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SEPTEMBER 1986 ISSUE 6

THIS ISSUE:

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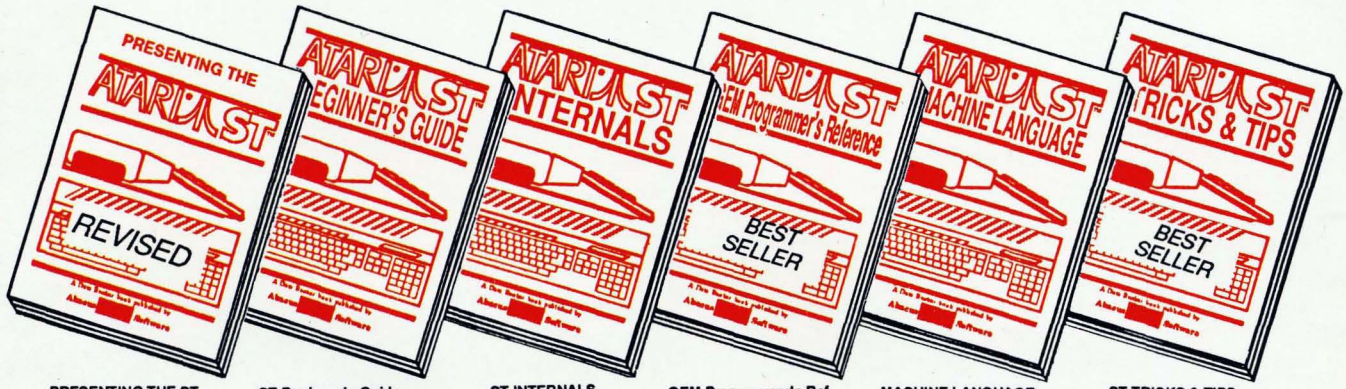

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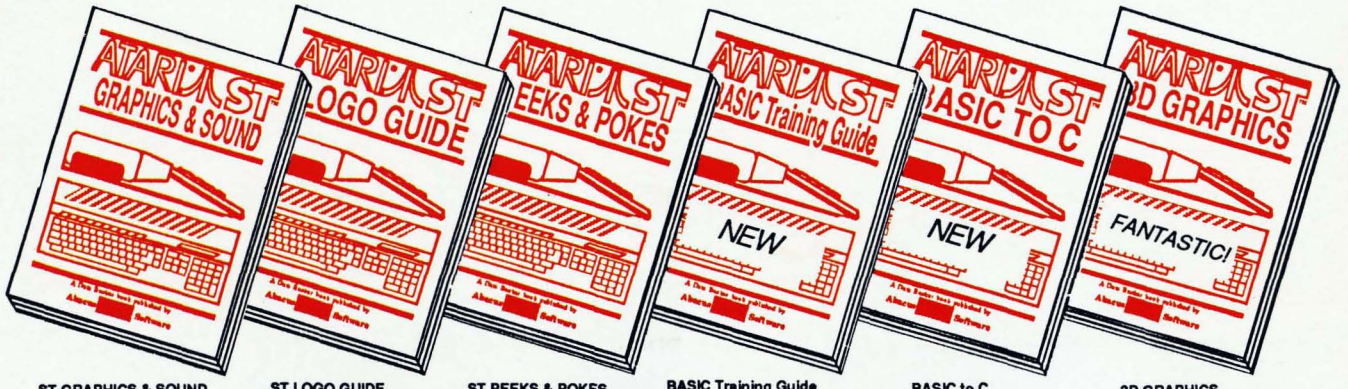

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THE ATARI ST OPERATOR'S MAGAZINE

ISSUE 6
SEPTEMBER 1986

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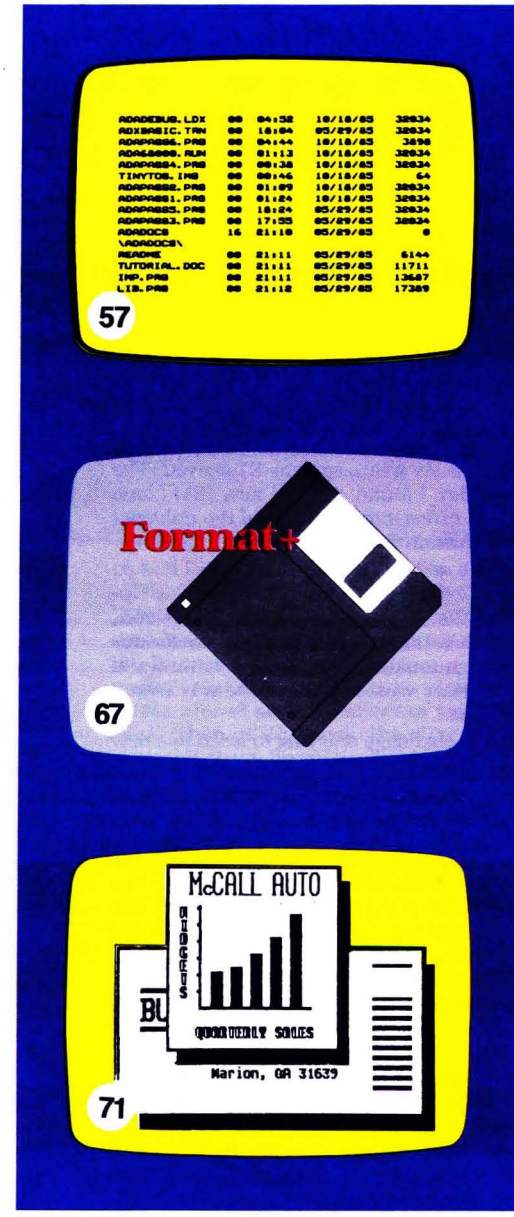

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LogiKhron
Clock Card . . . . . Matthew J.W. Ratcliff 55ST
(Soft Logik Corp.)
This cartridge plugs into your ST and provides you with the convenience of time- and date-stamping, anytime.

Typesetter ST . . . . . Matthew J.W. Ratcliff 71ST
(XLent Software)
A popular program on the Atari 8-bits is ported over to the ST, giving you text and graphic editing capabilities.

ST-Log is normally printed as a center section in **ANALOG Computing** (ISSN 0744-9917), published monthly for $28 ($36 in Canada, $39 foreign) per year by ANALOG 400/800 Corp., 565 Main St., Cherry Valley, MA 01611.

Getting around GEM's desktop

Some tips for the beginning ST user

by Philip S. Gallo, Jr., Ph.D.

Some six weeks ago, my ST arrived. The next day, I found a brand new IBM clone in my office, compliments of the university at which I work.

As a dedicated 8-bit Atari user, I had no prior experience with either machine. Today, the ST seems like an old friend, whereas the clone remains a mysterious and cantankerous adversary. It rarely, if ever, does what I want, in the way I want it done.

The challenge of trying to learn two new machines at once has certainly convinced me that the ST is a marvelously friendly, easy computer to use.

Nevertheless, a lot of ST users seem to be doing things the hard way, possibly because of the lack of information in the somewhat skimpy owner's manual. It's also probably this deficiency which has led reviewers to mistakenly complain about the difficulty of certain "housekeeping" operations (e.g., the transfer of files into and out of folders).

Before we get into that subject, let's begin with the basics. I'll assume you've read the owner's manual and are familiar with elementary operations, such as resizing windows, selecting options by "clicking" on them with the mouse, opening disk drives and "dragging" things with the mouse.

On the color system, a newly formatted disk will boot into the machine in the low-resolution mode, with all windows closed. Since most of your work will be in medium resolution, this isn't usually desirable.

I like to keep all my disks in a similar format, so I've prepared a master disk to use as a template for all my newly formatted disks.

In creating the master disk, I used the "set preferences" option of the desktop to call up medium resolution. With the mouse, I dragged the trash can to the lower right corner of the screen and the two floppy disk icons to the lower left corner. I opened a window to drive A and sized the window so it has about a quarter-inch margin at the top and sides, while extending downward to about one-half inch from the top of the disk icons.

By doing this, I can view two complete rows of eight file icons each. The next step was to call the "save desktop" option and save this configuration to disk.

Now, when I format new disks, I boot up with this master. After each disk has been formatted, I save this desktop on it. All my disks look alike and all boot up with the window to drive A open showing the first eight file icons.

I can scroll up and down to see more icons, and they'll always be displayed in two neat rows. I'm sure all of you know by now that, if you place a new disk in drive A and press the ESC key, the new disk's icons will be displayed in whatever desktop configuration's showing. If you didn't know it. . .well, you do now.

Since each disk holds a considerable amount of information, it's possible to have literally dozens of programs on a single disk. Scrolling through them to find the one you want becomes a chore. GEM has conveniently provided us with subdirectories, called "folders."

To create a folder, you merely go to the file menu and click on the "create new folder" option. If you had six different games on the disk, as well as a number of other programs, you might want to create a folder and name it GAMES.

You can, of course, drag each file to the folder, copying the files in one at a time. But it's much simpler to drag all of them at once and copy them. The easiest way to do this is to hold the SHIFT key down and use the mouse to click each file you want transferred.

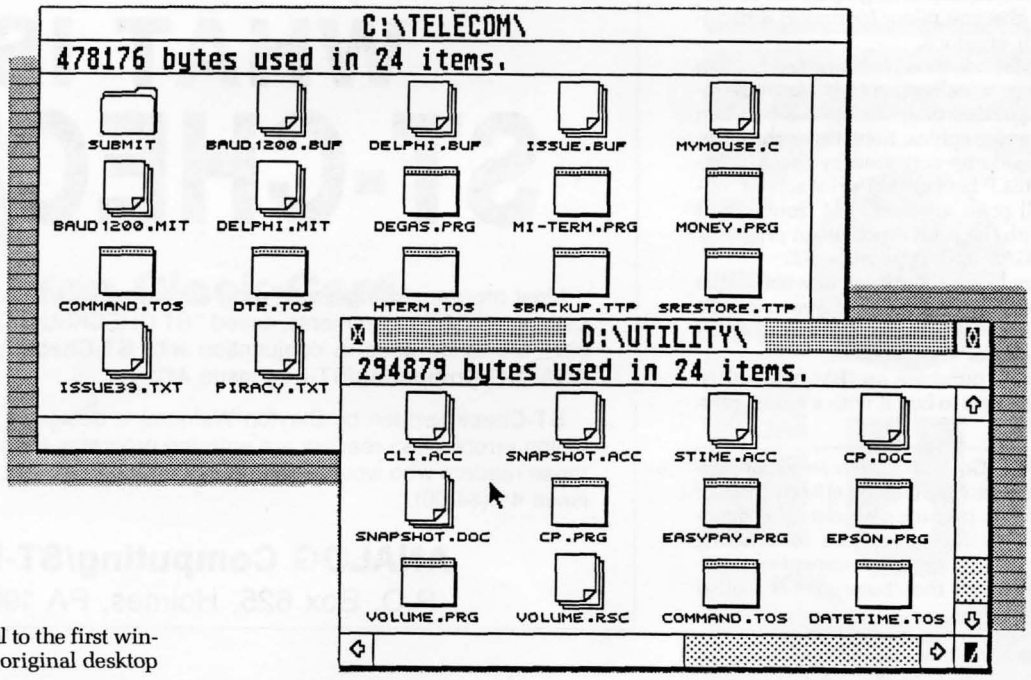
Each file will turn black when clicked. Release the SHIFT key and click on any of the files you've selected. When you start to drag that file to the folder, all the selected files will come along. Thus, the whole set can be copied into the folder at one pass.

Once they're safely copied into the folder, use the same SHIFT-click procedure to drag them to the trash can and delete them from the desktop in one fell swoop.

Moving right along. . .

The real problem, presumably, crops up when you want to copy a file from a folder to the desktop, or into another folder. In the January issue of *Byte* magazine, Jon Edwards and Phillip Robinson wrote ". . .to move a file out of a folder, matters are further complicated by the fact that the folder opens to take over the window from which it derived. You would first have to move the file to a different disk, delete the original file from the folder, then copy the file back to the original disk, but not within the folder, and then delete the first copy you made. It sounds difficult because it is." Wrong, gentlemen!

GEM has a feature that allows four windows to be open simultaneously. When you opened up your folder, you used only two windows. Your next move: click on drive A to open it again. A third window will



appear on-screen, identical to the first window opened, namely, the original desktop of drive A.

You may have to move this third window down toward the bottom of the screen a bit, so it won't obscure the contents of your folder. Now, simply click the item you want to move from the folder to the desktop, then drag it down to the window just opened. When you copy it, the item will be on the desktop.

If you want it out of the folder permanently, you'll have to click it again in the folder and drag it to the trash can. Maybe this isn't as elegant as the Macintosh's procedure, but it's a lot better than copying it to a completely different disk and back again!

Remember, you still have only three windows open. If you want to move a file from your GAME folder into the PUZZLE folder, locate the PUZZLE folder in window three and click it open. Now your fourth window's open, and your screen shows the contents of the GAME and PUZZLE folders.

From here, it's no great trick to copy a file out of one folder into another. When you're through, click the fourth, third and second windows closed—and you're back to the original desktop.

Of course, these tricks will only work if you have enough empty disk space to temporarily hold both copies of the file (or files) you wish to transfer. If you don't, the use of a RAMDISK will solve the problem. Read on.

How do you spell "relief"?

The only really tedious GEM operations occur when you've only one disk drive and wish to copy whole disks or individual files to a second disk. GEM does require an inordinate number of disk swaps for these operations.

The first fix is to get the TOS ROM chips installed. Not only do ROM chips yield an additional 200K of program space, they provide enough free RAM to read an entire disk's contents at once. For $25.00 to $35.00 installed, they have to be the biggest bargain in town.

The second fix is to obtain two special, invaluable programs for your library. The first is a copy program; the second is a RAMdisk. Such programs are inexpensive, and are now being published by several companies. If you have a modem, public domain versions can often be found on ST BBSs.

All the copy programs have two things in common. . .They copy faster than GEM's built-in routines and require only one disk swap. These programs read the disk in one pass, prompt you to insert the destination disk and write to it in one pass.

By contrast, even with ROM chips, GEM makes you swap disks three times. Copying individual files to another disk is *really* a headache. GEM makes you swap disks several times for each file to be copied.

If you need to copy seven files from one disk to another, you'll get dizzy swapping disks—and quite confused. Here's where a RAMdisk can save the day.

A RAMdisk sets aside a portion of memory, then "tricks" the computer into thinking this memory is another drive. When you "install" the RAMdisk, its drive icon will actually appear on the desktop. This icon can be opened to a window, just as a real disk drive icon would be.

By defining the RAMdisk with enough space for all the files to be transferred, you can SHIFT-click the files and copy them all at once to the RAMdisk.

Put the destination disk into your drive, press ESC to get a directory of your new disk, then SHIFT-click the files again, copying them from the RAMdisk to the destination disk. Since the RAMdisk operates virtually instantaneously, the whole process hardly takes more time than it would with two drives.

If you're trying the trick mentioned earlier for copying a file out of a folder and don't have disk space for two copies of it, open the RAMdisk instead of opening drive A again. Copy the file to the RAMdisk and delete it from the folder. Then close the folder and copy the file from the RAMdisk to the desktop, or into another folder.

Use your GEM in good health.

I hope these tips will prove helpful to you. They'll certainly reduce the time you'll need to devote to disk housekeeping chores—and give you more time to explore what has to be one of the most enjoyable computers ever designed.

One final word. If you're about to buy a new printer for your ST, try to avoid any printer advertising itself as "IBM compatible." The ST wants its printer to be Epson compatible. . .which isn't the same thing at all. An IBM-compatible printer will probably produce text with no prob-

lem. However, depending upon the brand, it could give you minor (or major) difficulties with graphics.

The most common problems are random garbage or misalignments in your graphics dumps, and/or white spaces between each line of graphics. Sometimes the built-in screen dump activated by the ALTERNATE-HELP keys or the "print screen" option will print all right. But trouble will occur with the print functions in programs like **DEGAS** and **Typesetter ST**.

Be sure to ask the salesman whether the printer you're considering is Epson or IBM compatible. Even many ST dealers aren't fully aware of this problem.

If you do purchase an IBM-compatible printer, be sure to buy it with a return privilege.

Philip S. Gallo, Jr., a professor of psychology, is researching the effectiveness of computers in training and educating autistic children. He's dedicated to extolling Atari's virtues in an environment committed to the notion that "computer" is spelled IBM.

WHAT IS ST-CHECK?

Most program listings in **ST-Log** are followed by a table of numbers appearing as DATA statements, called "ST CHECKSUM DATA." These numbers are to be used in conjunction with **ST-Check** (which appeared in **ANALOG Computing/ST-Log** issue 41).

ST-Check (written by Clayton Walnum) is designed to find and correct typing errors when readers are entering programs from the magazine. For those readers who would like copies of the article, you may send for back issue 41 ($4.00).

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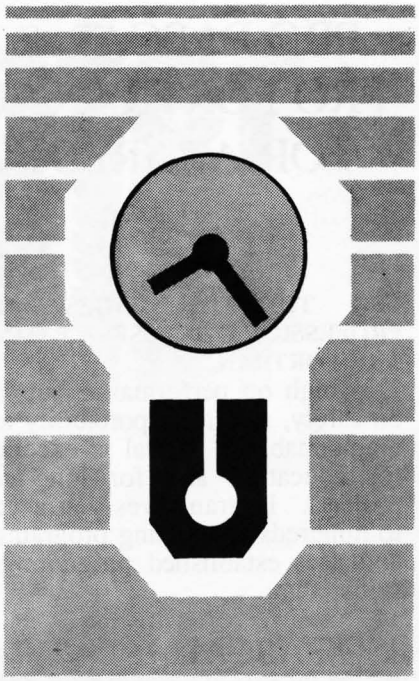
LogiKhron Clock Card



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by Matthew J.W. Ratcliff

I really like time- and date-stamping on my disk files—when I remember to set the time, that is. If the time isn't correct, those stamps are of no use to anyone.

With it set properly, the stamps provide a valuable reference. They're helpful in keeping track of the last time files were updated. This is especially true for hard disks, where you can afford the space for many archive copies of a program under development.

The problem with maintaining a record on the ST is that you must boot up a disk with DESK1.ACC on it, pull down the desktop, and click on the control panel. Then you have to click on the time line and type the correct time. Ditto for the date line. This is a major drag—and usually doesn't get done. Thank goodness for the **LogiKhron Clock Card**!

The **LogiKhron** plugs into the ST's cartridge port, extending the width of the computer's "footprint" another 2¼ inches.

The package comes with a disk containing two files, DESK5.ACC and CLOCK.RSC. If your TOS allows it, I suggest renaming the DESK5.ACC to CLOCK.ACC. (Some older versions of TOS looked for DESKx.ACC, where x was a digit from 1 to 6.) This will help you associate the files, when copying your timing accessories to other disks. There's no copy protection on the disk.

With these files on your boot disk (with TOS in ROM or RAM), your system clock is set automatically. You can pull down the desktop and select the CLOCK. The current time and date will be displayed. If you wish to set either, the process is the same as when using the control panel.

Sometimes the control panel clock won't be automatically updated when the **LogiKhron** is loaded. There's a time lag, which may range from 1 to 59 seconds. This is documented in the manual and is *not* a problem. The correct time is *always* written to disk, even if the control panel doesn't show it yet. The **LogiKhron** accessory displays the proper time.

The brief manual adequately describes setup and use of the **LogiKhron** card. Files for it will only cost you about 5K of disk space. (And you ROM/TOS owners will want these files on just about every disk.)

When loaded, the accessory actually takes about 11K of RAM. The additional RAM is due to operating system overhead, for installing an accessory. It's true for *all* accessories. You can probably do without DESK1.ACC on most of your disks, however, saving 19K of RAM.

The DESK1.ACC contains the control panel and install printer functions. Once these are set to your specific needs, you can just save your desktop (only about 500 bytes) to your disks and forget about that accessory. And, with **LogiKhron**, you can forget about the time—it's already taken care of.

I have only two minor complaints about the **LogiKhron**. The cartridge has battery backup which will last from three to six years. The problem is that it can't be replaced. The "cartridge" is actually a circuit board, sealed in plastic resin. When the battery wears out, the **LogiKhron** must be replaced.

Product manager Shawn Fogle of Soft Logik informs me that the cartridge will be replaced free of charge, if the battery fails within six months after purchase. Any time after that, it may be replaced for a reasonable $15.00.

My second complaint about the clock card is that it doesn't have a "piggyback" slot for other cartridges. When other cartridges become available for the ST, the **LogiKhron** must be removed to use them—you lose your automatic time setting.

Both of these limitations are minor... and understandable. This product is being delivered at a very affordable $49.95. The only reason this cartridge doesn't have a removable case for battery replacement is because none are available.

Once ST ROM cartridge cases *are* available, the **LogiKhron** may well be modified to make battery replacement quite simple. With a battery life of three to six years, you won't have to worry about it for a while, anyway.

The **LogiKhron** has performed flawlessly for me. Being the lazy sort of programmer, who hates typing any more than necessary, I found the **LogiKhron** an absolute must. I highly recommend it.

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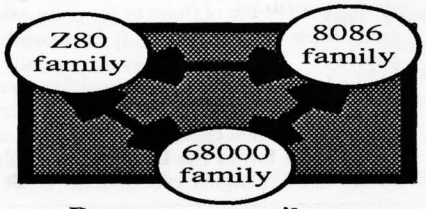

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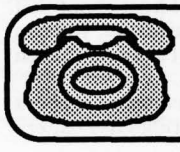
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CIRCLE #120 ON READER SERVICE CARD

Dx Lister

This utility will quickly list a disk's entire contents to your screen or printer

by Douglas Weir

According to a possibly apocryphal story, Digital Research originally intended to include routines in GEM and TOS that would get directory listings from the disk drives and send them to a printer. Specifications were scribbled out during a project meeting and a programmer hastily assigned. Unfortunately, he misread the name of a data structure called "drive block" as "livestock" and wrote a cattle-sorting program instead (watch for "HerdStar," soon to appear on local software shelves).

This is a two-in-one feature: "Dx.ttp" is a ready-to-run program included on this issue's ST disk version, briefly described below. The bulk of this article, however, gives a listing and explanation of a set of routines from **Dx** which you can use in your own assembly language programs. You don't need the subscription disk to use this article.

Dx lists the entire contents of a disk either to the screen or to a printer. Unless told to do otherwise, it will recursively search the entire disk and give the contents of all subdirectories. If you have a Star SG-10 or Okidata 192 printer, you can tell **Dx** to print its output in a special reduced format, suitable for disk labels. (The normal-size print option will work on any printer.)

The full pathname of a subdirectory is printed before its contents, in order to make clear just "where" the subdirectory is. If the disk has a volume name, this will be printed at the top of the listing. You can also define a title string to be printed before everything else, if you wish. Details of these and a few other options will be found below.

The program will handle about 400 separate pathnames (subdirectory names) and a total of about 3000 filenames. It does *not* check for conformance to these limits.

Now for a discussion of the set of subroutines listed below. I use these routines to interpret single characters typed after the program name, before RETURN. With a ".TTP" application, you would type these characters in the dialog box GEM presents, after double-clicking on the program icon. The routines look for occurrences of any of a set of programmer-defined characters, and if a valid character is found, a corresponding flag is set to "true." Otherwise, it remains "false."

The nice thing about these routines is that, in order to add, delete or change flags and codes, all you have to do is change the data declarations. Everything else is automatic; you never have to alter the routines themselves.

The characters (separated by spaces) can be typed in any order and may be upper- or lowercase. The number of characters is limited by the value of ARG_SIZE (argument size), which is the number of bytes reserved by check_c_args for parse_word to copy the next word into. For our purposes, these words will always be one character long, but you can use parse_word to return any size string of blank-terminated characters. Of course, you can change the value of ARG_SIZE, if you wish. (Warning: changing anything may result in an increase in argh _size, a mysterious debugging constant.)

An explanation of how these routines work ought to serve as a nice introduction to 68000 assembly language programming. But where should I start? Beginners will find the 68000 easier than most other chips, simply because the 68000 does so much more. Still, brief comments are almost doomed to appeal only to those with some previous assembly language experience. For this I apologize.

With this disclaimer in mind, let's take a look at the routines. The first section should be the very first in your program. When an ST program begins execution, the stack pointer is pointing to the return address used at the end of the program to return to the caller (i.e., the operating system). This address is a longword.

Next on the stack is another longword, the "base page"

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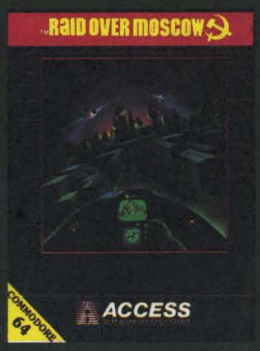

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address of the executing program. This marks the beginning of a memory area with useful facts about the program. We're interested only in what was on the program's command line when it was typed in. A location 128 bytes from the start of the base page contains the address of the command line.

So the program does the following in its first four lines:

(1) Gets the base page address from the stack and puts it into register a5.

(2) Computes the address of the command line pointer by adding 128 (hexadecimal 80) to the base page address, and puts the result into a2 (*lea*—"load effective address"—calculates an address and puts it into the designated register; *pea*—"push effective address"—also calculates an address, but pushes the result onto the stack).

(3) The contents of a2 now point to a byte holding the number of characters on the command line; this is followed by the actual characters. So the character count is put into d0, and after the post-increment, a2 points to the start of the command line.

I should mention that the string of characters made available to the program as the command line includes all characters typed after the program name, terminated by a *null* (binary zero).

If running as a .PRG application from TOS, the program will find a blank at the start of the string (this is the space separating the program name from the rest of the line). But the command line received by a .TTP application won't have that first blank. Usually this makes no difference at all, but it's worth pointing out.

The next four lines put a couple of parameters on the stack, call init_flags and clean up the stack afterwards; then check_c_args is called in the same way, only with five parameters on the stack. After this call, the flags in your data area are set to true or false, depending on which characters were typed on the command line, and you can continue with the rest of your program.

As for the subroutines, I'll discuss only a couple of interesting points. The header information found at the beginning of each gives a synopsis of the function.

I chose to pass parameters to these subroutines via the stack. This is slower than simply using registers, but it's much easier to maintain register integrity within subroutines this way. Let's take a closer look at how it's done.

To pass two values to init_flags, I push the values onto the stack and branch to the subroutine. At the beginning of the subroutine, a link instruction is executed, specifying an address register and an immediate value. This is what happens:

(1) The contents of the designated register (here, *a6*) are saved on the stack. Naturally, this is always a 32-bit value.

(2) The new value of the stack pointer is loaded into the designated register.

(3) The specified immediate value is added to the stack pointer.

The net result of all this activity is that the address register you specify in the instruction now points to a constant location in the stack.

When a subroutine begins, the stack pointer is pointing to a 32-bit (i.e., 4-byte) return address. *Above* this address is whatever data was pushed on the stack before the routine was called. After the link, the specified register points to its old value; 4 bytes up from that is the return address; and 4 bytes from the return address is the data.

So by adding *8* to the value of a6 in init__flags, you get the address of the last data put on the stack before calling the routine. By adding *12*, you get the address of the next-to-last data, etc. Suppose code__nr was word-size (2 bytes) instead of a longword; then you would only add *10* to a6 to get the stack address of "flags."

What about the immediate value that's added to the stack pointer by link? Remember that the 68000 stack grows downward in memory. If you add a value to the stack pointer, you effectively remove space from the stack. If you subtract a value, you reserve space. For example, whenever parameters have been passed on the stack to a subroutine, a value equal to the combined size of all the parameters should be added to the stack pointer after the subroutine completes. In this way, the stack pointer is restored to its original value before the parameters were pushed.

Look at the beginning of check__c__args. Here the negative immediate value ARG__SIZE is added to the stack pointer. A section of the stack ARG__SIZE-bytes large is now reserved. But how do you access it, and what do you use it for?

This is where the register specified in link becomes doubly useful. Just as you add values to a6 to access data *higher up* in the stack, you can subtract values from a6 to access memory *lower down*. By subtracting the same immediate value specified in link, you get the base address of the stack memory area which you reserved. This memory can now be used for whatever purpose you want.

The beauty of this system is that the area thus reserved is completely private to the subroutine which uses it. While the routine is active, the variables in this area are active; when the routine completes and unlk is executed, all this space is de-allocated from the stack, and the variables *go away*.

An area allocated on the stack in this way is called a *stack frame*, and the register used to access it is called the *frame pointer*. Languages like C and Pascal implement local variables with stack frames.

Thus, link has a double function. Sometimes it's used only to set up a frame pointer, to retrieve parameters pushed on the stack before the subroutine was called (in this case, an immediate value of *0* is added to the stack pointer, as in init__flags).

Sometimes it's used to allocate space for variables local to a subroutine. Or it can be used to do both at once. Whenever link is used, unlk must be used at the end of the subroutine, to restore the stack situation before you attempt to return:

```
Link a6, #-local__size      set up frame pointer
movem.l d0-d3,-(sp)         save registers
. . .(code). . .
movem.l (sp)+,d0-d3         restore registers
unlk a6                     restore stack
rts                         and return. . .
```

The space between the parentheses was originally occupied by my new **Koala Pad**-driven version of the ST operating system, K-OS.

You can use any register (except a7, of course) as the frame pointer; by convention, it's usually a6.

Finally, I'd like to discuss the bit of code in check__c__args between the labels c__c__scan and c__c__s001. Here the 68000 "decrement and branch" instruction is used to loop through all the valid character codes and compare each one with the character returned by parse__word, until a match is found or the valid codes are exhausted.

Most of this work is done by the two instructions:

```
cmp.b (a1),d4                    code found?
c__c__stest: dbeq d2,c__c__sloop  if not and more codes. . .
```

Here, the byte pointed to by a1 is compared to the byte in d4. The dbeq instruction takes care of everything else: either the zero flag is set (i.e., the bytes are equal), so that the branch back to c__c__sloop is not executed and the loop ends. Else if the bytes are not equal, then register d2 is decremented: if d2 contains a non-negative value (including *0*), then the branch to "c__c__sloop" is executed and the loop continues; otherwise, the loop ends.

In other words, dbeq means: unless the *equal* condition is met (i.e., the zero flag = 1, meaning that a comparison has been successful), decrement the indicated register and branch if the result is not −1.

There are two ways to get around this: either load the loop counter with a value one less than the intended count value, or label the dbra instruction and jump to it on the first iteration, thereby decrementing the counter once, before doing anything.

I use the latter method, but it has a pitfall. You must make sure, when you first jump to dbeq, dbmi, or whatever, that the 68000's status bits are not by coincidence set in such a way that the terminating condition is already true—and the loop never executes at all.

This can be a very hard bug to track down. If you make sure the last thing you do before the jump is load the count register, you won't have to worry. Move sets the status bits according to the value moved, and if the count is *0* to start with, the loop won't execute—which is what you want. But one can't always arrange things this way.

Remember, too, that move's to address registers have no effect on the status bits. Of course, with the dbra form, you don't have to worry about the status bits.

Note that, at the end of the check__c__args section, I test the count register to see if it was counted down to −1. If so, no valid match was found. The important thing to remember is that you must check the register as a word (16 bits), not as a longword. The dbra family decrements

the count register as a word value and leaves the upper 16 bits untouched. So, if I were to test d2 as a longword, I would never detect an error condition. This also means, of course, you can't have a count value greater than *32767* when using the "decrement and branch" instructions.

A government official was recently quoted as saying that "friends come and go, but enemies linger on." The same could be said of assembly language. Despite the experts' predictions, it's still there, lurking underneath C, BASIC and Pascal, like the old plumbing in a remodelled house. I hope these routines prove useful tools for those who want to learn to work at this level.

How to use the program.

Options.

Options can be in upper- or lowercase. They must be separated by spaces. They can be in any order, as long as those requiring strings are immediately followed (with a space separator) by the string.

- o — okidata printer (with r).
- t — star/gemini printer (with r).
- v — verbose mode (print file size, type, creation date, etc.).
- p — print listing, normal size.
- r — print listing, label size (with o or t).
- a — specifies drive a:.
- b — specifies drive b:.
- c — specifies drive c:.
- d-k — specifies drives d:-k:.
- n — include a title string in listing (+ string).
- s — set stack size (+ string) (maximum stack size is approximately 200K; minimum is 1K.)
- l ("ell") — set search level pathname (+ string).
- > — redirect output to a disk file (followed with *no* intervening spaces by filename. The filename is *not* terminated by a quote.)

Note: all strings are terminated by a single quote (').
Here are some examples, to help clarify the usage:

dx a p. . . print a short-form listing of the directories and their contents on disk a.

dx v c s 4000' p. . . print a long-form listing of the directories and their contents on disk c (hard disk), and set the stack size to 4K.

dx n disk contents' b v t s 3000' r. . . print a long-form listing in reduced size of the directories and their contents on disk b, with a title "disk contents" at the top of the listing, and set the stack size to 3K; SG-10 printer is specified.

dx l \stuff\nonsense' v c. . . display the contents of the directory \stuff\nonsense on disk c, long form, on the screen only.

dx a v >b:blip.dir b. . . output the directories and their contents from disk a (long form) to a file on disk b named blip.dir.

The slight inconsistency in the syntax for output redirection occurred because this was not a feature of the program as written, but rather of the operating system. I discovered it by accident(!) as I was testing the program, and am simply passing it on.

```
DISK CONTENTS 3 JULY 1986:
\
ADADEBUG.LDX      00   04:52    10/18/85    32034
ADXBASIC.TRN      00   18:04    05/29/85    32034
ADAPASS6.PRG      00   04:44    10/18/85     3898
ADA68000.RUN      00   01:13    10/18/85    32034
ADAPASS4.PRG      00   00:38    10/18/85    32034
TINYTOS.IMG       00   00:46    10/18/85       64
ADAPASS2.PRG      00   01:09    10/18/85    32034
ADAPASS1.PRG      00   01:24    10/18/85    32034
ADAPASS5.PRG      00   18:24    05/29/85    32034
ADAPASS3.PRG      00   17:55    05/29/85    32034
ADADOCS           16   21:10    05/29/85        0
ADAIO             16   21:16    05/29/85        0
\ADADOCS\
README            00   21:11    05/29/85     6144
TUTORIAL.DOC      00   21:11    05/29/85    11711
IMP.PRG           00   21:11    05/29/85    13687
LIB.PRG           00   21:12    05/29/85    17389
\ADAIO\
KEYBOARD.INC      00   21:18    05/29/85      333
SCREEN.INC        00   21:18    05/29/85     6144
GEM1.INC          00   21:18    05/29/85     1952
GEM2.INC          00   21:18    05/29/85     3627
```

I included a large number of drive designators because of the possibility that users might have hard drives partitioned into several logical drives. The original selection (which can be seen in the sample data section above) would not have allowed access to drives beyond c.

(Listing starts on next page)

Listing 1. — Assembly listing.

```
     Note: in the comments to the following code, the symbol " -> "
means "pointer to" or "contains a pointer to".

*******************************************************************************
*** This version is compatible with the A568 assembler included in the
***     Atari Developer's Kit.
*** INITIALIZATION: these should be the first instructions in your
***     program...
sys_start:
          move.l    4(a7),a5            a5 == base page address
          lea.l     $80(a5),a2          point to command line
          clr.l     d0                  clear for byte size value
          move.b    (a2)+,d0            get byte count

***  a2 -> command line
***  d0 == byte count of command line
          move.l    #flags,-(sp)        base of flags area
          move.l    #code_nr,-(sp)      nr of flags in table
          bsr       init_flags          initialize flags
          addq.l    #8,sp               pop args

*** process command line codes
          move.l    #code_scale,-(sp)
          move.l    #code_nr,-(sp)      number of codes possible
          move.l    #codes,-(sp)        table of codes
          move.l    d0,-(sp)            byte count
          move.l    a2,-(sp)            address of command line
          bsr       check_c_args        set flags
          add.l     #20,sp              pop args

*** ...the rest of your program follows here...


*******************************************************************************
*** SUBROUTINES: these are called from the main program (above).
*****
*
* init_flags-- initializes a standard table of (byte-size) flags to
*              FALSE.
*    at entry:
*              a6 + 8  -> size of table.
*              a6 + 12 -> base of table.
*    at exit:
*              table  is initialized.
*              all registers preserved.
*
*****
init_flags:
          link      a6,#0               set frame pointer
          movem.l   a0/d0,-(sp)         save registers
          movea.l   12(a6),a0           base of table
          move.l    8(a6),d0            size of table
          bra.s     initf_test          now start
initf_loop:
          move.b    #FALSE,(a0)+        initialize a flag
initf_test:
          dbra      d0,initf_loop       go till end
          movem.l   (sp)+,a0/d0         restore registers
          unlk      a6                  deallocate frame
          rts                           and return

*****
*
* parse_word-- returns a word (delimited by a space or end of string)
*               from a string.
*              the word must be <= 76 chars (ARG_SIZE, == size of local
*               area reserved by caller).
* at entry:
*              a6 + 8  -> address of string.
*              a6 + 12 -> byte count of string.
*              a6 + 16 -> area into which to copy word (null-terminated).
* at exit:
*              a0 -> next word of original string.
```

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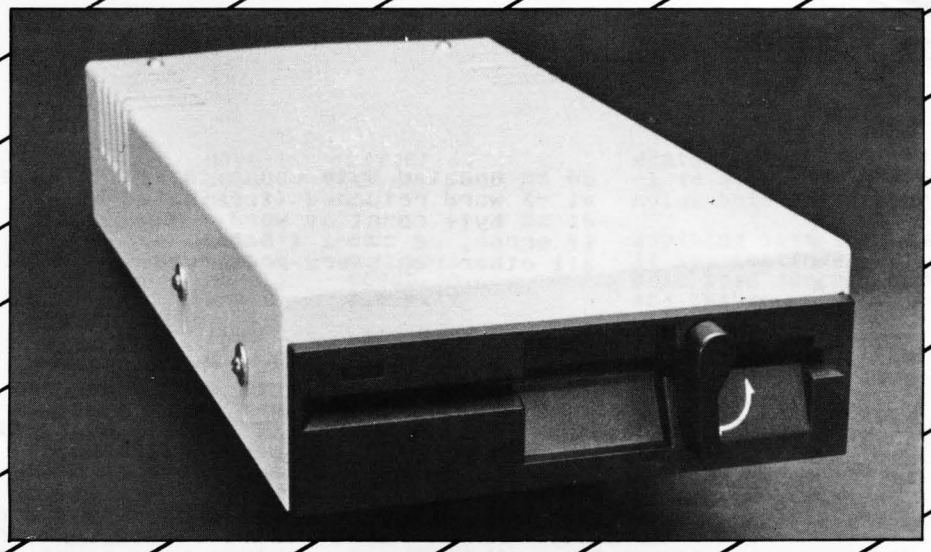

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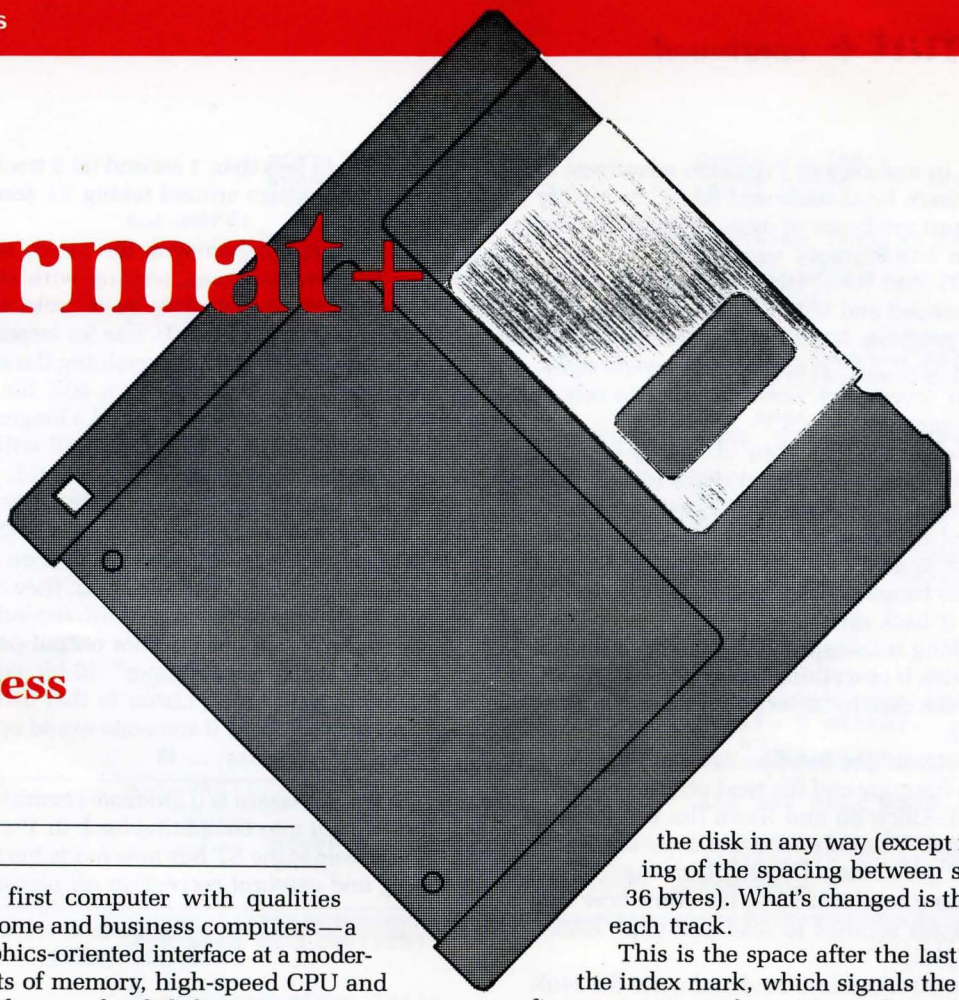
```
*               d0 == updated byte count (0 if string exhausted).
*               a1 -> word returned (terminated by 0).
*               d1 == byte count of word.
*               if error, d0 == -1 ('BAD').
*               all other registers preserved.
*
*****
parse_word:

          link      a6,#0           set frame pointer
          movea.l   8(a6),a0        get string address
          move.l    12(a6),d0       get byte count
          bgt.s     p_w_001         if count > 0, continue
          move.l    #BAD,d0         else return error
          bra       w_f_002         and leave
p_w_001:
          movea.l   16(a6),a1       point to copy space
          movem.l   a1/d2,-(sp)     save it and count register
          clr.l     d1              clear word count
          move.l    #ARG_SIZE-1,d2    start control count (-1 for null)
parse_loop:
          cmp.b     #BLANK,(a0)     blank?
          bne.s     p_l_001         if not
          subq.l    #1,d0           else decrement string count
          addq.l    #1,a0           point to next char
          bra       p_w_exit        and return word
p_l_001:
          subq.l    #1,d0           else decrement string count
          bne.s     p_l_002         continue if string not exhausted
          addq.l    #1,d1           else count this last char...
          move.b    (a0)+,(a1)+     copy last valid char...
          bra       p_w_exit        and return final word
p_l_002:
          move.b    (a0)+,(a1)+     copy char
          addq.l    #1,d1           count this one
          subq.l    #1,d2           decrement control count
          bne.s     p_l_003         if > 0, continue
          subq.l    #1,d0           else decrement string count
          bra       p_w_exit        and leave
p_l_003:
          bra       parse_loop      keep going
p_w_exit:
          move.b    #0,(a1)+        terminate word with null
w_f_001:
          movem.l   (sp)+,a1/d2     point back to start of return word
*                                    and restore d2
w_f_002:
          unlk      a6              deallocate frame
          rts                       and return


*****
*
* check_c_args-- checks one-letter command-line arguments and sets
*                internal flags as appropriate.
* at entry:
*               a6 + 8  -> address of command line string.
*               a6 + 12 -> byte count of command line string.
*               a6 + 16 -> base address of array of char codes to
*                                look for.
*               a6 + 20 -> nr of char codes in array.
*               a6 + 24 -> code table scale factor.
* at exit:
*               d0 == completion code (returns GOOD if there's
*                  anything else on command line-- even only spaces).
*               flags will be set TRUE or FALSE as appropriate.
*               all other registers preserved.
*
*****
check_c_args:
          link      a6,#-ARG_SIZE       set frame pointer
          movem.l   a0-a2/d1-d4,-(sp)   save registers
          move.l    12(a6),d0           command line byte count
          bgt.s     c_c_a001            if count > 0, continue
          move.l    #BAD,d0             else load error code
          bra.s     c_c_exit            and leave
c_c_a001:
          movea.l   8(a6),a0            command line address
```

```
            move.l    24(a6),d3           scale factor
            subq.l    #1,d3               -1 to allow for address reg inc
            clr.l     d4                  holds byte for comparisons
c_c_word:
            tst.l     d0                  anything left in command line?
            bne.s     c_c_w001            if so, continue
            move.l    #GOOD,d0            else load success code
            bra.s     c_c_exit            and leave
c_c_w001:
            pea       -ARG_SIZE(a6)       local space address
            move.l    d0,-(sp)            current command line count
            move.l    a0,-(sp)            rest of command line
            bsr       parse_word          get next word
            add.l     #12,sp              pop args
*** (a1) -> code to check; d1 == count; (a0) -> rest of cmdline;
***            d0 == bytes left
            cmp.l     #1,d1               one-char arg?
            beq.s     c_c_scan            if so, continue
            bra.s     c_c_word            else skip this one
c_c_scan:
            move.l    20(a6),d2           nr of codes to check
            movea.l   16(a6),a2           base of codes table
            bra.s     c_c_stest           start checking
c_c_sloop:
            move.b    (a2)+,d4            next byte
            cmp.b     (a1),d4             code found?
c_c_stest:
            dbeq      d2,c_c_sloop        if not and more codes to check
            tst.w     d2                  really a match?
            bmi.s     c_c_s001            if not
            move.b    #TRUE,0(a2,d3.l)    else set flag = TRUE
c_c_s001:
            bra.s     c_c_word            and get next word
c_c_exit:
            movem.l   (sp)+,a0-a2/d1-d4   restore registers
            unlk      a6                  deallocate local space
            rts                           and return

*******************************************************************************
*** DATA DECLARATIONS:
*****
*
* standard flags table.
*
*****
GOOD        equ       0          return code == success
BAD         equ       -1         return code == fail
ARG_SIZE    equ       76         max total length of command line arguments
TRUE        equ       1          == C "true" cond
```

```
FALSE     equ       0          == C "false" cond
BLANK     equ       32         ascii space == " "

                    even
code_base           equ       *                    base of codes table

*** now comes a list of the characters you want to use
codes               dc.b      'O','G'              command line codes
                    dc.b      'V','P','R','A','B','C'
                    dc.b      'N','S','D'

*** the next four lines do not change!
code_nr             equ       *-code_base          size of table
code_count          dc.l      code_nr              save it
code_scale          equ       *-code_base          index between codes and flags
flags               equ       *                    base of flags table

*** these are the flags which correspond to the characters listed above.
***   If the codes are changed, then the flags must also be changed to
***   maintain a one-to-one corrspondence. If a valid character code
***   (one of those listed above) is found on the command line, then its
***   corresponding flag will be set to "true" after the routine
***   'check_c_args' is called; otherwise it remains "false".
okidata             ds.b      1                    oki printer
star                ds.b      1                    star/gemini printer
verbose             ds.b      1
print_it            ds.b      1
small_prt           ds.b      1
drive_a             ds.b      1
drive_b             ds.b      1
drive_c             ds.b      1
set_title           ds.b      1
set_stack           ds.b      1
search              ds.b      1                    alternate search level
```

Format+



Double your disk access rates

by Brian Duggan

The ST is the first computer with qualities needed by both home and business computers—a user-friendly, graphics-oriented interface at a moderate price, with lots of memory, high-speed CPU and a DMA interface for easy hard disk expansion.

However, the true value of a PC for business purposes is highly dependent upon its floppy disk I/O speed. The new database, spreadsheet and integrated business programs are hundreds of thousands of bytes long. They'll tax floppy disk I/O to its limit. Indeed, everything's larger in the 16-bit world. Even BASIC has expanded to 140K on the ST, and that, at the ST's present speed, takes 18-20 seconds just to load.

After reformatting your disks with **Format+**, you'll experience a large increase in I/O speed, plus a corresponding increase in your ST's value for business use. How large an increase? Well, hold on to your hat, this is *not* a misprint. . . Read/Write will now take place at the raw rate of 23,000 bytes/second. This is at 5 tracks/second—double the present rate, it's the theoretical maximum for a floppy disk.

In fact, all disk access rates are doubled. Even writing to the disk with Verify on (the default on the ST) is doubled to 11,500 bytes/second or 2.5 tracks/second. This is also the theoretical maximum speed, as it takes one turn of the disk to Write and one turn to read back and verify.

If you're not experiencing any soft errors and are using work disks, you can write with reasonable safety, having verify off, and enjoy the full 23,000 byte rate. By the way, the disk copy utility will always automatically perform a verification, whether the verify flag is set or not.

No changes, just more.

Format+ doesn't change the present 9-sector format of the disk in any way (except for a slight squeezing of the spacing between sectors, from 40 to 36 bytes). What's changed is the "dead" space on each track.

This is the space after the last sector and before the index mark, which signals the start of the track's first sector. Extra formatting information is put there in three small "pseudo" sectors, numbers 10, 11 and 12.

These supply the 8-MHz 68000 CPU and the DMA Controller with sector and track information they need to perform the low-level housekeeping required for a move to the next track to take place. They're so quick that they can reset the disc controller, get the new track and read/write commands from DOS, step the disk head to the next track and verify the head movement. . . All in the time it takes for the "dead" space to pass by the disk head—and before the next index (or start) mark appears.

This permits a continuous read/write—something that's impossible for 8-bit computers, and for the IBM PC. This is the vaunted "68000 power."

The extra format information on the disk is completely transparent to GEMDOS, which knows nothing about sectors 10,11 and 12. Only the lowest level XBIOS knows about them, and it (being a drone) just takes and executes orders. It doesn't question the orders.

If you have any concern about overworking the stepper motor, this is on for 3 in every 200 milliseconds (one disk rotation), a duty factor of only 1.5 percent. In fact, since the raw disk read rate is now consistently doubled at all times (no matter *what* the program or DOS does, unlike the write rate), drive head wear is also pretty much halved —which greatly extends both drive and disk life.

To the keyboard.

Format+ has been kept as simple as possible. Instead of writing a lengthy stand-alone assembly language utili-

ty, difficult to type in and debug, I've taken advantage of having TOS available in RAM and used BASIC to modify it, shuffling the barest modicum of bytes. Type it in, save it to disk, and then let's **Format+** some disks.

Ready? Boot TOS into RAM (the original 5-29-85 or 6-20-85 version is needed and will be checked for), reload BASIC and run the program. It will modify the XBIOS format routine of TOS. Quit BASIC and format several disks. TOS has now been "corrupted," so remember to reboot after you finish formatting.

Test the results using the disk copy utility, by copying BASIC to one of the newly formatted disks (single disk copy should take about 17 seconds less). Erase everything from the disk except BASIC and its RSC file. Load BASIC (it should now take 11 or 12 seconds, instead of 18) and *POKE &H444,0*. This turns off the write verify flag (POKEing *255* will turn it back on).

Now, time how long it takes for BASIC to do a BSAVE *"Test",100000,100000*. If everything has gone well, BASIC will write 100K to the disk in 10 seconds flat, a net write rate of 10K/second.

Quit BASIC and "trash" the test file. You can now check and test the system file copy and file read utilities by copying BASIC to itself. Click on and move the BASIC icon down on the desktop. Then click on the copy box when it appears. You will get a *Name Conflict Warning*. . .Type in any name you like (I used *BASICA*), then time how long it takes for the system utilities to read and copy BASIC back to the same disk.

It should've taken 20 seconds to read and write the 140K file—only 2 or 3 seconds longer than it takes just to load (read) BASIC in the normal format! With verify off, reading and writing are now taking about equal times (10 seconds in, and 10 seconds out). So, net read and net write rates are about equal, at 14,000 bytes/second each.

Who ate the rate?

By this time, you might be wondering whatever happened to the 23,000 bytes/second. What's slowing down the net disk read/write rate? If you guessed GEMDOS, you're right. GEMDOS is very slow. Including head movements, it took GEMDOS 8 seconds to do its high-level file search work, while the low-level XBIOS made the actual transfer in 12 seconds (60 tracks at 5 track/second).

The business or power user who uses disk-sized databases and compilers will find that the ST can now load (without searches) an entire 350K disk into its memory in 18 to 20 seconds. And it performs a memory-to-disk dump at a comparable rate. This is about 19,000 bytes/second despite DOS overhead, which comes close to the theoretical maximum, and is even comparable to some hard disks.

What to expect.

Reads will be performed at a constant 23,000 or 5 tracks/second rate, with a net read rate of 14 to 16,000+ bytes/second for large files (i.e., **STWriter** loads its ST-WMAN file—90K—at 15.5K in 5.8 seconds and, by the way, will also copy it to a new name at 12K in 7.5 seconds.

For small files of less than 40K, GEMDOS will now take as much or more time than the actual read itself. A 20K file loads in less than 1 second (at 5 tracks/second), while GEMDOS putters around taking 2+ seconds to do whatever it does.

Writes are completely at the mercy of the program. A well-behaved program, writing with verify off, can run at or near the speed of the read cycle, as **STWriter** does. This is up to a net 14,000+ rate for larger files, with GEMDOS and the program determining the small file time. It's still less than 6 seconds for a 40K file.

Writes with verify on will take longer, at the raw 11.5K rate. However, 20 to 40K files still will only take 6 to 8 seconds to complete, even then. All this permits rapid fire PC/user interaction—a real boon in business use.

Misbehaved programs with small (<16K) and/or non-disk track-sized I/O buffers will tack on an extra 30 to 100 percent overhead. With verify on, they can drag the write rate to its knees, down to 1.3K/second. You now know where the blame lies for poor output performance times!

Enjoy using your "super" 16-bit computer, with its 23,000 byte I/O rate. Listen to that little disk drive give its all for you! Now, if someone would optimize those slow GEMDOS routines. . .

Brian P. Duggan is a graduate chemist who's a new Atarian. He got into computing back in 1981, with a TRS-80. The power of the ST has now made his writing, programming and cerebral recreation all pleasure with no pain!

Listing 1.
BASIC listing.

```
10    ' Format Plus: Copyright 1986 by
 Brian Duggan
20    Fullw 2: Clearw 2
30    Gotoxy 24,2: ? "* * * FORMAT P L
 U S * * * "
40    Gotoxy 27,5: ? "TOS Version: "
50    Gotoxy 26,3: ? Chr$(189);" 1986
by Brian Duggan"
60    Txt =9 : Gosub Effect: Gotoxy 14
,10 : ? "REMINDER:";
70    Txt =0: Gosub Effect: ? "  For 2
3,000 bytes/sec WRITE rate"
80    Gotoxy 24,11: ? "Poke &H444,0  (
255 to restore Verify)"
90    'TOS Version check ********
100   Def Seg =&H5000: A =Peek(&H18):
B =Peek(&H19)
110   If (A =5 AND B =41) OR (A =6 AND
 B =32) Then  f =0: Goto Modify
120   F$ ="************ A B O R T E D
 ****************"
130   Gotoxy 41,5: ?"Not 5-19 or 6-20-
85 TOS"
140   Color 2: Goto Finish
150   Modify:  If A =6 Then Adjust =-2
 Else Adjust =0
160   Gotoxy 40,5: ? "O.K.":F$ ="*****
** C O M P L E T E D--Ready To Format
*******
170   Color 3: Goto ChangeTOS
180   Effect:  Def Seg =0
190   Poke Contrl,106: Poke contrl+2,0
: Poke contrl+6,1:Poke intin,Txt
200   vdisys(1): Return
210   FINISH: Gotoxy 14,8: ? F$: Color
 1
220   Sound 1,8,10,4,55: Sound 1,0,0,0
,0: End
```

VIP Professional™

Finally – A Business Program that Brings Lotus 1-2-3® Functionality to Your *Atari ST*™!

VIP Professional is a state-of-the-art, integrated spreadsheet program which brings together a spreadsheet, a database and graphing capabilities. Professional was modeled after the powerful and best-selling Lotus 1-2-3® program which dominates the business world

Worksheet Magic

Nothing is left out of the workings of the worksheet. Ranges of cells can be named for convenience; column widths are variable; the screen can be split into two windows; titles can be frozen; contents of cells may be copied or moved; the worksheet may be altered as a whole or only partially; the list goes on and on. Perhaps most important, Professional can use and save Lotus 1-2-3 files for transfer between computers.

The worksheet includes over 45 special functions to simplify commonly used formulas, including powerful financial functions for the internal rate of return, present value, and future value. Of course Professional also has all mathematical, trigonometric, table, conditional and logical functions.

Database Power

The built-in database can handle up to 8192 records, with a possibility of up to 256 fields. The records can be searched, sorted and analyzed to find your best salesperson or your rarest stamp. Sorts can be done using multiple criteria, in ascending and descending order. And database functions can be used to do up to seven different kinds of statistical analyses of your database.

Graphs

The graphing capabilities of Professional are astounding. Not only are there six completely different types of graphs available, there are tens of ways to manipulate the data, titles, grids, colors, legends, keys, and scaling of the size of the graph.

Macros

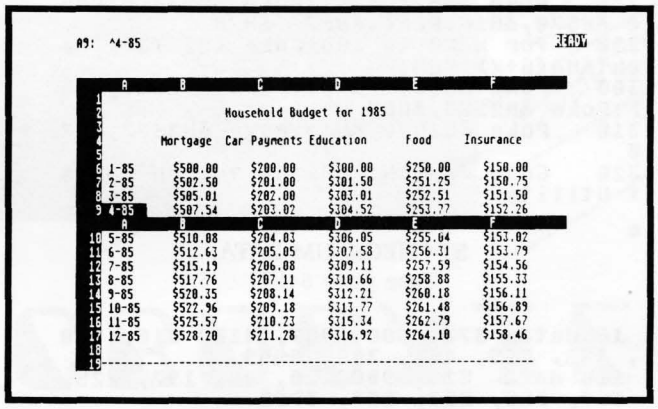
Professional also includes sophisticated macro programming commands. With several special macro commands, the user can actually *program* Professional to be dedicated to a specific task such as accounting.

Just Minutes to Learn

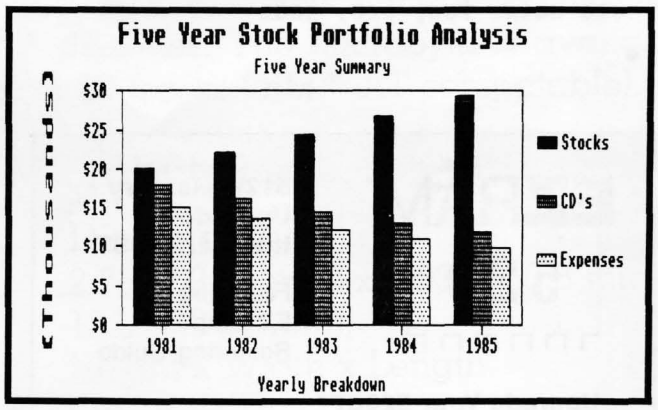
Professional is as easy to use as it is powerful. It comes with a user-sensitive tutorial for the newcomer. And help is built right into the program. With the handy tutorial, you will be able to create professional worksheets in just minutes.

Introducing Professional LITE™

For those of you who do not need the full power of Professional, we offer Professional LITE™. Though without the macros and the database features, and having a smaller sheet size (256 columns by 2048 rows, LITE still packs a powerful punch for only $149.95!



Integrated Spreadsheet Power



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The Power of Professional
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If your dealer is out of stock, order direct. Send your check or money order to the address below, together with $3 for shipping and handling. In California add 6% sales tax. COD's and purchase orders not accepted. Personal checks will be held for three weeks to clear. All prices are subject to change without notice.

TECHNOLOGIES

132 Aero Camino
Santa Barbara
California 93117

(805) 968-9567

SYSTEM REQUIREMENTS: Amiga with 512K; One disk drive; Monochrome or color monitor; Works with printers supported by the Workbench.

// Format+ *continued*

```
230   ChangeTOS:' **** Original TOS ne
eded in Ram ****
240   Def Seg = &H100+ Adjust
250   Poke &H56c,0: Poke &H56d,&H0c
260   Def Seg = &H6000+ Adjust
270   Poke &H563,&H22:Poke &H582,2:Pok
e &H583,&H18
280   Poke &H57c,&H61:Poke &H57d,0:Pok
e &H57e,&H1F:Poke &H57f,&H78
290   for x =0 to 300:poke &H24f6+x,Pe
ek(&H4f6+x):NEXT
300   Poke &H2521,&H01:Poke &H254f,&H6
F:Poke &H2573,&H6C
310   Poke &H2576,&H4e:Poke &H2577,&H7
5
320   Goto Finish:' Ready to run Forma
t Utility
```

•

ST-CHECKSUM DATA.

(see page 54ST)

```
 10 data  377, 606, 987, 418, 616, 780
, 482, 965, 462, 366, 6059
 110 data  510, 980, 50, 86, 197, 225,
 567, 325, 222, 620, 3782
 210 data  445, 603, 779, 814, 391, 85
8, 194, 629, 730, 970, 6413
 310 data  738, 928, 1666
```

•

Typesetter ST

XLENT SOFTWARE
P.O. Box 5228
Springfield, VA 22150
(703) 644-8881
Monochrome & color $39.95

by Matthew J.W. Ratcliff

Typesetter ST is the first in XLent Software's "printware" series for the new Atari 520ST systems. This is a graphics and text-editor package, suited to designing small newsletters or business advertisements.

Unlike **NEO-Chrome** or **DEGAS**, **Typesetter ST** allows you to edit within an area equal to one page on your Epson or NEC (or compatible) printer. A page on the printer works out to 960 by 672 pixels, as opposed to the ST's 640 by 400 (monochrome).

Typesetter breaks the picture into quadrants, which overlap for editing. It isn't a full-blown drawing program, like **NEO-Chrome** or **DEGAS**, but **Typesetter ST** has a few advantages over both of these.

Typesetter seems to be suited more for use as a utility, to supplement the drawing programs mentioned above. It comes with routines that will convert picture files into different display formats. Several character set files are contained on the unprotected disk, as well as both versions of the program—monochrome and color. The color version was tested for this review.

When **Typesetter** is run, you're presented with the "graphics card" menu of functions. Behind it is your graphics work area. The usual drawing functions are available, to plot points, draw lines, and so forth. Objects like rectangles, pies and ellipses may be drawn with different pattern and hatch fills. Pen width and color may be changed as you draw.

Typesetter can automatically create shapes which the current version of **NEO-Chrome** (0.5) can't handle. But you can't dynamically resize them, as in **DEGAS**. The objects may be more accurately thought of as icons, whose size you can adjust.

It uses the trial-and-error method—you change size from the graphics card, entering a value from *1* to *10* and drawing the new sized shape. Your best bet is to start small and work your way up. There are no cut-and-paste features in **Typesetter**.

Although you use a mouse to draw and place shapes on the screen, all program commands are accessed through function keypresses. Most are from the graphics card menu, but many are submenus. You're constantly reaching from the keyboard to the mouse, and back again.

If you get confused and type while in the mouse edit mode, all the keys are buffered. Then, when you do get back to the menu, the keyboard buffer isn't cleared—all your accidental keystrokes are treated as commands.

Also, whenever you select a menu function, you're returned to the graphics screen as your command is processed, then again to the menu. You must press the SPACE BAR to get back to your picture. The most logical interface would be to go directly to the graphics screen.

Each time you go to a different menu or mode of editing, all the functions take on different meanings. Aside from being very confusing, this doesn't take advantage of the elegant mouse interface used in most other programs (**DEGAS**, for instance). The function key interface makes using **Typesetter** during a long editing session a tedious chore.

You *will* have great fun playing with all the pattern and hatch fills, thirty-six in all. Examples are given in the brief manual.

If you wish to experiment with different patterns, you'll find the "user interface" a real pain. While drawing, you click the right mouse key to get back to the graphics card. Press *F* for the fill style, then type in the fill value (*1* through *24*) and press RETURN.

After the graphics card comes back again, you must hit the SPACE BAR to go back to the graphics screen.

The primary advantage of **Typesetter** is that it can load, edit and print a screen larger than the ST can display. Typically, you'll load a **DEGAS** or **NEO-Chrome** picture and add to it. Once the picture's loaded, you can easily add text, shapes and patterns to the extra "white space" at the bottom of the original.

NEO-Chrome supports text, and **DEGAS** also supports custom character sets. But custom characters have long been a hallmark of XLent's products.

You can load and edit with different character sets, placing letters anywhere on the original, or in the "extra white space" at the bottom. Text may be rotated in increments of 90 degrees (sideways and upside down). **DEGAS** comes with a character set editor; **Typesetter** does not.

Several "border texts" are provided with one of the custom character sets. With it, you can create fancy borders around an entire screen, or any portion of it.

I've run into a minor problem here. As mentioned in the documentation, while entering text at any angle of rotation other than 0 degrees, you don't have a cursor. It's

very difficult to accurately set up a text border this way.

Once in text entry mode, you may choose from 24 font sizes, the smallest giving you 106 characters across the display. Pressing the F1 key yields a menu of common text entry parameters you can change, such as underline or outline mode. While editing in text mode, you have several other function keys at your disposal, none of which appear in menus. You'll find these only in the documentation.

Pressing F2 gets you to yet another function menu, where inverse or normal video characters may be chosen. Character height and width can be adjusted, as well as overlay mode. Text adjusts to many heights and widths. This gives you much more control over text sizing than does either **NEO-Chrome** or **DEGAS**.

The F7 and F8 keys allow you to define margin widths, to make columnar text entry easier. And finally, from the text entry mode, pressing F10 will send control to the disk input/output options.

Here's my biggest gripe about **Typesetter**. If you forget how to spell a filename, you're out of luck. There's no way to get a disk directory—an absolute must in any applications program. I hope future versions will incorporate this feature. At any rate, from the disk I/O submenu, you can load or save **Typesetter** screens in many different formats.

While editing in graphics mode (with the mouse), you may press SHIFT keys for one of two differently scaled overlay grids. These tell what quadrant you're in and show an overlay of the exact pixel areas on the display, in terms of the printer's output. This is very helpful in keeping track of where you're editing "on the paper." While in text entry mode, these grids are accessed through the F4 and F5 keys.

You can also shrink a picture vertically by 25% or 33%, which can bring your images into better proportion. **Typesetter** can't "stretch" a picture, however, to make it fill a printed page. Height to width ratios of icons are adjustable, and the screen may be cleared—by page, quadrant (one-fourth of the current display), or current cell (portion of the entire picture filling the display).

Once you have your finely tuned document saved and ready to print, select the print option from the graphics card menu. This is where **Typesetter** truly shines.

I've been disappointed with my Gemini 10X printer, since getting the ST. The ALTERNATE-HELP-key picture dumps look sloppy, with about one-half dot of white space between each line of graphics. Contrast was poor, as well. I was about ready to trade up, until I started dumping pictures with the **Typesetter**. These have an excellent gray scale, with tighter line spacing, and fill the page nicely (if you edit in all the quadrants).

If you want pictures to take up the entire page and need a better graphics dump facility for your ST, **Typesetter** may suit your needs. It has many features lacking in **NEO-Chrome**. XLent's documentation highly recommends **DEGAS** to create pictures, with a **Typesetter**-performed final edit. No, **Typesetter ST** can't replace **DEGAS** or **NEO-Chrome**, but it will serve as a useful companion utility.

Matthew Ratcliff is an electrical engineer in St. Louis, Missouri. When not using his spare time to write articles, he's president of ACE St. Louis and a remote SYSOP on Gateway City BBS, (314) 647-3290.

THE CES Scene

A look at the June show tells us... "The STs are all right!"

by Arthur Leyenberger

"Toto, I have a feeling we're not in Kansas anymore. . ." (Glenda, the Good Witch of the North arrives in a marvelous sphere). Dorothy, upon seeing Glenda: "Now I *know* we're not in Kansas."

These immortal words from *The Wizard of Oz* kept going through my mind, as I entered the Atari booth (the largest seen since the Tramiels took over) at the June Consumer Electronics Show (CES) in Chicago. After the last few shows, nothing here looked like what I was used to—either in the video game glory days or in the vacuum that had followed..

The video game and home computer industry had taken a nose dive two years earlier, and each succeeding exposition gave evidence that the golden days had passed. I entered the largest annual trade show, amidst Dixieland bands and 100,000-plus attendees, I was prepared to report on yet another gloomy show.

Then I saw the Atari booth—thirty-odd software vendors, showing off their wares in what was easily the most exciting, overcrowded booth in West Hall. Kansas, indeed!

We bring you the new, the exciting, the technically astounding ST software that was being exhibited at the twentieth annual Summer CES. From what I saw at this four-day electronics, hardware and software bazaar, the remainder of 1986 will be very good for Atari ST users. The ST is an unqualified success, and the floodgates have opened wide to let forth a rush of software.

Software forever.

With the STs beginning to enjoy national popularity, you might ask how many programs are currently available? As of the start of CES, I could count over 200 titles on my local dealer's shelves.

The following companies announced or demonstrated ST software in Chicago. Some of the information here was obtained while viewing demos in the hectic Atari area; other tidbits were gleaned from the vendors' booths. For this reason, the detail presented here varies from one publisher to another. Companies are presented in alphabetical order.

Abacus Software was showing their CAD-like program, **PCBoard Designer**. It provides interactive layout of PC boards, component listing, automatic routing of traces and camera-ready printout. **PCBoard Designer** was demonstrated on a monochrome monitor and appeared to be a sophisticated program. It's currently shipping and retails for $395.00.

Abacus also announced a number of new titles. **ST TextPro** is a professional word processor that features multi-column output, automatic indexing and table of contents, fast text input and scrolling, definable function keys, and the ability to print sideways—for $49.95.

ST Text Designer is a page-making package, to create layouts from word processing files. The program can read files from **TextPro** or other ASCII files, then add lines and merge graphics with text. Available this summer, **Text Designer** will retail for $49.95.

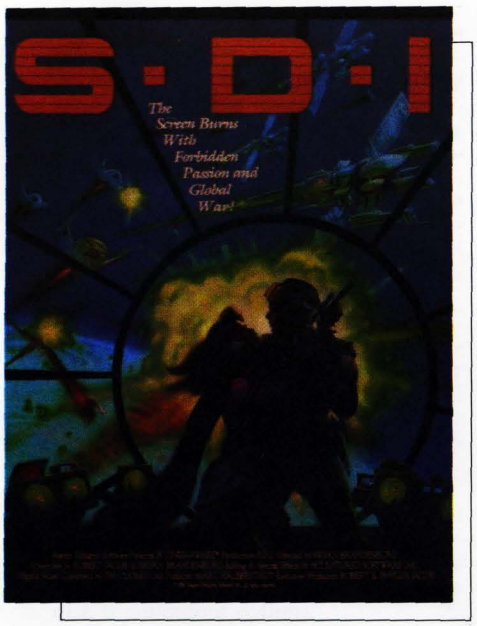
ST DataPro is billed as a simple yet versatile database program for the ST. Screen templates are used, to make database design and data input easier. Unlimited record length is possible, with a maximum of 64000 records. Available by the time you read this, it will list for $49.95.

ST PaintPro is a drawing and design package. Multiple windows allow you to copy and paste between them; rotation and a wide range of text formats and options are offered. Available now for $49.95.

Abacus also displayed three new ST books. ***Atari BASIC Training Guide*** is a functional, educational introduction to ST BASIC. From problem analysis to commands to algorithms, the book provides fundamentals of programming in an easy-to-understand format.

Another new Abacus book is ***Atari ST Graphics and Sound***. It teaches you how to create graphics and use the ST's built-in sound facilities. Examples are in BASIC, C, Logo and Modula-2, so there's something for every programming taste. Some of the topics are: mirror and rotation, graphics under GEM, coordinate transformations, raster and vector graphics, plotting and 2- or 3-D functions, waveform generation, the sound chip, and the ST as a synthesizer. Of course, there's far more information than space allows me to mention here.

The third new Abacus book is entitled ***Atari ST Tricks and Tips***. Chapters cover: using GEM from BASIC, combining BASIC and machine language, creating a RAMdisk and print spooler, automatically starting TOS applications, and much more. If you'd like to learn more about programming your ST, this and the two books mentioned above can help. All have sample



One of the Cinemaware offerings, *SDI*.

programs and tips for the new or expert programmer.

The Abacus books are currently available for $20.00 each, except ***BASIC Training Guide***, which is $17.00.

Activision shared a booth with several other publishers. The most exciting news from these folks is that their **Music Studio** has recently been released for the ST computers.

This music composition program, designed by Audio Light, allows the user to create music interactively and control up to fifteen instruments in one song, or up to eight voices at once. **Music Studio** has four tracks and can be interfaced with a MIDI instrument, though it also works with the built-in, three-voice sound chip of the ST.

When using a synthesizer keyboard, via the MIDI interface, **Music Studio** does not function as a sequencer or multi-track tape recorder. It is, rather, a composing program and uses standard music notation to edit and compose. Although real-time keyboard input is not accepted, the program can send output to a MIDI keyboard. Drop-down menus and mouse control make the **Music Studio** easy and enjoyable to use.

With this program currently selling for $50.00, work is already beginning on the next version. The latter *will* have real-time keyboard capture, as well as a MIDI patch librarian capability.

Activision also showed the **Paint Works** (formerly **N-Vision**), by Audio Light. This easy-to-use painting program is also available now, for $49.95. Look for **ST-Log** reviews of both these Activision programs soon.

Artworx demonstrated **Strip Poker for the ST** within Atari's exhibit area. This is basically the same program released for the 8-bits a few years ago.

Now, however, the program's completely mouse driven, and the graphics are substantially improved. Interestingly, the 8-bit graphics were uploaded to the Amiga, and **Deluxe Paint** by Electronic Arts was used to improve the pictures.

Resolution was increased to about four times the previous capacity, and colors were added. As a last step, the graphics were ported to the ST. Talk about a round-about trip to the ST!

Strip Poker for the ST will be selling for $39.95, with optional data disks at $19.95 each. The original game-playing algorithms were used for the ST version, so it's neither easier nor more difficult than its predecessor. Future data disks will use digitized graphics for, um . . . added realism. **Strip Poker** will be available by the time you read this article.

Artworx is already shipping **Compu-Bridge for the ST**, at $29.95. A **backgammon variant** will also be out by the time we're in print. And a new game called **Hole-In-One Golf** will be available soon, too. Artworx is solidly behind the ST and will continue to offer programs for it.

Batteries Included, a longtime supporter of 8-bit and now 16-bit Atari users, showed several new products at their booth. One of these was **Thunder!: The Writer's Assistant**.

As a spelling checker for the ST, **Thunder!** is unique in a number of ways. One is its ability to correctly check a word which has a number within it. No other currently marketed spelling checker for *any* computer can handle this type of spelling error.

Another unique aspect of **Thunder!**—its dictionary has 50,000 *real* words. Other products claim as many or more words, but count derivatives separately. For example, *walk*, *walks*, *walked* and *walking* could be counted as four separate words in some

Batteries Included's *Thunder!*

spelling checkers. In **Thunder!**, they're considered one word. Of course, you can create your own supplemental dictionaries, as well.

Two versions of **Thunder!** are provided on the distribution disk. One is a desktop accessory, to be used whenever accessories are normally available. It works only with GEM-based word processors (actually, with any GEM-based program). What's especially useful is that, when **Thunder!**'s been loaded as a desk accessory, consuming about 100K of memory, it can be disabled at any time, freeing up that memory —*without* rebooting. Nice touch!

The other version is a stand-alone program to be used with any file. It's handy in checking files created by non-GEM programs, or an entire GEM-created file. This program runs from the desktop and, when finished, returns you to the desktop. In addition to doing a spelling check, it provides you with a range of statistics, like character, syllable, word and sentence counts, and two types of readability indices.

In addition to a spelling checker accessory, **Thunder!** provides a word expansion feature. If I want, for example, I can define *CES* as "Consumer Electronics Show." Then, whenever I type *CES*, "Consumer Electronics Show" would be entered . . . a very useful feature.

Thunder! retails for $39.95. It's quality ST software, clearly one of the most impressive ST programs at CES.

According to President Michael Reichmann, Batteries Included has sold over 25,000 copies of **DEGAS**. In discussing the fact that **DEGAS** has done so well while not copy protected, Reichmann said copy protection is no longer an issue. All BI's products are sold without copy protection, a policy they intend to continue. The industry is slowly realizing: this is the way application software should be marketed.

I had a sneak preview of the next-generation **DEGAS**, **DEGAS Elite**. Scheduled to be released by August, it will sell for $79.95. Current **DEGAS** owners will be able to upgrade for half the price and their original **DEGAS** disk.

DEGAS Elite has significant improvements, too many to state here. Eight screens are now provided, and colors, objects, clip art, and so forth can be copied easily from one screen to another. Another powerful feature is the ability to specify a starting and ending color—and have the program fill in all the colors between for your palette.

Drives from A to P are now supported, and folders can also be used. Regardless of what resolution you're now in, any picture type—low, medium or high—can be loaded into the current screen. **DEGAS Elite** automatically does the conversion as it brings in the program.

NEO-Chrome and **Koala** pictures can be

loaded directly, too. And the current on-screen picture can be saved in any of these file formats.

You can use four different animation speeds, in four different directions, in four different ranges of colors at once, on one screen. In addition, any portion of a picture can be grabbed and copied to another screen, or even used as a brush. Very impressive!

The new **DEGAS** will automatically do anti-aliasing of a picture. The concept of anti-aliasing is that, if you put a complementary color along the edge of another color, it will seem to smooth the original's jagged lines. It's truly amazing to watch all the corners being magically rounded off. The effect is a marked improvement in your image.

One of the cleverest aspects of the program is that you'll be able to save a **DEGAS** picture as an ST icon. Also, you can grab a corner of a picture and stretch it in any direction. Eight levels of magnification are available in **DEGAS Elite**, for fine detail work, and both manual rotation and rotation by degrees are provided.

All in all, **DEGAS Elite** is state-of-the-art software for the ST, a significant improvement over its excellent original.

Batteries Included also showed their **IS*Talk** ST telecommunications program. It's a full-scale terminal program, based on the GEM graphics interface. **IS*Talk** is easy to use, with a host of sophisticated features—spelling checker, macros, replay, auto log-on, and much, much more. It's retailing now for $79.95.

Also coming from Batteries Included: an upgraded version of the popular 8-bit **HomePak**; **PaperClip Elite**, which will allow the inclusion of **DEGAS Elite** files within text; **BTS The Spreadsheet**; a personal diary program called **Time Link**; and another 8-bit upgrade, **B/Graph**, the graphics charting and statistics package. No question about it—BI is solidly behind the ST, with a wide range of products.

Batteries Included also announced a merger with ITM Corp., a Canadian holding company. BI will retain its autonomy, but will now have a parent company, to provide greater financial strength for growth. Basically, this deal means they'll be able to publish more software in the months ahead.

Broderbund, parent company of Synapse, brought two previously released 8-bit titles for the ST, **Essex** and **Brimstone**.

Essex puts you in the realm of science fiction, playing the part of a tourist aboard the starship *Essex*. What began as a peaceful vacation turns into an intergalactic rescue mission, led by the one person who can thwart the insidious Vollchons threatening all planets in the Sirius sector.

Brimstone is a fantasy, wherein you help Sir Gawain of the Round Table find the five mystical words which will release him from Ulro, the netherworld. Beyond the moat and massive door to the castle, you must outwit deranged white apes and defeat the Underdemons—or be trapped for eternity. Sounds pretty tough to me.

Both text adventure games feature 1500-word vocabularies and are played in real time. If you linger making a move, the action continues. **Essex** and **Brimstone** are available now at $44.95 each.

Electronic Arts shared a distributor's booth with other software publishers. The views of its president Trip Hawkins, concerning the Atari ST and Amiga computers, are well known. Briefly, he feels the Amiga is the better machine, while the ST has no future. Therefore, he won't develop ST software, but has heavily supported the Amiga.

The company does, however, have one ST program: **Financial Cookbook**. This is

an updated, improved version of the 8-bit title. We hope, as the ST's success is seen, EA will develop software for it.

Epyx Software, the folks who brought you **Rescue on Fractalus** and **Ballblazer**, two great Lucasfilm games for 8-bit computers, among others, were proudly showing two titles for the ST.

A new, enhanced version of **Temple of Apshai**, called **The Trilogy**, is available now. This role-playing adventure features 1400 separate chambers, multiple dungeon levels, improved graphics and faster action play. **The Trilogy** lists for $30.00 and includes **Temple of Apshai**, **Curse of Ra** and **Upper Reaches of Apshai**.

Epyx's **Rogue** has been a popular game at colleges for years. The goal is to find your way through a maze of ever-changing dungeons and magical places, recover the Amulet of Yendor and return to level 1. Of course, spending time in the underground world sounds a lot easier than it really is. Available now for $34.95.

Winter Games, enjoyed on a host of systems, now comes to the ST. Seven true-to-life sporting events, from bobsledding and ski jumping to figure skating, challenge the user. The Biathlon and four other events are included, and skill and stamina are required to succeed. An opening ceremony complete with national anthems greets up to eight players. **Winter Games**, available now, sells for $34.95.

Epyx's *Winter Games*.

World Games is a continuation of Epyx's "Game" series. In this one, eight events allow you to compete with up to eight other players. Cliff diving, sumo wrestling, barrel jumping, bull riding, weight lifting, giant slalom, pole vaulting, and hop, skip and jumping should keep you busy for quite some time. **World Games** will be available in the third quarter for $34.95.

Infocom announced three new interactive fiction titles for the ST this time around. **Leather Goddesses of Phobos**, by veteran author Steve Meretzky, is Infocom's first entry in the comedy category.

This product, geared for the standard-level player, combines comedy and sex, and takes the genre to new heights (or depths, depending on how you look at it). Three different playing modes are provided—Tame, Suggestive or Lewd—corresponding to P, PG and R movie ratings.

The saga begins in 1936 in Upper Sandusky, Ohio, where you've been boozing it up at a sleazy bar (Lewd)—or where you're enjoying an evening with your friends in a local lounge (Tame). You get the idea, right? Anyway, you're kidnapped by space creatures and carried to the Martian moon Phobos. There you learn that the Leather Goddesses are planning to turn Earth into their private sexual playground (L)—ahem, use Earth for their own indiscreet purposes (T).

Your goal is to get what you need in order to build a special Anti-Leather Goddesses Machine. Included with the program are a 3-D comic book, an intimate map of the catacombs and a sensuous scratch 'n' sniff card. All this fun, and the three different naughtiness levels, can be had for $39.95 this fall.

Another new Infocom ST title is **Trinity**, written by Brian Moriarty. A cross between the "Twilight Zone" and *Alice in Wonderland*, **Trinity** leads you to an alternate universe, where magic and physics coexist—and every atomic explosion that's ever occurred is inexplicably connected.

The story's chilling climax takes place in the New Mexico desert on July 16, 1945, where you'll arrive minutes before the most fateful experiment of all time: the world's first atomic explosion, code-named **Trinity**.

This is the first Infocom story to recreate actual locations and events. It begins in London; you're a tourist on a budget vacation. Where it ends is up to you. To ensure accuracy, Moriarty conducted extensive research, visiting Los Alamos National Laboratory and the Trinity site.

To get you started, the package includes a copy of *The Illustrated Story of the Atomic Bomb*, in the famous Classic Comics style. **Trinity** will be retailing for $39.95 by the time this issue's out.

The third title announced was **Moonmist**, by Stu Galley and Jim Lawrence. This introductory-level game has a Gothic setting. Each of the four variations has its own puzzles, treasures, hiding places and solution. As a result, **Moonmist** has more replay value than any other Infocom title to date.

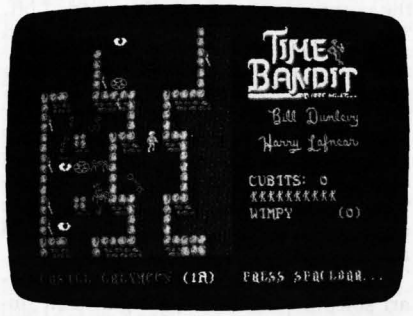
You play a famous young sleuth ready for adventure. A friend declares, "I know it sounds dramatic, but I think someone is trying to kill me," and you dash into action. Arriving at Tresyllian Castle, you're about to be in a treasure hunt, meet eccentric characters (including a ghost or two), and otherwise be put upon to solve the mystery. **Moonmist** will sell for $39.95 this fall.

Metacomco, the systems software house specializing in the 68000-based computers, announced a couple of new products for the ST.

No details were forthcoming, but it was learned that Metacomco's redoing Atari ST BASIC. The improved implementation will be out in the third quarter of 1986.

The company also announced **MCC Pascal** for the ST. This is an ISO Pascal compiler with a screen editor, linker, libraries and user manual. This version conforms to the ISO 7185 international standard Pascal. A company spokesperson told me that, compared to OSS's Personal Pascal, **MCC Pascal** has a faster compiler, slower linker and produces code that's almost identical.

MichTron was showing many existing products in their stall at the Atari booth. One of the most popular programs there was **Time Bandit**.



***Time Bandit* from MichTron.**

Written by Bill Dunlevy and Harry Lafner, **Time Bandit** is billed as the most detailed video game ever designed for a home computer. And it's not hype—anyone who's seen, played or been within 10 feet of the screen when the program's running can attest to that.

In it, you're the **Time Bandit**, an animated adventurer travelling through time and space in search of treasure. From a land called Timegates, you can choose to enter one of sixteen portals, each leading to a different "land" and a distinct time period. The future, ancient Egypt, deep space and the old West await your visit.

Once in, you must fight off the Evil Guardians—and search for scrolls, books, computer consoles, or even people. Within the arcade action of the game there are three graphics-activated text adventures. To get out of the current land, you must find the key to the lock blocking your exit. This is one exciting game.

There's much more to it, but suffice it to say that **Time Bandit** demonstrates the power, speed and graphic beauty of the Atari ST. The program's written entirely in machine language and consumes 350K of memory. You can buy it now, for $39.95.

Another major title shown by Gordon Monnier, president of MichTron, was **Cornerman**, a **Sidekick**-like multiple desk accessory. It can be purchased now for $49.95 and gives you no less than ten functions, all under one accessory name.

Here's what you get: a complete ASCII

(continued on page 78)

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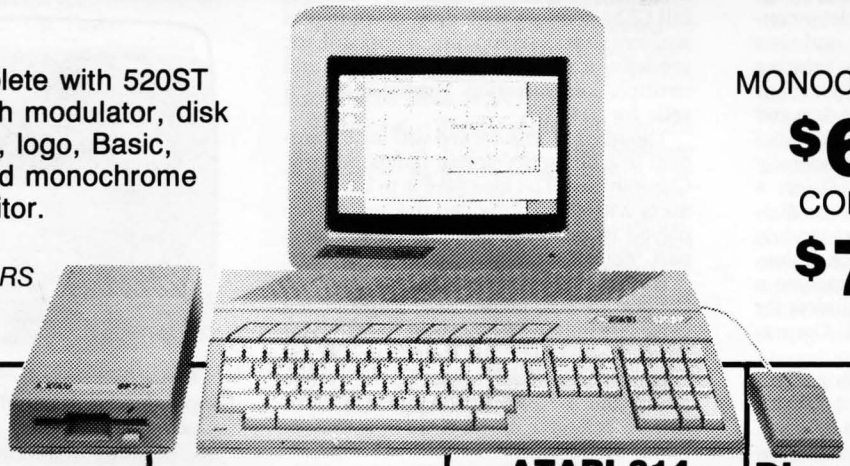

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reference table, with decimal, hexadecimal, character and mnemonic information for all 256 ASCII codes; a 16-digit calculator containing binary, octal, decimal and hex modes, three summing memories, printing tape display and more; a notepad with full editing, word wrap and automatic date and time stamp; a phone dialer with autodial capability; a phone log which automatically transfers information from the dialer; a fifteen-puzzle game; two clocks (one digital, one analog); a complete setup module to customize dialer, RS-232, clock, calculator and window position parameters; a print utility; and (gasp) a DOS window for use with MichTron's **DOS Shell**. **Cornerman** is one big bargain.

Microprose was demonstrating their nearly complete version of **Silent Service** for the ST. Here, you command a World War II submarine in the depths of the Pacific—and must sink enemy ships without being destroyed. Written by **F-15 Strike Eagle** author Sid Meier, the game will ship almost immediately.

The most notable difference between the ST and previous 8-bit versions lies in the graphics. Far more detail is evident in the ST program. For example, only four ship sizes could be seen through the periscope of an 8-bit, whereas there are now 128 different ship sizes. This adds greatly to the realism of the game.

Another major difference: the game has been entirely reconfigured, to be played via mouse icons. Periscope, throttle, game speed, zoom, etc., are now controlled by pointing and clicking.

In addition, varied screens appear in response to moving Captain Bob. The damage screen shows problems separately, as the instrument screen shows a set of analog gauges.

The third big change in the ST **Silent Service** is that the game's been made more historically accurate, wherever possible. More authentic convoy routes, behavior of the Japanese and additional Japanese warships have been added. Now you can run into Japanese convoys that are fast, dangerous and make for juicy targets.

Three different games are provided: training, convoy with heavy cruisers and carriers, and war patrol. The most challenging is war patrol, where you try to sink as much tonnage as you can before you: run out of ammunition, are too damaged to continue, or are sunk.

Silent Service for the ST is scheduled for the end of June at $39.95. Like all Microprose products, it's well conceived, well implemented and fun to play.

One of the more impressive software products of the show was Migraph's **Easy Draw**. Billed as a professional ST drawing program, it's object-oriented, allowing you to create custom business graphics, presentation materials, multi-dimensional illustrations and line drawings.

The program offers many features to make drawing easy—multiple windows, full GEM interface with drop-down menus and mouse action, zooming, clipboard art, predefined patterns, object rotation, and multiple font selection. Available now, it sells for $149.95.

The news at Mindscape was an ST product line being developed independently, **Cinemaware**. The idea here is to have products with movie-oriented themes. All are played in real time and are, for the most part, decision-making games of strategy.

For example, **King of Chicago** finds Al Capone in jail; you're one of the young gangsters fighting to take over the city. Another title, **Sinbad and the Throne of the Falcons**, brings up memories of Tyrone Power and the Arabian Nights. The third title is **Defender of the Crown**, a kind of Robin Hood tale.

The initial ST title, scheduled for release this fall, is **SDI (Strategic Defense Initiative)**. This science fiction adventure puts a young, beautiful Russian cosmonaut and a handsome American scientist in the midst of global war. It's billed as a story and flight simulator in one package. At least twenty-seven screens will accompany the story line, requiring two disks for the entire game.

Each product in the series will have at least 700K (really over a megabyte, due to the company's proprietary data compression technique). All the graphic adventures are mouse driven, with several action sequences—a sky battle, jousting, a sword fight with skeletons—controlled interactively by you.

These arcade sequences require a certain amount of expertise for completion. Moreover, the games are nonlinear in nature; you can find yourself in any part of the story.

The designers of **Cinemaware** are striving for interactive movies. The games combine arcade action, the depth and interest of text adventure and the appeal of graphics and sound (all will feature original music scores). From the sample screens I saw, they all look like hits.

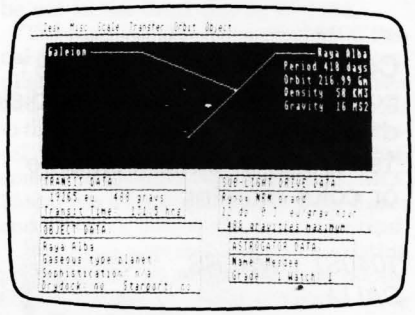
All four will be available by the end of the year.

Omnitrend Software demonstrated **Universe II** in Atari's section. This is a science fiction role-playing game for one, in which you're an undercover agent for the Federated Worlds Special Forces.

While operating a merchant vessel, you're called to perform covert missions within the United Democratic Planets—still earning a living, organizing a crew, upgrading your equipment from the 98 available parts, and exploring planets firsthand, to solve object-oriented puzzles.

As the game progresses, the long-range goal is gradually revealed; it's something about an ancient alien artifact, known only as the hyperspace booster.

Omnitrend's **Universe II** is selling now for $69.95.



***Universe II* from Omnitrend.**

Optimized Systems Software (OSS), long supporters of Atari 8-bit computers (with products like Action!, BASIC/XL and BASIC/XE), also had a booth within the Atari area. The ever-congenial Bill Wilkinson demonstrated their first ST product: **Personal Pascal**.

The programming language runs under GEM and contains drop-down menus for editing, linking and compiling. Of course, the mouse makes creation all the more simple.

OSS decided to create their own GEM AES and VDI calls in this version of Pascal. The program editor uses a text-based design, with cut and paste capability, and help screens similar to those of the Action! editor. Automatic file backup, automatic indenting, English language error messages and debug tracing are included.

Personal Pascal retails for $75.00 and has been shipping for a few months. The language is disk-based and comes with an almost 300-page manual. OSS plans to support the Atari ST, as it has the 8-bits.

One of the most exciting software programs at this year's CES was **The Pawn** from Rainbird, a British publisher. It had been available for almost two months and was demonstrated by Anita Sinclair, one of the authors.

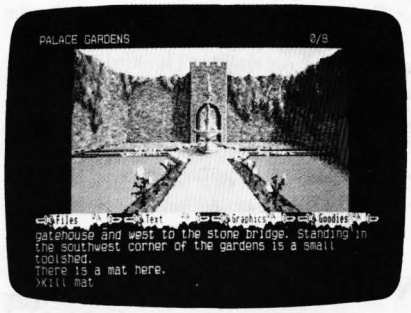
The Pawn is an ST graphic text adventure startling in both its sophistication and implementation. If you've gotten used to parsers in text adventures from Infocom and others, you'll be amazed at the level of this one.

One attractive feature of the game is that its pull-down menus, in the shape of scrolls, are used to issue commands. Another remarkable feature of **The Pawn**: when you pull down on one of these scrolls at the top of the screen, you bring a low-resolution color picture over your medium-resolution text. The pictures, by a noted British artist, are excellent.

The entire adventure is written in machine code, rather than C or Pascal, so it runs a lot faster than others you're used to. **The Pawn**, at $45.00, can be purchased now.

I was privy to a glance at **The Pawn**'s se-

quel, **Guild of Thieves**. Though sworn to secrecy, I *can* tell you the graphics are even better than those of **The Pawn**!



Sophisticated — *The Pawn* from Britain's Rainbird.

Another product shown by Rainbird was **Starglider**. It's an all-action, air-to-air and air-to-ground combat flight simulator that uses fast-moving, 3-D vector graphics. Extensive development went into the smooth vector graphics, to create the experience of low-level flight.

Pilot of the sole surviving ground attack vehicle left to oppose invaders from the planet Novenia, you have defense, attack and maneuver capabilities. But you must plot strategy while flying, refueling in flight and entering rotating missile depots. Your mission: destroy the alien's powerful flagship, *Starglider*. The game will be available in the third quarter, at $44.95.

Shanner displayed a variety of products in their booth. Recently recovered from the mess with VIP, Shanner's ready to move ahead—with software, hardware and accessories—according to James Copland.

At CES was their **full-color, GEM-based word processor**, which allows four documents to be edited simultaneously. Priced at $79.95, it will be available by the time this issue hits the stands.

Shanner also showed the **LogiKhron Clock Card**, acquired from Soft Logik. The manual's been rewritten and the cartridge modified, to allow access to the internal battery. See the review on page 55ST. It's currently retailing for $49.00.

ST-Key is a $20.00 macro key program for the ST. It lets you assign up to twenty macro functions to the ST's ten function keys. This program is said to work in conjunction with any other ST program.

Sound Wave One is a single-track, seven-octave ST MIDI sequencer. On the shelves now, it lists for $50.00.

Sound Wave Eight, an eight-track "professional" MIDI sequencer, will accept and control up to sixteen synthesizers. It's supposed to duplicate the functions of a professional recording studio, at $180.00.

Shanner has recently acquired two products from Blue Moon Software, **Macro Manager** and **Macro Desk**. The first is a **Sidekick**-style program, with a scientific calculator, alarm clock/calendar, event log and card file. In addition, it has project time recording and scheduling functions.

Macro Desk is not as feature-laden; it gives you everything but the project functions. **Macro Manager** retails for $70.00, and **Macro Desk** is $40.00.

Shanner also displayed the complete line of accessories from ITC. The **Shanner Planner** comes in 3½- and 5¼-inch disk versions, each with space for a notepad, disks, pen, calculator, software manual, business cards and ruler. The zippered portfolio comes gift boxed, for $39.95.

On the hardware side, Shanner displayed the **SD-2000**, a $429.00 dual disk drive for the ST. It has two double-sided, double-density drives in one fairly small enclosure, and a beefed-up power supply accompanies the unit.

Sierra On-Line brought their new ST chess game, **Kemplin Chess** (Kempelen is thought to be the father of game-playing machines).

This soon-to-be-released, $34.95 program is said to be one of the most powerful chess games on any microcomputer. Besides being a phenomenal chess game, it takes advantage of the ST's unique features. The board can be rotated or tilted, in order to be seen from another perspective (including 3-D), and colors can be set to your preference.

Sierra On-Line also showed the first in their business product series. Called **ST OneWrite**, its main target is the small businesses—storefronts and single doctor's or lawyer's offices.

Most accounting programs for computers expect the user to do General Motors' accounting on a micro. **ST OneWrite** goes the other way.

It follows the pegboard binder metaphor of the cash disbursement accounting module, but goes a step further—it replaces the traditional manual system with the ST's power and graphics. Once a check's written, the information is kept for future use. Whenever another check's made out to the *same* payee, *all you have to enter is its* amount.

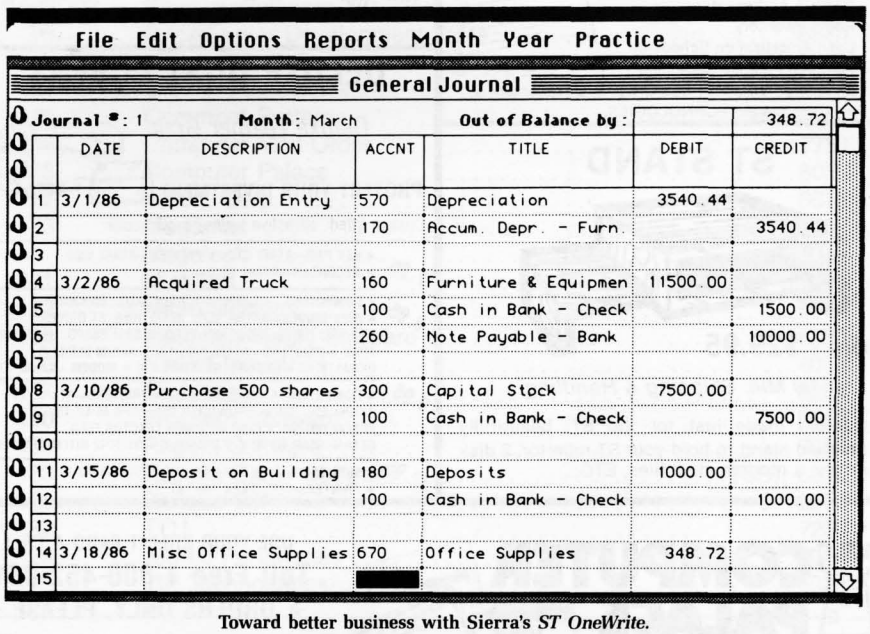
Checks can be printed on a dot-matrix or daisy-wheel printer, with notes on the stub. Your cash account is automatically credited, so you need only specify the account to debit. If you're unsure of your chart of accounts, pull it up in a window at any time. Expenses can be split over several accounts, if need be.

Once the account is specified and RETURN is pressed, the program will cross check numbers entered. Then the bank balance is automatically adjusted and the transaction posted to all necessary accounts. It's also posted separately into a vendor record—to keep track of how much business is done with individual vendors. Finally, all numbers are entered on the balance sheet and income statements.

Basically, the drudgery (in which errors often occur) is eliminated by this system. Especially useful: the income statement is accurate right up to the last check written.

ST OneWrite is a three-module system: cash disbursements, receivables and general ledger. Suggested retail for each module is $130.00. Sierra's currently working on a payroll system, although no firm shipping date has been announced.

This is the first major small-business software I've seen. As this program and others like it become available, the Atari ST can fulfill its potential—as the powerful computer for "most of us."



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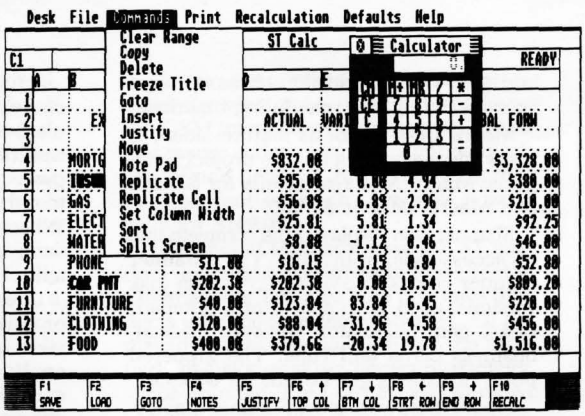

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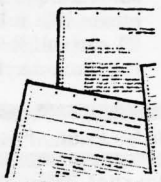

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// CES Scene *continued*

Sublogic had hoped the **ST Flight Simulator** would be out in April. At the June CES, though, I was curtly told it would be available *real soon*. Those of you holding your breath for it may now exhale.

Supra Corporation (formerly MPP, Microbits Peripheral Products) showed a **3½-inch, 20-megabyte hard disk** for the ST. Actually, they weren't showing it, but had provided other companies with demo units for CES. What better way to advertise?

Anyway, the disk will retail for $799.00, by the end of June. A 10-megabyte hard disk is sold directly from the factory at $549.00 (reduced from its earlier price). The 20-megabyte drive will be available from dealers, and a 60-megabyte drive is in the prototype stage. All Supra ST hard disks connect to the DMA port and come with a boot program.

Unison World, makers of **PrintMaster**, exhibited **The Newsletter Program** on an IBM PC. It should be available for the ST by the end of the year.

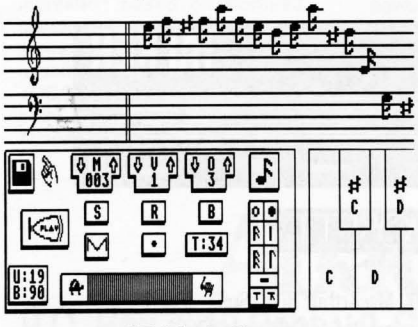
It will let you mix text and graphics on the same page, in a newsletter format. Fonts can be changed dynamically anywhere on the page, and multiple column printout is supported.

The Newsletter Program works with the QSL laser printer, as well as dot-matrix printers. Price will be under $100.00 (or, more likely, closer to $50.00).

XLent Software had several ST products out. **Rubber Stamp ST** is a combination of several graphic utilities, to let you create custom printouts for labels, index cards, logos and letterheads.

You can use graphics from **NEO-Chrome** and **DEGAS**, or create your own within the program. Complete control adds text, shrinks, rotates, copies sections, inverts and otherwise manipulates images. **Rubber Stamp ST** can also use custom character sets designed with the **DEGAS** font editor. The program, available now, sells for $39.95.

Another new XLent program is **Megafont ST**. This, too, is a port of an existing 8-bit program. With it, graphic files from **DEGAS**, **NEO-Chrome**, **Rubber Stamp** and others can be printed, in a variety of sizes. In addition, **1stWord**, ASCII and program files can be printed in varied character styles, including those used by the **DEGAS** font editor. The program supports a number of printers and will be going for $39.95 by the time you read this.



ST Music Box.

ST Music Box is a MIDI package to let you compose for a MIDI keyboard or the ST console speaker. Compositions can be entered via mouse or keyboard, and a range of editing features (insert, delete, key signature and many more) are provided. The **ST Music Box** should be selling for $49.95 at this issue's release.

The End.

The amount of software now available for the Atari ST is simply amazing, all the more incredible when you realize the ST appeared thirteen short months ago now. There was still more from others like Hippopotamus, but we just couldn't include it all.

To all skeptics out there (publishers, dealers and users): the ST is real; ST software is real; and I personally welcome back a healthy computer industry.

As Dorothy said, clicking her heels, three times, "There's no place like home, there's no place like home, there's no place like home" For an ST user, the 1986 Summer CES was a hell of a show.

ST INDEX TO ADVERTISERS

READER SERVICE #	ADVERTISER	PAGE #
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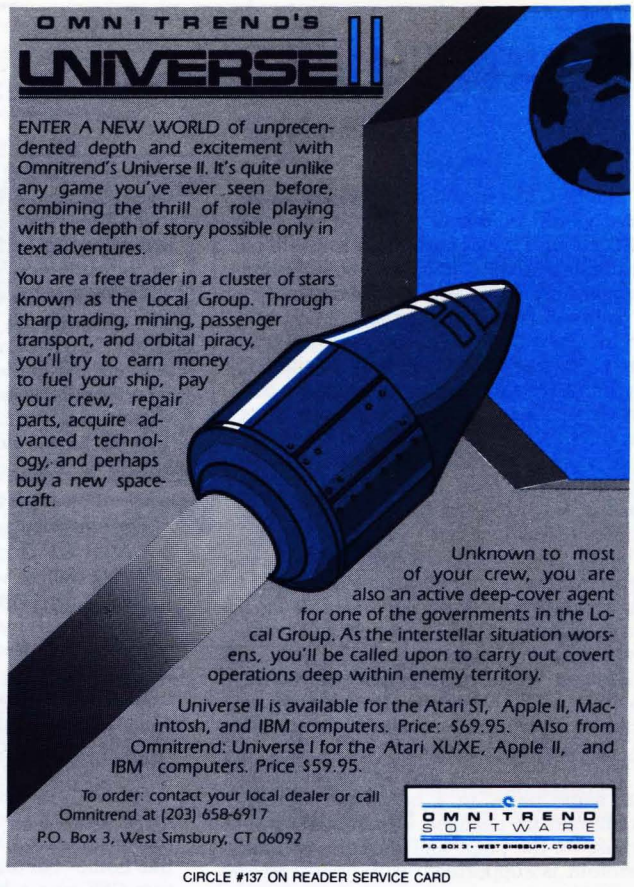

Unknown to most of your crew, you are also an active deep-cover agent for one of the governments in the Local Group. As the interstellar situation worsens, you'll be called upon to carry out covert operations deep within enemy territory.

Universe II is available for the Atari ST, Apple II, Macintosh, and IBM computers. Price: $69.95. Also from Omnitrend: Universe I for the Atari XL/XE, Apple II, and IBM computers. Price $59.95.

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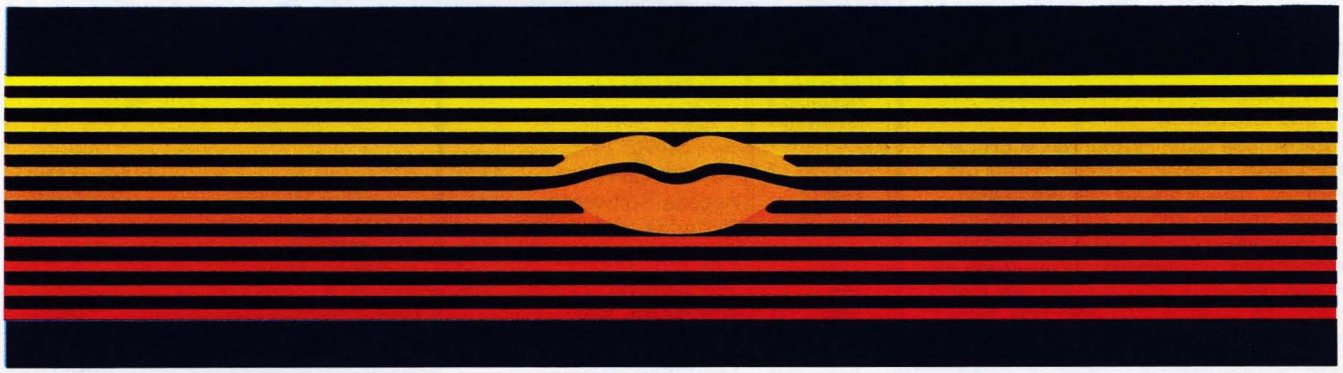

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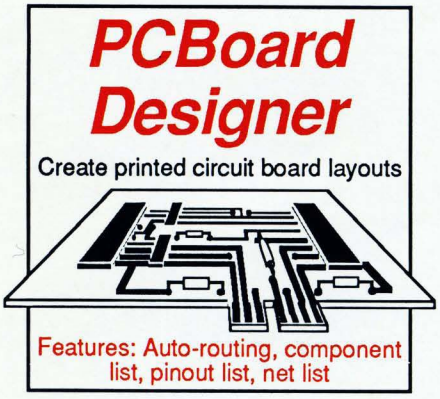

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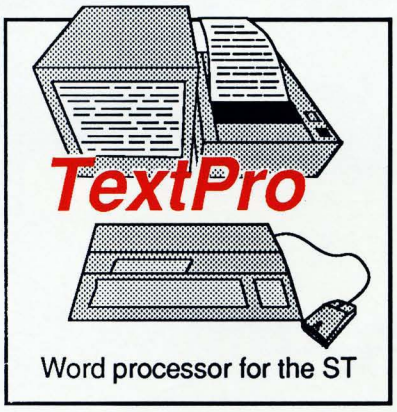

ST TextPro

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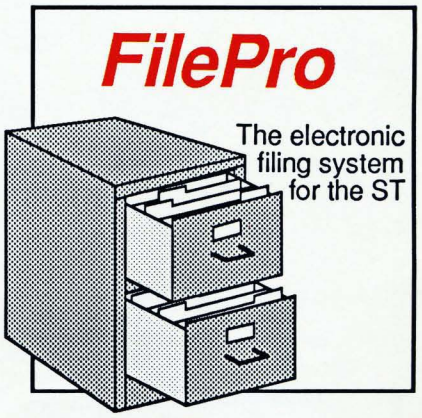
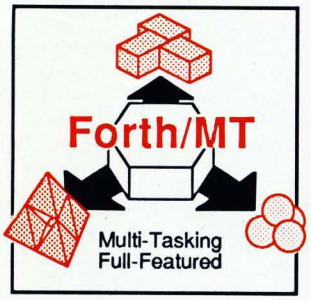


ST FilePro

A simple-to-use and versatile database manager. Features help screens; lightning-fast operation; tailorable display using multiple fonts; user-definable edit masks; capacity up to 64,000 records. Supports multiple files. RAM-disk support for 1040ST. Complete search, sort and file subsetting. Interfaces to TextPro. Easy printer control. **$49.95**



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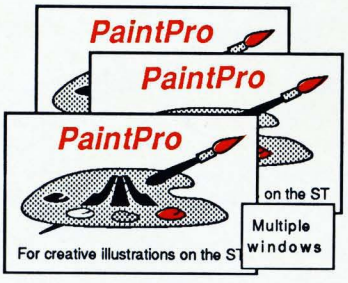
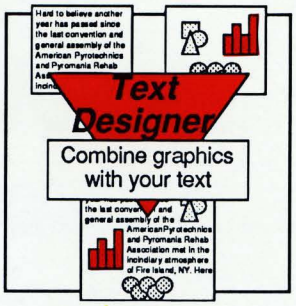


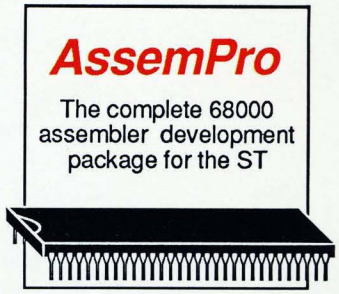
ST PaintPro

A GEM™ among ST drawing programs. Very friendly, but very powerful. A *must* for everyone's artistic or graphics needs. Use up to **three** windows. Free-form sketching; lines, circles, ellipses, boxes, text, fill, copy, move, zoom, spray, paint, erase, undo, help. **$49.95**



ST Text Designer

An ideal package for page layout on the ST. Accepts prepared text files from TextPro or other ASCII wordprocessors. Performs block operations— copy, move, columns. Merges bit-mapped graphics. Tools to add borders & separator lines, more. Available September '86. **$49.95**



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Take up the gauntlet! We're challenging ST programmers—give us your best. Original, exciting software for the ST is what we want, and your work could win $5,000 for 1st prize. Winners will also get our normal royalty payment when their programs are published in **ST-Log**, the **ANALOG Computing** ST resource. If your program doesn't win, it could still earn you money. Normal publication fees will be paid for inclusion in **ST-Log**. Read the rules below and *meet our challenge!*

RULES AND REGULATIONS FOR THE ST-LOG
ST PROGRAMMING CONTEST

1. All entries must be original creations and cannot be submitted, or be under consideration, anywhere else. This includes any other contests or competitions currently underway.

2. Feel free to submit as many entries as you like, as often as you like. The deadline for submissions to the contest is December 31, 1986. All entries must be in by that date to qualify for the contest judging (however, programs received after this date will be considered for regular **ST-Log** publication).

There is no limit to what types of programs we are looking for. Business or educational, graphics oriented or musically inclined, we want to see them all.

3. The entries can be in any programming language of your choice, on 3½-inch single- or double-sided disk, with both run-time and source code. It's quality that counts, not format. If your program is in a compiled language, the compiled object or run-time code must be a free-standing program—one which can be run by someone without a copy of that language. This rule does not apply to programs written in ST BASIC and Logo, which come with the ST. Also, we need to be able to distribute the program legally, without licensing fees or obligation to the language's maker. Contact the manufacturer to find out if the language you're using has distribution requirements.

4. Please make sure that all entries have accompanying documentation, and that all written materials pertaining to the entries (including articles) are submitted as standard double-spaced typewritten manuscript. Please try to make the text as informative as possible, as it pertains to the usage of the program. This accompanying piece could be in the vein of a "making of" the entry, and could include some of your personal programming hints, etc.

5. Any submissions that do not qualify for prizes will be returned only if you supply us with a stamped, self-addressed envelope or mailer. Please do not send originals of your program—make sure you keep a copy for your own use.

6. Contest judging will be done by the staff of **ST-Log**. The decision of the judges in all contest categories will be final. Contest winners will be announced in **ST-Log** during the first quarter of 1987.

7. This contest is void where prohibited by law. Full-time employees of ANALOG 400/800 Magazine Corp. are ineligible for this contest.

8. Send your entries to: **ST-Log**, c/o ANALOG 400/800 Magazine Corp., P.O. Box 23, Worcester, MA 01603.

Good luck!

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