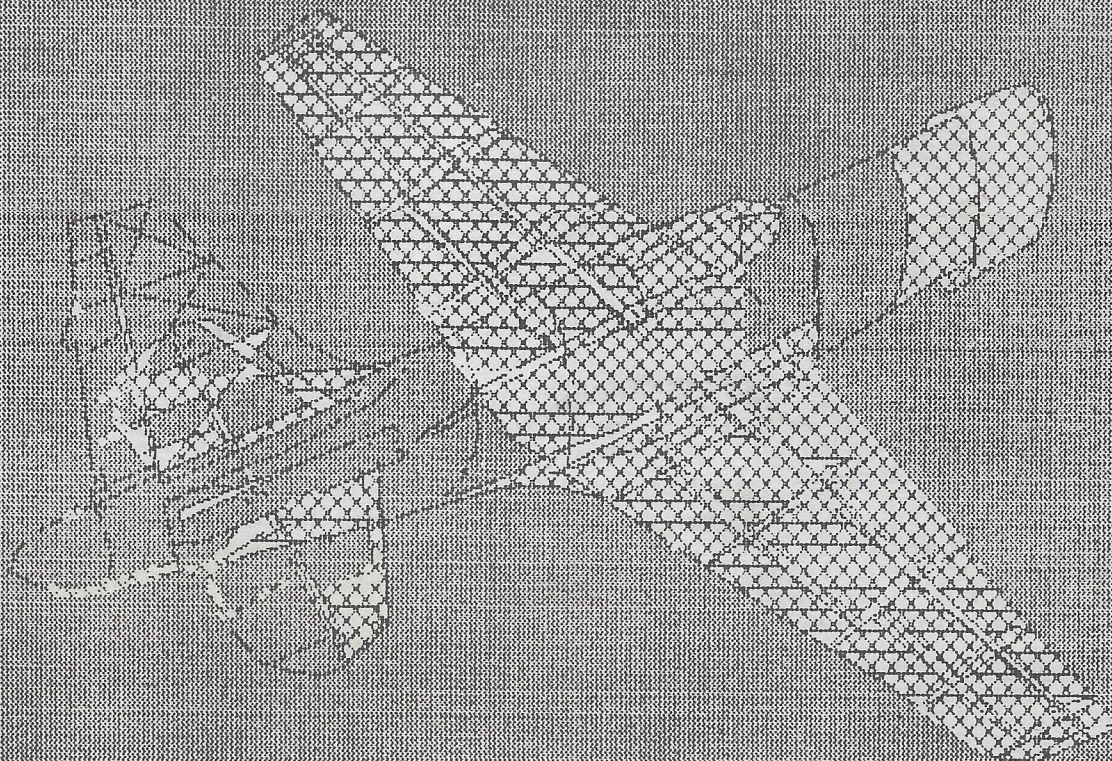


DALLAS ATARI COMPUTER ENTHUSIASTS

VOLUME 6 ISSUE 9 SEPTEMBER 1985

GRAPHICS DISPLAY



President's Perspective
Dateline, Dallas: 10Aug85

Hello!

This is our first attempt at delivering you a newsletter BEFORE the meeting. I hope that it finds you in good health and preparing for our September 14th meeting at the Infomart.

September Meeting At The Infomart

REMEMBER, FROM NOW ON, ALL DAL-ACE MEETINGS WILL BE HELD AT THE INFOMART! See elsewhere in the newsletter for the directions and times.

Information booth. This is the first contact with ANYTHING that you'll have when you enter the Infomart. There will be information booths for each group as you enter the building. GO IMMEDIATELY TO THE ONE MARKED ATARI!

This booth is where you get your badge and can find out the schedule for the day. VOLUNTEERS ARE NEEDED to man this booth. Please call Bob Dain or myself to volunteer some time.

Badges. You MUST WEAR a badge while in the Infomart. Stop at the information booth on the way in. You'll be given either: a) A permanent badge, if you're a paid-up member prior to September, or b) A temporary badge if you have recently joined or are bringing guests. The permanent badge is yours to keep and must be brought with you each time you visit the Infomart. Temporary badges are good only for the day. Please bring guests and family members!

Club Sales. Club sales (disks, t-shirts, etc.) will be on the first floor. Again, ask at the information booth where that area is this month.

Garage Sale. Our garage sale tables will be SUSPENDED FOR THE SEPTEMBER MEETING. This is to allow us a little time to evaluate how our new schedule and home is working. Stay tuned to the newsletter for an announcement of its resumption.

All meetings. There will be easles set up at key places around the Infomart. They will list the schedules and meeting rooms for ALL meetings for ALL clubs (including us) during that day. Check there for the whereabouts of the meetings

SIGs and Classes. If you are a SIG leader or a class instructor and you want to hold a meeting, please see our Vice President, Morris Stephens, for scheduling a room. You can make his life easier by telling him if this is to be a continuing event.

Loose children. THERE WON'T BE ANY! You are invited to bring your children to the meeting with you. Remember, you are responsible for their behavior. It is within the rights of the Security Officers, the Dallas Computing Council, or any officer of DAL-ACE to ask an individual to leave if they exhibit unreasonable behavior. This pertains to both adults and children. Please work with us on this.

Special Interest Groups (SIGs)

SIG. You may have seen or heard this word when hanging around the club or reading our newsletter. What does it mean? Is it a foreign fruit or a new rock group? No, it's yet another computer buzzword!

A Special Interest Group, or SIG, is a club within a club. It is a group of people that get together to share a common interest. This may be a specific computer language (eg. BASIC) or some use of a computer (eg. for education). The idea is to informally meet and share information, ideas, programs, or techniques.

There are some things that SIGs are NOT. They aren't classes! They aren't pirating groups. They aren't one-way gatherings where you take everything from the leader and give nothing in return.

What does it take to be a part of a SIG? Nothing really. There is usually a list of the SIGs in the newsletter. Simply contact the leader for the SIG that interests you and find out when the next meeting is. That's it! No forms, no money, no muss, no fuss.

What does it take to start a new SIG? It takes a little more. First, you need an area of interest (like maybe the new ST line). Then you need to select a leader (how about YOU?). Then you announce yourself to the president or board of directors for approval. This isn't hard.

Simply write down on a sheet of paper what the name of your SIG is, what your area of interest is (eg. sharing information about the STs), who you are, what your telephone number is, and how you plan on running the group (ie. do you plan on spending any money).

Present this to the board at any of their meetings. It doesn't have to be elaborate. In fact, simple and straightforward works best.

After you've done this, you should get yourself some members together and share some ideas!

Closing

Once again, I want to thank you for reading my perspective of things. And remember, you really DO know more than you think! Be enthusiastic and enjoy your club.

Dave

COVER ART this month contributed by Ed Williams. Ed wrote a "DRAW" program in LOGO on the 520 ST and used it to draw this picture, which he calls "Junk Plane". This picture was printed using the built-in screen-dump capabilities in the ST and was printed on a Gemini S6-10 printer in IBM mode. Ed is 17 years old and earned the money to buy his ST. Art submissions are greatly appreciated by the Editor.

Actually, we had a girl in a bikini originally scheduled for the front. Dave asked, "...but is it ethical?" I said "nuts to ethics", but eventually decided I liked the plane better.

--Ed.

COMING ATTRACTIONS

By Morris Stephens

A MEETING NOT TO MISS!!!

Whatever you've got planned for Saturday, September 14th, forget it. If you're getting married, put it off. If you're going on vacation, plan to be in town on the 14th. If you're supposed to work, call in sick. This is going to be a VERY SPECIAL meeting.

Some of you have already seen the new Atari 520 ST, but you have not really been able to see it do anything. Many of you have not seen it at all. Now you will have a chance, not only to see it, but to see it actually do something..... something useful. A very special program has been planned to really show off the ST, so you do not want to miss this meeting.

We are going to have a guest speaker from Haba Systems, Inc. Haba Systems is the company that appears to be the front runner in developing products for the ST. Some of the products already announced by them are Haba Hippo "C", a "C" language development system which includes the compiler, assembler, and linker, HabaWord, HabaCalc, HabaCom, and Haba Check Minder, as well as a 10 Megabyte hard disk drive. Haba's representative will have some of these products with him and will be demonstrating them. He will also demonstrate either the 10 megabyte hard disk drive or a new 20 megabyte drive that is being developed especially for software developers.

Free Door Prizes

As an extra added attraction, there will be several door prizes given away at the meeting, including software for the 520ST. So, if you have an ST, or if you want one, or if you have any interest in one at all, be sure to be at the September 14th meeting.

Meeting Agenda

- 11:00 - 12:00 Club Sales - 1st Floor
- 11:30 - 12:00 New Member SIG
- 12:00 - 1:00 Business Meeting
- 1:00 - 3:00 Guest Speaker and Demonstrations
- 3:00 - 5:00 DAL-ACE SIGs

Times are subject to change as necessary. Check the

updated agenda posted at the DAL-ACE booth at the main entrance.

Next Month

In our October meeting we plan to continue our program on graphics and animation. Steve Supinski and Hal Waldrop provided excellent demonstrations of Movie Maker and the Sketch Pad in the last meeting. For October we would like to be able to demonstrate some of the graphics printer dump programs and make comparisons between the commercial products that are available on the market now.

Call for Volunteers

In order to continue our theme on graphics and animation we will need some volunteers to provide some demonstrations for the October meeting. Anyone who is experienced with a graphics program, or animations program, or peripheral is asked to contact me at 956-9391. Anyone that has a 130XE and "Typesetter" is especially invited to contact me. We are also especially interested in demonstrations of graphics dump programs.

Demonstration Attendance

The turn outs for the last demonstrations were very disappointing. In order to encourage better attendance for our demonstrations all other activities will be kept to a minimum while the demonstrations are in progress. A lot of time and effort is invested in the preparations of demonstrations and the people who put on these demonstrations deserve more support than they have been receiving. Now that we are meeting in the Infomart it is possible to use the main meeting room for the demonstrations without the distraction of other activities. Please take advantage of the situation and show the demonstrators that their efforts are appreciated, and remember that the demonstrations are just as much a part of the meetings as the business portion.

FIRST ST BENCHMARK TEST

by Patrick Bass, Antic ST Program Editor

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Seems as if people just need to rate and compare things to see which is the fastest or most powerful. This certainly holds true when it comes to rating computers against each other. One standard that's used for comparing computer performances is speed of program execution. The same program, in the same language, is run on different computers. Since 1981, Byte Magazine's "Prime Number Benchmark" has been a widely accepted test of computer speed. This benchmark program is a simple procedure for finding all the prime numbers between 3 and 16,381. It adapts the Sieve of Eratosthenes, which has been around since the third century B.C.

How does the Atari 520ST stack up? We typed the "Prime Number Benchmark" into the 520ST using C language and timed how long it took to run. The 520ST turned in a time of 3.8 seconds. This speed puts it right up there with minicomputers running the UNIX operating system! A 28000 Z-Lab Zeus UNIX minicomputer running C took 4.8 seconds, and a 28001 5.5 MHz mini running C on UNIX took 1.97 seconds. At the low end of the scale, microcomputers running the benchmark took from 15.7 seconds (Digital BASIC on a Z80 microprocessor) to an astounding 5115 seconds (1 hour, 25 minutes) on a CP/M 280 running COBOL.

The Macintosh is the closest relative of the Atari 520ST because both machines use the 68000 microprocessor. Fastest Macintosh time for running the Sieve program in C was 7 seconds and the slowest was 13 seconds. The 520ST left Mac in the dust!

Note that this test does not depend on any I/O devices. Some computers might run a program blindly fast, and then take the rest of the afternoon to write the results to disk. Other computers might take longer with the same program but write to disk quicker, thus completing the entire task in less time. Suppose we had selected a benchmark test that included sorting a number of disk files. The speed of the disk drive hardware and software could be as important as the actual speed of the computer. Printers also tend to slow computers down a lot. An Atari 520ST can execute more than 10 million instructions in the time it takes a printer to perform a carriage return! We can also speed up the way a benchmark program performs its job. One common technique for doing this is to take advantage of special hardware features found on your particular computer. A familiar example for Atari 8-bit computer users would be to turn off the screen and speed up the program by 30 percent.

Just how fast is fast, anyway? Sometimes it seems funny to praise one computer for performing 8 million operations per second and then scorn another computer that merely performs 2 million operations per second. How long would 2 million operations take you with a pencil and paper?

UNDER NEW MANAGEMENT

The Disk Library

Howdy! Last month was my first taste of what it is like to stand at the business side of the library table, and believe you me, I now have a new respect for the job. My predecessors, George Rodenheiser, and the Sewell family, deserve a round of applause.

The same goes for all of the other volunteer librarians, who have served the club over the years. The financial soundness of the club treasury is a measure of their performance. Our annual dues barely cover the cost of printing the news letter, so the disk sales have to pay the rent.

The continuing support of the membership, over the years, has been fantastic. I never knew just how fantastic, until the last meeting, when it was my turn to face that sea of faces, everyone of which required some measure of attention.

My apologies to any of you who may have been missed in the press of the crowd. Next time, we will try to get things better organized. Maybe someone out there has a crystal ball, and can predict which disks will sell like hotcakes, so that we never run out.

We will continue to bring a system to the meeting place, for demos and for making additional copies, and it should not be too long before we know most of the answers to your questions. The next meeting promises to be a bear. The first time at Infomart, and there are still a lot of questions to be answered, such as where, when and for how long can we sell disks. So, hang in there, through one more session, and then we should be able to get it all together.

Many thanks to Anita Uhl, Bob Dain, and John Pellet, who provided some much needed help during the height of last month's rush hour. Also many thanks to the following members who have contributed program disks to the library.

Charles Marslett - 6502 assembler for MYDOS.
Steven Learson - 1030 Communications disk.
Dale Graham - 2 disks. Proterm and Video80.

These programs are being evaluated and will be made available as soon as possible. The disks have been copied, so the contributors can retrieve their original disks from me at the meeting. See you at Infomart! Jeff Golden

CES WRAP-UP & COMMENTARY

MEANING OF NEW ST CHANGES

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By Mike Ciruolo, Jack Powell

June 10 - At the June Consumer Electronics Show Atari announced that two new ST models and a pioneering 500 megabyte ROM compact disk system would appear on dealer shelves in time for the Christmas rush.

Complete lines of integrated software for the ST were announced by three major developers. First programs from the new productivity series were to ship this fall from Haba, Batteries Included and Rising Star. Haba also promised ST owners a 10 megabyte hard disk for \$499 and a \$299 Hayes-compatible modem.

NEW ST MODELS

Atari said that both new ST's will have 256K RAM of programmable memory. The 260ST will retail at \$399. The 260STD is to be \$499 and includes a built-in 3.5" disk drive. Otherwise they are identical with the 520ST except for the following:

- * GEM and the rest of the TOS operating software will be on ROM chips instead of on disk.
- * The television RF modulator is to be built-in.
- * The new 256K models won't ship till October or November.

520ST DEVELOPMENTS

How is all this significantly different from the 520ST?

According to Atari Marketing VP James Copland, the first 2,000 U.S. units of the 520ST were already shipping in June to Atari users groups.

In July the 520ST would appear in computer specialty stores, and mass merchandiser distribution of the ST line would begin in the fall, Copland stated.

By June, the 520ST was already on computer store shelves in Canada and parts of Western Europe.

Price of the 520ST was set at \$799 and included a 3.5" disk drive, a high-resolution monochrome monitor, external RF modulator pack -- and GEM on disk, leaving 256K RAM in memory after loading GEM and TOS.

So all the 1985 ST's will now have no more than 256K of usable RAM...or will they?

ROM OR NOT?

For pre-Xmas delivery, manufacturing must begin no later than September. The CES announcement of the 260ST and 260STD gave Atari all of June and July to make sure GEM and TOS were thoroughly debugged.

These newly announced 260 models will allow Atari to maintain credibility by meeting its pledge to ship the 520ST to US stores in early July. Disk updates could easily remedy any bugs found in the operating system of early 520ST's manufactured in May and June.

To Antic, the whole thing looks like a gutsy, clever move from Atari Chairman Jack Tramiel. Much of the U.S. business press unfortunately is computer-illiterate and reports even minor production delays as putting a company's entire future in doubt. Atari needed to bring an ST to market as quickly as possible, even if in limited numbers.

Yet Tramiel had clearly learned a valuable lesson during his Commodore days, i.e., the glitchy Commodore 64 operating system that went into ROM sooner than it should. In the long run, rushing GEM and the ST operating system into chips before it was truly ready would create user problems and be bad business.

As this issue went to press, Atari had been issuing mixed signals about whether a 520ST GEM and operating system upgrade to ROM would be provided by the manufacturer.

Before and during CES, the company repeatedly said that the 520ST model would never have GEM and TOS in ROM. However, a June 7 message on CompuServe's SIG*Atari from a company spokesman quoted Atari president Sam Tramiel as saying the entire 520ST operating software would be made available on simple plug-in chips at "nominal cost."

Of course, commercial 520ST software that doesn't use the GEM desktop can still draw on close to 400K of available RAM.

CD ROM

The mind-boggling 500 megabyte CD ROM was the hottest thing at CES. It was displayed at the Atari booth by Activenture, which is developing the technology under contract with Atari.

Imagine a read-only disk that's identical to a compact audio digital disk, but which could contain 100 volumes of reference books with room left over. And the 100 volumes of information would be instantly accessible. Only three seconds were required for the 520ST and CD ROM to search a keyword through an entire 26-volume encyclopedia.

And CD ROM could handle virtually any type of data that can be digitally encoded -- video images, software, photographs, etc.

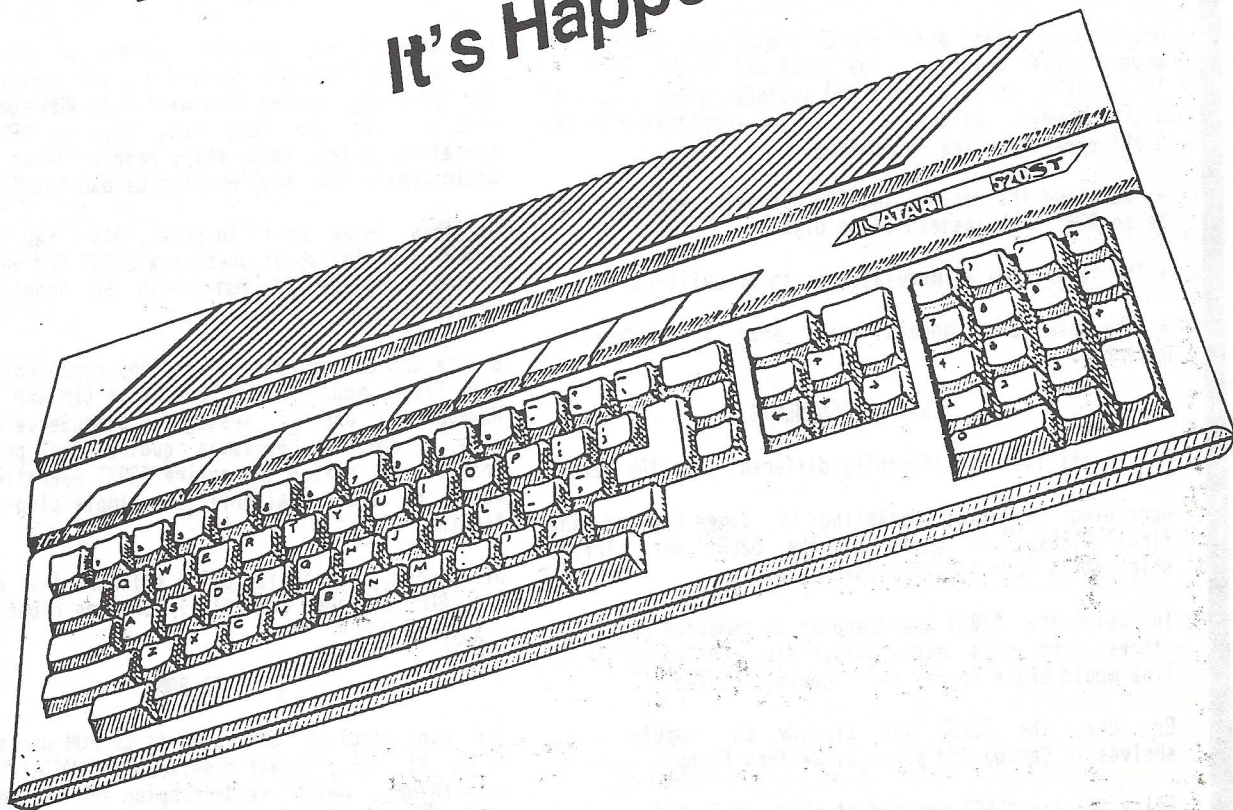
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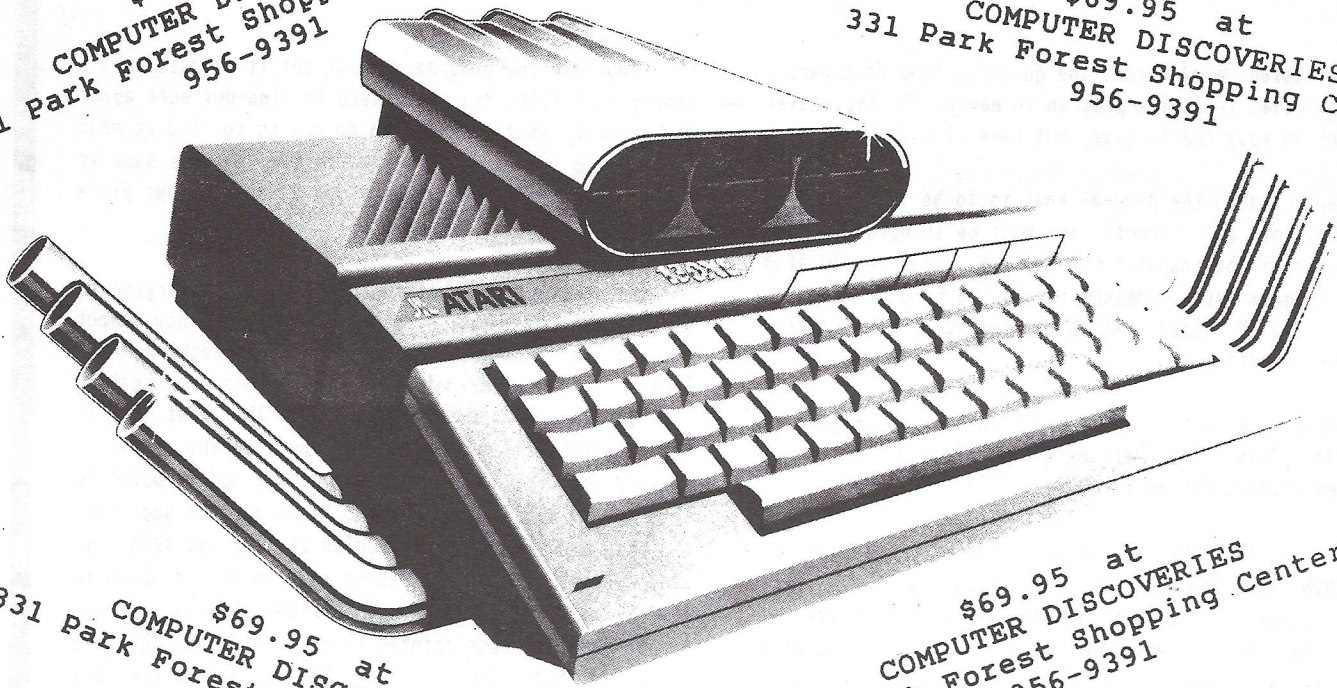
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In the home computer races, the Atari 130XE stands out as a price leader. But using underpowered Atari BASIC™ on this otherwise fine machine is like racing in the Indy 500 with half your cylinders missing. So don't get left at the starting line with only half an "engine." Change to the performance leader now! Buy BASIC XE from OSS, the **only** programming language designed especially for the Atari 130XE.

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- If you're already a real pro in BASIC... YOU need BASIC XE now!
- BASIC XE may well be the best buy any Atari owner ever made.

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MAKING BINARY LOAD FILES

by Al Nelsen

I am asked many times the question "how do I make a binary load file of a program in memory?". The answer is not an easy one to give, but here it is.

In most cases the program that is to be lifted, is in control of the computer and must be stopped. This is possible if the computer has OMNIMON installed. To stop the program with OMNIMON press and hold SELECT then press SYSTEM RESET. At this point you are in control of the computer.

The next step is to find out where in memory the program resides. This can be very hard to do if the program has burned bridges behind it.

One way to find the program is to type T which will put OMNIMON into the character mode. Next type D600. This will cause the memory at hex 600 to be displayed as text on the screen. As you press RETURN you will display more memory as text. Each RETURN will show more memory.

If you do this with only DOS and the DOS menu in the computer a few times, you will be able to spot the DOS and DUP programs whenever you see them.

When you are looking through memory you may see table data that the program had set-up, but which is not a part of the program. The way to see if it is data or program, is to see if it will disassemble. This is the X command of OMNIMON. If it will then you may have found part of the program.

As you disassemble the program it will become clear as to where the program starts and ends. Look for jump, branch, and JSR addresses, for if they are to addresses in ram then these addresses should be to parts of the program.

When you know where the start and end of the program is, then you must find out how many sectors are needed to store the data on the disk-drive. One sector of the disk will hold 128 bytes of data, so you will divide the program memory into 128 byte groups. First subtract the program start address from the program end address, then divide by 128. This number will have to be in hex, as will the start and end addresses.

At this point you are ready to lift the program from memory. You now need to put a blank work disk in the drive. Now type W1 followed by the start address of the program in hex, then the number of sectors in hex.

You now have the program on disk but it is still not a binary load file. You still need to find-out more about the program. What you need to do now is to find at what address to start the program. This may be the same as the beginning of the memory you saved, or some place else.

It is safe to say that the program you are trying to convert was a boot program. So lets see how a boot program is loaded by the computer. The computer reads sector 1 into memory at \$400 then extracts information from the first six bytes at \$400. The first byte is moved to DFLAG at \$0240. The next byte is the number of sectors to load into the computer, and is moved to DBSECT at \$241. The next two bytes are the boot load address and is moved to BOOTAD at \$242 and \$243. The last byte is the initialization address and is moved to DOSINI at \$0C and 0D. Then the record at \$400 is moved to the load address pointed to by BOOTAD, and then the computer reads the rest of the sectors to the load address. When this is complete the computer will do a jump to subroutine at the load address plus six bytes. The code at that address may be a multi-stage boot process or it could be the beginning of the program.

Many programs will at this point run a copy protection routine, if all is ok then it will jump to the main program. The main program may then erase the pointers that would tell you where to start the program, and sometimes the code that leads up to the start of the program.

The pointers that are of some help are DOSINI at \$0C,\$0D and DOSVEC at \$0A,\$0B. DOSVEC should contain the start address of the program, but in protected programs will be \$00. Two other addresses of interest is RUNAD at \$2E0,\$2E1 and INITAD at \$2E2,\$2E3. The first is the run address read from the first sector of the disk. If it has not been changed to \$00 it might point to the start of the program. The other is the address that will be used to initialize the program, but it may point to the protection routine or a multi-stage boot routine.

The last way to find the start address is to use the J option of OMNIMON. This option allows the computer to jump to a memory location to start running the code at that location. If it is the start of the program then you will be in the program and so know what the start address is. Most tries will end in a locked-up computer. The first location to try is the beginning of

a page of memory, as many programs start on the beginning of a page. Also you could use the S option to search for references to DOSVEC, DOSINI, RUNAD, or INITAD. If protected the code that modified these may be part of the start of the program. Some times looking at the stack on page one, may also help to find the start address.

After you have found the start address you will be ready to make the data that is on the work disk into a binary load file.

You will now have to boot-up DOS. When the dos menu appears exit DOS to OMNIMON by SELECT/RESET keys. Remove the DOS disk and insert the work disk in the drive. Now type R1, start address, number of sectors and OMNIMON will load the data from the work disk to memory where it came from. Next exit OMNIMON by pressing START/RESET.

You should then be back at the DOS menu. Select K write binary files, and then give the program beginning and ending addresses as asked for plus for the init and run addresses use the one you found to be the start-up address. The file name needed is whatever you want it to be. This should be saved on a disk other than the work disk.

All of the above works as long as the program does not use the same addresses as DOS. If the program does to this then the code must be relocated to a safe part of memory. This is not easy to do.

The N option is the one to use. You will have to determine which blocks of memory are code and which are data. the code blocks are to be moved with the N option and the data with the M option which is a move command.

After the code is relocated you can then lift it to the work disk and proceed to make it into a binary load file.

As you can see it is not a simple thing to pirate software. But I hope this will give you a feeling for the amount of effort you will have to put out to do so. It would seem that a part-time job would be a better answer. This is not to say that everyone needing this information is a pirate, as you might be wanting to put many of your programs on one disk with a select menu.

BASIC XE

A First Look - by John Pellet

BASIC XE from Optimized Systems Software (OSS) has now reached the Dallas market. OSS sent a review copy to DAL-ACE and this is a first look at the only language developed solely for the Atari 130XE (although rumor has it that there will be a new version of ACE-C for the XE that keeps an editor, compiler, and linker RAM-resident). BASIC XE appears to be a superset of BASIC XL (also from OSS) with 2 major additions and a couple of significant changes.

BASIC XE will fully utilize the extra memory in an XE. By giving the command "EXTEND" either from within the program or direct mode, BASIC XE will move the program into the upper bank of 64K memory. This provides 2 immediate improvements: you can create programs roughly TWICE as large as previously possible AND with a program in memory, ? FRE(0) yields about 32K free (the space in the lower 64K bank not occupied by DOS or the OS).

BASIC XE is much more structured than BASIC implementations previously available on the Atari. BASIC XE has added 1) local variables, 2) true procedure calls (with passed variables), 3) the IF-ELSE-ENDIF commands, and 4) the WHILE command which permits looping an undefined number of times. Although I am not a programmer, it would appear that BASIC XE is capable of fully structured modules, just like C.

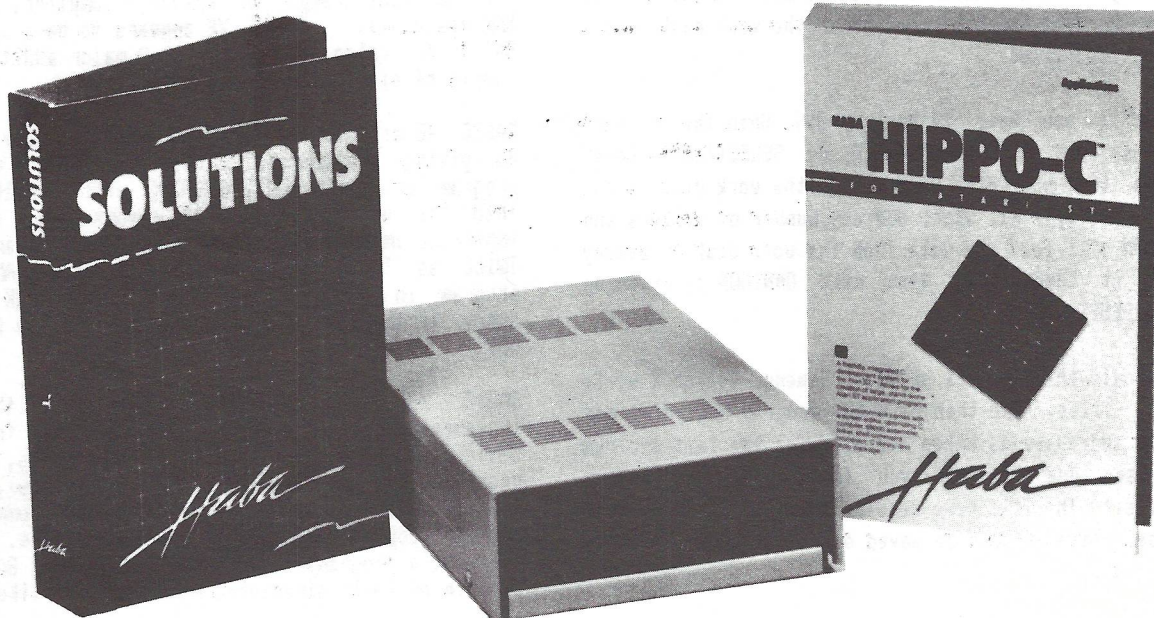
While the above are significant improvements, BASIC XE is not fully ROM-resident. To use the procedure calls, FAST mode, and some other features, an extension file MUST be on the booted disk. What impact this has is unclear since I got the cartridge but not the disk in time for this review. More to follow.

BASIC XE is NOT a licensed product. This is the first product I have seen from OSS that is sold rather than licensed. This creates a much clearer picture with regards to resale or independent development.

BASIC XE is a NICE product. It appears to significantly advance the state-of-the-art with regard to BASIC languages available on the Atari. But, consider the future of BASIC before making a decision. Based on my recent reading, there appear to be strong arguments against programming in non-structured languages. And BASIC XE is selling locally for about \$75 - almost half the cost of the computer it runs on. But, if you are writing software for yourself and want the latest and greatest tool, then BASIC XE is undoubtedly for you!

BASIC XE is available from Computer Discoveries for under \$75.

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A Development System for the Atari 520 ST
A friendly, integrated C development system for the Atari ST. Allows for the creation of large standalone Atari ST application programs. The compiler follows the Kernighan and Ritchie C standard (excluding floating-point). You can combine your own assembly routines with C. It allow allows you to view and modify the assembler output from the compiler.

HABADISK 10 MEGABYTE

Atari 520 ST Hard Disk
The HabaDisk for the Atari 520 ST is a 10 megabyte Winchester plug-in hard disk. HabaDisk stores the equivalent of more than 12 dual-sided 800K diskettes and retrieves information in seconds. A necessity for programming and large application uses.

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- High speed (3 msec track-to-track access time)
- Atari compatible (including Atari Desktop, GEM DOS and Mouse)

CHECKMINDER

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CheckMinder is an inexpensive, simple to use home accounting program designed for those of us who'd like our computer to help us keep track of our money. CheckMinder displays and works with all the objects already familiar to most users: checks, deposits, drafts, checkbook register, etc. It will remind you when bills are due, automatically record payments and deposits, reconcile balances, and generate reports for tax deductible expenses. CheckMinder can automatically arrange your checkbook by number, date, payee, or expense category, and will even print your checks for you too ... all with just a few clicks of the mouse!

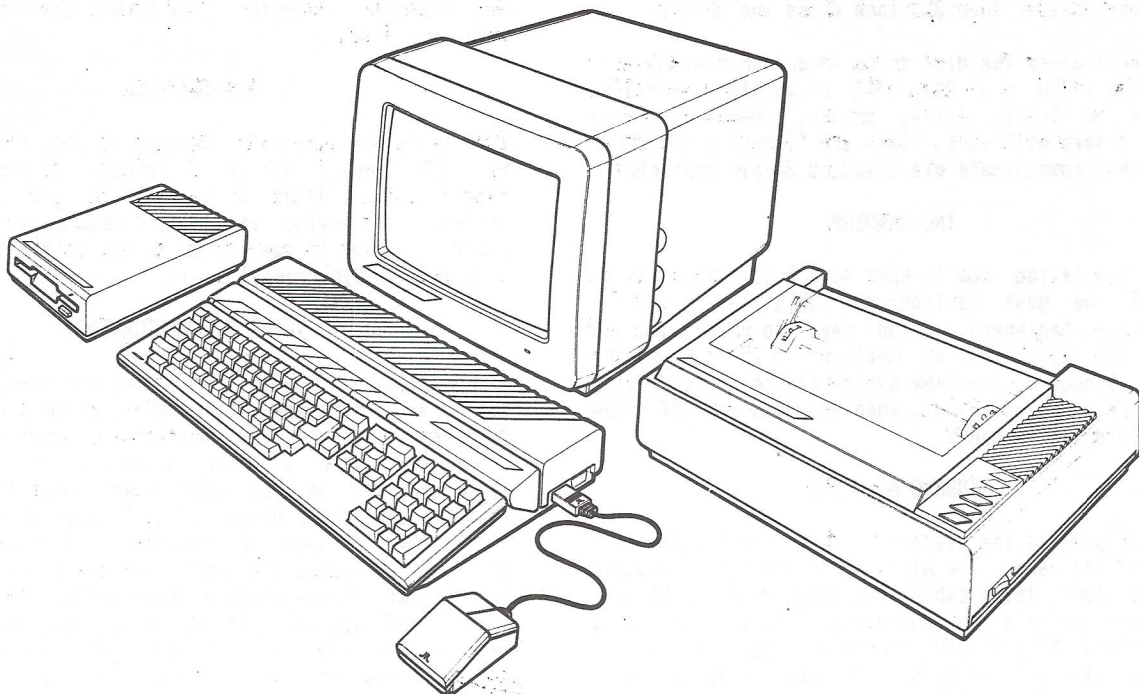
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HOW I MADE AN IBM-ST (An ST with 5.25" Disk Drive)

By David Small

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You can read and write IBM PC disks on your Atari ST if you connect a 40 track 5.25 inch disk drive to your 3.5 inch disk drive. Or, if you don't need IBM file compatibility for an ST, you can connect a 2 sided, 80 track, 5.25 inch drive and store 720K on one disk. This will save you money because 5.25 inch disks and drives are cheaper than 3.5 inch disks and drives.

But can you use the disk drive from your 8-bit Atari? Not if the drive is an 810, 1050, or an Atari workalike such as an Indus, Astra, or Rana. However, ATR or Percom drives will work. They are "industry standard" drives that communicate via standard 34-pin connector.

THE WARNING

Before specifying how to hook up a 5.25 inch drive to your ST, we must caution you this is no job for electronics beginners. You need to understand and modify the circuitry of whatever 5.25 inch you are using. Debugging your new system can be a frustrating experience. Not only that, when you open your ST drive you'll void the warranty.

RIBBONS AND PINS

Of the 34 pins in the standard industry connector, only about 14 are used. The Atari ST brings these 14 wires out in a short, thick cable that plugs from the ST into the first drive's IN connector. This cable uses a non-standard 14-pin DIN connector, but it carries industry standard signals. Our goal is to get those signals to a standard 34-pin connector. Theoretically we'd put a 34-pin edge connector on one end of a ribbon cable, 14-pin DIN connector on the other, and we'd have our disk drive cable. However, in practice I couldn't find a 14-pin DIN connector.

KINKY WIRING

Plus there's another catch. Atari does something kinky with the drive B select signal. It's on pin 6 of the DIN connector when coming from the ST. But inside drive A it is switched from IN connector pin 6, to OUT connector pin 5, where it becomes drive select for drive B. This means Atari ST drives always listen on pin 5 for select, and the daisy chain scheme gives the proper drive the correct signal. Thus the two connectors on the back of the ST drive are not interchangeable, like other Atari drives. Plug your ST into the OUT connector and the drive won't work.

INSIDE THE DRIVE

Therefore, the method I chose to use was to tap into the signals inside the 3.5 inch ST drive. Besides voiding your warranty, this will probably require you to cut a slot in the drive case for the new ribbon

cable. If you open up the drive (use a phillips screwdriver) you'll find the 14-pin DIN connector expands to (Surprise!) an industry standard 34-pin ribbon cable. Of course, it does this inside the shield to prevent radio noise from leaking out. A small circuit board has the two 14-pin connectors (IN and OUT) mounted on it, and it connects to the 34-pin ribbon cable inside the drive. I put a "tap" from the 34-pin ribbon cable in the drive to the 34-pin ribbon cable running to my remote 5.25 inch disk drive. I then used a DB-40, 40-pin male and female clamp-on connector to clamp one side to the ribbon cable and the other to the remote drive's cable. Then I plugged the two DB-40s together. You don't have to use a DB-40. Any clamp-on connector that covers the first 34 pins will work fine.

PIN SWAPPING

But we're not done yet! We have to jump from pin 6 of the DIN connect (drive B select) to pin 12 of the ribbon cable (drive B select) to get this signal across. Otherwise it doesn't show up on the 34-pin cable. This is easy to do on the bottom of the 3.5 inch drive's DIN connect board.

DRIVE B CONFIGURATION

Almost done. Now we need to set the remote drive as drive B. Sometimes it's called drive 1 or drive 2, depending on whether the manufacturer numbers drives at 0 or 1. When a drive is idle, a five-volt signal (HIGH) exists on the BUSY line. When the computer wants to access the drive, it pulls down this signal to zero (LOW). When the computer is finished with the drive, it releases the signal and the drive "pulls up" the signal to its original five volts. If two drives are hooked up, only one may contain pull up circuitry because the computer can only pull down five volts. Pull-up circuitry usually is contained in a chip in the drive. And now you are at a point where you must know enough about your 5.25 inch drive to figure out where the chip is. Since the ST drive A contains all the pull-up termination circuitry we need we must remove termination packs from the remote drive. In the case of my Tandon TM-100-2 drive I also needed to deal with the select line termination, since it doesn't go through the resistor pack. I had to clip resistor R14 from my Tandon to get rid of the added termination. Special Note: The ST monitor throws out a lots of magnetism. If you don't keep your drive at least one foot from the monitor, the disk's heads will pick up the monitor's signals and confuse the read data. You'll immediately notice data error if you get your drive close to the monitor. This is good reason to use a fairly long ribbon cable (3 feet or so) (We haven't noticed this problem in-house - ANTIC ED). ALL DONE!

THE RESULTS

All right, assume you have added an 80 track drive. Put the disk in, close the door and turn on the system. Click on drive B, select FORMAT, and format the disk either single-sided or double-sided. From then on, treat the 80 track drive as an Atari ST drive. Note: 80 track drives have traditionally been persnickety,

which is why 40 track drives remain popular. Keep a sharp eye on the drive's alignment. It takes very little misalignment to make a disk that only one 80 track drive in the whole world can read.

If you've added a 40 track drive, you may use it as an ST drive in only a limited fashion. You can't use FORMAT or a track copy, because they'll try to force the drive past its 40th track.

IBM ST

On the other hand, you can put an IBM PC disk in that 40 track drive, and click on the B icon. It'll pull up the disk's directory into folders and "text only" files. You'll notice on the top of the window an PC-DOS type of "pathname" consisting of multiple (if needed) folders and a file name. GEM simply turns the concept of pathnames into folder icons and moves you through the path by your actions of selecting, opening, or closing a folder. Of course, you can't run IBM programs because they are written in IBM assembly language, which the ST cannot understand. However, you can freely copy and use text files and the data within them. Furthermore, if you write back out from the ST to the PC disk, you'll find that an IBM has no trouble reading what you wrote.

OUT OF THE INNER CIRCLE

Book Review by John Pellet

Out of the Inner Circle, subtitled "A Hacker's Guide to Computer Security", by Bill Landreth is a fascinating inside look at "hacking" (the Wargames meaning - breaking into computers over the telephone). Mr. Landreth is a self-professed computer wizard who has broken into many computer systems.

The first part of the book is basically about the exploits of his inner circle of hackers plus hacking in general. He discusses general methodology and technique without explicitly giving instructions. He also explains some of the motivations hackers commonly feel.

This sets the stage for the second part of the book - how to determine if your system is secure enough and how to protect it if its not. The book presents a rational, logical process to use to determine your real security needs. It also presents several possible methods to eliminate hackers from a system. Current telecommunications security devices are also evaluated, principally by type of protection not manufacturer.

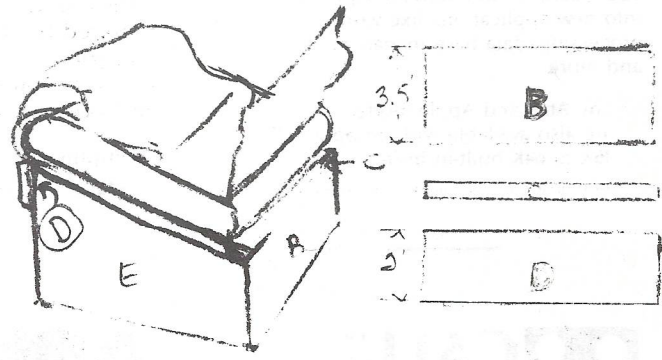
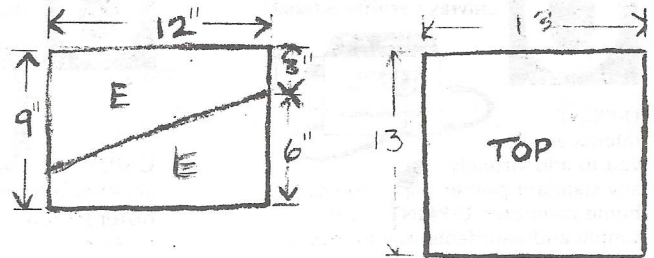
In summary, if you are interested in a detailed account of the exploits of telecommunications thief, or if you have a need to better understand hackers and the security needs of your system, then this book will interest you.

SON OF DO-IT-YOURSELF

by Bob Dain

Continuing in the series of how to build yourself great computer furniture at almost no cost, here is how to make a printer stand that will hold your printer at an angle for easy viewing of what's being printed. A good supply of paper fits right underneath. I built mine out of scrap 5/8" chip-board for the sides and 1/4" masonite for the front, top, and back. I painted the whole thing white to fit in with the rest of my computer area, but obviously you could make it out of anything - say, mahogany and ebony - if you wanted.

The Plan



THE SACHERTORTE ALGORITHM

Book Review by John Pellet

The Sachertorte Algorithm and Other Antidotes to Computer Anxiety by John Shore is one of the myriad of recent works vying for space in the computer section of your local bookstore. While it probably provides little new or original for people involved in programming every day, I found it interesting and full of new insight. I recommend it highly if you want to reduce computer anxiety or get a deeper understanding of the science of programming.

The book is divided into three major areas: our reactions to computers, a short course in computers -

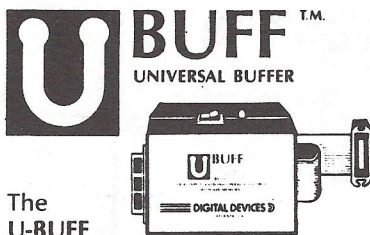
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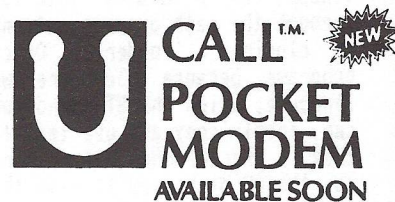
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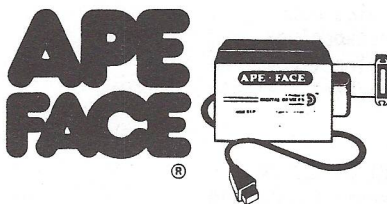
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what they are and what they aren't, and a varied discourse on the "art" (or science) of programming in today's world.

Our reaction to computers, whether anxiety or unquestioning obedience, is discussed with a frank and open style. With appropriate touches of humor. I, for one, had never considered how anxiety at school would be different from anxiety at home or at work. The potential benefits of reducing computer anxiety are clearly explained.

A short course in computers ranges from jargon (both what it means and why it appears), through a thorough discussion of user-interfaces, to the sachertorte algorithm. The sachertorte algorithm is a humorous but informative comparison between a people program (a torte recipe) and a computer program (a torte recipe rewritten in a highly structured language a la Pascal).

The final area of the book explains where programming, or software writing, is going and where its been. Programming is described as a literary activity, mathematics, architecture, and a combination of the three. Finally, the real benefits of structured programming are clearly explained! This is the first book I've read that has gone beyond stating "Beware GOTO - Here Be Monsters". If you want a firm grasp of the pitfalls of non-structured programming in today's world, I cannot recommend a better source.

In summary, if you or someone you know treats the computer as an enemy then this book will help transform the computer into a tool. If you want the development of computer programming explained clearly, without jargon, then this book fills the bill.

EDITOR'S NOTES

We're bustin' out all over! Yes, by popular demand (and an overpopulation of advertisements) I have been forced to temporarily expand the newsletter to 20 pages. By demand of the board, this newsletter should arrive in your mailbox before the meeting, so you can get an idea what to expect from the meeting and carefully examine all the ads so you know which companies you should patronize. Anyway, this effort was made possible not only due to the ads, which paid for the effort, but the generous and frequent contributions of John Pellet. He wrote many articles and downloaded many more from CompuServe, of which the addition of 5 1/4" drives to the ST article is my favorite. I single out John, but must thank the rest of the masses who also contributed, too. Thank you for making my life easier. Same ol' pedestrian Editor's comments, yeah, I know. Sorry. Someone ask John Pellet why he keeps spelling my name "M-A-R-C". See you at InfoMart.

Mark

COMMUNICATIONS COLUMN

by John Pellet

SURPRISE!!! I hope everyone is surprised to get this issue of the newsletter! We told you there would be some changes and this is the first one. This month's newsletter is being mailed in time for everyone to receive it BEFORE the meeting. If this is a plus PLEASE LET US KNOW! By the same token, if you can't stand the change, LET US KNOW! Mark and I, as well as the rest of the board, see advantages and disadvantages. Probably the biggest advantage is that you can see what's up before you come to the meeting. The biggest disadvantage is it moves the production meeting and deadline up 2 weeks (maybe even to the meeting weekend?). In any case, provide some feedback to the members at large, the editor, or any other volunteer.

With regard to the disk library, thanks Jeff. The first time is always the worst. We all look forward to an ever-improving disk library. Also, thanks for all the volunteers for sales and copying. The sales people are especially needed for our move to INFOMART. I'm not sure what new disks we'll have for September so be sure and check the club sales area during the hours given in the back cover.

Howard, as usual, has been very active with the BBS. It gets more active all the time. We added 20 member passwords in July. The number of phone calls and overall usage were both up about 10%. Unluckily, our source for disk drives dried up and so any increase in disk space will be delayed. If you have any opinions about how the BBS could be improved please leave me or Howard a message on the BBS.

That's about all for this month. Have fun at our new digs - the steel and glass INFOMART.

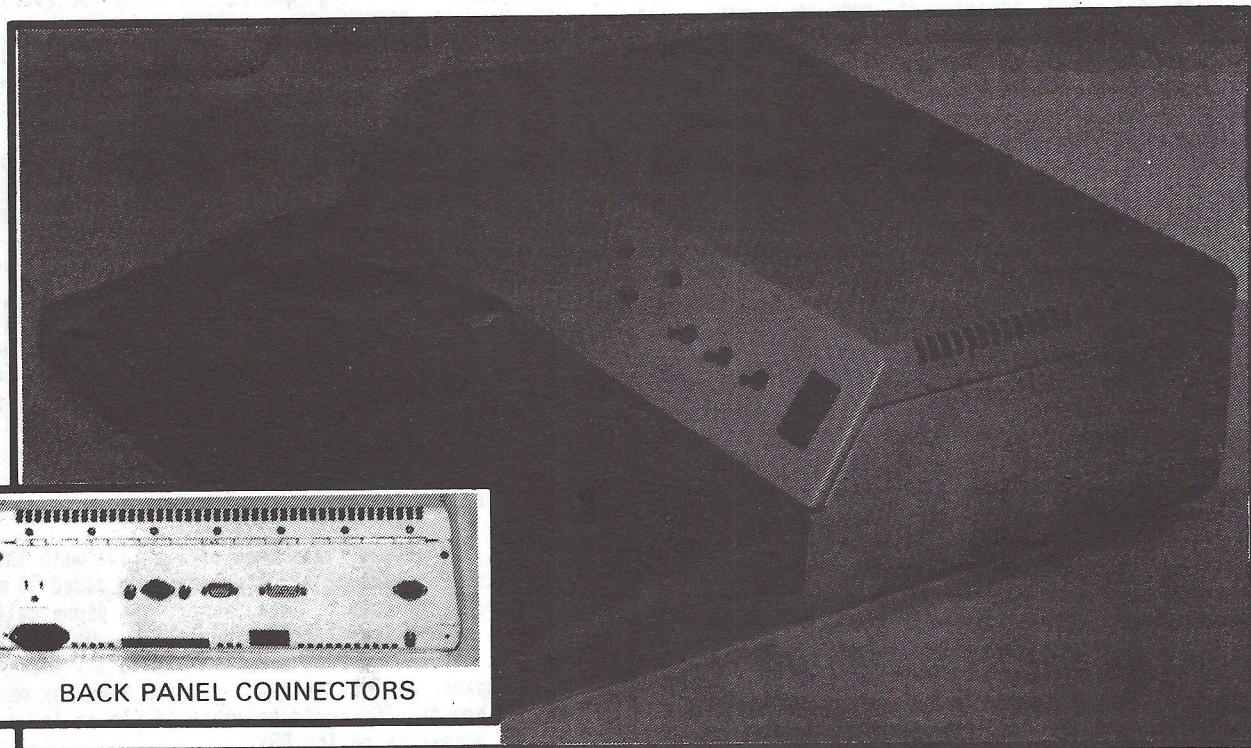
WISHBRINGER

Reviewed by Steven Markley

Wishbringer is the latest in the long line of Infocom interactive fiction titles. You start the game in the town of Festeron as a postal carrier. You are to deliver a letter to the old Magic Shoppe across town by 5:00. While traveling there you have time to explore the various locations of Festeron which include a police station, movie theater, church, library, arcade, and a spooky old graveyard. At the Magic Shoppe you meet the very old woman who runs the place, and to whom the letter is addressed. After revealing the contents, which state that her cat has been stolen, she bids you farewell, but asks you to keep an eye out for her cat. When you go outside, everything has changed. There is a tower where the post office used to be, and there is a thick fog every where.

That is a synopsis of the start of this game. It lives up to Infocom's standards. The story is well written and has a well thought out plot line. Also, the packaging is very nice, having a map of Festeron, the

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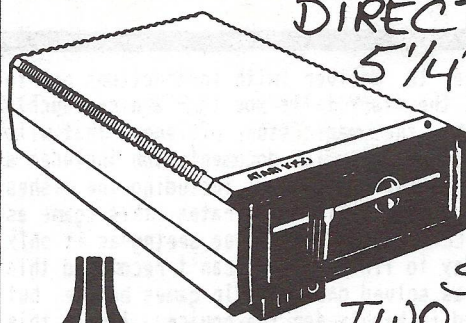
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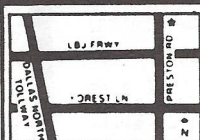
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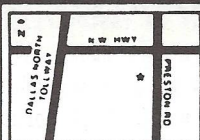
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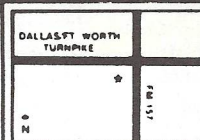
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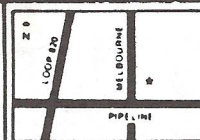
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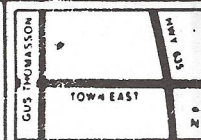
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letter you are to deliver (with instructions not to open it until the story tells you to - a nice touch), and Wishbringer, the magic stone of legend that will aid you on your way. The documentation includes a legend in verse of the magic stone including the wishes that it will grant. Infocom rates this game as "INTRODUCTORY LEVEL", and I agree seeing as it only took me ONE day to finish it. I can't recommend this to anyone who has solved one of their games before, but I do recommend it highly for the novice. I rate this game a 9 for the beginner and a 4 for the old pro. For them it will just be too easy.

Wishbringer can be purchased for around \$25.00 at the meeting.

Hippo C for the Atari ST by Haba Systems

review by Gary Sewell

Hippo C is one of the first new products available for the Atari 520ST. Until now, the only high level language for the ST was Logo and Digital Research's C compiler which came in the developer's package from Atari. In this article, I will try to give you my impressions of both compilers, run a few of the "standard" benchmarks on both, and run those same tests on Lattice C (tm) for the IBM PC. Lattice is the compiler used by most people, including Digital Research, when compiling programs for the PC.

Hippo C comes complete with a full screen editor, compiler, linker, assembler, and archiver. Also included is a UNIX(tm)-like front-end. For those of you using UNIX, you will love it. Most of the "standard" UNIX commands are there, like CD, LS, MKDIR, RMDIR, DATE, TIME, MV, CP, CAT, and PWD. Even the files are set up like a UNIX system. You have a BIN, TMP, INCLUDE, and USR directories. And just like UNIX, when you boot up, a program batch file called bin/login.bat can be set up to customize your environment.

The editor is a full screen editor making use of the 10 function keys on the ST. It is very easy to use, and after a few minutes you can master most of its commands. The editor will load the entire contents of the file into memory, and because only about 200K is left, you must limit your program to about 2000 lines of code. If you write this much C code into one file, you need to go back to BASIC. One thing you need to watch out for is that the editor does not warn you when you're getting near the end of memory.

The Hippo C compiler is a two phase compiler. The first phase is the preprocessor and parser. It takes C source code and expands all the includes and defines in your program, then parses the program for errors, then writes an intermediate file. Also, one of the outputs from this compile phase is a list of compiler statistics

which tells you the status of the compiler. Each listing has two entries: amount used, and maximum you have. The items are: number of symbols, size of namelist, most locals in a function, most typedefs, most structures active, size of type table, size of structure table, and number of globals. This information can be a great help when writing big C programs. The output of phase 1 is used by phase 2. Phase 2 creates a file whose output is 68000 source code. This file is used by the 68000 assembler to create an object file which can then be linked with other object files and libraries to create an a.out file or, by using a -S flag, a A.PRg file.

The archiver is a program that allows you to compile modules into object code and then add them to a library. This library can then be used in other programs, thus eliminating the need of compiling the same sections over and over.

The beta test version that I used for the test proved to be very friendly and effective. It compiled programs at least twice as fast as the Digital Research compiler. For example, the Sieve of Eratosthenes prime number program compiled in 53 seconds and linked in 99, while the Digital compiler compiled in 110 seconds and linked in 4 1/2 minutes. Execution times were 8.9 seconds for Hippo, 7 seconds for Digital. For comparison, Lattice compiled in 23 seconds, linked in 60, and executed in 3.6.

Some of the weaknesses in the beta version included a lack of printer drivers. After a call to Hippo, I was told that in the next release, the drives would be there. Also noted was the EOF from the keyboard. The manual states that a control-D is the EOF, but we couldn't get it to work. One serious problem found, that is also in the Digital compiler, is the initialization of static arrays.

```
EXAMPLE: static char *name[]={
                "John Doe","Mary Smith"
            };
            puts(name[0]);
```

If you use this construct, and many do, you will find a problem with the puts function. It will produce at least 3 bomb explosions on the screen. If you use printf with the %s specifier, it will work correctly.

I'm sorry that more information is not available due to the short time that I've had the compiler. Overall, the compiler is a good implementation of C as defined by the Kernigan & Ritchie text. It is faster than the Digital compiler, but produces a bit more code. It lacks a few standard I/O functions, such as gets and scanf. It does not support floats, but I'm told that version 2 will. In my opinion this product is worth the \$59.95 price tag, considering that most other C compilers run around \$300.

EDITORIAL STAFF

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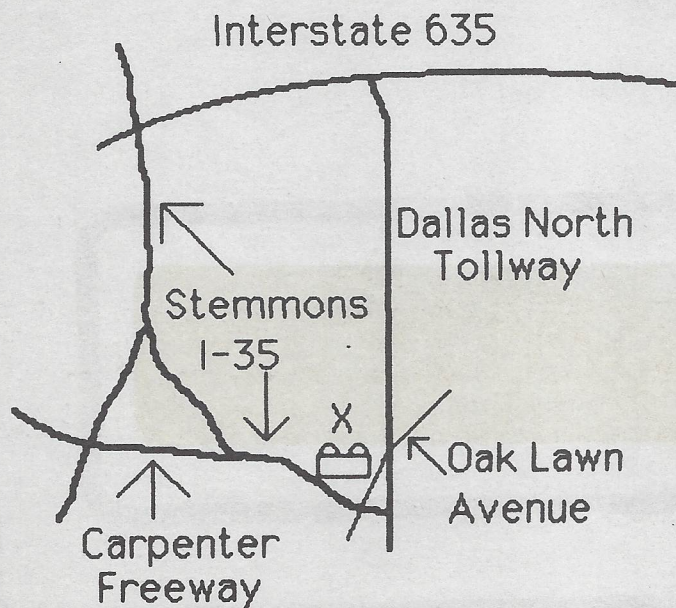
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 Column width: 56 characters per column (3 7/16 inches).
 Column length: 9 inches (6 or 7 LPI - 6 preferred).
 Right margin justification used with text.
 Submitted to newsletter both printed out and on DOS format disk.

NEWSLETTER PRODUCTION SCHEDULE

OCTOBER Newsletter: Copy should be turned in to Marc Maxham AT THE SEPTEMBER MEETING. FINAL deadline and production meeting will be available at the September meeting.

**INFORMART MAP
 X MARKS THE SPOT**



***** MEETING INFORMATION *****

INFOMART - DALLAS, TEXAS

DIRECTIONS: From north Dallas, take either Stemmons (I-35E) or the Dallas North Tollway SOUTH. From Stemmons, take the Oak Lawn exit, turn left (east) and park at Infomart, on the left just after you go under Stemmons. If you're using the tollway, exit right on Wycliff, go left on Harry Hines to Oak Lawn and turn right. Infomart will be on your right. From the south, take Stemmons north then follow above. Its the big white steel and glass building near the other 'marts'. The main entrance faces Stemmons. Guests are WELCOME!!

MEETING AGENDA

11:00 - 12:00 CLUB SALES - 1ST FLOOR
 11:30 - 12:00 NEW MEMBER SIG
 12:00 - 1:00 BUSINESS MEETING
 1:00 - 2:00 CLUB DEMONSTRATION(S)
 CLUB SALES - 1ST FLOOR
 2:00 - 4:00 DAL-ACE SIGS

Meeting rooms and additional information will be posted at the DAL-ACE booth at the main entrance, which will be manned from 10AM to 4PM. Final details on SIG times, newsletter dist., new member signup, library sales, etc. will be worked out and posted at our booth. GARAGE SALES WILL NOT TAKE PLACE AT THE SEPTEMBER MEETING - but should resume in October.

OCTOBER MEETING: The meeting will be October 12, 1985 at Infomart - schedule next month.

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