal Groh,
Dealer Sales Coordinator, and we exchanged
business cards. I noticed that his card was
multicolored, in contrast to Sig Hartman's
(purple logos), and other Atari employees
I've met (blue logos).
"ATARI" is spelled out in letters of
different colors, and remembering that the
colors refer to the different lines of
products that Atari sells.  So, in order,
here are the "Colors of Atari" and the
products they represent.

A    blue        ST computers
T    green       TT computers
A    orange      Video games (??) Lynx
R    red         XE computers
I    purple      IBM compatibles

Well, I'm guessing on the orange part of it.
But I noticed that Lynx logos are orange.
Could the Jaguar logo also be orange?
Notice that the logos on the Portfolio are
purple.
```

TT On Ethernet

The following conversation thread is a typical example of how information can be gained by reading electronic mail boards. On 11th December, the following request was posted:

```
I (would) like to know something about the
ethernet-interface of the TT.
```

Several days later, the following response was posted:

```
The TT does not have an Ethernet Interface!
The built-in high-speed Net-Interface in not
yet supported by Atari.  (Its AppleTalk-
like, I heard.)
You can insert an VME-Bus Ethernet-
Interface, but do you have Software?  I
heard some rumours about expensive
interfaces from German vendors, the same
vendors which sell (bad) ethernet interfaces
for the Mega-ST ...
```

A couple of days after this, the following was posted:

```
Speaking of Ethernet, I see on the .forsale
groups that Mac SCSI <-> Ethernet interfaces
are fairly cheap ($400.00 U.S. or so).
Does anybody anywhere support this (these
???) board for the ST?  It would be by far
the best solution for me.
```

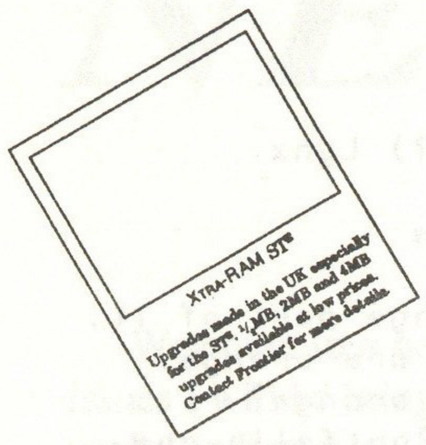
Even I could be tempted to buy a SCSI <-> Ethernet interface so I could talk to the PC / Mac network at work, though of course there will be the problem of software compatibility. Now, does anyone know of a network that will allow me to connect my Mac and ST together and share the harddisk/printers. Think I'll post a message and see what response I get?

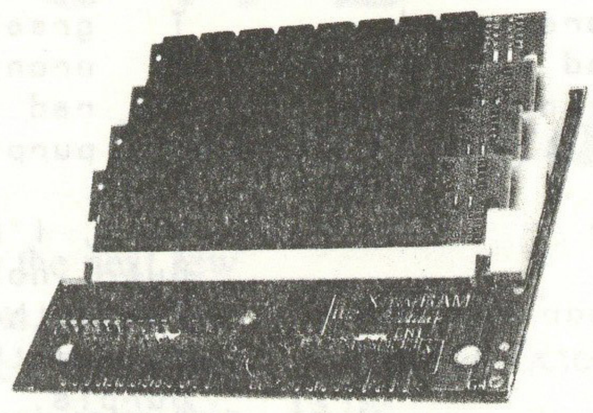
That just about rounds off this issue of NET_News. Please remember to let us know what you think. In the meantime, I'll continue to scan the nets and pick up anything I think will interest our readers.

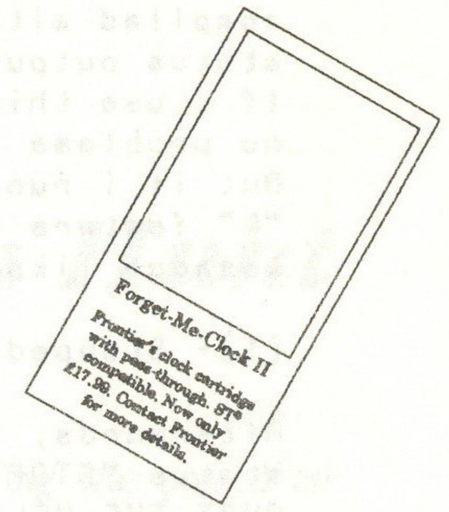
Help Wanted

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.

Choosing a memory upgrade for your Atari ST just got easier!







Once Frontier's XTRA-RAM *Deluxe* is installed in your ST, you can upgrade in stages to 4MB whenever you like - it couldn't be easier. Includes a two year guarantee and a no-quibble ten day money back offer.

Is your ST always running out of memory? Frontier Software's new XTRA-RAM Deluxe is the easy to fit and simple to upgrade memory expansion that you've been waiting for.

Thousands of ST users have already upgraded their STs to 1MB or 2½MB using the original XTRA-RAM in their homes and offices without having to send their computers away. Now Frontier, makers of the original XTRA-RAM, introduce their new memory upgrade - The XTRA-RAM Deluxe.

The experience, quality and expertise that went into the best selling XTRA-RAM has been applied to the new XTRA-RAM Deluxe. The XTRA-RAM Deluxe will upgrade your Atari STFM to 1MB then 2½MB and then 4MB with easy to install SIMM memory cards. Your Mega 1ST can be upgraded to 2MB and then to 4MB. Mega 2STs can be expanded to the full 4MB. Once the XTRA-RAM Deluxe is installed in your ST, you can choose when to upgrade further - you simply change or add SIMM boards - just like the ST^E. You can even use these SIMM boards if you later upgrade to the ST^E.

Easy To Fit

Installation of the XTRA-RAM Deluxe couldn't be easier. Following the instructions laid out in our simple to follow manual which is written with the non-technical reader in mind, you disassemble your STFM or Mega ST, plug the XTRA-RAM Deluxe into two places inside your computer and reassemble it. The whole process takes around 1½ hours and most STs will not require any soldering whatsoever.

The XTRA-RAM Deluxe fits <u>all</u> MMU chips (including the 100109) whether they are soldered down or not. If your ST has a soldered down Video Shifter chip or a 101601 type MMU then some soldering will be required. You can do this soldering yourself or Frontier or your dealer can do it for you for a small extra charge. If your ST has a socketed Video Shifter chip and an MMU which isn't the 101601 type, then you can fit the XTRA-RAM Deluxe without any soldering whatsoever. If you need any further explanation of this, contact Frontier direct.

No Need To Stop At 1MB or 2½MB

Most memory upgrades for the Atari STs will give you a simple upgrade to 1MB for about the same price as the XTRA-RAM Deluxe. Some of these upgrades may be as easy to fit as the XTRA-RAM Deluxe, but they do not allow you to expand your ST further. Once the XTRA-RAM Deluxe is installed in your ST, all you have to do to upgrade further to 2½MB or 4MB is install extra SIMM memory cards into the empty sockets on the XTRA-RAM Deluxe. This is a very simple process which takes less than ½ hour.

Don't restrict yourself to just 1MB. Make sure that you choose an upgrade, like the XTRA-RAM Deluxe, which can grow with your needs.

Totally Compatible

The extra memory that the XTRA-RAM Deluxe gives your ST is totally compatible with all of your ST programs. The ST's memory controller chip logs in the extra memory and makes it available for your programs. You will automatically get extra memory for DTP, word processing, MIDI, running the Atari Laser printer and everything else that you use your ST for.

Software Included

Each XTRA-RAM Deluxe upgrade is supplied with free RAM disk and printer spooler software and a free RAM testing program so that you know with certainty that your installation has worked.

Satisfaction Guaranteed

The XTRA-RAM Deluxe is supplied under Frontier's ten day money back offer - if you aren't satisfied with the XTRA-RAM Deluxe for any reason you can return it to the place of purchase within ten days for a full refund (participating resellers only). The XTRA-RAM Deluxe also carries a full two years' guarantee. The XTRA-RAM Deluxe is designed and manufactured in the UK. Unlike some ST upgrades, Frontier guarantee that each XTRA-RAM Deluxe uses only brand new SIMM memory boards - making your ST and its memory upgrade more reliable both now and in the future.

Prices

Frontier supply the XTRA-RAM Deluxe in four ways:

New Lower Prices!!

- XTRA-RAM Deluxe Unpopulated (without memory) £34.99
- XTRA-RAM Deluxe ½MB upgrades your 520STFM to 1MB (can later upgrade your STFM to 2½MB and then 4MB) £64.99
- XTRA-RAM Deluxe 2MB upgrades your 520STFM, 1040ST to 2½MB, Mega 1ST to 2MB or your Mega 2ST to 4MB (can later upgrade your ST or Mega 1ST to 4MB) £109.99
- XTRA-RAM Deluxe 4MB upgrades your 520STFM, 1040ST and Mega 1ST to 4MB £179.99

Please add £3.00 postage and packing to all orders under £120.00. All prices include VAT. Frontier accepts payment by Visa, Access, cheque or postal order. Prices subject to change without notice. Goods subject to availability. Specification subject to change without notice.

Designed and Manufactured in the UK. Frontier also manufacture memory upgrades for the Atari ST^E.

Available from your local dealer, or direct from:

2 Year Guarantee

Frontier Software

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P.O. Box 113, Harrogate, North Yorkshire England HG2 OBE. Phone (0423) 567140/530577. Fax (0423) 522874.

Game Reviews

Cultivation & Chromatics.....XL/XE
Ke-Soft (£6.99)
Reviewed by Thomas Holzer

Have you ever watched Amiga or ST owners playing all these hot games like Tetris and Puzznic, wondering if you can ever play these games on your trusty old XL/XE? Well, now you can but I do think that programs such as Tetris and match this and that are sometimes overrated. But please, don't get me wrong, I do like to play the odd thinking game. Zenji and Soko-Ban spring to mind, they are exceptionally good and represent value and staying power for many happy playing hours.

Cultivation: This game is on the a-side of the disk and the aim of the game is to match symbol blocks by pushing them together in the right order to make pairs. If they match correctly, they simply disappear and you advance to the next level once you've cleared the screen. To make matters a bit harder, a clock keeps ticking down so be careful not to hang around and get in a sticky corner. If you do make a wrong move you may reset the tiles up to three times by pressing the spacebar, but this does not affect the clock, it keeps ticking down. Cultivation has 10 levels containing 10 screens each and after that you can design your own screens with the built in editor, which is quite fun and easy to use.

The graphics are high-res, meaning black and white only and therefore very clean and clear. A special mention has to go towards the music, quite a high quality composition indeed.

Chromatics: Move coloured blocks falling into a well and match three same coloured blocks together to make a row or column of three or more and make them disappear. Once a stack of unmatched blocks reaches the top of the well the game is over. You use the joystick to move the blocks to the left or right as they fall, and by pushing the stick forward you can flip the colours which is a useful feature. Chromatics is a mix of Tetris (falling blocks) and Klax (match colours) which plays very well indeed. You may change the difficulty level by pressing <select> and the number of colours by pressing <option>. Even with the difficulty level set to hard it is still an enjoyable puzzler and should keep you happy for years to come.

Graphics are up to the usual high standard we expect to see on Atari computers. The title music is a well known tune from the ancient composer J.S. Bach, it is the music from that cigar advert, it plays throughout the whole game, which I found to be very relaxing (shame, I don't smoke cigars).

New and good software for your Atari? You bet!!

The software reviewed is available from: Ke-Soft, Frankenstr.24, 6457 Maintal 4, Germany or Gralin International.

Bill & Ted's Excellent Adventure .....Lynx
Atari Corp. (£29.95)
Reviewed by Thomas Holzer

Here we have the game based on the first film from those two cool dudes, Bill and Ted.

The beautiful babes from medieval England, Joanna and Elizabeth, have been kidnapped by the bad "grim reaper". Now it is up to Bill or Ted (or both, in a two player game) to travel through time and find the girls and be most triumphant.

I found the film to be a bit of a disappointment, but this game on the other hand gets you well and truly hooked. It is an overhead scrolling adventure type of game but with absolutely no fighting whatsoever, instead you have to play the guitar to fight of the enemies.

Sounds weird? You also have to collect musical notes to reveal hidden phonebooks in order to find the telephone numbers so that you can travel through time in your little telephone box (Dr. who indeed).

Also, you meet some important people on your travels, who give you some quests to do. For example, in the first stage of the game you meet an Egyptian king who has lost his staff and asks you to find it for him. This is essential for solving the clues to get further into the game. You also have to leave messages for yourself in one time zone in order to find it in another time zone later (or earlier?) during the adventure. Sounds even more weird?

Bill and Ted's Excellent Adventure is not a quick film licensing tie-in. Very much thought has been devoted to include the paradoxes of time travel into this game. Sometimes you have left yourself a clue in the past time, which you still have to leave in your present time, but you will have to place it right now to find it in the future. It is therefore important to search in every time period but watch out for lots of enemies like beetles, lions, bats and so on.

To sum it all up, Bill and Ted is an "excellent" adventure without the usual shooting and fighting, it involves a lot of brain power, maybe some frustration at times.

The graphics are spot on, so are the time travelling sequences, and game play is almost smooth, maybe a bit ruff at times. In one word - it's excellent dudes! (that's three words).

Robotron 2084 .....Lynx
Shadowsoft (£29.99)
Reviewed by Thomas Holzer

Ten years ago there was a fast and furious video game that drove people visiting the arcades totally mad. It featured a new two joystick control system that made it possible to shoot 360 degrees and still move around at the same time. The name of that game? It was "Robotron 2084". Now, ten years later, it makes a comeback on your Lynx and it looks, sounds and almost plays like its arcade uncle.

As you may have guessed, it is the year 2084 and the people of earth created the ultimate machine, a Robotron. One fine sunny day the Robotrons decided that man is not good enough any more and all humans must be destroyed, so they started to revolt against mankind. It is now up to one man to save the humans, he is a warrior armed with only a laser and guess who that man is?

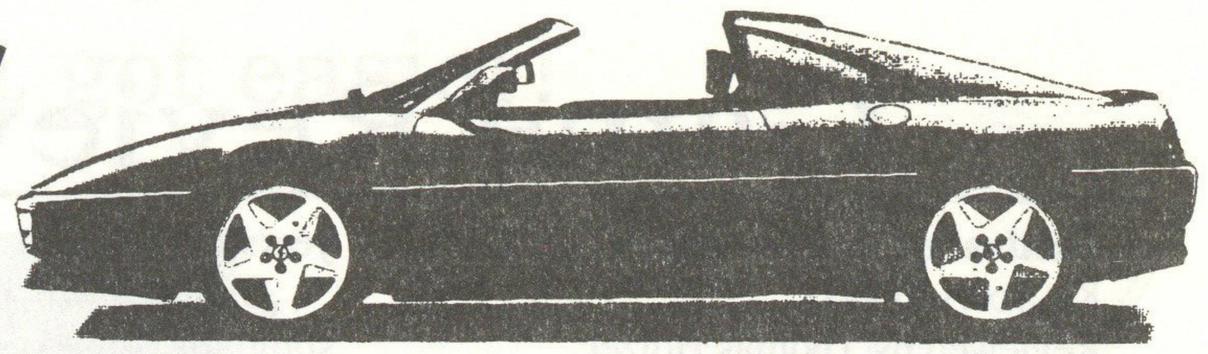
The game starts on a large playfield filled with Robotrons, humans and obstacles. The aim of the game is to destroy the enemies and save the humans before they become "Progs", helpers of the Robotrons. That is all there is to it. Sounds easy?

At first it seems to be a bit difficult getting the controls right, remember the coin-up had two joysticks, but in this version you have three alternative firing modes, one of those will surely suit you.

I found the best mode is option C, which means A button is rotating fire clockwise and button B counter-clockwise and after a while of practice you'll be doing some serious blasting.

The graphics and sonics are coin-up identical and you even get the flashing Robotron title screen plus another two extra title screens. An old blast it may be, but it is a hell of a good one.

Speed



Ralph Griffin presents a personal exploration of the many ways of enhancing your ST's performance using hardware & software.

Speed is sexy..

That is what we are led to believe, but sexy or not many of us lust after speed, after all, who wants to wait all day for a program to load, for the screen to update itself, or for a database to finish finding that long lost address?

Go for a brain transplant!

The brain of a computer is the CPU (Central Processing Unit). The CPU moves data around memory, between memory and the I/O (Input / Output) devices, as well as performing arithmetic and logical operations on data. In most microcomputers, the CPU is a single integrated circuit called a microprocessor. To speed up a microprocessor, developers must improve four areas:

[1] Increase the amount of data that can be processed at once.
[2] Increase the memory the CPU can use.
[3] Speed up data processing.
[4] Speed up data manipulation.(I/O)

The microprocessor connects to the memory by two groups of wires on the printed circuit board, each known as a bus. One group is responsible for holding the data (the data bus) and the other for determining where in memory the data is to be read from, or written to (the address bus). The size of a single piece of data that a processor can hold is called a 'word'. This refers to the amount of data that can be handled in one instant and is measured in bits. A bit is one binary digit either a '0' or a '1' and each bit is a power of 2. Data throughput and hence processor performance, improves with increasing word length since more bits are handled simultaneously.

Word Length	Processors	Example Computers
8 Bits	Z80,6502	Spectrum, BBC Micro
16 bits	68000,8086	Atari ST & Amiga, PC XT
32 bits	68030,80386,T800	Atari TT, PC AT, ATW
64 bits	i860, 68040	

The Z80 and 6502 eight bit microprocessors have 16-line address buses and so can use 65,536 bytes of memory (2 ^16). The 68000 has a 24-line address bus and can use 16 Mb of memory (2 ^24). However, the ST's Memory Management Unit (MMU) was designed to address only 4 MB out of the 16 that it is possible to address using the 68000. At the time of the design 4Mb was very adequate but today many power users are finding this a limitation.

With 32-bit microprocessors the limit on addressable memory has dramatically increased to 4Gb (4,096Mb) of RAM (2 ^32) for the 80386, 68030, and T800. The IBM PCs operating system OS/2 needs 8Mb to be comfortable, but gigabytes cost loads-a-money, so 32-bit microprocessors usually have virtual memory addressing. This is a hardware trick to make different parts of the system think each has access to a large amount of memory. In reality, chunks of data are saved out to disk and other chunks loaded from disk slowing access down to disk speeds.

Check that pulse..

All processors rely upon clock signals to synchronise their activities. The faster the clock signal pulses, the faster the processor runs. Clock speeds are measured in MHz. 1Hz is one cycle per second, so 1MHz is a million cycles per second. The 68000 inside the ST is clocked at 8MHz and that in the Amiga at 7.16MHz.The fastest instruction that a 68000 can perform is executed in four clock cycles. Hence an (8MHz) 68000 can run two million of its fastest instructions per second (2 MIPS). Many 68000 instructions take more than 4 clock cycles: a multiply can take 70 clocks, so the the true rating of a 8MHz 68000 is much less than 2 MIPS. Motorola have produced several versions of the 68000 including devices running at 16MHz. One of these is employed in the new MEGA STE.

High speed RAM chips are necessary to make the most of the higher transfer rates achievable with fast clocks. These are very expensive however, and dozens are required as main memory for a modern microcomputer. Over the years as microprocessor speeds have increased by an order of magnitude (ST Ed: 10 times), RAM speeds have only doubled. This means although a processor is capable of high speed it may have to pause to let the RAM catch up. These pauses are referred to as 'wait states'. PC clones alleviate the wait problem by constructing a 'cache' of fast but expensive SRAM (static RAM) between the microprocessor and slower, cheaper DRAM (dynamic RAM) which forms the main memory. A cache holds addresses and data of recently accessed memory. Whenever the processor accesses instructions or data, the memory management hardware within the CPU checks to see whether the data is in the cache. If it is, then fast access occurs. Because programs tend to repeat instructions in loops and access small amounts of data frequently, the actual 'hit rate' with 128k of SRAM can be as high as 95%, so caches can be very effective.

Specialist chips have been developed to reduce the work load of the processor, the Motorola 68881, and Intel 80387 for instance provide trigonometric functions, powers, roots and logs. They act as co-processors. A co-processor does not affect the speed at which basic computer functions operate. Instead it possesses a capability to remove the burden of some forms of calculation from the CPU thus leaving the microprocessor to perform a more efficient job. Such calculation is not needed to any great extent in programs such as word-processors, databases and file utilities. However, for Desktop Publishing, Spreadsheets and CAD applications, calculation is of primary importance. Latterly it has been possible to fit a processor and co-processor on one chip, the 80486 chip by Intel is an example. (ST Ed: The co-processor section of this chip has already been widely criticized. Consequently, Intel recently released a version of the '486 without the co-processor!)

The 16-32 bit MC68000 was developed over a decade ago. It has been updated and enhanced several times.The 68030 and 68040 are the most recent designs. The cost of these high performance CPUs remains substantially higher than that of

the 8MHz 68000. This is why Atari has been reluctant to use them in the ST. Only machines such as the TT can suffer the cost penalty imposed by using the 68030.

If you can't wait for Atari to redesign their internal architecture, what about fitting your own accelerator board? There follows a brief summary of the replacement processors available.....

Hypercache has 8K of instruction and data cache. There are two ways of turning the cache on and off, either by using the desk accessory or soldering on a hardware switch to the Hypercache board. The cache control DA works by toggling a bit in the sound chip which must be connected to the accelerator board. Hypercache also requires a 16MHz signal to be taken from one of the legs on the ST's shifter chip.

TURBO 16 from Fast Technology is a 16MHz 68000 CPU with a 16K instruction and data cache. Installing is similar to the rest, the old 68000 is removed and replaced with the new CPU board, the 16MHz clock signal has also to be tapped from the ST's shifter chip. Hardware and software switches for cache control are available.

Just recently, 4 new accelerators have reached the UK market. These are:

TURBO 20/16, a 16MHz 68000 with enhanced operating system in 6 ROMS but with no cache RAM.

TURBO 16 V2.0, a low power 16MHz 68000 with 32K cache RAM and supplied with HISOFT's TURBO ST software blitter.

TURBO 20/20, a 20MHz 68000 with 32K cache RAM, TURBO ST software and a video RAM cache option.

TURBO 30, a 68030 processor available in 40 or 50MHz versions! This board will run a maths co-processor at upto 65MHz too. It also supports upto 16 MB of burst mode RAM. However, you might need to sell your car to afford one! Prices start at around £1000 and rise to around £3000! All this expense to make your £300 ST run a little faster?

If you can't afford to speed up the processor look to software and specifically to the public domain, where programs are available that can speed up the ST by completely replacing chunks of the ST's operating system with small program patches installed from floppy. Many of the speed problems are down to the way the ST's operating system was written. Much of it was coded in C, GEM's native language. This has lead to some portions of the operating system code running well below peak performance. Much could have been achieved had the system been written in machine code. Many of the utilities in the PD are actually machine code patches that provide enhancements to the operating system. Areas for improvement are screen updates, window redraws and scrolling, floppy and hard disk performance, mouse speed and general system initialisation.

Screen handling was improved when Atari started fitting the blitter chip to ST's, but the improvement isn't always as great as it could be because the blitter is rarely allowed to run in bus hog mode when it could cause interrupts not to be serviced. The normal (safe) mode of using the blitter is the bus share mode so any blitter functions will be interrupted after 64 cycles. And will have to wait until the processor's turn on the bus is complete before a hardware executed BitBlit function can complete. Not all ST's have blitters fitted, you need TOS 1.2 or later to be able to use a blitter and not all of these machines work with a blitter for some reason. Not a worthwhile upgrade, even if your machine will accept one. A much better upgrade is to use a software blitter such as Quick ST or Turbo ST. These cost between £15 and £30 depending which version you decide to buy.

The software blitter..

An American chap by the name of Wayne Buckholdt re-wrote crucial TOS routines naming his program Turbo ST. Using Turbo ST, text output, window redraw and scrolling are noticeably speeded up. While Turbo was being sold, shareware programmer Darek Mihocka was developing his own software blitter, Quick ST. This was available on a Shareware basis. Recently it took a jump in performance and went onto the commercial market as QUICK ST V3. Because the Turbo and Quick code is more efficient than the C code the result is much faster screen handling.

There are also several ways of improving disk performance. 'Twister' adjusts the sector interleave, whilst remaining compatible with the ST's disk system. It improves the speed of disk access so that a sector can be read for every revolution of the disk. For hard disk users there are ways of improving the creation and writing of files. Again it is down to the inefficiently programmed File Allocation Mechanism in the ST's operation system. Enter FATSPEED and TURBODOS. Like software blitters these utilities redirect operating system vectors and replace sections of TOS with their own optimised code. Another useful disk related utility and popular with hard disk owners is the disk cache. This is a kind of intelligent RAM disk which records copies of disk reads and writes to a RAM buffer, so that subsequent requests for the same data, results in information coming from the faster RAM rather from the disk again. The shareware L-UTILITIES includes a disk cache program which can be configured to cache floppies as well as hard disks. It even supports disk write caching.

Hard disk drives are, of course, the best answer to the floppy disk speed problem. They provide much faster access to data and remove the need for tedious and time consuming disk swaps. All disk accesses, however, benefit from the fitting of TOS 1.4 as Atari improved the way files are handled. Hard disk users will notice a considerable speed improvement when using Tos 1.4. Perhaps this is a worthwhile upgrade, costing a modest £40 or so.

You can speed up the acceleration of the mouse, and so avoid running out of mouse-mat space with a couple of ACCessories. My favorite is PROMOUSE with dual speed action: move the mouse slowly and it gives fine precise control; move the mouse fast and the pointer accelerates away.....> > > >

Memory upgrades can also improve the performance of your humble ST. For floppy users who can't afford a hard disk drive, then a large RAM disk can often ease the operation of those programs requiring access to more files than can fit on a single or dual floppy! Try running Timeworks with K-Roget installed as an accessory with a single disk. However, with a 1Mb RAM disk, you can copy the Thesaurus files from floppy to the RAM disk and access them at full speed (faster than on a hard drive). Unfortunately you'll need at least 2MB of RAM to do this. STE owners can simply slot in SIMMs.STFM/MEGA ST owners will need an adapter board to be able to use SIMMs, such as the one supplied by Evesham Micros. Other boards can offer the full 4Mb for £160, about £90 cheaper than this time last year. Now could be the time to buy as industry sources are predicting price rises this year.

There are many ways to increase the speed of the ST from the cheap to grossly expensive. Which you choose, and which you really need I will leave to your own judgement. But one final thought. When my wife sits at the keyboard she can operate the computer twice as fast as me. Not because she slips in a faster CPU when I'm not looking, but because she can touch type and I cannot. Perhaps the fastest upgrade you can buy is a night school course in typing skills!

By Ralph Griffin and Paul Brookes.

Turbo - Info

Turbo-Info #7: Dual Memory Usage In Applications

(Reprinted from Atari Interface Magazine, Jan 90)

By Chuck Steinman
(Dataque)

This article will present one way to set up a program to run under the Turbo-OS, yet still be compatible with the Atari XL/XE operating system. It is assumed that the reader has some knowledge of programming at the assembly language level and is familiar with the previous article #6 (see issue 12 of 8:16 or the December '89 issue of AIM). This instalment will concentrate on memory use decisions.

Last month the program fragment presented determined the type and amount of available RAM. There were two significant variables which were set by that program to make later RAM accesses easier in applications where both standard and expanded RAM may be used.

The first, was the three byte pointer, BASEBYTE. This pointer is used to indicate where the base of user RAM resides. Since we want to make our application work in both the stock 6502 units and the Turbo-816, we must be very careful of what instructions are used. It is very easy to accidentally slip in a 65816 instruction, which would cause a real problem for the 6502.

The second variable was a flag called EXPANDED. This flag is set to zero to indicate there is no expanded RAM and some negative number if expanded memory does exist. We will modify last month's program just after the label NO ERROR, to store $FF into EXPANDED. This will allow us to use the bit instruction to test what memory to use in our program. Note that $FF is already loaded into the accumulator, so all we have to add is the one line 'STA EXPANDED'.

First we may want to initialize the RAM with the information expected as the defaults. In our little mini-application, let's say we have several tables which need to be initialized. To fall back to Turbo-Calc as a reference, we will need a 128-byte table for the cell width, and a 384-byte table for the row pointers. Another table will be initialized, to contain the cell data. To simplify later coding, we will keep pointers to the beginning of each of these tables. Well...let's begin.

```
; new definitions: note: order is important, due to byt/pag offsets

widvec    dsb 3      ; width pointer
bytvec    dsb 3      ; row address pointer
pagvec    dsb 3      ; row bank pointer
bnkvec    dsb 3      ; row bank pointer
celvec    dsb 3      ; temp cell pointer

; mini-memory map
;
; widvec -> 128 byte table (width of column)
; bytvec -> 128 byte table (lsb of data vec)
; pagvec -> 128 byte table (msb of data vec)
; bnkvec -> 128 byte table (cell data banks)
; celvec -> variable length cell data block
;
; offset tables to simplify initialization
bytoff    dcb        $00,$80,$00,$80 $00
pagoff    dcb        $00,$00,$01 $01 $02

initialize  jsr initialization  ; run last month's code
            ldx #$00

loop1       lda basebyte        ; byte of memory pointer
            clc
            adc bytoff,x
            sta widvec,x
            inx
            lda basebyte        ; page of memory pointer
            adc pageoff,x
            sta widvec,x
            inx
            lda basebyte        ; bank of memory poinbr
            adc #$00
            sta widvec,x
            inx
            cpx #$0f
            bcc loop1
            ldy #$7f            ; fill the width bbie
            lda #$08            ; set out defauit width to 8 characters
            bit expanded
            bpl nexp1
            nat                 ; go into the native CPU mode

exp1        sta [widvec],y      ; use long indirect access
            dey
            bpl exp1
            iny                 ; now zero

fill1       lda #$ff
            sta [celvec]        ; set end of row flag
            lda celvec
            sta [bytvec],y      ; byte of row vector
            lda celvec+1
            sta [pagvec],y      ; page of row vector
            lda celvec+2
            sta [bnkvec],y      ; bank of row vctor
            inc celvec
            bne noadj4
            inc celvec+1        ; move to next (now empty) row
            bne noadj4
            inc celvec+2

noadj4      iny
            bpl fill1
            emu                 ; and back to 6502 emulation mode
            bra cont1

nexp1       sta (widvec),y      ; non t816 execute this
            dey
            bpl nexp1
            iny                 ; back to zero

fill2       lda #$ff
            sta (widvec),y
            lda celvec
            sta (bytvec),y      ; byte of row vector
            ida celvec+1
            sta (pagvec),y      ; page of row vector
            inc celvec
            bne noadj5
            inc celvec+1        ; set pointer to next row

noadj5      iny
            bpl fill2           ; note: no need  to modify bank vectors

cont1       rts                 ; that's all
```

600XL Video Modification

By Ken Sumrall

Here are instructions on how to add a monitor jack to your 600XL. This jack contains the following signals:

Pin	Signal
1	Composite luminance
2	Ground
3	Audio out
4	Composite video
5	Composite chrominance

The numbering convention for the DIN connector is:

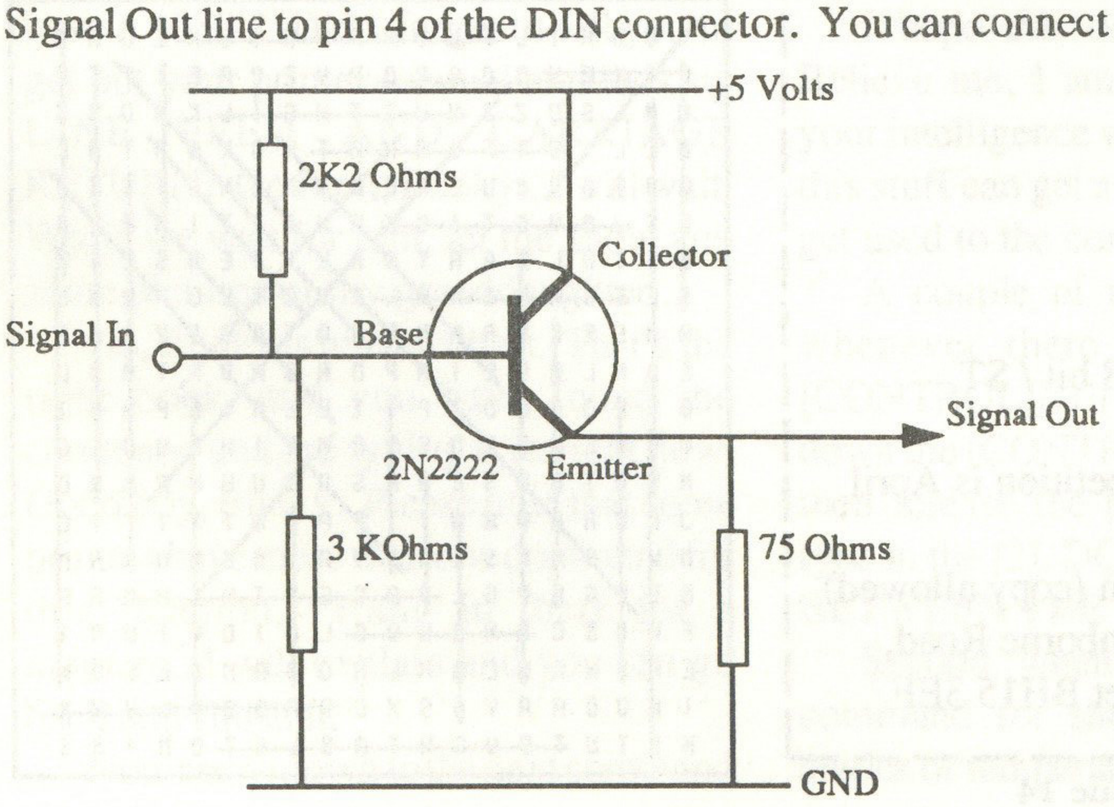
```
3 o          o 1
  5 o    o   o 4
        2
```

This mod for the 600XL provides every one of these signals except the composite chrominance. (Actually, the 800 and the XE both supply the composite chrominance signal, but the 800XL does not. Adding the composite chrominance signal to an 800XL is a simple mod that was described in ANTIC a few years ago. If you can't find the mod, send me e-mail, and I will try and find it.)

COMPOSITE VIDEO (pin 4):
To add composite video to your 600XL, you need the following parts, which are all available are Radio Shack:

(1) 2N2222 general purpose transistor
(1) 2.2K ohm resistor
(1) 3K ohm resistor
(1) 75 ohm resistor
(1) 5 pin DIN female connector

The circuit is shown below. It is a basic emitter follower circuit. I built this by just soldering the resistors and the transistor together, and did not put this on any kind of circuit board. After you have built this little circuit, you unsolder the 1st wire from the right of the RF modulator as you look at it from the front of the computer, and then solder that to the Signal In of this circuit. You then connect the Signal Out line to the 1st terminal from the right of the RF modulator, and also connect it to pin 4 of the DIN connector. You should use shielded wire when you connect the Signal Out line to pin 4 of the DIN connector. You can connect the ground wire to any major ground point on the mother board. I hooked mine to the metal case of the RF modulator. The +5V line is also available on the RF modulator. The 2nd pin from the right of the RF modulator is the +5V power supply for the RF modulator.



COMPOSITE LUMINANCE OUTPUT (pin 1):
To add composite luminance (black and white signal only) to the DIN connector, connect a 75 ohm resistor between the emitter of transistor Q6 and pin 1 of the DIN connector. You should use shielded wire to keep noise from appearing on the line.

AUDIO OUTPUT (pin 3):
To add audio output to the DIN connector, connect a wire from the 2nd terminal from the left on the RF modulator to pin 3 on the DIN connector.

COMPOSITE CHROMINANCE (pin 5):
I have not found a simple mod to pick up the composite chrominance signal for the DIN connector. I have not looked terribly hard, however, since it is possible to use the composite video output as a composite chrominance signal on many monitors. That is how my 600XL is hooked up to my separate composite chrominance/luminance monitor, and it looks great!

GROUND (pin 2):
I just connected pin 2 of the DIN connector to the metal box that the RF modulator lives in. However, you should be able to hook this pin up to any major ground point on the motherboard.

I was able to mount the 5 pin DIN connector on the back of my 600XL, between the RF modulator and cartridge slot. It is a slightly tight fit, but you can fit it if you are careful.

This is copyrighted by Ken Sumrall. However, you may freely distribute it, and modify it, as long as this notice is included in its entirerty. The author may be reached at the following Email addresses:

ken%hpda@hplabs.hp.com
...!hplabs!hpda!ken

8:16, BaPAUG and Ken Sumrall accept no responsibility for any damage done while performing or using this modification.

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[You may photocopy this form if you wish]

Competition #2

We were so pleased with the number of entries from the first competition that we are going to make it a regular event. So here goes competition number two.

On this page you will findeight short program listings written in languages available on the Atari 8 bit and/or ST. All you have to do is tell us which language.

We have four main prizes:

8-bit: InterLISP65 from ANTIC
BASIC XL from ICD

ST: PD Language Collection (ICON, Little Smalltalk, Forth, C, ELAN 1 and XLISP)
Using LOGO on the ST book by Martin Sims (Glentop)

and two 8:16 subscriptions to give away.

For those of you who are interested all the programs work and perform the same task in a similiar manner. Each program consists of a main routine that defines any variables (if required) and then calls a subroutine that asks the user to enter two numbers. The subroutine adds these numbers together, displays them on the screen and returns to the main routine which exits. Rather simple, really!

Listing One:

```
;8:16 Competition

MODULE
  BYTE A,B,C

PROC ADDAB()
  PRINTE("Enter A?")
  A=INPUTB()
  PRINTE("Enter B?")
  B=INPUTB()
  C=A+B
  PRINTE("C = ")
  PRINTCE(C)
RETURN

PROC MAIN()
  ADDAB()
RETURN
```

Listing Two:

```
10 R:8:16 COMPETITION
20 U:*ADDAB
30 E:
50 *ADDAB
60 T:ENTER A? \
70 A:*A
80 T:ENTER B? \
90 A:*B
100 C:*C=*A+*B
110 T:C = \
120 T:*C
130 E:
```

Listing Three:

```
{8:16 Competition}

PROGRAM Competition;

VAR
  A : REAL;
  B : REAL;
  C : REAL;

PROCEDURE ADD_AB
  BEGIN
  WriteLn('Enter A?');
  READ(A);
  WriteLN('Enter B?');
  READ(B);
  C := A + B
  WriteLn('C = ',C)
  END;

BEGIN
  ADD_AB;
END.
```

Listing Four:

```
10 REM 8:16 COMPETITION
20 EXEC ADD_AB
30 END
50 PROC ADD_AB
60    INPUT "ENTER A";A
70    INPUT "ENTER B";B
80    C=A+B
90    PRINT "C = ";C
100 ENDPROC
```

Listing Five:

```
10 REM 8:16 COMPETITION
20 DEFSNG A-C
30 GOSUB 50
40 END
50 INPUT "ENTER A";A
60 INPUT "ENTER B";B
70 C=A+B
80 PRINT "C = ";C
90 RETURN
```

Listing Six:

```
/* 8:16 Competition */

#include <stdio.h>

int a,b,c;

main()
{
  add_ab ();
}

add_ab()
{
  printf ("Enter a?");
  scanf ("%d",&a);
  printf ("Enter b?");
  scanf ("%d",&b);
  c = a + b;
  printf ("c = ",c);
  return;
}
```

Listing Seven:

```
TO COMP
ADD_AB
END

TO ADD_AB
PR [ENTER A?]
MAKE "A RL
PR [ENTER B?]
MAKE "B RL
MAKE "C 0
MAKE "C :C + ITEM 1 :A
MAKE "C :C + ITEM 1 :B
PR SE [C = ] :C
END
```

Listing Eight:

```
' 8:16 Competition
add_ab
END
PROCEDURE add_ab
  INPUT "ENTER A ";a
  INPUT "ENTER B ";b
  c=a+b
  PRINT "C = ";c
RETURN
```

The surprise from the first competition will be printed within the next issue of 8:16.

Competition #2 Entry form

Name:

Address:

1: _____

2: _____

3: _____

4: _____

Computer Type: 8 bit / ST

5: _____

Closing date for competition is April 28th, 1992.

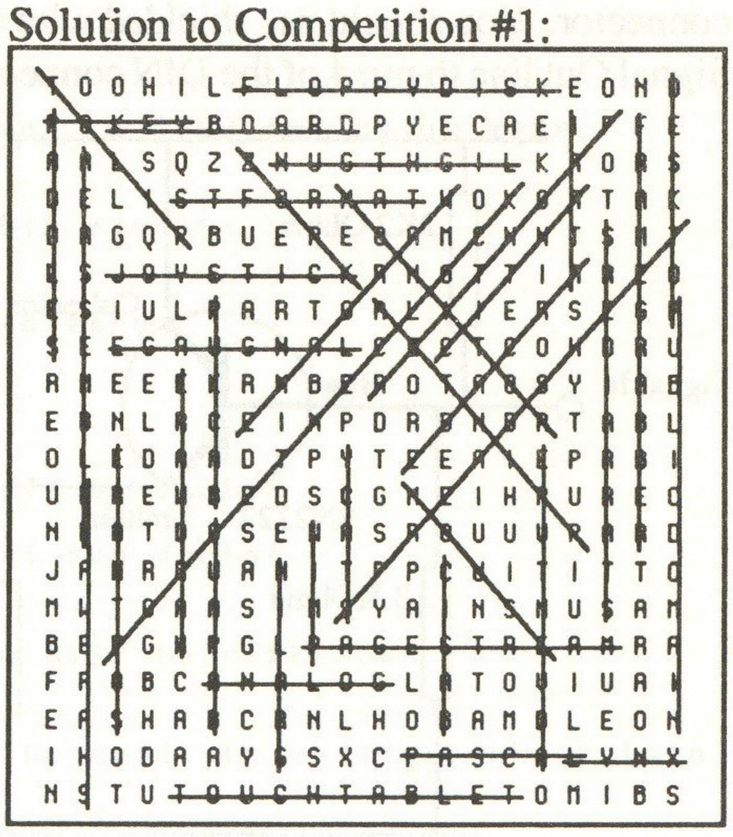
6: _____

Please send entry form (copy allowed) to BaPAUG, 248 Wimborne Road, Oakdale, Poole, Dorset BH15 3EF

7: _____

8: _____

Solution to Competition #1:



AtariWriter Plus VII

For Those Who Don't Want to Read the Book

By **Jimmy Boyce** (CACE)

Reprinted from Atari Interface Magazine, March 1990

Where were we? Oh yes, we are going to make a printer driver for the Panasonic KX-P1080i Printer. Let's start by thumbing through the manual <pg 46-47> along with getting the custom printer driver menu up on the screen in the manner we discussed last time we got together. Now that the menu is on the screen, the battle begins.

First, you see INITALIZE EVERY LINE. To be honest with you, I do not know what that means. According to the book, it doesn't matter because this is not necessary with most printers, and it is not necessary with the 1080i. So, arrow down to the next command, which is the LINE FEED AND CARRIAGE RETURN. Now we get into the good stuff. Strike the [RETURN] key and there is the predicted screen change and the "?" prompt at this point. For a 1O80i, type in [l] [O] [RETURN]. So far, so good! Now the cursor has moved down a line and another ~?~ appears.

You have typed in your first command for a Panasonic KX-P1080i printer. Aren't we proud of ourselves? What do you mean "no!" How could you not be? You say you have run out of numbers and that stupid "?" is still there and I didn't tell you what to do next!

Oh, sorry about that. Try another [RETURN].

Now you should be back to the menu, with the arrow right where you left it. That is not your problem, either? Tell me, Bunky, what is your problem? You don't have a 1080i? Did I forget to tell you to get out your printer manual and look up LINE FEED AND CARRIAGE RETURN? Go for it, Bunky...I will wait. While we wait for him, let me show you some pictures of my granddaughter...

Oh, Bunky is back with us. That's the right book, and you have found the command and are typing it in right now. Good boy, Bunky. Please note that some printers have more than one command for this function. Hang in there for a moment...I will explain and you can go back and finish it.

Now arrow down to the next command - UNDERLINE OFF. Strike [RETURN], next to the "?" type in [2] [7] [RETURN]. Same song, second verse...type [4] [S] [RETURN]. Same song, third verse...type in [O] [RETURN] [RETURN].

Now, if your line feed and carriage return was in the form of two commands, then enter them in the aforementioned manner. Be sure to start from the beginning of the command sequence. The first command will be lost if you don't re-type it (on the assumption that you typed it in and then went on to the next command, that is).

As a side note, remember that in order to use the underline command in your text, you must strike the ATARI LOGO key (otherwise known as "that little key in the bottom right hand comer of the keyboard that has a symbol that is divided from top right to lower left and is dark colored at the top side of the divider and light colored on the bottom side of the divider").

Or you can just place the cursor at the beginning of the text you want underlined, hold down the [CONTROL] key and strike the [U] key. Repeat this proceedure at the end of the text you wish to be underlined to make it quit underlining.

Now that you understand the process for entering this code (you do understand don't you, Bunky? Good, I am proud of you), I am going to list the rest of these "text commands" and give you the [CONTROL] key codes you will use in your text to access them.

I hope this does not confuse you. Believe me, I am not trying to belittle your intelligence with that statement, but this stuff can get a little strange until you get used to the commands.

A couple of notes for you: First, whenever there is a command like [CONTROL][G][2] for instance, hold down the [CONTROL] key and type [G], then release the [CONTROL] key and type in the [2]. DO NOT PUT A SPACE BETWEEN THE [G] AND THE [2].

Second, when using the superscript command for showing degrees (as in angles or temperature), DO NOT USE A ZERO...use a lower case [0]. I have not figured out how to use powers of a number, except to put in a space between the numbers...the computer cannot recognize the command and a power as seperate commands. It thinks you are giving an erroneous command and ignores it. Example: you want to type three to the third power. If you type in 3 [C O N T R O L] [G] [7][3][CONTROL][G][9], nothing will happen, because AtariWriter+ doesn't recognize ^G73. Type it in as ^G7 3. Sorry folks, it's the nature of the beast.

I have been using the printer driver shown below for quite a while now and it has served me well. Another note concerns the LINE FEED AND CARRIAGE RETURN and RETURN WITH NO LINE FEED. Somewhere I read those two commands should be 155. This caused me a lot of dip-switch setting changes on those itty bitty, teeny tiny switches when I changed to other programs I have and wanted a hardcopy of something.

Well, after some experimentation and cussing and threating to send the printer back to Japan, I found that just a simple line feed command was all that was necessary for LINEFEED AND CARRIAGE RETURN but a 155 command was necessary for the RETURN WITH NO LINE FEED. Thus ended my dip-switch setting problems.

Experiment! The commands will not hurt anything, other than wasting some paper. So, without further rambling on my part, let's get on with the little chart I have put together for you to use. Remember, this only works on a Panasonic KX-P1080i printer!

Well folks, that's about it for printer drivers for this month. I have put in a chart that cannot be single columned, and the people that put this little rag together will probably never let me write for them again. However if they do, I will see you next month.

1050 Battery Backup Modification

By Peter Fasoli

After you have read the information here you will be able to have full battery backup on your Atari system. There has been information on how to do this, but you could only have backup on the computer. This is all right if you only have a tape recorder, but if you have a 1050 drive then you are stuck. As the 1050 requires an AC input you can not add battery backup. There is however a way round this and the mod here will let you do it.

To start with the power section of the 1050 has a circuit to convert the input to drive a 12 volt regulator. All you need to do is remove this circuit and do the mods. Undo the 1050 case, remove the drive mechanism (writing down the connector positions and alignment) and then the PCB. Finally, remove the components as follows-:

CR15 CR16
CR17 CR18
CR19 CR20
C71
Q8

The locations of those components can be seen from the enclosed drawing. Now turn the board over and locate the two copper tracks that go to the power switch. Cut those and add a link shown at the power socket. Next add a link from Q7 to Q8 as shown. Solder two wires on the power switch and feed them through the hole just above the switch. Now turn the board over and solder those two wires in place of diode CR17. All you are left with now is to solder a link on CR19. This is all you have to do for the mod. As for power you will require a 12 volt PSU and the middle pin of the power socket is the plus (+) side. The PSU will need to be 12 volts regulated at 1.6 Amps. If you have more than one drive with this mod then you will have to take this into account. Now that you have the power mod you can build up the backup unit as shown. I have a PSU that will give 12 volts at 3 Amps and 5 volts at 5 Amps with full battery backup. You can read or write to the disk and remove the mains supply and the system will not hang up. As for my system it has been running for over a year and has been well worth the mod. Before you apply power be sure you have done the mods correct and go over it all.

The power supply shown works like this. The mains is fed into the transformer T1 and the output is fed into the bridge rectifier BY1. C1 is used to remove the ripple from the output and is then fed into the regulator IC1. The output is then fed to the second regulator IC1 via the relay contacts. The capacitor C4 is used to store the power for the 10ms in case the relay drops out. You then have the two outputs ie +5 Volts for the Atari and a +12 Volts to run the 1050 drive. So long as the mains is on the relay is on and the output from the 12 Volt regulator is fed to the 5 Volt regulator. If the mains is missing the relay will drop out and connect the battery into the 5 Volt regulator, so keep the system with power. To indicate that the mains is on the red LED D1 will be on and go out if the mains has gone. As for the battery I use a car battery and is 45 AH. This will give you a few hours on standby, but if you also have a TV with battery input you can also run this at the same time. If you do then the time on standby may drop to only a few hours. At least you can write your software back to the disk and not lose it. The last thing you do not want is to be on the computer for some time and just get close to the end and lose it all. As for the rating of the components I have given a list for a two drive system.

Components List

C1	4700 mfd 35 Volt
C2	100 nf disk ceramic
C3	2200 mfd 25 Volt
C4	4700 mfd 25 Volt
R1	1K ohms 1/4 watt carbon film
D1	LED (red)
BY1	Any 50 Volt 10 Amp bridge rectifier
RL1	Mains relay (Maplin type JG60Q
IC1	12 Volt 5 Amp regulator
IC2	5 Volt 3 Amp regulator
T1	Mains in 15 Volts AC out at 8 Amps (120 VA)

You will also require a case for this and a heat sink for the regulators. Also it is best to add a 3 Amp fuse to the mains side and a 5 Amp fuse on the battery lead. If you have a switch mode power supply with 12 Volts out at over 5 Amps you could add the circuit from the dotted line to it.

Important Notice

Please do not attempt this modification if you have no previous electronic or soldering experience. Peter Fasoli an The BaPAUG will accept no responsibility for any damage caused by performing or using this modification.

BaPAUG News - 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.

March 6th - Open Night

A chance to come along and ask questions about Atari computers and software. Several systems will be set up covering topics for beginners, MIDI, WP, DTP etc.

April 3rd - Swap Meet

Got some old software you no longer use? Missed a title no longer available? Heres your chance to swap your old and used software and hardware.

May 1st - MIDI

Demonstration of the latest MIDI software and hardware.

June 5th - Favourite Game

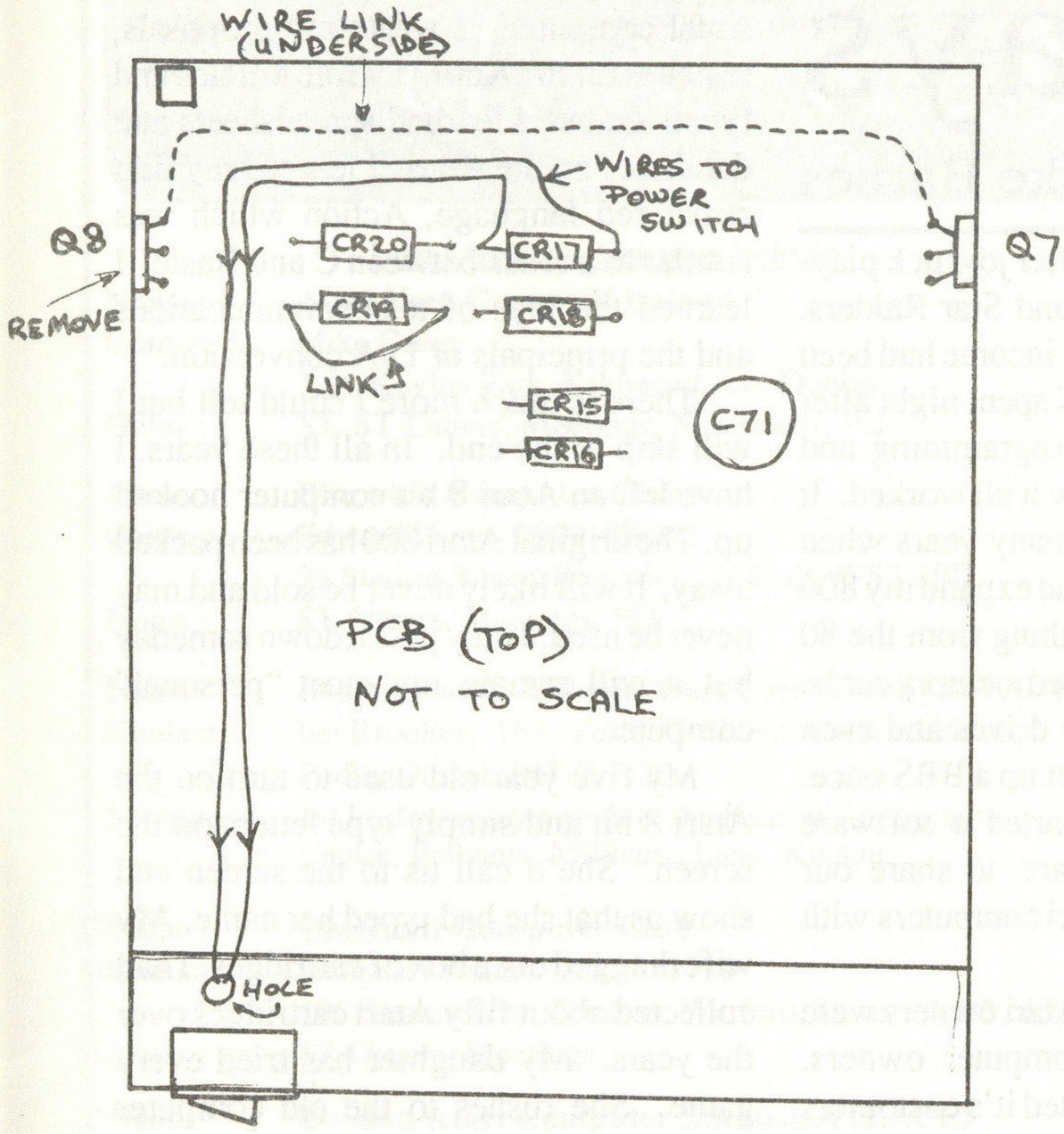
A relaxing evening playing each others favourite game.

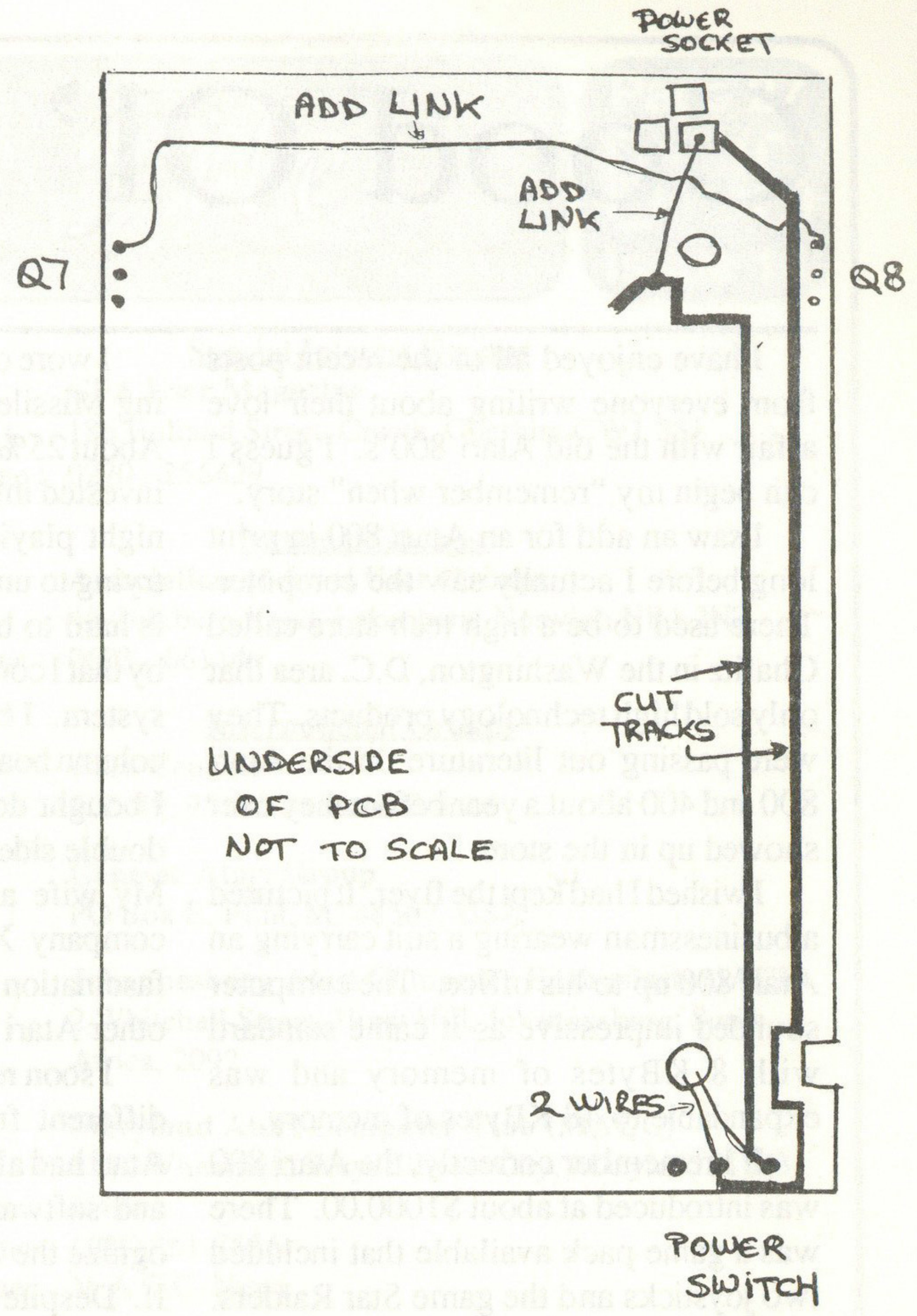
July 3rd - PD

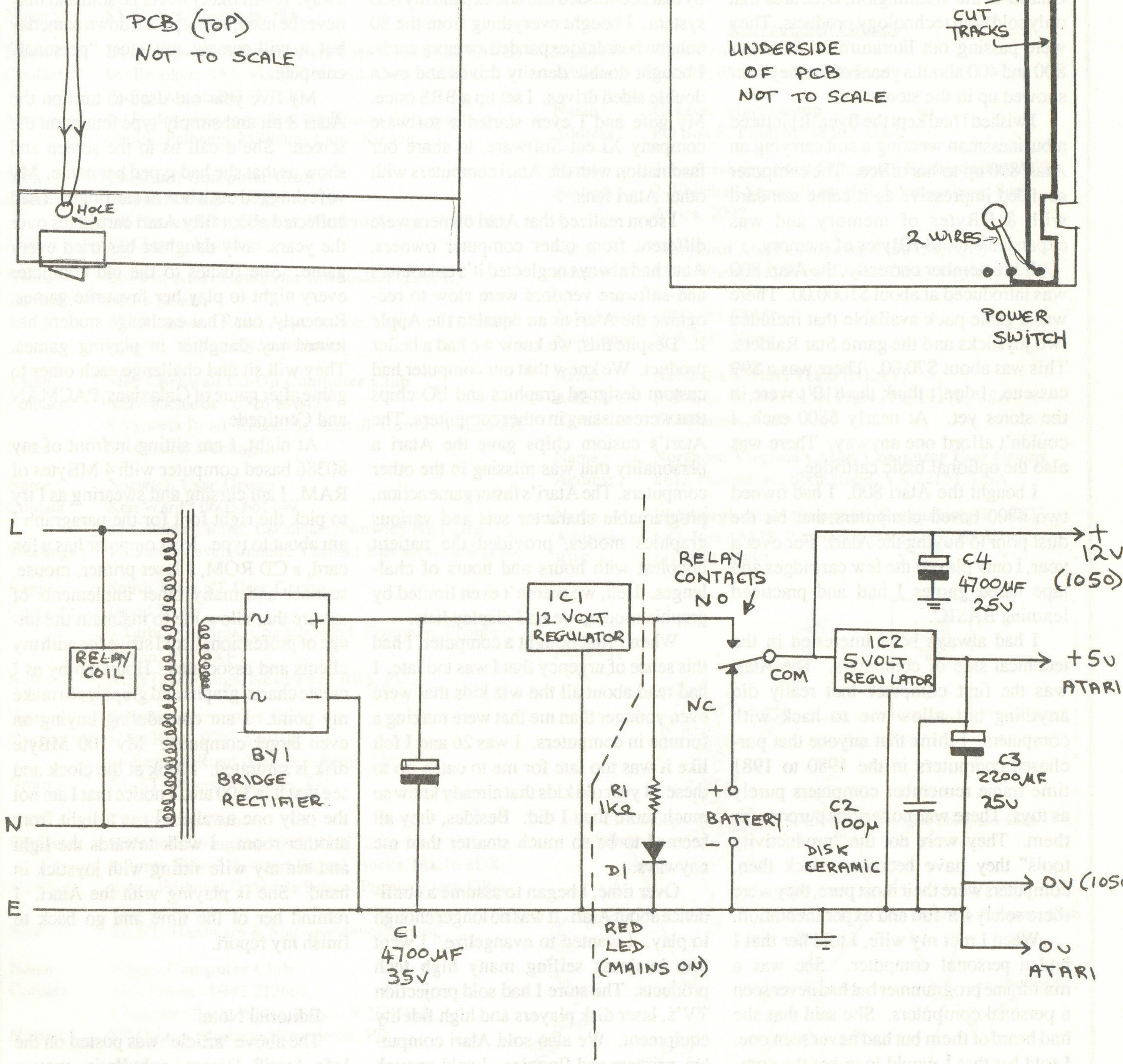
Demonstrations of the latest PD and shareware software.

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.







1050 Battery Backup Modification - Diagrams

Good Ol' Days

by Mike Barnes

I have enjoyed all of the recent posts from everyone writing about their love affair with the old Atari 800's. I guess I can begin my "remember when" story.

I saw an add for an Atari 800 in print long before I actually saw the computer. There used to be a high tech store called Chafitz in the Washington, D.C. area that only sold high technology products. They were passing out literature on the Atari 800 and 400 about a year before they ever showed up in the store.

I wished I had kept the flyer. It pictured a businessman wearing a suit carrying an Atari 800 up to his office. The computer sounded impressive as it came standard with 8 KBytes of memory and was expandable to 48 KBytes of memory.

If I remember correctly, the Atari 800 was introduced at about $1000.00. There was a game pack available that included two joysticks and the game Star Raiders. This was about $70.00. There was a $99 cassette. I don't think the 810's were in the stores yet. At nearly $800 each, I couldn't afford one anyway. There was also the optional basic cartridge.

I bought the Atari 800. I had owned two 6800 based computers that bit the dust prior to buying the Atari. For over a year, I only played the few cartridges and tape based games I had and practiced learning BASIC.

I had always been interested in the technical side of computers. The Atari was the first computer that really did anything but allow me to hack with computers. I think that anyone that purchased computers in the 1980 to 1981 time frame remember computers purely as toys. There was no serious purpose for them. They were not the "productivity tools" they have become. Back then, computers were their most pure, they were there solely for fun and experimentation.

When I met my wife, I told her that I had a personal computer. She was a mainframe programmer but had never seen a personal computers. She said that she had heard of them but had never seen one. I told her that I would loan her the computer to try out. She took it home with a copy of Space Invaders. The next morning, she called me and told me she had stayed up all night and wasn't going to work. I think I knew then that we were meant for each other.

I wore out joystick after joystick playing Missile Command and Star Raiders. About 25% of my yearly income had been invested into the Atari. I spent night after night playing games, programming and trying to understand how it all worked. It is hard to believe how many years when by that I continued use and expand my 800 system. I bought everything from the 80 column boards to expanded memory cards. I bought double density drives and even double sided drives. I set up a BBS once. My wife and I even started a software company XLent Software, to share our fascination with the Atari computers with other Atari fans.

I soon realized that Atari owners were different from other computer owners. Atari had always neglected it's customers and software vendors were slow to recognize the Atari as an equal to the Apple II. Despite this, we knew we had a better product. We knew that our computer had custom designed graphics and I/O chips that were missing in other computers. The Atari's custom chips gave the Atari a personality that was missing in the other computers. The Atari's faster game action, programable character sets and various graphics modes, provided the patient hobbiest with hours and hours of challenges. Hell, we weren't even limited by graphic modes, we had display lists.

When I first bought a computer, I had this sense of urgency that I was too late. I had read about all the wiz kids that were even younger than me that were making a fortune in computers. I was 26 and I felt like it was too late for me to catch up to these 24 year old kids that already knew so much more than I did. Besides, they all seemed to be so much smarter than me anyways.

Over time, I began to assume a confidence about Atari. It was no longer enough to play. I wanted to evangelize. I went into business selling many high tech products. The store I had sold projection TV's, laser disk players and high fidelity equipment. We also sold Atari computers, printers and floppies. I sold enough floppies in those days to pay the rent. (Floppies were $3.50 each then).

Over time, I was forced to offer new computers. I started with Apple II clones and moved up to the Columbia which was one of the early IBM PC clones. All along, the Atari 800 remained my personal computer. I wrote my proposals, resumes on the Atari. I wrote articles and typed letters. I learned spreadsheets and databases on the Atari. I learned my first structured language, Action which was similar to a cross between C and Basic. I learned the joys of telecommunications and the principals of D/A conversion.

There is much more I could tell but I will skip to the end. In all these years, I have left an Atari 8 bit computer hooked up. The original Atari 800 has been packed away. It will likely never be sold and may never be used. I may pass it down someday but it will remain my most "personal" computer.

My five year old used to turn on the Atari 8 bit and simply type letters on the screen. She'd call us to the screen and show us that she had typed her name. My wife dragged out a box of cartridges. I had collected about fifty Atari cartridges over the years. My daughter has tried every game. She rushes to the old computer every night to play her favourite games. Recently, our Thai exchange student has joined my daughter in playing games. They will sit and challenge each other to game after game of Galaxians, PACMAN and Centipede.

At night, I am sitting in front of my 80386 based computer with 4 MBytes of RAM. I am cursing and swearing as I try to pick the right font for the paragraph I am about to type. My computer has a fax card, a CD ROM, a laser printer, mouse, scanner and many other implements of torture that allow me to maintain the image of professionalism I strive for with my clients and associates. Hours go by as I create charts, graphs and graphics to make my point. I am considering buying an even larger computer. My 100 MByte disk is saturated. I look at the clock and see that it is 3:00 am. I notice that I am not the only one awake. I see a light from another room. I walk towards the light and see my wife sitting with joystick in hand. She is playing with the Atari. I remind her of the time and go back to finish my report.

Editorial Note:

The above 'article' was posted on the Info-Atari8 Digest, a bulletin system running on Internet which is available to anyone with suitable X.400 access. For more info send HELP to Info-Atari8-Request@NAUCSE.CSE.NAU.EDU.

User Group File

Local Groups (see map below)

Name : **Atari User Group Of Ireland**
Contact : Mike Casey
3 St. Kevins Park, Kilmacud, Co. Dublin
Notes : XL-ST-Others, Meetings, Newsletter, PD

Name : **Bloxwich Computer Club**
Contact : Edward Hunt - 0922 409291
29 Station Street, Bloxwich, Walsall, WS3 2PD
Notes : ST-Others, Meetings, PD

Name : **Bournemouth & Poole Atari User Group (BaPAUG)**
Contact : Ian Brooker; 163, Verity Crescent, Canford Heath, Poole, Dorset, BH17 7TX
Meetings : 1st Friday every month at the Kinson Community Centre, Pelhams, Millhams Lane, Kinson.

Name : **Cheshunt 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 : **Mid-Cornwall Co-Op Computer Club**
Contact : Mike Richards - 0726 890473
8 Victoria Road, Roche, St. Austell, Cornwell PL26 8JF
Notes : ST-Others, Meetings

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 : **South West ST User Group**
Contact : David Every
5 Turbill Gardens, Chaddlewood, Plympton, Plymouth, Devon, PL7 3XF
Notes : XL-ST, Meetings, Newsletter, BBS, PD

Name : **Swindon Computer Club**
Contact : Mike Bird - 0793 539105
46 Eastcott Road, Swindon, Wilts. SN1 3LR
Notes : XL-ST-Others, Meetings, PD

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

Name : **Wigan Computer Club**
Contact : Alan Owen - 0942 212662
1 Lidgate Close, Wigan, Lancs. WN3 6HA
Notes : ST-Others, Meetings, Newsletter, PD

Name : **XL/XE Alive**
Contact : Bill Sutton - 0784 255894
13 St. Annes Avenue, Stanwell, Middlesex TW19 7RL
Notes : 8-bit

Notice To All User Groups

Your user group will be removed from our list unless we receive conformation of you existance - you have been warned!

Special Interest Groups

Name : **GFA User Magazine**
Address : 186 Holland Street, Crewe, Cheshire CW1 3SJ
Telephone : 0270 - 256429

National Groups

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

International Groups

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

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

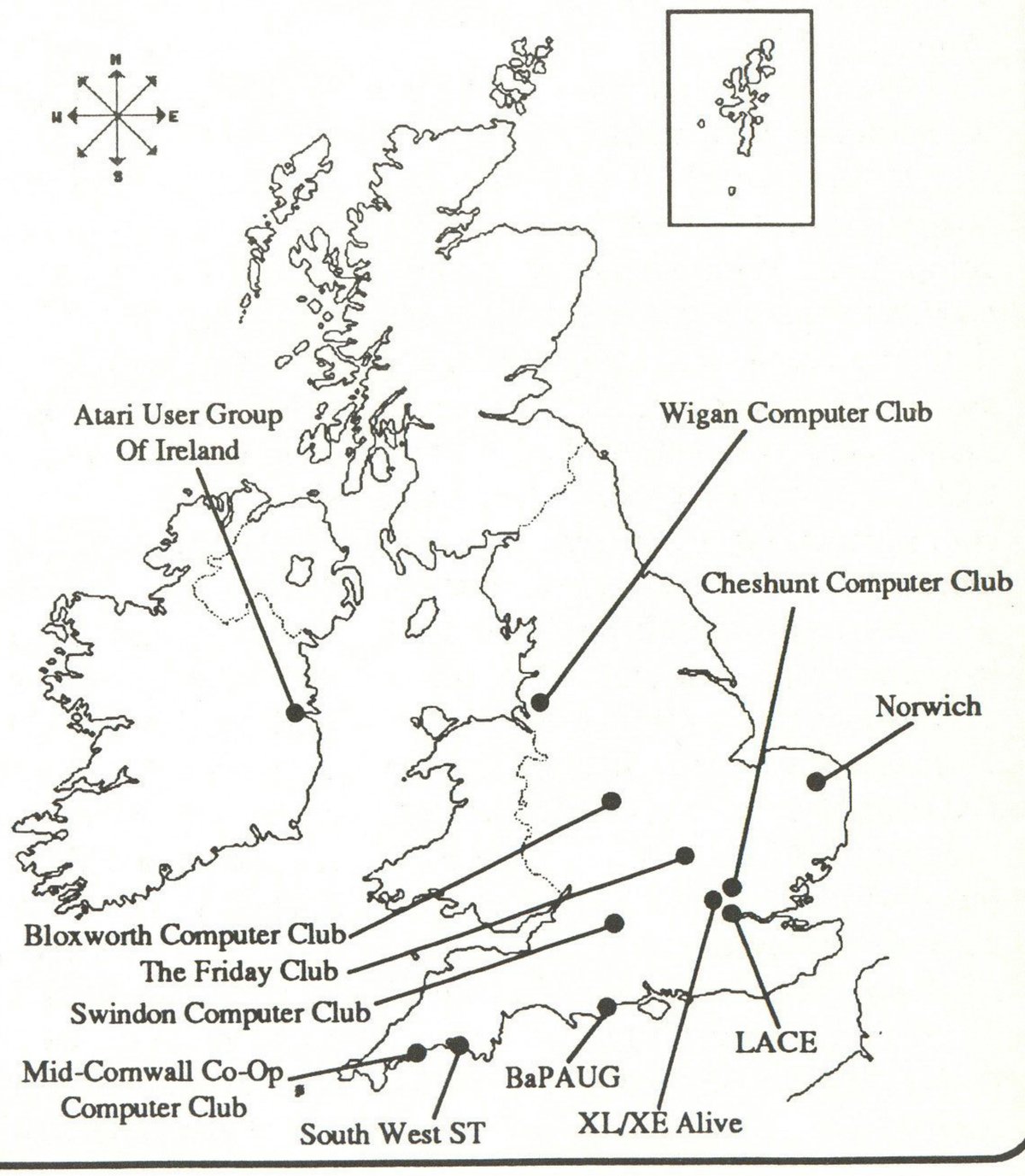
Name : **Johannesburg Atari Computer Enthusiasts (JACE)**
Address : 2 Whitehall Street, Hurst Hill, Johannesburg, South Africa, 2092

Name : **Maryland Atari Computer Club (MACC)**
Address : 8591 Wheatfield Way, Ellicott City, Maryland 21043, USA
Telephone: (301) 461-7556
Newsletter: M.A.C.C. News

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

Name : **Northern Virginia's Atari Computer User Group**
Address : 8612 Thames St., Springfield, VA 22151, USA

Name : **Pittsburgh Atari Computer Enthusiasts (PACE)**
Address : P.O. Box 13435, Pittsburgh, PA 15243, USA
BBS : (412) 571-0891



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