# ST-LOG

THE ATARI ST MONTHLY MAGAZINE

U.S.A. $3.50
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FEBRUARY 1987

ISSUE 11

## Appointment calendar
## Atari at COMDEX
## MIDI on the ST
## New product reviews
## An exclusive look: Publishing Partner

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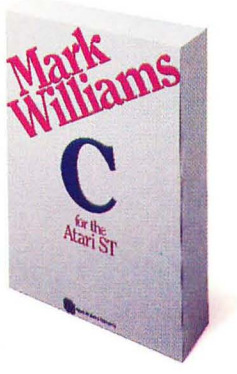


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ST-LOG
THE ATARI ST MONTHLY MAGAZINE

ISSUE 11
FEBRUARY 1987

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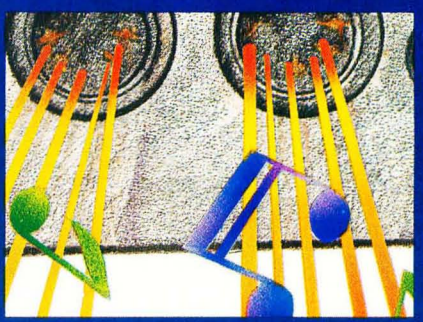

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# Editorial

Welcome to the second monthly issue of **ST-Log**. That is. . .well, it's actually our eleventh **ST-Log**, but the second *separately published* issue. It's confusing, I know. The staff is fairly flustered, too. We were sure that going separate with **ST-Log** would be both fun and easy. Still, as they say, one out of two ain't bad.

The response from our first independent issue has been excellent, and if anything, we'll be happily surprising our readers more with each issue. Many regular **ANALOG Computing** readers have taken us up on our special combination subscription offer and will be with us for **ST-Log** as well as for **ANALOG Computing**. I'd like to thank those of you who have given us your support with both publications. Without your loyalty, there wouldn't be an **ST-Log**. I'd also like to welcome our new readers.

Looking at the COMDEX article in this month's pages, I'm sure you'll agree that the ST is now—as it should be—considered a serious computer, which will be with us for a long time. Atari's ST has a strong following in Europe, and the company is now aiming at the U.S. market. According to an Atari Corp. source, the ST will be a major force in the U.S. in the coming year.

For followers of Atari, 1987 has already gotten off to an exciting start. At the Winter CES, Atari announced the Mega ST, a more compact component system in 1-, 2- or 4-megabyte versions. It has a smaller footprint (meaning that it takes up less desk space) and a separate keyboard—which, by the way, gives a better tactile response than the original. The Mega ST will also contain the new blitter chip, a real-time clock and a battery backup. The smaller footprint was accomplished by placing the CPU, power supply and floppy drive in the monitor pedestal. Prices for the Mega STs reportedly will start at around $995.

And would you believe an ST laser printer for under $1,500? You should—Atari will have it available in the spring, about the same time the Mega ST hits the shelves. So, from what I can figure, you'll be able to get a nice desktop publishing system for around $3,000. Not too shabby.

Last, for those of you who can't get your associates to think of buying anything but an IBM, you can now introduce them to the Atari PC. Yes, the Atari PC, an Intel 8088-based PC clone that will include the computer, monitor and 5¼-inch floppy for $699. Not to bore loyal ST Atarians in our audience, I should also mention that the Atari PC will come with 512K expandable memory and will include the GEM desktop, plus (and this is what's supposed to make it different from the other clones) a custom graphics chip and EGA graphics. We'll elaborate on this more next month. Just remember where you heard it first.

Michael J. Des Chenes
*Publisher*
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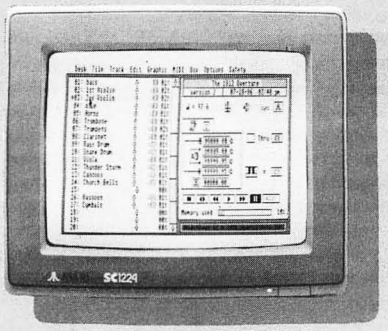

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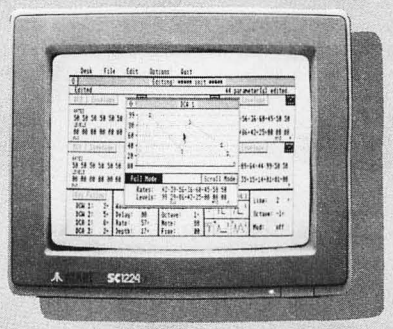
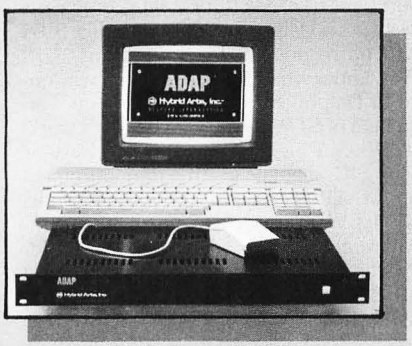


CZ-Android

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# Reader comment

### Softstrip — any takers?

I have been examining some of Cauzin's sales literature for their Softstrip System, a form of data backup/exchange that is to be stored on paper instead of on magnetic media.

According to their brochure, the only computer systems being supported at present are the Apple IIc, Macintosh and IBM PC or any 100-percent IBM-compatible system. I would like to see Atari included in this list, but to my knowledge there are not any Atari publications supporting this new form of machine readable data. This is a "Catch 22" situation, as Cauzin Systems, Inc. will not support the Atari community until the Atari community has indicated support for Cauzin Systems, Inc., and vice versa.

I believe a poll of your readers would show interest in the inclusion of this form of machine readable data in your publication. Softstrip data would offer an alternative to a disk subscription for those who cannot afford the latter. The addition of the printed machine readable data should increase your subscription cost by a nominal amount, an amount that I would be willing to pay.

A subscriber who owns a Softstrip reader could reap an additional benefit of being able to back up their own programs and data on a medium not susceptible to accidental erasure. According to the Softstrip sales brochure, the data strip will withstand dirt, stains, scratches, coffee spills and most dyes, such as those found in ballpoint pens, markers and lipstick, and, of course, magnetic fields. A user could store up to 8K of data per printed page using a dot matrix printer, up to 25K using a laser printer—of any data that can be stored on a disk. The Softstrip reader can be connected to a computer through a modem or a serial port (read: joystick ports with the proper software).

The Softstrip reader is listed at $199.95, more money than I can justify to back up my programs (with software I would have to write), but cheap compared to the cost of one or more disk subscriptions.

As I mentioned earlier, this situation is a "Catch 22". The only way I can see of trying to solve it is to demonstrate to Cauzin Systems that the Atari community is interested in using their product.

I am not associated with Cauzin Systems, Inc. in any manner; I am not being compensated for writing to you, nor do I, at present, own any of their products.

Sincerely,
Logan C. Kinnison
Columbus, NE

*How about it, readers? Let us know if you're interested in the Softstrip System. We'll pass the word along. —Ed.*

---

### Thanks a million!

Recently, I went on-line to Delphi, to try to find a solution for a problem I was having with my Gemini 10X printer and **1st Word**. I'd been on-line to Atari Base, CompuServe and many smaller BBSs to find the solution; many times, I thought I had, only to fail again. I was even told by one "tech hotline" to call Star Micronics for a solution—and call him back if I found an answer.

My problem was a printer driver for the infamous 10X printer, which would work with **1st Word** properly, without in-depth knowledge of writing or modifying printer drivers. I had downloaded three drivers from different sources, and *none* worked. Then I got the idea (albeit late) to leave a message on Delphi, as I had on other SIGs (with no response), for a solution.

You know what? The next day, I was on-line to Delphi, to download the new version (1.5) of **ST-Writer**, in hopes of it's working. When I logged onto the Atari Users' Group SIG, there was a title announcement from MATRAT to people having problems with **1st Word** and the Gemini 10X printer drivers. It said to check the ST SIG for a driver he (I think) wrote, that worked well. My heart rate rose in anticipation.

After this, I was notified of an awaiting message in the forum area. I found there a DFSCOTT note about checking with the Atari Base concerning drivers. Then there was a "thread" message from MATRAT to DFSCOTT about the driver that worked well with his 10X printer. I immediately went to the ST program area, downloaded his driver, went off line and gave it a try *. . . it worked as advertised!*

I would like to thank MATRAT and DF SCOTT for their quick reply to a very frustrating situation. Thanks go to you, and to Delphi for a great service to Atari users (both 8-bit and 16-bit).

Doyle Helms
STAR*TWO
Pensacola, FL

---

### More ST BASIC, please.

Yes, I do use my Atari ST for professional purposes—but programming is not one of them. I also use it for entertainment. I am not a professional programmer and I

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Zoomracks lets you zoom back to see the first line of several cards, and several racks next to each other--compressed for display with its Smart Zoom feature.

| 2. C:QNAMES | | 4. C:KEYHELP | 0. C:Disk | |
|---|---|---|---|---|
| Mr. Joel Cairo | BE5-3341 | SHF F5 Zom Pictr fl Tggl | C: DICT | 105472 |
| Mr. Mils Archer | AL3-7845 | – | C: DISTRIBU | 7168 |
| Mr.Rick Blaine | CA3-1871 | Alt N-Next/Prior Menu | C:F1HELP | 29696 |
| Mr. Sam Dooley | Ca-1871 | F10-Next Quickcard | C:GRADES | 2048 |
| Mr. Samul Spade | AL3-7845 | F9-Prior Quickcard | C:IBM REGIS | 14336 |
| Mr. Sid Wise | LE5-1299 | TAB-Next Fieldscroll | C:INVESTOR | 8192 |

Here you get an overview of three racks. Pressing one key zooms you in on one rack; pressing another, zooms you in on one card. To go someplace on the screen or execute a command, just click the mouse.

| | |
|---|---|
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| Mr. Mils Archer | AL3-7845 |
| Mr.Rick Blaine | CA3-1871 |
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| Sam Dooley is the well known piano player at Rick's Place and is best known for his rendition of "As Time Goes By." | |

## *What the reviewers said about Zoomracks (version I)*

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– **Newsweek**

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–*Jerry Pournelle,* **Byte**

"Truly innovative, ... flexible... extremely easy to use..."
– **InfoWorld**

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– *Art Leyenberger,* **Compute!**

"99% of the database needs in home and small business computers do not require the power and prorgramming features of DBASE III. In fact, by the time you learn DBASE III, you could have all your database needs filled by Zoomracks.

For those of us with two left thumbs...It is very hard to lose data with this well thought out system... less than $100 and worth 10 times that amount"
– *Don Terp,* **ST Business**

You can be an anarchist...and this program will bring order to your chaos...It is useful enough to become a standard equivalent to Lotus 1-2-3 in the industry.
– *Jim Bumpus,* **Atari ACE**

"*****...the more I use Zoomracks, the more I like it, and the more I can see to do with it.... will be with us for a long time, finding a solid niche in both home and office."
– *Richard Keller,* **ST Applications**

Zoomracks has established a productivity standard in design, concept, originality, and functionality."
– *Alan Glick,* **JBUG** (Boston Computer Society)

Zoomracks is totally in a class of its own... I found it so useful I considered buying another ST for my office.
– *John Leon,* **HASTE Electronik Letter**

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may never be, but I do enjoy typing in programs and seeing what these typed words will make the computer do. When I see an ST BASIC program listed, no matter what its purpose, I type it in.

I am not in poverty, nor am I floating in money. Frankly, though, the price and the complexity of a Megamax C or a similar programming language leave me a little in awe. Perhaps C is the only way to go if you are a professional programmer. Personally, I think the computer is for everybody—and not everybody is a programmer. Don't get me wrong; I do hope someday to be able to write my own programs, but I just can't see spending the time and money on it right now.

ST BASIC may not be the best or most efficient language, but it isn't all *that* bad. It has several features not found in Atari BASIC, such as auto numbering, renumbering and a debugging feature, that make it fun to use.

Sincerely,
R.R. Weldin
Newark, DE

### Getting real.

I have been an Atari 8-bit owner for two years, and I think that Atari computers (in general) are great. As a matter of fact, I just bought an Atari 520ST, in spite of the experience I'm going to tell you about.

I'm a student at the University of Florida; my main use of computers is for word processing. Recently, there was a computer expo at the University; all the biggies (Apple, IBM, even Commodore) were on the attendance list. Atari's name was not on the list. Puzzled by this, I decided to go undercover.

Posing as an over-enthusiastic Commodore owner, I went to the expo. Apple and IBM had particularly large booths. Commodore was represented by a local shop (a Commodore dealer). At their booth, I saw the Amiga, up and running in all its splendor. A crowd was gathered around it, wowed by its graphics. I asked one of the guys at the booth what he thought about the Atari ST. You know what he said? He said, "Well, maybe you should go to Toys 'R' Us. I mean, that's where they sell the toys."

I don't know, but I think that maybe Atari made a mistake by marketing the ST line through these stores. Not only does it hurt Atari's reputation as a company; it also hurts the reputation of the machines themselves. (Please try to understand; I only criticize because I'm concerned). What do you think?

Sincerely,
Elfrick Mendez
Gainsville, FL

*We think Atari computers had (wrongly) a game image long before any deal was made with Toys 'R' Us. Atari was* started *with game machines. And the "toy" image certainly isn't cleared away by the line's being sold in toy stores. But the mass distribution and sales achieved through these marketing certainly can't hurt Atari Corp. —or their computers. Nor do we hear complaints from buyers about getting the lower prices.*

*Some people prefer computer specialty stores—everyone knows they offer more in terms of knowledge and service—some of us must opt for lower prices. We think that people who know computers would never make the rash statement you heard. And if Toys 'R' Us sells STs and broadens the user base, that makes Atari Corp., Atari users and Atari magazines stronger.*

*—Ed.*

### Timeworks — an ST backer.

I started my computer adventure with a Timex 1000. Although small, it was fascinating to me. From there I went to a TS 2068, then I bought my first 800XL from Atari. What a computer! We now use two 800XLs, one 130XE and one 520ST. They are absolutely great.

Timeworks produces two products that are very nice: the **Wordwriter ST** and the **Data Manager ST**. They've been very helpful with any technical problems and questions that I've had about their products.

They seem to be backing the ST, and I just wanted to share it with your readers.

Keep up the great work with your magazine.

A loyal subscriber,
Larry Gurry
Tipton, IA

P.S. Keep the type-in programs for my 130XE and 520ST coming!

### A comment on piracy — the other side of the coin.

Piracy is *wrong*, both to the author/publisher and the *end user*. We will not make any headway with this problem until both sides realize the whole problem. I cannot speak on piracy of game programs, since I am primarily interested in productivity software—but, in my area, I have seen excellent programs pirated by both end users *and* publishers.

An example of this publisher "pirating" is my own case. When I purchased my first computer, I purchased a word processor at the same time. The computer store said they would help me with this program, and that I had purchased the latest and best word processor for the Atari.

I received no help from the store; technical support was poor—in fact, I registered my purchase with the software company and have never *heard* from them. Not only did I never hear from them, but later I found that I had purchased version 1.0 at $149.95 when version 3.0 was available at less than $100.00.

Why would a reputable software company allow this to happen to a customer? This, too, is "piracy," and must be stopped before only custom software will be available. The surest way to stop piracy at the end-user level is for publishers to become involved with the software's use and with end users, offering technical assistance and the latest revision at reasonable cost.

Yours,
F. Michael Trunzo
Stuart, FL

### Why should there be any rivalry?

I would like to express my confusion when I read in a past editorial column (the first column I read in every issue of **ANALOG Computing**) about a rivalry between 8-bitters and 16-bitters. For me, the situation is very clear: Atari 8-bit computers are the best exponents of a technology which represented the computer standard for the first half of this decade. Now, the ST line marks the next step in the constant evolution of this field, and it will last for three or four years more, possibly to the end of the eighties.

STs are not enemies of the 8-bit models. Simply, they are their successors. I own an 800, a 130XE and a color 520ST (which will be replaced with a monochrome 1040 when you read these lines). And I don't feel I must make any decision between the models. Simply, the pleasure comes now in a doubled amount.

About **ANALOG Computing** and **ST-Log**: I think a separate, ST-only magazine is a must, due to the ST market's growing so fast. But this doesn't mean **ANALOG Computing** must be dedicated only to 8-bit Ataris. This will simply make the fictitious rivalry between 8-bit and 16-bit Ataris, created by disoriented Atari users, come to pass. I think every one of your readers must realize your magazines are sought by true Atari fans (as they give us lots of quality every month), and that loyal users will never lay aside any Atari computer. An independent **ST-Log** will mean only that ST computers are important enough to be covered with detail, not that they are more important than other Ataris.

Also, I would like to thank you for your editorial column, as well as for sections like **The End User**, **ST User** and **Panak Strikes!** Mr. Leyenberger supports the editorial column very well, in creating a more direct communication between you and your readers, especially because he writes from user to user. And Mr. Panak helps us to protect our software investment. I think he's not destructive. . .well, maybe he is a little inclement sometimes. But, since Atari computers are not game machines (like "other" computers whose names we know well), it's no use to spend $30.00, $40.00, or more on a game which will be soon put aside.

From Mr. Panak's column, I move easily to another focus: *piracy*. Many words have been written about the rights of programmers and users. I think we must look at it from a more general viewpoint.

Buying a computer is like buying a picture album. Computers have an *unlimited* number of pieces of software to collect, in order to have the "album" as up to date as possible. And many times, the "pictures" themselves must be changed. I think you get the idea: if you want to have the complete collection of "pictures," you must sell your soul to Satan to get enough money. A forced-selection method is needed.

Maybe piracy is one undesirable form of this method. Months ago, I received an illegal copy of a game Mr. Panak reviewed. The program (if we can call that one a program) is condensed in three steps: load it, test it and *immediately* erase it! Mr. Panak said that "game" would serve better as a blank disk; his criticism fell short.

Turkey programs like that are a strong justification for pirates (I can't believe that hackers spend their time unprotecting such programs). But, as we have noticed, piracy also attacks good programs.

This is harder to analyze. Here, we find pirates creating trouble for software companies which *must* survive in the market. Fortunately, there are signs of intelligent reaction from companies like Batteries Included (thanks for its dedication to 8-bit *and* 16-bit Ataris!) and Infocom.

BI showed an original protection scheme with **PaperClip**, and Infocom gives us such delightful packaging that pirate copies bite the dust. Some friends of mine own the entire Infocom collection. I have an original **Hitchhiker's Guide to the Galaxy**, and I think it's worth more than the rest of Infocom would be, pirated. I also don't regret purchasing **SynCalc**, **The Graphics Magician**, **Top-DOS**, **Flight Simulator II**, **Diskey**. . .when it comes to a valuable piece of software, it's better to be supported by the company.

Now, at this point, the final answer lies with both the purchaser and the software company. The purchaser must realize he will find some quirks with his software and that many other users will find them, too. So, he must fill out the registration card; he must do something to be more than an illegal user. But, more important, the software company must be very serious and meticulous with user support. It must provide reasonable back-up and update policies. It must make the user feel he has not thrown away his money, above the quality of the software itself.

Russ Wetmore pointed out in **On-Line** the many expenses that must be met by developers in distributing a product. When these costs are raised by piracy, the company is in trouble. But I think that, *rather than trying to eliminate pirates, software companies must try first to change the cost* structures. I don't know about marketing, however, I think the classical process of product manufacture and distribution has to change radically to help stop piracy. Advertising is too expensive. I think the best way to advertise is a moderate campaign in magazines; but magazines must help, by fully reviewing new programs and encouraging readers to send their opinions, then publishing them.

Also, mail distribution would be best. For the program to be sold in computer stores, the stores must add in the shipping costs. And there could be some other considerations.

Yes, it sounds pretty Utopian. But it's more expensive (and impractical) to follow every teenager who wants to play a new game for a while.

The piracy problem can't be viewed as a computer-only subject. It implies that manufacturers must consider the user's investment. It implies users considering development costs. It implies human beings acting with respect toward others. To solve it possibly implies solving many of the other problems of modern life.

Well, I don't want to bore you any more. The only thing I wanted to say is that piracy is a very complex problem because it's a *human* problem. But, since it is a human problem, we users have the solution in our hands. Let's not let this one slip through our fingers.

Sincerely,
Ivan A. Antezana Q.
Lima, Peru

---

### Take *disk!*

I was extremely upset by your August issue (**ANALOG Computing**, issue 45). This time you went too far. As an ST owner, I take extreme exception to your "bonus" feature included on the disk version only. It took everything I had to get my ST. I couldn't buy a pair of socks with my smoldering VISA card right now. But you want me to pay almost $100.00 for a half year's magazine with an ST disk? *Forget it!*

I've been with you, and Atari, from the beginning. I have almost every issue you've put out. The issues I missed were because I relied on my subscription to supply them. Now I rely on the neighborhood newsstand. Don't get me wrong. I don't dislike your magazine. I just don't want to be burned again.

I've had my ST for about six months now, and the lack of programs and support has really frustrated me. Now you withhold some really good code—and hold it out like a carrot on a stick. You really have some nerve. I hope you can remember another publication called *Softside*. They had a pretty good magazine for a while. Then they put out a disk version called *Softside DV*. They also had the nerve to tease their regular customers—with good programs


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Chagrined,
Tim Caldwell
Baltimore, MD

*Now that we've separated the two magazines, you'll notice that the* **ST-Log***-with-disk price has been lowered to $69.00 for a half-year subscription. It was extremely unprofitable for us to try to fit all we could in one magazine, for one cover price. Now, we can give our readers more—machine-specific material—and charge a bit less for the disks.*

*Still, we will occasionally have material for which the listings are too long to print (as was the case with the disk bonus programs)—but which we want to make available to you. These will be published with listings on disk (like* ***Money*** *and* ***Database Create*** *in this issue) and available on the Delphi Atari Users' Group. We're not holding out on our readers; we're trying to give you as much as is possible—while making enough profit to stay in business. —Ed.*

**ST independence.**

In the next two or three weeks, I will be trading my IBM-compatible Tandy 1000 in for an Atari 1040ST. I have therefore begun to look around for Atari 1040ST magazines and have been buying what I could get my hands on. Unfortunately, there isn't that much out there, and I am considering my first subscription.

Sadly, things aren't quite that easy. I've been impressed with the professional reviews offered by **ANALOG Computing**, but the magazine suffers from a severe case of schizophrenia, as you must surely know—hence my feedback letter to you.

Your magazine has been covering Atari's 8-bit market so far. Now that you've decided to cover the new 520 and 1040 computers also, you have placed yourself between the frying pan and the fire. I am currently looking at issue 47 of **ANALOG Computing**. The editorial column begins like this: "We've heard it all the past few months—how **ANALOG Computing** loves the ST so much we're doing our best to kill the 8-bit line. . .What I'm leading up to is this month's theme. Here's a hint. It's not the ST!"

Well, of course I am disappointed! I want ST coverage, just as your old 8-bit customers don't want to see their magazine usurped by "some new fancy-pants upstart." This raises the question of what audience you're writing for. Your readers are confused, I believe, because you are confused. I practically read only **ST-Log**, and am thereby buying a 45-page magazine for $3.50. Meanwhile, the 8-bit readers don't get a full magazine, either. I'm sure they don't read **ST-Log**, except for the few who consider upgrading. So, what's to be done? *Make up your mind!*

Pick the market you want to cover. Quit short-changing both of your reader groups. If you want to cover both markets, do it right: publish another magazine. As other ST-specific magazines appear (*STart*, the COMPUTE! Atari ST magazine), the market will begin to drift their way, leaving your old 8-bit readers quite incensed with you. Meanwhile, you'll continue to straddle the fence. When the position becomes too uncomfortable, you will have to adjust. Ignoring the problem doesn't make it go away (unless the 520 and 1040 computers go away). Until then, I will save my subscription budget for a dedicated magazine. I hope it will be yours.

Sincerely,
Christoph L. Herod
Colorado Springs, CO

*Having climbed down from the fence, we hope so too! —Ed.*


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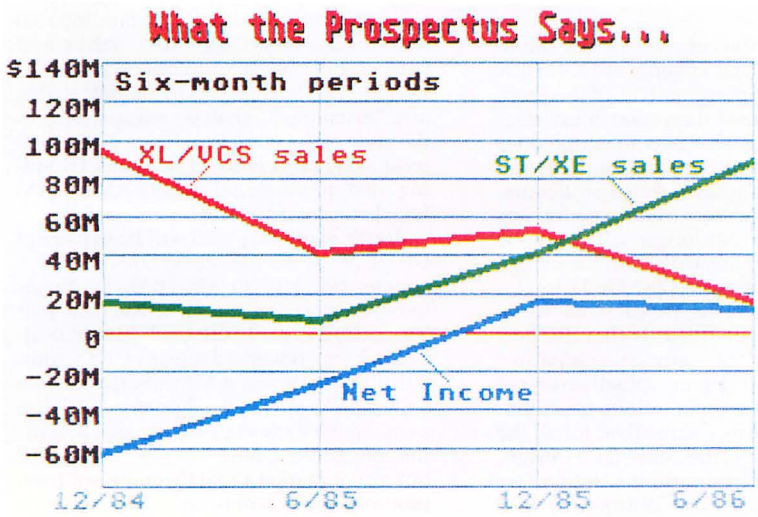


## Developments in the Atari ST world.

by D.F. Scott

*With this edition, **ST-Log's Status report** becomes a feature on news of the Atari ST line of computers only. Our continuing coverage of 8-bit-related developments will be found in the pages of **ANALOG Computing** from time to time.*

*Our sources this month include: Michael Katz, Atari Executive Marketing Vice President; Gershon Blumstein, Director of Software Products; and Neil Harris, Marketing Communications Director.*

### Big Grey in the Black, Rakes in Green; Big Blue Sees Red.

On Friday, November 7, 1986, four-and-a-half million shares of Atari—16% of the corporation—were offered publicly on the American Stock Exchange, for $11.50 per share. In the first few days of trading, the price per share jumped to over $14.00, and the trading volume made the Exchange's "top five" list for several days consecutively, just as a healthy new stock offering should.

Under the law, a public corporation must report its financial dealings to the public. So, for the first time since Tramiel Technologies "assumed" Atari on May 17, 1984, we have a graphic picture (as seen above) of Atari's recovery, as compiled by none other than the PaineWebber brokerage firm—with the "star" of the show undoubtedly describable by the first two letters of that word.

The prospectus organizes information in such a way that it is difficult, though not impossible, to determine relative sales of the ST, XE, XL and video games. Instead, it distinguishes between "purchased products" from Warner Communications and "new and redesigned products."

During the first seven-and-a-half months under the Tramiels, the XLs sold demonstrably well. Of course, as the XL supply dwindled down, so did sales; but those impressive 8-bit sales figures never translated over to the XE. In fact, the 8-bit sales seemed to decline with the *announcement* of the ST—perhaps many potential buyers put themselves on hold.

PaineWebber's figures also show that video game sales have constituted a surprisingly small minority of overall sales. In the purchased products division (which includes the older 2600 system) during the period in which the last XLs were sold, sales fell in two years to one-fifth of what they were at the end of 1984.

There's surprising news concerning the ST, as well. Without having given out final figures, Atari had reported before going public that it had a successful Christmas 1985 selling season. Yet new product sales in the first half of 1986 were *more than double* those in the latter half of 1985. Even after having paid all but $36.1 million of the $240 million owed Warner Communications, Atari Corp. was able to report a $12.4 million net corporate income for the first half of 1986. That's an increase in volume of 38 cents per share. The price per share on Atari's 16% of public stock has jumped as much as $1.88 in *one day*.

Corporation executives are pretending that the initial successes from going public don't have them grinning, not even privately. Having returned from the fall COMDEX in Las Vegas, three Atari sources each said they felt going public has done nothing, good or bad, to affect impressions of the corporation evinced by either buyers or dealers.

Marketing VP Michael Katz tells us the real image change is internal, in the redistribution of ranks and titles (Neil Harris calls this "musical jobs"), and the opening up of new divisions and positions (any of you laid-off Amiga developers still out there?) Projects Katz, "I think we'll continue to add people in important functional areas where we've had a shortage of people; and from an organizational and planning standpoint, I think we'll get a lot more professional, a lot more sophisticated, a lot better organized."

"It's positive," Katz continues, "but it isn't necessarily because we're going public; it's because we're successful in getting larger. We want to have the right kind of organization; we are going more to a *direct sales force* than we have in the past. Basically, we're looking for very experienced, good people in all the categories that we're going into."

Atari, for the first time, is hiring salesmen to go out "in the field" and sell its machines to prospective dealers—a tactic which is standard procedure for most other micro manufacturers. The theme behind their sales pitch—and perhaps Atari's new slogan—was premiered at the fall COMDEX: "Atari Means Business."

To reach the business market, veteran Atari executive Sig Hartmann was named as VAR (Value-Added Reseller) Sales Director. We may soon see Atari machines with major service and support plans, sold and advertised by some national retail computer stores. But VARs in the past have said they can't sell the ST, because of its low price and consequently low profit margin.

So it won't be the ST the VARs will be selling.

**68000-series, Type 2.**

We already know about the planned 68020 expansion unit—previously called the TT—which promises the capability for the ST to run the UNIX V operating system and related software. We've heard the name EST floating about, referring to a video expansion card which is to provide much higher resolution and color capacity, enough to make the Amiga's output look like the scoreboard at Wrigley Field in Chicago. We've also heard the names and descriptions of the two confused, one for the other.

Since the publication of Atari's prospectus, and since the fall COMDEX, we've been given a much clearer picture of Atari's plans for the 1987 product line. For instance, in the prospectus' description of Atari's development plans, three major items were listed. One is an ST expansion card containing that new video controller Atari has more-than-hinted about, as well as extra RAM. The second is a "dedicated graphics coprocessor," which is most likely the long-awaited blitter chip. The third has been described this way: "a UNIX-based, multi-user, multi-tasking microcomputer system." That suggests an entirely new machine with a new cabinet, not simply an "enhancement."

So, realizing the cat was already out of the bag, Atari's showpeople at COMDEX selected a few representatives of the press and gave them more than enough information to verify that this new machine does exist. In other words, it was *seen*. Here was evidence that Atari's marketing dilemma, reported in November's **Status report**, was being overcome. No longer will Atari be playing David-and-Goliath with the market—not unless it gets to play Goliath.

Honest speculation, from what we've been told so far by Atari, is that the new machine should be software-compatible with the ST *to a degree*. Whether or not a graphics environment will be provided, it's probably safe to assume that, for all the additions made to the "old" ST's design, there will be one important deletion (are you reading this, Russ Wetmore?), in a word: GEM.

The system's architecture will be modular, in the manner of a workstation—or a PC. With all of this talk about enhancement and expansion, there may be included such new features (for Atari) as hardware expansion slots—provided Atari can find manufacturers for hardware expansions. The main unit will contain internal slots for 3½-inch floppy disk drives and hard disk drives (an absolute necessity for UNIX). The keyboard will be detachable and "resculpted," shall we say, perhaps in the style of the durable old 800. There will most likely be a choice of monitors, including one professional-quality CAD/CAM *knockout* color monitor.

Atari's marketing plan will be to present UNIX V to the business market as a *counter-standard* to MS-DOS, in an attempt to prove the adage, "If you can't join 'em, beat the pants off 'em." MS-DOS itself is being reworked toward UNIX compatibility, utilizing a MicroSoft variation called *XENIX*. UNIX originator AT&T has seen moderate success with its Olivetti-manufactured UNIX PC and 6300-plus, but a real market breakthrough has been prevented by lack of publicity and the high price.

Still, with the "state-of-the-art" stars of the MS-DOS realm becoming the Intel 80386-based machines, the cost of keeping up with the cream of the compatibility clique will run into five figures. IBM, which has been slow to introduce a 386 PC, has actually been preempted, first by Compaq with its Deskpro series, next by the Corvus Professional 386, and others to come. Compaq's success may mean future IBMs will have to be "Compaq compatible."

So Atari's timing couldn't be better; it will be much easier competing with Compaq than with IBM. By choosing UNIX, Atari has avoided the problem it faced with the ST—of introducing a new machine with barely a disk that would run on it. UNIX-based software isn't widely marketed yet, but is certainly available now; and all future UNIX developers automatically become Atari developers.

Atari's Gershon Blumstein, whose Software Division is reportedly developing a "business productivity" package for the ST, realizes what sells a computer can be its capacity to run just *one* piece of software: "We recognize that there are holes in our product line, and also holes in the industry. We recognize that few people have made attempts at really strong applications, like the Lotus 1-2-3s, SuperCalcs and Excels of the world—that there are certain products that are not yet available on the ST. We're heavily investigating this."

With little help from the "Big Three" (MicroSoft, Lotus and Ashton-Tate), Atari has ceased searching for clones of existing packages. Instead, they're looking—in-house and elsewhere—for what Blumstein calls "premier core applications."

"For example," he explains, "**MicroSoft Write** is not an original concept. It's original to be on the ST, but it's not original in

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the industry. There are some people who are of the feeling that they're not as hungry as they used to be, five or six years ago, where they don't want to port their applications over to the ST. So we would find other products that provide similar-type capabilities. That's different from having a 'clone.'"

To summarize the 1987 game plan: Atari wants to market a new 68000-series machine with the UNIX V operating system as a counter-standard, to be sold through VARs via a new, direct sales force, with all the available service and support programs provided by dealers. As Blumstein pointed out, "the UNIX boxes are geared toward corporate America."

### The Blue and the Grey in Las Vegas.

If COMDEX could be considered an indicator of the potential outcome of the Battle of the CPUs, all the arrows would point to Atari. Despite the press hype over the 80386, independent sources all confirm that the crowds were gathered around anything with a 68000 in it; and Atari Corp.'s booth could be described as resembling a storm center.

Surprisingly, one of the centers of attention at Atari's booth was the corporation's formerly despised buzzword: desktop publishing. Several of the major brands of laser printers were running on STs, with Soft Logik's **Publishing Partner** and Mirrorsoft's **Fleet Street Editor** (a British import). The flurry about laser printing led Atari to announce that it is preparing to produce a laser printer for the ST (and the new "type 2" machine), with a projected price of *under $1000.00.*

The mood among Atari executives over the printer is mixed, with some calling it "just another printer." Gershon Blumstein, however, foresees opportunities as a result of its introduction. "What typewriters were for the sixties, word processors for the seventies, and personal computers for the late-seventies and mid-eighties, desktop publishing will be, carrying us right into the mid-nineties."

When Electronic Arts appeared at the Atari booth, announcing a retraction of its agreement with Commodore to produce 68000 material primarily for the Amiga, it showed off its ST translations of **Skyfox** and **Chessmaster 2000**. There, EA found itself awash in a sea of CAD/CAM applications running on huge Hewlett-Packard plotters, laser printers galore, and enough programming applications to bury the Pentagon. Even the Infocom division of Activision put aside its leather 3-D glasses, to demonstrate a prototype of **Cornerstone**, a relational database system once popular for the IBM PC. Corporate America has indeed found the ST.

It seems the usual fare of spreadsheet/database packages has taken a back seat to the "artistic sciences"—like micropublishing, the ever-expanding field of desktop engineering, developmental programming and logical inquiry, graphic arts, and recreation. Atari is capturing those markets; the compatibility world has yet to find the capacity to appeal to them.

Still, the press reports, before and after COMDEX, are obsessed with the 80386—the 68000 is dismissed in sidebars. Is the press blind, or is it focusing on the compatibility world to retain its advertisers? Gershon Blumstein believes neither, admitting, however, that the objectives of the press, in his view, were "clearly different from what the public was interested in."

"If you look at *Computer System News*, November 10, 1986; out of all the booths they discussed, compared to ours, you could almost say those were inactive. They concentrated on the 386. Clearly, at this show, the press and the public had two different objectives. I don't think [the press is] blind; I just say. . .this is, to them, the key issue. This is what turns them on."

When the great computer magazine shakeout took its full toll in late-1984 to early 1985, we lost several "generic" magazines that had represented the enthusiasm of the entire computer industry. Many analysts in high positions subsequently concluded the enthusiasm folded, too. Atari has proven—again!—at COMDEX that the enthusiasm never died; it was merely latent, covered over, whitewashed with a solution of compatibility mixed thoroughly with mediocrity. The wash is wearing off now, and the old spirit is showing itself once again. Just remember, you will, most likely, read about it here first. ///


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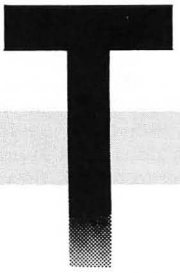

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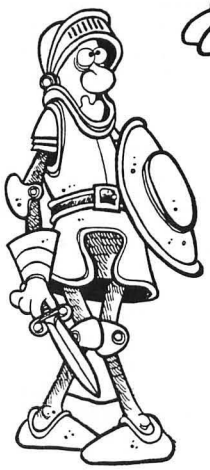
# Ian's Quest



**ST news, information and opinion.**

**by Ian Chadwick**

Fiends! Rapscallions! Scoundrels!

Why am I shouting? Well, you see. . .I had a column already written; a nice, mildly philosophic monologue on the concept of GEM as a working environment, with relevant commentaries on word processing. I wafted sonorous paragraphs on the debate between user interface and productivity across the page, waxed polemic on the dichotomy between casual and professional user. In short, another one of those who-does-he-think-he-is? heavily opinionated columns that brings burning ire to the heart of the reader (sheesh, I just *love* writing stuff like that). Sorry; you'll have to wait for that one.

Just as I was typing my last pithy points, I was interrupted. The mailperson handed me a small box with an Illinois return address and a SubLogic logo on the label. My hands trembled with anticipation. Was this the fabled ST **Flight Simulator** I held in my hands, or some cruel jest to entice me into palpitating disappointment? I laid the parcel reverently on the coffee table and gently removed the sealing tape with a few swift flicks of the paring knife. Snick! Snick! Afire with expectation, I separated the slices of cardboard and peered inside. *It was!* **FS2** had arrived for my ST at last. Madly I danced around the room in consummate glee, waving the package around, spinning like a dervish. (They also sent me their Amiga version. Great. . .What's an Amiga?)

Now don't get the wrong idea. I didn't rush up and cram the disk into my computer, foregoing all work in progress for a weekend of heady delight in the rapture only a true **FS2** addict knows. No siree. I waited at least ten minutes before I did that, savoring every delicious second, teasing myself with nasty thoughts like, "What if it's only the box?" or "What if the disk is bad?" Oh, we can be cruel to ourselves at times.

Get the picture? Probably not. Try to imagine a dishevelled man in his mid-thirties sitting in front of a computer all weekend, leaving only to perform the absolutely necessary bodily functions, (and only then when it was "perform or burst. . ."), ignoring wife, house, cats, dog, stegosaur (still haven't got it back to the Jurassic yet. . . ), in order to play with this program. I gave up showering, shaving, eating—almost—in order to discover what new thrills lay in store for me in the ST version. And I was not disappointed. My wife thinks I'm shy a few bricks at the present time, but she was kind enough to bring me meals at the keyboard, while I stared at my monitor and went "wroooom" and "neeeee-ow!" and "ka-boom!" as my simulated airplane rocketed up into the simulated sky, twirled, dived, twisted and slapped into a simulated building. . .simulated crash, burn, boom! Wheee!

Look, I'm not as crazy as you think. It all began innocently enough on Tuesday. I was sitting in my office on that drizzly afternoon listening to the monotonous staccato of rain on my desktop and reading my name on the glass of my office door: kciwdahc nai. On my desk was a copy of a book curiously titled *40 Great Flight Simulator Adventures*, by Charles Gulick, from COMPUTE! Publications.

Right up until that moment, I had played **FS2** on my Atari XE, but had never given it more than a passing look. Nice simulation, good job, well done, but. . .so what? The graphics were okay, nothing spectacu-

lar. I got tired of flying around Chicago (that is, after I learned to get airborne, and often enough I failed at that). Basically, it seemed pretty limited in its ability to hold my attention. The manuals were daunting, the instructions arcane (do I *have* to read all this stuff in order to fly the thing?) They made Linear B look veritably lucid in comparison. I simply put it among the rest of the disks I'll take with me when I retire to Bali and have all the time in the world to learn about them. Right after I win the big lottery.

I was bored—didn't want to work, just wanted to go home and drink some beer. I opened Gulick's book and began browsing (it was a choice of that or of reading some corporate sales nonsense that was strictly Valium for the brain cells). I suddenly realized he was writing about places in the **FS2** universe I didn't even know existed. Sure, you get all those maps, but I never understood how to get anywhere other than Meigs, never knew what the numbers meant, and all my efforts had lead to serious program—and, therefore, plane—crashes.

Gulick, however, was blithely guiding the reader around the Statue of Liberty, between the World Trade Towers, and landing in Central Park. Now, New York may not be *your* favorite city, but, from up here (Toronto), it seems the center of the world. I wanted to get home and try this out. It carefully, simply laid out how to enter the editor and set the parameters. And there was more—deadstick free-fall glides from 10,000 feet; night flights into LAX; fogged-in islands, dangerous turbulence, tricky dashes beneath the George Washington bridge. It was as if a little door opened in my head, and a voice said, "Look at all this neat stuff!" I feigned terminal illness and left work, in order to go home and try this out.

I probably spent 100 hours at **FS2** back then, playing with 40 GFSA and its sequel, 40 MGFSA (guess what the *M* stands for?) I built scenario disks, hacked the originals trying to discover how to build databases of my own (I didn't. . . sigh); I had a *great* time. And it all sort of paled, along with almost everything else on the XE, when I got my ST.

Now, in spite of my apparent interest in games, I don't really spend a lot of time playing them. I haven't the time, to begin with; I haven't got many (for the ST) and I find it boring after a few minutes of basic alien-frying. How many times can you play cosmic froggie space zapper? **FS2** is a whole other ball game, so to speak. On the ST, it moves from the realm of a game to a rite of passage. One day, I may have to go to the software equivalent of AA, to stand up and tell a group of equally besotted strangers I spend hours at the keyboard with this game—at the expense of wife, friends, employment. . .

So what is all this brouhaha, anyway? What makes this version so spectacular? Glad you asked. First, you've got control over your view window: it can be as large as the screen itself—the instrument panel neatly tucks down in the GEM fashion, somewhere below the bottom of the viewing window. You can have two disparate views, in different windows, at once —say, one straight ahead, the other from the spotter plane. Spotter plane? Yes, you can even watch yourself from an imaginary plane located at a chosen distance, and viewpoint from your own plane. Or from the tower. Tower? Yup, you can see yourself come in as an air traffic controller might. And you can have a map—the old radar screen—up at the same time, too.

In case you get tired of zipping about in the Cessna, you can select the Learjet. Whhoooommmm! Travelling at the edge of Mach 1, at 49,000 feet, beats it all. Well, it beats most things. Setting environment, time of day, clouds, winds, location. . . all easy, through GEM menus and windows. Choose a partial panel or none at all. Turn off crash detect. All simple clicks. Slew mode was never so easy. And the manual is so much easier and friendlier, I couldn't believe it was the same company.

Did I mention the multi-player mode? No? How's this? You can hook up two STs, either directly or through a modem (300, 1200 or 2400 baud), and fly with a friend —even see the other player and buzz them. I haven't tried it, but maybe you can even ram each other. (They don't let you shoot them. I wanted dogfights over Kankakee, but cooler heads prevailed at SubLogic.) No, they didn't allow for any multi-player World War I Ace, either, but the solo game is still intact.

What about the forty additional airports? There are San Francisco and the central California environs, San Rafael, Monterey, Lake Tahoe, Fresno, Mendicino. . . places, for the most part, I've never been to, but have now flown to in my simulated world. San Francisco itself has lots more detail: more buildings, mountains, Alcatraz, the Bay. There are even four prerecorded situations at which to begin, rather than just Meigs. Heaven, I'm in heaven. . .

Okay, there are drawbacks. You have to get flying to set an inflight situation (else you find you're 3,000 feet up, at full throttle, and no forward momentum; the resulting plunge is not amusing), instead of simply setting an airspeed indicator. The VOR dials require laborious, time-consuming mouse clicking (the description of how to set them in the manual is incorrect). You can only save twelve situations in a single file. (And it must be on the disk in drive A and is *always* called "F7," so you can't even save more than one on a disk. What a waste of GEM potential! Who came up with that one?) That seems like a serious restriction for a 1-meg machine. Of course, there's the ol' bugbear: I can't load it onto or from my hard disk, or even use drive B. No one at subLogic seems to think we may have more than one disk drive in use in our lifetimes.

Still, these are really small complaints, in comparison to the very large pleasure I get from this program. My only real (and currently unquenchable) unhappiness lies in the lack of a local database to discover. I doubt Toronto is high on the list of locales for them to turn into a scenery disk. Flying LA is okay, but I'd like to fly around near home once in a while.

I should add that I wrote Bruce Artwick a polite letter, almost begging him to release the information concerning the database file structure and the compilers for same (or at least sell them), so those of us on the outside could create our own scenery disks. I'm willing to spend some spare hours doing it; I'm sure many others would be, too. He hasn't replied yet. Who knows? Maybe he'll agree. Maybe if everyone who felt the same way wrote him and asked, it would work. Are you listening to me? Is Mr. Artwick?

I love this program. It delights me, entertains, relaxes and challenges me, all at once. It's my own little fantasy world to explore. I fly free; I shed the troubles, the traffic, the trauma of everyday cares when I load **Flight Simulator**. Flying is a lot like dreaming, and in your dreams, they say, you are truly free.

Oh, why was I shouting? Because now I'm behind on deadlines, I'm late with articles, my personal writing is suffering. . . all because they catered to my addiction. Fiends, rapscallions. . . and I do love 'em for it! //

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*Ian Chadwick writes, edits, plays blues guitar, casts the I Ching, walks the dog, feeds the cats, washes the dishes, makes homemade beer, plays wargames, and enjoys romantic dinners with his wife, when he's not playing* ***Flight Simulator****. According to his wife, he is currently involved only in the latter activity.*

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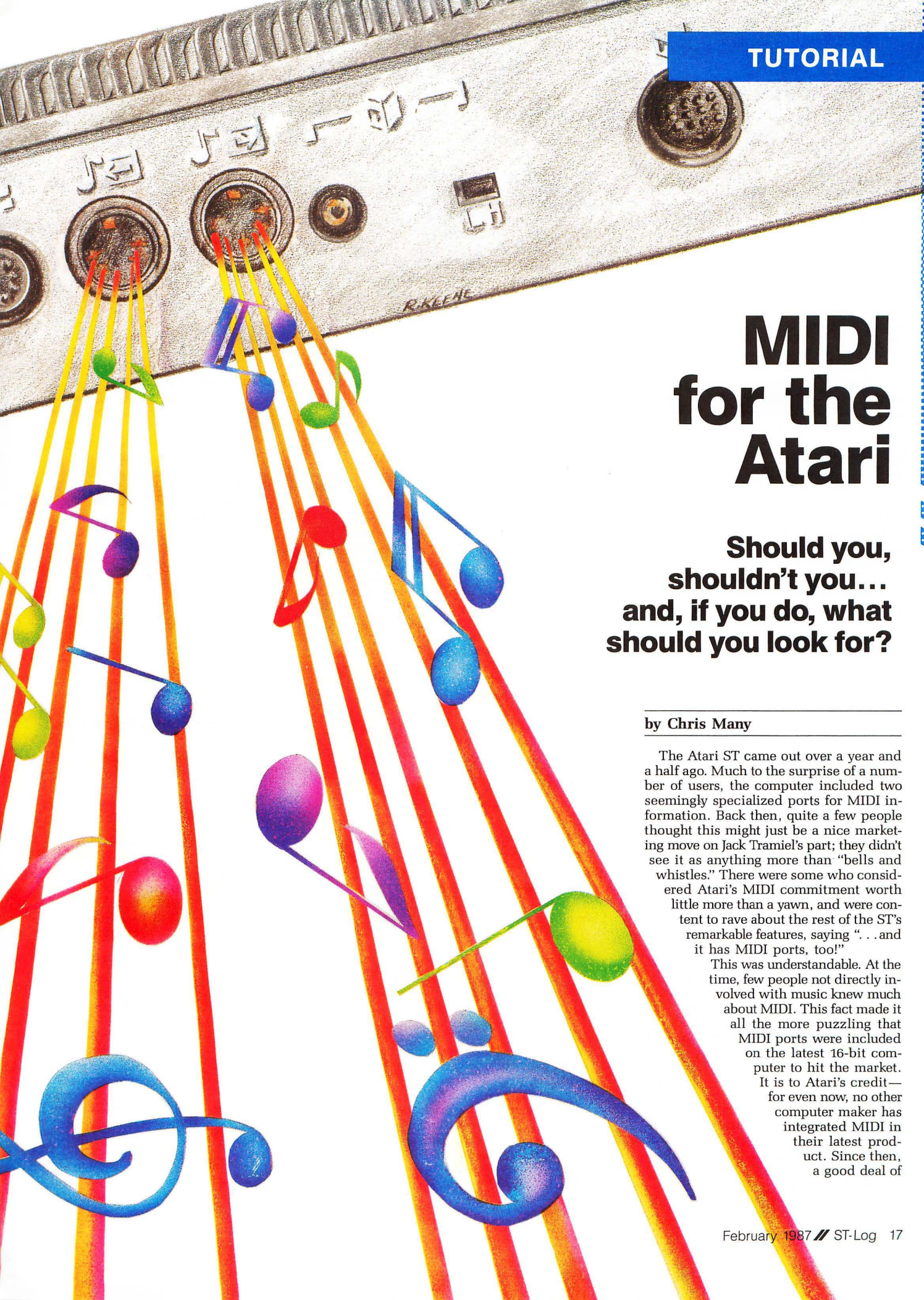

# MIDI for the Atari

## Should you, shouldn't you... and, if you do, what should you look for?

by Chris Many

The Atari ST came out over a year and a half ago. Much to the surprise of a number of users, the computer included two seemingly specialized ports for MIDI information. Back then, quite a few people thought this might just be a nice marketing move on Jack Tramiel's part; they didn't see it as anything more than "bells and whistles." There were some who considered Atari's MIDI commitment worth little more than a yawn, and were content to rave about the rest of the ST's remarkable features, saying ". . . and it has MIDI ports, too!"

This was understandable. At the time, few people not directly involved with music knew much about MIDI. This fact made it all the more puzzling that MIDI ports were included on the latest 16-bit computer to hit the market. It is to Atari's credit—for even now, no other computer maker has integrated MIDI in their latest product. Since then, a good deal of

music software has come out to make use of these two ports. Still, unless you're a professional musician (or you know one), you may find it a little rough to enter the world of MIDI.

It's not so much a *world* as it is a *marriage*, of music and computers. Musicians must now have a good understanding of computer basics, since much of today's music is produced through the use of computers. MIDI and computers are firmly entrenched in the day-to-day production of musical scores for commercials, television, film, industrial shows and records. But, as musicians have had to learn bits, bytes, error messages and disk drives, the computer user also has a new vocabulary to learn, to expand his own musical ability. As the fledgling keyboard artist has had to determine which computer offers the best value for the money, by comparing memory size to speed, to availability of good software, so computer users (novice or skilled) have to learn which synthesizer to buy, by weighing the positive and negative points of any particular instrument.

So what is this MIDI? As you probably know, MIDI is an acronym for Musical Instrument Digital Interface. Unlike computer manufacturers, the makers of musical synthesizers realized that it was in their own interest to standardize the interfacing of their instruments. Prior to December of 1982, synthesizers were being produced in much the way computers are: each had its own operating system; none could communicate with another directly; and each of the manufacturers had unique ideas about how to implement certain basic elements of the equipment. Discussions among the American companies soon expanded to include top Japanese synthesizer makers, and the groundwork was laid for a data transmission protocol between musical instruments. The combination of American and Japanese proposals produced a standard interface adopted by the top synthesizer manufacturers in the world: MIDI.

If you can imagine IBM, Apple, Atari and Commodore agreeing to a standardized DOS for *all* computers and specifications that would enable software to run on any brand of computer, then you can imagine what happened to the music industry once MIDI appeared in December of 1982.

In the last three and a half years, there has been a virtual revolution in the development and expansion of musical instruments. New advances in sound reproduction have made some earlier breakthroughs obsolete in a matter of months. Prices for some instruments have dropped drastically in less than a year. Synthesizers with features available on only high-end equipment (with high price tags) only a year ago, are now regularly released at prices much lower than that of a fully-configured Atari system, 8- or 16-bit.

It's important to realize that MIDI is a digital code representing the music you're playing—not the music itself. For example, when you play a middle C on a keyboard, this is transmitted down your MIDI cable as a *note on*, followed by a number indicating which note is being played (*60* in the case of middle C). Other information, such as hard you hit the note (*velocity*, in synthesizer terminology), how hard you press the key after you hit the note (*aftertouch*), when you lift your hand off the note (*note off*), etc. are also transmitted.

The various fundamentals of music performance have been broken down into series of *0*s and *1*s, which can be transmitted from one synthesizer to another instantly. Well. . .almost. The current baud rate for MIDI data transmission is 31.25 kBaud.

Now you can begin to see how the computer has become a useful tool in the work of a musician—professional or amateur. Computer programs (also called sequencers) can store (record) MIDI data in RAM and, on command, play that information back out to your synthesizer. The information can be stored on disk, and uploaded or downloaded via a modem, as with any data file. There are a number of these programs available—some good, some not so good, some easy and some complex. Some are geared for the home user and require little effort to learn and use. Others are for the professional and demand a much greater effort—but provide an amazing array of features and flexibility.

Just as word processors have some common characteristics (such as word wrap or cut and paste functions), sequencers also have certain basic features. Without these basic features, you won't fully realize the potential of your ST (or an 8-bit Atari) as a musical tool.

*(1) Multiple tracks.*

A sequencer is much like a tape recorder, in the sense that it stores musical information. I remember, years ago, buying my first reel-to-reel tape recorder with "sound on sound" capability. I could record a piano on one track, then play it back while overdubbing a vocal part on another.

A sequencer does much the same thing. You can play a melody on one track, play it back and record a bass part on another, play it back again, this time adding chords, and so on. Don't bother with a music program that has less than eight tracks. There are plenty with at least sixteen, and lately they've been adding up to twenty-four—or more. Most multiple-track programs allow you to bounce down, or combine the information from several tracks onto one, so if you must settle for a program with less than eight available tracks, you ought to at least make sure this function is available. It's far easier when parts are instantly available on separate tracks. I strongly advise you: steer clear of single- or double-track MIDI recorder programs.

*(2) Transposition and tempo settings.*

Many novice musicians find it difficult to play in a key like F♯ Major, or another key with a lot of flats or sharps. Yet, if you always play in C (no flats or sharps), you may find, when you try to sing along, that it becomes too high or too low. Or let's say you wanted to play the same line you've just spent an hour perfecting. . .up a third so you can create an exquisite harmony. A transposition feature can move the key up or down, as far as you want.

Some interesting effects can be created by playing a single line, transposing that line to other tracks, then playing them all at once. You also have the same amount of flexibility with tempo. Not everyone can play "The Flight of the Bumblebee" at full speed on a keyboard instrument. But you could slow down the tempo, play your music in at a speed that's comfortable for you, then speed it back up.

Unlike conventional tape recorders, you don't get that "chipmunk effect" when you speed up the playback rate. That's because your computer is just transmitting numbers to your synthesizer, not actual sound waveforms. So your synthesizer receives and plays the same notes —faster. If you run across a music program that doesn't transpose or allow you to vary the tempo, please walk away.

*(3) Auto correction* (in synthesizer jargon, *quantizing*).

This feature, borrowed from drum machines, enables you to correct your timing. You can select the timing you want (quarter, eighth, sixteenth, etc.) The track you played is scanned through, with each note averaged to the nearest time value. This can make your music sound very "tight" with the tempo (you hear a lot of this on the radio today). The drawback is that it can make your music sound too perfect, so be sure the sequencer you buy has this as an *option*, not a mandatory feature.

*(4) Copying and combining tracks.*

I mentioned this earlier for a good reason. If, somehow, you use up all the available tracks, you're going to want to be able to combine some of them, to free them up. Otherwise, you're going to be stuck—just when you don't want to be.

*(5) Multiple MIDI channel access.*

This becomes more important as you expand your synthesizer system. In certain cases, you may want to have a synthesizer play two or more different sounds at the same time. Included in the MIDI specs are sixteen separate channels on which MIDI information can be sent and/or received. As in a phone system, different streams of MIDI data can be sent to different instruments along the same cable, allowing you to carry on up to sixteen different conversations simultaneously. There's no reason for the omission of sixteen-channel capability in any sequencing program, but I've seen several that allow you access to only

four or eight channels. While it may not seem important to you at the outset, you shouldn't bother with accessibility of less than sixteen MIDI channels.

There are many other features available, and I'm sure the author of each software program would argue that his features are vital and that I've overlooked them, but the above five items cover what you should be looking for in a good sequencer—for any system.

The only other feature I should mention, for those who plan to do any recording to a multi-track tape recorder, is some method of synchronizing your computer with tape. This is mandatory if you plan to record music in a more conventional method and are using a small four-track cassette recorder, or are going to a recording studio to use your computer and synthesizers.

But software is only one side of the story; the other is the selection of one or more synthesizers to which you can hook up an 8- or 16-bit Atari. There are hundreds of different synthesizers being manufactured, hyped and sold today, at prices ranging from $200.00 to $200,000.00—and up. Obviously, most of us aren't in the high-end market, and more and more manufacturers of synthesizers (especially the Japanese) recognize a broad market in home users. We're now seeing more scaled-down versions of high-end synthesizers being put out for the casual musician or home enthusiast. These instruments contain features that, a few years ago, astonished the music industry and caused a revolution in the way music was created.

Perhaps the best known of these inexpensive but powerful synthesizers is the Casio **CZ-101**. This was the first to offer a number of advanced programming features at an incredibly low price. Released in late 1984 for less than $500.00 retail, they're now available for $200.00-300.00 just about anywhere. Despite the toy-sized keyboard, the sound is impressive. The **CZ-101** quickly found a place in many recording studios and synthesizer labs—right next to the expensive instruments. For anyone just starting out, this is a good first synthesizer. It's inexpensive, it sounds good, it lets you easily learn to program sounds, it allows access to more than one voice at a time, and it's MIDIed. You really do get a lot of sound for your money with the **CZ-101**. For most computer users who want to get into MIDI, the main concerns are cost and ease of use.

Additionally, editing programs are available for the **CZ-101**, which will assist you in creating your own sounds for the Casio. A new ST program, **CZ Droid** from Hybrid Arts, not only helps you in editing sounds, but will actually create new sounds by itself.

Another popular introductory synthesizer is the Yamaha **DX100**. Yamaha manufactures the **DX7** (probably the most widely used professional synthesizer on the market today). The **DX100** includes many of the features found on its big brother—but without the larger price tag (list price is $445.00; it can be picked up for about the same amount as the **CZ**). It's a different-sounding instrument and lends itself more to electric pianos, flutes, and things of that nature.

Learning to program a **DX** is more difficult than most synthesizers, since the documentation has left a lot to be desired. But the **DX100** comes with 192 ROM patches (sounds) on board. This number is significantly more than the **CZ**'s 16, and most of them are useful. I haven't seen any editing programs for this fairly new instrument, but that doesn't mean you can't design your own sounds. As with the **CZ**, you can edit any and all sounds without the use of a computer, but it is so much easier when you're able to deal with sound elements graphically.

There are other synthesizers competing for the low-end music market; Seiko, Technics, Siel and Korg all sell models for under $500.00, each with its own strengths and weaknesses. I'd recommend starting with the **CZ** or **DX** series, and expanding from there.

One of the nice things about MIDI is that expansion is planned for, from the beginning. If you start your MIDI setup with an ST, a music sequencer like **EZ Track ST** (from Hybrid Arts) and a **CZ-101**, you'll be pretty well set for a few months. If you'd like to add a second synthesizer, go out and get one. Most synthesizers have a MIDI "thru" port, which lets you chain more than two synthesizers together. If your system doesn't have one, you can get an inexpensive thru box, an accessory which accomplishes this feat. If you want to add a drum machine (a specific kind of synthesizer which duplicates drum sounds and rhythms), that too is MIDIed. And, when you're ready to graduate to the **DX7**'s and **Emulators**, you probably won't want to get rid of your first synthesizer, anyway.

Creating music has never been easier or more fun than it is right now. If you don't own an ST, you can still interface your 800, XL or XE to a synthesizer with **MIDI Mate**, a hardware interface for the 8-bit from Hybrid Arts. If you already have an ST, it's as easy as plugging in your MIDI cables. Using MIDI isn't all that expensive to start out, and it opens up all kinds of musical frontiers for those willing to invest the time and energy to learn. //

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*Chris Many is a professional composer, who scores for film, TV, commercials and industrial shows. He has had three albums published, and a fourth is in the works. He's also a computer programmer for businesses specializing in 1-2-3 and Symphony applications.*

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# ST news

## New books from Abacus

***Introduction to MIDI Programming*** examines the musical capabilities of the ST coupled with the MIDI environment. The 256-page book starts out with a look at MIDI, the MIDI standard and the MIDI language. Other chapters cover buying a synthesizer and programming it, how to purchase MIDI software, and using the extended BIOS. In addition, C source code for a number of programs and functions is included, as well as the source code from XLent Software's **ST Music Box** auto-player program.

***ST Disk Drives—Inside and Out*** includes chapters on files, file structures and data management. The floppy disk, hard disk and RAMdisk are also discussed, from both a programming and a technical aspect. Several complete utilities and programming tools are provided, too.

Each book retails for $24.95. Also just released: ***Atari ST for Beginners***, an introductory guide for newcomers, at $16.95.

All are available from Abacus Software, P.O. Box 7219, Grand Rapids, MI 49510 — (616) 241-5510. Reader Service #140.

## ComputerEyes

This popular video digitizing system for the Atari 8-bit line is now available for the ST, boasting many features. The slow-scan system connects to any standard video source. Color or monochrome images can be captured under software control and displayed in any ST graphic mode. Additional features consist of automatic calibration of brightness, contrast and color balance, or manual adjustment after image capture using easy slider controls. Of course, images can be saved and retrieved via disk, in formats compatible with **DEGAS**, **Neo-Chrome** and other popular graphics software.

Video inputs allow for VCR or LaserDisc imaging, or any other NTSC or non-interlaced composite video signal. Scanning time is said to be 6 seconds in low resolution, 12 seconds for medium resolution, and 24 seconds for high resolution. The **ComputerEyes** interface hardware and software package lists for $249.95. For additional information, contact Digital Vision, Inc., 14 Oak Street, Suite 2, Needham, MA 02192 — (617) 444-9040 or (617) 449-7160. Reader Service #141.

## Metatrack

Midisoft calls their new **Metatrack** a "32-track software recording studio," which connects any and all MIDI musical instruments with an ST.

Raymond Billy, President of Midisoft, has let it be known in his statements that "early users of the product have found it to be a very elegant and comprehensive tool for enhancing MIDI keyboards with the power of the Atari ST."

**Metatrack** offers fast, real-time record, playback, overdub, rewind and fast-forward. You use the mouse to select menus and graphics, to control 32 polyphonic tracks and more than 30,000 notes per song—or 70,000 on a 1040ST.

The product's full-track editing capability lets you Combine, Copy, Move and Erase any combination of the 32 tracks. Insert, Delete, Erase and Paste are additional options.

If you would like to know more about **Metatrack**, contact the manufacturer. The suggested retail is $99.00, from Midisoft Corporation, P.O. Box 1000, Bellevue, WA 98009 — (206) 827-0750. Reader Service #135.

## Other news

☑ **The Monitor Box** permits an ST to be used with a standard composite monitor or TV set. Other applications: projection TVs, VCRs, or the ability to take your ST anywhere and run it through a hotel TV, for instance. At $59.95, from JNL Technologies, 3460 Harold Street, Oceanside, NY 11572 — (516) 536-3969. Reader Service #142.

☑ The **LDW BASIC Compiler**, version 1.1, is shipping, with new features and packaging, and an enhanced/updated manual. Among the new features: faster screen output, arithmetic functions which run four times faster than 1.0, enhanced GEM environment, hooks to BIOS and multi-line statements. You'll get better run-time error handling, plus compile times up to 70% faster. It's $69.95; registered 1.0 users can upgrade for $25.00. Logical Design Works, Inc., 780 Montague Expwy., Ste. 205, San Jose, CA 95131 — (408) 435-1445. Reader Service #143.

☑ WGBH, the well-known public broadcasting station in Boston, Massachusetts (producers of "Nova" and other high-quality shows), is holding an **On-Line Computer Auction** in conjunction with Delphi/Boston. Planned for February 11-14, 1987, its more than 400 computer-related items (software, hardware, peripherals, furnishings, office supplies and services) will be offered and accessed via modem. Those wishing to participate can obtain a complimentary Delphi/Boston account. They'll receive a complete list of available items, an index of donors and a list of public access locations. For information, contact Edythe C. Baker, **Channel 2 On-Line Computer Auction**, WGBH, 125 Western Ave., Boston, MA 02134 — (617) 492-2777.

☑ "Infocom goes to Hollywood" is what they're saying about that company's latest interactive software. **Hollywood Hijinx**, according to author Dave Anderson, "is loaded with puzzles that recall the pure logic problems of **Zork**." You play the starring role in one of Hollywood's zaniest "B" movies. With **Hijinx** is a copy of *Tinselworld* magazine, an autographed photo of Uncle Buddy (the epic's producer), a letter from Aunt Hildegarde and a lucky palm-tree swizzle stick. **Hollywood Hijinx** goes for $39.95. Next issue, you'll learn where palm-tree swizzle sticks come from, as we visit the magic offices of Infocom, Inc., at 125 CambridgePark Drive, Cambridge, MA 02140 — (617) 492-6000. Reader Service #144.

## Gfa BASIC overview

Ever since the release of the less-than-suitable ST BASIC, many developers have jumped on the bandwagon, putting out their idea of the perfect BASIC. The latest entry in this long line of hopefuls is MichTron's **Gfa BASIC**.

**Gfa BASIC** claims to not only improve greatly upon the lack of flexibility in ST BASIC, but to move the concept behind the BASIC language itself into realms of higher elegance, including a close attention to structured technique (something that's always been one of BASIC's weakest points). How successful MichTron has been in this attempt will be more apparent when the product has gone through further testing.

Among the advantages of **Gfa BASIC** is its compact interpreter, which takes only 55K of memory. This BASIC also claims a high processing speed. An empty FOR. . . NEXT loop can complete 10,000 iterations in less than half a second.

There are several differences between **Gfa BASIC** and its more traditional cousins. First, there are no line numbers (one of the ways a structured approach to programming is encouraged); sections of the code that must be referenced are given labels. Also, in an effort to keep program code more readable, only one command per line is allowed. As further incentive to structured program design, **Gfa** offers several looping structures, including DO. . . LOOP, WHILE. . . WEND and REPEAT. . . UNTIL, as well as the ability to set off modules of code as PROCEDUREs with their own local variables.

The editor does away with the clumsy window-based system used in ST BASIC. Instead, it incorporates two screens, between which you can flip—in several ways. The first of these is the editing screen. which contains a menu bar at the top (not the usual GEM bar, but something unique to **Gfa**). The second screen is a display showing the results of entered commands.

The editor also allows you to select between two different text sizes, and offers full text manipulation, including find and search commands, and complete block functions (copy, move, delete, print, etc.)

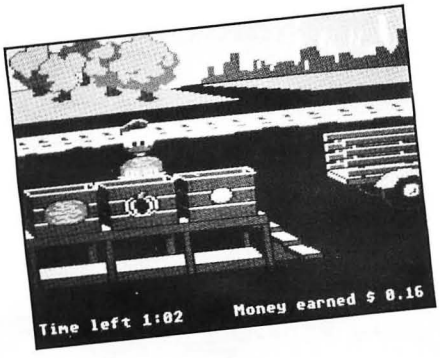
A complete review will appear in a future **ST-Log**. From MichTron, 576 S. Telegraph, Pontiac, MI 48093 — (313) 334-5700. Reader Service #145.

## Latest from Sierra

The talented personnel of Sierra On-Line and Walt Disney have worked together to bring you **Donald Duck's Playground**. In this program, detailed, colorful graphics (on a color monitor) are combined with cute characters and fascinating activities, to provide 7- to 11-year-olds with several scenarios.

Logical thinking, matching skills and change-making are the educational goals, while children assist Donald in planning and constructing a playground for nephews Huey, Dewey and Louie.

**Donald Duck's Playground** can be played on either monochrome or color ST screens. The game lists for $24.95, from Sierra On-Line, Inc., Sierra On-Line Building, Coarsegold, CA 93614 — (209) 683-6858. Reader Service #146.




## Torpedoes away!

High Adventure on the High Seas has long been obtainable on other popular computers, and now it can be found on your ST. Joining the ranks of submarine simulations, **GATO** gives you command of a World War II GATO-class combat sub. Detailed graphics, plus various realistic operations and strategies, provide many challenging scenarios. You begin each mission with a radio message assigning you an objective, then head out into the open Pacific.

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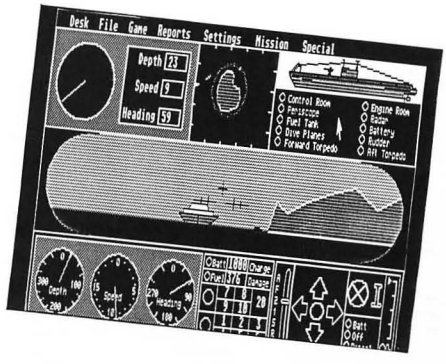


**GATO** runs for $39.95, playable on color ST systems. Spectrum Holobyte Inc., 1050 Walnut, Suite 325, Boulder, CO 80302 — (303) 443-0191. Reader Service #147.

## Account for yourself.

**Dac Easy Accounting** combines seven integrated packages into one powerful program—general ledger. purchase order, accounts receivable, accounts payable, billing, forecasting and inventory. Menu driven, the system was designed for ease of use. Password protection keeps unwanted eyes off your work, and file capacity is limited only by disk space. Over three hundred different reports can be generated, with ninety-plus routines at your disposal. Double entry, an unlimited number of accounts and departments, three-year account history for CRT inquiry and budgeting capability are some of the functions at your fingertips.

Cost is $69.95. For further data on this package, contact Dac Software Inc., 4801 Spring Valley Road, Building 110-B, Dallas, TX 75244-9990 (214) 458-0038. Reader Service #148.

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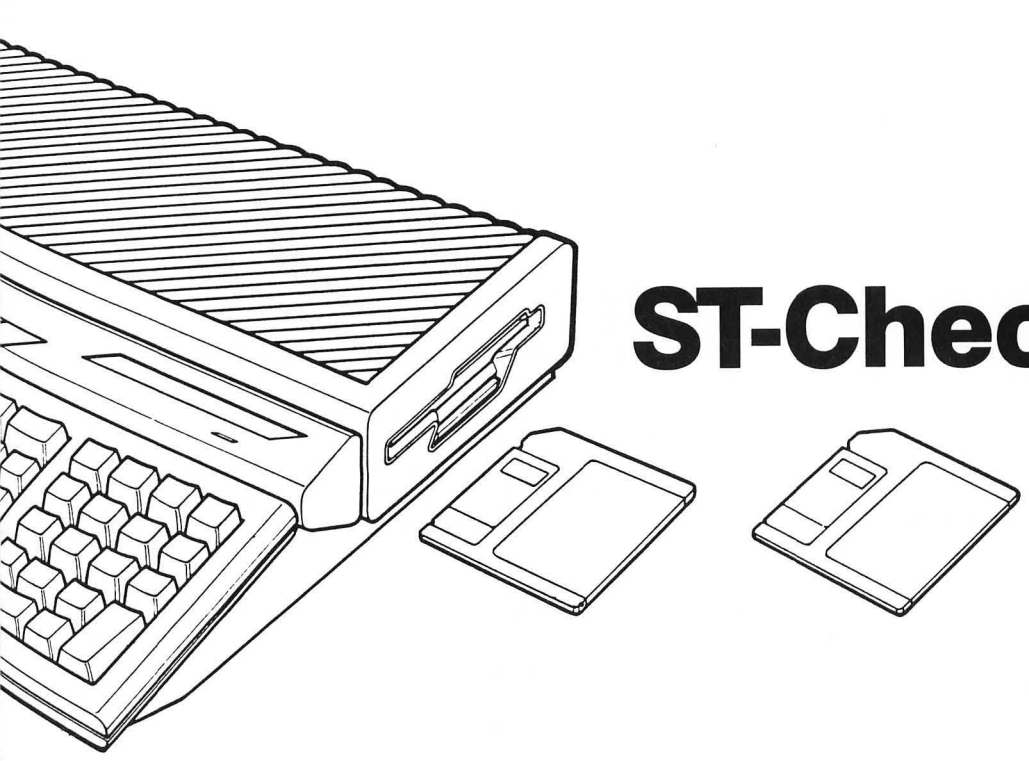


# ST-Check

## A checksum program for the ST BASIC listings in these pages.

by Clayton Walnum

Those of you who spend a good deal of your free time typing in the listings from our magazines have surely grown accustomed to seeing (and, we hope, using) the checksum data that follows each BASIC listing. One of the first projects I undertook when ST BASIC made its appearance was to make sure that this tradition continued. The result was **ST-Check**—a typing validator for the ST computers. It was first published in **ST-Log**'s issue 1 (in **ANALOG Computing**) of April 1986. Now that **ST-Log** has become a separate magazine, we thought it appropriate to reprint this handy checker.

### What good is it?

Typing in a program listing can be a frustrating and time-consuming task. Just one mistyped character will frequently render a program completely unusable. To insure that your program will run correctly, the entire listing must be checked character by character against the original. This can take many hours. To make matters worse, you can't trust your own eyes. Do you know how easy it is to overlook an *O* where a *0* is supposed to be?

Typing checkers like this one take over the arduous task of proofreading your program files. Using these programs can cut down your debugging time by a huge factor. When the checker's output matches that published with the listing, you can be sure your typing is accurate.

### Getting started.

Load your copy of ST BASIC, then type in the listing that accompanies this article. When you've finished, save a copy to your disk.

Now, the bad news. There's no foolproof way **ST-Check** can find typos within itself. An error in the program will make all data suspect. So why have I included the checksum data with the program listing? Because, though you can't get much help *finding* your errors, you *can* be sure when none exist.

### Introspection.

When you run **ST-Check** against itself, you will get one of several results. The program may just give up and crash. In that case, go through the listing character by character until you find your mistake.

A second possibility is that the program will run okay, but will create all bad data. This may indicate an error somewhere between Lines 80 and 420. Find the typo and correct it. A last possibility is that the checksum data will have only a few bad values. In this case, use the normal method detailed below to locate your errors.

*Warning:* until you get your checksum data for **ST-Check** to match the data following the listing, you can't trust it to proofread other programs.

### Using ST-Check.

When you finish typing an ST BASIC program listing from the magazine, save a copy to your disk, then run **ST-Check**.

The program will first ask for a filename. Type in the name for the program you wish checked (the one you just saved to the disk), then press RETURN. You'll be asked for a "bug" name. Enter a name for the checksum file (this can be any name not already on the disk), followed by RETURN. Hint: if you include a *.BAS* extension on your bug filename, you'll be able to view the generated data without leaving BASIC.

**ST-Check** will now proofread the program. When the checking process is complete, you'll have a file on your disk (saved under your bug name) which contains the checksum data for the program checked.

If you added the *.BAS* extension, you may now load this file and view it. If you didn't use the *.BAS* extension, you must return to the desktop, double-click the bug file, then click the "show" command.

Check the last value of each line. If it matches the value in the published checksum data, then go on to the next. If it doesn't match, you've got a typo.

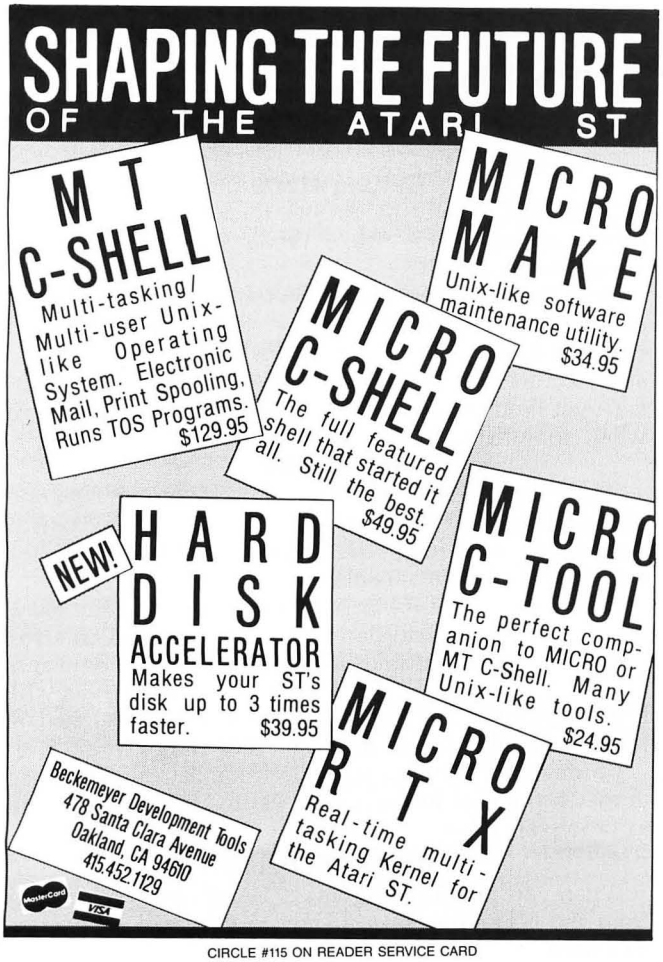
To find the error, look at the line number of the data statement in which the bad value occurred. This number is equivalent to the first program line the data evaluates. Let's call this "Line X." Count the entries in the data line until you get to the bad value. We'll call this count "Y." Now look at the program you typed in. Starting with, and including, Line X, count down Y lines. The line you end up on will be the one containing the typo.

Correct the error, then rerun **ST-Check**. When you get all the checksum data to match that in the magazine, your new program is ready to run.

### Passing the buck.

Okay, friends. Here's where the truth comes to the fore. I can take only minimal credit for **ST-Check**, as it's virtually a direct translation from **D:CHECK2** (**ANALOG Computing** issue 16) by Istvan Mohos and Tom Hudson. All accolades and tribute should be directed to those two fine gentlemen. I'm sure they'll divvy it up fairly, and perhaps pass a small share on to me. Thanks, guys!

You may now type in this month's ST BASIC program, secure in the knowledge that the searching eye of **ST-Check** is primed and ready. ///



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Listing 1.
ST BASIC listing.

```
10 'ST CHECK typing validator by Clayt
on Walnum
20 'based on a program by Istvan Mohos
 and Tom Hudson
30 if peek(systab)=1 then cl=17 else c
l=32
40 fullw 2:clearw 2:gotoxy cl,0:? "ST
CHECK":ex=0:sp=0:x=0
50 input "Enter filename: ",f$:input "
Enter BUG name: ",f1$
60 on error goto 590:open "O",#1,f1$:o
pen "I",#2,f$:close #2
70 open "I",#2,f$:on x goto 140,220
80 color 2:?:? "Counting lines":lineco
unt=0:color 1
90 on error goto 570
100 line input#2,i$:linecount=linecoun
t+1
110 ? ".";:goto 100
120 close #2:q=int(linecount/10):dim c
(linecount),r(q)
130 x=1:goto 70
140 range=0:lyne=0:color 2:?:?:? "Fill
ing array":color 1
150 ? ".";:count=0
160 line input#2,i$:count=count+1
170 lyne=val(i$):r(range)=lyne:range=r
ange+1
180 on error goto 580
190 line input#2,i$:count=count+1:if c
ount=10 then 150
200 goto 190
210 close #2:x=2:goto 70
220 color 2:?:?:? "Calculating checksu
ms":color 1
240 for i=1 to linecount:checksum=0:li
ne input #2,i$
250 for z=1 to len(i$):number=asc(mid$
(i$,z,1))
260 if number=asc(" ") and ex=0 and sp
=1 then goto 320
270 if number<>asc(" ") then sp=0 else
 sp=1
280 if number<>34 then 300
290 if ex=1 then ex=0 else ex=1
```

```
300 if ex=0 and number>=asc("a") and n
umber<=asc("z") then number=number-32
310 product=x*number:checksum=checksum
+product:x=x+1:if x=4 then x=1
320 next z:? ".";
330 checksum=checksum-1000*int(checksu
m/1000):c(i)=checksum:x=2:next i
340 close #2:lyne=r(0):item=0
350 color 2:?:?:? "Creating BUG file":
color 1
360 count=10:total=0:if linecount<10 t
hen count=linecount
370 i$=str$(lyne):i$=i$+" data "
380 for i=1 to count:datum=c(10*item+i
)
390 i$=i$+str$(datum):i$=i$+",":total=
total+datum:next i
400 i$=i$+str$(total):print #1,i$:? ".
";
410 item=item+1:linecount=linecount-10
:if linecount<1 then 430
420 lyne=r(item):goto 360
430 close #1:clearw 2:?:gotoxy 0,1
440 ? "To check BUG data against the c
hecksum data found in the magazine,"
450 ? "return to the GEM desktop and d
ouble click your BUG file.  You may"
460 ? "then SHOW the data on your scre
en or PRINT the data to your printer."
:?
470 ? "The line number of each data st
atement coincides with the first line"
480 ? "of the user program the data st
atement evaluates.  Numbers within"
490 ? "each data statement represent c
onsecutive lines of the user program."
500 ? "The last number is the total.":
?
510 ? "Check the last number of each s
tatement against the version in the"
520 ? "magazine.  Only when there's a
discrepancy need you check each number
"
530 ? "in the data statement.":?
540 ? "Take note of the lines containi
ng typos, then make corrections.  When
"
550 ? "all corrections have been made,
 rerun this program to double check."
560 ? "Press <RETURN>":input i$:close
#1:close #2:end
570 if err=62 then resume 120
580 if err=62 then resume 210
590 if err=53 then ? chr$(7);"FILE NOT
 FOUND!":close:resume 50
600 ? "ERROR #";err;" at LINE ";erl:en
d
```

●

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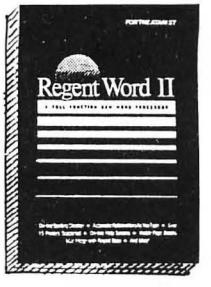


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# Fall 1986 COMDEX

## Take a deep breath; there was plenty to see this fall, with about 400 new ST titles.

by Arthur Leyenberger

Atari has done it again! For the third or fourth consecutive time, the Atari Corp. booth has been the most crowded section at a Consumer Electronics Show or COMDEX. Yes, the 1986 fall Computer Dealers Exposition in Las Vegas last November was a major success for the ST and for the software that supports it.

The trade papers had billed this year's fall COMDEX as the show that would restore new life to an ailing computer industry. Why? The claim was: the Intel 80386 microprocessor (the processor used for the next-generation IBM PCs and their clones) was so exciting that it was bound to work wonders for the industry. The 90,000 or so attendees were supposed to be excited by still more IBM PC clones. Yawn!

What has really been happening—and, alas, largely ignored by the industry's insiders—is that the new 68000 machines (the Atari ST, Commodore Amiga and Apple Macintosh Plus) have rekindled interest in microcomputers. Of the three, Atari's ST is the one showing the most promise, excitement and accessibility. No question about it, the Atari ST is the computer for most of the rest of us. And the incredible amount of new ST software is, in part, responsible.

The Atari exhibit looked as if someone was giving away money, all week. As has become the custom, Atari divided up their space, to allow dozens of software publishers to strut their stuff. Atari provided the hardware, and the third-party developers provided the software. There were so many software exhibitors, in fact, that they had to work in shifts. It was almost an all-ST show.

### Atari hardware.

Atari itself displayed very little in the way of new hardware. They showed a new 1200-baud Hayes-compatible modem, expected to go for under $100.00. The **SH212** is a 300/1200-baud modem with internal speaker, pulse or tone auto-dialing as well as auto-answer capabilities. It's tentatively scheduled for first-quarter 1987 release.

There were plenty of 520 and 1040STs, Atari hard disks and printers and monitors around the main exhibit. Several manufacturers of laser printers (Hewlett-Packard, Canon and QMS) loaned their printers to the mini-booths.

However, the real Atari hardware news was to be seen in a hotel suite far from the main exposition. Atari was showing—not all that secretly—a new ST, with an improved, detachable keyboard. In addition, the long talked about MS-DOS box with slots for peripheral cards was on hand. A nonworking model of an Atari laser printer was seen, as were graphic examples of the blitter chip. Atari said that their blitter chip will be standard in the new ST 2- and 4-megabyte separate-keyboard computers. Further, it will be available as an upgrade for all earlier STs. Look for the blitter chip, plus new ROMs supporting fonts, output to laser printers, and much more, at some point in 1987.

### Other hardware.

One of the more interesting booths was that of the Video Touch Corporation. They were using an ST with a touch-sensitive monitor screen for a point-of-sale cash register system. With their modified ST RGB monitor, 1040ST, hard disk, custom software and the cutest little printer you ever saw, Video Touch demonstrated a $5000.00 **food and beverage order-entry system**, that can double as a **single-entry full inventory and accounting system**.

The system provides a fast, efficient ordering method and could work like this... Orders for foods and beverages are placed by pressing appropriate menu boxes on the touch screen. When an order is taken and paid for, a receipt for the customer is printed at the counter. The kitchen's printer lists items requested, and a printer in the bar does the same for beverages desired.

Other uses of the touch screen system could include education, medical, inventory and home applications. We were impressed with Video Touch's use of the ST in a vertical market application product.

A number of **video digitizers** for the ST were at the show. Digital Vision, makers of **ComputerEyes** for the 8-bits, unveiled their color digitizer for the ST. For about $250.00, it will support all graphic modes and will take **NEO-Chrome** and **DEGAS** files. Interestingly, **ComputerEyes ST** automatically adjusts the input signal's brightness, contrast and color.

Another new digitizer was being shown by MichTron. This device also offers **NEO-Chrome** and **DEGAS** compatibility, while providing resolution of up to 128 gray levels. Like all video digitizers, the input signal can come from cassette recorder, laser disk or camera. Also, the length of time required for the video capture is dependent on the resolution desired. The more resolution or definition you want, the longer it usually takes to perform.

O&R International, Inc. was showing an interesting product called the **Last Stand**. This smoke gray, high-impact acrylic computer center sells for $44.95. It allows you to place your ST, two disk drives and monitor all in one convenient location.

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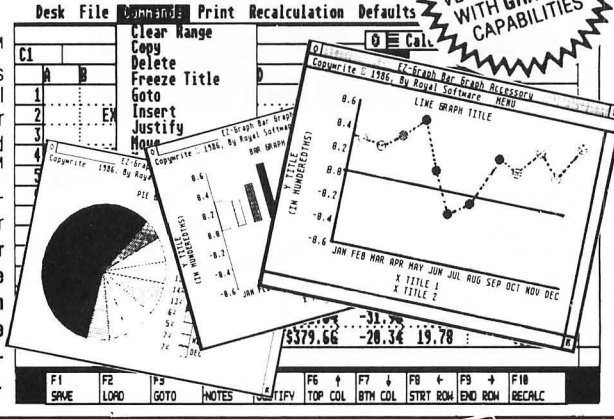


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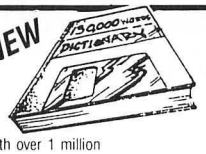


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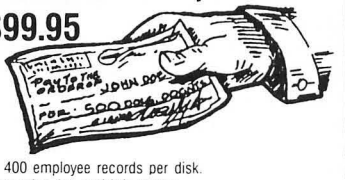

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- Easy to use GEM based program
- Employees names, hours, and dates

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**Word processing software.**

Atari was showing **MicroSoft Write**, said to be a port of the word processor created by MicroSoft, **Macintosh Word**. The program is supposed to support multiple type fonts and has other features that put it in the "desktop publishing" category. Atari says it will sell for $129.00, shipping by the end of the year. Judging from the completeness of the version shown, a more realistic date would be some time *next* year.

Atari was also demonstrating **1st Word Plus**, an improvement on the original included with STs. Now that bundled software is no longer to be provided with the ST (ST BASIC is to be the only software boxed with either model), Atari Corp. has upgraded the word processor. It now has built-in outline processing, as well as the ability to pull in a **DEGAS Elite** graphics file. When a **DEGAS** image is brought in, text automatically reformats around it. Provided also are multiple fonts, conversions for other word processor files and an integral spelling checker (like **Thunder!**).

**PaperClip Elite** from Batteries Included offers multiple headers/footers, full macro support, date/time insertion, and quite a few other features—too numerous to mention here. **PaperClip Elite** will be out in the first quarter of 1987, for under $100.00.

Regent Software was showing their recently released **Regent Word II** for the ST. You may recall **Regent Word I** as, for some time, the most stable and usable ST word processor. Now, **Regent Word II** adds a full GEM interface and more features to an already well executed program. Additions include: a built-in spelling checker; a multiple margin command that lets you easily create indents and "outdents;" rulers; word count; and much more. Owners of **Regent Word I** can send in their original disk and $52.00 to receive **Regent Word II**. Otherwise, the retail price of **Regent Word II** is $99.95.

Timeworks was demonstrating their new **Word Writer**. One of five new ST products introduced by this company in the previous month, **Word Writer** is a full-featured GEM-based word processor. It includes an integrated outline processor, three spelling checkers, extensive help screens and a built-in print spooler, as well as an on-screen display of text attributes (underlining, bold, italics and super/subscripts).

In addition to being a stand-alone word processor, **Word Writer** will interface with other Timeworks products, like their **Data Manager** database program and **SwiftCalc** spreadsheet software. **1st Word** text files can be imported, and printer drivers are provided for a variety of printer models. **Word Writer** is available now and retails for $80.00.

**Desktop publishing software.**

Judging by the number of laser printers seen and the amount of new desktop publishing software on hand, a primary theme of this fall's COMDEX seemed to be "Desktop Publishing." The Atari exhibit microcosm was not substantially different. A number of these programs were demonstrated.

Desktop publishing is a combination of word processing, page layout and artwork. By melding these three elements into one program, you can easily design, compose and paste up contents of a printed page, for forms, newsletters, charts, etc. You typically see exactly what you'll get—on the screen, before it's printed. One of the most exciting examples of the genre shown at the Atari booth was **Publishing Partner** (see our overview on page 57) from Soft Logik Corp.

With **Publishing Partner**, you can create up to a 99-page document on a 1040ST, or about 27 pages on a 520ST. Type fonts can be as small as 6 points (1 point = $1/72$ inch) or as large as 144 points, in half-point increments. Multiple columns can easily be created, and text can be entered directly or imported from an ASCII file. Copy can be routed from column to column or page to page, and a large variety of text attributes can be used. Output can go to your Epson, Apple Laserwriter, Postscript or a GDOS-supported printer.

> *"...one of the themes of this fall's COMDEX seemed to be 'Desktop Publishing.'"*

**Publishing Partner** is a full GEM application, with drop-down menus that make learning and using the program simple. But its power is far from simple. It retails for $150.00 and is very impressive.

Another desktop publisher was being offered by Mirrorsoft, Ltd., an English software publisher. **Fleet Street Publisher** is billed as an easy to use, yet professional product. This program combines the advantages of a what-you-see-is-what-you-get word processor with its advanced features, like picture cropping, sizing and a library of ready-made graphics. Text can be typed directly into it, or imported from ASCII files created by other word processors.

**DEGAS** and **NEO-Chrome** files can be pulled into the page composition process and easily manipulated. One of the more remarkable features here is the ability to rotate any graphic around its center by degrees. This is quite useful in straightening digitized portraits. A Postcript software interface is included, for laser printers and typesetting equipment. Output to your dot-matrix printer is also supported.

**Fleet Street Publisher** contains a number of sophisticated typesetting features: kerning, hyphenation (with its dictionary), user-definable widows and orphans, editable fonts, and much more. The package is divided into two levels; both allow you to create multiple-page documents with editable layouts, left- and right-hand page orientation, sequential and nonsequential columns and pages.

Level I, available in spring 1987, is designed for the user with a brief knowledge of desktop publishing. *Level II*, for summer 1987, is the professional version. It is for use in prepress typographical and graphic arts environments. This version of the program can directly drive phototypesetting equipment, as well as output to laser and dot-matrix printers.

**Fleet Street Publisher** was designed by some folks at the *Daily Mirror*, the second-largest-selling newspaper in the U.K. It is to retail for under $200.00, published by a major U.S. software company.

Another desktop publishing program, shown by Softlab, is called **Lasertype** and is meant only for the 1040ST. It is a traditional, commercially-oriented typesetting tool that lets you print books with automated table of contents, index, pagination, sectioning, etc. The program has forms-handling capability, with the ability to do shading, lines and patterns. It also packs an illustration editor.

Designed for Hewlett Packard LaserJet+ printers and compatibles, **Lasertype** has been around for about two years in the MS-DOS environment and has been ported to run on the ST using the Mark Williams C compiler. It's retailing for $279.00, and is available now.

**Graphics software.**

Batteries Included was showing the recently introduced **DEGAS Elite** graphics package. The number of features in this entirely new version of **DEGAS** is staggering. At $80.00, **DEGAS Elite** is not cheap. But the ability to cut and paste between up to eight separate picture screens, scale, flip and rotate whole images or portions of one picture, stretch, color animate, and much more, is well worth it.

If you already own **DEGAS**, Batteries Included allows you to upgrade to **Elite** by sending $39.95 and your **DEGAS** master disk to them—a very reasonable policy.

Aegis Development Inc. was one of the first software companies that supported the Amiga, with superb graphics painting and animation programs. They have now ported one of these to the ST and were showing it at the Atari exhibit. The **Animator ST** is, in fact, more powerful than its Amiga counterpart.

Using **DEGAS** or **NEO-Chrome** pictures, it creates three types of animation: cell, metamorphic and cyclic. Cell animation takes bit-mapped images and moves them. The illusion is created by bringing over a

picture, clipping out what you want and saving it as a cell. The cells are then placed wherever you want on-screen. You assign a sequence to them and specify a duration. All this is very easy to do, and the effect stunning.

The real power of **Animator ST** lies in its metamorphic capabilities. In this type of animation, an image is created, and the changes are then specified. As the picture goes from one image to another and back, the illusion of movement is created.

Cyclic animation is similar to what **NEO-Chrome** or **DEGAS Elite** can do with colors. Here, colors are rotated to create the illusion of movement.

**Animator ST** uses icons for the various commands, and on-screen help is provided. Not only is this program powerful, it's fun. **Animator ST** will be available by the time you read this, for under $80.00.

XLent Software demonstrated a plethora of new and familiar products. **Write 90** is a utility program that lets you print spreadsheet files horizontally. The program sells for $30.00, is GEM-based and supports Epson FX, NEC and Prowriter printers. **Typesetter Elite** is the newest version of XLent's familiar **Typesetter** program. For $50.00, you get a GEM "desktop publishing" program that integrates text and graphics into one page-composition tool. It permits you to import ASCII files, as well as create and use custom fonts and icons.

**Rubber Stamp ST** is a utility with which you can manipulate pictures from **DEGAS** and other popular graphics programs. This $40.00 program is useful for printing repetitious full-screen pictures or address labels, and for adding text to pictures. **Megafont ST** is another XLent graphics utility program that allows you to create your own fonts. Its cost is $40.00.

**PM Interface** is a $30.00 program to enhance Unison World's **PrintMaster**. It lets **PrintMaster**, for example, use **DEGAS** and **NEO-Chrome** files, and turns **PrintMaster** files into icons, for use by several XLent products.

### Application software.

ISD Marketing announced and showed the long-awaited GEM version of the **VIP Professional** electronic spreadsheet. Nearly a year late, VIP is supporting earlier purchasers of **VIP Professional** with a very fair upgrade policy: send them your original disk and $19.95, to receive two disks with the enhanced features. No matter where, or from whom, you bought your product, VIP wants to set things straight.

The new version is very similar to the original, its major difference being in the use of drop-down menus, windows, dialog boxes, etc.—the GEM interface. One of the new features is a floating-point sparse matrix, which means data files created with the **Professional** will be only as large as required for the data. (Lotus 1-2-3 saves files in which a cell entry in the top left and lower right corners of the grid would result in the creation of a huge file, filled almost entirely with empty cells.)

Among other improvements are: faster screen refresh, faster program operation and a better graphprint program. With the GEM functions added, you can still use Lotus 1-2-3 style "Slash" commands, as before. The new **VIP Professional** retails for $250.00. A GEM version of the somewhat less-featured **VIP Lite** program will be out in early 1987.

Another electronic spreadsheet was being shown by Royal Software. **E-Z Calc**, a $70.00 GEM-based spreadsheet, is quite well done. **E-Z Calc** has a matrix of 300 columns by 999 rows, and uses a sparse matrix to minimize file size. It contains a built-in 10-keypad calculator, on-line help, a built-in sort routine, note pad, and much more.

> *"**E-Z Calc** is just that: very easy to use."*

One of the unique aspects of **E-Z Calc** is the way in which its graphs are created. A separate window for the graph can be made from a desk accessory, then the number from the spreadsheet dragged to that window—instant graph!

**E-Z Calc** is just that: very easy to use. For example, the mouse can be an alternative to formulas. Instead of entering a cell range for a total, the total command is selected from a drop-down menu. The first and last cells are then indicated by clicking the mouse. Three mouse-strokes take the place of eleven keystrokes.

Another feature of **E-Z Calc** is the ability to attach a note to each cell. This is useful to remind you how you came up with a number, what a formula means, etc. Bold print in a cell indicates the presence of a note. A number of after-market utility programs are sold with this notepad-type feature in the IBM-DOS world. Seeing it in an ST application was encouraging.

Paul Heckel of Quickview Systems was showing off the new version of **Zoomracks**. Aside from the more polished look of the program, **Zoomracks II** has a number of new features. These include: output forms (with mail merge), labels and report generation, arithmetic capabilities and the ability to load comma-delimited data files.

**Zoomracks II** retails for $150.00. **Zoomracks I** sells for $80.00. If you already own the original, the upgrade is $80.00.

DAC Software was showing their popular **DAC Easy Accounting** for the ST. This program is a port from the MS-DOS version available for some time. Using generally accepted accounting practices, it also has integrated modules for general ledger, accounts payable, accounts receivable, billing and inventory, and purchase ordering. **DAC Easy Accounting** retails for $70.00.

A separate payroll program is also available, which works in conjunction with the accounting program. It can automatically print payroll checks, as well as generate W-2 forms. The payroll module lists for $50.00.

Timeworks displayed their database program, **Data Manager**. This full-featured, $80.00 product includes database management, report writing, graphics and label-making. **Data Manager** is GEM-based software, with extensive help screens and a print spooler. It is available now.

**SwiftCalc** is the Timeworks spreadsheet that interfaces with **Data Manager** and **Word Writer**. **SwiftCalc** boasts 8000 rows and 256 columns, a set of built-in mathematical and statistical functions, all GEM features, on-line help, and all the features you'd expect from a complete spreadsheet program. It's now retailing for $80.00.

Another new Timeworks product, **SwiftTax**, is a tax preparation program for the 1986 tax year. Included with it is a 1987 guide written by Sylvia Porter. Still another new product from the company is Sylvia Porter's **Personal Finance**. This financial planning program takes you step-by-step through the process of organizing personal finances. A major part of it is budgeting, a crucial item to anyone's financial strategy. Both **SwiftTax** and Sylvia Porter's **Finance** are GEM-based, retail at $80.00 and should be available by the time you read this.

**MaxThink** is an idea processor for the Atari ST. Without going into the snake-oil pitch of its creator, the product is said to go beyond the characteristics of an outline processor. Since outline processors require top-down thinking, these are best suited for analytical tasks (breaking something down into its parts). **MaxThink** has this capability, plus the ability to start with an idea—say somewhere in the middle of a thought—and work its way either further down to the specifics, or up to the higher level.

**MaxThink** can be used on a 520 or 1040, with a color or monochrome monitor. Outline size is limited by computer memory, as is amount of detail. The program lists for $60.00.

### Drawing software.

Generic Software was showing off their **First CADD**, a computer aided design (or CAD) program for the ST. It's an entry-level two-dimensional drafting and design package from the makers of **Generic CADD**, a popular, inexpensive program for the IBM PC and clones. It is meant to create flowcharts, organizational charts, forms, floor plans and other types of drawings.

**First CADD** is a menu-oriented drawing program that supports all three resolution modes of the ST. All drawing, editing and

menu selection is done via mouse, and output can be directed to Epson-compatible dot-matrix printers. **First CADD** is selling for $50.00.

**MIDI software.**

Quite a few publishers were demonstrating their MIDI (Musical Instrument Digital Interface) software for the ST. MIDI allows synthesizers, sequencers, computers, rhythm machines and other devices to be interconnected, through a standard interface. The Atari 520 and 1040ST computers have a MIDI interface built in.

Many MIDI programs currently (or soon to be) available for the ST share similar features. All require a separate MIDI device, usually some type of musical keyboard, to be connected via cables to the computer. Then the user can play the keyboard and have the notes stored in memory or saved in disk files, to be played back through the keyboard. Once the notes are stored in the computer memory or a file, the MIDI program will let you edit, rearrange or otherwise manipulate the composition which was originally played. Since the notes are stored digitally in memory and your keyboard is under the computer's control during playback, you'll find no loss in sound quality. Rather than being recorded (like a tape recorder) and played back, when the MIDI program tells the musical keyboard to play, it is first-generation music—as if you were playing the keys yourself.

What differentiates various MIDI software offerings is the extent to which you can manipulate the music once it has been stored. Another variable in programs is the way music is initially stored. True MIDI programs store musical notes as you play the keyboard. Others require you to enter notes individually with the mouse, but have the ability to play back through the MIDI keyboard.

**MIDIPLAY** is a real-time (stores notes as you play) MIDI record/playback system that supports all sixteen MIDI channels of information. This information can include pitch, duration, velocity and other MIDI parameters. Over 200,000 MIDI notes can be stored in 1 megabyte of RAM—*three hours* of music. **MIDIPLAY** is $50.00 and will work on color or monochrome ST systems. Electronic Music Publishing House, Inc., creator of **MIDIPLAY**, also has for sale a series of "prerecorded" MIDI data disks, containing professionally performed music for your entertainment or education. The first **MIDIDISC** is **Classics, Vol. 1**, priced at $20.00. It contains the music of Bach, Beethoven, Chopin, Debussy and Mozart. **MIDIPLAY** and **MIDIDISC** are both available now.

**METATRAK**, from MIDISOFT Corp., is an Atari ST "recording studio". Using the full GEM interface, **METATRAK** provides real-time recording, playback, overdub, rewind and record features. Notes can also be entered individually, for more precise arranging. Thirty-two independently controlled tracks can be created and, with the full-track editing option, can be combined, moved, copied or erased. Cut and paste features let you easily rearrange a composition. **METATRAK** should be selling for $99.00 by the time you read this.

Another new MIDI program is called the **Orchestrator**, from Intersect Software. This music composition and entertainment system for the ST uses the full GEM interface. Compositions can be played back through the ST sound chips or a MIDI-compatible instrument. Music is entered via mouse in standard musical notation, rather than by

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real-time musical keyboard entry. A built-in editor allows you to edit any of the three ST voices independently, rearrange compositions with the cut and paste features, and save songs as files. The **Orchestrator** is more an entertainment product than a MIDI instrument controller program. It will be retailing for $50.00 by the time you read this.

XLent Software has a $50.00 MIDI program, the **ST Music Box**, to lend graphics support and other administrative tweaking to your composing. The program requires note-by-note mouse entry, but it will play back through your monitor's speaker or a MIDI instrument. Sheet music with lyric and graphic notation can also be printed with **ST Music Box**, which is out now.

Beam Team Software was demonstrating several MIDI-related programs for the ST. All use the GEM interface and seem quite professional. **Transform-Xsyn** is a series of graphic editors/librarians for FBO1, Yamaha JX, DX and TX and Casio CZ synthesizers. In addition to real-time recording of up to 80,000 notes and editing capability to modify your composition, **Xsyn** is a full-featured patch librarian.

Most synthesizers, such as the inexpensive but feature-packed Casio CZ-101, allow you to create your own sound by manipulating various parts of the soundwave. This is typically done with switches, knobs or pushbutton keys on the synthesizer itself. The result of manipulating these is that the sound, stored digitally in the synthesizer, is altered. When you've created a particular "sound" and stored it in the synthesizer memory, it's called a *patch*. A patch librarian program allows you to store patches as files and call them up, to transfer to the synthesizer.

The Beam Team **Transform-Xsyn** MIDI program is available in versions for the individual synthesizers mentioned above. The program now sells for $100.00. Another Beam Team Transform program, **Xnotes**, is a music composer and score publisher. A variety of flexible modes are provided, for the input and editing of professional-quality music notation on-screen, as well as features for high-resolution printout of scores, including text. **Xnotes** is priced at $200.00 and is available now.

The third Transform product, **Xtrack**, is a $150.00 professional sequencer/recorder. It offers most of the features used today in music production, including Song Pointer for SMPTE synchronization. It provides high-quality graphics, unlimited tracks, a full-featured step editor for MIDI events, and much more. All three Transform MIDI programs can access files and data from the others.

**Utility programs.**

Beckemeyer Development Tools brought along many products. **Micro C-Shell** provides a UNIX-like environment on the ST. This $50.00 program has such features as aliases, history, shell variables and a built-in structured programming language. The company also sells a $25.00 tools package, **Micro C-Tools**, providing another couple dozen commands and more utilities. **Micro Make** is a $35.00 UNIX-like Make tool, primarily for software developers. It could be a real time-saver for assembly and high-level language program development.

The newer multi-tasking version of the original shell, **MT C-Shell**, is retailing for $130.00. It incorporates a real-time kernel, a multi-user multi-tasking environment, electronic mail, multi-tasking print spooler, and all the features of **Micro C-Shell**.


"Don't even think about another C compiler"

- Mike Fleischman, ANTIC: The Atari Resource, Sept. 1986

Megamax Professional C Development System For The Atari ST
Rated #1 C compiler by ANTIC, Compute!'s Atari ST, and Start: The ST Quarterly

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- Intelligent Linker produces efficient native code
- Extensive documentation
- Disassembler
- C programmer's editor
- Code improver
- Developer support included
- Resource construction program
- Create desk accessories
- In-line assembly and structure passing
- Object file librarian
- Six times faster than Atari Development Package
- Develop on single drive 520 ST
- The compiler chosen for development by:
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**Hard Disk Accelerator** is this company's disk-caching program for ST hard disks. The program works automatically with all software and can be used with any ST to speed access by as much as 300 percent. Selling for $50.00, it will be available by the time you read this.

Beckemeyer has a number of additional utility products that will become available in the near future. One is a desk accessory which provides a C-Shell from within. The prototype being displayed looked like a handy product. Another future offering may be a set of hard disk tools. This could include a backup program, disk compaction and a tool for maintaining software across machines.

The young folks of Paradox Enterprises, who were the first to come out with a 5¼-inch MS-DOS disk drive for the ST, were also in attendance at Atari's exhibit. They were demonstrating their latest MS-DOS emulation program, **MS.EM**. This $70.00 software turns the 68000 microprocessor ST into an IBM PC work-alike. **MS.EM** performs with all versions of MS-DOS. The preferred DOS is version 3.2, because it supports the 80-track drives used by the Atari ST.

Some programs already tested include **Sidekick, Word Perfect 4.1, Wordstar, dBase III, Turbo Pascal, Lotus 1-2-3**, and many more. Function keys all work when using MS-DOS programs, as do all MS-DOS commands. This utility program really puts the CP/M emulator to shame. Think of the paradox of running the MS-DOS versions of GEM application programs and the desktop on the GEM-based Atari. Perhaps we'll finally see GEM Write, Draw, Graph and Paint on the ST, after all.

Classic Image was demonstrating their **Disk Library** for the ST. This $50.00 program lets you organize and access all the files and programs on your many ST disks. **Disk Library** files, categorizes and cross-references each disk, each folder and each file in your library, creating a permanent record. As you add new files, folders and disks, they're automatically updated to the library. After the information has been updated, you can print a listing of what you have, search for specific items or groups of items, and generally manage the information contained on your disks.

Softlab was showing **Oscar**, their hard disk backup program. This is a flexible, ST hard disk backup program that stores files on floppy disks. Available now, it sells for $40.00. Look for a hard disk backup program review article soon in these pages, comparing this and other currently available programs.

**Mark Williams C** for the ST was being exhibited by the Mark Williams Company. This product is an implementation of the standard C language, which produces code proven denser and faster than that of most C compilers on the market. It contains a number of extensions to the basic C language, such as a shell environment, and access to GEM AES and VDI libraries. It also includes an assembler and linker, and the microEMACS full-screen editor with source code. **Mark Williams C** is available now, for $180.00.

*"Perhaps we'll finally see GEM Write, Draw, Graph and Paint on the ST, after all."*

### Educational software.

First Byte Software was showing four new software titles, aimed primarily at preschool through sixth-grade children. The programs are the first in the new **Smooth Talker** series, which uses voice synthesis on the ST.

**First Shapes** is designed for ages three through six. It is meant to teach children the beginning concepts of form and size, in a playful environment controlled by the child.

**Speller Bee** is a spelling program that allows parents to enter their own words, or to use the supplied vocabulary, to teach a child how to spell. **Speller Bee** uses both word-oriented, pull-down menus and larger graphic-oriented "picture box" menus for the younger child, with synthesized speech to pronounce words once they're spelled correctly.

**Math Talk** problems can either be entered by the parent or child, or by the program. In addition to providing practice on math problems, the program also features a game to teach math tables.

**Kid Talk** uses the principle that children learn to read by reading their own writing. This word processor lets children enter a story or letter—and not only read it, but hear it, too. Similar to the preceding offerings, **Kid Talk** provides the option of using pull-down, word-oriented menus or "picture box" menus. **Math Talk** and **Kid Talk** are designed for first- through sixth-grade children.

Each First Byte educational software programs retails for $50.00 and should be available by the time this magazine is on the stands.

Unicorn Software displayed several new educational products for the ST, aimed at the elementary through junior-high levels. **Kinderama** is a preschool program of five early learning games. For children of preschool age through six-year-olds, the program covers letter recognition, counting, and simple addition and subtraction. **Read and Rhyme** is a reading program dealing with language arts activities: phonics, vocabulary, and alphabet order and classification. It is meant for children ages five through ten.

**Math Wizard** is designed for the five- through thirteen-year-old and covers the four basic math operations, simple equations and word problems. **Fraction Action** and **Decimal Dungeon** are aimed at children eight and up. Both are arcade-style math programs using a **Donkey-Kong**-type of format. Addition through division, and conversions to percentages and fractions are covered. Both programs are combination tutorial-and-game-format products.

All Unicorn Software is available now, at $40.00 each.

### Games.

MichTron was showing a couple of new games for the ST. **Karate Kid II** is an action game, tied closely to the recent movie and containing superb graphics. Written in England, **KKII** is a one- or two-player game with several interesting features. On attaining a certain score, bonus screens are displayed (like the famous catching-the-fly-with-the-chopsticks scene). In addition to this, audio output can be played through a MIDI keyboard. Even the ST's audio capabilities, as played through the monitor speaker, sound good. **Karate Kid II** will be available by the time you read this article, for $34.95.

**Shuttle II** takes place in the 1990s and puts you in control of the next-generation space shuttlecraft. Really more of a simulation than a game, a complete round of this one can take as long as 30 minutes. **Shuttle II** will be available in the first quarter of 1987, for $40.00.

**Trivia Challenge** is the third new game from MichTron. Not only does it contain hundreds of queries in such topics as pop music, sports, arts and general knowledge —this software also lets you create your own questions and categories. Each question has three possible answers, and you can gamble money on the outcome. In addition, the quicker you answer a question, the more points you'll receive. **Trivia Challenge**, out now, sells for $40.00.

Scorpio Systems International brought a new game for the ST, **Professor Craps**. What better place than Las Vegas for the premiere of the ST version of this already-popular program? With the $50.00 game, you'll learn how to play craps: make the correct bets, take or lay the correct odds, understand the table and percentages, and develop your own strategy. The simulation can be played either straight, or in a "student" mode, which allows you to try alternatives, get advice and see the outcomes of various bets and strategies.

Another game being shown was **Diablo** from Classic Image Software, derived from the European game **Diablotin**. It consists of tracks, panels and a ball which follows the maze of tracks. Tracks are divided into panel sections, and each of the panels can be moved. As the ball continually follows

its track, you have to move the panels, to slide more tracks into position for the ball. It's a lot more difficult than it looks. **Diablo** sells for $30.00 and will be available as you read this.

Electronic Arts had held off on publishing ST software, but we were glad to see them this time around. Being shown by the company were ST versions of **Skyfox** and **Chessmaster 2000**.

**Skyfox** is an excellent flight simulation/combat game that had not yet appeared on any Atari machine. **Chessmaster 2000** is one of the best computer chess games currently available. According to EA president Trip Hawkins, if these ST titles sell well, more can be expected.

Eidersoft, another of the many British firms present at the fall COMDEX, was exhibiting their three-dimensional space arcade game, **Wanderer**. Glasses are supplied with the game to create an illusion of 3-D movement on-screen. We were surprised at how well the illusion worked, especially with this space/flying game. The company's **ST Karate** has been available for some time on European shelves, for another machine, and has just come over to the U.S. for us. **Wanderer** sells for $35.00, while **ST Karate** is $39.00. Both games are available now.

> *"More and more, the Atari ST is being recognized as a serious computer..."*

**The end.**

That wraps up our fall COMDEX coverage. There are now about 400 software titles for the ST, either currently available or about ready to ship. That's a very healthy number, considering the time the ST has been available. More and more, the Atari ST is being recognized as a serious computer and is being welcomed in either the business environment or the home.

In the Madison Ave. Department, Atari has changed their advertising slogan. The very familiar "Power Without the Price" has been replaced by "Technology So Advanced It's Affordable." A major advertising campaign was reported at COMDEX as having already begun, in such national general-interest magazines as *Time, Newsweek, Business Week, Omni* and *Scientific American*. In addition, Atari claims that advertising will continue in a number of computer magazines.

All in all, it looks like the ST is here to stay. The amount of software, the industry reaction (finally) and the continuing sales all mean the ST—in a variety of forms—will be around for a long time. ///


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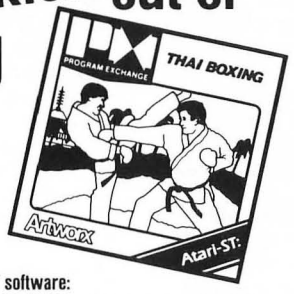


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CIRCLE #122 ON READER SERVICE CARD

# Step 1
# HARD WARES

## For the first-time computer user: what the texts *don't* tell you about how to get the most from your ST.

by Maurice Molyneaux

Atari's ST computers are particularly appealing to the first-time computer buyer, not only because of low price and powerful features, but also because of their "friendly" GEM (Graphics Environment Manager) user interface. Point-and-click is a lot more appealing to the first-time user than the menacing A> prompt with which many other computers greet their operators. However, no matter how simple the ST is to use, there remain numerous fine points of operation Atari's manuals (and most books on the ST) fail to cover adequately, or at all.

So, for the user new to the ST, I am writing this, the first of several articles covering those aspects of the ST either missed or barely mentioned in other texts. We begin with a discussion of hardware; future articles will cover such topics as software, floppy disk formats, even a detailed rundown of how to use GEM.

### Hard and soft.

One of the most common questions I hear from new users is, "What's the difference between hardware and software?" Despite the temptation to reply that hardware is stiff and software is supple, the truth is that hardware refers to actual mechanical devices: your computer, monitors, disk drives, printers, mice, etc. Software refers to the programs and data actually used by your computer: spreadsheets, games, word processors, etc.

A third term, *vaporware* (or *vapor*), is used in the computing world to refer to announced products that just don't seem to make it to the market (the 130ST and 260STD, for example.)

### RAM not ROM.

Another of the most common questions new users pose is, "What's the difference between RAM and ROM?" RAM is an acronym for Random Access Memory, which doesn't mean much to a novice. Simply put, RAM is the part of your computer hardware which stores the data and programs you've loaded; it's where said data is manipulated and used. For example, the text you type when using a word processing program is stored in RAM, where it can be edited, saved to a mass storage device (a disk drive), or erased. The important thing you must remember about RAM is that it's erased when the power is cut off. In other words, RAM is volatile memory—everything in it is forgotten the moment you turn off the machine. So, if you've created some data you want to keep, make sure you save it to a disk before you turn off or RESET your computer. Otherwise, it'll vanish from RAM and spend eternity in that ether we call "electron heaven," from which there is no resurrection.

ROM stands for Read Only Memory. The data in ROM is literally *etched* into the chips; it cannot be erased. You and your computer may "read" the contents of ROM, but those contents can't be altered. When you turn off the power to your computer, the contents of ROM (unlike those of RAM) are not erased.

In most cases, ROM contains the instructions and routines that tell your computer how to run. In the ST, TOS (an acronym for The Operating System; other operating systems are often referred to as "the machine's OS") and GEM (the system's software) are held in its six ROM chips. When you turn on your computer, ROM tells it how to be an ST. Cartridges almost universally hold nothing but a ROM chip or two, programs for your computer's use.

Memory is generally measured in Ks or *kilobytes*. One K equals 1 kilobyte. A kilobyte consists of 1024 bytes, not an even 1000, as you might expect from the prefix *kilo*. This odd numbering system is due to the way computers handle math.

### The ST.

As I write this, there are only two models of the ST available: the **520ST** and the **1040ST**. For all intents and purposes, they're the same machine, with only minor differences in configuration. Both have 192K of ROM, a 94-key keyboard, a mouse, two mouse/joystick ports, a cartridge port, DMA/hard disk interface, RS232C serial port, Centronics parallel port, monitor jack, MIDI in and out jacks, and a floppy disk connecter. The main differences between the machines have to do with memory, floppy disk drive A and the capability for connection to a television.

The 520ST contains 512K of RAM, while the 1040ST contains 1024K of RAM. Although currently no provision has been made for the external addition of RAM to the ST (aside from cartridge-based RAMdisks), a number of companies offer memory expansion boards that can be put inside your computer. I will warn you now, however: generally, this type of operation is extremely delicate. I'd recommend having any such memory expansion done by the technician at an authorized Atari dealership. I'd also suggest asking other ST owners who've had their machines' RAM upgraded which board they've used and how well they work. (I don't recommend the technique of RAM chip "piggybacking." I've seen too many ST's die on the table, or have RAM failures later, due to overheating.)

The 520ST must be accompanied by at least one external floppy disk drive unit, in order to function. The 1040, by contrast, contains a double-sided disk drive (the equivalent of an **SF314** drive) in the computer itself. The 1040ST's power adapter is also built into the computer case, while the 520ST's is a box which sits "outboard" (apart from the computer). Most 520ST units manufactured after 1985 contain an RF modulator and a jack for connecting the computer to a television set. As of this writing, the 1040ST does not contain such a device.

Other than the preceding details, the machines are virtual twins, so the question of compatibility (will a program for the 520 run on a 1040?) should never come up —*unless* a particular program requires more RAM than a stock 520ST contains (a couple of programs written before the 1040ST was released will not function on any ST containing more than 512K of RAM.)

### Eye of the beast.

The number one output device of your ST is the monitor. If you own a 520, you can probably attach it to a television set. Since the TV picture doesn't do justice to the machine's graphics, I don't recommend it. That leaves you (currently) with one of two options, or a third—unlikely—alternative. When you buy an ST, you're generally given the choice between purchasing it with the **SM124** monochrome or the **SC1224** color monitor.

The SM124 is a special high-resolution monitor which displays a screen with dimensions of 640x400 pixels (a *pixel* is a "picture element," a dot on the screen), in black and white only. The black and white here is truly just black and white, with each pixel being either on (black) or off (white). The only gray tones you'll see are generated by clustering white and black dots. When the ST is connected to this monitor, it will operate in high-resolution mode only, and will not allow low or medium resolutions (which use color). The SM124 is an ideal choice for people who intend to use their computers for text or business-oriented applications, where color graphics are not important. Most word processors benefit greatly from the sharp readability of the SM124's display, which is easier on the eyes in the long run than is a color display.

The SC1224 is the most common choice among American ST purchasers. It is a high-quality color monitor of the analog RGB type. RGB monitors are generally among the crispest for color displays, because they receive signals for each of the three primary colors which create the display (Red, Green and Blue=RGB) on separate lines, rather than as one jumbled signal.

Attached to a SC1224, the ST can display screens in low resolution (320x200 pixels with 16 user-selectable colors), or medium resolution (640x200 with 4 user-selectable colors). Available colors can be chosen from a palette of 512 possible hues. Low-resolution mode is fine when you're using painting software (like **NEO-Chrome**, **DEGAS Elite**, etc.) and for many games. Medium resolution is recommended if you'll be working with word processors, databases, spreadsheets, etc. If you intend to use your system even occasionally for graphics and games, then the SC1224 is probably the better bet.

The third and least likely choice for a monitor is the Atari **PS3000**. This monitor is merely a SC1224 in a new case, but with the important difference that it contains a single-sided disk drive inside the monitor housing. Atari produced a number of these, but they're hard to come by. They also have limited appeal, as most users would prefer a double-sided drive in place of the single-sided one contained in the PS3000.

If you have both a color and a monochrome monitor, be advised that you will have to unplug one to use the other. . . but *never* switch plugs while the ST is on. It could damage your computer, and you can't fool an ST into keeping one resolution when you switch to another monitor—it will perform a system reset if you try it, as surely as if you'd pressed the SYSTEM RESET button.

If you have two monitors, but hate constantly switching plugs, **Monitor Master** by Practical Solutions is for you. With it, you can flip a switch to go from one monitor to the other. (I still suggest turning the computer off before doing this; and don't leave both monitors on at the same time.) Even better, the new **Monitor Master II** apparently will allow you to have *both* an audio output line (you could connect this to a stereo or tape deck) *and* a composite video output line (to hook to a composite monitor or VCR).

### Cartridges.

You read earlier that almost all cartridges are ROM devices. As with most other hardware, you should never plug in or remove a cartridge from your computer with the power *on*, since it could damage your ST. Cartridges come in many forms with varied functions, including battery backup clocks, video digitizers, emulators (like the **Magic Sac** Macintosh emulator), and the always-popular game and program cartridges.

Like most computers, your ST when first turned on

checks to see if a cartridge is inserted into the cartridge port. Generally speaking, the ST hands control of itself to the programs in a cartridge. The cartridge may or may not activate GEM or other ST functions, like disk use. In contrast, some cartridges (e.g., Magic Sac) do nothing until a disk-loaded program is run to activate them.

The advantage of cartridges is that they are instantly loaded, and the data in them can't be erased as disk files can. The disadvantage is that, because they're hardware, they cost more to manufacture than do programs on inexpensive floppy disks.

### Driving floppies.

The current ST system will support only two floppy disk drive devices. If you have a 520ST, you can have two external drives; if you own a 1040ST, you can purchase one external disk drive to supplement the internal one (make sure you buy a double-sided drive if you get an external unit for your 1040). Third-party units which contain two disk drives in one casing are still treated as two drives, so don't assume you can fool the ST into using more drives than it allows.

Atari offers two different models of 3½-inch microfloppy disk drives to the user: the **SF354** single-sided disk drive (which stores about 360K of data per disk in standard format) and the **SF314** double-sided drive (about 720K per disk in standard format). The difference between single- and double-sided drives is that the single has only one "head" which reads and writes to only one side of the disk, while the double has two heads with which it may work on both sides of a disk, doubling its storage capacity.

Double-sided drives are preferable, because, in the long run, you will have to purchase fewer disks (double-sided disks aren't that much more expensive than singles), thus saving money and space (half the number of disks for the same amount of data).

You can buy double-sided disks for use on a single-sided drive, but this won't yield any greater storage space. It's important to note that a single-sided drive cannot write to or read from a disk formatted as double-sided. However, a double-sided drive *can* read and write disks in single- or double-sided format, and format them as such. Most commercial software is supplied on single-sided disks, so there's usually not much problem with which drive you have.

You should remember that you cannot use GEM's disk copy function to copy a disk of one format to a disk of the other format (e.g., copy a single-sided disk to a double-sided one). If you want to transfer files from disks of different formats, you'll have to copy the files themselves, not the whole disk.

Some companies sell 5¼-inch floppy drives, a few of which can be used for transferring files between IBM compatibles and the ST. Ask your Atari dealer about these, if you feel it would be useful to transfer data files between an IBM compatible and your ST.

By the way, the most common drive-related error I've seen with the ST occurs when users have an external drive placed very near a monitor (particularly the SM124), or when the drive's data cable crosses a power or monitor cable. If you have any problems reading disks on an external drive, move it as far from your monitor as you can, and make sure the drive's data cable doesn't come in close proximity to or cross other cables. If the problems disappear, you've located the trouble.

### The box.

Another type of disk drive is the hard disk. Unlike a floppy drive, into which you insert the various program disks, most hard disks are "fixed," meaning the disk in the drive is not removable. With no access slot, they generally look like blank gray boxes. Hard disk drives are far more expensive than their floppy cousins, but the price pays for some decent benefits.

First and foremost is their tremendous storage capacity. The most common hard drives for the ST—including Atari's **SH204**—provide 20 megabytes (about 20,480K) of storage space, the equivalent of around 28 double- or 56 single-sided disks! In addition, due to the fact that an active hard drive is (usually) always spinning, they are much faster at reading and writing than are floppy disks. Couple this with the tremendous potential transfer rate of the ST DMA/Hard Disk port, and you'll find your floppies seem ridiculously slow by comparison.

The main use for a hard drive is to store programs you use often and large amounts of data. Programs which are supplied on more than a single floppy disk are often best transferred (if they aren't copy protected) to your hard drive, to eliminate annoying and confusing disk swaps.

Software developers prefer hard disks to floppies, because, when compiling and linking files, the hard disk is much swifter. It saves them a lot of time.

The danger with hard disks is that they're easily damaged if you bump them while on (the drive head can crash into the spinning disk and gouge it), and vast amounts of data are lost if the drive fails. Some companies offer high-speed tape backup systems for hard drives, which can be a real lifesaver.

Currently, the ST cannot be booted (the system activated) from a hard drive, so you must have a floppy drive to boot from. Also, the DMA/Hard Disk port allows only one hard drive to be plugged in, although the system can support far more than that. Some sort of splitter unit will be required to attach multiple devices to this port.

### Can we talk?

If you want to contact information services, electronic bulletin boards, or just zap a file to your friend's computer across town, you'll need a *modem*. A modem is a device which MOdulates a computer's data into audio pulses, transmits them across telephone lines, where they are received and DEModulated by a modem on the other end. This allows you to link two or more machines together across great distances.

A number of modems are available, mostly of the 300- and 1200-bps (bits per second) variety (*baud* is often used in place of *bps*). I would not recommend a 300-bps modem; they're very slow, which means more money if you're calling long-distance or paying a service charge based on your connect time to a system. The 1200-bps modems are quite reasonable in price, and, by the time you read this,

Atari's own **SX212** 1200-bps modem should be available (perhaps for under $100.00).

You should *not* choose a modem lightly. Ask other users which brand they use; what, if any, problems they have with them; and make sure the particular brand works with your ST—and that the software you plan to use with the modem will function with the ST. It's best to try to stay with modems that are Hayes compatible. It's something of an industry standard, so most telecommunications programs support it.

The modem is connected via the RS232C (modem) port on your ST. Most non-system-specific modems have been designed to connect to such a port, and appropriate cables are not difficult to obtain.

### Put it on paper.

Purchasing a printer is one of the wisest investments a serious computer user can make. Not only can you drop a letter to Aunt Tessie, but you can print out source code for programs in development, reports from a database or spreadsheet, and the on-disk instructions to programs that lack printed manuals. And, if you have the right kind of printer, you can even print greeting cards, calendars, blueprints, or the screen itself.

If you intend to print only text—particularly for business letters, statements, etc.—and you want it to look professional, then I suggest buying a printer capable of true letter-quality text. Most letter-quality printers fall into the "daisy wheel" category. These are wonderful for straight text, but useless for most graphics applications.

The average user buys a dot-matrix printer, with which he or she can print text and graphics at a reasonable speed. Ink-jet printers are also available. They're quieter than the dot-matrix variety, and sometimes surpass the latter's output quality. If you want a printer for *both* text and graphics work, I'd seriously suggest getting a graphics-capable printer that supports a Near-Letter-Quality (NLQ) mode. This gives you the best of both worlds without having to buy two printers. Laser printers are the best bet for such dual usage, but their high prices make them unattractive to the average user.

If you intend to print graphics, make sure the printer you buy is Epson compatible. The ST has a built-in screen dump utility which uses the Epson format for output. If your printer doesn't use Epson-compatible graphics codes, you'll have to obtain a printer driver to make it function properly for screen dumps.

Insofar as color printers go, generally the common types are: thermal transfer, ink jet and some dot matrix. Thermal-transfer printers (like the **Okimate 20**) often give the most impressive color, with a vivid, glossy print. However, such printers are prone to leave narrow gaps or overlapping edges on lines of print (most dot-matrix printers suffer this problem, too).

Ink jets are generally much better at printing uniformly than are thermal printers, but their print quality tends to look a bit flat, and the darker colors do not reproduce well on them.

Make sure you get a good look at an actual printout from *any* printer before you buy it.

### Protection.

There are a number of hardware items no ST user should be without. Here they are. . .

*Surge suppressor* — A multi-socket (usually) device into which you plug all of your computer equipment. The suppressor should be plugged into a properly grounded electrical outlet. Its purpose is to filter incoming electricity and prevent power surges from getting to your valuable computer hardware. Suppressors generally have built-in circuit breakers, to prevent an electrical spike from damaging your system. There are many makes, but there's absolutely *no* excuse for not having one. You can also purchase special suppressors for your telephone line, to prevent the spikes which could damage your modem and whatever it's connected to.

*Dust covers* — Particularly for your computer itself. Dust is a great menace to your computer system, so get a cover and put it on your machine when you're not using it. Such dust covers are made to fit almost every conceivable piece of hardware, including monitors and disk drives.

*Mouse pad* — These little mats not only improve your mouse's traction and accuracy, but also save wear and tear on the ball and associated mechanisms, because such pads are generally better than your desktop's hard surface.

*Disk cases* — Stacks of unorganized floppies, unlabeled and perhaps in the boxes in which they were bought, are just another accident waiting to happen. Label them and file them in a disk case (the flip-open type is best), where you can find them and won't mistake them for unformatted blanks.

### Shutting down.

That's it for now. Next time out, I'll be discussing disk formats, conventions of filenames, uses of subdirectories, what a program is, bombs, what I call the Three Laws of Computer Errors, and more. In the meantime, if you have any questions or comments, drop me a line, in care of this magazine. That way, I'll know if I missed some points important to you. **ST-Log** is committed to being of use to ST users, from novice to grand-master-hacker status, and your input is more than welcome! ///

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*Highly allergic to all things Commodore, Maurice Molyneaux purchased his 800XL for animation. Now wielding an ST, he writes regularly for a local Atari users group, is finishing revisions on a science fiction novel and occasionally sells original paintings on commission, in addition to being employed as a computer operator by a mining company in Nevada.*

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# Appointment Calendar

## On-screen or in print, this should help get you organized.

by Richard J. Bourne

Of all the utilities I have created on my Atari ST, few are as useful as this adaptation of the time-honored calendar routine. You can use it in two ways: printed to your screen, it can be most useful to match a day with a date, either in the past or the future. Dumped to a dot-matrix printer, it puts each month on an individual page in grid form, with plenty of room to jot down reminders of meetings, social engagements, doctor's appointments, etc. I can hardly keep up with the requests for photocopies from friends and workmates!

The program is optimized for the Panasonic KXP-1091, but you should be able to customize it for your own printer in less than fifteen minutes. Lines 830-950 contain the fully remarked printer codes, and if your printer is an Epson or Star, you won't have to change more than a few of them. If your printer doesn't support a code, just delete that definition line.

If your model printer can accept "downloadable character shapes," you'll get virtually perfect vertical lines. If not, you'll have to delete Lines 960 to 980 and use the standard character which best represents a vertical line. I chose the lowercase letter *l*.

The clarity of the program is much improved by liberal use of long, descriptive variable names (ST BASIC allows up to thirty-one characters per variable name) and by the use of labelled lines (ST BASIC accepts *GOTO DAYOFWEEK* as readily as *GOTO 460*, as long as you've included a line such as *460 DAYOFWEEK:*). You may add other ST BASIC statements on the same line, after the label and colon.

Be particularly careful to type the proper number of spaces in lines which define the strings for months, days and dates. For example, each day or month name is padded with spaces to occupy equal length within the string. Count carefully any extra spaces at the start and end of these strings.

If you're using a printer, check to be sure it's turned on and set to the top-of-form *before* you run the program. You will be asked the year for which you wish a calendar and whether you want a single month only. Printing begins almost instantly if you're starting at January, but is otherwise delayed, since the program must calculate all dates from the start of a year.

Sooner or later, you'll probably want to print out a calendar for the year 2020 (to see on what day your birthday will fall), or one in the distant past (to better visualize some historic event). The future is yours up to the year 9999 (leap years are properly calculated), but you cannot select any year before 1583. The reason? In late 1582, Pope Gregory XIII had his astronomers revise the old Julian calendar, to make it coincide better with the movements of the Earth and Sun. ///

*A television instructor at the Southern Alberta Institute of Technology, Richard J. Bourne uses computers in many ways in his courses—for TV graphics; preparation of logs, shift schedules and handouts; and for computerized videotape editing. The school has recently purchased forty 520 and 1040STs for training purposes. Mr. Bourne holds his B.Ed. degree, with sixteen years teaching and ten years broadcast experience.*

*(Listing begins on next page)*

Listing 1.
ST BASIC listing.

```
10 '  APPOINTMENT CALENDAR
20 DEFINT A-Z:PR=1:YEARFLAG=0
30 WIDTH 255:WIDTH LPRINT 255
40 FULLW 2:CLEARW 2:PRINT"APPOINTMENT
CALENDAR"
50 '  INPUT SECTION
60 INPUT"SCREEN ONLY?  Y/N";QUEST$:Q$=
LEFT$(QUEST$,1)
70 IF Q$="y" OR Q$="Y" THEN PR=0 ELSE
GOSUB PRINTCODES
80 GOSUB SETUP
90 START: INPUT"FOR WHAT YEAR DO YOU W
ANT THE CALENDAR  (4 DIGITS)";YEAR
100 IF YEAR<1583 OR YEAR>9999 THEN PRI
NT"YEAR IS OUT OF RANGE":GOTO START
110 IF PR=0 THEN 140
120 INPUT"DO YOU WANT A SINGLE MONTH O
NLY  (Y/N)";QUEST$:Q$=LEFT$(QUEST$,1)
130 IF Q$<>"y" AND Q$<>"Y" THEN MONTH=
12:YEARFLAG=1:GOTO ROUTINE
140 INPUT"FOR WHAT MONTH DO YOU WANT T
HE CALENDAR (1-12)";MONTH
150 IF MONTH<1 OR MONTH>12 THEN PRINT
"1-12 PLEASE!":PRINT:GOTO 140
160 '  PRINT CALENDAR
170 ROUTINE:FOR MB=1 TO MONTH
180 MC=MB:YC=YEAR:GOSUB DAYOFWEEK:W1=W
EEKDAY
190 MC=MB:GOSUB MONTHOFYEAR:M1$=MONTH$
200 IF MB<MONTH AND YEARFLAG=0 THEN 28
0
210 CLEARW 2: GOTOXY 0, 0:PRINT SPC(30
);M1$;"  ";YEAR:PRINT
220 PRINT DAYNAMES$:PRINT
230 IF PR=0 THEN 280
240 LPRINT WIDEON$;BOLDON$
250 LPRINT :LPRINT "          ";M1$;"
";YEAR:LPRINT
260 LPRINT WIDEOFF$:LPRINT DAYNAMES$
270 LPRINT LINEFEED8$;:LPRINT UNDERLIN
E$
280 MC=MB:GOSUB DAYSINMONTH:D1=DM
290 FOR I=1 TO 6:J=1:IF I>4 AND ((I-1)
*7+J)>D1+W1 THEN 450
300 IF MB<MONTH AND YEARFLAG=0 THEN 33
0
310 IF PR=0 THEN 330
320 LPRINT BAR5$:LPRINT "1";
330 FOR J=1 TO 7:E1=((I-1)*7+J+6-W1)*2
-1
340 IF ((I-1)*7+J)>D1+W1 THEN DAY$="
" ELSE DAY$=MID$(DATE$,E1,2)
350 IF MB<MONTH AND YEARFLAG=0 THEN 38
0
360 PRINT "     "DAY$"   ";:IF PR=0 TH
EN 380
370 LPRINT "     ";WIDEON$;DAY$;WIDEOF
F$"1";
380 NEXT J
390 IF MB<MONTH AND YEARFLAG=0 THEN 45
0
400 PRINT:PRINT:IF PR=0 THEN 450
410 LPRINT
420 FOR T=1 TO 6:LPRINT BAR5$:NEXT
430 LPRINT BAR5$;:LPRINT CR$;
440 LPRINT UNDERLINE$
450 NEXT I
460 IF YEARFLAG=0 AND MB<MONTH THEN 48
0
470 IF PR=1 THEN LPRINT FORMFEED$;
480 NEXT MB
490 PRINT:INPUT "ANOTHER PAGE";QUEST$:
Q$=LEFT$(QUEST$,1)
500 IF Q$="y" OR Q$ ="Y" THEN CLEARW 2
: GOTO START
510 CLEARW 2:END
520 '  DAY OF THE WEEK
530 DAYOFWEEK: IF MC>2 THEN 540 ELSE M
C=MC+12:YC=YC-1
540 WEEKDAY=1+2*MC+INT(.6*(MC+1))+YC+I
NT(YC/4)-INT(YC/100)+INT(YC/400)+2
550 WEEKDAY=WEEKDAY-INT(WEEKDAY/7)*7
560 WEEKDAY=WEEKDAY+6:WEEKDAY=WEEKDAY-
INT(WEEKDAY/7)*7
570 RETURN
580 '  NUMBER OF DAYS IN THE MONTH
590 DAYSINMONTH: IF MC<>2 THEN 640
600 LPT=0:'   CHECK FOR LEAP YEAR
610 Y=YEAR:IF (Y-INT(Y/4)*4)<>0 THEN 6
40
620 IF ((Y-INT(Y/100)*100)=0) AND ((Y-
INT(Y/400))<>0) THEN 640
630 LPT=1
640 DM=VAL(MID$(MONTHDAYS$,2*MC-1,2))
650 IF MC=2 THEN DM=DM+LPT
660 RETURN
670 '  MONTH OF THE YEAR
680 MONTHOFYEAR:MONTH$=MID$(MONTHNAME$
,(MC-1)*9+1,9)
690 RETURN
700 SETUP:DATE$="              1 2 3 4
5 6 7 8 9101112131415161718 19"
710 DATE$=DATE$+"20212223242526272829 3
031          "
720 DAYNAMES$="  SUNDAY    MONDAY    T
UESDAY  WEDNESDAY THURSDAY  "
730 DAYNAMES$=DAYNAMES$+" FRIDAY   SAT
URDAY  "
740 MONTHNAME$="JANUARY  FEBRUARY MARC
H    APRIL    MAY      JUNE     JULY
 "
750 MONTHNAME$=MONTHNAME$+"  AUGUST
SEPTEMBEROCTOBER  NOVEMBER DECEMBER "
760 MONTHDAYS$="312831303130313113031303130
31"
770 UL$="__________":UNDERLINE$=""
780 FOR T=1 TO 7:UNDERLINE$=UNDERLINE$
+UL$:NEXT
790 UNDERLINE$=UNDERLINE$+"_":' TOTAL
OF 71 UNDERLINE CHARACTERS
800 BAR5$="1          1          1
  1"
810 BAR5$=BAR5$+"          1          1
          1          1"
820 RETURN
830 PRINTCODES:'PRINTER CODES: MODIFY
THESE ACCORDING TO YOUR PRINTER MANUAL
840 ESC$=CHR$(27):'              ESCAPE
CHARACTER
850 BOLDON$=ESC$+"E":'           BOLD ON
860 BOLDOFF$=ESC$+"F":'          BOLD OF
F
870 LINEFEED8$=ESC$+"0":'        1/8" LI
NE FEED
880 PICA$=ESC$+"P":'             10 CPI
(PICA)
890 LINEFEED6$=ESC$+"2":'        1/6" LI
NE FEED
900 WIDEON$=ESC$+"W"+CHR$(1):' DOUBLEW
IDE PRINT ON
910 WIDEOFF$=ESC$+"W"+CHR$(0):'DOUBLEW
IDE PRINT OFF
920 MARGIN$=ESC$+"1":'           SET LEFT
 MARGIN
930 DEFCHAR$=ESC$+"y":'          DOWNLOAD
 A CHARACTER SHAPE TO PRINTER
940 FORMFEED$=CHR$(12):'         FEEDS FO
RM TO TOP OF NEW PAGE
950 CR$=CHR$(13):'               CARRIAGE
 RETURN
960 LPRINT DEFCHAR$"1"CHR$(0)CHR$(0)CH
R$(0)CHR$(0)CHR$(255);
```

```
970 LPRINT CHR$(0)CHR$(0)CHR$(0)CHR$(0
);:' DEFINE VERTICAL LINE CHARACTER
980 LPRINT MARGIN$;CHR$(5);:' SET LEFT
 MARGIN AT 5
990 RETURN
```

●

ST CHECKSUM DATA.

*(see page 23)*

```
 10 data  242, 869, 789, 399, 241, 825
, 759, 17, 517, 81, 4739
 110 data  332, 649, 291, 989, 418, 66
1, 27, 300, 175, 903, 4745
 210 data  374, 357, 349, 429, 877, 86
3, 431, 543, 453, 892, 5568
 310 data  336, 707, 354, 566, 922, 74
1, 169, 293, 927, 144, 5159
 410 data  300, 374, 768, 783, 284, 44
, 445, 499, 259, 171, 3927
 510 data  914, 437, 659, 579, 805, 37
3, 359, 326, 161, 982, 5595
 610 data  700, 900, 81, 427, 283, 358
, 48, 585, 367, 594, 4343
 710 data  842, 469, 741, 279, 729, 51
0, 805, 322, 256, 856, 5809
 810 data  233, 350, 540, 310, 480, 86
4, 593, 535, 832, 376, 5113
 910 data  532, 788, 141, 839, 254, 85
9, 973, 301, 373, 5060
```

●


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CIRCLE #124 ON READER SERVICE CARD

# C-manship

## This month, we learn about alert boxes and user-defined mouse forms.

by Clayton Walnum

We've spent the last couple of months examining GEM's VDI. We didn't cover everything, but we managed to touch upon most of the major functions. Some of the ones we glossed over are easy enough to figure out from the documentation supplied with your compiler; others we'll get to as we need them, particularly the raster functions.

This month, we'll get started with GEM's AES (Application Environment Services). We'll learn how to create GEM alert boxes, a little about the interaction of the AES with the VDI, and how to define our own mouse forms.

### Getting to work.

Listing 1 is this month's sample program, and, as usual, it was written with Megamax-C. If you're using a different compiler, you may have to make slight changes to the code.

When you run the program, you'll be presented with an alert box like the one shown in Figure 1. Use the mouse to click on the first button (the one labeled *New*). The screen will clear, and the mouse pointer will change to a custom form (you'll be seeing this cursor again sometime in the future; it's from a game I'm working on). Clicking the left button will return you to the alert box. Now, click the button labeled *System*. The mouse form will change to one of the system cursors, the pointing finger. The last button is self-explanatory (I hope).

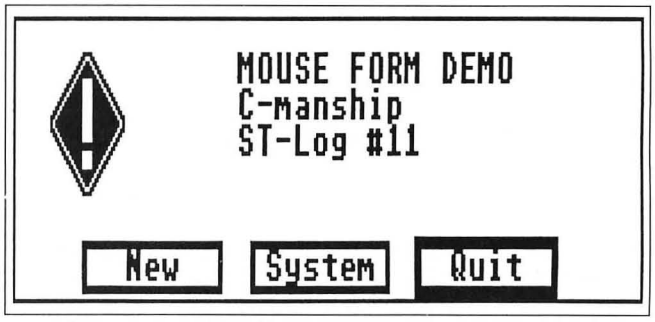



**Figure 1. — The first alert box from Listing 1.**

### A small matter of incompatibility.

Before we get started with the nitty-gritty material, there's something you should be aware of whenever you're going to use AES or VDI mouse routines. The AES has close ties with the VDI; in fact, it relies on the VDI to do a lot of the dirty work. For instance, when you call the AES window-drawing functions, the window is created, in part, using VDI graphics. That's why some of the VDI routines are referred to as "graphics primitives." They're the foundation upon which all the sophisticated ST graphics are built. The VDI is, in a way, a subordinate of the AES.

In most cases, when dealing with graphics, there's no problem with this hierarchy, but when you start handling mouse events (a fancy name for mouse input), it's easy to confuse the AES. Basically, you can use the mouse-handling

routines in the AES *or* in the VDI, but not both at the same time. If you want to be on the safe side, don't use the VDI mouse functions at all.

That's why button_wait() in Listing 1, a function that appeared in a different form last month, had to be modified, replacing the VDI calls in the original with the AES calls found in this month's version. The AES alert box routines must, obviously, also handle the mouse. If we tried to use the VDI mouse routines, we'd have trouble. (Try it if you like; replace the new button_wait() with the old one. Then, if you leave the mouse in one place when clicking on a button, you'll find that the mouse will reclick the alert box with no help from you.) If you look at button_wait(), you'll see we've replaced the VDI call vq_mouse() with an AES call, evnt_button().

The function evnt_button() is a higher-level call and, as a result, is more complicated and flexible. When called, the function waits for a mouse button to be pressed. The call looks like this:

```
n_times = evnt_button(n_clicks,button,
  state,&mx,&my,&ex_state,&K_state);
```

All the parameters, including the return parameter, are integers or pointers to integers, and are described below:

n_times — the number of times the button attained the desired state.

n_clicks — the number of times the button must be clicked.

button — the button (left or right) which must be clicked. A value of *1* indicates the left button, a value of *2*, the right.

state — the state the mouse button must attain. A value of *0* is up, and a value of *1* is down.

mx — the X-coordinate of the mouse when the button event occurred.

my — the Y-coordinate of the mouse when the button event occurred.

ex_state — the state of the mouse buttons after exiting the function.

k_state — the state of the keyboard after exiting the function. The values *1*, *2*, *4* or *8* indicate that the right shift, left shift, control key or alternate key were pressed, respectively.

As you can see, this call is more complicated than our old friend vq_mouse(), but allows us more options.

### Alert boxes.

The alert box is the simplest of GEM's form library to use, since the system handles virtually everything for you. All you need to do is provide the proper information for the function call. To draw an alert box:

```
choice = form_alert(deflt,string);
```

Here, choice is the button number pressed (returned from the function), deflt is the number of the default button (the button, if any, that will respond to the RETURN key), and string is a pointer to a string containing the alert box description. You may also use a string literal for the second parameter, by enclosing it in quotes. In fact, it's done that way in the sample listing.

The alert box description contains all the information GEM needs to draw your box: the icon that will be displayed, and the text for both the box and the buttons. The string actually has three segments separated by square brackets:

```
[icon #][box text][button text]
```

The icon # is the number of the icon you wish displayed, defined as follows:

```
0 -- None
1 -- Exclamation mark
2 -- Question mark
3 -- Stop sign
```

The text for the box may be up to thirty-two characters per line, with a maximum of five lines. How does GEM know where to divide the text? We tell it, by placing an OR symbol between each line:

```
[line1|line2|line3|line4|line5]
```

Each alert box you design must have at least one button, but you may have up to three. The information for the buttons comes after the box text and consists of the text to be printed within each button. The buttons' texts are placed between square brackets, with each button's text separated by the OR symbol:

```
[button 1|button 2|button 3]
```

The text for each exit button must be less than twenty characters. You can see the completed string in the function do_alert(), found about halfway down Listing 1. Notice that, due to the string's length, it had to be wrapped around to the next line. Normally, you can't divide a string, but the use of the backslash (at the end of the first portion of the string) lets us get around that limitation. When the C preprocessor sees the backslash, it knows that the rest of the string will begin at the left margin of the next line. If you want to use a backslash within a string, you must type two.

### They don't fit!

When the form_alert() function is called, it uses the information you've supplied to figure out the number of buttons and the size of the box. Almost everything is taken care of for you, but you may find it necessary to "clean up" the box description a bit, in order to force GEM to do exactly what you want.

For instance, the number of buttons that will fit in the box is largely dependent on the length of the text and the size of the icon (if any) printed in the box. If the resultant alert box is only slightly smaller than the space needed for the buttons, GEM will place the buttons so that they overlap the box's borders. This type of box is not particularly attractive but will be fully functional. If the box is significantly undersized, GEM will start leaving buttons out, and you can't live with that.

These problems don't usually crop up for single-button alert boxes (unless the button text is unusually long), but when you start dealing with three exit buttons, this type of glitch will very likely introduce itself.

How can we force GEM to do what we want? Remember that the size of the box is dependent on the length of the text lines and the size of the icon, while the size of the buttons is dependent on the text printed within them.

The icon size is unchangeable; it's set by the system, and the only way we can manipulate the icon is either to print it or not. But the box text and button text are fully under our control.

One way, then, to help fit the required buttons into the box is to shorten the text within them. If the button text is just the way we want it, and we still can't fit all the buttons, we have to resort to the second method: padding the beginning or end of the box text with spaces. This will force GEM to draw the box larger. You can see an example of this in the form_alert() call in Listing 1. Try removing the additional spaces and recompiling the program. You'll find that, in medium resolution, the leftmost button will overlap the box's border; in low resolution, the button is completely missing.

### Custom mice.

GEM provides a number of built-in mouse forms for our use, but we may at times find a need for something better suited to our application. When this occurs, graf_mouse() can come to our rescue. We discussed this function last month, but didn't cover the method for designing custom mouse forms. Now, you'll be pleased to know, we're going to make up for that lack.

A mouse form is actually two graphics, 16x16 pixels in size, placed one on top of the other. The first graphic is the shape of the pointer itself. The second is the pointer's mask, enhancing its visibility. If you carefully examine a mouse form, you'll notice that there's a 1-pixel wide border around it. The border is a different color so that the mouse pointer won't "vanish" if it should be moved over something of the same hue. This border is the mask.

The first step in designing a mouse form is to draw the form and its associated mask on a sheet of graph paper, each within a 16x16 grid. We then have to translate the graphics to something the computer can understand.

Our C program is going to need the data for the new form in some sort of numerical notation. Hexadecimal notation is best for our purposes, if for no other reason than the ease with which it's calculated from the binary representation of our graphics. There's no room here for a full discussion of number systems, so if you don't know how to make these conversions, I suggest that you head for your local library or bookstore and bring home a reference book which thoroughly explains binary to hexadecimal conversions.

The binary version of our graphic is simple enough to explain, though. Each grid location not filled in is an "off" bit; the others are "on." Each of these bits is represented in binary, by a *0* for off or a *1* for on. Figures 2 and 3 illustrate the conversion of our custom pointer from its graphic state to hexadecimal.

### Coding it.

Once we've done the conversion, we must incorporate the result into our program. The easiest way is to store the data for the form and its mask in two integer arrays. If you look at the sample listing, you'll see our custom mouse pointer in the arrays mouse_data[] and mouse_mask[]. The *0x* preceding each value tells the compiler that the number is to be interpreted as hexadecimal.

Just above the mouse form data in the sample listing is the declaration for a structure named mfrmstr (mouse form structure). To be more precise, it's not a structure declaration, but the declaration of a new data type *consisting* of a structure. We've defined this new data type by prefacing the structure definition with the C keyword typedef. Right below the declaration is where the actual structure variable mouse is declared.

This structure will hold all the information GEM needs to enable our new mouse form. As you can see, the block contains thirty-seven words of information. The first two words will hold the X- and Y-coordinates of the form's "hot spot" (sounds pretty sleazy, doesn't it?) This is the location within the form which will determine the X- and Y-coordinates for the entire mouse cursor. The third word will hold the number of bit planes. For high, medium and low resolutions, this value will be *1*, *2* and *4*, respectively. The fourth word will indicate what color the mouse form should be; the fifth will hold the color for the mask. The next thirty-two words store the actual mouse form data. We'll move the values found in the arrays mouse_data[] and mouse_mask[] into these locations.

To change the mouse form now, all we need do is fill in each member of the structure with the appropriate information and perform the following call:

```
graf_mouse(255,&mouse);
```

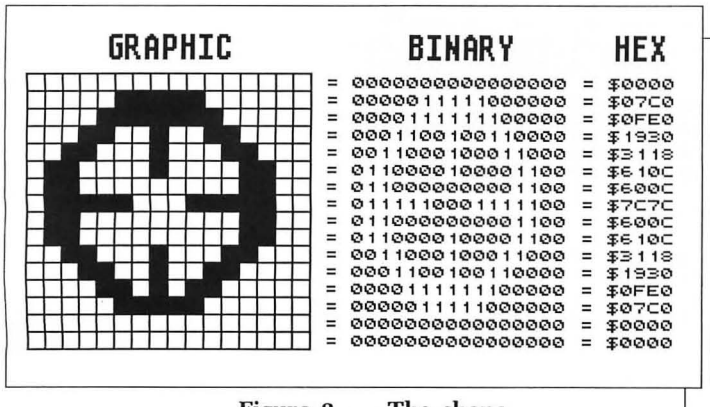
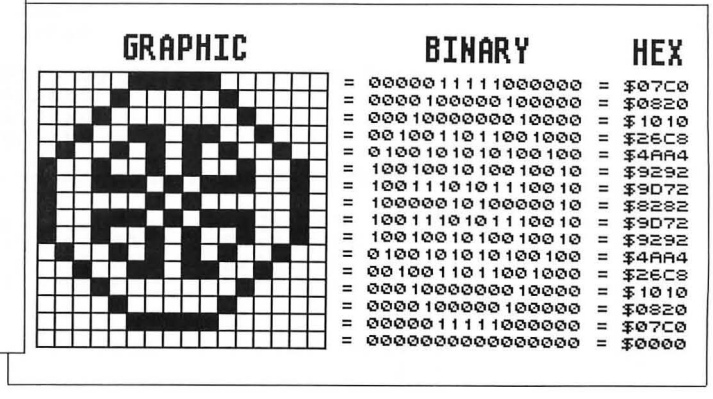



**Figure 2. — The shape.**

**Figure 3. — The mask.**



We went over this function last month. If you don't remember the details, do a little review. What's important here is that the parameter 255 informs GEM we want to change over to a user-defined mouse form. The parameter &mouse is the address of the block of data containing the form's description.

### Mission accomplished.

There you have it: everything you need to know to get the most out of alert boxes and to design your own mouse forms. As soon as you tear your eyes from this page, yank out your C compiler and fool around with the form_alert() function. Try different combinations of text and buttons, till you feel comfortable with the function. Then design some alternate mouse pointers and modify Listing 1 (or write your own code from scratch; that's the best way to learn) to install your new forms. How about changing Listing 1, so the alert box buttons allow you to alternate between two custom mouse forms? That will mean having two sets of data, one for each form, and changing the new _mouse() function so you can pass it the address of the form description for the cursor to be implemented.

Until next month, adieu. ///

Listing 1.
C listing.

```
/*************************************************************/
/*                  C-MANSHIP, Listing 1                     */
/*                      ST-Log #11                           */
/*                Developed with Megamax C                   */
/*************************************************************/

#define TRUE 1
#define FALSE 0
#define FINGER 3

/* Required GEM global arrays */
int work_in[11],
    work_out[57],
    pxyarray[10],
    contrl[12],
    intin[128],
    ptsin[128],
    intout[128],
    ptsout[128];

/* A couple of global int variables */
int handle, dum;

/* Mouse form definition block */
typedef struct mfrmstr
  {
   int x_hot;     /* x-coordinate of pointer hot spot. */
   int y_hot;     /* y-coordinate of pointer hot spot. */
   int planes;    /* number of bit planes.             */
   int fg_color;  /* mouse form color.                 */
   int bg_color;  /* mouse mask color.                 */
   int mask[16];  /* Data for mouse mask.              */
   int data[16];  /* Data for mouse form.              */
  } MOUSEFORM;
MOUSEFORM mouse;

/* Data for the new mouse form */
int mouse_data[] = {0x0000,0x07C0,0x0FE0,0x1930,
                    0x3118,0x610C,0x600C,0x7C7C,
                    0x600C,0x610C,0x3118,0x1930,
                    0x0FE0,0x07C0,0x0000,0x0000};

int mouse_mask[] = {0x07C0,0x0820,0x1010,0x26C8,
                    0x4AA4,0x9292,0x9D72,0x8282,
                    0x9D72,0x9292,0x4AA4,0x26C8,
                    0x1010,0x0820,0x07C0,0x0000};

main() /* Main program */
{
   appl_init();  /* Initialize our application. */
   open_vwork(); /* Go set up our workstation.  */
   do_alert();   /* Go to the main loop.        */
   appl_exit();  /* Back to the desktop.        */
}

open_vwork() /* Initialize a virtual workstation */
{
```

```
    int i;
    handle = graf_handle(&dum,&dum,&dum,&dum);
    for (i=0; i<10; work_in[i++] = 1);
    work_in[10] = 2;
    v_opnvwk(work_in, &handle, work_out);
}

do_alert() /* This is the main program loop.  It calls the alert box */
{          /* function as well as the functions to change the mouse  */
           /* form. The loop will repeat until REPEAT becomes false. */

  int choice,  /* Will hold button choice.      */
      repeat,  /* Loop control variable.        */
      deflt;   /* Holds default button choice. */

  repeat = TRUE;  /* We set this so the loop will repeat.    */
  deflt = 3;      /* Set default button to Quit (see below). */
  while (repeat) {
    choice = form_alert (deflt,
      "[1][    MOUSE FORM DEMO    |\
    C-manship|    ST-Log #11][New|System|Quit]"); /* Draw alert box. */
    if (choice == 1) {  /* CHOICE contains the button pressed.       */
      new_mouse();      /* If the button was NEW, show new form.     */
      button_wait();
      deflt = 2;        /* Change default button to 2.               */
    }
    if (choice == 2) {          /* If the second button was pressed, */
      graf_mouse (FINGER,&dum); /* then change to the Hand icon.     */
      button_wait();
       deflt = 1;               /* Change default button to 1.       */
    }
    if (choice == 3)
      repeat = FALSE;  /* When REPEAT becomes false (0), we get out  */
  }                    /* of the while loop and go back to main().   */
}

new_mouse() /* Changes the mouse form to the user-defined form      */
{           /* found in the global arrays at the top of the listing */
   int x;
   mouse.x_hot = 8;     /* These two assignments set the "hot spot" */
   mouse.y_hot = 8;     /* to the center of the mouse form.         */
   mouse.planes = 4;    /* Should be 1 for high res and 2 for med.  */
   mouse.fg_color = 0; /* Mouse form drawn with color 0.            */
   mouse.bg_color = 2; /* Mouse mask drawn in color 2.              */
   for (x=0; x<16; ++x) {             /* This loop moves the data from */
      mouse.mask[x] = mouse_mask[x]; /* the global arrays into the    */
      mouse.data[x] = mouse_data[x]; /* mouse form definition block.  */
   }
   graf_mouse(255,&mouse); /* Presto! Our new mouse comes to life. */
}

button_wait() /* Waits for left button to be pressed and released. */
{
  int dum;

    evnt_button(1,1,1,&dum,&dum,&dum,&dum);
    evnt_button(1,1,0,&dum,&dum,&dum,&dum);
}
```

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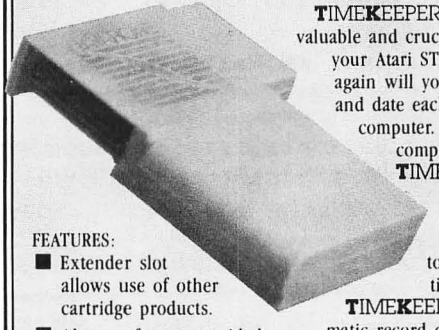

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# DataTrieve

**ABACUS SOFTWARE**
**P. O. Box 7219, Dept. 1B**
**Grand Rapids, MI 49510**
**(616) 241-5510**
**$49.95**

**by Matthew J.W. Ratcliff**

**DataTrieve** is a GEM-oriented database manager for the Atari ST. The manual is well done, with extensive examples and screen templates. It begins with a tutorial on creating an address database. Once you've planned the fields of your database, you select "create" from the file menu. You're then presented with a familiar dialog box, where you may specify field name and type. Types are easily indicated, by clicking on one of three type icons: text, date or numeric. A field may also be deleted here. Once your fields are set up, clicking on the "OK" button gets you back to the main window.

To the far left of this window is a column of seven icons. The first is either an exclamation point or a question mark, indicating input or search modes, respectively. Next is a gearshift lever. Clicking on this icon toggles between input and search modes. The next is the eraser icon. Clicking here will clear all the fields in the current database. This will most commonly be used to clear all fields before specifying new parameters for search functions. The next two icons are plus and minus, which will move you forward or backward one record in the current database.

The sixth icon is the card file. Clicking here will bring up a display index list, in sorted order, for the current field. This can be used to quickly scan through a name list, pick one and exit to the main window, to see the entire data package. A scroll bar at the bottom of this index window allows you to step through the fields, from last name to first name, to street, and so on. This facilitates quick and easy manual searches.

Index fields may also be defined from the "change" pull-down menu, so that you can specify a default sort order for your database—of up to twenty different fields. These index field specifications may be saved and are easily redefined. For example, typically, you will look at your address database sorting on last name, then first, but you may wish to sort on zip code before printing address labels for presorted mail. The final icon, a trash can, is self explanatory.

The search functions are powerful, with wild cards (such as * and ? placemarks, which most DOSs accept in filename specifications), range (such as 63000~63020, where the tilde is the range indicator) and an OR tag, as well. Multiple fields may be checked at the same time.

Another convenient feature of the **DataTrieve** program is its "subrange" option. If you have a user group database and wish to create a separate mailing list for ST owners only, it can be tagged as a subrange. This can be treated as a separate database. It can be sorted independently of the remainder of the data, saved, loaded and deleted. Block operations are supported from the change menu. For example, you can cut records to a clipboard and paste them into different data files.

Epson and a few other printer drivers are available for printer output. If your particular equipment is not supported, you can edit the printer driver definition and save it to disk.

Fields may be selectively printed to a file, screen, modem or printer. You can edit a printer mask, to customize your output to continuous form labels or form letters. **DataTrieve** supports DIF (Data Interchange Format), to read or write text files for your database.

Finally, **DataTrieve** gives us several mask editors, for the screen, to create lists and for printer output. The screen editor allows you to size each field individually. It's also a graphic editor; boxes, circles, lines, color, text style and shading may be defined for each field of your database. This allows you to create a customized input window that's pleasing to the eye, giving your database a professional look.

It took a bit of practice on my part, but once I got used to it, I found the screen mask editor very powerful—and actually fun to use. It's much like a resource construction set editor, in that you are defining your own custom input dialog (a full window, really) for the database. It's truly impressive.

**DataTrieve** uses the mouse and GEM interface well. If you prefer a speedier form of communication, the icons in the main window may be simulated by direct keyboard input (such as F1 for shifting between input and search modes). Most of the pull-down functions are also available from keyboard control. The GEM interface makes **DataTrieve** fairly easy to learn, and the keyboard commands make interaction with the program fast, once you're familiar with its operation.

I put together a database from my battered old address book. **DataTrieve**'s overall performance was smooth. I didn't run into any apparent bugs, and the software was fast when using a RAMdisk. A vertical scroll bar to the right of the display keeps you informed at all times about how

much free RAM you have in your current database.

I don't use database software often, so for me, it has to be simple to learn and use. **DataTrieve** certainly fits that bill. It is limited, in that it can't perform mathematical functions on your files, but the calculator symbol in the screen mask editor (which is "not implemented in the current version of **DataTrieve**") indicates that future versions of the program might support math functions.

I have, basically, only minor complaints about **DataTrieve**. First, it's copy protected, and the manual does not tell you this (although it is indicated on the registration card). I was "apparently" able to make a backup copy of the program. But, when I attempted to add to a database, the mouse pointer disappeared and I couldn't do anything else.

When you enter a field, pressing the F2 key files it to disk. The program seems to buffer very little information in memory and does a great deal of disk I/O. You will find it somewhat slow, unless you make effective use of a RAMdisk.

The printer mask editor has an annoying quirk. Once your database is defined, you will want to generate a custom output mask for printing labels or forms. Upon entering the printer editor, *all* the fields are defaulted to 40 columns, instead of being defined from the field length settings. The end result: you'll have to duplicate your efforts in field sizing. However, this is only a minor nuisance. I found **DataTrieve**'s performance to be predictable and remarkably bug-free, and can safely recommend this product. ///

## Regent Base

**REGENT SOFTWARE**
**7131 Owensmouth, Suite 45A**
**Canoga Park, CA 91303**
**(818) 882-2800**
**$99.95**

**by Matthew Stern**

Until now, there seemed to be only two types of databases for the ST. One gave simple-to-use pull-down menus, but was frustratingly limited. The other offered the power of an IBM database, but not the convenient mouse controls expected on the ST. With Regent Software's **Regent Base**, you finally get the power of a relational database language, like dBase III, in an easy-to-use, mouse-controlled package.

Rather than translate a CP/M, IBM or a mainframe database, Regent Software created an entirely new database language especially for the ST. Instead of some cryptic prompts, **Regent Base** presents you with familiar GEM windows and the drop-down menus. You also get GEM's graphic capabilities: you design screens by moving boxes and button icons; and enter text in a number of sizes, colors and typestyles. **Regent Base** gives you the ability to create "user friendly" database applications.

**Regent Base** even makes it easy to select and run databases. A handy menu program lists the **Regent Base** programs and available database applications, or "forms." Click on the application you want, and, when you quit, it will take you back to the menu. You can also launch **Regent Word II**, their word processor, from the menu.

Your **Regent Base** files, or "tables," are disk based. They're not limited to available computer memory, as is the case with other database programs. Still, the company recommends that you use **Regent Base** on an ST with at least 1 megabyte. I've been able to use it on an unexpanded 520ST, by disabling most of my desk accessories.

To help you get started, **Regent Base** has two complete forms: a mail list manager and checkbook program. These will show you how easy your own applications can be to use. You select commands simply by clicking a button with the mouse. For example, to add a new name to your mail list manager file, click on the "New" button. To search for a record, type in the name you want and click the "Retrieve" button. The entire record will come on-screen.

Click on the "Report" button, and **Regent Base** will load in another form for printing reports. (You can use the same table in several different forms.) The report generator is an impressive application in itself. It prints envelopes, Federal Express airbills, a phone book, and can merge data with **Regent Word II** documents.

Three menus also appear at the top of your forms. The desk menu, of course, lets you run desktop accessories. The control menu lets you quit the program or go to the editor for changes. **Regent Base** supports a wide variety of printers, and you can select one from the printer menu.

Sorting necessitates a separate program. It physically rearranges the data in your table. You can sort records in ascending or descending order, by one, two or three fields. To sort large tables, you'll definitely need a megabyte.

I was impressed with how quickly **Regent Base** saved and retrieved data, especially on a hard disk. As for the database program's speed—well, it's about what you would expect from uncompiled BASIC.

The real fun comes in writing your own applications. **Regent Base** gives you a number of tools that make this easy.

**Regent Base** takes a right-brain/left-brain approach to creating a database. The form editor, used to make applications, comes with object and procedure editors. The object editor appeals to your aesthetic nature, by letting you design those attractive GEM screens with input and output boxes, and mouse-controlled buttons. The procedure editor uses your analytical skills, in writing instructions to make the form work.

The object editor yields a blank screen, and a palette of boxes and buttons. You can add edit boxes for data entry, text string buttons for box labels and titles, command buttons, and output boxes for prompts and messages from the application. (You can also display messages in the status line at the top of the window.) To add a box, simply drag it from the palette to the screen. Resize boxes by dragging the right side. A box can be any length you want, but you're limited to one line per box.

You'll need to make note of the field numbers of your boxes. **Regent Base** offers a "Show Field #'s" option in the special menu, to display them. However, if you have a lot of boxes on the screen, the numbers may appear garbled.

With **Regent Base**'s typestyle and color variety, you won't have to settle for boring screen prompts. Enter text in sizes from 8 to 24 point, in bold, italic, underlined, outlined or shadowed text. You may use up to four colors on your screen to make an attractive display.

Still, it's not much use having a pretty face—unless you have brains to go with it. With the procedure editor, you tell **Regent Base** how the form will operate. The programming language uses self-explanatory, plain English commands. If you've had at least a little experience in programming, especially in BASIC, you'll have no trouble using **Regent Base**.

The command set is fairly complete—and powerful. You'll find most commands you'll need, including math functions, record updates, text-appending strings and se-

lective replacement and record deletion. It also has relational commands, for data in two tables. **Regent Base** supports a variety of field types, including alphanumeric, text only, dates (in abbreviated, extended or European formats), integers and decimal numbers in a format you choose.

It also has commands to speed up search and retrieval of data. Instead of searching through the entire file for a record, you can create an "index," which contains only the fields you want to search through.

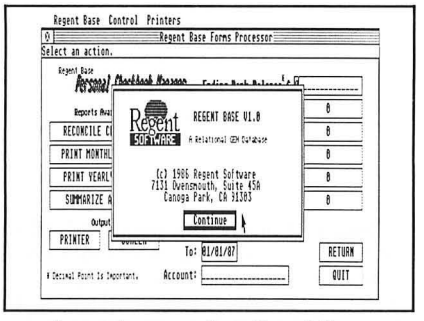
The language is structured, and lends itself to the easy insertion and removal of modules. For example, the mail list has a command to update changes to an existing record. On the form, the "Update" button is field number *32*. To perform the commands to update the record, I entered:

```
IF USER$=32 THEN UPDATE;
```

It tells **Regent Base**: if the user clicks on field number *32* (the Update button), go to a subroutine called Update. There, **Regent Base** will find the instructions to perform that command. (Incidentally, if you prefer the keyboard to the mouse, you can assign commands to the function keys.)

You can also run one form from another. To run that report printing form, we used the command:

```
RUN MAILRPT.FRM;
```




**A sample screen from *Regent Base*, the Mail List Manager.**

This closes the current form and runs the one specified. So, instead of creating (and possibly debugging) a large form, you can break it up into some smaller modules.

For printing, **Regent Base** gives you several powerful commands. You may print headers and footers, embed page numbers and the current date, and use underlined, bold or elongated text. Your reports will look as attractive as your screens do.

The only major drawback to the procedural editor is the editor itself. It has very limited editing features. Fortunately, you can write your program with a word processor (like **Regent Word II**), save it as a text file and read it into **Regent Base**.

Since **Regent Base** is a programming language, it will take a little bit more work on your part to design an application than would a predefined database, like Timeworks' **Data Manager ST**. However, **Regent Base** offers you more power and flexibility. You can program the functions that you will use over and over. Instead of clicking on field boxes and selecting the commands from a menu, you can put all those functions on a single button. Furthermore, **Regent Base** gives you GEM-oriented controls and a comprehensible procedural language —both of which are as easy to learn as is the usual database.

If you want a powerful data management system that you can easily modify for your needs, **Regent Base** would be an excellent choice. ///

---

*Matthew Stern has written about a number of computer systems, including the Commodore 64/128, Apple Macintosh, IBM PC and Atari ST. He currently works as a technical writer at AST Research. If you have any questions, you can reach him at the ATARI16 forum on CompuServe. His ID number is 73547, 2420.*

---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# I*S Talk

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**by D.F. Scott**

The larger the available RAM in a new computer, the larger programs become to fill that RAM. **I*S Talk** is huge—perhaps too huge. Its wild concoction of functions reminds me of an old "Saturday Night Live" routine, where Dan and Gilda would fight about whether the foam in the convenient aerosol can was a floor wax or a dessert topping—only to have spokesperson Chevy reassure them, "It's a floor wax *and* a dessert topping!" I've tried to convince myself that **I*S Talk** is a terminal emulator *and* a spelling checker, *and* a memo pad, *and* a calendar, *and* a text editor. . .

Now out from a 5¼-inch disk packet pops a 3½-inch disk labeled *I*S Bridge*. "Oops," I thought, "I've got the wrong disk." (Besides, I can't play bridge.) Bridge's purpose, I discovered, is to act as a starting point for **I*S Talk**, the file recovery program Goodies, and the **Isgur Portfolio System** (a separate financial management program currently marketed by Batteries Included). Bridge lets the user set the calendar date and jot down dated memos, which may serve as reminders of future events.

Bridge always boots with November 20, 1985. It doesn't matter if you've already set the date before; you have to do it again if you want to check for current memos. Of course, to do this you need to know the date. The profusion of paper calendars in existence is testament to the fact that humankind has a difficult time remembering what day it is. So if you already have a *real* calendar, why do you need a phony electronic one?

Faced with my initial disappointment, I could have used a few Goodies. Goodies claims to recover *only* memo files accidentally "corrupted" by I*S Bridge. "Goody," I thought, "Every time I write a new memo, the rest teeter on the brink of electronic extinction." Since each memo shares the same two files, once one memo is shot, they all fall dead.

What, then, does Bridge *do*? I've found a purpose for this rascal: **I*S Talk** is more susceptible to bombing when run without Bridge's assistance.

After **Talk** is loaded, the unused RAM is christened the "memory buffer." If one chooses to use the FUNKEY.ACC desk accessory (which allows switching from *mouse input to keyboard*) or to load the spelling dictionary, the memory buffer's size is reduced. This buffer is used to hold the text of an on-line session (yes, this *is* a telecommunications program), letting the user scroll through the text with the GEM scroll bar. Loaded with Bridge, **Talk**'s buffer is about 141K on a 520ST. With the accessory and 88K dictionary loaded, the buffer is reduced to a bit less than 55K—still adequate.

Batteries Included should know about spelling checkers, having published **Thunder!**, but **I*S Talk**'s checker is little more than a "Fizzle."

Playing "Beat the Editor" with the spelling checker, I loaded my last 32K **ANALOG Computing** article into the capture buffer. After 20 minutes and 45 seconds of stops and inquiries, the checker found 151 words not in its library—44 of which can be found in a standard English dictionary. Twenty-one "stop words" were contractions—like *isn't* and *we're*.

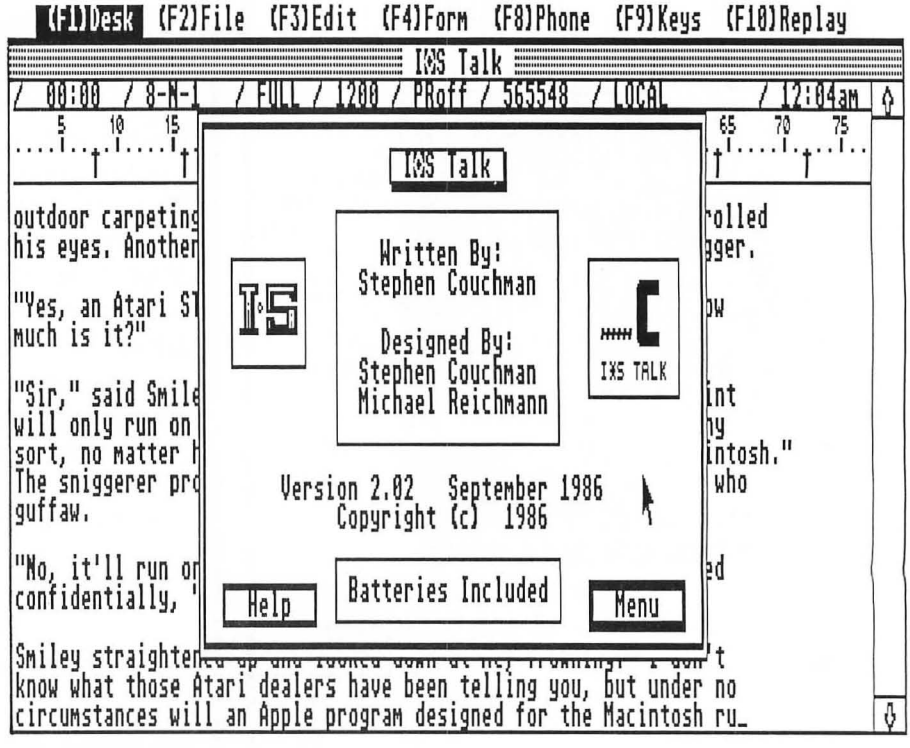
The checker *did* find one typo—a letter *e* in the word *disasterous*. Just to get back at it, I uncovered a typo in the dictionary itself: the word *arbitratiyonal*. So there!

**I*S Talk**'s box promises that all updates to the spelling dictionary can be saved to the disk permanently. So far, this hasn't worked for me.

I've completed my review of the "dessert topping" portion of our program; now, let's go on to the "floor wax"—the terminal. *This* is the slippery part.

**Talk**'s main terminal window is topped by a seven-selection menu bar. In each drop-down or dialog-box menu, there's an alternate keyboard selection for each item. Overall, user interaction with the program is thorough and well thought out. The actual code doesn't seem to have been so thoughtfully conceived. For instance, once the FUNKEY.ACC accessory is installed, use of the compose window via the mouse, instead of the keyboard, can cause the program to bomb. The window is supposed to allow me to type what I want, check my spelling, and then send it.

The capture buffer editor allows the user to trim captured text down to size before saving it, and even check the spelling. You *cannot* go into the capture buffer and add text directly; this isn't a word processor.



You can "mark" a section of text by mouse-drawing a rectangle around it, then move or delete it. My version has a hard time with marked text, which should be displayed in the "light" font. Some letters go unmarked.

The only text *replacement* the edit feature supports is exchanging a misspelled word for its correct spelling—but there's a bug here, too. When a misspelled word is found, the cursor resides at the end of that word. Should the correct spelling be a few letters shorter, the cursor only backspaces the number of characters in the *correct* spelling. Thus, the typo *tallk* would be replaced with *ttalk*.

To send or receive, you use the transfer screen, which looks like a jammed telephone switchboard. If you're in a hurry to up- or download, this tangle of selections can be horrifying.

Besides the transfer screen, **I*S Talk** offers some useful features, one of which is the auto-log-on. However, sometimes the auto-dialer won't get my VM520 modem's attention, unless coaxed about six times to do so.

Please, watch out for the CTRL-O keystroke (used on Delphi to skip unwanted text). **Talk** (for no apparent reason) recognizes CTRL-O as a command to "suspend all user input to this program." In other words, the program locks up.

The form/settings combination allows the setting of terminal parameters. Some of the extra features are: the choice of an underline or block-form cursor (I like underlines—they're unobtrusive); the choice of baud rates between 110 and 9600; and a scroll-setting feature, which allows text to hop up the screen normally or "fine-scroll" upward slowly. This is as much an example of fine scrolling as the Korean version of *King Kong* was an example of fine animation. I may as well have a 110-baud modem.

**Talk** also supports the use of macros, predefined text strings that may be transmitted with a simple combination of keystrokes—a handy feature.

The following receives my "Fibber McGee Floor Wax Award for Least Useful Special Feature in a Program." The replay feature is supposed to work like a tape recorder, memorizing and saving to the disk a sequence of commands for playback at a later date. This way, if you use the same key sequences every day, you won't have to type them in each time.

Sounds useful, does it? I started a recording, logged onto Delphi, went to the Atari SIG, read a piece of mail, logged off, and shut off the recorder. Playing back the recording, I was treated to a computerized rendition of exactly what I had *not* done.

The mouse pointer (even at fast playback speed) crept up to the menu bar by itself, wildly jiggling the Phone and Keys menus back and forth. It then went to the main window and settled down, while the terminal dialed exactly four of the necessary seven digits required to complete a legitimate phone number. Satisfied with that, it diligently tried to log me off. Failing, of course, it sent me a message (featuring that disgusting little hand) telling me my modem was off, then quit altogether.

The best part of **Talk** is the documentation. It's quality can best be described in two words: *Sheldon Leemon*. He's worked valiantly to make up for **I*S Talk**'s dismal programming, by attempting to redeem it in English. I wish he had written the program.

Batteries Included has proven in the past that it can produce efficient and reliable software. In spite of the company's reputation, I recommend that Batteries Included scrap this product and rewrite it from byte one—or else hire Chevy Chase as company spokesman. ///

---

*D.F. Scott is an artist, writer, educator and programmer living in Oklahoma City. He is currently engaged in the study of quantum physics, computing, and other ways in which elementary particles interact with each other. Otherwise, he fills infinite pieces of paper.*

---

(**Reviews** *continued on page 76)*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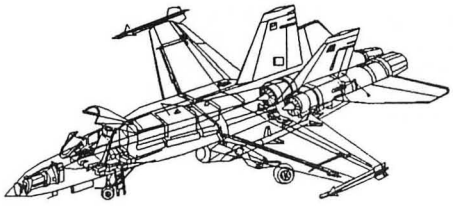

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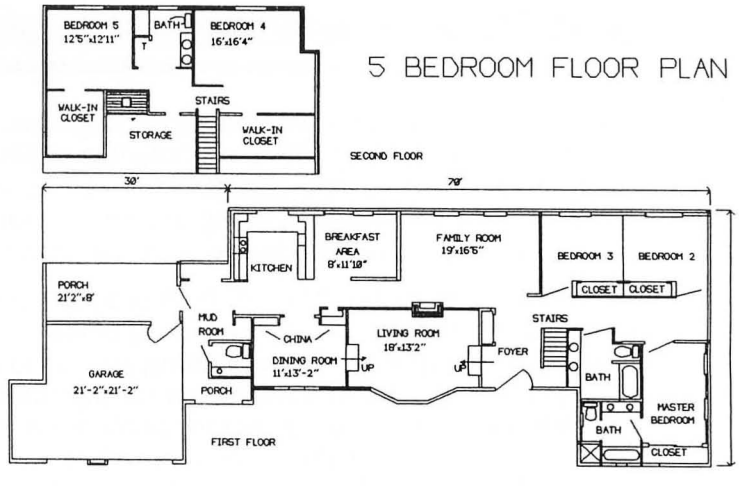


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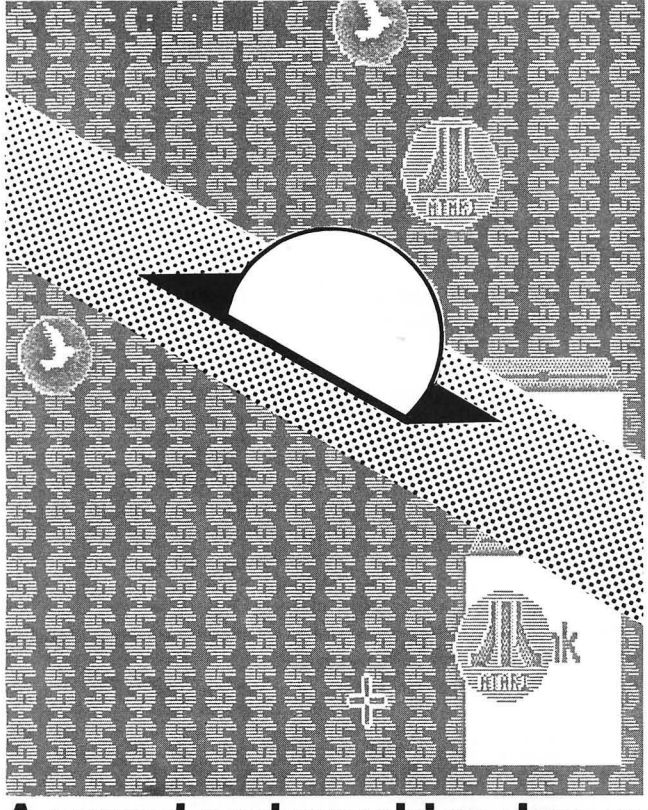

GAME

LOW RESOLUTION ONLY

# Money

## A SPECIAL INCLUSION

## A sound and graphics demonstration.

by Bruce and Lynn Holloway

*The program and source files for this game were far too long for inclusion here. They can be found on this month's disk version, or on the* ***ANALOG Computing*** *Atari Users' Group on Delphi. The article that follows is complete; there is no DOC file on disk or on Delphi.*

Enough of this futzing around. I'd had the ST since September, and all I'd written were a couple of nongraphic GEMDOS programs—and those were from my CompuPro at work. I'd seen those demos with the objects bouncing around the screen in living, breathing color, and had muttered to myself, "I could do that."

So I hauled out Alcyon C, MINCE and all those developer's manuals, and pored over them, trying to make some sense of them. The fruits of this labor? **Money**!

### *Money* is the root of all evil. . .

But you never have enough. The object of **Money** is to grab as many of the coins bouncing around the screen as possible and deposit them, by dropping them through the slot in the top of the bank. You have five rounds of thirty seconds each, to collect as much cash as possible before the bank closes. You grab a coin by moving the mouse cursor to the coin and pressing the left mouse button. You drop a coin by releasing the button. Simplicity.

Banks can get rather picky about the money they deposit. Slugs really make them mad. They'll take the full value of the slug from your account to cover the loss. Better to destroy these crude imitations of good money than to risk giving them to the bank. Get rid of coins by moving the mouse cursor over a slug and pressing the right mouse button. You can remove a coin you've grabbed, too; get a good grip with the left button and blast away. But remember, destroying good money is a Federal crime.

After any round you've managed to get through without depositing slugs or destroying real money, you can try for even bigger bucks in a bonus round. Blasting a coin in a bonus round merely changes it to another type. At the end of a round, matching coins are added into your bank account.

You have five rounds to go for all the gold you can get. Where else can you find an arcade game you get quarters *from*?

### The details.

**Money** is written in C and 68000 assembly language (which is what GEM and the Atari ST were really designed to work with). A number of little tricks it uses to get the most from the system aren't well described in any of the Atari documentation. . .such as Vertical Blank Interrupt (VBI) routines.

A VBI runs while the video beam is moving from the bottom to the top of the screen, after drawing a complete image. It does this about fifty times a second, and small routines can be run while it's retracing. Routines that need to run at well-specified intervals are good candidates for VBIs.

**Money** uses a VBI to dynamically change the colors in its logo. According to the Atari docs, you'd assume that all you'd have to do is fill in a table entry. . .but there's more than that. You can't even touch the table, unless your program is running under supervisor mode instead of under user mode (the default).

The example in Listing 1 takes as an argument a pointer to a function, and sets it up as a VBI routine, started on the next vertical blank and continued for each one thereafter. Please note that the example listings are *not* complete programs, but are intended only to illustrate some of the programming techniques used in **Money**. The complete game, as well as all source code, can be found, as stated above, on this month's disk, or on the **ANALOG Computing** Atari Users' Group on Delphi.

### The animator — *vro_cpyfm.*

A lot of programs write to the screen directly with their sprites and figures, because their programmers couldn't figure out how to use GEM's bit-blitter, Copy Opaque.

Assuming you have an image in device-specific format (and if you don't, you need to use vr_trnfm—transform form), all you need to do is set up the two Memory Form Descriptor Blocks (MFDB) and the coordinates to which you want to place the image, and you're all set. Listing 2 shows how **Money** sets up the MFDBs in order to display the cursor.

One of the really useful features that Atari added into GEM was the ability to draw to a hidden screen (or logical screen) while displaying the real screen (or physical screen), and to flip between the two. This is the technique **Money** uses to get smooth animation.

The process is a simple one. Set the logical screen to your own internal buffer, using the _setScreen extended BIOS function. Clear the logical screen, or copy a previously drawn background from another buffer. Display all your forms. Swap the logical and physical screens to display the new drawing, then go back to the beginning.

For more detailed information, refer to the extensively commented C source. It will show you the exact way in which these techniques can be used to make fast, smooth, full-color animation on your ST a reality. ///

---

*Bruce Holloway is a software engineer with Digital Research, Inc., and was one of the winners of the 1986 International Obfuscated C Contest, an annual contest the object of which is to write unreadable code.*

*Lynn Holloway is a free-lance documentation writer who gets to test Bruce's software. She offered invaluable programming suggestions and proofread the article.*

---

**Listing 1.**
**C listing.**

```
*****************************************************************
*       VBLANK(fn_pointer)
*           WORD (*fn_pointer)();
*
*       Sets up "fn_pointer" to be a VBI routine.
*
        .globl  _vblank
_vblank:
        move.l  #vbl1,-(SP)     TRAPs are an easy way to get
        move.w  #TRAP4,-(SP)    into system mode, so we'll
        move.w  #5,-(SP)        set up our own TRAP 4 handler,
        trap    #13             execute it, and remove it.
        move.l  12(SP),D1       D1 points to our VBI routine.
        trap    #4              Call our handler to set it.
        move.l  D0,4(SP)        Now restore the old handler.
        trap    #13
        add.l   #8,SP
        rts                     and return.

vbl1:   move.l  VBLQ,A0         Now we can look at the system
        move.w  NVBL5,D2        variables. Get the base of
        sub.w   #1,D2           VBI table into A0, and the
vbl2:   tst.l   (A0)+           number of entries into D2.
        dbeq    D2,vbl2         Go through the table looking
        bne     vbl0            for an unused entry.
        move.l  D1,-(A0)        Set it to our routine,
vbl0:   rte                     and exit.
```

**Listing 2.**
**C listing.**

```
/* Memory Form Definition Block structure. This is the structure
   used by VRO_CPYFM to define the size, format, and location of
   the animated images.
*/

#define MFDB    struct _mfdb
MFDB {
    WORD *M_pat;        /* Pointer to the form                  */
    WORD M_fwidth;      /* Width of the form, in pixels         */
    WORD M_fheight;     /* Height of the form, in pixels        */
    WORD M_width;       /* Width of the form, in words          */
    WORD M_format;      /* Form format (0=machine dependent     */
    WORD M_planes;      /* Number of planes (4=low res,         */
                                            2=med res,          */
                                            1=high res)         */
    WORD M_dummy[3];    /* Unused words.                        */
};

MFDB dmfdb = {          /* Set up MFDB for the screen           */
    0, 0, 0, 0,         /* When M_PAT is zero, the MFDB
    0, 0, 0, 0, 0         refers to the screen, and the
                            other parameters get ignored.       */
};

MFDB mmfdb = {          /* Set up MFDB for the mouse            */
    curs;               /* Mouse form defined elsewhere         */
    16;                 /* 16 pixels wide                       */
    16;                 /* And 16 pixels high                   */
    1;                  /* 16 pixels fit in 1 word              */
    0;                  /* Form is device-specific              */
    4;                  /* Four planes for low res mode         */
};

/* And you might use code like this to display it */

mouse_display(x,y)
WORD x, y;
{
    WORD pxy[8];

    /* selects the entire form for drawing    */
    pxy[0] = 0;     pxy[1] = 0;
    pxy[2] = 15;    pxy[3] = 15;

    /* this is where it goes on the screen    */
    pxy[4] = x;     pxy[5] = y;
    pxy[6] = x+15; pxy[7] = y+15;

/* The parameter '7' is the code for a Transparent copy, which means
   anything beneath the figure will be erased, but those areas that
   are part of the copy and contain no image will stay the same. In
   practice, this requires ANDing a negative form mask before placing
   the image to make sure none of the background leaks through.
*/
    vro_cpyfm(handle,7,pxy,&mmfdb,&dmfdb);
}
```


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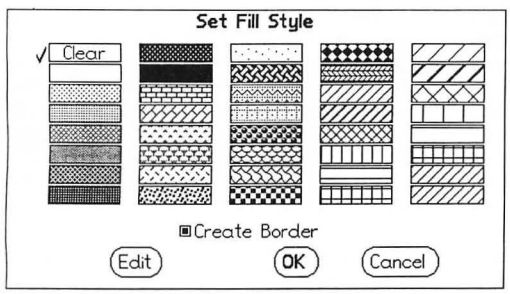


# A view of Publishing Partner

## An inside look at Soft Logik's desktop publishing program.

**by Shawn Fogle**

*The power which desktop publishing has brought to individuals and businesses is now available to the Atari ST user. Desktop publishing provides a comprehensive page layout system, to be used in setting up the finished product for newsletters, flyers, documentation, forms, charts, and much more. Most of the products on the market—and there are several now available for the ST—also allow for pictures or graphics to be integrated into the text.*

*These systems offer you a word processor, page layout and forms creator, all in one. Most popular printers with reasonable graphics output will suffice, although laser printers with postscript capability are highly recommended.*

*We asked Shawn Fogle, Director of Marketing for Soft Logik Corp., to provide our readers with an overview of their product,* ***Publishing Partner****. This is not a review, but an introduction to a new product by someone who knows it best.*

*Many of the features described here relate specifically to the Soft Logik product. Other products on the market may offer more features or less.* ***ST-Log*** *will continue coverage of the desktop publishing field, with complete reviews of this product and others, in the coming months.*

Desktop publishing is quickly becoming a new software category. Its immense popularity stems from people's desire to produce professional-looking documents with a personal computer. If you've ever tried to create a newsetter or flyer with the assistance of a typesetter, you will quickly appreciate the advantages of a professional "do it yourself" desktop publishing program.

The purpose of this overview is to outline the many unique features ***Publishing Partner*** offers. After the software has been loaded, you will see the screen display in Figure 1, below.

You'll notice the familiar pull-down menus at the top of the screen, along with a *toolbox* at the right. The toolbox contains many drawing tools—such as circles, ellipses, boxes, rounded-corner boxes, horizontal and vertical lines, diagonal lines, polygons, and a freehand drawing mode. In addition to the drawing tools previously listed, you can choose from the forty-eight supplied fill patterns and thirty-two colors, along with over ninety different line types and thicknesses (including *beginning* and *ending* line attributes, such as arrows, rounded-corner lines and square lines).

Also located in the lower portion of the toolbox is a *page indicator*, displaying the current page number. By clicking on arrows below this page number, you're able to move from page to page. If you instead click on the displayed page number, you'll see a dialog box which will permit you to go directly to a desired page. This shortcut eliminates having to "flip" through ten pages if you only wanted to view page 10. You can create a document containing up

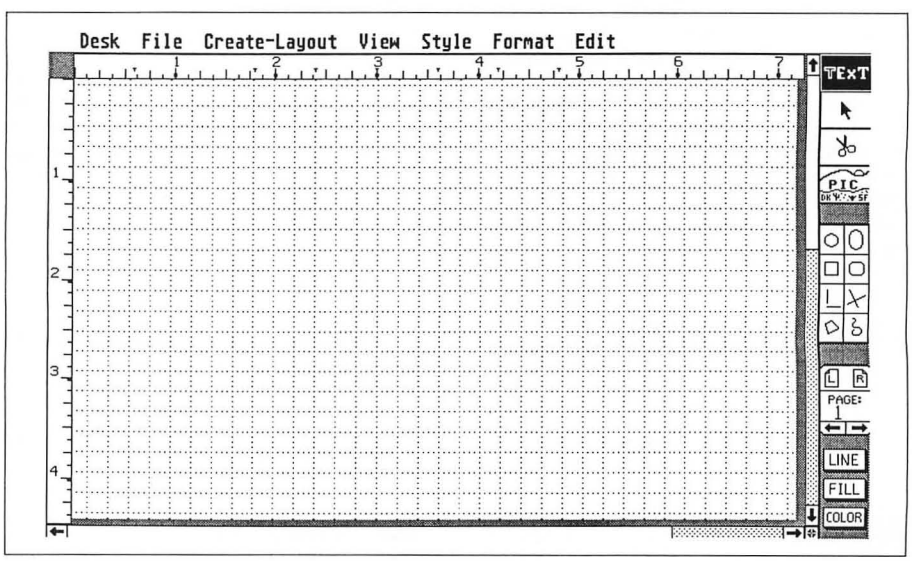


**Figure 1.**

to ninety-nine pages. On a 512K system, maximum document size is about twenty-five pages. If you have a megabyte or more of RAM, you can easily create a document that exceeds fifty pages. A document's size is only limited by available memory.

**Publishing Partner** also allows for the creation of *master pages*. Most word processors let you create items called *headers* and *footers*, merely a repeating line at the top and bottom of every page. **Publishing Partner** has taken this idea one step further. Suppose you want something—a line, picture and page number—to appear on every page. This can be easily accomplished by placing it on a master page. If you're working with a double-sided document and place information on the left master page, that information will only be repeated on even-numbered pages. If your information is placed on the right master page, it will be repeated on all of the odd-numbered pages. In a single-sided document, if you place information on a master page, it will be repeated on every page. The information in a master page can be changed at any time.

The PIC option from the toolbox permits you to *import* any picture formatted by **DEGAS**, **Neo-Chrome** or **Tiny**, and locate it anywhere in a document. Once a picture's been placed, it can be moved, reduced, enlarged or trimmed at any time.

With this option, you will easily be able to mix text and graphics in your compositions. **Publishing Partner** can read any picture you want to use—low-, medium- or high-resolution—and convert it to the resolution you are using. A picture converted from one resolution to another may or may not look attractive, depending on the colors used (and, of course, other factors) in the first version.

**Publishing Partner** employs a "What you see is what you get" (WYSIWYG) user interface. If you create a multicolumn document, you will see the columns on your screen exactly as they will print. The number of columns is limited only by available free RAM; each will occupy approximately 4K. Columns (often called *text blocks*) can be created by either pointing, clicking and dragging the mouse, or using the "Create Columns" option from the "Create-Layout" drop-down menu. Each option has its own advantages.

If you want to place text on a page, you don't have to create a column for it—this helps preserve memory. There are benefits in entering text inside or outside a block. When your text is inside a column, you'll get the advantages of word wrap, hyphenation (manually inserting soft hyphens), search and replace, text routing (linking columns together, so text will automatically flow from column to column), centering, block left, block right, character justify or word justify, in addition to many common word-processing commands, like move to beginning of line, end of line, top of column, bottom of column, etc.

Once copy has been entered into a column, the column can be moved, reduced or enlarged. Any text inside will automatically reflow within the new dimensions. Unless the columns have been text routed, editing information in one will not affect anything else on the page. This is extremely useful when working with a page that contains several columns.

Text entered outside a column is treated as if it were a graphic element (a line, box, circle, etc.) While you lose the advantages of word wrap, search and replace, and so on, you do gain the ability to move text around the page by simply *dragging* it, via the mouse. To move text already inside a column, you will have to use the traditional *copy to* and *from* buffer commands.

**Stylizing text.**

Text can be stylized in many ways. **Publishing Partner** offers:

Backslant
**Bold**
Double Underline
*Italicize*
Light
Mirror ɹoɹɹiM
Outline
Reverse Type
Shadow
~~Strike-Through~~
Tall
Underline
Upside Down - ∩pɐɪqe Dowu
Wide

**Figure 2.**

You can mix and match any combination of attributes and thus create an entirely new font. In addition to adjusting the text attributes, you can also adjust the spacing. **Publishing Partner** permits you to adjust letter spacing (the amount of space used to separate characters), as well as line spacing. Line spacing can be set between ½ point and 63½ points (1 point = 1/72 inch). The letter and line spacing can be preset, so defined settings are used when typing. If the line spacing were set to 1 point, **Publishing Partner** would use that value when entering text. Otherwise, you can highlight a section of text, and adjust its letter and character spacing as desired. This is especially useful if you need "just one more line" in a column. By slightly adjusting the amount of white space between each character and line, you can sneak in a few more words. This feature can be a lifesaver when preparing brochures and newsletters.

Since **Publishing Partner** permits you to mix type sizes anywhere on a page, standard spacing rules for super- and subscript no longer apply. For this reason, **Publishing Partner** permits you to adjust super- and subscript spacing values, up to 63½ points above or below the baseline.

**Publishing Partner** lets you adjust page size up to 18 inches by 18 inches. Several preset page sizes are available, including letter, legal, A4 and B5 (European standards). If you wish to combine two files into one, the "Append" option will prove to be very helpful.

When printing a document, you can specify a range of pages to print, (i.e., two copies of pages 3 through 7 of a 12-page document). You can also specify that the pages be printed at actual size, reduced or enlarged, from 15% to 999%.

**Publishing Partner** even supports color separation. Using the "Color" option from the toolbox, you can specify the color of text, lines and fill patterns. When printing, you can instruct the program to print all or a specific color. For example, suppose you want to print a three-column newsletter in black ink, with the headline appearing in red. Using the program, you can assign different colors to the information placed on the page. At printout, you can specify to print only information assigned the color red. In this case, only the headline would be printed (in correct position). If you instruct the program to print information assigned a color of black, the remainder of the page would be printed. You can take the two pieces of paper to the printer, who will shoot negatives directly from your color-separated proofs.

Like the GEM desktop, **Publishing Partner** contains a "Save Preferences" option. With this, you can specify a variety of settings (for example: default font, point size, letter and line spacing, the disk drive path names, etc.), to be used every time the program is loaded.

When placing text and graphics on the page, it's important for the objects to align properly. For this reason, **Publishing Partner** permits you to display *rulers*, create *snap to guides* and *tab settings*. The rulers can be displayed in inches, picas or centimeters. When moving the mouse while rulers are displayed, you'll see corresponding "tick" marks move on both the horizontal and vertical rulers—so you know exactly where the mouse pointer is positioned. The "Snap to Guides" option allows you to create invisible magnetic lines, which will take anything placed nearby and pull it to a common border. This option is helpful when creating forms containing several lines that must start along a common margin. When the Snap To Guides option is activated, you can be a little sloppy drawing lines, because the magnetic attraction will force all lines to start and end on a common margin.

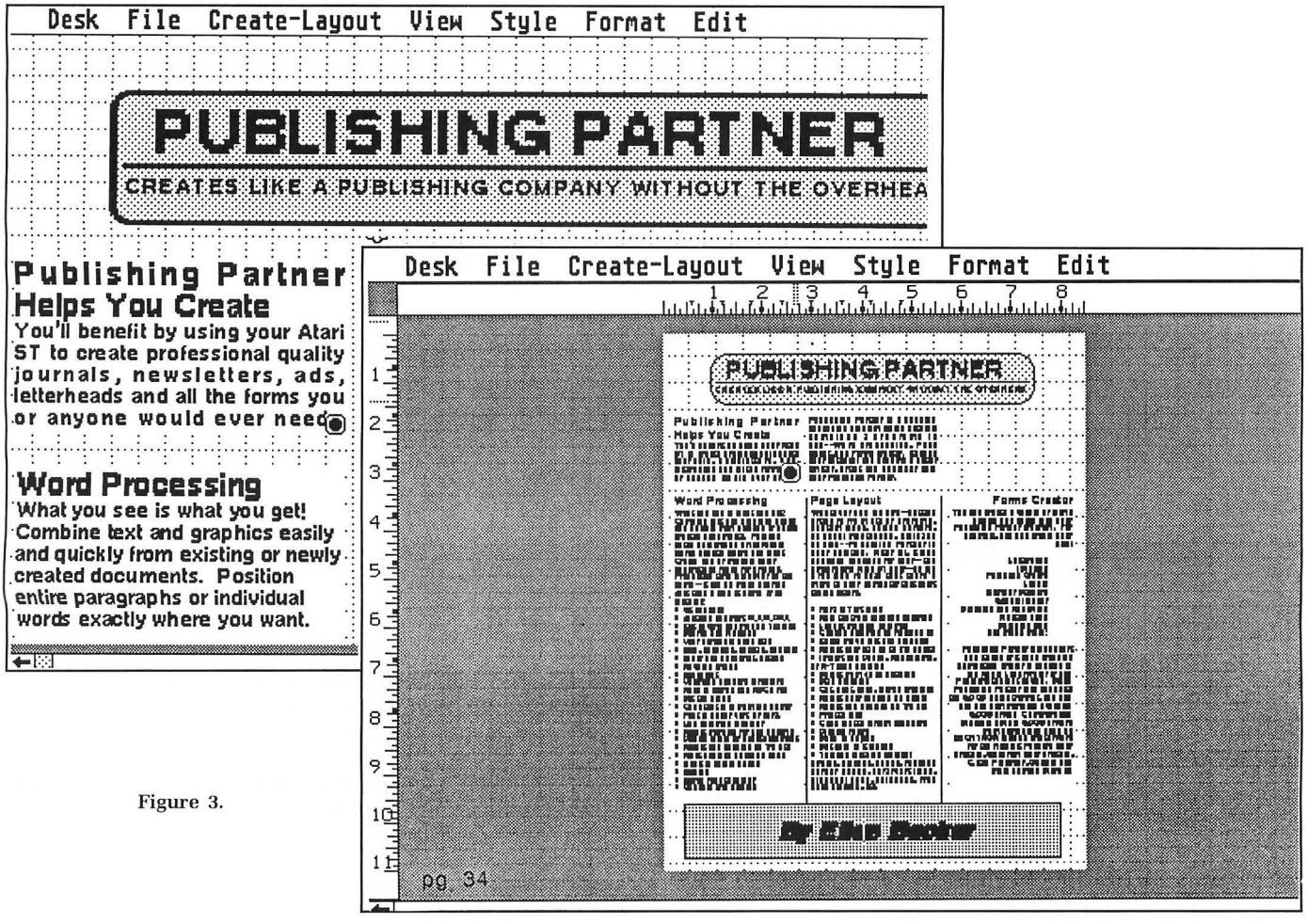


Figure 3.

**Publishing Partner** offers several alternatives for viewing a page. Editing will be most likely to occur while you're viewing the page in actual size. If you select the "Show Full Page" option, the entire page will be reduced to fit on one screen. Other viewing options include "Show 50%" and "Show 200%." You can even use the "Show Multiple Pages" option to view two pages side by side, all on one screen. If you choose the "Show Set User Scale," you can enter a viewing percentage between 15% and 999%.

If you're entering (or importing) text into a column which becomes filled, you'll see an overflow indicator at the bottom of the column. When this occurs, you can pick up the text overflow by using the mouse and clicking on the button. The mouse pointer will change into a special text icon, indicating that your excess text has been "picked up." This text can then be placed in any column. Just position the pointer over the column in which you want it to appear and click your left mouse button. The overflow text will then be placed in that column. **Publishing Partner** even supports *kerning*. By using the "Kerning" option of the program, you can adjust spacing between any two letters. This can be particularly helpful when you are trying to fit a large headline in a limited amount of space. You can even create some special typographical effects by overlapping certain letter combinations.

Left and right margin settings within a column can be adjusted at any time. Other word processing capabilities of the **Publishing Partner** include: "Make Upper and Lowercase," insert mode toggle, and the ability to set a starting page number. The starting page number can be set between 1 and 999. By linking files together, you can create up to a 1000-page document, each page having the master page information in addition to its page number.

**Publishing Partner** is written in 100% assembly language and is entirely RAM based. Therefore, the only time the program goes to disk is when loading and saving fonts and files. You never have to wait for disk access. **Publishing Partner** is able to support color and monochrome computer systems, using one or more disk drives. Since the program is unprotected, it will work effortlessly with hard disks. **Publishing Partner** supports Postscript-compatible laser printers, such as Apple's LaserWriter (at no extra charge), in addition to Epson- and Epson-graphics-compatible dot-matrix printers. Since new print drivers are constantly being released, you may want to make sure your printer is supported.

As a special offer to readers of **ST-Log**, anyone sending a check to Soft Logik to order the program, along with a copy of this article, will receive a $10.00 rebate. Soft Logik will also pay all shipping and handling charges. For additional information, contact Soft Logik at (314) 894-8608 —4129 Old Baumgartner, St. Louis, MO 63129. //

# An introduction to handling windows in ST BASIC

by James Luczak

Working with windows in ST BASIC may conjure up thoughts of complicated programming techniques. But, thanks to ST BASIC's providing access to GEM's AES (Application Environment Services) via the GEMSYS() command, manipulating windows from BASIC is really quite easy. The AES does most of the hard work, at the same time relaying important information about the windows back to the BASIC program.

This article will show how to redraw, activate, close, full, size, and move windows.

### The message pipe.

The AES provides feedback to a program when the program interacts with windows. It does this via the *message pipe*. The message pipe is a reserved area in memory into which the AES writes information about a window's current state. These messages are in a standard format; Table 2 gives a full explanation. The messages are automatically generated when the program interacts with a window, and are placed in the message pipe. All the program need do is deal with the messages as they appear.

As described in Table 1, the message pipe is 16 bytes long. To create a message pipe in BASIC, dimension an eight-element integer array and initialize each element to *0*. To obtain the address of the beginning of the array, use the varptr() command, like this:

```
1 dim mp%(7)
2 for x=0 to 7
3 mp%(x)=0
4 next x
5 msgpipe=varptr(mp%(0))
```

In the above, the array mp%() is the message pipe, and the variable msgpipe contains the address of the beginning of the array.

The important thing to remember about messages is that they are automatically generated by the AES. When writing a program that incorporates window manipulation, you must handle the messages as they appear on the message pipe. Very often, more than one message will be written when you interact with a window. For example, multiple messages will be written when you move or size a window so that it overlaps one or more other windows—each window will get its "own" message. Luckily, messages aren't too difficult to deal with. Since the AES uses a standard message format, it's easy to write a handler that will interpret each message as it appears on the pipe. Once the handler is working, you won't need to be concerned about messages at all. The message handler given in the demo program is straightforward. It acts on each and every message as it appears on the pipe. You could just as easly act on certain types of messages only. For example, you could ignore all window movement messages, which would prevent a user of the program from moving its windows.

### What to do with a message.

In this section, we will see how to handle messages as they appear on the message pipe. In effect, I'll be describing how to build a message handler. Keep in mind that this is a general description. Your message handler will be tailored to suit your own needs.

*Redraw:*

The *REDRAW* message is issued by the AES when a window's work area needs to be redrawn. This will happen in the following cases: (1) when a window is made larger; (2) when a window that is partially off-screen is moved back on-screen, either partially or totally; (3) when a window that's been moved or sized exposes areas of other underlying windows; and (4) (in some cases) when a window is made active.

# Window BASICs
## PART 2

To handle a redraw message, we must pass the X- and Y-coordinates, and the width and height of the window (elements 4 through 7 of the message), along with the window's handle (element 3) to the demo program's redraw routine. This routine makes the proper sequence of calls to redraw the window correctly.

*Important*: always pass the window's *handle* to the redraw routine. Redraw messages may appear for several different windows when you interact with only one. The handle in the message pipe identifies the window to which the X- and Y-coordinates, etc., "belong."

The *draw* routine contained in *redraw* is where the actual redraw of the work area occurs. In the demo program, window 5 is the only window that is redrawn with a specific pattern. All other windows are simply filled with the background color and no pattern is drawn. If you want something specific to be drawn in each window, supply the appropriate information and use the window handle to identify the window in which a particular pattern is to be drawn.

*Top Window.*

The *TOP WINDOW* message is generated whenever you click the mouse button over a window that is not currently active. The AES checks to see which window is under the mouse pointer. If the window handle is *0* (the desktop window), or if the window handle is the active window's handle, then nothing happens. If the window handle is that of an inactive window, the AES will generate a *TOP WINDOW* message for that window. When the message is received, make a WSET call. Pass the window handle (element 3) to WSET and specify fld=10 (active window). The AES will then activate the window. Depending on where the window that's made active is located, a redraw message may be issued by the AES for the newly-activated window.

*Close Window.*

When the mouse is clicked on the "Close Window" box (upper left-hand corner), the AES will generate a *CLOSE WINDOW* message. Pass the window handle (element 3) to the WCLOSE function, and the window will be closed and removed from the screen. As long as the window has not been deleted, it can be redisplayed, simply by reopening it (calling WOPEN). If you want to delete the window from memory, make a call to the WDELETE function, passing the handle of the window to delete. Always close the window before deleting the window from memory!

*Full Window.*

The AES will generate a *FULL WINDOW* message when the mouse is clicked on the full box (upper right-hand corner). The full window message can be used to toggle a window between full size and its previous size. The easiest way to do this is to make three WGET calls, obtaining the current, full and previous sizes of the window. Compare the window's current size to its full (maximum) size. If the current size is smaller than the full size, pass the full window parameters to the WSET function. If the current size equals the full size, pass the window's previous size parameters to the WSET function. Specify fld=5 for the WSET call. Depending on where the window is located, one or more redraw messages for other windows may be generated.

*Size Window.*

Clicking the mouse over the window size box (lower right-hand corner) causes the AES to generate a *WINDOW SIZED* message. You may move the mouse after pressing —but before releasing—the button. If so, the AES continually displays a "rubber box," showing what the window's new size would be if the button were released at that point, which is when the message is generated. The message will contain the new dimensions of the window.

Make a WSET call. Pass the new dimensions (elements 4 through 7), along with the window handle (element 3), specifying fld=5 to WSET. The AES will set the window to its new dimensions. If the window is made larger, then a redraw message will be generated. Depending on the location of the window, additional redraw messages for other windows may be generated.

*Move Window.*

When you press the mouse button over the window move bar (top of window, same area as the title bar) and then release the button, the AES will generate a *MOVE WINDOW* message. If you move the mouse before releasing the button, the AES will display an outline box showing what the new location of the window would be if the button were released at that point, which is when the message is generated. The message will contain the new coordinates and dimensions of the window. Make a WSET call. Pass the new information (elements 4 through 7), along with the window handle (element 3), specifying fld=5 to WSET. The AES will move the window to its new position. The AES does not generate a redraw message, unless more of the window is visible after the movement than was visible before. Otherwise, a simple raster copy is used. Depending on the new location of the window, additional redraw messages may be generated for other windows.

This is a general method for handling messages. You can modify the parameters returned by the AES before displaying a window, or ignore a message completely. In the demo program, for example, the close window message will only close window 5. If you click on the close box of any other window, the message will be ignored.

### Waiting for a message.

The best way to wait for messages is to use the EVNTMULTI function, which allows you to wait for one or more events simultaneously. Table 1 gives a full description of the EVNTMULTI function. Refer to the demo, to see how to use the function in a program.

### The demo program.

This program creates a window in the area normally occupied by window 1 ("List window"). The new window has a colored background with a diagonal line running across its work area. You can use the mouse to move, size, full, activate, and close the window. You can also manipulate windows 2 ("Output window") and 3 ("Command window"). To exit the program, click the mouse button on the "Close" box of window 5 (demo window). The close boxes of windows 2 and 3 are deactivated. All window manipulations are controlled by the demo program.

### Watching and listening to the demo.

Each time you manipulate a window, you will hear a low- or high-pitched beep. A low beep indicates that a message has been received by the message handler. A high beep indicates that a redraw of a portion of a window has occurred. As you manipulate the windows, you will be able to *hear* each time a message is received.

Depending on where a window is on-screen and what you do to it, you will notice that—even though you may have manipulated the window only once—several messages may be received by the message handler. Again depending on where the window is on the screen, you may hear one or more high beeps for every low beep. This indicates that a portion of a window is being redrawn via the rectangle list. The rectangle list is returned by the W GET function, which is called as part of the window redraw routine. The AES maintains a parameter list describing the rectangular portions of a window which must be redrawn when that window is manipulated.

By watching the color of the demo window, you can tell when the window has been redrawn. With each redraw operation, the window's color will change. In other words, if you make the window larger (either vertically or horizontally), the color of the work area will change, indicating that the work area has been redrawn. If you make the window smaller, the color of the window will remain the same; thus the work area has *not* been redrawn.

If you move the window, you will notice that the color of the window almost always remains the same. The AES normally uses a raster copy to move a window, eliminating the need to redraw. The only time you will see the color change when moving a window is when you move it from a position that is partially off-screen to a position that is "less" off-screen, i.e., you can see more of the window than before. In this case, the AES issues a redraw message for the window. For a graphic example of using the rectangle list to redraw a window, remove or REM out Lines 1590 and 1870 from the demo. Now, each time you move the demo window from over the other windows, thereby exposing more of them, the portions of the windows being redrawn will be in different colors. You can actually see the portions of the underlying windows that are being redrawn via the rectangle list.

I learned more about GEM simply by watching this demo operate than I did from writing it! Actually seeing and hearing the mechanics of the AES's window management processes will be as eye-opening for you as it was for me, I'm sure. ///

**Listing 1.**
**ST BASIC listing.**

```
100 'WINDOWS FROM BASIC DEMO PROGRAM
110 'by JIM LUCZAK
120 a#=gb
130 gintin=peek(a#+8)
140 gintout=peek(a#+12)
150 addrin#=peek(a#+16)
160 a$=" ATARI 520ST ":aaddr=varptr(a$
)
170 aadhi=int(aaddr/65536):aadlo=aaddr
-(aadhi*65536)
180 b$="Working with WINDOWS":baddr=va
rptr(b$)
190 badhi=int(baddr/65536):badlo=baddr
-(badhi*65536)
200 dim mp%(7):for x=0 to 7:mp%(x)=0:n
ext x
210 c=varptr(mp%(0)):' get address of
message pipe
220 closew 0:closew 1
230 poke gintin,3:gemsys(78):' make mo
use pointing finger
240 fc=1:poke systab+24,1
250 '- MAIN PROGRAM LOOP -
```

```
260 gosub DOCREATE
270 while mc=0
280 gosub EVNTMULTI
290 if evntype=16 then gosub MSGPIPE
300 if evntype=2 then gosub WFIND
310 wend
320 '- CLEAN-UP AND END -
330 poke systab+24,0
340 poke gintin,0:gemsys(78):' make mo
use an arrow
350 closew 2:openw 0:openw 1:openw 2
360 sound 0,0,0,0,0
370 end
380 '- CREATE WINDOW -
390 DOCREATE:
400 comp=63:' window component code
410 getv=4:handle=0:gosub WGET
420 wx1=rx:wy1=ry:ww1=rw:wh1=rh
430 wc=1:gosub WCALC
440 wx1=wx2:wy1=wy2:ww1=ww2:wh1=wh2
450 wc=0:gosub WCALC
460 wcx=wx2:wcy=wy2:wcw=ww2:wch=wh2
470 gosub WCREATE
480 fld=2:ws1=aadhi:ws2=aadlo:ws3=0:ws
4=0
490 gosub WSET
500 fld=3:ws1=badhi:ws2=badlo
510 gosub WSET
520 ax=5:ay=12:aw=310:ah=105
530 gosub WOPEN
540 return
550 '- WINDOW REDRAW ROUTINE -
560 UPDATER:
570 mf=256:gosub GMOUSE:' hide mouse f
orm
580 udv=1:gosub WUPDATE:' begin update
590 getv=11:gosub WGET:' get first upd
ate rectangle
600 while rw>0 and rh>0
610 gosub RESULT:' calculate rectangle
 dims
620 gosub DROUTINE:' draw or write to
window being updated
630 getv=12:gosub WGET:' get next rect
angle
640 wend
650 udv=0:gosub WUPDATE:' end update
660 mf=257:gosub GMOUSE:' show mouse
670 return
680 '- CALCULATE RESULTANT RECTANGLE -
690 RESULT:
700 if x1+w1<rx+rw then triw=x1+w1 els
e triw=rx+rw
710 if y1+h1<ry+rh then trih=y1+h1 els
e trih=ry+rh
720 if x1>rx then trix=x1 else trix=rx
730 if y1>ry then triy=y1 else triy=ry
740 triw=(triw-trix)-1
750 trih=(trih-triy)-1
760 return
770 '- GRAF_MOUSE -
780 GMOUSE:
790 poke gintin,mf:' mouse form
800 gemsys(78)
810 return
820 '- WIND_UPDATE -
830 WUPDATE:
840 poke gintin,udv:' begin / end upda
te
850 gemsys(107)
860 return
870 '- WIND_GET -
880 WGET:
890 poke gintin,handle:' window's hand
le
900 poke gintin+2,getv:' identify info
 request
910 gemsys(104)
920 rx=peek(gintout+2):' x-coordinate
of rectangle
930 ry=peek(gintout+4):' y-coordinate
of rectangle
940 rw=peek(gintout+6):' width of rect
angle
950 rh=peek(gintout+8):' height of rec
tangle
960 return
970 '- WIND_CALC -
980 WCALC:
990 poke gintin,wc:' type of calculati
on
1000 poke gintin+2,comp:' window compo
nent code
1010 poke gintin+4,wx1:' x-coordinate
INPUT
1020 poke gintin+6,wy1:' y-coordinate
INPUT
1030 poke gintin+8,ww1:' width INPUT
1040 poke gintin+10,wh1:' height INPUT
1050 gemsys(108)
1060 wx2=peek(gintout+2):' x-coordinat
e OUTPUT
1070 wy2=peek(gintout+4):' y-coordinat
e OUTPUT
1080 ww2=peek(gintout+6):' width OUTPU
T
1090 wh2=peek(gintout+8):' height OUTP
UT
1100 return
1110 '- WIND_CREATE -
1120 WCREATE:
1130 poke gintin,comp:' window compone
nt code
1140 poke gintin+2,wcx:' x-coordinate
of full size window
1150 poke gintin+4,wcy:' y-coordinate
of full size window
1160 poke gintin+6,wcw:' width of full
 size window
1170 poke gintin+8,wch:' height of ful
l size window
1180 gemsys(100)
1190 handle=peek(gintout):' window's h
andle
1200 return
1210 '- WIND_SET -
1220 WSET:
1230 poke gintin,handle:' window's han
dle
1240 poke gintin+2,fld:' identify chan
ge request
1250 poke gintin+4,ws1:' INPUT depends
 on change request
1260 poke gintin+6,ws2:' INPUT depends
 on change request
1270 poke gintin+8,ws3:' INPUT depends
 on change request
1280 poke gintin+10,ws4:' INPUT depend
s on change request
1290 gemsys(105)
1300 return
1310 '- WIND_OPEN -
1320 WOPEN:
1330 poke gintin,handle:' window's han
dle
1340 poke gintin+2,ax:' x-coordinate (
location to open window)
1350 poke gintin+4,ay:' y-coordinate (
location to open window)
1360 poke gintin+6,aw:' width of windo
w
1370 poke gintin+8,ah:' height of wind
ow
1380 gemsys(101)
1390 return
1400 '- CLOSE WINDOW -
```

```
1410 WCLOSE:
1420 poke gintin,handle:' window's han
dle
1430 gemsys(102)
1440 return
1450 '- DELETE WINDOW -
1460 WDELETE:
1470 poke gintin,handle:' window's han
dle
1480 gemsys(103)
1490 return
1500 '- WIND_FIND -
1510 WFIND:
1520 poke gintin,mx:' x-coordinate
1530 poke gintin+2,my:' y-coordinate
1540 gemsys(106)
1550 handle=peek(gintout):' window's h
andle
1560 return
1570 '- DRAW ROUTINE -
1580 DROUTINE:
1590 if handle<>5 then color 1,0,1:got
o 1630
1600 bc=bc+1:if bc>3 then bc=0
1610 fc=fc+1:if fc>3 then fc=0
1620 color 1,bc,fc:' do window fill an
d line colors
1630 triw1=trix+triw
1640 trih1=triy+trih
1650 if triw1<trix or trih1<triy then
return
1660 sound 1,0,12,7,0:' do high beep
1670 wave 1,1,1,256,0
1680 '. CLIP TO RECTANGLE SIZE .
1690 poke contrl,129:' OPCODE
1700 poke contrl+2,2
1710 poke contrl+6,1
1720 poke intin,1:' turn clipping ON
1730 poke ptsin,trix:' x-coordinate of
 clip
1740 poke ptsin+2,triy:' y-coordinate
of clip
1750 poke ptsin+4,triw1:' x-coordinate
 diagonally across (ptsin)
1760 poke ptsin+6,trih1:' y-coordinate
 diagonally across (ptsin+2)
1770 vdisys(1)
1780 '. FILL RECTANGLE .
1790 poke contrl,114:' OPCODE
1800 poke contrl+2,2
1810 poke contrl+6,0
1820 poke ptsin,trix:' x-coordinate of
 rectangle
1830 poke ptsin+2,triy:' y-coordinate
of rectangle
1840 poke ptsin+4,triw1:' x-coordinate
 diagonally across (ptsin)
1850 poke ptsin+6,trih1:' y-coordinate
 diagonally across (ptsin+2)
1860 vdisys(1)
1870 if handle<>5 then return
1880 '. DRAW LINE .
1890 poke contrl,6:' OPCODE
1900 poke contrl+2,2
1910 poke contrl+6,0
1920 poke ptsin,trix:' x-coordinate of
 start of line
1930 poke ptsin+2,triy:' y-coordinate
of start of line
1940 poke ptsin+4,triw1:' x-coordinate
 of end of line
1950 poke ptsin+6,trih1:' y-coordinate
 of end of line
1960 vdisys(1)
1970 return
1980 '- EVNT_MULTI -
1990 EVNTMULTI:
2000 poke gintin,18:' wait for message
 or button click
2010 poke gintin+2,1:' 1 button click
2020 poke gintin+4,1:' left button
2030 poke gintin+6,1:' button down
2040 for x=8 to 30 step 2:poke gintin+
x,0:next x
2050 poke addrin#,c:' address of messa
ge pipe
2060 gemsys(25)
2070 evntype=peek(gintout):' type of e
vent that occurred
2100 return
2110 '- MESSAGE HANDLER -
2120 MSGPIPE:
2130 sound 1,0,10,5,0:' do low beep
2140 wave 1,1,1,256,0
2150 if mp%(0)<20 or mp%(0)>28 then go
to CLEANPIPE
2160 mtype=mp%(0)-19
2170 handle=mp%(3):' window's handle f
rom message pipe
2180 on mtype goto 2200,2240,2280,2340
,2460,2460,2460,2420,2420
2190 '. REDRAW .
2200 x1=mp%(4):y1=mp%(5):w1=mp%(6):h1=
mp%(7)
2210 gosub UPDATER
2220 goto CLEANPIPE
2230 '. TOP WINDOW .
2240 fld=10
2250 gosub WSET
2260 goto CLEANPIPE
2270 '. CLOSE WINDOW .
2280 if handle<>5 then goto CLEANPIPE
2290 mc=1
2300 gosub WCLOSE
2310 gosub WDELETE
2320 goto CLEANPIPE
2330 '. FULL WINDOW .
2340 getv=5:gosub WGET:cw1=rx:cw2=ry:c
w3=rw:cw4=rh
2350 getv=6:gosub WGET:pw1=rx:pw2=ry:p
w3=rw:pw4=rh
2360 getv=7:gosub WGET:fw1=rx:fw2=ry:f
w3=rw:fw4=rh
2370 if cw3+cw4=fw3+fw4 then ws1=pw1:w
s2=pw2:ws3=pw3:ws4=pw4:goto 2390
2380 ws1=fw1:ws2=fw2:ws3=fw3:ws4=fw4
2390 fld=5:gosub WSET
2400 goto CLEANPIPE
2410 '. SIZE & MOVE WINDOW .
2420 fld=5
2430 ws1=mp%(4):ws2=mp%(5):ws3=mp%(6):
ws4=mp%(7)
2440 gosub WSET
2450 '. CLEAR PIPE BUFFER & RETURN .
2460 CLEANPIPE:
2470 for x=0 to 7:mp%(x)=0:next x:' cl
ear message pipe
2480 return
```

●

ST CHECKSUM DATA.

*(see page 23)*

```
 100 data  800, 285, 991, 574, 864, 69
1, 806, 320, 773, 337, 6441
 200 data  72, 263, 621, 664, 41, 243,
 400, 781, 629, 733, 4447
 300 data  324, 51, 823, 540, 745, 636
, 76, 800, 618, 684, 5297
 400 data  640, 915, 285, 679, 774, 68
2, 926, 363, 414, 964, 6642
 500 data  799, 942, 405, 999, 350, 80
5, 572, 335, 85, 818, 6110
 600 data  919, 765, 756, 734, 66, 836
```

```
, 648, 361, 963, 545, 6593
 700 data  834, 650, 252, 268, 975, 89
0, 360, 314, 488, 153, 5184
 800 data  718, 347, 517, 585, 187, 79
4, 362, 36, 172, 293, 4011
 900 data  182, 775, 662, 671, 766, 77
2, 364, 86, 263, 331, 4872
 1000 data  226, 586, 593, 654, 831, 8
57, 28, 39, 127, 144, 4085
 1100 data  440, 415, 590, 891, 520, 5
28, 659, 608, 855, 581, 6087
 1200 data  443, 66, 150, 355, 190, 55
5, 560, 565, 242, 864, 3990
 1300 data  446, 253, 377, 358, 966, 9
72, 42, 70, 862, 455, 4801
 1400 data  568, 454, 360, 861, 453, 7
64, 581, 365, 867, 458, 5731
 1500 data  212, 332, 453, 612, 869, 5
89, 458, 612, 836, 218, 5191
 1600 data  440, 465, 547, 720, 662, 9
52, 54, 164, 927, 573, 5504
 1700 data  438, 440, 545, 826, 881, 5
04, 677, 722, 813, 559, 6405
 1800 data  441, 440, 455, 600, 506, 6
79, 724, 720, 107, 380, 5052
 1900 data  444, 443, 58, 936, 943, 92
1, 727, 471, 483, 7, 5433
 2000 data  166, 452, 163, 268, 979, 7
25, 780, 646, 442, 959, 5580
 2120 data  596, 48, 148, 42, 327, 950
, 611, 744, 966, 253, 4685
 2220 data  401, 367, 223, 830, 405, 5
75, 659, 942, 185, 250, 4837
 2320 data  404, 420, 837, 932, 866, 9
, 699, 604, 405, 291, 5467
 2420 data  91, 684, 835, 260, 887, 85
4, 459, 4070
```

●

## AES EVENT LIBRARY CALLS

**MESSAGE** — Wait for a message on the message pipeline.

| BASIC CODE | DESCRIPTION |
|---|---|
| 1 a#=gb | |
| 2 addrin#=peek(a#+16) | Pointer to address where message is to be stored |
| 3 poke addrin#,addr | addr=Address where message is to be stored |
| 4 gemsys(23) | |

Note: a message on the message pipe will be 16 bytes long. The following is an example of how to reserve space for, and obtain, the address of the message pipe.

| | |
|---|---|
| 1 dim msgpipe%(7):' | Reserve space for message |
| 2 for x=0 to 7:msgpipe%(x)=0:next x:' | Initiate array to 0 value |
| 3 addr=varptr (msgpipe%(0)):' | Address of beginning of array |

| ARRAY | MESSAGE PIPE WORD |
|---|---|
| msgpipe(0) | Word 0 |
| msgpipe(1) | Word 1 |
| msgpipe(2) | Word 2 |
| msgpipe(3) | Word 3 |
| msgpipe(4) | Word 4 |
| msgpipe(5) | Word 5 |
| msgpipe(6) | Word 6 |
| msgpipe(7) | Word 7 |

**MULTIPLE EVENT** — Wait for one or more of the following events at the same time.

KEYBOARD
BUTTON
MOUSE
MESSAGE
TIMER

| BASIC CODE | DESCRIPTION |
|---|---|
| 1 a#=gb | |
| 2 gintin=peek(a#+8) | Define integer input |
| 3 gintout=peek(a#+12) | Define integer output |
| 4 addrin#=peek(a#+16) | Define pointer to message pipe address |
| 5 poke gintin,mf | mf=Type of event to wait for<br>1 KEYBOARD<br>2 BUTTON<br>4 MOUSE 1<br>8 MOUSE 2<br>16 MESSAGE<br>32 TIMER |

**BUTTON**

| | |
|---|---|
| 6 poke gintin+2,bc | bc=Number of clicks to wait for |
| 7 poke gintin+4,1 | Wait for LEFT button<br>(2= Wait for RIGHT button) |
| 8 poke gintin+6,bs | bs=Button state to wait for<br>0 BUTTON UP<br>1 BUTTON DOWN |

**MOUSE**

| | |
|---|---|
| 9 poke gintin+8,mf1 | mf1=Flag for call<br>0 Return on ENTRY<br>1 Return on EXIT |
| 10 poke gintin+10,x1 | x1=Coordinate of rectangle (upper left corner) |
| 11 poke gintin+12,y1 | y1=Coordinate of rectangle (upper left corner) |
| 12 poke gintin+14,w1 | w1=Width of rectangle |
| 13 poke gintin+16,h1 | h1=Height of rectangle |
| 14 poke gintin+18,mf2 | mf2=Flag for call<br>0 Return on ENTRY<br>1 Return on EXIT |
| 15 poke gintin+20,x2 | x2=Coordinate of rectangle (upper left corner) |
| 16 poke gintin+22,y2 | y2=Coordinate of rectangle (upper left corner) |
| 17 poke gintin+24,w2 | w2=Width of rectangle |
| 18 poke gintin+26,h2 | h2=Height of rectangle |

**TIMER**

| | |
|---|---|
| 19 poke gintin+28,lo | lo=Low word of long value<br>1 1 Millisecond<br>1000 1 Second<br>60000 1 Minute |
| 20 poke gintin+30,hi | hi=High word of long value |

**MESSAGE**

| | |
|---|---|
| 21 poke addrin#,addr | addr=Address of message pipe |
| 22 gemsys(25) | OPCODE |

**OUTPUT**

| | |
|---|---|
| 23 evflg=peek(gintout) | evflg=Flag for event that occurred<br>1 KEYBOARD<br>2 BUTTON<br>4 MOUSE 1<br>8 MOUSE 2<br>16 MESSAGE<br>32 TIMER |

**MOUSE**

| | |
|---|---|
| 24 mx=peek(gintout+2) | mx=X-coordinate of mouse |
| 25 my=peek(gintout+4) | my=Y-coordinate of mouse |
| 26 ms=peek(gintout+6) | ms=State of mouse button<br>0 left button UP<br>1 left button DOWN |
| 27 mk=peek(gintout+8) | mk=Current keyboard state<br>0 NO KEY PRESSED<br>1 RIGHT SHIFT KEY PRESSED<br>2 LEFT SHIFT KEY PRESSED<br>4 CONTROL KEY PRESSED<br>8 ALTERNATE KEY PRESSED |

Note: These values are actually bit flags, so they can be combined. For example, *mk=3* would mean that *both* shift keys were pressed.

**KEYBOARD**

| | |
|---|---|
| 28 kb=peek(gintout+10) | kb=Standard keyboard code of key pressed |

**BUTTON**

| | |
|---|---|
| 29 mb=peek(gintout+12) | mb=Number of times the mouse button entered the desired state |

Note: when using the *EVNTMULTI* function, you only need to use the parameters required by the events you want to wait for. For example, if you want to wait for a message on the message pipe, and for a button press at the same time, use the code listed below.

| | |
|---|---|
| 1 poke gintin,18:' | 16 for message pipe and 2 for button press=18 |
| 2 poke gintin+2,1:' | 1 click |
| 3 poke gintin+4,1:' | LEFT button |
| 4 poke gintin+6,1:' | Button DOWN |
| 5 for x=8 to 30 step 2:' | Clear all unused parameters |
| 6 poke gintin+x,0 | |
| 7 next x | |
| 8 poke addrin#,addr:' | Supply address where message from the message pipe will be stored |
| 9 gemsys(25) | |
| 10 | |
| evntype=peek(gintout) | If evntype=16, then a message came over the message pipe; if evntype=2, then a button was pressed |
| 11 nb=peek(gintout+12) | Number of times the mouse button entered the desired state, if the mouse button was pressed |

Type of event flag (Line 5): You can specify any combination of events, by adding their values together and using the result as the input parameter.

Keyboard: No input parameters need to be used. If you specify to wait for a keyboard event, the code for the key that was pressed will be in *gintout+10*.

Mouse: The mouse event has two sets of input parameters, so that you can wait for entry or exit events simultaneously.

Message: If a message event occurs, the message will be located at the address specified for the message pipe.

**Table 1.**

## AES MESSAGE PIPE FORMAT

All AES messages have a maximum length of 16 bytes (in BASIC, the equivalent is an 8-element integer array). All AES messages define the first three elements as follows:

| | |
|---|---|
| ELEMENT 0 | Message ID number |
| ELEMENT 1 | Application ID |
| ELEMENT 2 | Number of elements used beyond the 8th element, if the message is longer than 8 elements. |

In BASIC, elements 1 and 2 are *DON'T CARE*. In other words, element 0 is the only element of the first three that will be used.

**REDRAW WINDOW** — 20 MESSAGE ID — Redraw work area of window.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window HANDLE |
| 4 | X-coordinate of upper left-hand corner of window |
| 5 | Y-coordinate of upper left-hand corner of window |
| 6 | Width of portion of window to redraw |
| 7 | Height of portion of window to redraw |

**TOP WINDOW** — 21 MESSAGE ID — Make selected window active.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Not used |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**CLOSE WINDOW** — 22 MESSAGE ID — Close window.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Not used |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**FULL WINDOW** — 23 MESSAGE ID — Make window its largest possible size, or restore it to its previous size.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Not used |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**ARROW** — 24 MESSAGE ID — Arrow or Scroll Bar selected.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Action requested:<br>0 Page up (Scroll Bar)<br>1 Page down (Scroll Bar)<br>2 Row up (Arrow)<br>3 Row down (Arrow)<br>4 Page left (Scroll Bar)<br>5 Page right (Scroll Bar)<br>6 Column left (Arrow)<br>7 Column right (Arrow) |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**HORIZONTAL SLIDER** — 25 MESSAGE ID — New position of horizontal slider.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Requested slider position (0 - 1000)<br>0 Leftmost position<br>1000 Rightmost position |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**VERTICAL SLIDER** — 26 MESSAGE ID — New position of vertical slider.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Requested slider position (0 - 1000)<br>0 Top position<br>1000 Bottom position |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**SIZE WINDOW** — 27 MESSAGE ID — New window coordinates.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | X-coordinate of upper left-hand corner of window |
| 5 | Y-coordinate of upper left-hand corner of window |
| 6 | Requested width |
| 7 | Requested height |

**MOVE WINDOW** — 28 MESSAGE ID — New window coordinates.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Requested X-coordinate of window |
| 5 | Requested Y-coordinate of window |
| 6 | Window width |
| 7 | Window height |

**WINDOW NOW ON TOP** — 29 MESSAGE ID — Identifies window that has just been made active.

| ELEMENT | DESCRIPTION |
|---|---|
| 3 | Window handle |
| 4 | Not used |
| 5 | Not used |
| 6 | Not used |
| 7 | Not used |

**Table 2.**

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# The super simulators

## *Flight Simulator II* and *Silent Service* arrive for the Atari ST.

by Arnie Katz, Bill Kunkel and Joyce Worley

Simulators allow computer users to jump from the prosaic world of work and school to nonstop excitement, in locales ranging from the wild blue yonder to the deep blue sea. It's a perfect example of having your cake and eating it, too. Most folks can't resist the chance to handle a plane, race car, ship, or other vehicle, in high-stress situations—without any personal risk.

Hardware-oriented simulators on which the home variety is based are essentially educational devices. Their sole purpose is to teach the user to correctly pilot a real version of the simulated vehicle. After all, it wouldn't be a good idea to throw novice 747 pilots into the cockpit and tell them to "mess around" until they get the hang of it. High-tech simulators, often costing millions of dollars to construct, provide a safe learning environment for difficult-to-master skills.

For home users, confrontation with the real-time challenge of the situation is the main attraction. The first surge of interest in computer simulations occurred during the Video Game Boom (1981-1983). The mature user saw them as an intellectually stimulating category of action game.

With video game market's collapse came protestations that simulators were not really games. Software publishers wanted to exempt their simulators from the negative image which electronic games had at that time. The debate is largely of academic interest. If simulators truly aren't games, they nonetheless satisfy many of the same desires. Further blurring any distinction in this matter is the fact that many simulator programs incorporate overt game elements.

Whether the computer user wants a demanding intellectual challenge or a fast-paced electronic joyride, a pair of simulators recently released for the Atari ST can deliver.

**Flight Simulator II** from SubLogic is the program which really popularized simulators in the home computer market. Bruce Artwick's landmark revision of his earlier IBM program, for 6502-based systems puts users inside a prop-driven Piper 181 Cherokee Archer and allows them to fly to any of several American cities (Chicago, Seattle, Los Angeles, and New York). Those who mastered flying could also enjoy a little dogfight action, courtesy of a World War I combat program.

SubLogic has now supported the earlier **Flight Simulator II** with add-on "scenery disks," which provide further destinations (see the section in **ST notes**). In view of the enormous sales which **Flight Simulator II** has racked up in the last three years, its long-awaited release for the ST (from SubLogic, 713 Edgebrook Dr., Champaign, IL 61820) qualifies as a major event in entertainment software.

One of the few criticisms leveled at the earlier versions concerned the simplistic, sometimes crude graphics. In the ST edition, however, the visuals have been extensively cleaned up. It offers much sharper images and features several alternate perspectives, in addition to the standard cockpit viewpoint.

Some critics debited the 6502 version for excessive realism. The simulation was so detailed that skill and knowledge were required to use it. Verisimilitude in the ST edition is all any sky-jockey could want, yet the new program exploits the ST's excellent interface to fashion the ultimate in user-friendly skies.

The player clicks on a "File" menu header to select the major operating mode (either demo or WWI ace) and aircraft (prop or jet propelled). The "Enviro" header offers options to modify environmental conditions by programming the season, cloud cover, wind, fog, and so forth, while the "Nav" menu provides mouse access to navigational features and maps. Other headers deal with pause, optional audio, save and load—all through the mouse.

The focus of much of the program's excitement is the "View" menu, which lets users alternate a cockpit perspective with views from the flight tower or from a "spotter" plane flying in tandem with the user's craft. Like an out-of-body experience in an airplane, the "spot" option offers the armchair aviator a look at things that real pilots can only dream of.

The top half of the screen is devoted to the visual display, and flight instruments take up the bottom. The three-dimensional graphics and animations are (pardon the pun) "top flight," and the clarity of the images can only be called spectacular. The "zoom" option enhances traditional cockpit displays. Armchair Smilin' Jacks may eagle-eye faraway mountains and landing strips with a keystroke, then pull back for a gander at the Big Picture.

**Flight Simulator II** makes excellent use of the desktop. Simple mouse commands move and resize windows. Moreover, users can actually fly their aircraft exclusively with the mouse. Clicking the right button turns flight control over to the mouse. The

user holds down the left button, moving the mouse forward to accelerate. Rolling the mouse left or right controls turns on the ground and banking in the air. Send the craft down the runway, then pull back on the mouse once it hits takeoff speed. And *voilà!* You're flying!

Instrumentation includes: airspeed indicator, artificial horizon, altimeter, turn coordinator, directional gyro, vertical speed indicator, omni-bearing indicator (with a glide slope, no less), magnetic compass, clocks, engine monitoring instruments, a battery of radios (navigation, DME, ADF, communications—incoming only), lights and transponder. And there are control positioning indicators, plus indicator icons (landing gear, magnetos, lights, zoom, autopilot status, mouse/yoke, flap position, carb heat, which can be accessed by clicking on the appropriate on-screen icon).

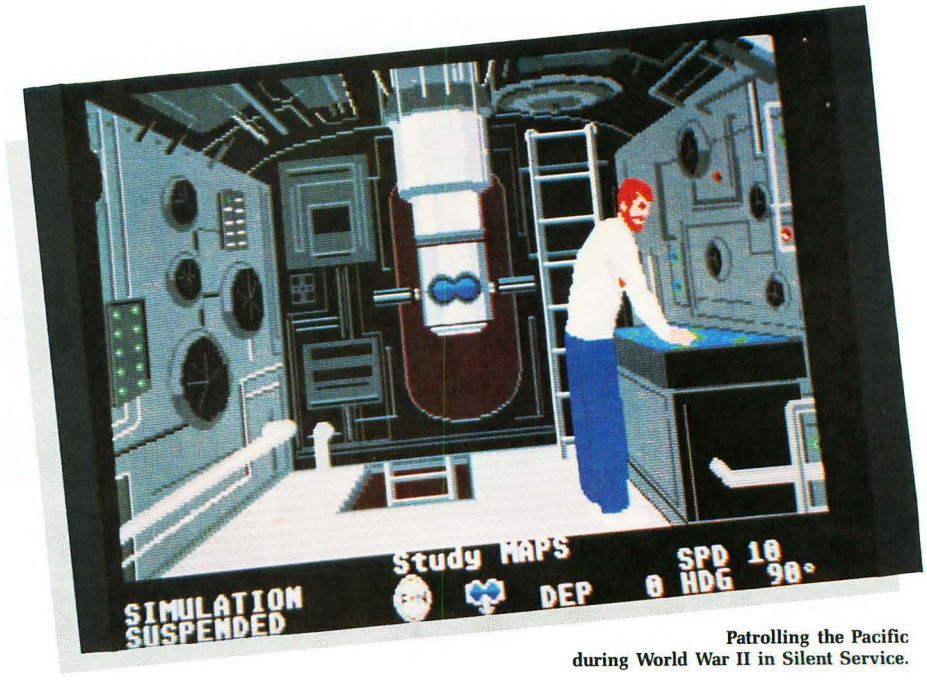
The beauty of **FS II**, however, is that it isn't necessary to become intimate with each and every gauge and meter in order to get airborne. The user-friendly interface and mouse control (using most of the GEM protocols) let even the most earthbound of us gain virtually instant access to the skies. Players learn to fly by getting up there and flying, and if a crash is the end result, we recommend you click on "spot" on your way down—and observe the catastrophe from a safe distance.

Flying is one of mankind's oldest yearnings, which seems to give flight simulators an innate appeal. Submarine simulators, on the other hand, do not possess that degree of universality. Being submerged in a gigantic, high-tech sardine can is probably not how most folks would opt to spend Saturday night. People who are turned on by the idea of submarines are, generally, more interested in torpedoes and in deck guns than in recreating a realistic sense of oxygen deprivation during a mock depth charge attack.

Subs are, basically, war machines, and any submarine simulation worth its ballast is going to concentrate on reproducing the excitement of battle. Silas (**Castle Wolfenstein**) Warner's ST adaptation of Sid Meier's **Silent Service**, from MicroProse (120 Lakefront Dr., Hunt Valley, MD 21030) does this with exceptional skill.

The program, subtitled "The Submarine Simulation," combines high levels of realism, a simple mouse-controlled interface and superb graphics, to present an exciting recreation of submarine warfare in the Pacific Theater of World War II.

Players can select among three basic options: torpedo/gun practice, convoy actions and war patrols. The program offers seven convoy encounters (Plunger in the Inland Sea, January '42; Wahoo vs. Convoy, January '43; Hammerhead at Borneo, October '44; Searaven at Toagel Mlingui, January '43; Tautog at night, March '44; Grayback in the China Sea, October '44; and Cavalla Hits the Jackpot, June '44), which mix combinations of day and night actions, surface and submerged, and visual and radar combat.




**Patrolling the Pacific during World War II in Silent Service.**

A quintet of WWII patrols (*USS Tang*, Midway Patrol, June '44; *USS Bowfin*, Fremantle Patrol, November '43; *USS Growler*, Second Patrol, August '42; *USS Seawolf*, Seventh Patrol, October '42; and *USS*

*(continued on opposite page, top)*

## GBA Championship Basketball

**(TWO ON TWO)**
**ACTIVISION**
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**ST version $44.95**

**by Bill Kunkel**

Okay, sports fans, up and at 'em! At long last, a software publisher has produced a team sports contest for the ST: **GBA Championship Basketball (Two on Two)**, a full-court, action-strategy roundball simulation by Troy Lyndon, Scott Orr, John Cutter and Mark Madland (ST translation by Dynamix).

The "GBA" is the nonexistent "Gamestar Basketball Association"—a four-division league of two-man hoop teams that play the most realistic roundball this side of the Lakers. Gamers name their squad, select a teammate, program the attributes (quickness, dribbling, inside/outside shooting, stealing, jumping), and even choose the race of their own on-court surrogate.

Teammates are selected from a menu of thinly-disguised NBA all-stars (though the last names are taken from members of the Gamestar design crew, first names like Elgin and Magic make the identities pretty transparent). The player next selects a division in which to compete (graded by difficulty), and the run-and-gun begins.

While **Two on Two** is a full-court simulation, only the half of the court that's in play is displayed on-screen. The team with possession heads up-court (under computer control), as the user calls a play via the joystick and his opponent (human or computer) selects a defense.

Once in the attacking zone, the offensive player retains complete control over his on-court surrogate, while the teammate moves to his preselected position and plays according to his individual skills.

Any shot's success is determined by the positions of the shooter and defender on the floor. Uncontested shots from beneath the basket almost always ripple the twine, while 3-point attempts from half-court—with two defenders draped over the shooter's arms—result mostly in airballs.

**GBA Championship Basketball** obviously owes a tip of the hat to the classic Irving and Bird **One-on-One**, from Electronic Arts. A second player, however, opens up strategic possibilities that the earlier game didn't even aspire to. The addition of the passing game creates a different level of

*(continued on opposite page, bottom)*

*Spadefish*, Second Patrol, October '44) will give master U-boat skippers a chance to restage the classic submarine battles.

The patrol mode is the campaign game. But, before the player can attempt this demanding version of the program, would-be commanders must pass a short quiz to determine their ability to distinguish the different types of Japanese ships. Those who flunk this quiz are remanded for further training.

Once a mode is selected, the computer loads in the appropriate scenario, and the display shifts to a map of the Pacific. Players give orders by clicking the right mouse button, which puts the conning tower and menu on-screen. From there, mouse control can summon up the Map Room (with a special zoom feature for close-up study of charts and maps), the instrument and gauge room (including a cutaway schematic drawing of the sub), quartermaster's log, or bridge.

Each section has its own graphic screen with click-on icons. The Map Room, for example, provides users with access to any part of the Western Pacific Ocean, down to a resolution of 100 yards.

The heart of the game is in the bridge screen. The top of the playfield is devoted to a vivid periscope display, with target-related data (target visual, range, speed, course, angle on bow and lead angle) and control icons along the bottom. The click-on icons include the dive/rudder control, speedometer (she can travel up to 10 knots undersea, 20 knots on the surface), periscope, torpedo launch and deck gun.

To lend a realistic sense of time in the confrontations, designers created a "time scaling" system. It permits the player to speed things along while maneuvering for position.

Beautiful visuals and animations detail even the smallest actions. When the sub launches a torpedo, the user can watch it through the periscope, as it speeds (hopefully) toward its target, cutting the water just below the surface. After a hit, a flash of fire and smoke envelops the target, frequently followed by the sight of the ship sinking forever beneath the waves.

Don't get the idea that the convoys and patrols are sitting ducks, however. The escort ships, in particular, can be hazardous to a sub commander's health. A single appropriately placed depth charge can end an encounter in the blink of an eye. (Such unsuccessful missions conclude with a display of the flooded conning tower and a drowned on-screen surrogate.)

As is usual with MicroProse products, the game play is of primary importance, but realism hardly takes a back seat. These folks do their homework when it comes to simulations, and **Silent Service** is amazingly true to its origins. For example, the date of a simulated encounter determines the technical gear found aboard each vessel. Mark 20 Electric "wakeless" torpedoes, introduced in January '44, are available only in the actions which occur on or after that date. Another example: in April, 1943, the Japanese increased the escort strength for vital tanker and troop convoys. So, all actions taking place on or after that point become proportionally tougher.

**Silent Service** features the usual first-rate MicroProse documentation, which enlightens while it instructs, providing the historical perspective along with the nuts-and-bolts.

So batten down the hatches, raise the landing gear, load the torpedo tubes and prepare for takeoff. The ST super simulators have arrived, and they're likely to keep users flying, diving, firing and maneuvering for quite a while to come. //

---

simulation, with the computer player able to either pass or call for the ball anytime during possession.

The graphics and player animations are expertly handled, but the choices of color seem questionable. The teams' orange and blue uniforms tend to disappear against the Celtic green of the key. The skin tones of the basketball players also make them difficult to track against the woodgrain of the simulated parquet flooring. Darker colored uniforms would have solved the problem —and saved users a lot of eye strain.

The clock is another problem; it is only visible during play. It is not only obscured during the play selection period, when the squad on offense moves up-court, but also during time-outs! In other words, the only way to find out how much time remains in a game is to sneak a peek during play, a most distracting necessity.

Quibbles aside, Activision's **GBA Championship Basketball** is like manna in the desert to the starving ST sports maven; it's highly recommended. Now, software producers, how about baseball, football, soccer and hockey? //

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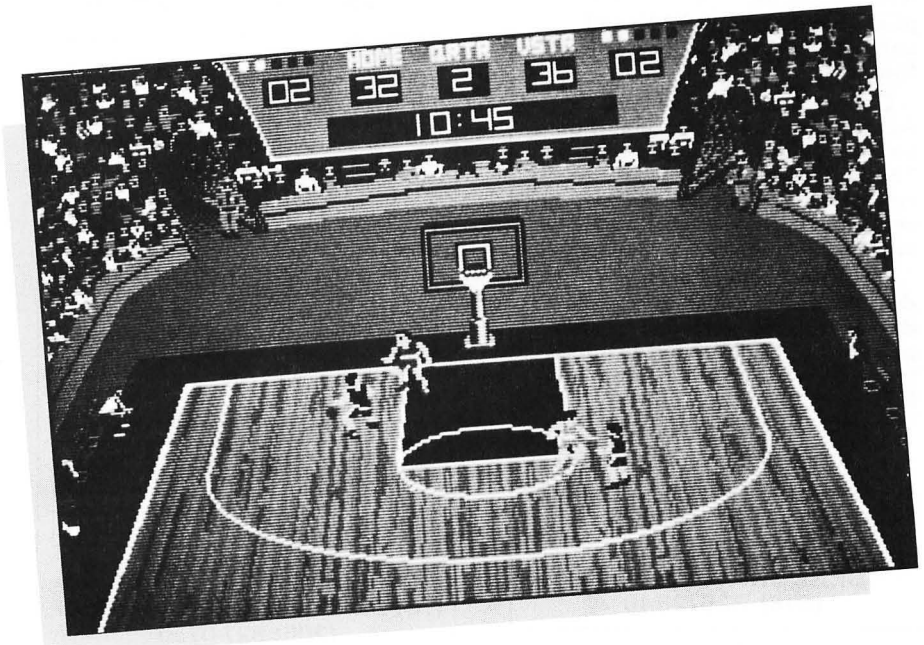


**ST sports fans—attention at last!**

## Winter Games

**EPYX**
**1043 Kiel Court**
**Sunnyvale, CA 94089**
**ST version $39.95**

by Bill Kunkel

Light that Olympic torch, wax up your skis and sharpen those ice skates, because **Winter Games** has finally arrived for the ST. The first of the Olympic Games series from Epyx to make the jump to a 68000 system, **Winter Games** features figure skating, free skating, speed skating, hot dog aerials, ski jump, biathlon and bobsled run competition among its events.

Figure Skating lets players control a female skater through a one-minute exercise with seven compulsory, joystick-selected moves. During this brief timespan, compu-athletes must execute—successfully—the camel spin, sit spin, double axel jump, triple axel jump, double lutz jump, triple lutz and camel-into-sit spin.

Free Skating employs the same movements, but the Olympians can use them freely to create a choreography of spins and jumps, to the accompaniment of the two-minute musical selection.

Speed Skating pits two skaters head to head. Both racers are on-screen in a wild sprint, moving up to 30 mph. (The documentation notes that speed skaters are the fastest self-propelled human beings over level earth.)

Hot Dog Aerials are short ski jumps, during which the player can attempt any combination of six joystick-controlled movements (backflip, mule kick, back scratch, forward flip, swan and daffy). The showy maneuvers here are a contrast to the Ski Jump, a long, straight leap requiring the player to guide the skier's body with joystick commands.

The Biathlon, one of the oddest of Olympic events, combines cross-country skiing

**Let the games begin with *Winter Games* from Epyx.**

(with the computer monitoring even the surrogate's heartbeat) and target shooting. The user controls both the skiing and the "lock and load" rifle with the joystick.

The Bobsled is the final contest. Here, players streak along a semi-circular track of packed, solid ice, in a race for the best time. This event offers both an overhead display of the entire course and a first-person view of the track from inside the sled.

**Winter Games** on the ST is, in some ways, an improvement over previous 8-bit versions. Its background visuals are breathtaking, especially in the cross-country sequences from the biathlon event, with its sparkling winter creeks, lush evergreens and glistening snow. Unfortunately, the figure animation itself is only adequate. Inexplicably, it's inferior to the animation seen on the earlier Commodore 64 version.

The sound track is also weak, especially the musical themes which accompany each event. This fault, though, can be laid more directly at the ST's doorstep, since the ST sound chip is noticeably inferior to the C-64's SID chip. As a result, the individually scored themes for each competition sound tinny and, occasionally, just a trifle flat.

The biggest disappointment, however, was Epyx's failure to enhance the bobsled event by including additional tracks. The bobsled competition is the single most impressive event on **Winter Games**, but, by the fifth run, most gamers will be able to steer through it in their sleep.

All in all, **Winter Games** seems an enjoyable entry to the ST games library, but —as with many ST translations—the users may have been hoping for more. ///

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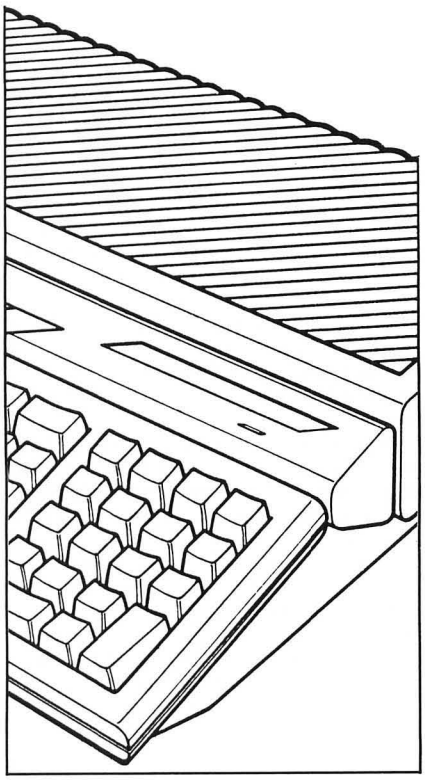

# ST user

> "...we may be entering a software Dark Ages."

**by Arthur Leyenberger**

Welcome to the second installment of **ST User**. I plan to continue this mostly monthly, somewhat irregular column in the same tradition as I have written **The End User** in **ANALOG Computing** magazine.

Last issue's inaugural column discussed Data Pacific's new **Magic Sac** cartridge for the ST. I welcome feedback on that topic, as well as on any future columns. The best place to reach me, especially if you want a response, is either on Delphi's **ANALOG Computing** Atari User's Group (send messages to NJANALOG), or on CompuServe's SIG Atari (you can reach me at 71266,46). You can also write to me at the **ST-Log** address on the staff page of this issue.

I am appreciative of this chance to continue what I call the great Atari Adventure, together with you. Now. . .onward!

### Interface Wars.

Broderbund Software, producers of the popular **Print Shop**, recently won in their lawsuit against Unison World for software copyright infringement. The United States District Court of San Francisco ruled that audio-visual displays or user interface of a non-video-game computer program can be copyrighted under the Federal Copyright Act. The ruling also stated that programmers infringe on copyrights if they copy the look, sequence and structure of an already existing program.

Broderbund brought suit against Unison World over that company's program **PrintMaster**. The various screen displays and menus of **PrintMaster** were very similar to those of **The Print Shop**, although I always felt **PrintMaster** had improved menus and commands.

The outcome of this suit is expected to have far-reaching implications for software for all computers. Think about VIP's **VIP Professional** spreadsheet for the ST. It is clearly a Lotus 1-2-3 clone. It looks like 1-2-3, works like 1-2-3, and even reads and writes 1-2-3-compatible files. Oh, oh.

What about all of the Apple Macintosh MacWrite word processor look-alikes for the ST? In fact, where is this going to end? One of the best things about the existing software industry is that new programs continually improve on older programs. There are very few really new ideas when it comes to computer software. Looks to me as if we may be entering a software Dark Ages.

News of this decision is probably causing smiles at Apple. You will recall that, early in 1986, Apple threatened to sue Digital Research, because the GEM desktop's MS-DOS and ST versions were too similar to the format of the Apple Macintosh. (Of course, we all know Apple Computer was not the originator of the "visual interface" of the Macintosh. It was created by Xerox at the Palo Alto Research Center—PARC—many years before.)

Because Digital Research did not have

> "The new desktop has only two windows, and they're fixed."

the financial wherewithal to contest Apple's claim, they agreed to change the "look and feel" of the GEM desktop—to Apple's specifications. Well, I just last week received the new version of the GEM desktop for the IBM PC and clones. I can justifiably state that the desktop's look and feel are significantly changed . . . for the worse, I think.

### The "New Improved" GEM desktop.

Many of us have become *very* accustomed to the GEM desktop. Its use seemed intuitive, requiring little training for effective operation. Now some of the familiar format has changed, with the introduction of the new version of GEM for the IBM PC and other MS-DOS computers.

One of the most obvious differences is seen in the use of windows. The old version allowed up to four separate windows, which could be made any size and placed anywhere on the screen. The new desktop has only two windows, and they're fixed. Each is the full screen width and occupies about half of the screen vertically. These two windows cannot be relocated or resized.

Because of the full-width window, there are no horizontal scroll arrows, no bars or sliders; all of the icons are displayed across the screen. There are, however, vertical scroll arrows, bars and sliders, similar to the previous version of the desktop.

Also missing from the screen of the new GEM are separate trash can and disk icons. Instead of clicking the mouse button on individual file icons (or dragging it through several file icons, then dragging the entire selection to the trash can), you now have a "'delete" command in the "file" dropdown menu. Files are selected in the familiar manner, then you select the delete command from the file menu.

Disk icons are initially located inside each of the two windows. Then, as before, when you click on one of the disk icons, the window fills with the top-level folder's contents. Unfortunately, you can't pick up the disk icons and place them wherever you want; they're in a fixed position and order in the top left corner of the window.

Another interesting change involves creating a new folder. Previously, a new folder was made by selecting the "new folder" command of the file menu. Now, each of the two fixed windows has a new folder icon, regardless of what folder is being displayed or how deep you are into the folder hierarchy. To create a new folder, you click on the new folder icon, then type in the new name.

There are some other minor changes, as well. The "close" button located in the very top left of the window is now a butterfly shape, instead of a circle. The "desk" dropdown menu is now located at the top, on the far right of the screen, and has been renamed *"desktop."* In fact, all GEM Application programs have the desktop menu at the top right. When an icon is selected, it no longer becomes inverse video; it just gets a darker outline.

I don't particularly like the new GEM desktop. My major objection is to not being able to size the windows, place them wherever I like, and have up to four on-screen at once. The new version seems inefficient, too. For example, when I'm doing a lot of disk maintenance. . .I used to create two windows on the screen. I would display the filenames as text and make both windows just wide enough to display the filename and extension. With two narrow, vertical windows on-screen, there was still room to display all of my disk icons—as well as the trash can.

The screen display I just described worked very well when I wanted to do a lot of file transfers, deletions and renaming. I had everything arranged nicely on-screen, and all was in reach. The new desktop limits me to just two windows. Therefore, I have to go down into folders, or redisplay higher-level folders more often, to accomplish the same tasks.

> "Every manufacturer is going to have to be isolated, out for itself."

I'm sure I'll eventually get used to the new GEM desktop, but I don't like it. Part of my dislike is based on having to do more work. The rest stems from resentment that Apple Computer forced these changes on Digital Research. Between making it harder to use the GEM desktop and the competition from the inferior (yet more popular) **MicroSoft Windows** for the PCs and clones, it looks as if GEM and the GEM video interface could be facing extinction. For now, GEM is an endangered species. Let's hope it survives.

### "Aye, Captain. We need more power."

With the introduction of the new desktop for the MS-DOS machines—and presumably a new look for the various GEM PC application programs—we can kiss a standard user interface goodbye. Apple did have a chance to let the Xerox PARC/Macstyle interface become the standard computer interface of the future. Think of the possibilities: a user could walk up to any computer that used icons, and having used one such machine, could use any other. The sizable, multiple windows and trash can could have been the interface for the rest of us.

No one knows what this turn of events will mean for the ST user. Atari claims that the Apple Computer vs. Digital Research affair was strictly between those two companies and had no relevance to the ST. We'll see. It seems clear that, if Digital Research's GEM application programs—GEM Draw, GEM Wordchart, GEM Graph, GEM Write and GEM Paint—ever make it to the ST, they will have to conform to the new, improved, Apple-requested GEM look and feel.

And what about other software? Will software authors be wary of using windows? Are trash can and clipboard icons now forbidden? It seems that the new GEM look and feel could have long-lasting and far-reaching implications. That's really too bad; for a while there, it seemed that computers were becoming easier to use, since there was a common interface. Unfortunately, using a computer in the future will be more difficult, since every manufacturer is going to have to be isolated, out for itself. //

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CIRCLE #113 ON READER SERVICE CARD

# Database Create

## An accessory for *Regent Base.*

by Frank Cohen

*The program and source files for this utility were far too long for inclusion in the magazine. They can be found on this month's disk version, or on the* ***ANALOG Computing*** *Atari User's Group on Delphi. This article is complete; there is no DOC file on disk or on Delphi.*

Just after I'd finished writing my last video game for the Atari 800, a friend told me about a new computer Atari had just shown at one of the trade shows. He couldn't stop raving about the new ST. I shrugged my shoulders, "just another system announced and never marketed," I figured . . . until I saw it.

My brain raced: "Just think of the games I could write with sixteen colors on the screen and the fast 68000 chip!"

A short while later, a 16-bit microcomputer with incredible graphics and half a million bytes of memory (the 800 only had 48,000 bytes total) was sitting in my living room.

At the same time, I found myself facing potential bankruptcy, as my financial situation was going from bad to worse. Even though I was writing about three high-quality games a year for the 800, the poor state of the games market and rampant piracy were destroying any chances I had of continuing. So I compromised; I thought about doing a business product for the ST.

I'd heard the ST had good possibilities as a business machine. In spite of that, there just didn't seem to be any business software available. One day at a computer store, I saw dBase III for the IBM PC. It was touted as "the best database ever!" I'd never liked the PC, and thought even less of dBase III, because they both seemed so cumbersome and awkward. That night I began work on **Regent Base**.

As I worked the months slipped by. I saw a few other ST databases show up: **DB Master One, H&D Base, DBMAN,** and **Habaview**.

The finished **Regent Base** falls into the same category as **H&D Base** and **DBMAN**; they're procedural language driven databases. To do anything with this type of database, the user must learn a programming language. With the procedural language, databases are created, information within them is manipulated, and reports are generated. All three of these databases are very powerful.

Of the three databases above, **Regent Base** is the only one that makes use of GEM. However, that doesn't mean setting up a database is as simple as pointing and clicking the mouse, as in **DB Master**. Creating a table in **Regent Base** requires processing the following type of command from **Regent Base**'s "Sequel Editor."

```
Create Table Videotapes
Name Char(20),Number Int(6)
```

This procedural command tells **Regent Base** to create a new database table called *Videotapes*. In this new table, there will be two fields: *name* and *number*. The name field will be a character field twenty digits wide. The number field is an integer field six digits wide, so it can hold integer values from *0* through *999,999*.

**H&D Base** and **DBMAN** have similar commands to create a new database table. Once the table's been created, a procedure (program) must be developed to store and retrieve information within the database table.

With **Regent Base**, GEM objects are used to facilitate this process. However, a procedural language program still must be written. Once the procedural language program is written and the GEM objects have been assembled, the finished product is called a *form*. When a **Regent Base** form is running, it looks just like any other GEM application you would expect to see on the ST. Its ability to create forms is what separates a procedural language driven database from the rest.

Most beginners (who are used to **DB Master** or **Habaview**) are staggered when they begin to see how hard it

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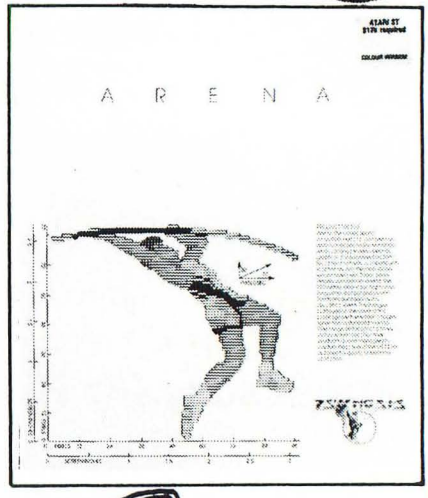

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is to use a database with a procedural language. It is a monumental task to start at the beginning and create a working application using **H&D Base, DBMAN** or **Regent Base**.

Because of this, I've begun writing a series of accessories for **Regent Base**, so the user who isn't interested in programming can use an otherwise powerful database. The first of the accessories is detailed in this article. The **Create** accessory creates **Regent Base** database tables using the GEM system alone—no programming needed.

**Database Create** is a stand-alone program that can be used on any Atari ST system. To run it, simply double click on the CREATE.PRG file. **Create** can be used from a hard disk or floppy disk, simply by copying the CREATE.PRG and CREATE.RSC files onto the destination device.

When the program is started, a small dialog box will appear, asking for the name of the database table to be created. The name may be up to twenty characters long, but the first eight characters must be different from those of any other existing database tables. Type the name of the new table, then press RETURN. The dialog box will then disappear.

**Create** will then open a large window directly below the menu bar. Within the window you will see a group of choices, containing the three basic field types: *Character, Numeric* and *Date*. Below the choices will be a larger area, labelled with the name of the table to be created.

To define a field, drag one of the objects from the choices box onto the table area. Before the field is added to the table, a smaller dialog box will appear, asking for information specific to the type of field to be added.

Of the three types of fields, the Character field is the simplest to define. Character fields hold any string of characters. When defined, the Character field is set to a certain maximum number of characters. The dialog box that appears first asks for the name of the field to be typed, then for the size of the field in characters.

The Numeric field can be of *Integer* or *Decimal* type. An Integer field can hold any whole number (i.e., no decimal point or fractions) and can be up to ten digits wide. Decimal fields can hold any number or fraction. They can be defined to hold up to ten digits to the left of the decimal point and nine digits to the right (i.e., *9999999999.0 00000001*). The dialog box that appears when a Numeric field is defined asks which field type (Integer or Decimal) to define.

The date field can be defined in one of four possible ways: *Normal, Long, Short* or *European* format. The Normal Date field is displayed as *1/2/86*. The Long Date version would appear as *January 2, 1986*. A Short Date would be *JAN 2, 86*, while the European Date field would show *2/1/86* when printed. The dialog box that appears asks the user to click the selected Date field type.

When defining a new field, you must define the field name. The name defined must be different from all other previously defined names in the table being created. Once the new field has been entered, the corresponding icon will appear in the table area.

Next to the choices is a *Trashcan* icon. You can delete fields within the table area by dragging the field's icon to the Trashcan. The field will then be removed from the table area. Please note: once a field has been dragged to the Trashcan, it cannot be retrieved; a new field will have to be redefined from the choices area.

Once the fields of the new table have been defined, and appear in the table area, **Database Create** has enough information to assemble the procedural commands to generate the table. The output of **Create** is saved as a **Regent Base** form. The new form may be run directly from **Create**, or saved and run later, either from the menu program or the Sequel Editor in **Regent Base**.

Either of these two options is called from the "Control" option of the menu bar. The Control menu bar entry contains three selections: *Save As A Form, Create Table* and *Quit*. Save As A Form creates a new **Regent Base** form containing the procedural commands necessary to create the new database table. The form created can be loaded into the Sequel Editor and processed.

The Create Table selection creates a new **Regent Base** form, then automatically processes the new form using the **Regent Base** Sequel Editor.

The Quit selection exits **Create** and returns to the GEM desktop.

**Database Create** serves simply as a tool to a greater understanding of how **Regent Base** works and what can be accomplished with **Regent Base**. Forms created by the program can be loaded into **Regent Base**'s Forms Editor for a closer look.

Future versions will include additional field types, the ability to enter and exit through the central menu program, and the ability to edit existing database tables.

**Database Create** is not a solution to the major problem of learning to use a procedural language for the first time. A table defined using **Create** will physically exist. However, the form that actually manipulates the table's contents must be written in the procedural language.

The next accessory planned is a database table "Data Entry" editor, which will allow direct (no programming necessary) access to database tables output by **Create**. Next will come a "Reports Generator," for instant reports based on the contents of the database tables. ///

---

*Frank Cohen, the author of **Regent Base**, has been publishing software for the Atari line since his first program, "Clowns and Balloons," in 1982.*

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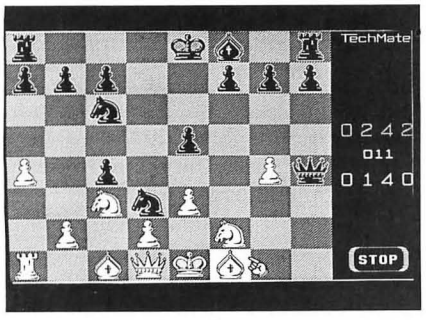
# Techmate version 1.1

**SZABO SOFTWARE**
**P.O. Box 623**
**Borrego Springs, CA 92004**
**$49.95**

**by Douglas Weir**

A famous Grandmaster is supposed to have said that the ideal chess player would play "like a book in the opening, like a magician in the middlegame, and like a machine in the ending." If your machine is the ST, then the software will have to be a new release from Szabo Software. It's the only chess program available for the ST series so far, but we're lucky—it's a very good one.

**Techmate**—no, it's not the name of a Silicon Valley dating service—runs in high or medium resolution. You get three files on the single-sided distribution disk. The program seems to be written completely in assembly language, and is thus small—less than 20K bytes. One of two data files, each about 118K bytes in size, is used by the program to run under color or monochrome. **Techmate** is totally mouse-driven. Starting a game involves no more than a couple of mouse clicks.




**A sample *Techmate* screen.**

The game display is simple. Most of the screen is filled by the chessboard. In high resolution, the pieces are drawn in the standard Staunton style used for diagrams in chess books. The color version (which can be run from low or medium resolution) uses slightly more stylized forms. In any case, you won't be distracted by the display. The right side of the screen is used for information. In the middle of this area are two digital clocks: one for the program, and one for you. Each side is allotted a certain amount of time for a game. You can take as long as you wish to make a move, provided you have time left on your clock. If you run out of time while it's your move, you lose.

However, it's very easy to change the clock settings, either before or during a game. If you run out, you can give yourself more time and resume the game at the current position. The clocks register up to 9999 seconds each, so you can allot up to 2¾ hours to either side, or both (if my long division is correct). The default setting for the clocks is 300 seconds (5 minutes) per side. The initial settings can be different—in fact, I was able to obtain some of my most satisfying results against **Techmate** by setting its clock to, say, 30 seconds, and mine to 9000.

The level of skill at which the program plays is determined by how much time you give it, and so is continuously variable. There are no formal play-levels. If you set **Techmate**'s clock to one hour, it will play better than it would if you gave it only five minutes. It will also take more time for each move (according to Szabo Software, **Techmate** will typically take 1/50th of its time remaining for the current move). **Techmate** "thinks" only on its own time, not its opponent's.

**Techmate** has a respectable repertory of openings. As long as you stick to its "book," it will make its moves almost instantaneously. However, its knowledge is not encyclopedic. As Black against 1. P-K4 it will play 1. . . P-K4, 1. . . P-QB4 (Sicilian Defense), 1. . . P-Q4 (Center Counter), 1. . . N-KB3 (Alekhine's Defense), or a King's Indian configuration (with . . . P-KN3, . . . B-N2, etc.) In some cases, it will continue for five or six moves in a line before starting to think for itself. Against the King's Gambit (1. P-K4, P-K4; 2. P-KB4), it does not know about the Falkbeer Counter-Gambit (2. . . P-Q4). It had no trouble finding Fool's Mate against 1. P-KB3 and 2. P-KN4.

With its clock set to 900 seconds (15 minutes), **Techmate** was unable to checkmate with King, Bishop and Knight against a lone King. But it kept trying. It does know about such principles as the Opposition in King-and-Pawn endings.

As you would expect, the program's greatest strength is in pure tactical play and short combinations. I'm not a rated chess player and so have no idea what **Techmate**'s rating at various levels might be. I found it much stronger than my four-year-old old Fidelity Chess Challenger (one of the "dedicated" chess computers). In five-minute games, **Techmate** is truly formidable.

For the record, **Techmate** allows all the legal moves of chess, including castling, pawn captures en passant and pawn promotion. It recognizes (and, in the appropriate situation, will play for) stalemate. It will declare a draw after fifty moves if no captures or checks have occurred. It also recognizes the three-time repetition rule: if a position is repeated three times, the game is legally drawn (provided one of the players points this out). Perpetual check falls into this category. If there is not enough material left on the board for either side to win (for example, King and Knight against King), **Techmate** declares a draw.

**Techmate** plays "touch-move." But it's as easy to override this feature as it is to fiddle with the clock settings. At any time—your move or not—you can click the mouse on the "Stop" box, and **Techmate** will suspend operation. You can now (a) switch sides, (b) change the clock settings, (c) "take back" as many moves as you want—right up to the beginning of the game, (d) start a new game, (e) make one or more moves for White and/or Black, or (f) quit the program altogether.

The moves on the chessboard are accompanied by a combination of visual and audial cues. Whenever **Techmate** moves, a pleasant bell sound is heard once, and the "to" and "from" squares are highlighted until you move the mouse. When it gives check, you hear something like a gunshot (this can be quite a surprise when unexpected). Other sounds are used to signal illegal moves (which the program will not execute), draws, checkmate, and so on. In all these cases, a message is also displayed in the upper right corner of the screen.

**Techmate** will not save a game, and you cannot get it to generate a listing of moves. But at the end of a game you can use its "take-back" feature to go back over the moves in reverse. I was intrigued to find that, in more than one case where I went back to an especially interesting point, **Techmate** chose a different move in an identical position. This may have been due to the clock's having a slightly different setting the second time around.

My only serious complaint about the program concerns its "Problem- Solving Mode." The only way you can set up a position (and then let **Techmate** take White or Black and play on from this point) is to start as if at the beginning of a normal game, and then manually make the alternating series of moves that will generate the desired position. There's no difficulty making the moves, but it would be much nicer to have a mode where one could just place the pieces where one wanted them, get rid of the unwanted pieces, and pick up play from there.

As for **Techmate**'s style of play. . . in a word, it's aggressive. It always looks for counterplay. In positions where it is forced to defend, **Techmate** will select a purely

passive move only when nothing else is available. It seems to readily see ahead a move or so to potential pins, discovered checks, and so on. In positions involving fluid pawn-play in the center it is especially effective, often brutally so. One quickly learns to feel discouraged when **Techmate** starts things off with . . . PxP in a seemingly even position.

Szabo Software seems committed to supporting their product. I've already received a two-page update describing a fix for a slight bug, and containing news and hints of future enhancements. A rumored "Bobby Fischer Mode," where the computer refuses to play unless the lighting is perfect and you have $100,000 prize money on deposit with a third party, is not mentioned.

**Techmate** comes with a very well written eight-page guide. **Techmate** is not copy-protected. I use it every day. I love it. Buy it. //

# Micro C-Shell

**BECKEMEYER DEVELOPMENT TOOLS**
**592 Jean Street #304**
**Oakland, CA 94610**
**(415) 658-5318**
**$49.95**

**by Douglas Weir**

Windows are better, I won't deny that. Compare the nicest new GEM applications to the menu-driven Gothic novels exported from the IBM world. It's no fun lurching blindly down the labyrinths of yet another "Super Gee-Base" with nothing but a sheaf of cryptic programmer's notes (pardon me—they call them "User's Manuals") to show the way. At least with GEM, relief from any situation is only a Close-Box away.

But there's an exception to this general rule. Most of the programs and utilities used by programmers—compilers, assemblers, linkers and whatnot—were written to be used most conveniently from an old-style environment. When I used **Megamax C**, I ignored all the GEM trappings. Instead I renamed the compiler and other utilities, and ran them all from DRI's command.tos (a rudimentary command interpreter program). Still, there wasn't much one could do from this shell, aside from get directories, run programs and exercise TOS's random-bomb-blit routine.

With **Micro C-Shell** from Beckemeyer Development Tools, that has all changed. **Micro C-Shell** is a Unix-like command interpreter with both internal and external commands. It is so Unix-like, in fact, that you are well advised to consult one of the many Unix guides available, to help you understand some of the package's more abstruse points.

You start **Micro C-Shell** simply by clicking on GEMCSH.PRG from the desktop, as you would any other program. GEMCSH configures itself with the information contained in the text file login.sh, if one exists in the current directory, or it uses default values. After that, you find yourself in a text-only environment that looks just like Unix—at least to this unpracticed eye.

About eleven commands are built in to the shell program—for example, show text file contents (cat), show directory (ls), copy file (cp), and so on. The single commands are often much more powerful than they appear at first glance. By using the "-R" flag with the ls command, for example, you can get a recursive listing of all subdirectories on a disk (incidentally, an explanation of this flag was left out of my printed copy of the manual).

I counted another fourteen external commands. These are simply runnable programs (with *.PRG* or *.TOS* extensions) that are loaded in and executed by the shell program when you type their names. This means the system is easily extensible by the user. If you want a new command, you just write a program to accomplish it, then put it in the proper subdirectory.

The external commands supplied include programs that will find differences between two files, perform some simple formatting of text files, send text files to the printer, count the words in a text file, change the read/write flags on a file, etc. One external command called CC.PRG lets you run the DRI C compiler and linker from **Micro C-Shell** using batch files, with a minimum of trouble and a fair amount of flexibility. Since it's an external command, I was able to delete it, rename my **Megamax** compiler to CC.PRG and run it, instead.

One internal command you won't find on any other Unix system deserves special attention. By typing gem followed by a program name, you can easily run GEM applications from **Micro C-Shell**. This lets me use the **C-Shell**, but use **1st Word** as a text editor. I did find a couple of peculiarities with the command when used to run **1st Word**, however. First, you have to type something like:

```
gem 1st_word x
```

(where x is just a dummy character—it can be anything) to prevent **1st Word** from trying to open a new file called 1st_word! The second bug will be discussed below. Other GEM programs worked fine when called via the gem command.

Just listing the separate commands gives no idea of how flexible a system **C-Shell** really is. You can run several commands sequentially from one line of typed input, by separating the commands with a semi-colon:

```
cd junk ; ls -l ;
cat readme.*
```

This will move you to the directory junk, display a long listing of the directory's contents, and then show the contents of all files in the directory with the name readme, regardless of extension. The filename wildcards * and ? are accepted.

**Micro C-Shell** also allows commands to accept redirected input, and to redirect their output to other commands. This is accomplished with pipes:

```
ls -l junk | lpr
```

The command ls outputs a long listing of the contents of directory junk, but the output, instead of being printed to the screen (i.e., to standard output), is redirected via a pipe (indicated by | ) to the command lpr, which sends its input along to the printer. Thus you get a printed directory listing. Another example:

```
pr stuff.txt | lpr
```

This sequence will send a listing of stuff.txt to the printer, complete with page breaks and headings.

Piping is implemented with temporary files, and this brings me to the other peculiarity in the gem command. The user should specify in the login.sh file that all temporary files be written somewhere safe (I use a RAMdisk, which also speeds things up), i.e., not to a directory, or even to a disk, containing files to be edited. Otherwise, I found that **1st Word** often appended the contents of a recently-piped file to the file currently being saved after an edit. I should point out that I could not duplicate this problem with any other text editors.

Other built-in features of **Micro C-Shell** allow you to rename (alias) commands and sequences (thus reducing the amount of

typing necessary for often-used commands), and to recall previously-typed command lines from a system-maintained buffer (history).

With **Micro C-Shell**, batch (shell) files are very easy to use (you call them as you would any other command), and they enjoy full access to all features of the shell itself. Their syntax is in some ways similar to that of C (hence the name). However, writing shell files can be something of a dark art, and you won't get much help from the documentation—the author seems to have taken a sacred vow never to give examples of anything. Beckemeyer's **MT C-Shell** (to be reviewed in a future **ST-Log**) includes a long shell file used to install the system, from which you can glean many useful hints, but with **Micro C-Shell** I think you'll be forced to refer to a Unix manual if, like me, you aren't already familiar with shell files.

One of GEMCSH's external commands is CSH.PRG, which in fact is. . . **Micro C-Shell** (minus the gem command). Two main uses for this command are given in the manual. First, you can put it in the "auto" folder of your boot disk and have **C-Shell** automatically run every time you turn on the computer (that's the reason why this version doesn't know about GEM, which isn't yet activated when the "auto" programs are run). Second, you can call CSH.PRG from within your own programs, and thus use the shell's internal as well as its external commands. You can also invoke copies of the **C-Shell** from within the current shell (too much of this sort of thing can lead to a species of user confusion known as shell shock).

As you might guess from its name, **Micro C-Shell** (and Unix, for that matter) has a certain affinity to C, the programming language. Implementations of Unix are usually written mostly in C, and I assume that this is true for **Micro C-Shell**, as well. But there's no reason why one couldn't use **Micro C-Shell** to build a system around another favorite language. I was able to work with the **Personal Pascal** package very easily. I ran the editor, compiler and linker as separate programs with no trouble at all. Without the GEM overhead, everything ran slightly faster.

**Micro C-Shell** contains just about everything you'd ask for in a reasonable system, except for a format command—to get this you must buy Beckemeyer's **Micro C-Tools**, a companion package.

**Micro C-Shell** comes on one single-sided disk. GEMCSH.PRG is about 67K bytes in size. The programs in the \BIN subdirectory (i.e., the external commands) total about 238K bytes. This is the minimum portion of the package you would want accessible from disk at all times (you could, of course, delete from the disk the commands you don't use, making more free space). **Micro C-Shell** can thus be used conveniently in a floppy or hard disk environment.

My only real complaint with **Micro C-Shell** concerns the documentation, which in some ways hearkens back to the worst days of user-hostility; even the official Unix manuals seem friendlier. And there's more than a little evidence that someone neglected their proofreading duties. You'll have no trouble using most of the commands directly, but you'll probably need a second reference to figure out all the intricacies of history substitution and writing shell files.

Otherwise, I recommend **Micro C-Shell** enthusiastically—for programmers and developers. To "applications-only" users, I would say stick with GEM, unless you hate the mouse.

As mentioned above, **Micro C-Shell**'s repertory of external commands can easily be added to by the user. An example is the **Micro C-Tools** package (to be reviewed soon), which I also recommend. //

## Starglider

**by Jez San, Argonaut Software**
**RAINBIRD SOFTWARE, U.K., through FIREBIRD SOFTWARE**
**P.O. Box 49, Ramsey, NJ 07446**
**$39.95**

**by D.F. Scott**

Dartmouth **Star Trek** (believed created in 1968) is the root of a long family tree which branches out like this: from Dartmouth **Trek** came Cambridge **Trek**—the first real-time variation and the basis of Sega's arcade **Star Trek**—and the original PDP-11 **Space Wars** vector-graphics game. **Space Wars** was ported by Cinematronics over to the arcades years later, and Atari copied it with **Cosmos**. Though never released, Cosmos was changed so that the asteroids became targets rather than obstacles, and we know where that part of the tree leads, already.

Lance Miklaus popularized **Star Trek** for the TRS-80s, and Personal Software (later VisiCorp) came up with a great real-time variation in **Time Trek**. Doug Neubauer put the Atari 400/800s on the map by adding first-person combat to the scheme, while keeping the Dartmouth **Trek**'s sector grids and sensor scans—thus creating **Star Raiders**, the first heavyweight champ. None of the seven years' worth of variations since have managed to dethrone it, but now Jeremy "Jez" San has taken the best from each of them (**Star Wars**, **Battlezone**, **Red Baron**), added a dash of Bob Polin's **Blue Max** (where you're most vulnerable while refueling, instead of most secure), and given us **Starglider**, which may very well be the new champ. **Starglider** is that good, right from the opening soundtrack.

And so, ten billion years from now, when archaeologists of the new human civilization dig up remnants of the old, uncovering such treasures as the Taj Mahal, the Reagan Memorial, the ANALOG Building, and the infinite pile of loose leaf papers under which rests D.F. Scott, they will most likely deduce the following:

Ancient Earth colonies were divided into 8x8 *sector grids*. Within one of these grids, mankind had harnessed a source of infinite energy called a *starbase*. In the outside world of never-ending combat, men and women lost bodily energy rapidly, and were often caught with their shields down. The starbase (a structure marked by two golden arches) was a place for rest and rejuvenation. From there, combatants could emerge to face the robotic minions of doom denoted in folklore only by the letter *K*.

Archaeologists will never realize that what really happened was that everyone with an ST—meaning most of us, of course—was simply spending most of their time playing **Starglider**.

In this game, you find yourself in a first-person attack scenario similar to that of **Battlezone**. You have two main instruments: your forward viewscreen and your radar, which seem to hold up in battle a lot better than your ship. You fly a rather quiet sort of hovercraft. There are two ways to control it: by keyboard à la **Flight Simulator**, or by mouse (which I prefer because of its greater responsiveness).

The mouse control is subtle and ingenious. The direction you're headed in is determined by the position of the mouse relative to the center of your mouse pad or roll-around area. The left button fires your lasers—more like a plasma beam, just the slightest bit of time delay—and the right button (held down, followed by an upward or downward movement of the mouse) controls your speed. After about three flights, the movements became instinctive for me.

There is one minor bug, though. I've noticed that sometimes the speed automatically decays, and sometimes it stays con-

stant. Either way, the program is consistent throughout a game. I've learned to compensate for this eccentricity.

The viewscreen employs simulated vector graphics of the first caliber, especially in the color version. Each target has a sharp, crisp look. Some are capable of changing shape, such as the high-scoring, bird-shaped "Starglider" targets with flapping wings. The rate of frame-redraw with up to six objects on the screen at once is practically unnoticeable, although a panorama can contain up to two tanks, a missile launcher, three towers, one cannon, three laser turrets, and maybe six launched missiles!

**Starglider** could have been called "You vs. The Galaxy." Your ship moves over the surface of a planet reminiscent of Atari's **Star Wars** arcade game, though about ninety times more populated. This ship of yours doesn't burn fuel, so much as evaporates it. The shields are simple: as long as you have shield energy, you live; if not, you will die. Most of your shields operate at the front of your ship—you'll be quite likely survive a head-on collision with a missile—but behind you it can get pretty drafty.

Almost nothing succumbs to one laser hit; it takes about ten (!) hits to zap the average target. Some are invulnerable to lasers, but for these (luckily), you have impact-destructible missiles (two is your limit at any time), which you guide by remote TV camera toward the target. I love 'em.

Refueling is self-service only. You have to steal your fuel by sitting on top of an ethereal power line that invisibly connects three towers. The feeling is somewhat like that of using the restroom in the middle of a Who concert—you're likely to be molded into something you weren't when you came in.

Aside from a few harmless landmarks, the only friendly objects you'll find are your missile silos, where you'll also collect shield and laser energy (but not fuel—they're not that generous). Unfortunately for you, someone in the Silo-Planning Department decided it would be nice to have the silos spinning around. Of course, you don't spin around, so docking becomes one treacherous maneuver—half orbit, half sudden impact.

As I said before, **Starglider** borrows from the best. The 100x100 sector grid, although seldom used, gives just enough of a hint of the old Dartmouth **Star Trek** to make a space game player feel at home.

The space game gives us an environment where our lives hang by a silver thread of connected pixels, a world of split-second action rather than prudent decision-making. It's a world we all need to live in every once in a while. And we couldn't pick a better place than the world of **Starglider**, the latest descendant in a long and honorable line: the progeny of programming genius and lightning-fast reflexes. //

# QMS KISS Laser Printer

**QMS, INC.**
**P.O. Box 81250**
**Mobile, AL 36689**
**$1995.00**

**by Charles Bachand**

Never having been exposed to a laser printer before, I was content to use whatever piece of printer hardware was in the offices at any given time. And I've been happy using these ANALOG Publishing printers—even with the strange and somewhat loud noises they make.

But, since we've been using ST computers *(fast)* and I got my 2400-baud modem *(even faster)*—not to mention the Atari 20-meg hard disk drive *(faster still)*—the other printers are starting to seem like the proverbial tortoise. Unless there's a large printer buffer implemented in hardware or software to gobble up the characters, the computer is basically going to sit there while the document or listing is put to paper. And with the length of some of the listings I've encountered, it's usually a good idea to schedule printing to coincide with lunch—crossing your fingers that you don't run out of paper while dessert is being served.

For the most part, you don't have to worry about print speed with a laser printer. The **KISS** will output text at a rate of six pages per minute. That's one sheet every ten seconds! If you figure that your average document is 58 lines in length (actually 66 lines, minus 4 lines both on the top and bottom for a nice border effect) you're printing 348 lines of text each minute—or 5.8 lines each and every second.

Ever since we at **ST-Log** moved up into the high-tech world of laser printers, other printers in the office are being put to less and less use. It's actually getting quiet around here. We've started noticing other little noises, like the hum of fluorescent lighting, the fan in the water cooler down the hall, and even people breathing. A laser printer can relieve a major source of stress in the office environment.

Compared to the dot-matrix and daisy-wheel printers you may be more familiar with, the **KISS** is quite large. Measuring 18.7" in width by 12.25" in height by 21" in depth, this gives it a footprint just a little bigger than that of a Brother daisy-wheel (one of our printers gathering dust since the **KISS** arrived.) Most of the **KISS** laser printer's size comes from its added height, which is due to the large amount of added hardware in the machine. It's about the size of a small office photocopier.

And a laser printer is, in fact, a glorified photocopier. It gets a lot of its technology from the new personal plain-paper copiers, from Canon and others, that are beginning to appear in office supply and department stores. In fact, the **KISS** obtains its nonelectronic "copier" equipment from Canon, as do about 75% of the other laser printer manufacturers.

A copying machine produces an image by shining light onto a piece of paper you want copied. This light is then reflected—by the use of a mirror—onto a photosensitive drum inside the copier. The rest of the process—which involves chemical toner, static electricity and heat—is much too involved to go into here. Let's just say that it goes "round 'n round," and the copy comes out there.

We have the same things happening in a laser printer as in a photocopier, with one big difference: the light is not being reflected off of anything, but is generated within a solid-state laser. The beam from the laser is panned across the drum and, ultimately, onto the paper, by reflecting it off of a set of rotating mirrors while pulsing the laser on and off. These "pulsations" generate the light and dark areas that make up the individual pixels on the paper. The laser used in this application is so accurate that it can print text to a resolution of 300 dots/inch. You'd be hard-pressed—even with a good magnifying glass—to be able to see these individual dots.

Since the **KISS** does not have to deal with the actual hardware present in other printers—ribbons, print-heads, daisy-wheels, and the like—but, instead, can do pretty much what it wants to a piece of paper, it is not limited to acting like, or emulating, any one printer. In fact, with the current software in the machine, it is just as happy acting like a Diablo 630 or Xerox 1730 daisy-wheel, the Qume Spring 9/45, 9/55 and 11 Plus printers, or even an Epson FX-80. Nor does it care which way you prefer to orient the paper, since you can easily select between either Portrait (standard vertical orientation) or Land-

scape (horizontal) modes of printing. The only limitation is that you must use single sheet paper—that trusty box of 9½x11 fanfold you've been keeping in the closet won't do you any good here.

The Epson emulation seems to be the most popular among users of the ST, since this is compatible with the built-in screen dump software. Our **KISS** has been set to this mode ever since it arrived and is constantly being used to generate screen dumps and program listings, for both the Atari 8-bit and ST computers. As you can probably tell from looking at the listings in the magazine, the emulation software does indeed work—with a only a few exceptions.

Some Epson commands don't work with the laser printer, because they are hardware oriented toward "real" Epson printers, and—quite frankly—there's no real need for them in a laser environment. These unnecessary commands include disabling the paper-out sensor, skip-over-perforation and selecting unidirectional printing, among others. The **KISS** will accept these, as well as other unsupported commands, but they will be ignored and won't affect printing.

Another curious difference is seen when printing in Superscript or Subscript mode. Here the built-in software is only partially Epson compatible—text is correctly printed a half line above or below the current line, but an Epson will also print this offset text using a special half-height character set. The **KISS** uses the standard character height, instead.

Conforming to Epson's method of handling graphics does not allow you to address the full 300 dots/inch resolution that a laser printer can produce. The smallest dot an Epson can make is 1/72 of an inch high, and 4 laser-generated pixels must be stacked one on top of the other to emulate this.

Graphic information is stored in the printer's 128K of page memory before being finalized on paper. There is nowhere near enough memory here to handle a full page of graphics at 300 dots/inch, but the **KISS** will handle a full page emulating Epson's single-density graphics, or a half page of double-density graphics.

Other, more expensive printers have upwards of 256K RAM to play with—allowing you that finer control—but the key term here, as far as we're concerned, is *more expensive*. With a price of $1995.00, the **KISS** is currently the least expensive of the laser printers.

There are literally hundreds of selectable options on the **KISS**, and all these are accessible through the seven-key keypad mounted on the front of the machine. This method makes it fairly easy to change options, even though you must usually refer to the manual to determine the proper codes. The one option we tend to use most—primarily because we have 8-bit Ataris as well as STs hooked up to the printer—toggles the control of interpretation of the carriage return character while in Epson-emulation mode. While most control panel options are of the "set and forget" variety, this particular one is constantly being changed.

Here is where any review of this printer becomes a little incoherent. There is literally *too much* one can say about the QMS **KISS**. The printer has so many features—is so fast, so quiet, can print with such high quality. . .etc., etc., etc.—that it's difficult to decide what to talk about next. Did I mention the manual feed capability, or the replaceable toner cartridge, or the different paper sizes, or the built-in diagnostics and self-test capabilities? The **KISS** has them all.

I'm beginning to run out of space here, and our Managing Editor wants this review on her desk "now!" So. . . let's just take a few more minutes here, to talk about the user's manual.

To explain all these wonderful options to the somewhat dumbfounded new-user, there is the more than 360-page loose-leaf **KISS** owner's manual (Publication Number 1720486B—I wonder if they made that up). The hefty (2 lb., 7.5 oz.) document explains everything there is to know about the **KISS** printer. This is the second version of the manual, a tremendous improvement over the original, which was a strange and unruly mess that produced confusion whenever it was referenced. The new manual could still use a set of tab indexes to mark the beginning of each section of the manual. One of these days I'm going to break down and buy a set.

And, last, for those who need ready-made software to teach them how to use this new-fangled machine, QMS supplies **1st KISS**, a cleverly designed, self-paced tutorial program, as well as **PopSet**, a program to allow you to program the **KISS** printer from your computer. Unfortunately, both of these pieces of software are for IBM PC compatibles: they help us very little. Someday, we'll wake up and find all the software in the world is ST compatible. Someday. Until then, we'll just have to make do with what we have. And we have a powerful ally, in the **KISS** laser printer. ///

## Deep Space

**by David H. Lawson, Garvan Corbett**
**PSYGNOSIS, LTD.**
**1st Floor, Port of Liverpool Bldg.**
**Pier Head, Liverpool, UK L3 1BY**
**$44.95**

**by D.F. Scott**

In 1980, some friends of mine and I would regularly gather around a TRS-80 Model I, each of us assuming a role in playing what was then the premiere space game: Lance Miklaus' **Star Trek III**. There could be as many as eight of us huddled around that small box at any one time. Had someone walked in then and handed us **Deep Space**, there would immediately have been eight pairs of bulging eyes and sixteen hands jammed together, with all of us clamoring for keyboard space.

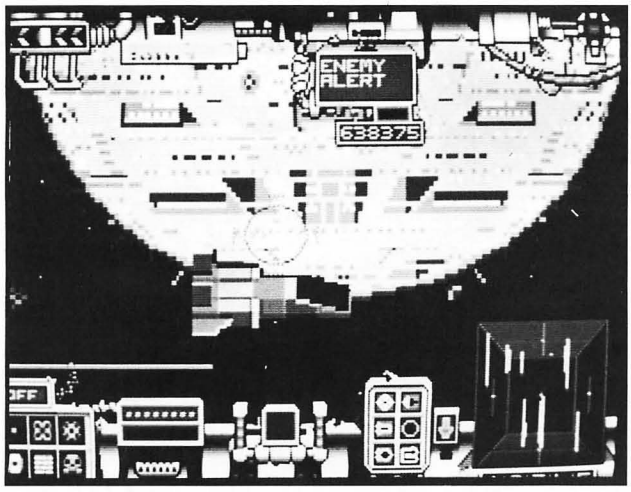
But that was six years ago. Since then, we've found reasons to call **Ultima IV** "blocky," **Mercenary** "slow," and **Flight Simulator II** "too easy." In short, we're *much* pickier than we were. I'm among the pickiest of our old group, so, with due respect to my good friends, I'd like to offer a space-game connoisseur's view into **Deep Space**.

The game scenario, if familiar, is also enticing: an offensive mission in a so-called Strix fighter to clear the galaxy of Vexon militant vessels, which plague the "home territory" of four solar systems. Since the player is allowed to choose his own mission plan, he is considered a "freelancer"—an employee of The Agency, a sort of interstellar Impossible Missions Force—receiving bounty money for the destruction of certain ships. The money concept is important here; fuel, replacement parts and arms *cost* money, and there are no low-interest loans to be had in deep space.

Each solar system is connected through a hole in hyperspace called a stargate; one can travel to other star systems through it. At the end of the stargate trail is the Vexon system itself, where our nemeses originate. There the hired gun—kamikaze that he is—heads for the ultimate target: the Vexon mothership, hovering in the star-littered screen like the universe's biggest ball of lint.

The ship's implements are also familiar: various scanners, an adequately verbose ship's computer, and a choice of weaponry. On this familiar theme **Deep Space** makes some unique and welcome variations. First of all, the first-person-oriented

viewscreen (à la **Star Raiders**) is in itself "rotatable," like the gunnery pod of *Star Wars'* Millenium Falcon. One may then slide around the interior of the ship like yolk in a glass eggshell, while the ship's absolute movement remains unchanged. Movement in general is controlled by the cursor keys, the mouse *or* a joystick, all active at once. Ship's functions are accessed through icons *all over* the lower portion of the screen as pointed to by a GEM-like arrow.




**A new viewpoint of a familiar scenario type greets the user in *Deep Space*, from Psygnosis, Ltd.**

So this game has an established scenario, with interesting variations and nice features, and a respected manufacturer—Psygnosis, Ltd., who gave us **Brataccas**. Where could it possibly be deficient?

Speed. This game is in serious need of a blitter chip. What's supposed to be deep combat often ends up more like deep sleep. True to the name of the game, any target of importance is almost always very far away—a dot deep in the distance. So your Strix fighter is rarely in any danger by virtue of its position, except when caught in the occasional meteor shower.

Realistic, perhaps, but realism never made a good space game. To compensate for the lack of positional strategy, single targets are made quite dangerous. A fully-fueled, top-condition Strix fighter with shields up can be completely defeated by a few innocent meteors or a couple of blasts from an enemy ship which, just a few blinks of an eye ago, was only a twinkle in that eye.

To measure the distance between things, the game offers three (3) different kinds of sensor scanners. One is a very-short-range device projected onto your forward viewscreen—all ship's computer functions are projected in a like manner. Your ship is depicted on an X,Y-coordinate plane, along with its magnetic scoops (to pick up prisoners in space for more cash, or to acquire energy nodules—a nice idea). This scanner also shows surrounding objects in various shades of grey, brighter shades depicting greater nearness to you on the Y,Z-coordinate plane. If that's difficult to comprehend now, imagine trying to figure it out while being shot at by red nodules of fire straight out of a Klingons' nightmare.

The second sector scan is a two-part, two-square-inch projected map of the whole solar system, shown as colored microdots on a light-gray field—part one being the X,Y-coordinate plane, part two the Y,Z plane. Trying to decode this map would be like consulting a Rand McNally Road Atlas left open on top of Mt. Everest through a hand-held telescope from a boat in the middle of the Pacific Ocean. You're supposed to be able to point to the object you want to head toward with a pair of microscopic cross hairs, and the navigation system will then lead you there by projecting a sort of square tunnel in the right direction. About halfway to your destination, though—approximately the distance between Jupiter and the Sun—the squares in the tunnel grow closer together, until you're left with one big red square (apologies to Lenin). So much for navigational aid; where's Sulu when you need him?

All the graphics in this game are based on two principles: colored points or bit-mapped "overlay" images. The latter technique proved superior for **Brataccas**, but for a space game? First of all, the star-field is a really *good* attempt at simulating depth. If you can picture in your mind the opening sequence from the movie *Star Trek II*, you can imagine **Deep Space**. By itself, it's brilliant; but when there are other objects on the screen, and when almost *all* the scanners are on, so much is happening that the starfield jerks about wildly, as if you're being kicked through space by a mad Vogon. Add a planet to the picture (planets are lighted on all sides, by the way—an excusable piece of surrealism), and you're no longer a visitor in space, but a participant in a rather slow slide show of the Apollo XIII mission. Depth goes out the window. The starfield is one cause; there are at least 100 little objects in it being moved around trigonometrically.

Unfortunately, when you get close enough to an enemy ship to see its shape, it doesn't look much like a ship anymore—instead it seems part mirage, part something you built with Lego blocks when you were a kid. There's a limited number of stored bit-mapped images depicting the target ship at various stages of rotation. Deciding which image to show, and where, can sometimes take a full second—and all the while the program has to keep tabs on that infinite starfield. Add to that one planet and one more target, along with all your torpedo fire and the targets' barrage, and you may be staring at an immobile screen for periods of time way too long for a space game.

The result of this deep deceleration is that the game ceases to be tactical at its most critical stages. You're either being shot at, or you're completely safe, or you might shoot blindly into space and by chance *hit* something. I've won several battles without having the foggiest idea why. This game tries to do *too much*.

A note to the manufacturer: **Deep Space** should be streamlined—first by cutting down on the number of stars, second by reducing the number of scanners to one, third by removing GEM mouse control as an option and sticking to the faster IKBD (intelligent keyboard) joystick control, fourth by consolidating all the computer functions with a text readout to one item, and fifth by reducing the number of redundant controls (like weapon selection) to one, thus cutting down on unnecessary screen activity. Maybe then there'd be some room in the program code for decent *sound*. Right now, it's a terrible racket of beeps and more beeps.

This game has a great premise and an excellent scenario—it just needs to go on a diet. Get to work on it, Psygnosis; we're counting on you. Forgive us our pickiness, but after a decade of blasting away little *K*s with little *E*s, we deserve to be picky. ///

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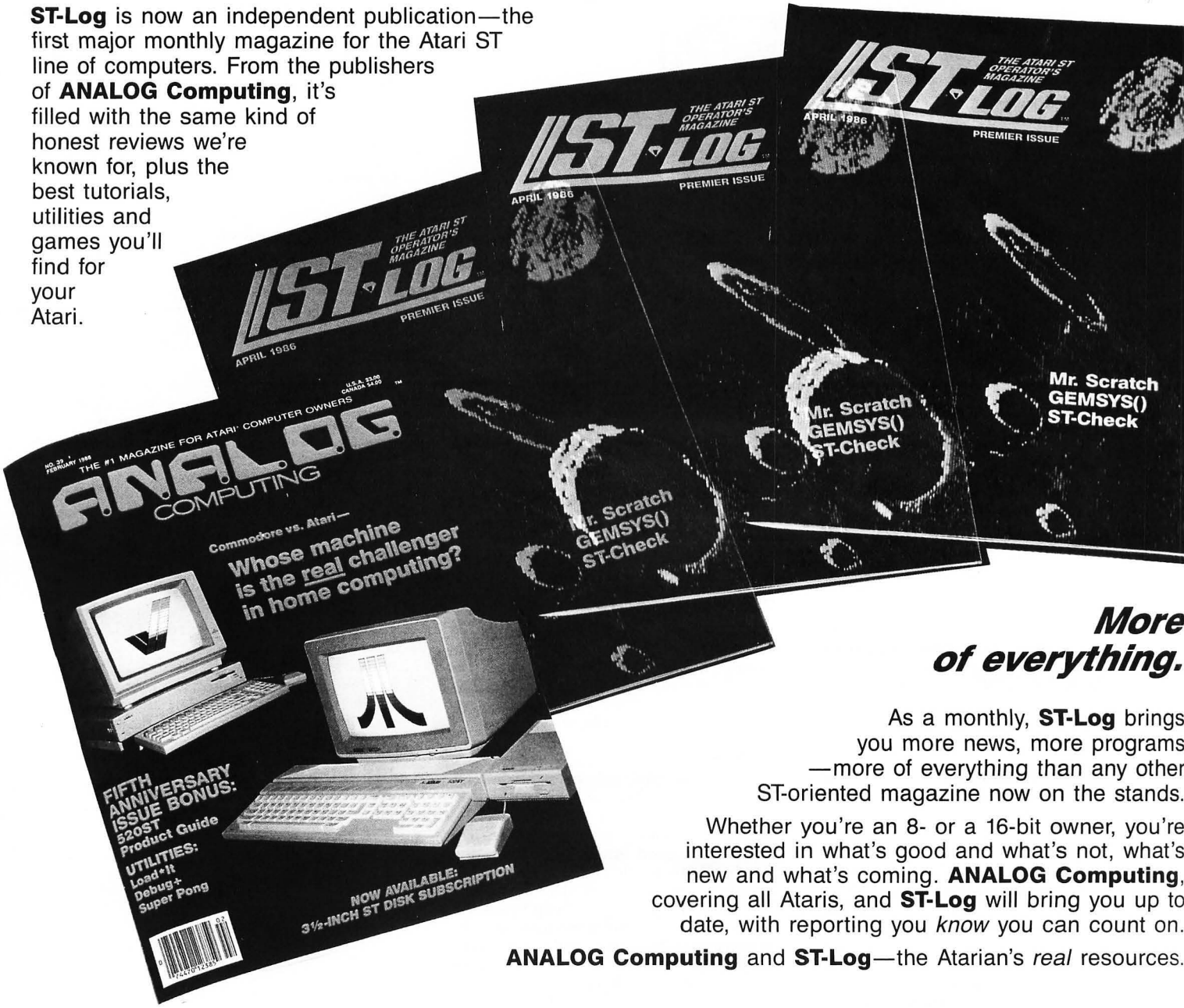


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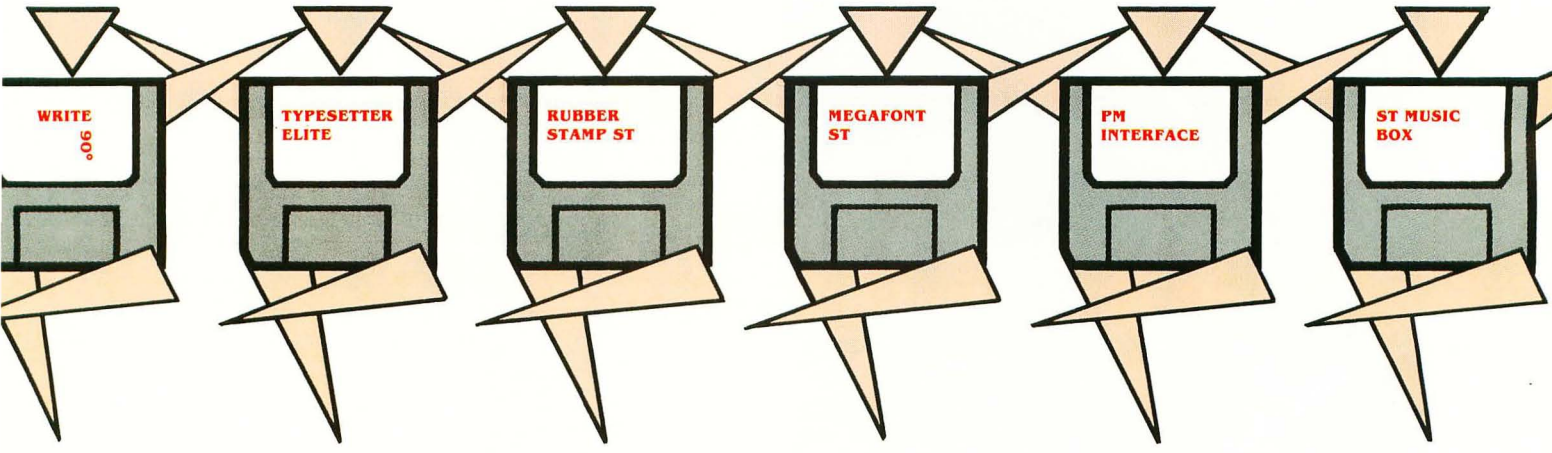


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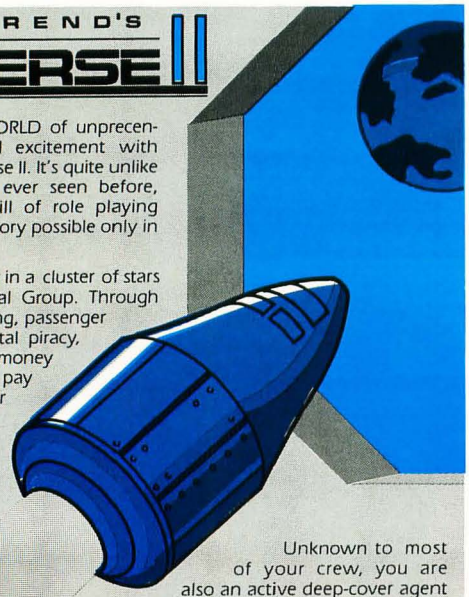

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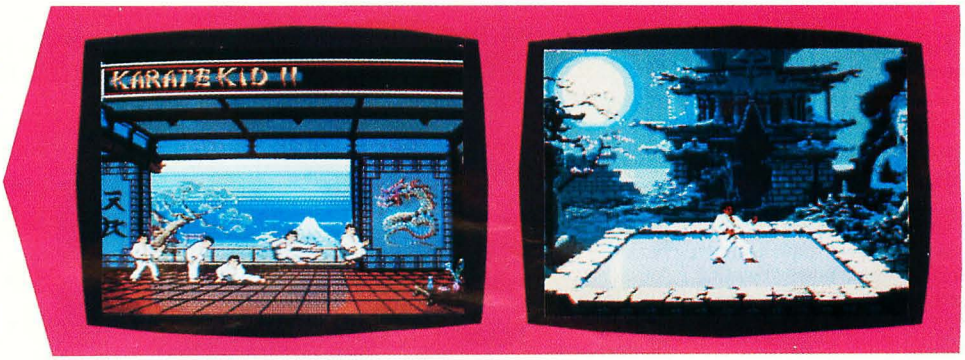


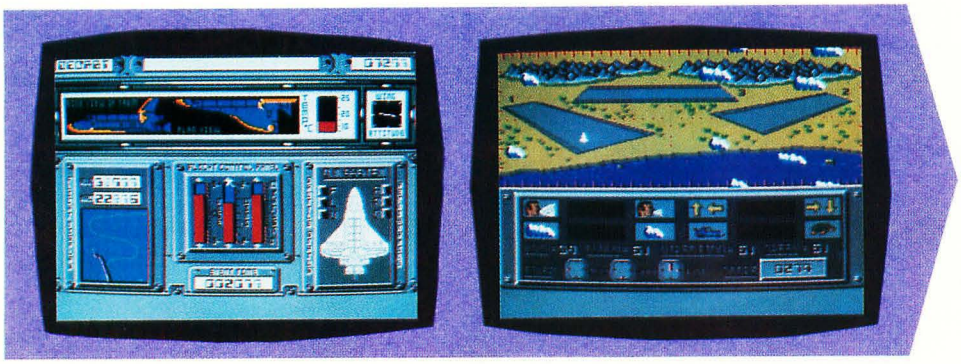

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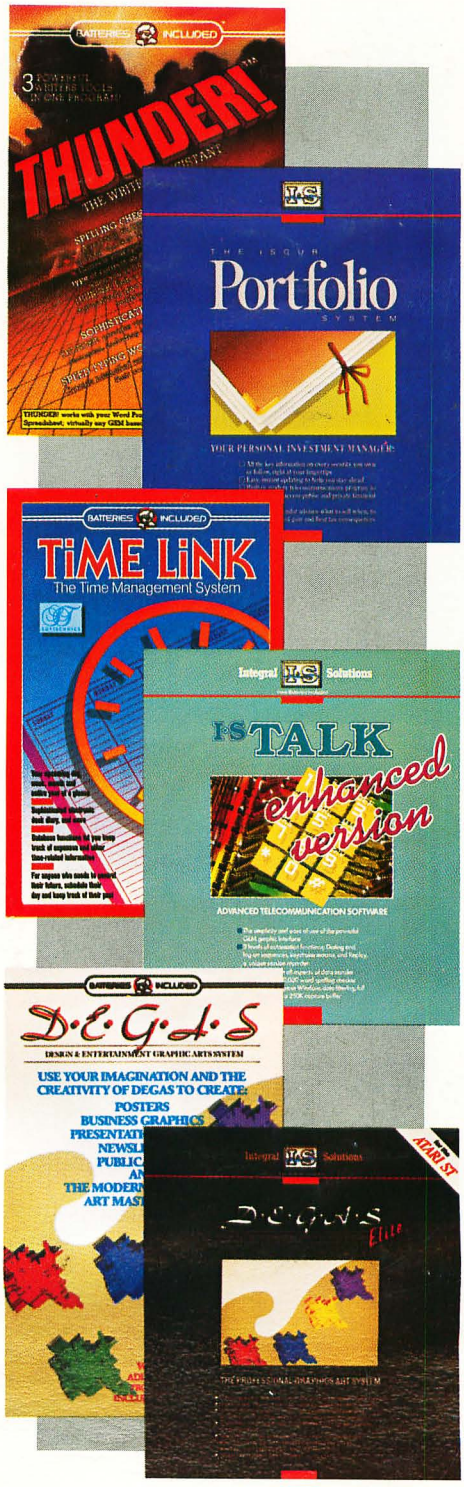


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