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THE EDITOR'S COLUMN

by Norman Knapp

This month's newsletter contents reflects current ACE membership interest in the new Atari products, telecommunications, and machine language. SYNCOMM is reviewed by Eric Anderson and the MPP Smart Terminal (disc version 6.1) is reviewed by Bill Morgens. Due to an oversight of the ACE editor we have two articles by Dr. Warren Lieuallen on machine language.

We also have, courtesy of Dick Brudzynski, downloads from the CompuServe Atari bulletin board of the Antic Special Bulletins concerning new Atari products:

1. Two new Atari computers.
2. Two Lucasfilm games, Koronis Rift and The Eidelon.
3. An encyclopedia on a laser disk.
4. New products for 8 and 16 bit Ataris.
5. The Haba Systems ST product line.

The flurry of new Atari computers and software for them leaves me breathless. Personally, I am quite interested in the ST computers. In contrast to the situation when the Macintosh was released, it appears that there will be an abundance of software for the new ST computers when it comes out. Right now the most obvious question facing the Atari community is uncertainty of the ST release date. In recent years, nebulous release dates have handicapped other new computers and have weakened their position in the market place, even threatening the parent company's ability to compete in the market place. The only company to escape this dilema has been IBM; everybody waits to see what IBM will do no matter how long it takes.

There is another issue that I would like to discuss that concerns the utilization of the ST's memory. There are two shools of thought on this: the computer owners' and the software writers'. The computer user will view the 520's memory to be used to construct and process large files of data. The software author can visulaize memory as a resource to be used to contain long, elegant programs. The problem arises when the memory requirements for data and programs exceed the available memory. There is an alternative which was mentioned by Jack Tramiel several months ago; the production of optimized program code, which has not been discussed since Jack's brief comments in January. It takes extra time to write optimized code. It may be that in the rush to produce ST software that there may be quite a few unnecessarily long programs on the dealer's shelves. The obvious solution to this problem is to let the market place weed out the offending products. Another solution is feedback from user groups to the software houses letting them know what we would like to see in their software products.

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SYNCOMM: From Synapse. Discount price approximately $30.

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A review by ERIC ANDERSON

When a commercial software house invades a market already populated with high quality public domain software, it had better do it right. Synapse tried. Unfortunately SynComm falls short.

When I opened the package and started reading through the lush, lavish manual that Synapse includes, I was suitable impressed. Make no mistake, the documentation is a work of art. It comes in small three-ring notebook which also contains the disk.

The writing is crisp and straightforward. You won't have too much trouble trying to understand what the authors are telling you. Synapse has also gone to considerable trouble to include pictures of relevant menu screens. The nice part of having the photos, is that you don't have to be sitting at the computer to read the manual and have it make sense. From the other new products in the Syn Series, it is clear that Synapse is taking the documentation and presentation seriously. They are to be commended for this.

Unfortunately, though, SynComm does not live up to the quality of the documentation. When compared to the public domain AMODEM, which is available practically anywhere for the price of a disk, SynComm comes off second best.

The terminal program is written in machine language -- you won't need Basic. After you start the boot process, the program loads, then disconcertingly pauses, then loads some more. The pause apparently has to do with Synapse's new copy protection scheme, and the first time you see it happen, you'll believe the whole thing has crashed.

After getting itself initialized, the main screen comes scrolling up with the message "Open for business." SynComm uses three basic screens: 1) the main screen, 2) the command screen and 3) the configuration screen. The configuration screen is easy enough, with the usual choices on parity, baud rate, etc. One nice feature is that different configurations can be saved to the disk, and Synapse provides not only a default configuration, but one for CompuServe as well.

The option and select keys toggle the different screens, while the start key is sort of an expert user switch. If you know what the letter is for the function you want, the start key lets you execute it without going to the menu.

The first problem with SynComm, though, is the echo line on the main screen. What you are typing on the screen appears both on the screen as well in an echo line at the bottom of the screen. The echo line cursor marches to the right until you hit the return key. Then it resets itself to the left and clears the echo line. I found this to be extremely distracting. The interference was even worse, though, when the echo line would fill up bef I wanted to hit return. That meant characters would beg marching across the bottom of the screen like a freight train. The echo line is bad enough, but to have the words come spewing out of the left side of the screen and tromping across the bottom is downright distracting.

SynComm allows you to have multiple capture buffers and switch between them. This feature is nice, although with 18K of available memory left, you can have either a lot of little buffers, or one big one. If you were downloading a series of short files, the multiple buffers might come in handy, but there's one problem: I couldn't figure out how to make the multiple buffers work with XMODEM protocol. That seeming incompatibility destroys the whole point of the exercise.

I uploaded a file to Dr. Download using XMODEM transfer. For a 62 sector file, SynComm required 62 disk accesses! AMODEM on the other hand, would fill the buffer, send the buffer and then refill the buffer. AMODEM would have transferred the file with only one (or possibly two depending on which Basic) disk access.

Quite possibly, the problem with all this is SynComm's command structure. AMODEM, TeleTalk and other terminal programs have adopted a certain syntax for cert operations. The program may work a little different, but a glance at the menu tells you how to do what you want. That's not the case with SynComm. For whatever reason, the author has adopted a nomenclature all his own. It may be unique, and maybe it works, but it is not easy to instantly decipher while you're on-line.

There are a couple of other niggling points. SynComm would not reproduce certain Dr. Download menu screens correctly. For unknown reasons, some of the vertical bars wouldn't line up correctly. (They do with AMODEM.) In addition, SynComm does not support the 835/1030 modem. It should. There's no reason why the correct handler cannot be selected after the program loads. There are already public domain programs that do this.

Finally, the instruction manual talks about downloading from CompuServe. Unfortunately, most of CompuServe's Atari files require CompuServe's "A" protocol to download properly. That means you've got to use T-Scope. While SynComm will be able to handle CompuServe's XMODEM files, they are still in the minority. the instructions, after raising that point, should make the distinction clear.

SynComm is not a bad program. If it had been releas two or three years ago, it would have been hailed as stunning success. It is a measure of how fact the public domain sector has grown that "free" programs have eclipsed Synapse's commericial offering. That's good news for the user, bad news for Synapse.

Machine Language: Where Do I Begin?

by Dr. Warren G. Lieuallen

As many people already know, beginning to understand and program in machine or assembly language is not an easy task. The instruction set for the 6502 microprocessor is much more primitive (much more basic!) than BASIC; many tasks which were automatically performed for the user become responsibilities which must now be directly and properly controlled, such as: specific input/output control, alloting precise memory space for variables, counters and flags, and many more. But perhaps the most bothersome of these extra "housekeeping chores" is deciding just where to store the actual code which makes up the program. This must be done before the program itself can even be written.

While using BASIC, program lines are simply typed in, one after the other. The use of line numbers instructs the computer in which order the commands are to be executed, and additional lines may be added into the program at any point be using an intervening line number (this explains the common practice of numbering lines with multiples of ten--plenty of space is left for any modifications.).

Very rarely is any thought even given to where within the computer's memory the BASIC program will reside; the computer figures that much out for itself! The line numbers simply indicate the order of the program statements, not their location. However, with machine language, this luxury is not provided.

Every "program statement" in a machine language program is simply a number from 0 to 255 (that's the maximum range of numbers which can be expressed in one byte in the hexadecimal system [00 to FF]). This number is then placed into a specific memory location, perhaps by means of the POKE command. After the appropriate numbers have been entered, the computer simply executes the commands represented by the numbers it finds in its memory, one right after the other. The order of execution is the order that the commands are encountered in sequential memory locations, one right after the other (there are exceptions, of course--as in the BASIC "GOTO" command, branches are allowed in assembly language via "JUMP" commands.). One consequence of this is that it is much more difficult to modify a machine language program, because there is no "line-skipping" as in BASIC.

So, the first consideration in writing a machine language program is which memory locations to use. There must be a contiguous stretch of available memory locations large enough to accommodate the entire macine code, and these locations must not interfere with the specific "hardware" locations used by the computer in its functioning.

Probably the best, and easiest place to store machine language code is on "page six". This refers to memory locations 1536 to 1791 (it's called page six because the memory locations in hexadecimal are 0600 to 06FF.). This area of memory, 256 bytes in length, has been set aside for just such a use; only rarely will the Atari require any of this space (for a response to an "INPUT" statement of more than 130 characters in length, some of these locations are used.).

If your machine code is more than 256 bytes in length, then you must find another location to use for storage of at least the excess code, if not the entire program. If this is the case, you're probably a better assembly language programmer than I am, and don't need me to tell you how to handle this problem!

Another consideration is how to store your machine code. The method with which most people are probably familiar is to store the program as a "binary" disk file. This is done by using the "Binary Save" option of DOS; these files are subsequently loaded again with the "Binary Load" option. This form of saving creates a special file on the disk which indicates to the computer that the following data file is to be placed into particular memory locations, which the user has specified. Many programs use this method, which is relatively fast, especially for larger programs. However, it is more difficult to access the code directly, and understand or modify it as you see fit.

A second approach is to write a BASIC program which will "POKE" the necessary values into the proper memory locations, and then run the machine language via a "USR" command. This approach has the advantage of allowing access to the code, which usually consists of decimal representations of the hexadecimal codes in DATA statements. However, these numbers must be reconverted back into hexadecimal, and then looked up in a table to "disassemble" the code, unless a disassembler program which can read BASIC DATA statements is available. Also, the code must be typed in as decimal numbers, which means they probably had to be converted from hexadecimal in the first place! Another disadvantage is that this method is much slower to load into the computer, so that longer programs will entail a significant delay.

The best approach is also one of the more limited. If the machine language code is in a form known as "relocatable", which means that it has no restrictions on absolute memory addresses (many programs do), then the numbers making up the code can be converted into their ASCII equivalents, and written as the characters of a string variable! This can be done easily to machine language programs in a different form by a BASIC program which reads each number, and then assigns the proper location within the string to the corresponding ASCII character. Then, the routine may be called from BASIC by using this command: X=USR(ADR(ML$)), where X is a dummy variable, and ML$ is the string containing the machine code. This method is one of my favorites in that it loads almost instantaneously, and can be easily used from within a BASIC program. However, it is limited to relocatable code, which has proven to be quite a limitation, indeed.

I hope this introduction to machine language and its uses has been both interesting and valuable to you. Perhaps you, too, will find programming in machine or assembly language as challenging and rewarding as I do.

M.P.P. SMART TERMINAL, (Rev 6.1)
DISC VERSION

Reviewed by Bill Morgens

Micorbits Peripheral Products (Albany, Oregon) has really outdone themselves this time.

Let's go into a little background with my involvement with the MPP 1000E modem. I had purchased the modem recently and had a question or three about its operation. So I called the company and spoke to one of the technical whizes. During the course of the conversation it was mentioned that a revision of the Smart Terminal was available at no cost for modem owners. It seems that they had run out of space for cartridge use so they went to disc. I was told that it would be necessary for me to return the cartridge in an envelope that had "RAV.6" written on the outside in the lower left corner and they would send the disc at no charge. Shortly after that I heard that MPP was getting too many cartridges and it was only necessary only to send a 'proof of ownership.' I thought to myself that I really wanted to be able to continue to use the modem during that time, so I just cut off the cover of the owner's manual and sent it to the company. About 10 days later, my new disc arrived by United Parcel.

In previous editions, one of the main shortcomings of the modem was the owner's manual. MPP admitted that there are "a few portions of the owner's manual that are not crystal clear." It was a welcome sight to see that they had completely re-done the manual. It is now much clearer and easier to follow. There are still a couple of places where one will stop and ask "What was that I just read?"

As you boot the disc WITHOUT BASIC (hold down the (OPTION) key, you XL'ers out there) it will auto boot. Should you forget to hold down (OPTION) as you turn on the computer, it will still autoboot, but you'll have less storage space available in the buffer. On disc, you have available 23182 bytes for the buffer if you boot with Basic, but without Basic 31374, a considerable difference of 8192. There has been a sacrifice of buffer space for new features ... with the cartridge we had 37663 bytes available.

As the main menu comes up on the screen there are a couple of improvements immediately visible. In addition to BYTES LEFT, we're now told how many FREE BLOCKS we have for the buffer.

Looking at function A) DISK FUNCTIONS (which replaces DISK DIRECTORY on earlier versions) we find 7 options:

A) DISK DIRECTORY
B) FORMAT DISK
C) RENAME FILE
D) DELETE FILE
E) LOCK FILE
F) UNLOCK FILE
G) EXIT

This is MPP's Smart Terminal DOS which gives you additional working power. For instance, you won't have to remove disc, etc., if you need to format a new one. You can bring up the disc directory and find out how many sectors are available on your disc for D/L.

There aren't any significant changes until we get to letter M) DIAL/ANSWER FUNCTIONS. On typing "M" we see a sub menu that lists spaces for us to insert 10 telephone numbers and than below that there are 8 function choices:

A) AUTO ANSWER (OFF) OR (ON)
B) QUICKDIAL (OFF) OR (ON)
C) AUTODIAL NUMBER
D) CHANGE NUMBER
E) LOAD NUMBERS
F) SAVE NUMBERS
G) HANG UP PHONE
H) EXIT

New to the MPP is Menu Item B) QUICKDIAL. To toggle this very useful option, type "B" and your number will be dialed about 4 (yes I said four) times as fast! Some phone systems won't accept this rapid pulse dialing, but if yours does, it's a super feature! Option C) AUTODIAL NUMBER not only dials any number from the above list that you have entered, but keeps re-dialing that same number until it either connects or you abort the function by pressing (START). Each time the number is dialed and not connected, a slash "/" is printed on the bottom of the screen. When another computer's carrier is dectected, the modem will automatically go into the TERMINAL MODE.

Option D) CHANGE NUMBER is only sightly changed from previous versions. We can now input 33 characters per line (the owner's manual still says 24 characters, however).

Option E) LOAD NUMBERS. It is through this option that we are able to access the TWENTY additional phone numbers. Since the Smart Terminal will automatically load the numbers on page 1, just type "E" to toggle page 2 and then type "E" again to access page 3. Typing "E" again will bring up page 1 again, etc.

Most noticeable in the new version are the STATUS LINES, two lines of inverse video occupying the bottom two screen lines and giving you a constant status report on several conditions. The top line's fist entry is "tr:" and toggles to tell you whether you are in the ASCII mode or the ATARI translation mode; next is "xm:" which toggles to tell you whether xmodem is on or off; next is "dup:" announcing full or half duplex; next is "online" or "offline"; last on the top line is "bd:" telling you the current baud rate you're using. In the bottom line, the first entry is "sl:snap" which will copy the contents of the screen into the current buffer. "Op:" tells us what function is taking place after pressing (OPTION) to begin or stop transfer. Next is "BF:" which tells the buffer number in use. "ps:" indicates which of the 3 pages of telephone numbers is in use. The last item is sometimes a blank, but when up or down loading the name of the file involved will appear in this window.

All in all, this latest revision from MPP is most welcome. After using the product for a while, I'm very pleased with it. Next time, perhaps, those nice folks out in Oregon will provide facilities for an audible monitor... I'd really like to hear what's going on with my telephone signals. More than once I've run into a problem where the auto-dialer just slaved away not letting me be aware that I was causing a problem with someone's telephone.

Machine Language: How Does It Work?

by Dr. Warren G. Lieuallen

As we discussed last month, the first consideration in writing a machine language program is where to store it. Now that that problem is solved, we're ready to begin actually writing our program. But, as you are no doubt aware, the commands in machine language are not as easily and intuitively understood as those in BASIC. The machine language commands are simply numbers from 0 to 255. What do those numbers mean?

Each of the "numbers" in a machine language program is a code; each number represents a specific command which can be executed by the 6502 microprocessor. Just as there are commands in BASIC (such as GOTO, POKE, IF-THEN, etc.), there are commands in machine language (such as JMP, LD, BEQ, etc.). These commands constitute the machine language program, just as in any other programming language. The difference is that machine language is a "low level" language, meaning that the commands are much closer to the actual instructions carried out by the microprocessor, and are therefore not as "user-friendly" as the higher level programming languages we are accustomed to, such as BASIC, FORTH, LOGO, etc. However, because it requires less "translation" by the microprocessor, a machine language program will execute much faster than one written in a higher level language (as always, there are exceptions!). And this speed is the reason that programmers turn to machine language.

A short example should clarify this point. Suppose we want to fill the screen with a particular character. In BASIC, the program might look something like this:

```
10 GRAPHICS 0
20 FOR I=40000 TO 40959
30 POKE I,10
40 NEXT I
50 GOTO 50
```

This program will clear the screen, and then place the internal code for an asterisk in the memory locations which correspond to the graphics-zero screen display. This routine takes about seven seconds to do the job.

Now, when using machine language, the program may be entered in several ways, depending on whether you have a machine language assembler/editor program or not. The following program will work from BASIC to "assemble" the machine language codes in memory:

```
10 FOR I=1536 TO 1569
20 READ J:POKE I,J:NEXT I
30 GRAPHICS 0
40 X=USR(1536,10)
50 GOTO 50
100 DATA 104,201,1,208,254,104,104,170
110 DATA 165,88,133,204,165,89,133,205
120 DATA 138,160,0,145,204,230,204,208
130 DATA 250,230,205,166,205,224,160,208
140 DATA 242,96
```

This routine (which is relocatable--refer to last month's article if you're not sure what that means) will also fill the screen with asterisks, but is nearly instantaneous. So, you can see that machine language can be very useful where execution speed is essential. For longer, or more "serious" applicatons, the difference in speed would be even more dramatic. Also, although the machine language program looks longer, it occupies only 34 bytes once loaded, while the BASIC screen-fill routine requires 61 bytes of memory.

So, as the example demonstrates, machine language does have some advantages over other programming languages, but it also has one BIG disadvantage; machine language is much more difficult to learn and use. That's why the higher-level languages were written in the first place!

It is not my intention to teach you how to program in machine language. In the first place, I'm only just learning to do so myself. In the second place, several good books already exist to do just that, and you have to pay for those books! If you're still interested, here are some of the books I've found helpful:

Programmer's Reference Guide for the Atari 400/800 Computers
by David Heiserman Publ. by Howard Sams & Co.
This book contains, among other things, a complete instruction set for the 6502 microprocessor, their decimal and hexadecimal op-codes, their effects on the various flags, and a brief explaination of their functions.

Atari BASIC, Faster and Better
by Carl M. Evans Publ. by IJG Enterprises
This book contains many useful BASIC and machine language routines, and although does little to explain the source codes, is a very good tutorial nonetheless.

My introduction to machine language was on a Timex-Sinclair 1000, so I have no experience with a book directly concerning machine language for the 6502 microprocessor in the Atari computers. However, browsing through a bookstore should turn up several good titles. Other books are available to cover specific areas, such as The Atari Assembler by the Inmans.

I wish you much luck and success in your journey into the exciting and often frustrating world of machine language!

Antic On-Line Special Bulletin

by Michael Ciraolo

Sunday, June 2, 1985

Chicago, IL--Atari Corp. introduced two new computers at the summer Consumer Electronics Show today, and is expected to make more major announcements tomorrow.

Atari introduced two new computers, the 260ST and the 260STD. The 260ST is a 256K version of the 68000-based 16-bit ST machines previously announced by Atari.

According to Atari marketing official Brian Kerr, the new machine is expected to retail in the $399 range and will be shipped this fall.

Atari also announced the 260STD, identical to the 260, with the addition of a built-in 3-1/2 inch disk drive. Kerr said the expected price is $499.

Both of the 256K machines will have the operating system and Graphics Environment Manager (GEM) built in ROM, according to Kerr.

However, the long-awaited 520ST, which is now scheduled for shipping in July, will have an operating system installed in RAM, according to Kerr.

The company is expected to announce a read only memory device in the form of a compact laser disk for use with the new ST computers.

Although not officially announced, the CDROM was designed by Activenture in Monterey, Calif.

Activenture demonstrated the CDROM privately to Antic shortly before the Consumer Electronics Show, where we learned that the CD has a 500 megabyte capacity.

The first product available on the CDROM will is expected to be a 100 megabyte encyclopedia from Grollier.

Called an "inverted database" by its developers, the CDROM encyclopedia lets users type in words or strings of words to be searched throughout any portion of the text, all 20 volumes of the encyclopedia.

Further details are expected tomorrow, when Atari officials have promised to introduce the product.

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Antic On-Line Special Bulletin from the Summer '85 Consumer Electronics Show

Sunday, June 2, 1985

by Michael Ciraolo

Chicago, IL--New products for the 8-bit Atari computers include two new games from Lucasfilm, distributed through Epyx Software.

The two games, scheduled for release this fall, are Koronis Rift and The Eidelon.

Lucasfilm team leader Noah Falstein said of his team's game, The Koronis Rift: "It's the year 2249. An ancient coalition of races once existed throughout the galaxy. They've left behind artifacts.

"You're a techno-scavenger, hunting for artifacts when you find the motherlode of finds, a weapons testing ground."

Weapons are the most sellable of items, so you drop down to the surface of Koronis to scavenge. Of course, the ancient races left behind a variety of weapons, defenses and anti-detection devices, all protected by genetically engineered Guardians.

There is one remaining Guardian base at the end of the Rift, a Grand Canyon-like chasm, which can only be destroyed with the right combination of weapons systems.

"You are armed only with puny weapons when you start," said Falstein. "But you work your way up -- acquiring detection gear, weapons, shields, anti-detection equipment. As you get better equipment, you run into tougher guardians."

Koronis Rift is a multi-strategy game, and there is no one solution to the game. "It takes the right combination of weapon systems to get to the base at the end of the Rift," said Falstein.

"As I see it, this is played the way you play a text adventure. There will be an Encyclopedia Galactica to provide information on the races leaving the systems, and you have to consider clues and strategy to reach the base at the Rift's end."

The game also works on other levels. Each weapon system is color coded, so a blue shield is the best defense for a blue laser, not so good for a purple laser, and no good for a red laser.

As one would expect from Lucasfilm, each game is breathtaking, both for game design and for programming innovation. Koronis features a cleaner version of the fractal landscape generator used in Rescue on Fractalus.

Not only are you presented with the pilot's view, control panel and overhead monitors, but Koronis also includes incredible GTIA animation produced by Jim St. Louis, who produced the introductory scene in Epyx's final version of Rescue. (Ed. Note: St. Louis was also the artist who created the famous Robot & Rocket demo graphics, used by Atari at the January CES)

The Eidolon takes you back in time, to the 19th century. You've ventured into your uncle's dusty basement, and there it is, dials still glowing. But what is the Eidolon? According to Lucasfilm team leader Charlie Kellner, it's a magic time machine, a la H.G. Wells. The inventor left a few notes, but...

You start up the Eidolon, and find yourself in a cavern. You start running into things, and as they get more fiercesome, you get the feeling you're approaching the center. But of what?

Kellner won't say. But he did let on that the cavern, while immense, is not infinite. Indeed, it's the same cavern each time you play, and thus mappable.

"It's partly a voyage of discovery, partly a quest to get to the end," Kellner said.

Eidolon uses animation techniques never before used in home computers, according to Kellner. The characters in the game -- dragons, trolls and greps -- are produced by cell animation, the same technique used to animate Fred Flintstone and other cartoons.

Without using Player/Missile graphics, Kellner said, the animation for any one character is composed of four to six overlayed cells (from celluloid). One cell might be a leg; moved, you see a character walking, while the head is held motionless.

The Lucasfilm team's programming keeps the creatures moving logically against a three dimensional background. "The characters are drawn in real-time, directly on the graphics screen," Kellner said.

The games are to be priced in the $29 to $35 range, and will be shipped in the near future. No specific ship date was given by Epyx.

What's next from Lucasfilm? The team leaders wouldn't say, but both did mention their, and George Lucas' goal: interactive movies. While that may be five to ten years away, "interactive cartoons are a good first step," according to Kellner.

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ANTIC ON-LINE SPECIAL BULLETIN

Monday, June 3, 1985

by Michael Ciraolo

Chicago, IL -- Imagine always having an encyclopedia available on your Atari, as readable as a conventional book, but as searchable as an industrial database.

Imagine, also, that you could search through 26-volume's worth of encyclopedia for term's such as "Costa Rica" and find 57 references in less than three seconds. And imagine a $500 price tag for this technology.

Such technology, under development by Activenture in an exclusive agreement with Atari, was demonstrated at Atari's CES booth today.

Called a CDROM, the technology includes a compact laser disk player connected to the direct memory access port (DMA) on an Atari ST, according to Activenture's engineering vice president Tom Rollander.

The CDROM can hold a half gigabyte of information (500 megabytes), although the encyclopedia demonstrated occupied only a quarter of the disk's actual space.

Rollander told ANTIC that independent publishers would announce specific products for use on the CDROM in the future, starting with the encyclopedia, and with more products introduced in the fall.

Atari officials would not name the exact price or release date of the CDROM, and said they were still discussing whether Activenture or Atari would distribute the product.

Rollander said the CDROM "would be available in the fall."

Using the CDROM, you can browse through text, exactly as you might with a hard-copy volume from an encyclopedia, using the mouse for control. You can move foward or backwards by page, choose individual volumes, chapters or entries and so on.

You can also specify any section of text for dumping to a printer, Rollander said.

Or you can search for specific words or phrases, using powerful techniques familiar to industrial database subscribers.

Specify a word or phrase and look for it in all of the text, in bibliographies, in tables, in subheadings, in specific entries, or in combination with other unspecified terms.

Regardless of the search you choose, the computer screen will tell you how many entries were retrieved and let you look at each one. In each case, the text is black on white, with red cursor control and green highlighting of the chosen word.

The amazing speed of the CDROM search is the product of previous indexing, said Rollander. In fact, the computer is not searching the text of the encyclopedia each time, but is searching a specially prepared index, which is larger than the actual text.

The full text of the encyclopedia occupies 58 megabytes, while the index structure takes up 60 megabytes.

"We've traded hours of processing time on a VAX for the data storage capacity of the compact disk," explained Rollander.

His company took the magnetic storage tape used by typesetters and professional database suppliers and dumped an encyclopedia into a VAX computer.

Using the VAX, Activenture identified, indexed and cross-indexed 141,000 unique words in the text, producing a structure Rollander called "an inverted database".

The entire disk has a half gigabyte capacity, the same amount as 100,500 standard floppy disks, said Rollander.

THE INFORMATION AGE

Atari officials were ecstatic and called the CDROM "the most important innovation since home computers".

"This is what computers are all about," said one Atari marketing manager. "This will change everything. This is IT!"

Other reaction to the CDROM was mixed. In a crowd of distributors, retailers and members of the press, many people expressed their enthusiasm to ANTIC. Others were simply speechless.

"We asked ourselves 'What are most people doing with computers in the home?' They're using them as doorstops, playing games with them and eventually throwing them in the closet," said Rollander. "Now there's a real reason to use the machines."

"I expect resistance from many publishers, but eventually CDROMs will have greater market penetration than current encyclopedias," Rollander predicted.

Nor is optical storage/inverted database technology limited to encyclopedias. Rollander said the principle may be applied to cookbooks and airline guides, and that his company was talking to a variety of other publishers.

"I expect to see publications in the $100 to $150 range at first, dropping to $50 in time," he said.

The cost of such optically stored databases is not high for two reasons: Activenture's indexing procedure uses the magnetic tape already in common use by publishers, so computer input is simple, with most books already existing on tape.

Rollander also indicated that material stored on microfiche could easily be read, so databases of journals, the New York Times and out-of-print materials could be produced.

Then there's the technology of the compact laser disk. Mastering such a disk costs only a few thousand dollars, and the mass production cost is less than that of magnetic tapes and disks.

Because optical disks are mastered and pressed like records, there are no recording heads to wear out and no lengthy time spent making a recording, said Rollander.

INFOMANIACS DELIGHT

There is distinct pleasure in discovering all of the references to a particular word, references that you might never have found if you had simply looked up a primary entry.

For instance, Rollander demonstrated a search using the word "toothache". In addition to the expected references under dentistry, he also found mentions in connection with cloves, henbane and certain painful medical procedures developed during the Middle Ages.

The CDROM "gives students more appreciation for information than they get by simply looking up the subject," said Rollander.

(ANTIC Note: CDROMs are capable of storing object code (programs) as well as text. In the near future, exclusive Activenture interviews with ANTIC will reveal other potential types of CDROM-based information, such as videotapes, photographs, and software.)

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ANTIC ON-LINE SPECIAL BULLETIN

Summer Consumer Electronics
Show

Tuesday, June 4, 1985

by Michael Ciraolo

Chicago, IL -- As companies debut new products for the Christmas buying season, there is enthusiastic interest in developing for both the new and old Atari computers. First the new:

The complete line of Infocom text adventure games will be available with the 16-bit Ataris.

Batteries Included announced a major commitment to the ST machines with their "IS" integrated software based on the GEM environment. According to Michael Reichmann, the company's director of product development, the entire line will work at an intuitive level, so that users will not have to memorize any commands.

According to the early announcement, the IS line will include a word processor with a built-in spelling checker, a combined spreadsheet and graphics package, a database manager, and a stock portfolio manager. The screen structure and layout are the same for all programs.

All programs in the IS series will be released for the Atari STs and the IBM PC and compatible market. The first program, "Portfolio", will be available for the STs shortly after September 1, according to Batteries Included.

The Software Publisher Sierra On-Line will market the submarine simulation game GATO for the STs. GATO puts puts the player in the role of a World War II submarine commander, searching out and attempting to destroy the Japanese Imperial Fleet.

Sierra president Ken Williams said "We want to see exactly how large these two new markets are. We figure the best way to test the unknown waters is to publish a proven product (already out on the IBM, Macintosh and Apple 128K) with a broad appeal for maximum market penetration."

The flight simulator producers SubLogic said they would produce a simulator called Jet, and Electronic Arts is expected to release a financial cookbook, both products for the STs.

FTL Software, producers of the Apple II game Sundog, Frozen Legacy, are converting the game over to the Atari STs. The game won Family Computing's award for hybrid games last year--it is a role-playing economic simulation space adventure.

Many of these products were simply announced, with no date or price specified.

Several products for the 8-bit line of computers, including the 130 XE, were also announced.

Batteries Included, producers of PaperClip, announced an 80-column display, the "BI-80", for Atari 400/800, XL and XE computers.

The BI-80 plugs into the Atari cartridge slot and requires extremely little special programming or software switching to use. The cartridge is expected to cost about $80.

Developers said the BI-80 produces a clean, crisp display ideal for writing professional-quality documents. Paperclip will be the first software package released for the Atari BI-80. There was a functioning version of 80-column Atari Paperclip shown at their booth.

According to John Skruch, product manager for the XE line, demand for the new 8-bit computers is so high he can't keep machines on warehouse shelves for over 18 hours.

The new XE products Skruch mentioned include programs from First Star Software, Synapse Software, and Adventure International.

Atari is also getting ready to release AtariWriter Plus, currently in final testing, a home productivity package called Silent Butler, and a proofreading program.

Skruch said this fall will also see the release of a planetarium program for the XEs that includes over 17000 plotted stars. The program will let users move through time, choose viewing angles, see constellations, track Halley's comet, and so on.

The programs sought by Atari Corp. continue to be application and education software, not games. "Atari Incorporated was a video game company that happened to make computers. We're a computer company that happens to make video games," Skruch said. "There aren't enough applications for the Atari."

Skruch also said his company has not released any 65XEs yet, as the nearly identical 800XLs are still available. When the last 800XLs are sold, Atari will start producing the 65XE.

"But at the price, the 130XE is still the machine of choice," Skruch said.

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Chicago, IL--While many companies are instroducing one product apiece for the Atari STs, one company has announced an entire line of ST products.

Haba Systems, headquartered in Van Nuys, Calif., will release a word processor (HabaWord), a file and report manager (HabaFiles) and a spreadsheet and graphics package (HabaCalc N Graph) in September for $59.95 each, according to Charles Becker, vice president for sales.

A communications program, not surprisingly called HabaCom, will be released in August for the same price, Becker said.

The company, which produced the integrated spreadsheet, word processorand database /// Easy Pieces for the Apple ///, will also release Hippo C and a checkminder program in late July or early August.

Becker added that all of the Haba applications will feature pull-down menus and point-and-click editing.

Haba, which has written over 10 products for the Macintosh, will port all of its current and future programs from the Mac to the Jackintosh, starting in January 1985, said Becker.

In addition to its line of software, Haba told ANTIC they will sell a 10 megabyte hard disk for $499 and a fully Hayes-compatible modem for $299. These products are called HabaDisk and HabaModem.

For people who are less than comfortable or fluent with computers, Haba offers Haba Software Solutions. Each retailing for $49.95, titles include How to Prepare and Manage a Home Budget, How to Write a Resume, How to Start Your Own Business, Business Forms, How to Prepare for the S.A.T., and so on.

The 46-member company is named for founder and chief executive officer Chaz Haba, who was director of marketing for Fairchild Semiconductor and who has started several small computer companies.

Becker said the Atari STs' combination of 68000 processor technology, GEM operating system, mouse, serial and parallel ports, 40 and 80 column mode and game (cartridge) port make the ST a "true industry leader", especially in light of Jack Tramiel's "genius for launching exciting, innovative and well-conceived products."

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ANTIC EDITORIAL NOTE:

Antic's CES coverage will be completed Monday, June 10th. We're going to wrap up the events of the past week and shed more light on the Atari presence at the 1985 Summer Consumer Electronics Show. Expect two more reports (ANTIC6.CES and ANTIC7.CES).

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The following letter was received by Bay Area Atari Users Group (BAAUG) on Thursday, May 30, 1985. Postmarked at Sunnyvale, CA on May 29, 1985.

Dear User Group President:

The new Atari Corporation is very pleased to make available the first shipment of the much acclaimed Atari 520 ST systems to be sold in the United States. Your group has been included in a select list of clubs designated to participate in this historic event.

The initial system we are offering consists of a 520 ST computer, a 360 kilobyte single-sided 3-1/2-inch disk drive, and a high-resolution (640 by 400 pixels) monochrome monitor for $799.95, with shipping prepaid. Software included will be the TOS operating system and the Logo programming language.

These 520 ST systems are covered by a 90-day exchange warranty. In addition, the BASIC programming language will be supplied free of charge when available in late June 1985. Any updates to the TOS operating system will be sent free to user group purchasers for a period not to exceed six months.

In consideration of your continued loyal support for the new Atari Corporation, the corporation intends to donate $50 for every ST system purchased by your user group, which will be paid in the form of a check. These monies are intended to support your ongoing user group operations.

Please determine which members of your group would like to buy an ST system, collect the money, and send a single check to my attention at the address above. We will ship the systems to a central location designated by you shortly after receiving your order. Distribution of the systems to your members will be left to you.

As your members work with their 520 ST computers, we would very much appreciate receiving feedback about any elements relating to the system. Please have members send comments to:

ST Response Program, David Duberman,
Atari Corp., PO Box 3427, Sunnyvale, CA 94088

or leave a message on the Atari BBS: the telephone number is 408-745-5308.

As this offer is available only through June 25, 1985, it's very important that we receive your order as soon as possible. Thank you for your promptness.

Sincerely,
David Duberman
User Group Coordinator