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#1 Guide To Atari ST

Volume 4, Number 3

October 1989

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*Start Magazine May 1989*

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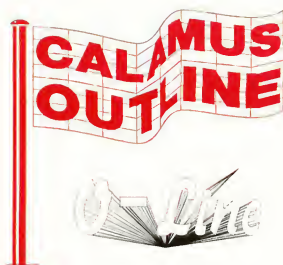
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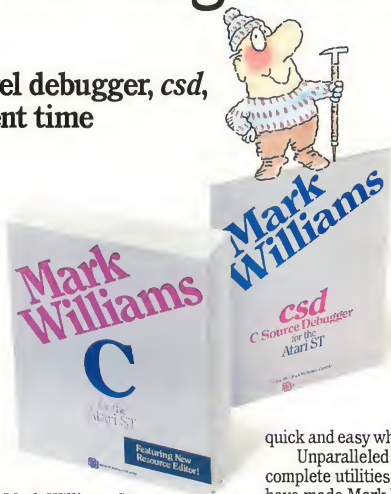
Reviewers have been raving about the IBM version of *csd* for years:

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# #1 Guide To Atari ST START®

OCTOBER 1989 VOLUME 4, NUMBER 3



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# Editorial

**T**he time is finally here. You've been waiting for months—we've all been waiting—for Atari to roll out its new hardware. And this issue, we're happy to present our first hands-on report on Atari's newest releases: the STACY laptop ST and the Portfolio MS-DOS hand-held computer.

Thanks to the good offices of Atari MIDI marketer Frank Foster, Vice President of Software Leonard Tramiel, Vice President of Operations Augie Liguori, new Vice President of Marketing Jim Fisher and Atari's Press Representative Andy Marken, we were able to sit down for a lengthy session with the STACY engineering prototype in early June and then spend several days with a Portfolio clutched close at the end of June. We're proud to report that START was the first ST magazine accorded that privilege.

And what do we think of Atari's newest computers for the traveling user? Turn to my evaluation, **The Traveling Computers**, for a complete report.

Do you have a **Great American Novel** fermenting in your brain? Ready to put it on paper? Let Michael Perry help you with WordPerfect macros and good advice on how to get your masterpiece together—and how to get it read.

Like most of us, you probably have more appointments and "must do's" than you know how to keep track of. James Robinson has written the definitive **Schedule Maker** program with the power and versatility to handle *all* of your scheduling needs. And it's on your START disk this month.

Do you have a hard disk or are you thinking of buying one (as nearly half of our readers have told us they're planning to do)? Be sure to read **Dave Small's** definitive Hard Disk Trouble-Shooting Guide.

And if you're looking for a particular piece of software, check out START's massive **ST Softguide** database. It's planned to be a regular quarterly feature in START.

Finally, in response to your requests, we're beginning our **Programming in C** column this issue. It starts with a bang, too: Sam Streepner has rewritten parts of the libraries for three popular Cs to make it easier for you to create programs that can run either as desk accessories or as standalone programs. And, of course, they're on your START disk this month also.

Whatever your ST interests, whatever your ST needs, we think that we have something for you this month. This issue is full of hot news, reviews of alternative Desktops, the latest DynaCADD, font editors, entry-level sequencers and more. We hope you enjoy this issue. And to Atari, we say, *keep those new products coming!* ■



ANDREW REESE  
START Editor

# Dialog Box

## Letters From Our Readers

### Wants A-Calc Tax Templates

I was disappointed to see that your annual tax templates were only published for Lotus 1-2-3 compatible spreadsheets. Last year they were also published for A-Calc Prime. I purchased A-Calc Prime mainly to do my taxes since my limited need for a spreadsheet does not justify investing in an expensive program. I also notice that "Doing Spreadsheets On The ST" (June 1989) only covers 1-2-3 compatibles. I'm sure that there are other ST users with limited spreadsheet needs. Please don't forget us.

Ron Ritzman  
Marietta, Georgia

*We stopped providing spreadsheets on the START disk in A-Calc Prime format because this product is no longer being distributed in Unites States. There are so many spreadsheet formats it is difficult to support them all; however, we will take your point into consideration in planning future spreadsheet columns. All START readers should keep in mind that we don't know which products you want us to support unless you tell us!*  
— START Editor

### Just in Case

Thanks for continuing to put lots of very useful material in your magazine. I use my Mega 2 mostly for MIDI, desktop publishing and education and I appreciate having one source that keeps me up to date on the ST.

I have two simple questions: First, does anyone make a carrying case for the Mega? I have seen wonderful cases for the Macintosh that are light, compact and very protective. As a musician and educator, I have to transport my Mega 2

wherever I go, and I end up packing and unpacking the computer in its original cartons. If someone could design and produce a carrying case I believe there would be quite a few people, especially musicians who would be eager to buy one.

Second, I know that with a Macintosh emulator the ST can run Hypercard, but is there any chance of something comparable to Hypercard appearing for the ST itself? I'll keep my fingers crossed!

David K. Aimone  
Scotia, NY

*To answer your first question, check with the Calzone Case Company (225 Black Rock Ave., Bridgeport, Connecticut 06605, (800) 243-5152.)*

*As to your second question: so far the closest thing to Apple's HyperCard on the ST is Quickview's Zoomracks. START does, however, plan to take an in-depth look at HyperCard in a future "Mac & PC on the ST" column.—START Editor.*

### Recommended Reading

The ST is not my first computer and START is not the first computer magazine I have ever read, but those were my mistakes. Now I have the computer supported by the magazine. Keep up the good work!

Now, can you recommend a good resource for novice ST users?

Mervyn Swaine  
Hantsport, NS

*Besides START magazine, of course, the single best resource for the novice ST owner is, appropriately, The Atari ST Book, by Ralph C. Turner. Ron Luks reviewed the book in our May 1989 issue. — START Editor. ■*

### Alert Box

In the August issue, we identified Mindscape's Indiana Jones and the Temple of Doom in Products Update as having been derived from a Sega arcade game. In fact, its arcade source was by Atari Games. Also, the correct telephone number for Mindscape is (312) 480-7667, and the Batman game is published by Data East, as correctly stated in the text, and not by Mindscape, as stated in the caption.

Do you have questions about using your ST? Is there something you're not clear about? Every issue, START's editors listen to your comments and answer your questions in Dialog Box. Let us hear from you! Our address is:

Dialog Box  
START  
544 Second Street  
San Francisco, CA 94107

Or leave us a message on CompuServe using the Antic Online Mailbox—just log on and type GO ANTIC.

### SUBMISSION INFORMATION

*START Welcomes submissions. Please include both hard copy printouts of articles and program listings as well as disk files on ST compatible disks. Media will be returned if self-addressed, stamped mailer is supplied. START assumes no responsibility for unsolicited editorial materials.*

# News, Notes & Quotes

## What's New in the ST World

BY STEPHEN MORTIMER, START CONTRIBUTING EDITOR  
AND THE START STAFF

### Calamus Outline—Super Text Effects

Calamus Outline, the newest member of the Calamus DTP family of products, lets you manipulate text, letter and font attributes and achieve results on a par with those produced by PostScript illustrating programs. Text can be made to follow any type of path you desire; it can be circular, on a Bezier curve or around a box. Predefined functions let you superimpose text onto objects such as cones, cylinders or globes. Additionally, the text can be filled with gradient shading patterns or stretched and dis-

torted by actually manipulating the control points of the font. A calculator function allows complex mathematical special effects to be created and stored for later use. Calamus Outline also doubles as a drawing package with Bezier curves, gradient fills and other complex objects. The resulting files can be imported into Calamus DTP. No price has been set. For more information, contact ISD Marketing at 2651 John Street, Unit 3, Markham, Ontario, L3R-2W5, Canada, (416) 479-1880.

**Calamus Outline is a vector graphic editing program that lets you manipulate text, letter and font attributes. You can send text along any path, including waves, circular text and more.**



### CompuServe Goes Continental

In its first step toward worldwide expansion, CompuServe, Inc. will expand its online service to Europe, beginning with England and Switzerland. In Switzerland, the service will be available in German, which points toward the German market as the next logical expansion site. European customers will access local systems (with local rates) that have gateways to the Atari Forums on CompuServe's U.S. mainframes. There will be small additional surcharges, according to Ron Luks, manager of CompuServe's Atari Forums, but the overall cost of accessing CompuServe's Atari areas (and other U.S. Forums in general) from Europe will be significantly less than it is now.

Luks said that reverse gateways would eventually be available also. Among other things, this will give U.S. customers access to public domain software on European online databases. For more information, contact CompuServe's Corporate Headquarters at 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220, (614) 457-8600.

### Software that the ST Deserves

Antonio Salerno, Atari's new director of software marketing, has established a definitive and formal beta-testing process in an effort to improve the quality of Atari software and help speed its development. Salerno joined Atari from Bor-

land International, publishers of Turbo C and Turbo Pascal. Eight new products, including Desk Set II, Wordflair and Hyperplan, are set for release this year. The software generally tries to fill a niche that current software does not cover

"Atari wants to release software that the ST deserves," says Salerno, who hints that the best is yet to come: "There is an exciting range of products still to be announced."

Antic Software is proud to present

# GFA-BASIC 3.0

The World's Most Popular BASIC Programming Language for the ST

Here's what you get with  
Version 3.0:

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reference books.

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from Antic Software. . . .

In the tradition of continued support for  
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\*GFA-BASIC 2.0 owners who received their program on the  
START Magazine disk, please call for upgrade information.

CIRCLE 005 ON READER SERVICE CARD



## Atari Unveils Portable Game System

At the Consumer Electronics Show on June 3 in Chicago, Atari President Sam Tramiel unveiled Atari's revolutionary Portable Color Entertainment System. The hand-held PCES features a 3½-inch color LCD screen with a resolution of 160 by 102 pixels and can display 16 colors at once from a palette of 4,096. The screen is flanked by four control buttons on one side and a joystick on the other.



**In Monster Demolition for Atari's new PCES, you are transformed into a huge, dangerous and deeply annoyed monster as you roam through the game and destroy everything you can.**



**Atari's hand-held Portable Color Entertainment System, developed by Epyx, features a 3½-inch color LCD screen with a resolution of 160 by 102 pixels and can display 16 colors at once from a palette of 4,096.**

A 16MHz 65C02 processor is at the heart of the system. The ComLink network lets you interconnect up to eight systems for head-to-head competition, and you can also plug in headphones for private listening. The image on the screen can be flipped vertically so left-handed users can use the joystick easily.

The PCES, developed by Epyx, was acquired through an arrangement wherein Atari became a part owner of Epyx. Epyx has already developed six games for the PCES, which is scheduled to be released in August or September. National press coverage praised the PCES and claimed it was better than the recently introduced Nintendo Game Boy. The PCES will retail for \$149.95.

## Dot Dot Dot

TOS 1.4 is gradually being distributed to more and more people. Registered developers now can purchase the six-chip ROM set, but no general release date has been announced by Atari . . . According to Sig Hartmann, vice president of Fortune 500 sales at Atari, a government technology show was a big hit for Atari. At the show, Atari displayed the Portfolio pocket PC to an enthusiastic crowd. The response to the product has been enormous . . . Migraph has decided to remove the unpopular anti-theft PSK device from Touch-Up! version 1.5. The PSK is a hardware key that connects to the parallel port on the ST. Users can order version 1.5 from Migraph and then send in their PSK for a \$15 rebate . . . Migraph is also preparing Easy-Draw 3.0 for release. This new version supports B-Spline curves and lets you trace bit images manually. It's a stepping stone to Migraph Illustrator, which is scheduled to be released in 1990 . . . Toad Computers has an answer to the Megafile 44: The Toadfile 44, 44-megabyte removable hard disk. Based on the same technology as the Atari unit, a Syquest mechanism, the drive retails for \$899, compared to \$1,199 for the Megafile 44. It uses an ICD controller and software to control the drive. Cartridges sell for about \$100. . . . WordPerfect has released another upgrade to their popular word processor. To order the upgrade, contact WordPerfect customer support. ■

*Stephen Mortimer is a contributing editor for START. He lives in Binghamton, New York.*

*If you have a hot Atari news item, let us know at News, Notes & Quotes, START Magazine, 544 Second Street, San Francisco, CA 94107.*

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CIRCLE 059 ON READER SERVICE CARD

# Products Update

## New ST Software and Hardware

COMPILED BY MARTA DEIKE  
START EDITORIAL COORDINATOR

### DTP Newsletter for ST Users

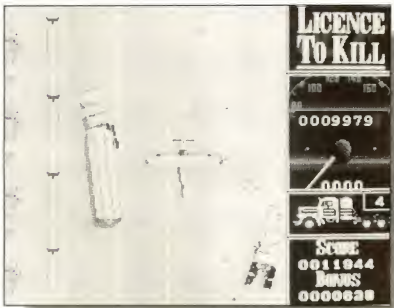
A newsletter for ST desktop publishers has been produced by E&L Productions. It's bimonthly and covers topics such as new desktop publishing packages, publication design and layout and hints and tips for the DTP user. In addition to helpful information, the newsletter will serve as a forum for Atari desktop publishers to make their opinions known and express their thoughts in this growing and exciting field. Subscriptions, \$9.95/year. E&L Productions, 27 Cedar Hill, Sumter, SC 29154, (803) 494-2201.

### ST Spreadsheets Expand: LDW Power Version 1.10

LDW Power has taken yet another leap forward. Version 1.10 of Logical Design Works' powerful spreadsheet, not only lets you write DEGAS files, but offers virtually unlimited graphing points. The new version has more fonts, printer drivers and print functions. It is also now compatible with large-screen monitors. Even the file transferability to and from Lotus 1-2-3 has been improved. Registered users can upgrade by sending the original disk(s) along with \$15 to Logical Design Works. LDW Power Version 1.10, \$149.95. Logical Design Works, 780 Montague Expressway, #403, San Jose, CA 95131, (408) 435-1445.

### Broder-Bond?

Based on the latest James Bond movie, *Licence to Kill* is Broderbund's new graphic adventure. You're Agent 007, fighting on land, sea and through the air, striking out to bring down a drug lord. Enhanced with colorful animation, the game includes all the exciting Bond stunts—pilot helicopters in pursuit of planes and jeeps, swim with sharks, dodge bullets, water ski with a harpoon gun and chase oil tankers in a crop duster. It's screen after screen of hot action, a veritable license to thrill. *Licence to Kill*, \$29.95. That's Bund, Broderbund, 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3200.



James Bond was never so slick. You are the famous agent pursuing the ruthless drug lord in Broderbund's new graphics adventure, *Licence to Kill*.

### Arkanoid II—the Story Continues

If you ever played the hit arcade thriller *Arkanoid*, chances are you couldn't stop—you were hooked. Well get ready, *Arkanoid* fans, because Taito has just released *Arkanoid II—The Revenge of Doh*, which promises to be an even bigger hit than its predecessor.

*Arkanoid II* is set in hostile outer space, where the evil force Doh lurks in the mammoth alien spaceship Zarg, threatening the entire intergalactic order. To destroy Doh, one or two players controlling the Vaus II spaceship must attempt to penetrate the ship and destroy 67 barriers by deflecting multiple energy balls. Watch out for surprises! *Arkanoid II*, \$29.95. Taito, 267 W. Esplanade, Suite 206, N. Vancouver, BC, Canada V7M 1A5, (604) 984-3344. ▶



## Don't Be A Solitary Atari.

The largest and longest standing group of Atari® users in the world shares its problems and solutions online every day in CompuServe's Atari Forums. And you can join them.

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every day. You can even provide recommendations as they develop new programs and products. There's no better way to get more out of your Atari.

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**CompuServe®**



# Products Update

## Computer Cover-Ups

Protect your 520ST or 1040ST against smoke, dust, dirt and other nasty particles with **Computer Cover-Ups**. The covering's fabric blend allows air to circulate, reducing the chance of heat or moisture buildup. Cover-Ups are custom made for ST systems and come in eight different colors and four designs, such as animal imprints, embroidered initials or silk screened logos. Computer Cover-Ups range from \$5.53 (for an ST keyboard) to \$22.43 (for an ST keyboard, monitor and disk drive). P.S. Computer Cover-Ups, 3359 Dryden Road, Metamora, MI 48455 (313) 796-2334.



**P.S. Computer Cover-Ups provide protection for your valuable equipment. The cloth fabric is completely washable.**

## VCR Hard-Drive Backup for the ST

If you've ever lost all the data on your hard disk, you know the importance of backing it up. On the other hand, you know the amount of time the backup process takes. Seymor/Radix has developed a hard drive backup system called DVT that lets you back up your hard drive with your VCR and store up to 360 megabytes of data on a standard videotape. DVT stores at a rate of eight megabytes per minute and no special cables are needed. DVT VCR Backup System, \$249.95. Seymor/Radix, P.O. Box 166055, Irving, TX 75016, (214) 823-5797. ■

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*If you have a new product for the ST, we'd like to hear from you. Please send press releases and product photos to **Products Update**, START Magazine, 544 Second Street, San Francisco, CA 94107.*

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## Coming Next Issue

In the November issue of START Magazine, we'll bring you an exclusive interview with ATW guru Tim King of Perihelion Systems, the author of the Helios operating system for Atari's powerhouse transputer workstation. You'll get an inside look at the future of computing.

And we have another exclusive for you: a report on Atari at the Summer NAMM Show, written by the Atari

MIDI master himself, Frank Foster.

On your START disk, you'll find the first super-smooth rendering program for the ST, START's RezRender. You've probably seen the amazing images at your users group or at the START booth at World of Atari in Anaheim. Now you can create your own smooth-shaded animations with RezRender.

We have a special surprise for you

on the November START disk. It's amazing, it's revolutionary and it's by David Small and David Ramsden. Need we say more?

*You won't want to miss this issue of START!*

Look for the November 1989 START in your mailbox or at your newsstand or computer dealer. ■

## DynaCADD 1.56

BY DAVE EDWARDS

Let me say one thing first: These folks at ISD are nuts! Every new release of DynaCADD has more and more exceptional features. This program is so far beyond any other CADD program for the Atari that it's not even funny, and version 1.56 has features that even the most popular IBM PC programs do not have.

But why do they continue to make these improvements? DynaCADD was always the premiere Atari CADD program and it will continue that way no matter what new machines Atari releases.

The Atari version is also a springboard for DynaCADD on other platforms such as the IBM PC and Macintosh. I am still very excited about this program and I can only hope Atari will release computers that will give users real competitive CADD power under the Atari name.

### New and Improved

This review will mainly cover recent enhancements; for a complete feature list please refer to my CADD review in the March 1989 issue of START.

We'll be reviewing DynaCADD in START, head-to-head against AutoCAD, in the near future—and we'll all see its real power. But Atari users can reap the benefits of this program now. The first thing you notice about the program is that it runs much faster—up to nine times faster, according to ISD. This speed increase is even more apparent on a system with a math coprocessor.

ISD has achieved this increase by

compiling their code using the Turbo C compiler. But wait: Borland doesn't sell Turbo C for the Atari, right? Well, in North America, no, but in Germany, yes—and it has found great success.

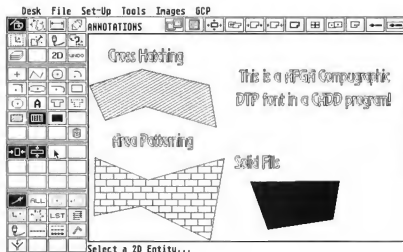
### These folks at ISD are nuts!

The next enhancement is a stroke of genius. I have often wondered why CADD programs couldn't use desktop publishing font files to produce text. The best-looking fonts available are for DTP applications and most CADD users have to get by with some vastly inferior fonts. Version 1.56 of DynaCADD now supports the same fonts as Calamus—in fact it comes

with five fonts licensed from AGFA Compugraphics. These fonts would normally cost over \$500 if purchased separately.

DynaCADD now features new algorithms for using these fonts and even has kerning tables built in. This is absolutely the first time any CADD program anywhere on any machine has pulled this off. I know that many others will go this route soon. More fonts are being released and will give DynaCADD drawings the best-looking text of any CADD system.

Included in the DynaCADD package is a font editor that lets you create or edit your font libraries. Unfortunately, you cannot edit the fonts from Compugraphics. This program is a complete system within itself and really deserves a separate review, but it should suffice to say that it is a professional font creation program with many advanced features. Fonts can be created with splines and not just straight lines; buffering is included, as are rotate,



**The DynaCADD 1.56 main screen. New features added to DynaCADD include cross-hatching, area patterning, solid fills and the ability to use Compugraphic fonts.**

stretch, imaging and automatic smoothing of vectors. Each font can have up to 255 characters and each character can have a resolution of 64,000 by 64,000 points. This is hot stuff and a feature I can't say enough about. Bravo!

### The Main Program

The main program features improved text justification, three new lineweights, Grid and Axis commands to produce a graph paper background, and fillets between arc/line and arc/arc combinations. Cross-hatching and area patterning can now be done in 2D and 3D—the 3D option simply isn't available in other CADD programs. Patterns are stored in a special font file for editing with the font editor, which starts you out with 14 hatches already defined. The program now has a dialog box providing a selection of 16 colors for display on the new 16 color hi-res systems. There is also layer locking, which prevents elements on certain levels from being manipulated. A new element, 2D solid fill, has been added, along with named levels, which allow for greater compatibility with standard DXF files from AutoCAD and other CADD systems.

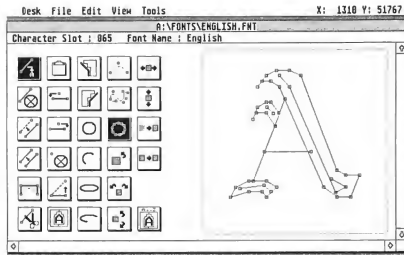
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**I couldn't believe  
ISD was able to include  
background plotting  
in DynaCADD.**

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### The Plot Thickeners

A separate program helps you define plotter parameters and assign them to a configuration file. Also, DynaCADD lets you do plotting in the background, meaning a plot can be in progress as you continue working on your file. Plotting has been the downfall of most micro-based CADD systems, but this feature of



**DynaCADD now includes a font editor that lets you create or edit your font libraries. Fonts can be created with splines, not just straight lines. Also, a font can have 255 characters—each with a resolution of 64,000 by 64,000 points.**

DynaCADD solves most of the complaints. I couldn't believe they were able to include it in the program.

As if that weren't enough, ISD has included an icon to turn off the screen buffer, thus freeing up more memory, but at a cost of forcing the screen to redraw every time a dialog box comes up. Also, instead of just showing three lines of the previous commands at all times, there's now a dialog box showing the commands—it comes in handy when you forget which commands you've used. You can also use the function keys for many of the most-used commands.

### Traveling Into Another Dimension

Another new feature is a Set Global option for dimensions. This lets you change all the parameters associated with dimensions, such as marker and extension offsets, throughout the entire drawing at one time. To add even more value to the program a bi-directional ASC translator has been included. ASC files come from a German line art program called Campus. However, their DXF translator is very expensive—in fact, it costs more than DynaCADD. DynaCADD purchasers can now translate these files into DXF at a far lower cost and have a full-blown CADD package to boot. (Editor's note: See the *START* disk this issue for a special CAD-3D-to-DynaCADD converter.)

As you can tell, DynaCADD still floors me. I would still like to see the options for Translate/Move or Translate/Copy

given their own set of icons and not use a move/copy toggle switch. But otherwise, there's little to complain about—It's simply one of the most well thought-out CADD

---

**DynaCADD still  
floors me.**

---

programs on the market. When Atari releases the TT, this program will push it to the top of CADD workstations. But in any case, DynaCADD has shut the door on the high-end options for the Atari. Even if AutoCAD were ported to the Atari, it would be hard-pressed to compete with this program. ■

*Dave Edwards runs a CAD consulting service and has written several CAD-related articles. When he is not writing about CAD, you will find him doing VersaCAD training. He is also a MIDI consultant, professional drummer and managing editor of "The MIDI Insider, The MIDI Power User's Newsource."*

### PRODUCTS MENTIONED

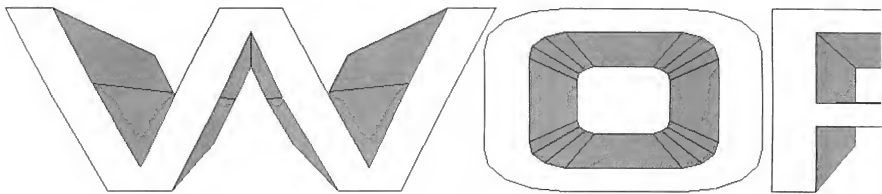
**DynaCADD** version 1.56,  
\$995. ISD Marketing,  
2651 John Street, Unit 3,  
Markham, Ontario, Canada  
L3R 2W5, (416) 479-1880.  
CIRCLE 164 ON READER SERVICE CARD



PROGRAM BY DAVID FLETCHER

ARTICLE BY ANDREW REESE, START EDITOR

# THE BEST OF TWO

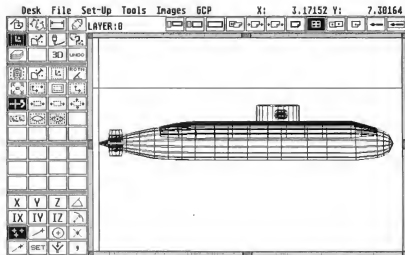


*Design in Cyber Studio, plot in DynaCADD. File CADDYNA.ARC on your START disk.*

If you're like many CADD professionals, you've probably fooled around with CAD-3D 2.0 and Cyber Sculpt from Antic Software. You've been impressed with their ease of use and power, but have wished that they had more CADD features, such as dimensioning, text capability or plotter support.

Then along came DynaCADD and you took to it immediately for its 2D and 3D capabilities, easy interface and features unavailable in any program (and some unavailable on any other micro-computer). But you probably also found that, as powerful as DynaCADD is, its 3D object creation and manipulation tools are just not as easy and intuitive as CAD-3D's.

The solution? On this issue's START disk is the file CADDYNA.ARC. It's an archived file containing CONVERTITOS,



**This submarine was created in Cyber Sculpt, converted to an ASCII text file in CAD-3D 2.0 and then converted using CONVERT.TOS to DynaCADD format.**

a file conversion utility written by David Fletcher, DynaCADD's chief programmer, and included on the START disk through the courtesy of Nathan Potechin and Oren Asher of ISD Marketing. The CAD-3D-to-DynaCADD converter may be distributed freely.

## A Simple Operation

To convert CAD-3D objects to DynaCADD format, you must first copy

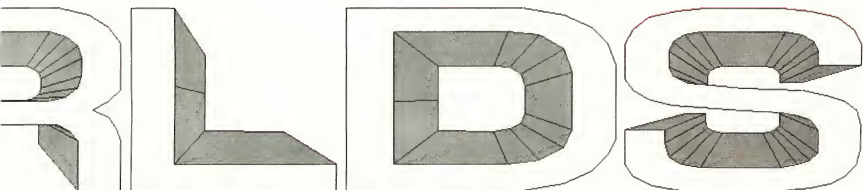
CADDYNA.ARC to a blank, formatted disk and un-ARC it following the Disk Instructions elsewhere in this issue. When you've finished, you will have the program CONVERTITOS.

In order to convert a CAD-3D object to DynaCADD, you must first load the CAD-3D file into CAD-3D 2.0 and use the Object List option on the File menu to generate an ASCII disk file. (You don't have to have CYBSMASH.ACC installed



*With the CAD-3D-to-DynaCADD converter on this issue's START disk, you can have the best of both worlds: create your 3D objects in CAD-3D or Cyber Sculpt and then convert them to DynaCADD format to take advantage of its wealth of features and plotter support. The converter runs in both color and monochrome.*

## CAD-3D-to-DynaCADD Converter



```
** CAD 3D 2.0 to DynaCADD DEF 2.0
** Copyright (c) April, 1985
** by David D. Fletcher
** All Rights Reserved

CAD 3D file to be converted : C:\NCADSTUFF.ETC\SUB.TXT
DEF 2.0 file to be created : C:\NCADSTUFF.ETC\SUB.DEF

Remove extra lines ( Y/N ) ?

Conversion started...

Object name: SECTION
Reading Point : 00319
Reading Face : 00635
Analyzing adjoining face : 00634
Removing duplicate lines...
Writing object to file...

Object name: sail1
Reading Point : 00847
Reading Face : 00091
Analyzing adjoining face : 00824
```

**The CAD-3D 2.0 to DynaCADD converter automatically converts an ASCII CAD-3D file to a .DEF file that you can load into DynaCADD. As it runs, it will keep you apprised of its progress.**

program, you may do so by pressing [Control]-[S]; to cancel [Control]-[Q] to resume. To cancel the conversion, press [Control]-[C].

*Note: Be sure that you have enough disk space for these conversions. For example, the 3D2 submarine file only required 17,822 bytes, but the ASCII .TXT file took 79,775 and the .DEF file took 134,012 bytes!*

*ISD's David Fletcher is the head programmer for DynaCADD.*

to do this.) When the dialog box appears asking you to "Print to which device?"; click on the Disk button. When the file selector box appears, enter the path and filename you wish and then click on OK. If you have created your object in Cyber Sculpt, you will need to save it as a .3D2 file and then load it into CAD-3D 2.0 to do this preliminary conversion.

To run CONVERTITOS, double-click on it from the Desktop. Then type in

the path and name of the ASCII object file you wish to convert and press [Return]. You will then be asked to enter the name you want for the .DEF file and whether you want to remove duplicate lines. Type in a Y for yes or N for no and the converter will load in the file you specified and convert it. You will see several status messages as the program runs, as shown in the accompanying illustration. If you want to pause the

### PRODUCTS MENTIONED

**DynaCADD** version 1.56, \$995. ISD Marketing, 2651 John Street, Unit 3, Markham Industrial Park, Ontario, Canada L3R 6G4, (416) 479-1880.

CIRCLE 164 ON READER SERVICE CARD

**Cyber Studio, including CAD-3D 2.0**, \$89.95. Antic Software, 544 Second Street, San Francisco, CA 94107, (800) 234-7001.

CIRCLE 164 ON READER SERVICE CARD

STACY's keyboard layout is extremely usable in little space. The function keys, cursor group and keypad have been relocated and reduced in size, but they are at least as usable as the ST's, if not better. And the keyboard itself is full-sized and a pleasure to use, much better even than a Mega.



*Picture, if you will, two businesspeople sitting in an airport waiting room. Each is using a portable computer to catch up on business. One computer is a classic-looking, charcoal-gray laptop and the other a miniscule hand-held. You've just entered . . . the Atari Zone. Read on for a hands-on evaluation of Atari's newest computers: the STACY and Portfolio.*

# Hands-On Preview of Atari's STACY and Portfolio

The Portfolio's keyboard is too small to do much in the way of touch-typing. The keys are uniquely shaped, square with the upper left-hand corner removed. At their lower edges, they're flush with the surface of the keyboard, while at the upper edge, they protrude just over 1/16-inch.



# THE TRAVELING COMPUTERS

BY ANDREW REESE START EDITOR

Atari has seemed to be dormant in the marketplace during the last year. Now, with Fall of 1989 upon us, the sleeping giant has awakened. Poised for a strong fourth quarter, Atari is bringing to market a series of spectacular new computers. First on dealers' shelves

is the Portfolio, the hand-held MS-DOS computer developed by DIP in England. Coming on its heels is the release of STACY, the long-awaited ST laptop. By the time you read this, both computers should be available through Atari dealers across the country.

We were fortunate to spend some

time with both computers. The STACY and Portfolio are very different from each other, but each is special in its own right. Both bear the handsome new Atari charcoal-gray color and both promise computing power for the user on the run. We'll start with a look at STACY and then move on to Portfolio. ▶

## STACY

I'm beginning this article on one of the STACY prototypes in a conference room in Atari's home office in Sunnyvale, California. It's not the final production version, but it's in near-final form and close enough to evaluate it as a computer and, well, as a computing experience.

nal Mega bus port; the pin-outs are different from the Mega plug, but electrically, it's the same. This means that any bus-port device now existing for the Mega, such as the Moniterm big-screen monitor interface or JRI's GenLock, could be made to work with STACY.

Like most laptops, STACY's screen acts as a cover for the keyboard and pivots up for use. The power switch is

supply. STACY's internal batteries are in a compartment at the top of the case near the screen pivot. Details as to whether the batteries are recharged in place automatically were not available at this time. The battery pack is removable, so conceivably they could be recharged away from the unit.

Booting STACY is just like booting any ST: insert a disk and turn on the computer. I tried booting with my normal complement of accessories and TSR programs, including G+Plus, UIS II, ReSTART, HotWire and Turbo ST. Everything worked perfectly.

I then tried booting Spectre 128. It too worked perfectly and after a moment I was looking at the first Macintosh laptop in captivity. If you have been wanting one of Apple's long-delayed laptops, save yourself time and money and try this combination.

I also tried pc-ditto, Flash! and Cyber Sculpt to see if there were any differences in operation between STACY and an ST. None. It acts exactly like what it is: a portable 1040ST.

### The Feel of a Rolls-Royce

Atari has done a magnificent job with STACY's keyboard. The key spacing and feel is as good as the best IBM add-on keyboard you can buy. There's a nice, positive over-center feel and a solid re-

## Booting STACY is just like booting any ST: insert a disk and turn on the computer.

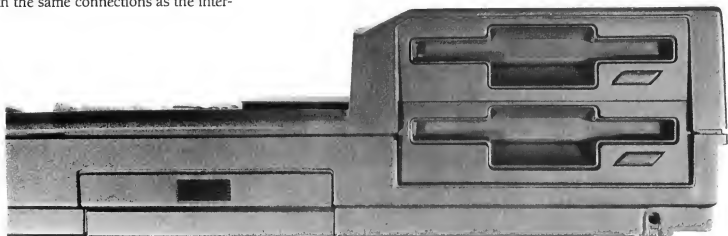
STACY is, as you can see from the photos accompanying this article, clad in a handsome, sculptured charcoal-gray case designed by Atari's Ira Velinsky. It has a bright, backlit supertwist LCD screen and a golf-ball-sized trackball in place of the standard Atari mouse. Inside, it's almost a straight 1040ST, complete with all of the ports you're familiar with from your own ST or Mega.

Specifically, STACY has the following ports: Centronics parallel, serial, DMA, mouse/joystick, joystick, MIDI in and out, monitor and floppy disk drive. In addition, STACY has a special power jack, so that it can be operated from a battery-saving wall external power supply. Finally, STACY has a special bus port with the same connections as the inter-

on the left-rear side as you're facing the keyboard and the disk drive(s) are on the right side. (This prototype was equipped with two internal double-sided drives, stacked one over the other. STACY will be available initially equipped with a single DS drive. It will also be available later with your choice of two floppy drives or one floppy and a 20-Megabyte internal hard disk.)

### And on to Business

The production external power supply was not available for our tests, so we used a Hewlett-Packard lab supply to supplement STACY's internal battery



Floppy disk access is from STACY's right side. This particular unit was equipped with double-sided drives, although the standard configuration is with one floppy drive. A hard drive will take the place of one of the floppy drives. The access door toward the front covers the standard mouse and joystick ports.

bound that lets you know when you have keyed in a character I made fewer inadvertent keypresses on the STACY keyboard than I normally do on my ST or Mega.

The location and size of the cursor arrows take some getting used to. They're located further up in relation to the keyboard than on an ST. The [Help] and [Undo] keys have also been repositioned and are to the left of the cursor keys instead of above them.

The keypad is quite small and appears awkward, but the keys are contoured along their width—cupped—to avoid double hits. Once you're properly located on the keypad, you won't miss a key. I do wish, however, that Atari would add a bump to the [5] key to make it easy to find.

Atari has included a unique golf-ball-sized trackball with two buttons above it on the right side of the keyboard. For a right-hander, it's well located, but southpaws may complain. You can always plug in a mouse if you're using STACY on a desk; it won't work on your lap, however.

One question I wanted to answer was how easy the STACY trackball was to use. I was pleasantly surprised. It does take some getting used to, but its small size and convenient buttons are

easier to use than others available for the ST. Cursor movement seems more proportional and controllable.

---

## **STACY acts exactly like what it is: a portable 1040ST.**

---

The function keys are smaller than on the ST and stacked [F1] through [F5] in one row above [F6] through [F10]. I expected to have trouble with them because of their size, but surprisingly, they're easier to use than the ST's slanted buttons that always seem to confuse my fingers. It's easy to hit the right function key on STACY.

### **The Look**

STACY has a backlit supertwist LCD screen, meaning that the display is visible with no external light and retains good contrast in almost any lighting situation. It mimics the ST monochrome screen and has a full 640-by-480 pixels in a 5¼-inch-by-9-inch display. Under the display in bold letters is the logo ATARI STACY. (According to Atari, this is the official name: STACY, all in capital letters.)

To the right of the display is a clip that does double duty. It has a light spring pressure to keep a tension on the trackball when the lid is closed, and while you're using STACY, it acts as a document clip to hold papers next to the screen. Clever.

Below the spring clip is the volume control for the built-in speaker and a contrast control. Below that are three indicators, two for the disk drives and the third for the battery. They are labeled FDD A (Floppy Disk Drive A), FDD B/HDD (Floppy Disk Drive B/Hard Disk Drive) and BATT. The drive lights are the same "drive busy" lights we've used to on the ST.

I found that the screen retained its visibility well and I was always able to position it so that the screen had good contrast. One problem I noted was that even though the cursor arrow is the same size as that on the ST, it seemed less visible. I had a hard time finding it until I moved it. I was not able to determine whether that's because of a change in the cursor mask or just inherent in an LCD display.

Remember that this was an engineering prototype, rather than a production STACY. Atari promises that the production STACY will have an even better display. Even as it is, it's eminently usable, if not as striking as some of the red-on-▶



**STACY has all of the ports you've become used to on the ST. From left to right across the back are the serial, parallel, external floppy disk drive, DMA, external monitor, MIDI ports and the external power source socket with the reset button adjacent to it.**



black displays on the higher priced IBM-computer units.

### Laptop Use

This is not a miniature computer, like the Portfolio. It has a full-size keyboard, plus the added width for the trackball and keypad, yet it fit comfortably on my lap and I was able to position the screen for a good, bright display.

One problem is that a great deal of the weight of STACY is concentrated at the back of the machine, from the screen pivot back. The battery pack and the disk drives are all located there and when you swing the screen back enough to get a good viewing angle, its weight is added. I found that it tended to be a bit heavy on the knees and light on the thighs. Of course, it will fit everyone differently, depending on height, chair height and so on.

### Is STACY for You?

STACY is an interesting computer. It is a 1040ST with a better keyboard in a convenient package, complete with all of the ST's ports. It is set to retail at \$1,499 for a single drive model, a healthy premium over the equivalent monochrome desktop 1040ST. If you are one of the thousands of people who have been waiting for a laptop ST, Atari did a good job realizing STACY; you won't be disappointed. If you type a lot, you might want to consider STACY for its superior

keyboard, even if you set it up on a desk with an external monitor and power supply.

For those waiting for a multi-purpose laptop computer, STACY fills the bill nicely. With pc-ditto and Spectre, you can have a "three-headed monster" that can run almost any software out there anywhere. I was unable to determine if the new pc-ditto II would fit inside STACY—that question will have to wait for a later report for an answer, but cartridge-based Spectre GCR should work splendidly.

---

## With Spectre 128 on STACY, I was looking at the first Macintosh laptop in captivity.

---

For those of us who commute on public transportation and use an ST at work, STACY looks like a godsend. I'm looking forward to the experience.

Atari has set the roll-out of STACY for September 1, so that by the time you read this, you should be able to run (don't walk) to your local Atari dealer and check out STACY for yourself. It's well worth a look.

## Portfolio

It's a jewel, a tiny MS-DOS computer that charms everyone who sees it. It's Atari's Portfolio and it should be available in Atari dealers by the time you read this for the unbelievable price of \$399.

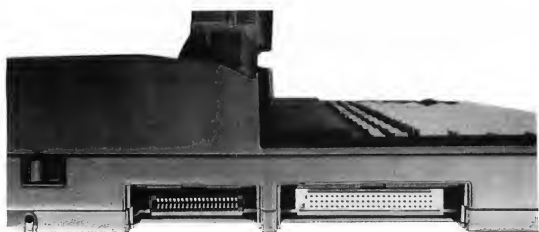
When Atari says that the Portfolio is the size of a VHS VCR tape, they're right. It's the same width and thickness and ¼-inch longer. When you pop the lid, amazingly, there's a full QWERTY keyboard with additional keys for special functions.

I had the pleasure of spending five days with Portfolio at the start of July. I've played around with the Sharp Wizard and several other of the hand-held life organizers on the market and thought that the Portfolio was in the same league. In fact, it does much of what its anemic competitor does, but it's more—so much more.

To begin with, the Portfolio runs a clone of MS-DOS 2.11; that means that you can run almost any software from the IBM world. You can easily port files and software in either direction to or from your IBM-style hardware. And because the Portfolio port can be software configured to be either a Centronics parallel printer port or a 9600-baud serial port, you can pass files back and forth to any other brand of computer as well.

Did you pick up on the fact that the Portfolio can be configured with a printer port? Yes, you can connect the Portfolio to a parallel printer and print from the built-in software or from any other MS-DOS software you run.

Another aspect of the Portfolio that separates it from the crowd is its memory. For the base price, you get 128K of RAM and 256K of ROM. All of the operating system is in ROM—no disk accesses to run MS-DOS! The balance of the ROMs is taken up by an ASCII text editor, complete with clipboard, search-and-replace and word wrap, a Lotus 1-2-3-compatible spreadsheet with 127 columns and 255



STACY's left side. Closest to the front is the bus port, next is the cartridge port and at the back is the power switch. STACY's internal batteries are in a compartment at the top of the case near the screen pivot.

rows, a powerful calculator, a diary with notes and alarms and an address book. All of the programs have their own on-line help, keyboard equivalences and—also built-in—you can switch among English, French and German menus and help!

Atari has also included a RAM card reader in the Portfolio. The credit card-sized RAM cards slip into the reader on left end of the Portfolio. It's recognized as Drive A and cards will be available with battery-backed storage of up to 128K.

Finally, Atari is making the Portfolio expandable. You will be able to add external "daisy chain" modules on the port on the right end of the unit to expand the internal RAM to up to 640K and then add the printer port, serial port or even an external RAM card reader to the end of the chain. (There's even going to be a RAM-card drive for IBM compatibles to make "disk" transfer of files and programs easy.) Take that, Sharp!

### The Lilliputian National Computer

The Portfolio is the first of several hand-held computers due out in 1989—and will have the best price. But can you actually use a computer this size? The answer is a resounding "Yes!"

Because the peripherals were not available at the time I tested the Portfolio, I can't report at this time on MS-DOS software running on this tiny wonder. I did, however, try out all of the built-in software and experiment with all of the DOS commands.

One of the first things I did was to write a new AUTOEXEC.BAT file. Most of the familiar commands worked just like they do on Portfolio's bigger cousins. There are several special MS-DOS and .BAT commands peculiar to the Portfolio. For example, typing "off" at a prompt turns the unit off. (You can also turn it off by holding down the [Fn]—Function—key and pressing the [OI] key or just by not pressing a key for a few minutes.)

**Portfolio—actual size.**

And in a .BAT file, the command "app" brings up the built-in applications menu.

Copy, delete, mkdir, removedir and dirfactory) commands all work just as they do on IBM hardware, complete with "/" commands appended and wildcards. The .BAT commands allow IF and branching structures to let you customize your installation.

There are no function keys on the Portfolio as such; the number keys double as the function keys when you hold down the [Fn] key. To bring up the key menu in each application, you need only touch the Atari logo key—the F1 menu appears over the application immediately. Then you can move up and down the menu with the cursor keys or just touch the keyboard equivalent of the menu item (its first letter) and a second menu appears. It's all very well thought out and implemented.

To select an item from a menu, you just touch the [Return] key. To back out of an item or application, you just touch the [Esc] key. A touch of the [Esc] key from the Applications menu takes you back to the DOS prompt. It's that easy.

### Firing It Up

The Portfolio comes with a Quick Reference Card (which I didn't see) and a pretty-well-written 237-page manual (with no index) that explains the basics of DOS and all of the built-in software. If you have some familiarity with DOS, you'll appreciate the manual more, since it jumps into DOS commands and CONFIG.SYS and AUTOEXEC.BAT files almost immediately. It might have been better to include a "quick start" for neophyte users at the start and then delve into the mysteries of DOS in a later chapter. It looks a bit intimidating as it is.

I hope that the first thing the Quick Reference Card tells users is how to type in "app" at the DOS prompt to reach the applications menu. Once there, non-computer users can feel insulated from those aspects of computers that frighten them in the first place. If I were a neo-

phyte who bought a Portfolio in preference to a Sharp Wizard, for example, and then was confronted with MS-DOS for most of the first 50-plus pages of the manual, I think I'd close the lid, close the manual and look for something easier to master.

The Portfolio gives approximately 20 hours of use on three AA pencil batteries. Alkaline batteries are recommended; since rechargeable NiCad batteries have a nominal voltage of 1.2 volts rather than the 1.5 volts of dry cells or alkaline cells, I suspect that you can't use rechargeables in the Portfolio. The manual says nothing about it.

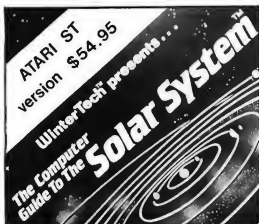
Once you insert the three batteries, you turn on the Portfolio by touching any key on the keyboard. Up pops an MS-DOS prompt on the Portfolio's built-in supertwist eight-line by 40-character display. The Portfolio operating system automatically sets up a RAM disk of one-fourth of the available RAM at start-up and maintains this memory even while the computer is off or while you're changing batteries. You can reconfigure this RAM disk, but doing so will wipe out all of the files on it.

The RAM card can be inserted or removed at any time, except during those brief periods of disk access. If you direct the Portfolio to read the A: drive with no RAM card in the slot, you get the familiar MS-DOS prompt: "Abort, Retry, Ignore?"

### Touch Typing, Anyone?

The Portfolio's keyboard is small, too small to do much in the way of touch-typing, unless you're eight years old or less. It works better for a hunt-and-peck typist or, as my wife observed, for thumb typists. The keys are uniquely shaped, square with the upper left-hand corner removed. At their lower edges, they're flush with the surface of the keyboard, while at the upper edge, they protrude just over 1/16-inch. Between those two points, the keys are convex, bulging out toward the fingers. They're surprisingly ▶





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**In place of a disk drive, the Portfolio uses battery-backed Static RAM (SRAM) cards in configurations up to 128 k. They're approximately the size of a credit card.**

usable and the 1/16-inch-plus rise helps your fingers locate the rows easily.

For any adult used to an Atari ST keyboard, the Portfolio takes some getting used to. It took me a few hours to feel comfortable with the key locations and keystroke combinations. After that, I found that I could accomplish what I wanted with a minimum of fuss, typing in text, creating a spreadsheet, adding names to the address book, entering calendar notes and setting alarms easily.

Unfortunately, we don't have space to review each of the Portfolio's built-in applications in this issue. Suffice it to say that they are adequate, well-designed and intuitive in their operation. And there's always online help two keystrokes away.



**On the left end of the Portfolio is an SRAM Card "drive," accessed as Drive A by the operating system. You can insert or remove SRAM Cards at any time, except when the system is accessing them—just like a floppy disk. Also visible is the external power jack at the left.**

## Final Thoughts

The Portfolio should make Atari millions of dollars and make the Atari name a familiar one in corporate offices around the world. Its MS-DOS compatibility almost guarantees instant success and its impressive and friendly design should produce wide acceptance by the general public. Is it for you? Do you need a small computer to do your work on the run? Do you need a combination address book, notebook, calendar, calculator and spreadsheet that fits in an inside suitcoat pocket? Only you can answer that question, but I can tell you that the Portfolio is the computer sensation of 1989. Be sure to look at it at your Atari dealer. ■

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# WORDUP

# 2.0

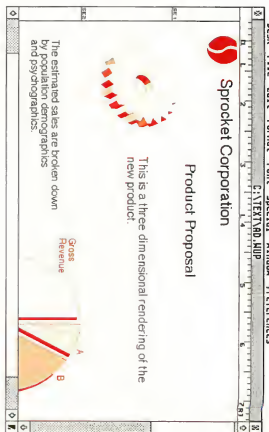
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# SCHEDULE

## Making Your Life a Little Easier

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*Stay on time with SCHEDULE.ARC and SCHEDDAT.ARC on your START disk.*

**S**chedule Maker is a powerful time-management tool that will help you keep track of important dates and times. Not only does it record information in a fast and easy way, it lets you view up to four months in advance with all those special days highlighted. Schedule Maker will also trigger your memory—months, weeks or days before appointments—with its automatic “ticker” function, which searches your calendar by subject and date. Now you'll not only know exactly what appointments you've made, but you'll know to the day, to the hour and even to the minute, how much

time you have until it arrives.

The best way to learn Schedule Maker is to experiment with it. It runs in medium or high resolution and the ST's familiar drop-down menus, dialog boxes and windows make it user-friendly. About the only typing you'll do is for entering records—everything else is accomplished with the mouse. I've included a few sample files, but the program is extensive and you should play around with it to realize its potential.

### Getting Started

Schedule Maker and its data files are contained in the files SCHEDULE.ARC and SCHEDDAT.ARC. Format a new disk and label it “Schedule Maker Disk.” Copy SCHEDULE.ARC and ARCXTTP

onto the Schedule Maker disk and un-ARC the file, following the Disk Instructions elsewhere in this issue. Now delete SCHEDULE.ARC from your Schedule Maker disk. Do not delete any files from your START disk or START backup disk. Copy SCHEDDAT.ARC onto your Schedule Maker disk and un-ARC the file. When you return to the Desktop you will see SCHEDULE.PRG, some data files and some sample files.

Schedule Maker's record files use the extension .REC. Printer files use the extension .COD. Report files use the extension .RPT; tickler files use .TIK; and window files use .WDW. Macros use the extension .MAC. If you save your current configuration, Schedule Maker will create a file called SCHEDULE.INF; the next time you run Schedule Maker it will load all of your settings files automatically. The resource file SCHEDULE.RSC must be in the same directory as Schedule Maker to run.

Double-click on SCHEDULE.PRG. If you have not already set the system clock, Schedule Maker will prompt you for the current date and time.

### A Guided Tour

To see how easy Schedule Maker is to use, let's go through the process of creating a

# SCHEDULE MAKER

BY JAMES ROBINSON

file and adding some records. Schedule Maker's default record file format has a field for the date and starting time of the event, a 15-character subject field and two lines (40 characters each) for a description of the event; see Figure 1.

To change the default record format click on Set Fields... under the Records menu. Click on NO next to the ENTER TICKLER category. Add a new field by clicking on the edit line under the LABEL heading and typing CLIENT. Next, set the length of the field to 15 by clicking on the line under LENGTH and entering 15. The Set Fields screen should now look like Figure 2. Click on OK to accept the changes.

## Ticklers

One of Schedule Maker's most important features is that it can automatically add "ticklers," records that remind you that an event will take place in a certain number of days. Let's say you're an attorney and you want ticklers created automatically for all your trial dates. Click on Auto Ticklers... under the Prefs menu. Enter the category you want to set ticklers for, in this case TRIAL, and press [Return]. Now enter the number of days for the tickler. Type 30 [Return], 60 [Return] and 90. Press [Enter] or click on ▶



Figure 1. This is Schedule Maker's default record format. You can modify it by clicking on Set Fields... under the Record menu.

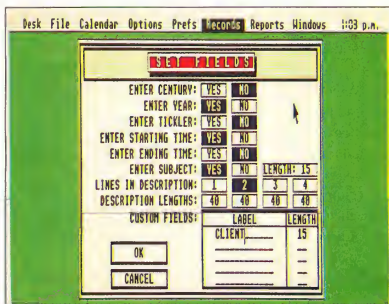


Figure 2. This is the modified Set Fields screen, with an extra field added for CLIENT. You can add up to four new fields and can use one to four lines for descriptions.



## SCHEDULE MAKER

OK to leave the Auto Ticklers menu; the screen should look like Figure 3.

Up to 10 different Auto Ticklers can be defined per file. If you need more than 10, you can load other previously saved Auto Ticklers (.TIK) files before entering records.

To add new records to the file, click on New Records. . . under the Records menu. Let's say you have to prepare for an important trial set for January 29, 1990 at 2:30 p.m. Enter this information in the following format: for January 29, 1990 type "012990"; for 2:30 p.m., type "0230p". Note that neither slashes nor colons are necessary.

Now type in TRIAL as your Subject. Let's make your Client's Name 'Andrew Reese' and for the Description, type in 'The People vs. Reese.' Click on OK. The next window shows an Auto Tickler record; click on OK to confirm the trial tickler record and the program will inform you of the tickler date. Since the Auto Ticklers menu is set for three ticklers, confirm each tickler in turn. Next, the program will ask you if you want to enter any more records; click on No.

Click on Load Reports. . . under the Reports menu and select STANDARD.RPT. This reports file contains six report formats—Daily Schedule, Daily Time to Event, Reminders, Columnized Schedule, Full Columnized and Double-header. To modify a report to work with your file, click on Edit Reports. . . under the Reports menu. Select the report Daily Schedule and click on OK. At the Edit Report menu seen in Figure 4, click on Column #3 ("Description") under the Select Column To Change heading; this line should now have a check mark. Click on the CLIENT button under the Select Info To Print menu; this will make the CLIENT field the third column in the report. At this point the check mark will advance to Column #4. Click on Description under Select Info To Print.

Click on OK to save the modifications to the report. (Note: You can only select a Description column once in a report.

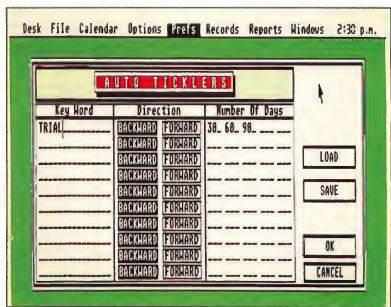


Figure 3. Schedule Maker's "ticklers" feature automatically creates special records to remind you of upcoming events. In this case, ticklers are set for TRIAL subjects 30 days, 60 days and 90 days before the event.

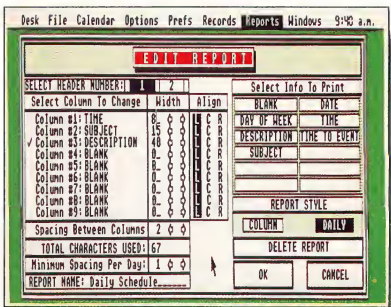


Figure 4. The Edit Report menu lets you set column contents and spacing for reports sent to disk, printer or windows on screen.

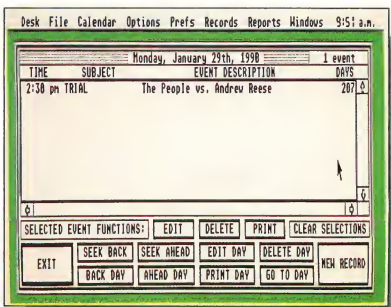


Figure 5. The calendar menu comes up when you click on a date in a calendar window. You can examine, edit, print out or delete records for a specific date.

Schedule Maker will print each line of Description information in the final report automatically.)

To generate a report window, click on Print Report. . . under the Reports menu. Click on OK to bypass the record

selection dialog box (see below under "Record Template" for instructions on how to access specific records). Select the report Daily Schedule and click on OK. Next, highlight the button under the window icon and click on OK. The report window will open on the screen. Set the window to the size you would like.

## Calendars

Under Calendars click on Monthly Window. . . In the first dialog box, set the year and month of the calendar to January 1990. In the second dialog box, determine which records you want reported in the monthly calendar. If you want to report all records, click on OK.

You'll then see a traditional monthly calendar set to the year and month you defined in the first dialog box. Change the year of the calendar by clicking on the scroll bars or by moving the slider. Click on the arrow buttons to change the month. The year and month can also be changed by clicking Edit All Windows. . . or Edit Top Window. . . under Windows.

Days are highlighted in the calendar if one or more records are scheduled for that day. Click on a specific day to call up a window that tells you the events scheduled for that day; the screen in Figure 5 will use the current report format. You can make changes to the calendar report by clicking on Edit Report under the Calendar menu. You can select one or more records in the report screen by clicking on the records. Selected records will be highlighted.

At this screen you can:

**CLEAR SELECTIONS:** Clear the highlighted (selected) record list.

**EDIT:** Edit the selected records.

**DELETE:** Delete the selected records.

**PRINT:** Print the selected records.

**EXIT:** Exit dialog.

**SEEK AHEAD:** Find the next day with reported events.

**SEEK BACK:** Find the previous day with reported events.

**AHEAD DAY:** Go to next day.

**BACK DAY:** Go to previous day.

**EDIT DAY:** Edit the day's reported events.

**DELETE DAY:** Delete the day's reported events.

**PRINT DAY:** Print the day's reported events to printer or disk.

**GO TO DAY:** Jump to a specific date.

**NEW RECORD:** Enter new record(s).

## Program Basics

Schedule Maker uses the standard GEM dialog boxes with the exception of the [Return] and [Enter] keys. Press [Return] to go to the next field within a record. Press [Enter] to exit from the form; press [Alternate]-[Enter] to cancel the form.

To move to the beginning of a field, press [Insert]; to move to the end, press [Ctrl Home]. These two keys toggle so you can press either key to switch from beginning to end of the field. [Tab] will move the text cursor ahead a word. Press [Shift]-[Tab] to move the cursor back a word. Press [Shift]-[Delete] to delete the information to the end of the field. [Alternate]-[Tab] will erase any word that follows the text cursor. Press [Esc] to delete the entire contents of a field.

Schedule Maker also makes use of the ST's function keys. The first two function keys are used to cut and paste. Press [F1] to copy information in the current field into a buffer. Press [F2] to paste the contents of the buffer into another record. [F3] is a real time-saver because it pastes your last entry into the current field. For example, if you're entering several records with the same date, all you

have to do is enter the date for the first record, and press [F3] for the other records. Press [F4] to place the system date (the current date) into the date field. This key is particularly helpful when printing reports to a window.

The [F5], [F6], [F7] and [F8] keys are used to manipulate the date in the current field. Press [F5] to decrease the date by one day. Press [F6] to increase the date by one day. Press [F7] to decrease the date by one week. Press [F8] to increase the date by one week. [F9] and [F10] manipulate the time in the current field. Press [F9] to subtract an hour from the current time, [F10] to add an hour.

---

## Schedule Maker lets you view up to four months in advance.

---

You can also create your own text macros in Schedule Maker. Macros can be defined for any [Alternate]-letter key combinations. Create or view macros by clicking on Macros. . . under the Prefs (preferences) menu.

To see a list of keyboard commands, click on Help With Keys. . . under the Options menu.

## Record Template

Whenever you edit, delete or transfer records, print reports or edit windows you'll be presented with a Record Template dialog box. Here you select your records. If you want to see all of the records, click on OK. If you want only certain records, however, you can define them in the subject field. For example, if you only want records that refer to a planned party, simply enter "Party" into the subject field. There are also logical commands to make other types of decisions possible. For instance, if you want to print a report of everything except ▶

## SCHEDULE MAKER

your party, enter "Party" into the subject field and click on "<>" (not equal to). The logical definitions are: "IN" (contains), "<" (less than), ">" (greater than), "<=" (less than or equal to), ">=" (greater than or equal to), "<<" (not equal to) and "=" (equal to). One logical operator can be used in each field.

### The Drop-Down Menus

The rest of this article discusses some of Schedule Maker's more complicated options. Schedule Maker's menu options are described in the sidebar accompanying this article. However, the best way to learn this program is by experimenting with it and by examining the sample files.

### Printing Reports

If you're sending a report to the printer, the PAGE SETUP dialog box will let you select your printer options. If you are writing to disk, you'll need to name the new file or select an existing ASCII file with the file selector. Select an existing file and choose to either WRITE to or APPEND this file. Next you will be presented with a smaller PAGE SETUP dialog box where you can enter the title and define the header, date, time and name of the record file.

If you write the report to a window, each record for the window can be selected by clicking on the record. Selected records will be highlighted and can be edited, deleted, printed or transferred to another file by clicking on the appropriate item under the Records menu. To clear any selections made, click on Clear Selections under Records. You can also clear selections by clicking on the window title bar.

### Editing Reports/Making New Reports

Pull down the Reports menu and click on New Report or Edit Report. (If you choose to edit an existing report you must then select the report to edit.) The Edit Report dialog box sets up all of the report generating functions. The differ-

ent types of information that can be printed are under Select Info To Print. The column you are working on is indicated by a check mark. You can change the column to work on by clicking on the appropriate Column # label. When making new reports, this is not necessary because the column to work on initially is the first column. After you click on an Info To Print (Date, Time, Subject, etc.), the column to work on is automatically set to the next one.

The Info To Print categories are self-explanatory except for the Time To Event item. The Time To Event dialog box asks which format you want to use (short, medium or long). If you only want to print the number of days until each event, use the short format. If you want to print the number of days plus the hours

and minutes to each event, you can use either the medium or long format. Examples of the different formats are:

SHORT: 27  
MEDIUM: 27,2:15  
LONG: 27 days 2 hrs 15 mins  
SHORT: 0  
MEDIUM: 5:30  
LONG: 5 hrs 30 mins  
SHORT: 0  
MEDIUM: 25  
LONG: 25 mins

After you've selected the information to print check the Total Characters Used value. If this value is greater than can be printed on a line by your printer, there are several things you can do to make the report fit. First, you can change the

## Schedule Maker Drop-Down Menus

### FILE

New . . .	Start a new record file.
Open . . .	Open a record file.
Merge . . .	Merge records from another file.
Save . . .	Save the current record file.
Save As . . .	Save the current records under a new filename.
Abandon . . .	Abandon any modifications made to the current records.
Delete . . .	Delete a file.
Rename . . .	Rename a file.
Quit	Exit the program.

### CALENDAR

Edit Report . . .	Edit the calendar report.
Monthly Window . . .	Open a monthly calendar window. The month, year is chosen and then decision statements for record fields can be set.

### OPTIONS

Calculate Between Dates . . .	Determine the amount of time between two dates and/or times.
Calculate From Date . . .	Determine the result of a calculation from a date.
Enter System Date/Time . . .	Set the current time and date.
Send Printer Code . . .	Send an ASCII code to your printer.
Help With Keys . . .	Help dialog box showing function keys and editing keys.

### PREFS

Auto Ticklers . . .	Define/Load/Save Auto Ticklers
Macros . . .	Define/Load/Save Macros
Printer Codes . . .	Set your ASCII printer codes.
Other . . .	Display time/date, set the ASCII disk reports file extension, set backup record file on or off.
Save Configuration . . .	Save the filenames for Auto Ticklers, Macros, Printer Codes, Windows, Reports, and Records to the SCHEDULE.INF file. These files will then be automatically loaded the next time the program is run.

size of some or all of the columns by typing the new width into the width column or clicking on the left or right arrow buttons. Second, you can reduce the Spacing Between Columns value in the same manner. Third, you may not need to view one of the fields you are printing. Finally, you can make the report a "double-header" in which you can print twice as much information in the same number of columns. You can change the current header number by clicking the 1 or 2 button next to the SELECT HEADER NUMBER: label. To see an example of this load the STANDARD.RPT file and examine the Double Header report.

You can define the way text is aligned, at the left, center, or right of each column. Dates and numbers look best

when they are aligned to the right. Other information is usually aligned to the left. Text is rarely aligned in the center of the column, however, in double header reports, it sometimes makes information easier to read.

There are two different styles of reports to choose from. A column style is simply a set of columns. A daily style heads the records for a specific day with the date.

#### Column Style:

9/20/89 Wed 10:00 am  
 Example record . . .  
 9/20/89 Wed 12:00 pm  
 Example record . . .  
 10/12/89 Thu 8:00 am  
 Example record . . .

## RECORDS

New Records. . .	Enter new record(s).
Edit Records. . .	Modify some or all records.
Delete Records. . .	Delete some or all records.
Transfer Records. . .	Copy/Move some or all records to another file.
Clear Selections. . .	Clear report window selections.
Print Selections. . .	Print selected records. Records can be selected in report windows.
Set Fields. . .	Set the record fields.
Information. . .	Display information for the current record file.

## REPORTS

New Report. . .	Create a new report.
Edit Report. . .	Modify an existing report.
Print Report. . .	Print a report to window, printer, or disk.
Load Reports. . .	Load a report file.
Save Reports. . .	Save the current reports.

## WINDOWS

Close All Windows. . .	Closes all open windows.
Edit All Windows. . .	Just like Edit Top Window except that all open windows are edited.
Edit Top Window. . .	Look at and modify the top window's information. Editing a report window will allow you to change field decision statements and to change the report. Editing a calendar window lets you change the month and year and the field decision statements.
Mark Position. . .	Mark the slider positions for the top window.
Goto Mark. . .	Go to the marked position for the top window.
Load Windows. . .	Load a window configuration file.
Save Windows. . .	Save the current window configuration.

## RECORDS

New Records. . .	Enter new record(s).
Edit Records. . .	Modify some or all records.
Delete Records. . .	Delete some or all records.
Transfer Records. . .	Copy/Move some or all records to another file.
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Mark Position. . .	Mark the slider positions for the top window.
Goto Mark. . .	Go to the marked position for the top window.
Load Windows. . .	Load a window configuration file.
Save Windows. . .	Save the current window configuration.

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## SCHEDULE MAKER

Daily Style:

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10:00 am Example record . . .

12:00 pm Example record . . .

Thursday, October 12th, 1989

8:00 am Example record . . .

## Calculating Between Dates and Times

This function performs the same task as the Time To Event report feature except that it uses the system date and time as the starting data. Both functions will tell you how many days and/or hours and minutes there are between two dates and/or times. Pull down the Options menu and click on Calculate Between Dates. . . Enter the starting date and ending date to calculate the numbers of days between those dates. You can also enter the starting and ending times if you want to know the hours and minutes between those times. Click on OK to display the result.

## Calculating From a Date

Calculate from Date. . . under the Options menu tells you the resulting date of a certain number of days ahead of or back from a date. In this dialog box, enter the date for which the calculation is based on, then select the direction of the calculation. Enter the number of days to calculate. Clicking on OK gives you the result.

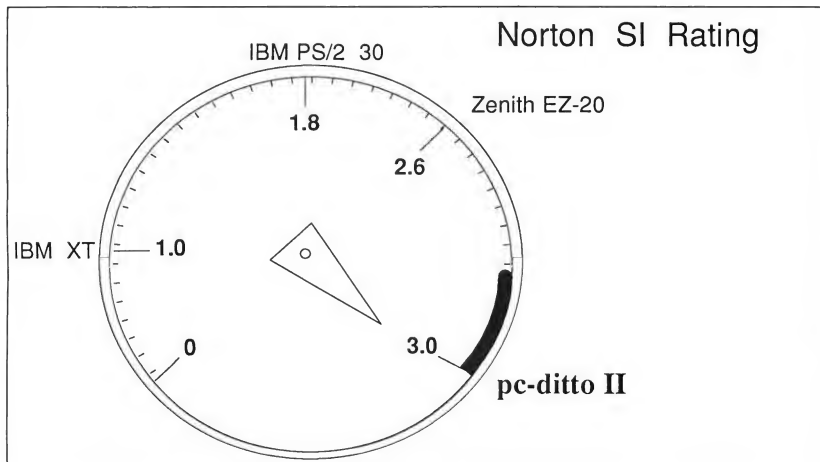
## Configurations

Records, reports, windows, printer codes, macros and Auto Ticklers are all kept in separate files. Rather than loading each file manually, you can use the Save Configuration. . . feature to load all of the files automatically after you run the program or open a records file. ■

*James Robinson is an ST enthusiast who has been using Atari computers for seven years. He hopes to someday write commercial software for a living. This is his first publication in START.*

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## Accessorize Your Programs

BY SAMUEL STREEPER

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Have you ever written a useful utility and wished you could access it as a desk accessory? Or the other way around? Perhaps you converted that accessory into an executable program but don't like maintaining two source code files that do the same thing.

The truth is that there's very little difference between desk accessories and programs if they follow some simple guidelines. On this issue's START disk you will find MMINITC, LASINITC and MWINITS, which replace the standard initialization routines for Megamax C, Laser C and Mark Williams C, respectively. They're in the archive file CINIT.ARC. Copy CINIT.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC CINIT.ARC following the Disk Instructions elsewhere in this issue.

The compiler-specific instructions for linking these initialization routines with your program are at the end of this article. These startup routines are not always recommended as a replacement for the standard routines; they are intended for programs that you want to be as small as possible. Compiling a very small program with these startup routines will reduce the executable file size

from about 4,000 bytes to less than 400 bytes. However, the startup code will not parse the command line into the `argv` array and dirty, unclosed file streams will not be flushed to disk when the program terminates. I'll assume that since you want your program to run as an accessory (which accepts no com-

which is 0xff if the application is running as a program, 0 if it's a desk accessory.

### The Main Event

Let's assume you have source code to an event-driven GEM program and you'd like to turn it into a dual-purpose desk accessory/program. From the `evnt_multi` function call, the application receives keypresses, button clicks and window redraw messages. Also, programs may receive menu bar events, and desk accessories may receive accessory open and close events denoting that they've been activated or deactivated. (One requirement for a dual-purpose desk accessory/program: the program must not be heavily dependent upon the menu bar because when it runs as a desk accessory it won't have one.)

To convert the program to act as a desk accessory, you'll need to add the code necessary to handle desk accessory open and close messages. There's no harm in having your program check to see if it receives accessory open events; it never will. The desk accessory must stay in the `evnt_multi` loop forever because if it terminates, the computer will reset. See the source to PRGACC.C to find out how to handle a *dual-purpose evnt\_multi* loop. ▶

---

**T**here's little difference between desk accessories and programs if they follow some simple guidelines.

---

mand line arguments and never terminates), these issues don't bother you. These routines also use the ST-specific GEMDOS file routines which are smaller and faster than the corresponding Unix-compatible routines. In addition to taking care of startup housekeeping, the startup code sets a variable (`_app`)

### Registration

If your application is being run as an accessory it should use the `menu_register()` call to put its name in the desk accessory menu bar so the user can activate it. Make this call right after `appl_init()` because if you make too many AES calls *before* calling `menu_register()`, the name won't be registered until the *second* time the Desktop is drawn.

### Memory Handling

At load time, a desk accessory is given as much memory space as its code and data require; it should not allocate more memory. On the other hand, when a

## Ever write a useful program that you'd like to use as a desk accessory?

program is loaded, it is given the largest chunk of free memory in the machine. It can keep as much of this memory as it needs, but should give some of it back to the system. Assembly language programmers are responsible for taking care of this initialization themselves. For programmers using C or other high level languages, the compiler will take care of linking initialization code that does this automatically.

A desk accessory should not use `malloc()` to allocate memory, primarily because this memory may be lost when the user changes resolution. Also, old versions of GEMDOS allow only a small number of `malloc()` calls (between 20 and 40), and the program the desk accessory is called from may make some `malloc()` calls as well. An alternative to `malloc()` is to reserve space by creating a pointer to a buffer.

## The Resource Dumper

I wrote the utility RSCDUMP.TTP to let you merge a resource file with a C program listing. This program (and the source code) is on your START disk in CINIT.ARC. Copy CINIT.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC CINIT.ARC following the Disk Instructions elsewhere in this issue. The following example program has a resource file with one object in it, a simple dialog box with one button. The following code loads the resource from disk and puts up the dialog box:

```
#include "resource.h"      /* include object offsets */
#define RECT x,y,w,h
#define ARECT &x, &y,&w, &h

put_up_dialog()
{
    OBJECT *dialog;
    int x,y,w,h, choice;

    /* load resource, kill program if not found */
    if (!rsrc_load('resource.rsc')) Pterm(-1);

    /* get the address of dialog box */
    rsrc_gaddr(0,DIALOGBX,&dialog);

    form_center(dialog,ARECT);
    objc_draw(dialog,0,2,RECT);
    choice = form_do(dialog,0);
    form_dial(FMD_FINISH,0,0,0,RECT);

    if (choice == BUTTON)  { /* do something */ }
}
```

Now let's build that resource file in. Run the program RSCDUMP.TTP and type in the command line:

```
resource.rsc >resource.c
```

This will give you the C data structures for the resource file in the file RESOURCE.C. That file will look like this:

```
OBJECT obj0[] = {
-1,1,1,G_BOX,0x0,0x10,0x21121L,0,0,22,6,
0,-1,-1,G_BUTTON,0x21,0x0,'A Button',3,2,16,2,
};
```

You don't really need to understand this structure, but just by looking at it you can see that it is an array whose first object is a

box type, and whose second object is a button type containing the text 'A Button'. Now look at the RESOURCE.H file created by the resource construction program:

```
#define DIALOGBX 0
#define BUTTON 1
```

This tells you that the dialog box is the 'zereth' object array and that the button is the first object in that array. Rewrite the above program fragment to include its resource:

```
#define BUTTON 1

OBJECT dialog1 = {
-1,1,1,G_BOX,0x0,0x10,0x21121L,0,0,22,6,
0,-1,-1,G_BUTTON,0x21,0x0,'A Button',3,2,16,2,
};

put_up_dialog()
{
    int x,y,w,h, choice;

    /* convert_resource is found in prgacc.c */
    /* an object tree should be converted only once */
    convert_resource(dialog);

    form_center(dialog,ARECT);
    objc_draw(dialog,0,2,RECT);
    choice = form_do(dialog,0);
    form_dial(FMD_FINISH,0,0,0,RECT);

    if (choice == BUTTON) { /* do something */ }
}
```

Using an included menu bar is not difficult either.

```
OBJECT menubar1 = {
-1,1,5,G_IBOX,0,0,0x0L,0,0,80,25,
5,2,2,G_BOX,0,0,0x1100L,0,0,80,513,
/* more C objects. . . */
};
```

If the application is running as a program and you wish to display this menu bar, simply call:

```
convert_resource(menubar); /* only convert it once! */
menu_bar(menubar,1);
```

```
Instead of
char *ptr;
ptr = Malloc((long)(16 * 1024));
```

```
use:
char buffer(16 * 1024);
char *ptr = buffer;
```

If you must use `malloc()`, do so before making any AES calls. If you allocate memory after AES calls, GEMDOS may take the memory away without warning.

## A Resource Dumper

Your desk accessory/program should not load a resource file because in doing so, GEM will allocate space for that file. On this issue's START disk is the tool RSCDUMPTTR, which lets you construct dialog boxes and menu bars using a resource construction program. Then it outputs this file as an array of C structures which you can incorporate into your program easily. It works well for most resources that don't contain bit-mapped structures. See the sidebar accompanying this column for a description of how to use this program.

The program PRGACC.C demonstrates a dual-purpose application. You can run PRGACC.PRG from the Desktop or rename the file PRGACC.ACC to use it as a desk accessory. The accompanying resource file PRGACC.RSC is not necessary; it's already incorporated into the program.

## Link Notes for Megamax C

The Megamax linker MMLINK expects to find its initialization code in the file INITO in the SYSLIB library file. Unfortunately, you can't specify an alternate INIT file, so you'll need to replace this file in your system library. *Make a backup copy of the system library before you replace INITO!* There may be times you'll want to use to the standard library.

Compile MMINITC, ignoring the compiler warnings. Change the name of the object file from MMINITO to INITO ▶

and optimize it using MMIMP:

```
mmimp init.o
```

Now delete INIT.O from the system library and replace it:

```
mmlib dv syslib init.o
mmlib rv syslib init.o
```

You may now compile your programs normally. I include my stack in a separate object file that lets me customize the amount of memory taken by the stack. Note that this stack, unlike the standard Megamax C stack, is part of the 32K of data space you can use from Megamax. This is only a limiting factor in very large programs. (If it's a problem, consider the upgrade to Laser C.)

To link your program (and the stack):

```
mmlink your_prg.o mmstack.o -o
your_prgacc
```

### Link Notes for Laser C

Compile the files LASINIT.C (the initialization code) and LASSTACK.C (the variable size stack). You don't need to have the initialization code in the system library; the linker assumes that the first file it links is the initialization code. If you use the graphic interface to the linker, remove the default file INIT.O and link with LASINIT.O as the first file. You may also have **make** call the linker with this as the first file:

```
prgacc.acc : prgacc.o
```

```
$(LINKER) -v lasinit.o lasstack.o
prgacc.o $(CLIB) -o prgacc.acc
```

The file MKPRGACC in the CINIT.ARC archive file on your START disk is a sample Laser C makefile.

For what it is worth: the default Laser C init actually works fine as an init for programs or accessories. My init will generate smaller code for those who don't

need file stream cleanup or command line arguments. Also, the current Laser init allocates the stack from GEMDOS if it initializes an accessory; this memory is lost when you change resolution.

### Link Notes for Mark Williams C 2.0

Compile the file MWINIT.S as follows:

```
cc -c mwinit.s
```

Move the resulting file MWINIT.O into your \LIB directory. Now to compile your program/accessory:

```
cc prgacc.c -Nrmwinit.o -laes -lvdI
```

The `-Nrmwinit.o` tells the linker to use the file MWINIT.O as the runtime startup module. The options `-laes` and `-lvdI` tell the linker to link your program with the GEM binding libraries.

### Assembly Accessories

The file ASMBLY.S is an example of how to write an assembly application which functions both as an accessory and a program. It was assembled with HiSoft Devpac, but shouldn't be too difficult to transfer to another macro assembler. It simply puts up a dialog box when it is run as a program or selected as an accessory. It doesn't do the fancy window or menu handling of the C example.

### Conclusion

You now have all the tools to write dual-purpose applications. These techniques will make debugging your desk accessories much easier, because you can run them as programs until they work perfectly. ■

*Samuel Streeper is currently working on an Atari ST MIDI networking system. This is his first article in START.*

## Programming in C . . . on your START Disk

*The following files are in the archive file CINIT.ARC on your START disk:*

PRGACC.C  
PRGACC.PR  
Sample program code of a dual-purpose desk accessory/program. Rename PRGACC.PR to PRGACC.ACC to try it as a desk accessory.

PRGACC.RSC  
PRGACC.DEF  
PRGACC.H

These files were created using the Megamax resource construction program but are not needed to run PRGACC since they have been incorporated in the program using Resource Dump.

RSCDUMP.C  
RSCDUMPTP

The source and executable code to the resource-file-to-C converter.

MMINIT.C  
MMSTACK.C  
Megamax C startup code and stack.

LASSTACK.C  
LASINIT.C  
Laser C startup code and stack.

MKPRGACC  
Makefile used to make program/accessory with Laser C.

MWINIT.S  
Mark Williams C startup code.

ASMBLY.PR  
ASMBLY.S  
HiSoft Assembler code for simple dual purpose program/accessory. ■



## HotWire, NeoDesk 2.0 and VDOS ProQueue

### Alternate Desktops for your ST

BY GREGG PEARLMAN  
START ASSISTANT EDITOR

Looking for a way to customize your ST's operating system? START recently received HotWire from CodeHead Software, NeoDesk 2.0 from Gribnif Software and VDOS ProQueue from Marathon Computer Press, three "alternate Desktops" – shell programs that let you access the ST's operating system without using its GEM point-and-click Desktop.

The three packages have many similarities, but each one has a unique "feel." HotWire is "just the facts, ma'am," NeoDesk is almost whimsical while VDOS is stodgy and no-nonsense. But whichever one you use, you'll quickly find it indispensable.

#### Why Use an Alternate Desktop?

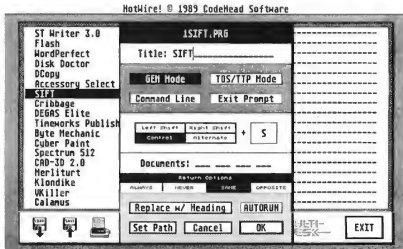
The ST's operating system has a perfectly good built-in Desktop. Unlike users of, say, an Atari 8-bit computer, you don't have to search through your entire home or workstation to find a disk with DOS on it to run programs, copy files, format disks and, in fact, boot your computer in the first place.

With the GEM Desktop on the ST, you don't have to boot with any disk and you still have all those options available.

Why, then, do you need an alternate Desktop? Well, you don't. Until HotWire, NeoDesk and VDOS ProQueue came along, ST users were fairly content to make do with what they had. But the added conveniences of these three programs—hot keys, file "move" operations and more—sure make it tempting to have an alternate Desktop.

#### HotWire

When the START editorial staff first saw HotWire, our collective reaction was "Wow!" It's a simple concept: with HotWire installed, to run a particular program, you just press one key, or a key combination involving the right and left [Shift], [Control] and [Alternate] keys. That's it. No searching through layers of subdirectories on multiple hard-drive partitions—HotWire will do that for you. For example, on my system I just ▶



The program installation menu of HotWire from CodeHead Software, overlapping the main menu, has room for three columns of 18 programs each. Here you can choose, among other things, what keypresses you want to use to summon a given program.

press [S] at the Desktop, and I'm in ST Writer. This sold me immediately. Even better is the fact that it takes up only 44K of my 10405T's memory. Also, HotWire works in all three screen resolutions.

HotWire lets you assign "Hot Keys" for up to 54 programs that you can run instantly from the Desktop. If you forget which key goes with which program, press [Right Shift]-[Help], which brings up a menu displaying all 54 program names. Then just press the appropriate key (or combination), or left-click on the program name, and you're there. The Hot Keys are saved in a file with a

## HotWire's "one keypress" environment is very, very satisfying.

.HOT filename extender; you can save several .HOT files with different Hot Keys for different applications and load them as you need them. (In fact, you can automatically load one of 10 .HOT files by holding down [Shift] and pressing the appropriate number on the numeric keypad.)

The Options box lets you decide which keypress will run a particular program. Just enter a program name in the title field, enter the type of program (i.e. GEM or TOS/TTP), click on Command Line or Exit Prompt if you want, then set up your key combination. Enter a letter from A to Z, then (optionally) select any combination of the [Shift] keys, [Control] and [Alternate]. Those 16 possible combinations, plus the 26 letters, give you 416 possible Hot Key combinations. The Return options at the bottom of the Options box determine whether you'll return to the Desktop or the HotWire menu after you quit a program.

## What Else Is There

Other HotWire features include the ability to print Hot Key listings, move Hot Key titles around on the menu, "Zap" a Hot Key or clear an entire Hot Key menu. You can also run a "non-Hot" program from the HotWire menu (which also has an option to use CodeHead's MultiDesk desk-accessory loader). And HotWire can be used with "Install Application," or installed as an application.

If you don't have a hard drive, HotWire is still useful. Have all your programs in a .HOT file, and when the menu comes up, just put the necessary floppy disk in the drive and then press the Hot Key.

## In Closing

HotWire's 33-page manual tells you all you need to know. It has several illustrations and is written and laid out clearly and concisely. Not only that, but the cover, courtesy of Maurice Molynaux, is full of silly (and entertaining) program names, such as "Plaque-Man" and "Alien Ninja Vixens."

Overall, I find HotWire amazingly convenient. It's nice not to have to dig through dozens of folders and sub-folders to find the right program. The "one keypress" environment is very, very satisfying.

## NeoDesk 2.0: The Desktop Alternative

As alternate Desktops go, NeoDesk 2.0: The Desktop Alternative from Gribnif

Software is the most fun to look at and play with. The NeoDesk Desktop works much like the GEM Desktop, but the program includes an icon editor that lets you customize not only your disk, printer and trash icons, but also your background color and pattern. And you can boot NeoDesk with a DEGAS .PI2 or .PI3 as your background (but that will take up an extra 32K of your computer's memory).

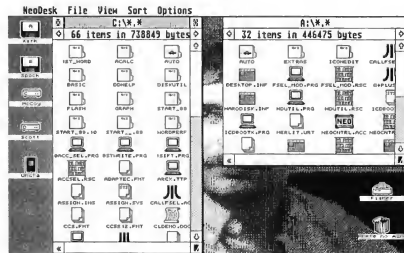
NeoDesk is not copy-protected, so you can install it onto your standard boot disk or your hard drive, in any folder or directory you wish (although the root directory seems to be the smartest place). Unless you have TOS 1.4, you'll need the public-domain utility STARTGEM.PRG in order for NeoDesk to autoboot.

Although NeoDesk takes up 154K of your ST's memory while its Desktop is onscreen (plus the 32K if you opt for a DEGAS picture), it occupies only 24K while you run another application.

## Looks Are Important

With NeoDesk you can either have one customized icon for programs and another for non-programs (much like the standard GEM Desktop), or every file can have its own unique icon. You can also have specific icons for specific file types. For example, a .PRG icon could look like an active computer screen and a .PR\_ (or .PRX) icon can look like an

*continues on page 93*



Cute and fun—and useful, Gribnif Software's NeoDesk lets you use an almost unlimited number of icons for your files (if you're so inclined). You can even boot with a DEGAS picture as your Desktop background, such as this one of the reviewer hiding behind his A drive.

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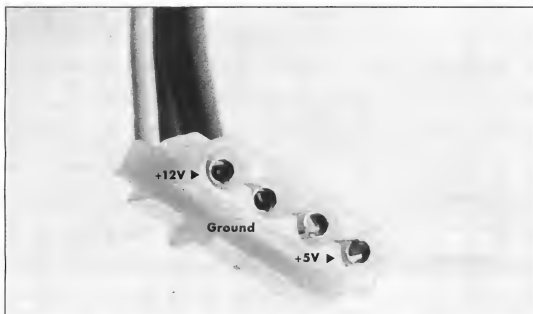
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## Troubleshooting Your Hard Drive

BY DAVID SMALL  
START CONTRIBUTING EDITOR  
WITH DAN MOORE



**Figure 1.** These voltages should be present at the cable end of a hard drive power supply. If these voltages aren't present, you may have power supply problems. Before diving into the power supply, however, be sure your drive is plugged in, your power strip is turned on and the power switch works.

If you've read the last two columns, you now understand the basics of hard drive hardware. Now comes the part you've been patiently waiting for: troubleshooting.

*(Editor's Note:* This column is aimed at the ST user with a high level of technical expertise. Some of the techniques Dave discusses involve opening up your

hardware or modifying your hard disk data at a very low level. Please note that any time you open up your hardware, you void your warranty. If your hardware is still under warranty, it's better to leave a problem in the hands of an Atari (or Supra or ICD, etc.) authorized repair facility. Similarly, if you don't know what you're doing, fooling around with the data on your hard disk is almost

guaranteed to cause you catastrophic problems. Don't attempt any of the fixes described below unless you have the requisite skills. We at START can't guarantee that you won't kill your data, your hard drive or yourself if you poke around where you shouldn't.)

### It's Dead—Now What?

Okay, you've got something wrong with your hard disk. Let's classify the problem—break it down into a category where we can look at potential causes and solutions. Just scan through the list until you find the information you need. Do note, however, that some hard disk problems can be very subtle or actually be multiple problems; it never hurts to read the whole troubleshooting list. It can inspire good ideas.

### I. Catastrophic Failures

The disk won't turn on. Nothing happens when you flip the power switch—no spinup "vroooom"; no "whick whick whick" of the Adaptec controller resetting, nothing.

This is a thoroughly sick drive. This usually means a power supply problem; *power supplies fail more than anything else.*

Diagnosis: First, check the fuse. Yes, ▶

you'd be amazed how many people forget that. Despite the protestations of a generation of electrical engineering professors, yes, fuses do sometimes blow for no good reason. Try replacing the fuse (same value, of course, and that means the same value on both ends, volts and amps.) Don't do something dumb like wrapping it in aluminum foil, or the jam-in-a-thick-piece-of-copper-wire trick. The fuse is trying to

the off position, and no drop in the on position). **CAUTION: That current is deadly. Don't try checking it if you're not familiar with electronics.**

Second, check for continuity through the transformer. I'm deliberately using technicese here; if you don't know what these terms mean, please don't play with your power supply. There are dangerous voltages on those big chunks of metal "heat-sinking" the power transistors; I

If power goes into the power supply and nothing comes out, you've got a bad supply. Make sure you test this with everything connected to the power supply; an unloaded power supply often shows no output at all! Admittedly, this makes it trickier to troubleshoot; a "dead load" (such as an old, useless hard disk that spins up, but doesn't work otherwise) is real handy here.

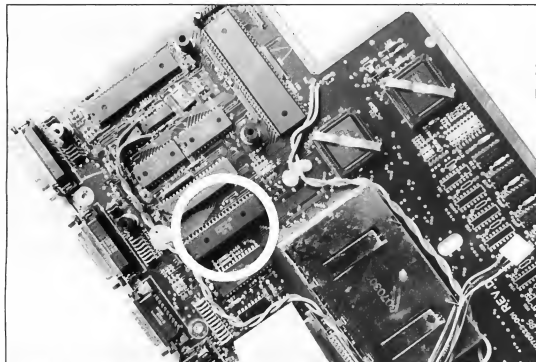
If the supply gives +5 and +12 until something is connected, then either the supply is weak or the component being supplied is shorting out across the supply. This can be a little tricky to diagnose. A dead-short board will cause the power supply to "crowbar" and shut itself off to prevent damage, so you'll tend to "see" a dead supply. Unhook the suspect board, take a Pepsi break and let the supply sit and cool off, then try again.

Crowbaring is often signalled by a "click click click" noise from the drive; also, sometimes you'll see the fan barely jerking as the supply turns on and off. That's a symptom of a dead short.

If you find one board that causes the power supply to shut down when it's hooked up, obviously, replace it. New Adaptec 4000's are available everywhere; ACSII-SCSI converters are available from the manufacturers. It is very helpful to have another drive to swap parts with. Make friends with your local dealer's service department—take them out for a beer sometime—and they might let you borrow parts from a shop drive to test yours.

If it's the actual hard disk mechanism that's broken (I've seen that happen several times), then you're probably stuck and you've probably lost all of your data. There are shops that can sometimes repair hard disks and sometimes get your data off dead hard disks, but they are very expensive.

Also, I've seen four hard disks that, once spinning, could keep spinning, but which couldn't get the motor started. There's a fix you can try, but it is



**Figure 2.** If your system freezes when booting from a hard disk and tells you that you have 0 bytes in 0 folders, your problem may be that the DMA chip needs reseating. In a 5205TFM, the chip is socketed; carefully pry it up from both sides, a little at a time, and press it back down again. This is not recommended for beginners—have an expert do it.

tell you your drive is inhaling too much electricity; if you bypass it, you may burn up the drive. This is embarrassing at best.

Not the fuse, eh? Well, make sure the drive is plugged in and that the power strip is "hot." A quick meter check of the power strip might not hurt. I've seen remote lightning bolts take out the MOV's (Metal Oxide Varistors, a power spike protector) and otherwise burn up a power strip.

Okay, it's getting power, still nothing. You'll have to open it up.

First, check the power switch with your meter. Make sure it turns off and on (check for 110V AC drop across it in

had one drive's power supply really zap me, so I know.

If that looks okay, check for +5 volts DC and +12 volts DC on ALL the power leads coming out of the supply. This is easy. The ACSII-SCSI board requires +5 VDC only (measure +5 to the ground lead running along with it). The hard drive itself and the Adaptec controller require +5 and +12 VDC. Looking at the power lead, the voltages are arranged as shown in Figure 1. Usually the +5 wire is red and the +12 orange, but don't count on it; it seems to depend on what spool of wire they were using the day they built the supply.



guaranteed to cause trouble; if you have to do this, it's a last ditch effort; be ready to get all the data you can off this drive. Have your floppies formatted and ready . . .

Apply power, then reach to the head stepper motor shaft/cam, and gently wiggle it. That often can cause a head that's frozen to the disk surface to come loose! I know: it sounds like an awful thing to do, but this is desperation strategy.

Once it's spun up, copy all the data off that drive that you can get, and use it for target practice thereafter. You can bet the platters and head are damaged.

*Warning: The drive may never spin up again, so don't turn it off! This might be your only chance to recover your data, so don't waste it. Either make an image copy of the drive to a new drive, dump it to floppy disks or both.*

I have two Microscience HH 1050 20-meg drives that did this to me. As soon as I have Spectre GCR out the door, I'm taking them out for an appointment with my .270 rifle.

If your hard disk squeals unbearably all the time, look under the hard disk mechanism for where the head spindle touches. There's often a small copper "strap" here. A small drop of oil here can cure the squeal. Don't overdo the oil! Oil attracts dust (that's why older cars used an oil-soaked air cleaner—it really pulled the dust out of the air) and if you apply too much, you'll really get a squeaky drive in a few days. Also, you can very gently loosen the strap, just a little bit, and see if that helps. Don't overdo any of this; the hard disk is incredibly fragile.

Look at your Adaptec (ACB) controller. Does its LED come on? (Atari wires this LED to the front of the hard disk case). If not, and your ACB is getting power, then your ACB is sick; you'll probably have to replace it. The ACB should go through a power-up cycle that involves turning that LED on.

Finally, check all the power wiring,

You'd be amazed at how many times the connector that brings power to the ACBI-SCSI board on Atari drives can come loose; that'll paralyze the unit. Make sure all the plugs are plugged in fully. A loose plug can work for awhile, then oxidize and quit.

I'm getting used to hard disk mechanisms going bad; I've gotten sort of blasé about it. For example, just before last Christmas, a 40-meg Miniscribe, 20-meg Microscience, and four Hewlett-Packard 20-meg drives all

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## A blown fuse is trying to tell you that your drive is inhaling too much electricity.

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gave up the ghost one night from an unexplained power glitch. That's what, 140 megabytes of storage? After that, I just keep a spare drive around and swap it in if I suspect drive problems.

If you still don't have the problem solved, start swapping parts, until you've completely rebuilt the drive. Swap the 50-pin, 34-pin, and 20-pin cables first; these are the least reliable parts of the system. (One good tug on a clamp-on cable will often kill it). Then, swap the power supply, the drive mechanism, the ACB and the ACBI-SCSI board last. Again, you can see why it's really helpful to have a friend's drive to swap with.

If you run into a bad cable, throw it away. Don't keep it in your junk box, where you might re-use again. If you want to save the ribbon cable, fine; cut the connectors off with scissors or diagonal cutters. (Note: the clamp-on connectors are not reusable.)

If your drive has endured something like a lightning spike coming into it, it may be that everything inside is fried. Another possibility is a "ground loop" where your drive gets in the way of an accidental 110 VAC circuit. If either of these events happen, plan on replacing everything.

## II. It Spins Up, But . . .

If the drive spins up ("Vrooom!") but the head doesn't move ("whick whick whick"), either your Adaptec isn't sending out the head move commands, the drive is deaf and cannot listen or the cabling moving the commands to the drive is bad. Swap and fix appropriately.

Next, try swapping your ST/hard disk cable. I've mentioned this once before, but it's worth repeating. I have had more problems with that 19-pin cable than with anything else, period. It's just too short, and that causes bend and strains on the internal conductors. Again, ICD will sell you a new cable. Unless you are darned good at soldering, don't try rolling your own; it's not much fun.

With any luck, your hardware will now be back to its normal self—you'll be able to turn on the hard disk, hear it spin up, hear the Adaptec reset and move the heads, and it's ready.

If all else fails, try taking your hard disk mechanism to a friend's drive and try to get your data off that way. Dan and I have done this successfully a few times.

## III. O.K., The Hard Disk is Waking Up

Well, that's a good sign. Now, we need to make sure the communications between it and the ST are in good shape.

Watch the hard disk's "busy" light carefully. At power-up, it may either turn on and stay on, or turn on and eventually go off when the Adaptec is done resetting the drive. This depends on the Adaptec and isn't really a symptom of illness. Now turn on your ST. If the hard disk's light is on, it should im-▶

mediately snap off as the ST says "Reset and Hello" through the hard disk interface. If that light does not snap off it's a sure sign of trouble. I don't know the details of some aftermarket interfaces; this applies only to what I've seen: ICD, Supra, Atari interfaces.

The floppy drive will turn on and try to read in the first sector (as described in agonizing detail in *Autobooting Your Hard Disk* in the May 1989 issue of *START*). If there's no disk in the drive, this will take around five seconds to finish; if there is a disk in the drive, it will take less than a second. Then the ST will try to read in the first sector of the hard disk. This will cause a *brief* flash of the hard disk drive's light. You can definitely see it, it's just mighty quick.

If this *doesn't* happen, then your ST is not commanding the hard disk to give it the first sector. Again, suspect the cable *first*.

The next thing to suspect is the Atari DMA chip. I've had this go bad on me several times. The symptoms are that if you boot from the hard disk, the system freezes; if you try to boot from floppy, the floppy window instantly pops up and shows "0 bytes in 0 sectors". It never shows any data on the floppy disk, regardless of what's there. If these symptoms appear, it's your DMA chip—count on it.

Almost all the time, you can cure this by simply reseating the DMA chip. Open up your ST (which can involve a soldering iron, so don't be surprised; the metal RF shield is sometimes tack-soldered down), find the DMA chip (it's usually in front of the Hard Disk port, so that the signal lines are as short as possible), pry it up from both sides a little at a time, so that you don't bend the pins to the side, and press it back down again. Of course, anti-static precautions are essential; if you don't know about this, get help from someone who does.

Reseating the chip fixes a lot of DMA

problems. What you're doing is scraping off a microscopically thin layer of oxide corrosion on the pins and on the socket. ST owners have been reseating chips for a long time (particularly the MMU and GLUE square chips); add the DMA chip to your bi-monthly reseating schedule.

Naturally, at this point you've cycled power to the hard disk, to make sure it's not getting "stuck" by the bogus commands sent during an ST power off. But watch for that light flashing; if it doesn't flash, something is wrong. If the cable or DMA chip fixes don't work, just carry your hard disk over to a friend's ST and try it; if it works, your ST is bad—take it to a dealer to get it fixed. If it still doesn't work, try troubleshooting it as above.

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## **Some hard disk problems can be very subtle or actually be multiple problems.**

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### **IV. Autoboot Problems**

Next, let's assume the light flashes and your hard disk tries to self-boot—you see the HD light flashing a few times. Nothing happens, or maybe you get a "Self Boot" message, then the ST dies or the screen gets filled with gibberish or you experience some other bizarre symptom.

You've probably got sick autoboot software: something has corrupted it.

If you're set for autoboot, you're going to have to beg and plead for the hard disk to let you boot up to the desktop enough just to fix it! If you've got a hard drive that can be turned on when the ST is running, and not crash the ST, then good! Turn on the ST, put in your hard disk utilities disk, and

when the Desktop appears, turn on the hard disk. Re-install the autoboot utility (delete any old autoboot files from the hard disk). That ought to do it.

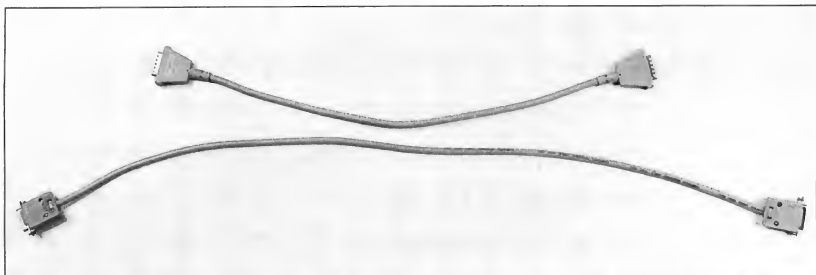
If your hard disk cannot be turned on when the ST is connected—that is, it crashes the ST—welcome to the club. So does mine. Use the program *Revive* in the Spring 1987 issue of *START* (and repeated in the May 1989 issue) to make a "bootable floppy disk" which will force the ST to ignore the hard disk at boot. Power up the hard disk, then when the ST boots from this floppy, put in your utilities disk, and re-install the autoboot. That ought to fix it; it did when my hard disk went bad.

*Revive* is one of those utilities you don't need often, but boy, when you need it, you *need* it. I keep a *Revive* disk in my hard disk toolkit at all times (along with the *Supra* utilities disk).

If your hard disk used to self-boot, but now boots from floppy, then something has corrupted the autoboot. There are lots of possibilities. The "auto boot" flag could have been shut off. The partition sector could have been damaged, which would disable the boot (the Atari would conclude it was not a "bootable sector"). The hard disk driver program on the hard disk (AHD1.SYS, SUPBOOT.PRG) might have gotten damaged. For instance, *Magic Sac's* MAGICHD program did this, when it tweaked a partition into Macintosh OS disk format. Just re-install the autoboot using the supplied software and the problem will correct itself.

You can do this by booting from floppy, then running the hard disk drive by hand. For instance, with the *Supra* software, you'd double-click on SUPBOOT.

Watch the hard disk at this point! You should see SUPBOOT poll the hard disk as it wakes up, looking for partitions. If nothing happens (no light flash), you've got a hardware problem. May I repeat? All together now: Distrust the ST/hard disk cable first!



**Figure 3.** On the top is the Atari hard drive cable. In order to minimize noise, the cable is kept to an convenient 19-inch length, as opposed to ICD's 31-inch cable (bottom). Because Atari's cable is so short, it almost guarantees kinks, and that means intermittent hard disk "failures."

After running SUPBOOT and seeing the light flash, your communications to the hard disk should be restored. Now re-install a hard disk icon (or use a command line shell) so that the ST can access the hard disk. (Note that when you boot from floppy, you're using the floppy's DESKTOP.INF file, so probably all of your hard disk icons are missing. You'll have to hand-install a icon to access the hard disk from the Desktop.)

Then, use SUPUTL to re-install the automatic boot software. You should be all set.

If you run SUPBOOT but still cannot access your hard disk, there are several possibilities:

1. Your SUPBOOT is bad. Remember, some Atari machines cannot detect all floppy disk errors. Programs really *can* go bad in this manner.
2. The ST cannot talk to the hard drive (no drive light flash) or the communication is corrupted (DMA chip needs reseating).
3. Your partition sector is bad; the data in it has been damaged, such as if the partition tables have been zeroed out by a program error.

If this last has happened, then you'll see the hard disk flash, SUPBOOT will run and exit normally, but you will still

not be allowed to talk to the hard disk. For instance, you'll double-click on the C icon, and get the "non-existent disk drive" message.

### V. Trouble In the Partition Sector

At this point, you have *serious* trouble with your partition sector. You'll have to restore it. If you took the time to write down all of its specs, as I recommend you do while the system is running okay, then you can use SUPEDIT and punch in the partition sector data. You'll then be able to retrieve the data from your hard disk—maybe only the partition sector is damaged!

If you're like most people and didn't write down the info and never used Meg-A-Minute Elite (in the November 1988 issue of START) to back up your partition sector, well, then, you can either reformat (and lose all your data), or try to restore the partition sector by hand. Yes, it's true! Meg-A-Minute Elite backs up what no other backup program does: the critical partition sector! It's a VERY good idea to use it at least once, just to get a backup of the partition sector; losing that one sector will shut off access to your hard disk.

It's not easy to restore a partition sector by hand. But try to remember exactly how many megabytes your partitions were. Mostly, everyone uses even numbers: 5 or 10 megabytes. If so, try

using these values for partition sizes:

- 1 megabyte = 2,000 sectors
- 2 megabytes = 4,000 sectors
- 5 megabytes = 10,000 sectors
- 10 megabytes = 20,000 sectors
- 15 megabytes = 30,000 sectors
- 16 megabytes = 32,000 sectors

Plug these values into the SUPEDIT partition edit utility, remembering to leave one-sector "slop" for fencepost error. I can hear the masses clamoring for an example, so here goes.

Let's assume I have a strange disk layout, of 1-meg, 5-meg, 10-meg, and 2-meg partitions in that order (C,D,E,F). My partition table needs to look like this when I'm done with SUPEDIT:

Starting Sector #	Length
1-2001	( 1 meg)
2002-10002	( 5 meg)
12003-20003	( 10 meg)
32004-40004	( 2 meg)

You can see what I mean about "fencepost error"; 2000 sectors takes us from sector 1 to sector 2001, so the next partition starts at sector 2002.

When done, tell SUPEDIT to write this out as your partition sector. It will question your sanity, but persist; you *know* what you're doing, right? When it's done, you won't be able to boot from ►

hard disk, but you will from floppy; run the SUPBOOT hard disk driver, install the icons, and test it out. Hopefully it will work. If not, you've got even more trouble.

The reason I'm stressing this so much is that it is *easy* for hard disk software to accidentally blow away the partition sector. The partition sector is sector 0, and 0 is a value often used in programs. If a program accidentally gets a 0 where it shouldn't (in the write sector number) and writes to the partition sector, then you've suddenly lost the ability to talk to all of the (still intact) data on your hard disk.

Anyway, that's how to restore your partition sector if it gets damaged. Either use Meg-A-Minute Elite at least once to backup your partition sector, or repair it by hand with SUPEDIT. I don't know another practical way to do it.

Once More For Emphasis: If your partition sector is damaged, the ST has forgotten where on your hard disk all

your "drives" (directories) are. This means *everything on your hard disk is inaccessible*. That's why I'm stressing backup or fix; I let it happen all the time. No other sector on the hard disk is this critical.

## It's easy for software to accidentally blow away the partition sector.

### VI. Does Your Data Appear Damaged?

Okay, let's say your hard disk walks, talks and boots, but *strange things happen* when you use it. For example, you

run a program and get TOS ERROR #35. This means The Operating System (TOS) tried to load the program, did so, and discovered the program wasn't a program; it was just random data, so TOS gave up.

This means you have data damage on your hard disk. *No physical damage* (well, not necessarily, although it could be; it usually isn't). This happens all the time. People make big bucks selling disk repair utilities. Or they write columns.

Atari's disk operating system has one particularly nasty bug, known popularly as the "40-folder limit". What happens is every time you access a folder (by opening it, or otherwise "touching" it), information about that folder is loaded into a memory table. Problem: the memory table's size is tiny. After you've touched around 40 folders, the table runs out of space, and the disk operating system goes berserk—writing sectors every which-where, resulting in lost clusters, cross-linked clusters and what-

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not. It's a nightmare.

To make this worse, folder "slots" are used up just by a drive being connected, by doing a "SHOW INFO" and other ways. It's mighty easy to run out of folder slots.

One common symptom of this is that when you open up a new directory box, and you get data or program files that belong somewhere else. Or you get the dreaded "0 files in 0 items" box, faking you into thinking everything has just been erased.

If this happens, reboot immediately; if you write anything to that hard disk, you're going to damage the directory structure. Your data is probably still out there, and still okay. Upon restarting, go immediately to the offending directory, and try again; if it works this time, take a deep breath—you were lucky.

If this happens from within a program, you may be doomed. Be very careful accessing many folders from within a program; you can run out of slots very

quickly that way.

Atari has released an "official" 40-folder bug fixer program, called FOLDRXXX, which is available from bulletin boards, user groups or the August 1989 issue of START. What you do is put this in your AUTO folder with the XXX replaced by how many folder slots you'd like to reserve. For instance, for 100 folders, name the program "FOLDRI00.PRG" in the AUTO folder (I use FOLDR800 on my system, because I have so many hard disks (six) attached to it; it's necessary.)

At boot-up, FOLDRXXX adds more memory to the dinky memory space, which just moves the problem into the future. Yes, eventually, you will still crash, but hopefully you'll have RESET or powered off the system before that point. Most people don't touch that many folders; most programmers are aware of the bug, and write their code not to. George Woodside's superb Turtle backup program, for instance, uses only

a few folder slots in spite of the fact that it touches everything on the hard disk.

Atari has rewritten GEMDOS, which is the true cause of this problem; by the time you read this, the new TOS 1.4 ROMs (which fix this problem, among others) should be available. Contact your Atari dealer for information.

If your directory has been really damaged—say, you get the "0 bytes in 0 items" message—or if folder names are trashed (look like Greek letters, commonly)—or if Show Info crashes or shows weird information—you have trouble. (Fair Warning: Once Show Info has been confused once, it takes a reboot to make it work again. If you do a Show Info on a bad partition, then on a good one, it'll show bad data on both.) You have big problems. What you need is a good disk fixer program; I don't know of any for the ST! This is most unfortunate.

At this point, you'd best have backed up your hard disk. If you've used Meg-

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## SMALL TOOLS

A-Minute Elite, for instance, it'll take you only 10 minutes to fix a 10-megabyte partition *completely*, directory structure, partition sector, and all. (Not bad, eh?) If you're using Turtle, you'll have to "zero" the partition with hard disk utilities (SUPUTL) to get a basic directory out there, then go re-create all your folders, then copy the Turtled disks back into them. Be sure to zero the partition; that makes sure the directory structure is new and clean.

The other backup schemes I've seen are too slow to mention; they are so slow you will end up not using them religiously, which is how backups need to be done.

Finally, be sure to run a program to check your disk's structure periodically. Michtron's TUNEUP! does this automatically. A few other disk testers are available. Essentially, they check that what the directory *thinks* the disk structure is, and what it really is are the same and let you fix the structure if there's a

problem.

TUNEUP! has one other very handy feature; it lets you pack all disk data towards the end of the disk. Briefly, whenever the Atari has to write to the disk, it looks for the first open disk sector (starting at 20 or wherever). If you

**I'm getting used to  
hard disks going  
bad; I've gotten sort  
of blasé about it.**

have five or 10 megabytes of data before the first open sector, the ST can take up to 30 seconds to find an open sector. This greatly slows any write operation, and if you're using lots of temporary files—as in, for example, an Alcyon C

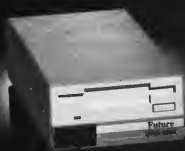
compile or in WordPerfect—then you're in big trouble.

Compressing the data to the end of the disk opens up the "fast" area of the hard disk for writing, so the ST doesn't have to search far for the first open sector. Things really zip along when you do this.

I don't recommend TUNEUP 100 percent, but I've used its data compaction many, many times. There's not much else like it on the market and it's very much worth having if you use your hard disk much.

Again, the best cure for data loss as the result of directory problems is a good backup schedule. It's much easier to pull data from a backup than it is to try to reconstruct it.

Generally, however, I find that people don't realize this until they've completely murdered a hard disk and have to rebuild it from scratch. The only positive thing I can say about that experience is that it tends to keep junk



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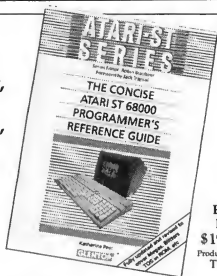
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from accumulating on your hard disk.

If you have a book on IBM or MS-DOS disk structure, you could read it for additional information about your ST's disk structure; they're compatible. Just find the first sector of a given partition via the partition table, and start tracing. You'll even find the ST "boot block" information to be fairly compatible with IBM boot blocks.

If your directory has been damaged, there's no easy way to tell what programs might have been hurt, especially if you have many folders. Your data may be lost for good or require many hours of painstaking tracing and an intimate knowledge of MS-DOS disk structure (both of which are time intensive) to fix. At that point—and we've all been there—the only reasonable alternatives are a reformat or if you have one, going back to your last backup.

### Conclusion

Atari disk hardware is pretty good. It's

much faster than, say, its IBM counterpart. It's a rare case of where more speed costs less.

In this series, I've tried to de-mystify hard disks by showing you how they look and work from both a software and hardware point of view. While I don't expect you to understand all of it the first time, because I'm sure to have forgotten things important to beginners, at least you have a place to start.

I've also tried to give you some of the debugging techniques Dan and I have used over the years, show you some of the common faults we've run into and tell you how to fix them. Believe me when I say that this knowledge was paid for with much blood and sweat. Many of these aren't written up anywhere else (the "0 bytes in 0 folders" = DMA chip problem, for instance) and are a simple fix... once you know what's wrong.

I wish you luck with your hard disk. May you never have to use the know-

ledge in this column the same way I had to—a deadline a few hours away, a completely dead system and the data possibly lost for good. But may you keep this issue nearby to refer to if it ever does happen. ■

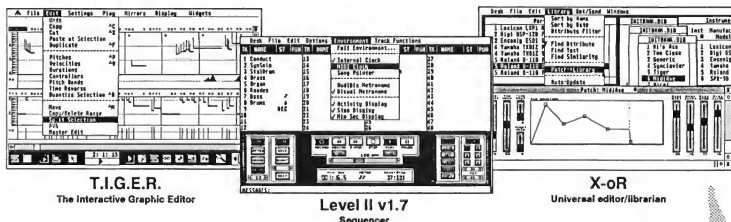
*David Small is the creator of Spectre 128, but has just given birth to a new "baby": Spectre GCR. David is a START Contributing Editor. Dan Moore is the creator of Paper Clip for the Atari 8-bit computers.*

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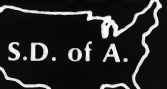
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## Entry Level Sequencers: The Second Generation

### Reviews of EZ-Track Plus, MIDI Recording Studio Version 1.1 and MIDIsoft Studio: Advanced Edition

BY JIM PIERSON-PERRY  
START MUSIC/MIDI EDITOR



**The main screen from EZ-Track Plus. The current file contains 13 different songs, each compressed to individual multi-channel tracks. The MIDI Thru features let you play along with the pre-recorded music.**

Sequencing programs are the meat and potatoes of the MIDI software industry. They come in all shapes and sizes, with dizzying arrays of features and individual interpretations of the ideal user interface. Recent issues of START Magazine have featured reviews of several professional-level sequencers.

This time, we are going back to the basics to look at three entry-level sequencers that cater to the hobbyist and home user. All were reviewed in Antic magazine when originally released, but they have since been upgraded substantially.

#### EZ-Track Plus

The first sequencer released for the ST was EZ-Track, which simulates a 20-track tape recorder. The program runs under GEM and is not copy-protected. All operations take place from a single working screen, using dialog boxes as appropriate. Virtually all commands can be executed via either the mouse or keyboard equivalents.

On the left side of the screen is the track information and control area. Each track can hold data from any number of MIDI channels. Either the original MIDI

channels will be used for playback or the track can be explicitly assigned to play on a single MIDI channel (alterable in real time). The display shows the track name, mute on/off, protection flag, MIDI activity indicator, assigned MIDI channel and amount of memory used. During playback, individual tracks can be turned on or off at will. For faster auditioning, an individual track can be soloed (with all others muted) or bowed out (with all but that track playing). Tracks are played from start to end with no looping.

Recording and playback are controlled by screen buttons simulating tape recorder controls for Forward, Rewind, Record, Play, Pause and Stop. These are located on the right side of the screen along with controls for tempo, tape counter, metronome on/off, internal/external sync, song transposition and memory use indicator. MIDI system commands can be sent on any or all channels to set omni/poly/mono mode, local on/off, all notes off and issue a tune request.

To record a track, you click on Record

and start playing; all unmuted tracks will play along so that you can overdub parts. After playing, pick a track to hold the MIDI data and click on Keep. (If you forget to click on Keep, your data will be overwritten by the next part you record.) Step-time input is also supported by manually advancing the counter and playing a note or controller. All MIDI data except sysex information can be recorded by EZ-Track Plus. Alternatively, incoming MIDI data can be filtered to ignore specific messages such as aftertouch (channel and polyphonic), controllers, pitchbend, etc., which helps to conserve memory. MIDI Thru lets you listen to your music while recording, either on the input channel or redirected to another. This is important when using a master keyboard to control slave synth units.

Editing features include time quantization (position or duration), mix and unmix (by channel number) tracks, velocity adjust by or to a set value, and pitch transposition. Transposition can be done at the song level where all tracks, except one for drums (optional), are shifted together. Event list editing is not supported. EZ-Track Plus uses an internal clock resolution of 96 ticks per beat. It can act as the master MIDI clock for your system or sync to an external MIDI clock, such as a drum machine.

The two major new features are support for regional editing operations and use of measure-oriented timing. Previously, editing operations were restricted to an entire track or song. Now, regions of a track can be defined by start and stop positions and edited without affecting the rest of the track. An extension of this is the new automated punch-in/out function to correct a flubbed part without redoing the entire track. A region also can be defined across multiple tracks, not necessarily contiguous, for cut-and-paste operations.

Elapsed time and positions within a song can be specified in terms of measures. This is much more in line with

## Entry Level Sequencers START Chart

	EZ-TRACK PLUS	MIDI RECORDING STUDIO (a)	MIDISOFT STUDIO ADVANCED EDITION
<b>GENERAL</b>			
Version	4/22/88	1.1	3.01
Price	\$65	\$39	\$149
Manufacturer	Hybrid Arts	Dr. T	Midisoft
Hardware Needed	Color/Mono All ST/Mega	Color/Mono All ST/Mega	Color/Mono All ST/Mega
GEM Support	Full	No	Full
Copy Protected	None	Heavily	None
Install On Hard Drive	Yes	Yes (Key Disk)	Yes
<b>DESIGN</b>			
#Tracks/Sequence	20	8	64
#MIDI Channels/Track	16	16	16
Track Name Length	16	8	8
Transport Controls	Start Stop Rew	Play Stop	Start Stop Rew
Record FF Pause	Record Pause	Record FF Pause	
MIDI Slow Option	No	Yes	No
<b>TIMING</b>			
Synch Modes	MIDI dock	MIDI dock	MIDI dock
Internal/External Synch	Both	Both	Both
Song Position Pointer	Send	Send	Send/Receive
Timing Resolution (PPQN)	96	24 (nominal)	96
Tempo Range (BPM)	0.5-380	10-999	30-480
Conductor Track	No	Yes	Yes
Audible/Visible Metronome	Both	Both	Audible
<b>RECORD/PLAY</b>			
Memory Use Indicator	Yes	No	Yes
MIDI Thru/Rechannel	Yes	Yes	Yes
Live Controller Filtering	AFT PB CC PC	AFT CC	AFT Sysx
	Note On/Off Channel Cmds		
Keyboard Cmd Equivalents	Yes	Yes	Yes
Play From Cue	Yes	Yes	Yes
Automated Punch In/Out	Yes	No	No
MIDI System Cmds	Channel, Clock	No	Channel, Clock
Looping	No	Yes	No
Track Mute/Solo	Both	Both	Both
Track Protect	Yes	No	Yes
Step-Time Recording	Yes	Yes	Yes
Real-Time Controls	Track status, Channel, Transp Tempo	Track status, Tempo	Track status, Channel, Vol, PC Tempo, Oct

## EDITING

Editable Parameters	Vel, Channel
Edit Region Locators	MBT, #Beats
Cut/Paste Region	Yes
Insert/Delete Region	Yes
Copy/Move/Merge Track	Yes
Unmerge Tracks	By Channel
Transpose Region	+/- 9 Oct
Smart Song Transpose	Yes
Smart Note Delete	Yes
Parameter Scaling	Vel (Limited)

Quantize Start/Duration	Either
Quantize Resolution	1/192 Note
Time Reverse	No
Time Shift Tracks	+/- 1/4 Note
File Edit Options	Delete, Format
Print MIDI Events	No

## EXTRAS

Integrated Scoring	EZ-Score +
Record Sysx Information	No
Support MIDI File Std	No
Use ST Sound Chip Voices	No

## MIDI RECORDING STUDIO (a)

All Events, Tempo, Sysx
MBT
Yes
Yes
Yes
By Pitch
+/- 5 Oct
No
Yes
Vel, Time, Channel

Both
1/64 Note
No
Yes
No
No
Yes

No
Yes
No
Yes

## MIDISOFT STUDIO ADVANCED EDITION

All Events, Tempo, Sysx
MBT
Yes
Yes
Yes
By Channel
+/- 5 Oct
No
Yes
Tempo, Vel

Either
64th Triplet
No
No
Delete, Format
Yes

EZ-Score +
Yes
Yes
No

## NOTE

(a) Timing parameters expressed relative to nominal 24 tics per beat. This spec can be changed which affects all timing values.

## ABBREVIATIONS

AFT	— Aftertouch
BPM	— Beats Per Minute
CC	— Controller
FF	— Fast Forward
MBT	— Measure, Beat, Tic Timing
Oct	— Octave(s)
PB	— Pitch Bend
PC	— Program Change
PPQN	— Pulse Per Quarter Note (Tics Per Beat)
Rew	— Rewind
Transp	— Transpose
Vel	— Velocity
Vol	— MIDI Volume (CC 7)

how musicians work than the previous scheme of counting the number of beats from the start of a song (still supported as an option). This MBT (measure, beat, tick) system is widely used among sequencer programs and locates position by measure count, beat within the measure and tick within the beat. To use it, you must set a time signature (meter) to define the number of beats per measure.

Other new abilities include track level transposition, time-shifting individual tracks by up to a quarter note to change the "feel factor," importing a track from one song to another and recording or playing from a cue point rather than starting from the beginning of a song. EZ-Track Plus comes with the GenPatch desk accessory, for sending sysx information to your MIDI equipment, and is compatible with HybriSwitch (not included). Songs files can be transcribed into sheet music via the Easy Score Plus program and are upwardly compatible with the MIDI Track series of professional-level sequencers.

The manual has been completely rewritten and expanded. It is now over 150 pages long, well written and chock full of illustrations, with an index and glossary. It's geared toward the practicing musician using a computer for the first time, and tends to gloss over a few MIDI aspects too quickly for novices. For example, there are detailed instructions on formatting and copying a disk while MIDI thru and input filters are barely mentioned.

## MIDI Recording Studio, Version 1.1

The MIDI Recording Studio (MRS) is at the opposite pole of user interfaces from EZ-Track Plus. It goes beyond simple tape recorder emulation, functioning more as a musical word processor. While using some GEM conventions, the program allows only the control panel accessory and a hard drive loader to be in memory. You must boot without other desk accessories or memory resident programs—standard fare for Dr. T prod- ▶

File Setup Track Region MIDI Transfer

LATINOEL.SMG

TRACK NUMBER	TRACK DESCRIPTION	TRACK MODE	MIDI CHAN	PRG CHG	VOL	OUT	SIZE
00 0							
1	Drums	PLAY	10	8	127	0	48
2	Slap Bass	PLAY	2	78	98	0	48
3	Marimba	PLAY	3	105	96	0	28
4	Pan Pipes	PLAY	4	78	101	0	28
5	Cymbal	PLAY	5	128	111	0	4
6		CLEAN	1	8	127	0	0
7		CLEAN	1	8	127	0	0
8	For Roland MT32	CLEAN	1	8	127	0	0
9		CLEAN	1	8	127	0	0
10	"Lullino El Ray"	CLEAN	1	8	127	0	0
11	Copyright 1988	CLEAN	1	8	127	0	0
12	Lorne Rossbach	CLEAN	1	8	127	0	0
00 0							

EDIT MARKS HEAD BEAT TICK  
SOURCE BEGIN HEAD BEAT TICK  
SOURCE END HEAD BEAT TICK  
DEFINITION HEAD BEAT TICK

HEAD BEAT TICK  
COUNT 201 41 0

TEMPO 120

PAUSE STOP REWIND FF PLAY RECORD

**Recording/playback screen from MIDISOFT Studio: Advanced Edition.** Note each track's real-time control for mode, MIDI channel, program change, volume and octave. A separate screen handles detailed event list editing.

tempo and metronome. Individual tracks can be muted or soloed during replay; those unmuted will play while you record additional parts. Your music is always saved. You must explicitly direct MRS to erase a bad take; otherwise, you advance to the next empty track for the retake. Song files are upwardly compatible with other sequencing and scoring programs from Dr. T.

Where MRS really shines is its powerful editing capabilities. It far surpasses a standard tape recorder emulator by giving you tools to operate on your music at any level from the entire song down to individual MIDI data bytes. The editing workscreen displays an event list of your music, as interpreted MIDI data, along with a menu of operations. Editing options range from changing entries directly in the event list (correct bad note or change its timing), to operations over a range of events such as compress or expand playing time and scale velocity data to produce smooth fade in/out

ucts. MRS is heavily copy-protected; it can be installed on a hard drive but you must have the original disk (key disk) in drive A during loading.

Two workscreens are used: one for record/playback and another for editing. The record/playback screen appears as an 8-track tape recorder with screen buttons for Record, Stop, Pause and Play controls. Locations within the song are specified by measure, relative to a user-

defined meter. You can start from the beginning of a song or a specified cue range. Tracks play from beginning to end, then loop. Track one acts as a conductor track, setting the overall length for all tracks. While recording, tracks are assigned sequentially—you cannot pick a particular track to record on.

Recording options include MIDI thru with rechannelization, filtering of aftertouch and/or controller data, adjustable

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effects. Step time recording is done by simply typing the appropriate notes or events into the event list. Playback can be triggered from the edit screen by clicking the right mouse button.

In addition to standard MIDI data, MRS also understands three special event types that handle tempo, rests and sysex data. These can be manipulated like other data, making it possible to program tempo changes or send sysex data to your instruments during a song. Regional editing is done by defining the start/stop points within a track, either by typing them or by dragging the mouse through the event list to highlight the region. Regional operations include cut/paste, copy and delete. Two delete options are allowed: cut out the region (shorten the track) or erase the region (maintain track length).

More specialized editing operations provide transposition or inversion about a center point for pitch, velocity and/or note duration. A region or track can be

reversed to play backwards and MIDI channels can be reassigned for sequential events to rotate through a channel range (hocketing). Tracks/regions can be merged or split out on the basis of pitch. Notes can be quantized with re-

---

## Sequencing programs are the meat and potatoes of the MIDI software industry.

---

spect to position and/or duration. The nominal internal clock resolution is 24 ticks per beat, but this can be varied over a wide range. MRS can act as the system MIDI clock or sync to an external clock source.

The major point of the revision is

that MRS now treats the three internal sound chip voices as if they were MIDI sources. Three default voicings are provided to simulate lead, bass and drum sounds. MRS is also compatible with the sound chip synthesizer program G.I.S.T., letting you create your own sounds for the internal voices. This opens up the sequencer program to users who do not even have a MIDI instrument — a great way to test the waters without spending a lot of money.

**MIDIsoft Studio: Advanced Edition**  
MIDIsoft Studio: Advanced Edition occupies a center place between the extremes of the previous two programs. It acts as a 64-track tape recorder for record/play actions while also supporting event list editing. The program runs under GEM and lets you access desk accessories. You can even segue to another GEM program (e.g. ST Writer) from within MIDIsoft Studio and return to the sequencer after quitting the application. ▶

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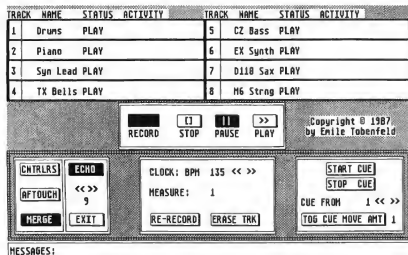
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The transport screen from Dr. T's MIDI Recording Studio. This handles recording/playback and MIDI Thru features. Event editing and track edit operations, such as velocity scaling or time reverse, are handled in a separate workscreen.

also can be muted or soloed during playback. You may save individual tracks as well as entire songs to data files. Song files can be scored using EZ-Score Plus and a future upgrade will provide support for the MIDI standard file format.

Tape transport buttons at the bottom of the screen trigger Pause, Stop, Record, Fast Forward/Rewind and Play actions. The standard measure/beat/tick system for defining track position is used for all operations, based on a user assigned meter. Tempo can be varied in real time from the screen control or edited into a special conductor track for automated changes during play. Tracks can be quantized automatically after recording, with respect to either position or duration. All MIDI data can be recorded, including sysex information. To save memory, incoming data can be screened to filter out aftertouch and/or sysex messages. Music can also be entered via step recording. Pitch, velocity (on and off) and program change data are recorded but

Sending in the registration card gets you an unprotected version of the program disk, installable on a hard drive. The manual is well-written with numerous illustrations and is easily understood by novice users. An auxiliary program is included which converts MIDIsoft Studio song files into the file format used by EZ-Track Plus and EZ-Score Plus.

The left side of the record/play screen holds track information. Up to 12 tracks

can be shown at a time with their name, status and length. Each can also be assigned a MIDI channel, program change, MIDI volume and octave transposition value that affect playback without altering the actual track MIDI data. These values can be changed in real-time while playing. A MIDI channel of 0 maintains the incoming channel assignments. A single track can contain information from any and all MIDI channels. Tracks

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not controller, sysex or MIDI system messages from step record mode.

Editing can be done at the track, region or event level. Basic track-level operations include erase, copy, move, combine and uncombine (with respect to MIDI channel). All events within a track can be reassigned to a single MIDI channel, regardless of their origin channel. Regional editing provides cut/paste, copy, erase, delete, transpose pitch and quantize. Note-on velocity can be altered over a region in several ways: set to a single value, scale by a linear ramp, scale by percentage of current value or add an offset to the current value. The event list itself can be edited for individual corrections, additions or deletions. The track can be played from the event list edit screen, with the list scrolling to follow playback if desired.

MIDIsoft Studio can send a variety of MIDI system commands to your equipment. These include Omni/Poly/mono mode settings, local on/off, all notes off,

tune request and song select. It can act as the system MIDI clock or sync to an external source and both send and receive MIDI song position pointer. Timing resolution is 96 ticks per beat. A very

breakdown on features for the three programs across a variety of criteria. The relative importance of each will depend on your needs and interests. Features are classified into categories for general setup, program design, timing, record/play operations, editing operations and extra goodies.

All three programs work well. I had no problems with any of them during extensive testing; the features worked as advertised and timing was steady. Looking at different sequencing applications, however, the programs can be better differentiated.

EZ-Track Plus is basically a software multitrack tape recorder—both a strength and a weakness. Most musicians should be comfortable with the program and find it easy to use. The wide number of EZ-Track song files on various BBS attests to its popularity. It carries the metaphor perhaps too far, however, offering little that cannot be done with a tape recorder. I was disappointed that no ▶

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## Where the MIDI Recording Studio really shines is its powerful editing capabilities.

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useful feature of MIDIsoft Studio for live performance is that you can load a new song file while another is playing.

### Summary

The accompanying START Chart gives a

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-Ralph Mariano, ST Report



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## REVIEW ENTRY LEVEL SEQUENCERS

form of event editing was provided, a hereditary weakness of Hybrid Arts in my opinion, or provision for simple musical effects such as fade in/out and programmed tempo changes.

Dr. T's MIDI Recording Studio is by far the most powerful of the three in terms of musical processing abilities. It is well suited for those interested in exploring musical ideas that go beyond linear recording. Tools are provided for tinkering with the MIDI data at various structure levels; ideal for musical "what if?" sessions. On the other hand, those looking just to lay down and manipulate multiple parts may quickly become frustrated by its 8-track limit. The ability to use MRS solely with the internal sound chip is a great means of introducing sequencers and MIDI to potential users leery of outright buying a synthesizer.

MIDIsoft Studio: Advanced Version may turn out to be the sleeper of the bunch. The original program was a good workhorse and never received the rec-

ognition it deserved. This upgraded version is even more attractive and fits comfortably in the middle ground between the other two programs. It is strong

## EZ-Track Plus' two major new features are support for regional editing operations and use of measure-oriented timing.

on tape recorder fundamentals but with sufficient editing power to move beyond those limitations. The ability to load

one song while playing another makes it a strong contender for the favorite of performing musicians. ■

**START Music/MIDI Editor Jim Pierson-Perry is a research chemist and semi-professional musician living in Elkton, Maryland.**

## PRODUCTS MENTIONED

**MIDI Recording Studio version 1.1, \$39.** Dr. T's Music Software, 220 Boylston Street, Suite 306, Chestnut Hill, MA 02167, (617) 244-6954.  
CIRCLE 153 ON READER SERVICE CARD

**EZ-Score Plus, \$149.95; EZ-Track Plus, \$65; HybriSwitch, \$29.95.** Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064, (213) 826-3777.  
CIRCLE 186 ON READER SERVICE CARD

**MIDIsoft Studio: Advanced Edition, \$149.** MIDIsoft Corp., P.O. Box 1000, Bellevue, WA 98009, (206) 827-0750.  
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UNIT PICTURED INCLUDES SOME OPTIONS

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The Discovery Cartridge does not bog down the execution of Mac programs, like the Translator does. In just about 3 minutes, the Discovery Cartridge converts an entire disk side from Macintosh format to Magic, Spectre, or Aladin format. This includes read, format, write, and verify. Once the Macintosh disk is converted, the Discovery Cartridge does not have to be present for your ST to access the converted disk.

You can even use your Discovery Cartridge directly with the Spectre, and run Macintosh programs directly from Macintosh formatted disks. The Spectre 128 is required, which is not sold by Happy Computers. It also can access data and files from Macintosh format disks, without the need for any emulator.

No special Macintosh drive is needed. The power of the Discovery Cartridge's HART chip allows Atari ST drives to directly read the variable speed Macintosh disks, without any need to vary the drive speed. Either MFS or HFS, single or double sided disks can be converted. A double sided drive is needed to access double sided Macintosh disks.

### OPTIONS

Option package #2 adds a battery backed up clock, ROM / EPROM sockets with a program select switch, plus the circuitry and connector needed to support direct access of a 3rd and 4th floppy drive. Other option configurations are available, including a second cartridge port. A technically inclined user can install their own options. Complete documentation is included with each unit. The standard unit which has no options, can perform all disk backup and Mac disk conversion.

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# Disk Instructions

## How to Get Our Programs Up and Running

Each article in this issue with a disk icon next to its title on the Table of Contents or "On Disk" on its first page has an accompanying file on your START disk. These files are *archive* files—they've been *compressed* with the Archive Utilities Set, or ARC, a public domain program available for many personal computers. We use the ARC utility to squeeze the many files that may go with a particular article into *one* compressed file, which may be only 40 percent the total size of the original files.

In addition to the archive files, you'll find the program ARCX.TTP, which stands for ARChive eXtract, on your START disk. You'll use this program to *decompress*, or *extract*, the disk files we've shrunk down with ARC.

All programs on your START disk are copyrighted. They are for your own private use, and are not public domain.

### Getting Started

To use the files and programs on your START disk, please follow these simple instructions. You'll need two blank, formatted single- or double-sided disks to properly extract the files.

Your START disk is not copy-protected and you should make a copy of it *immediately* to the first blank disk. Make sure the write-protect window is *open* on the START disk at all times to insure that you don't accidentally erase the disk.

*Note: If you are unsure how to format a disk, copy a disk or copy individual files, please refer to your original Atari ST or Mega manual and study these procedures carefully before going on.*

After you've copied your original START disk, store it in a safe place and label the copy disk "START Backup."

Now, put your START Backup disk in Drive A of your computer and double-click on the Drive A icon to see the disk's contents.

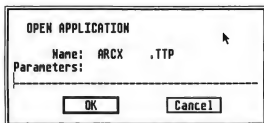
### Un-ARCing the Files

To use START's compressed disk files, please follow these steps:

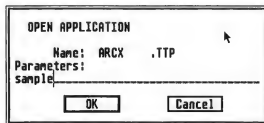
1. Copy the ARCEd file you wish to use and the program ARCX.TTP from

your START Backup disk onto your second blank formatted disk. When you're finished, label it *Un-ARC disk*.

2. Now you'll extract the compressed files from the ARC file you just copied. Insert your Un-ARC disk into Drive A. If the Drive A window is already open on the Desktop, you can press the Escape key to see the new disk directory. Otherwise, double-click on the Drive A icon to see the directory. Double-click on ARCX.TTP. The following dialog box will appear:



3. Type in the name of the ARC file you just copied over to your Un-ARC disk and press Return. You do not have to type in the extender .ARC. You can type in the name in upper or lower case.



(Note: If ARCX.TTP can't find a file, it may be because you have misspelled

the name of the ARC file. You must type the filename *exactly* as it appears in the directory.)

4. As the program runs, it will display the names of the individual files as it extracts them, similar to the example below.

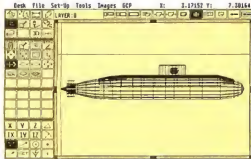
```
Archive: SAMPLE.ARC
Extracting file:EXAMPLE.PRG
Extracting file:FILE.TXT
Extracting file:SAMPLE.PIC
Extracting file:README
```

When ARC has successfully extracted all the files, it will return to the Desktop and you will see the original files within the directory window, along with the archive file and the ARCX.TTP program. You may now use any of the START files as you wish; just follow the instructions in the appropriate article in this issue.

To use any other archive files on your START disk, simply repeat the above procedures. Be sure you begin each time with a blank, formatted disk.

In addition to the runnable programs, some ARC files may also contain source code listings or an ASCII text file (called BREAKDWN.TXT, for example) which describes the program's structure. You can examine such a file from the ST Desktop by double-clicking on its icon and then clicking on Show (to see it on the monitor) or Print (to print it out). ■

# Disk Contents



**The Best of Two Worlds** . . . . .page 18



**Schedule Maker** . . . . .page 30



**ST Softguide** . . . . .page 69



**Boingo** . . . . .page 88

**T**his issue's lead program, *Schedule Maker* by James Robinson, will help you keep track of your scheduled appointments. *Schedule Maker's* flexible reporting features let you send your schedule to the screen, a printer or an ASCII file on disk. Multiple windows can display reports or monthly calendars. *Schedule Maker's* tickler feature lets you know—ahead of time—when those important meetings are coming up. File *SCHEDULE.ARC* and *SCHEDULE.DAT.ARC*; runs in medium or high resolution.

This month's *START* disk contains an invaluable reference for all ST owners. *Softguide*, by Dain Lees and Fred MacGregor, is a database containing information on every commercial ST program on the market. Browse through *Softguide* by categories and subcategories or search for a product by company or program name. File *SOFTGUID.ARC*; runs in medium or high resolution.

We've been getting requests for a C Programming column for some time, and this issue *START* is pleased to kick it off with Sam Streeper's desk accessory *header files*. Read programming in C to learn how to write programs that can function as either desk accessories or programs—simply by changing their name. File *CINIT.ARC*; runs in any resolution.

This month's game is *Boingo*, by Frank Cohen of Regent Base fame. This Q-Bert-like game will keep you and your family entertained for hours. Files *BOINGO.ARC* and *BOINGO.SRC.ARC*; runs in medium or low resolution.

Enter the "best of both worlds" with the *CAD 3D to DynaCADD converter*, brought to you by *START* in cooperation with *ISD*. Create great 3D objects with *Antic's Cyber* software and then use this utility to convert them to *DynaCADD* objects for professional finishing. File *CADDYNA.ARC*; runs in any resolution. This program may be freely distributed.

Got a novel idea? Use *Michael Perry's WordPerfect novel macros* to get your great American novel on paper—*WordPerfectly!* File *NOVEL.ARC*; requires *WordPerfect*.

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The goal of Computers and You is to make a difference through technology. And it's working. By the end of the first quarter, students had already found jobs. For some, their first ever. And it doesn't stop with the Tenderloin. Our vision is to fully develop the San Francisco center and then recreate it in cities across the U.S.

A donation of equipment, time and especially money from you or your company can help make this vision a reality. To find out how, call us at (415) 922-7593. Computers and You, 330 Ellis St., 6th Fl., San Francisco, CA 94102.



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# ST Softguide

## START's Guide to ST Software

BY DAIN LEES AND FRED MACGREGOR

*If you're like most ST owners, you're always on the lookout for that one program that does exactly what you want it to do. Let START's ST Softguide put you on the right track. It's a self-contained GEM database of all available ST software and runs in both monochrome and color.*

*A list of all the software you've been looking for can be found in the file SOFTGUID.ARC on your START disk!*

When the ST first came out, there were only a few programs available and choosing a program was easy—the list would fit on a single page. Now, four years later, the software available for the ST numbers in the hundreds. It's no longer an easy task to sort through all of the available offerings for the one you want. Until START's ST Softguide, that is.

ST Softguide is a self-contained GEM database of all available ST software. It's easy to use with a mouse or from the keyboard and has search and print features as well. It's on your START disk in the file SOFTGUID.ARC. Copy SOFT-

GUID.ARC onto a blank, formatted disk and then follow the Disk Instructions elsewhere in this issue. Then simply run SOFTGUID.PRG on either a monochrome or color system. Because ST Softguide is a large program, we recommend that you deactivate any desk ac-

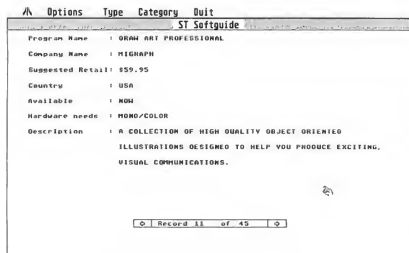
cessories before using it on a 520ST.

### Using ST Softguide

When you first run ST Softguide, you'll see the credits. Click on the Continue button and you'll be taken to the first listing in the database, ISD Marketing's ST Accounts 2.0, as shown in the illustration.

All of the software in the database is sorted by Type and Category within the Type. For example, the Type "Business" includes Categories of Business Manager, Data Base, Desktop Publisher, Spreadsheet and Word Processing. To select a particular Type and Category, use your mouse to drop down the Type menu, then click on the Type you want. A check mark will appear beside your selection. Then drop down the Category menu and select which category you want in the same manner.

The display for each database listing is easy to understand. We've tried to ▶



**A typical ST Softguide screen. It gives basic information to help you track down the programs and hardware you want, while still being compact enough to run in a 520ST.**

make sure that all listings are accurate and up-to-date as of the time of preparation of the database. For this particular version, the listing is accurate as of July 1, 1989, just before START goes to press. Some notes, however: *Suggested Retail* is the latest suggested retail price, but it may have changed since we compiled the listing; *Hardware Needed* indicates the minimum system configuration needed and *Description* gives a brief description of the software.

At the bottom of the screen you will find two arrow boxes. By clicking on the right arrow the program will search for the next record in the Category. By clicking on the left arrow the program will search backwards in the Category for the previous record.

### Other Options

The Search function lets you search for either a specific Program Name or Company Name. It's not case-sensitive and,

although you can't use wildcards, it will search on any portion of a Program Name or Company Name. It can be activated either from the Options menu or by holding down [Control] and pressing [S] key. To choose the type of search you want to do just click on the appropriate box, then enter any characters, words or phrases you want to find.

The "Search Next" function lets you repeat the search to identify additional programs which match the criteria you specified in the previous search. The Search Next function can be activated either from the Options menu or by pressing [Control]-[N].

The Print function lets you print the record currently on the screen. It can be activated from the Options menu or by pressing [Control]-[P].

To exit the program, you can either select Quit from the Quit menu or press [Control]-[Q] and then click on OK to confirm your choice.

### Types and Categories

The Type Business includes five Categories:

Business Manager includes those programs designed to run businesses or to keep track of business assets (i.e., money, inventory, time and people). Data Base includes databases and other related files. Desktop Publisher includes desktop publishing programs and related files such as fonts and clip art. Spreadsheet includes spreadsheets and related files, such as graph makers and templates. Word Processing lists available word processors.

Communication includes available telecommunication terminal and BBS programs.

Education includes children's learning and teaching programs.

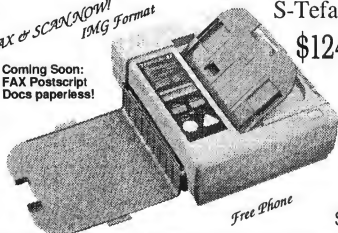
Entertainment is the largest single Type. It includes four Categories: Adventure Games (both graphic text adventures and walking adventures), Arcade Games

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299.95	Archipelagos	28.95	30 MegHD	\$629	
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WordUp	55.95	Robocop	35.00	\$799	
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Degas Elite	41.95	Running Man	37.50	Touch-Up&	
TouchUp	139.95	Heroes of Lance	29.95	Scanner \$375	
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Superbase Pers.	55.85	Hewson Pack	45.00	\$99FlashCable	
EZ Grade	27.95			duets at discount. Just call. 2400Modem	
Necdesk 2.04	34.95			WE'VE GOT IT! Music, too!	\$129.95

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(fast-moving games usually controlled by a joystick or mouse). Board Games (conversions of popular board games, such as chess, and strategic games, such as war simulations), and Sports Games (existing sports games, such as golf or football, and some futuristic adaptations of current games).

The Type *Graphic* has two Categories, CAD and Paint. CAD includes Computer Assisted Drawing (CAD) programs for architects, engineers and related fields. Paint includes programs with which you can draw or paint your own pictures.

*Home Productivity* includes programs to automate your home finances, use cookbooks or select the right wine for your dinner party.

*Miscellaneous* is a catch-all Type that includes the Categories of Utility and Equipment. Utility includes programs and accessories to make using your computer easier and more fun. Equipment includes add-on equipment to enhance your computer use.

*Music* includes MIDI programs that let you play or compose music.

*Programming* includes programming languages (Language) and programs to enhance your programming abilities (Utility).

## Updates Planned

We hope you find *ST Softguide* useful. We plan to update the listing every three months for inclusion on the *START* disks for the January, April and July 1990 issues of *START Magazine*.

*START* has made every effort to present an accurate and comprehensive list of available *ST* software in the *Softguide*. However, if you have any corrections, additions or other information that bear on the accuracy of our guide, please send them to *START Softguide*, *START Magazine*, 544 Second Street, San Francisco, CA 94107. We want to keep this database current, so please also be sure to let us know of any new products! ■ *The ST Softguide is Dain Lees and Fred MacGregor's first program for START.*

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# Clipboard

## Tips and Tricks for the ST Owner

By Heidi Brumbaugh  
START Programs Editor

### GOTO Where the Whimsy Takes You

GFA BASIC's procedures encourage programmers to use structured programming to solve problems. GFA BASIC's ON GOSUB command and the new SELECT CASE syntax in version 3.0 render the GOTO statement practically a dinosaur. However, GFA goes so far as to *prevent* you from using GOTO inside FOR NEXT loops, procedures and (in 3.0) functions. The following program:

```
FOR i=1 TO 10
  IF i=5
    GOTO getout
  ENDIF
NEXT i
getout:
PRINT "Out of the loop; i is"i
```

will generate an error message because of the GOTO statement inside the FOR NEXT loop. There is a way around this limitation, however. Although you cannot GOTO out of a procedure, you can RESUME out of an error-trapping routine, and since you can generate an error using the ERROR command you can effectively use RESUME to go anywhere in a program:

```
ON ERROR GOSUB goto_getout
FOR i=1 TO 10
  IF i=5
    ERROR 100
  ENDIF
NEXT i
getout:
PRINT "Out of the loop; i is"i
END
```

```
PROCEDURE goto_getout
  IF ERR=100
    RESUME getout
  ENDIF
RETURN
```

This program will jump out of the FOR NEXT loop when the error is encountered (I used error 100 because it wouldn't occur naturally in a program). The program will continue at the label getout and print the value of i, which will be 5.

This trick will work from inside procedures or functions. You can even RESUME to a label inside a different procedure; however, doing this may generate an error or have unexpected results.

### Help to Escape

If you are using a GEM version of ST Writer pressing [Esc] doesn't always bring you back to the GEM menu bar. This happens frequently in the newest version (published in the April 1989 issue of START) and is caused by the mouse being on the top line of the ST Writer screen—regardless of whether the mouse pointer is visible. Simply move the mouse down a little to return to the menu.

### Pixel Ruler

Ever needed precise pixel measurements to incorporate images from a picture into your program? Frank Cohen, author of Boingo in this issue, solved this problem by creating a ruler which measures off pixels. This ruler is included in one of his data files for Boingo; to use it yourself simply load the file BOINKMEN.PCI (from BOINGO.ARC) into a paint

program. Draw over the Boingo character images and save the picture out under a different name (for example, RULER.PCI). Be sure not to alter the original BOINKMEN.PCI file from your game disk or Boingo will not play properly.

### ARC on IBM

The Archives Utilities Set (ARC) is a standard not just in the ST world but for most microcomputers. Thus if you have an IBM PC or compatible you can download ST programs from your favorite online service, un-ARC them right away on your PC and then loan them directly to your ST since it can read an MS-DOS-formatted disks directly. (Of course, you can still only run ST programs on an ST.)

### Bouncing Along

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*Got an ST trick or tip to share? We're interested in tips for the rank beginner or expert programmer, for exploring the Desktop or for getting the most out of any popular ST program. Send your tips to the Clipboard, START Magazine, 544 Second Street, San Francisco, CA 94107. ■*

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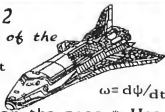
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# TO PRODUCE A MIGHTY BOOK...

## Writing Novels with WordPerfect

BY MICHAEL PERRY



***Writing a novel can be a rewarding and fulfilling experience. Getting it published is an entirely different matter. START can't turn you into a Hemingway, but we can help. Michael Perry, author of numerous books and magazine articles, has cooked up some handy WordPerfect macros to make your next literary submission look professional—and saleable!***

---

*WordPerfect macros for the budding novelist in the file NOVEL.ARC on your START disk.*

---

**T**he End."

After typing those gratifying words into your ST, you finish a year of labor on what could become the next bestseller and ship it off to several publishing companies. And thanks to WordPerfect's macro

ability, you know that in addition to being brilliantly written, the manuscript will be impeccably printed and formatted.

But why should a writer bother with figuring out the correct margins, headers, page numbering and so on? Won't the best writing stand on its own, even if it's

scratched on grocery bags with a charred stick? The purists in the writing business always point out that Hemingway never used a word processor. However, according to an authoritative and helpful reference work, *The Writer's Digest Guide to Manuscript Formats* (Dian Dincin



Buchman & Seli Groves, *Writer's Digest* Books, 1987): "If your work is properly presented, it will have a greater chance for acceptance or publication." Knowing and following the proper manuscript format, your Great American Novel can look just like the manuscripts submitted by such literary giants as James Michener and Thomas Pynchon (or Stephen King and Jude Deveraux, for that matter). This is where WordPerfect can help.

In my experience, WordPerfect is an excellent word processor for writing books. It's flexible, it has a good spelling checker, indexing and table of contents and it has macros to do the routine word-processing tasks while I'm working. Using WordPerfect lets me concentrate on the writing—I use very little energy worrying about the "mechanical" problems.

### The Road to Literary Success

There are three basic steps to writing a book:

1. Write each chapter (not necessarily in order). Print a hard copy for proofing as you go along.
2. Create a table of contents, cover page and other elements of the book that can't be written until the bulk of the writing is completed.
3. Prepare the manuscript for final submission, either in hard copy or electronically.

The WordPerfect macro and "dummy" files on this month's START disk are designed to get you through each step much more easily, and let you concentrate on producing priceless prose. Following is a list of those files:

CHAPTER.MAC: Automatically formats chapters.

SELFCOVER.WP: A cover page for writers without agents.

AGNTCOVER.WP: A cover page for writers with agents.

FOREWORD.WP: A "dummy file" for the front and end matter (foreword, acknowledgment, dedication, etc.)

To use the macros, un-ARC the file NOVEL.ARC following the Disk Instructions elsewhere in this issue. Then place them in your WordPerfect default directory.

### Using the Macro

With the WordPerfect macro, writing the body of your book can be an enjoyable and easy experience. After you boot up WordPerfect, change your default directory to the one containing the book macro by pressing (F5), clicking on "7. Change Dir" and typing in the name of the directory. This is where your work will be stored. The file list should now contain all the macros.

Next, invoke the "new chapter" macro by pressing [Alternate]-[F10], and typing "CHAPTER.MAC" into the box. This macro leaves you on a page with the words "Title of Book/Your Name." Simply replace the "dummy" text with your own, press (F7) and then (Enter). With very little effort, you've just set your margins to 1½ inches (it looks wide, but publishers like it), put in the correct page length, added a running header with page number, set your tabs, taken off right justification (ragged-right is preferred) and set your spacing to double-spaced. Less than 30 seconds after you've started, you can be creative.

If you already have some unformatted prose kicking around in the computer, this macro will make them "submission ready." After deleting the existing formatting information in a file (use [Alternate]-[F3] to reveal codes, then backspace or delete as necessary), move your cursor to the top of an existing file, and invoke the macro as described above. ▶



### A Little Advice

Save each chapter in a separate file, and back them up regularly. Spell-check as you go along, because if you wait until the whole book is assembled in memory, the spelling checker may crash (as it does occasionally on longer files). Several months later, assuming you write regularly, you should be wrapping up the last chapter of your book and be ready to format your masterpiece for

submission. Simply open a new file and save it under a file name different from any on your directory (I suggest "FINAL.WP"). Retrieve the first chapter, then move to the bottom of the file. Add a hard page return (Control-Return), then retrieve the next chapter. Repeat this procedure until you have the whole book in one file.

The macro will make page numbering sequential, starting with 1. Even if you wish to add a foreword, table of

## Preparing a Manuscript for Electronic Submission

by Michael Perry

More and more publishing companies have realized the futility of retyping hundreds of pages of a manuscript, when an author could just as easily send in a disk. If your publisher can read a WordPerfect file, you can submit a disk that is generated from your program, since all WordPerfect formats are supposed to be compatible.

For electronic submissions, check with the publisher about what kind of disk they want and what kind of file they can read. Almost everyone can read a 5¼-inch disk, as the ST format (using a 5¼-inch drive such as an IB drive) is IBM-compatible. If the publisher requests a 3½-inch disk, use a double-sided disk only, and format the disk on an IBM machine (or use an ST format program that produces an IBM boot sector, such as DC Format from Double-Click Software). An ST can always read a 720K 3½-inch disk formatted on a PC, but not necessarily the other way around.

Once you get over the disk-compatibility hump, there's still the question of file compatibility. Simply alert the publisher that your file was created in WordPerfect on the ST, because when they bring the file up into what will probably be IBM WordPerfect, it may give them the "Not a WordPerfect File" warning. If the publisher uses Macintosh WP, the only way they can receive your file is over the modem, since Mac and Atari disks are incompatible.

If your publisher requests an ASCII file, you can create one from WordPerfect by saving the file using Control-IF5, and clicking on 2. Save Text File. Always send a hard copy with any electronic submission (if you send something via modem, follow up with a confirmation copy), because ASCII files will not have underlining and may lose other formatting commands, depending on what becomes of the file.

No matter how you choose to submit your work, always spell-check it thoroughly. You paid for a top-of-the-line word processor, but it does no good if you don't take advantage of all its features. ■

Title of Your Book/Your Name

PREFACE/FOREWORD/ACKNOWLEDGMENT ETC.

This is where you put your "front matter." The first line should be indented. There is no page number. Date and city are single spaced.

Month, Year  
City

Your Name

contents, acknowledgment, etc., this is the correct page number. The first page of prose is always page 1; the elements which come before have no page numbers. Numbering is continuous throughout the book; each chapter will not have a new page 1.

When you're ready to print your masterpiece, use good bond paper and the best printer available—given a choice of two unsolicited manuscripts, an editor will read the one that's easier on the eyes first. If you use perforated paper, separate the pages.

After printing the bulk of the book, you can assemble a table of contents, index, etc. by following the excellent tutorial in the WordPerfect manual. The table of contents should be Flush Right with Leaders (Style 5), with one or two levels (depending on whether you have subchapters). Indexing style depends on what type of book you're writing, and all the WordPerfect indexes are acceptable.

The foreword, dedication, etc. go on separate pages at the front of the manuscript. Using the dummy file "FOREWORDWP" for this front matter, replace the information in this file with your particular information, and remember that front matter has no page numbering. For the cover page, use "SELFCOVERWP" if you don't have an agent, "AGNTCOVER

about 22,000 words

For "front matter," use the macro called **FOREWORD.WP**. This format is used for whatever foreword, preface, dedication, etc. you plan to include in your book.

Title of Your Book  
by  
Your Name

Agent's Name  
Agency  
Address  
City, State, Zip  
Agent's Phone

The page on the left shows what the title page of your book should look like if you have an agent (use the macro called **AGNTCOVR.WP**) and the page on the right shows what it should look like if you don't (**SELFCOVR.WP**).

Author's Name  
Address  
City, State, ZIP  
Phone

about 22,000 words

Title of Your Book  
by  
Your Name

WP" if you do, replacing the information accordingly.

#### And It's Ready to Go

Assemble your completed manuscript, make a copy for yourself and send the original to the publisher. Manuscripts are generally mailed first-class, in typing-paper boxes. If you don't have a typing-paper box, the shop that makes your

copies for you probably will.

Good luck with your book. If the prose is as good as the formatting, it'll be a hit. ■

*Michael Perry is the head of CU Productions in Hollywood. His latest book project is The Groom's Survival Manual (Pocket Books), "a witty and informa-*

*tional tome to aid men who are about to get married."*

#### PRODUCTS MENTIONED

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## Computer Guide to the Solar System

BY TOM BYRON, START ASSOCIATE EDITOR

In an impressive new educational program, WinterTech effectively presents the enormity of the universe within the confines of a personal computer. More than just an encyclopedia article, the Computer Guide to the Solar System is an "interactive space atlas" that presents Earth's home in a comprehensive and colorful software package.

The lack of an effective and detailed tutorial of the solar system in the educational market inspired Gary Winter, president of WinterTech, to write the Guide. The program was written in GFA BASIC 2.0 and makes full use of the ST's GEM interface and graphics abilities. Though WinterTech doesn't state the program's in-

WinterTech recommends that it be run on 1040ST or Mega, though there is a 512K version available. Much like the solar system it presents, the Guide is very large and therefore eats up a lot of computer memory. On a 1/2-meg machine, disk access is slow, but you can install the Guide on a hard disk to speed things up.

### The Manual

How do you write instructions for a program whose interface is already so intuitive and easy to use? WinterTech's solution was to spend less time on how the Guide actually works and more time on why the program was developed and how to make backups of the Guide. It's very helpful

the Guide is too good a program to be thoughtlessly tossed around from one pirate BBS to the next.

### Program Basics

WinterTech has packed its Guide with loads of features and information. Just one look at the drop-down menu headings in the main screen will convince you of the program's thoroughness.

The menu headings are Intro, Sun, Earth, Moon, Planets, General and Quit. Under each heading are various topics of discussion, such as a planet's structure, its size and mass and its orbit around the Sun. Under General, you can explore the mysteries of such topics as gravity and motion.

There's really no set order to the Guide, no structure to follow. Teachers will find this lack of structure to their advantage. It lets them set their own curriculum within the program. To the home user, this means that you can start anywhere you wish.

Your galactic adventure begins from a first-person perspective, zooming toward the Earth's solar system. Once the main menu appears, you'll have access to the many worlds the Guide has to offer.

### A Quick Look

Let's begin our tour on familiar ground. At the main menu screen, move your space-

---

## The Computer Guide to the Solar System is an "interactive space atlas."

---

tended audience, fourth-graders and up will find the Guide easy to use and understand.

### System Requirements and Getting Started

WinterTech's Guide runs in medium resolution only, so a color monitor is required.

and written in a concise and straightforward manner. However, it does not include a biography or list of research material for further reading.

WinterTech urges you to read the licensing agreement on the last page of the manual. Basically, it says "Do not pirate this software!" Please heed this message—

ship cursor to the heading labeled EARTH. Under that heading, click on Structure. Here begins an in-depth look at our home planet's insides.

Be prepared to do a lot of reading throughout your journey, because most of the screens are filled with text. It's all very well written so be sure to read everything, particularly the highlighted sections that contain special instructions.

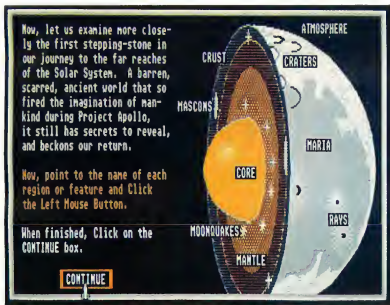
Each tutorial tends to be long, so if you want to check out another part of the Guide you just click the right mouse button to return to the main menu screen.

For this review I did explore the whole program. But even if I weren't writing this,

gravity. It is here that you can calculate the relative weight of objects on different planets and moons. You do this via the scroll bar at the bottom of the screen. It's features like this that make the Guide educational and fun.

### Some Conclusions

According to Gary Winter, the response to the Guide has been positive enough to prompt plans for other educational products based on the same idea. This is encouraging because this kind of program is precisely what the educational market needs. Imagine a whole series of programs that present in-depth studies of history,



After a few minutes with WinterTech's Computer Guide to the Solar System you'll probably want be an astronomer. This "Interactive space atlas" is concise and well structured and is an effective teaching aid in both the home and the classroom.

I'd probably go the distance—I really enjoyed myself. I'm hardly an authority on astronomy, but with the Guide I think I've made a significant step in that direction.

The Guide would be a failure if it didn't allow for some interaction from the user. The ST is an excellent vehicle for effective use of animation, and this fact is not lost to WinterTech. In one part of the program, for example, you see a feather and a penny fall to the ground. If you wish to see how they would fall in a vacuum, you click on the appropriate dialog box. You'll see the air "pumped out" of the screen and the objects dropped again.

One of the most intriguing features of the Guide can be found in the section on

geography, mathematics—the list is endless. It's also encouraging that Winter chose the ST as a vehicle for the Guide.

The Computer Guide to the Solar System is an impressive product—easy to use, fun and educational. It's rare for me to walk away from a program and feel like I've learned something. With WinterTech's Guide I really *have* learned something. ■

### PRODUCTS MENTIONED

**The Computer Guide to the Solar System**, \$44.95.  
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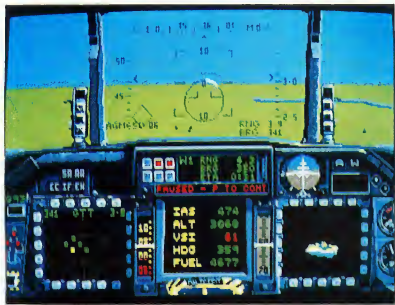
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For The  
Fun Of It

# High-Tech Jets and Ditzy Dinosaurs

In the April 1989 issue of START, veteran Marine Corps pilot Wolf Griffey took a fascinating and experienced look at Spectrum HoloByte's famous F-16 flight simulator. This issue, he checks out a new F-16 simulator from Britain to see how it stacks up. But if you think all this military talk is too grim, we've included a review of Taito's Bubble Bobble by START's own Marta Deike.

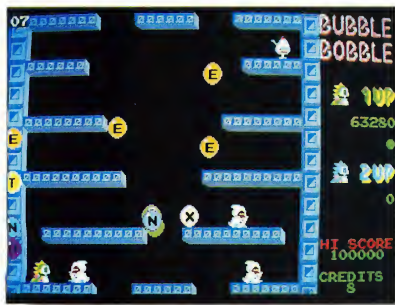


**With a new arsenal and advanced design, Digital Integration's F-16 Combat Pilot compares favorably to Spectrum HoloByte's famous jet-fighter simulation.**

## F-16 COMBAT PILOT

Reviewed by Wolf Griffey

I was transferred! I'm flying the best simulation in the Falcon stable (Spectrum HoloByte's) and my commanding officer tells me to pack my bags and report to the Wildcatters, a new squadron working out of Digital Integration's F-16 Combat Pilot jet-fighter simulation. This meant, of course, going through that horror of horrors all pilots dread: REFAM (Refamiliarization). I would have to learn the new machine from the ground up and prove myself all over again. All right Digital, let's see how you stack up.



**Taito's Bubble Bobble sheds new light on why the dinosaurs became extinct—they blew too many bubbles!**

## Reporting Aboard

Entering the F-16 Combat Pilot's ready room, I could either begin a Quickstart program or study the manual, followed by a few training hops. I chose the latter. The Wildcatters are flying the Falcon C version with an MSIP avionics update from the AFTI technology demonstrator program—too many new things to find out about in the middle of a fight.

Don't get me wrong, the Quickstart option is a good way to go if your idea of fun is to learn by impacting the ground and then trying again. I just like to know a few basic things when I'm up—

little things such as airspeeds, weapons delivery tactics and systems selection. They get mentioned in Quickstart, but a little training still wouldn't do me any harm.

### **New and Different; Old and Familiar**

The front office of Digital's F-16C has been improved by making it a "glass cockpit," as opposed to my older ride, where the only CRT was the radar/map console. Most of the dials, single displays and panels have been replaced with three CRTs called Multi-Function Digital (MFD) displays. Before, the best I could do was to switch modes on the center console between the air-to-air or air-to-ground display. Now I could put up three displays at once and cross-check like crazy. A nice touch in this F-16C was a data link device, the Up Front Control Panel (UFCP), centered and above the MFD's.

The MFD displays could be used to call items like air or ground radars, primary flight data, weapons status, moving map, ILS, a new digital artificial horizon (I'm traditional and didn't like it too much), plus a new screen for the Lantirn (thermal image) acquisition system. The Lantirn allows increased targeting for some of the weapons and gives the pilot night attack abilities.

Both air and ground radar displays had track and scanning modes. The basic radar, the AN/APG-68V, also has an air-combat-scan. When the pilot selects dogfight, a preset group of displays are present and the radar shows only the target of "greatest threat," it does an auto-lockup and readies the weapons system for quick firing when in range. The same type of auto-lockup is present in the ground-track-radar.

### **New Toys**

All of these new gadgets had to have something to go with them, so I turned to the weapons section. There were the standard iron bombs, a Mk83 1,000-pounder, a Mk84 2,000-pounder and

the Mk82 Snakeye. The Durandal (runway buster) was available and, of course, the AIM9M and M61a1 Vulcan cannon. Having these weapons made me happy because I knew them, but it was the new items that really warmed my heart.

The AMG-65 was in two different upgraded forms. First there was the D version, Imaging Infrared (IIR). Used with the Lantirn, a "hot" target could now be hit from 10 miles away versus a visual targeting at three miles. The E version has laser guidance. If ground troops can scan the target, the Lantirn will let this fly off at 11 miles or you can use the ground-target-track mode on the radar and do the same. Safety is distance from target.

Best of all, the Wildcatters had gotten the new AMRAAM AIM-120A. Shoot and forget, with a max range of over 30 nautical miles—love at first sight for a fighter jock.

### **Flying The Beast**

Engine startup came about only after I could identify myself to the Wildcatters. (This simulation uses off-disk copy protection—you type in a word from the manual.) The systems checks were completed, cleared with tower for takeoff, moved onto the active runway, pushed for 100 percent and then afterburner. The run was smooth and the climb-out a breeze. I soon found out that this bird

The rest of the cockpit was about the same as to warning lights and controls. The Heads-Up Display (HUD), pretty much a standard item now, was not too different. It was when I noticed that the repeat compass had been moved to the right-side panel that I started thinking about what else had been moved.

The trim control was missing and my old friend the snake was not on my HUD when I went to guns. These I could get used to in time. I discovered that my CCIP was now a set-the-box-on-the-target-and-squeeze type of operation, not the continue-to-target type I had seen before. During the runs to test the weapons there was a definite need to modify the tried and true and get with the program.

My back seat woke up long enough to show me how to get this beast down on the ground, then let me try as long as I wished. I say beast, because I now knew why I missed the trim control. Keeping airspeed and direction on line, even with the ILS or GCA assist was—and continued to be—somewhat painful.

### **End Game**

After a few missions and some time to think, I paid my old CO a call and told him what I thought the differences were between Digital Integration's F-16 and Spectrum HoloByte's version. The op-area is larger in Digital's, but it looks a

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## **It was the new items in F-16 Combat Pilot that really warmed my heart.**

---

handles like the Falcon I knew in the upper ranks in Spectrum HoloByte's bird. Airspeed increased and decreased according to throttle position and attitude. The ship was steadier in turns and system call-ups seemed easier to handle and gleaming info from the displays was easy and straightforward.

little bleaker and the airfields seem to be a little small for operating from. And there are more missions and three types of MiGs (27-Flogger/J, 29-Fulcrum, 31-Foxhound) to shoot at and be shot at by.

Two final things come to mind. First, Digital's F-16 is a squirrely ship on landing. Second, someone needs to tell those

people in the tower (Digital) that security is good, but if I'm already in the log, I don't need to identify myself everytime I go up in one day.

If it came down to a choice between flying Spectrum HoloByte's F-16 simulator or Digital's F-16 Combat Pilot, I would go with whichever was closest and then get some temporary duty with the other unit on a 50/50 basis.

## BUBBLE BOBBLE

Reviewed by **Marta Deike**

If you thought dinosaurs were extinct, think again. Taito brings them back as Bub and Bob, in the new arcade translation, Bubble Bobble. As Bub or Bob, you move through a series of mazes or "caves," foraging for food fortified with points. When your enemies attack, you blow bubbles at them.

### No Bubble Gum

The concept of Bubble Bobble is simple: pudgy baby dinosaurs blow bubbles at beasts. But gameplay is not easy. Each maze contains a number of nasty monsters such as ghosts, killer whales and "Stoners" — hooded figures who hurl large indestructible boulders. There are 10 different types of monsters and the higher the level, the nastier the monster. I've only survived to the thirteenth level, but according to the manual, there are 100.

## Did dinosaurs really like bananas better than pears?

In order to progress to the next level, you must clear the screen of the monsters. They can be encapsulated in your bubble, but then you must turn around and pop it—quickly. If you don't, the monsters break free and, as you may

have guessed, they're not at all happy with you. If you break the bubble in time, your enemies transform into valuable fruit which you collect for points. I hadn't known that dinosaurs were fond of bananas, but evidently they were a favored food (second only to peaches, if you're faced with the choice).

In addition to fruit, other treasures appear intermittently. Some merely boost your score. Others affect your power, such as the "Ring of Fire," which puts a deadly flame into your prehistoric breath. The instructions for Bubble Bobble are sparse, so you'll have to discover the properties of the different items, as well as the M.O. of your enemies, by trial and error. But then, such surprises are half the fun.

### Bubble Rap

Scoring in Bubble Bobble is not entirely clear. You start out with four lives and eight credits, each worth four more lives. The credits seem to be awarded sporadically. For instance, if you die four times in one maze, the game ends—sometimes. If you're starting in a new maze with only one life left and you lose it, you'll be credited with four more—sometimes.

It's surprisingly easy to get knocked out in Bubble Bobble. Just brushing against a beast will stun you, leaving you momentarily helpless and vulnerable to further attack. While you're reeling in unconsciousness, however, firing the joystick button seems to call a credit into action, although why this happens remains a mystery. Perhaps it has something to do with being resuscitated by your own bubble.

The graphics are festive; they're colorful and cute and the objects that give you points are well represented. The sound effects, however, could use a lot of improvement. All you get for consuming the vital fruit is a weak little bleep. And there's no extra sound at all when you're bonked. One final roar or even a bleep would make a difference.

The prevailing sound in the game is

the Bubble Bobble theme. This penny-arcade score is the most delightfully bright and cheerful music ever. For the first five rounds of this, my head was so busy dancing back and forth that I almost couldn't care less about the fearsome beasts. But it gets monotonous, fast. It runs on independently of gameplay and without much variation. By the sixth round, I had to turn the volume off; with it went the few sound effects and some of the magic, too.

## You'll hear the Bubble Bobble theme in your dreams.

### Kids, Try this at Home

While Bubble Bobble has its flaws, they're minor and don't diminish the overall playability. The game is fun. It's not a hot-wired racing simulation, nor is it a mind-bending text adventure—it's a good example of what Taito does best: entertaining arcade action. A hundred levels should be enough to keep the challenge going for some time. ■

*Wolf Griffey is a former Marine Corps fighter pilot and is now a product manager for Antic Software. Marta Deike is the Editorial Coordinator for START Magazine.*

### PRODUCTS MENTIONED

**F-16 Combat Pilot**, \$35. Digital Integration Limited, distributed by Sideline Software, 981 West Commercial Blvd., Ft. Lauderdale, FL 33309, (800) 888-9273.  
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**Bubble Bobble**, \$29.95. Taito Software, 267 West Esplanade, North Vancouver, BC, V7M 1A5, (604) 984-3344.  
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# BOINGO

*Bounce to the Beat with an Old Friend*

BY FRANK COHEN

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*Big fun, bouncy style. Files BOINGO.ARC and BOINGSRC.ARC on your START disk.*

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**B**oingo's origins lay in an area far away from arcade games. It began as an enhancement that adds binary trees to a commercial database system. Binary trees—the computer equivalent to the proverbial fork-in-the-road problem—are used to index a set of records in a database. Imagine the binary tree turned upside-down. With the root of the tree on the top of an ST display, each node might appear to be a platform in a pyramid. The computer program to map out the tree becomes fairly simple, the program continues to plot nodes until it reaches the bottom of the display. Watching the binary tree program create the playfield provided the impetus to create Boingo.

## Personality

Boingo is similar to the old arcade game Q\*Bert, in which a likeable yellow and orange-snouted character bounced around a pyramid of tiles. Bouncing on a tile changes the tile color. Once all the tiles color were changed, Q\*Bert received a bonus and advanced to the next level.

***Pull up your comfy chair; you'll be in it for hours. From the creator of Clowns & Balloons—one of the first Atari 800 arcade-style video games—comes BOINGO, Frank Cohen's addictive strategy- and fun-filled bouncing game. Plays on a color monitor.***

Colored dots gave Q\*Bert more energy. Standing in Q\*Bert's way were a coiled snake that chased him, a red-legged animal that recolored the tiles, and large pink and green toxic dots that cascaded down the pyramid.

The characters in Boingo were developed as simple pencil drawings. They have three poses: standing, stretching and falling. While not moving, a character is displayed in the standing position. A jump is preceded with the stretching position. Shortly before landing, the falling position is displayed. When shown in quick succession, the human eye combines the three positions, and the character appears to jump.

I loaded the pencil drawings into DEGAS Elite, an excellent development

tool whose many features (Circle, Box, Line, Text) helped in creating Boingo graphics. If you have DEGAS Elite, you can easily change or enhance the graphics to suit your artistic talents. Try creating pencil sketches of funny characters. Next, draw the three positions of each character. Now load the picture file BOINKMEN.PCL into your copy of DEGAS Elite.

The character drawings have been placed within rulers marking height and width limits—in other words, cels. Provided your characters fit within the cels, any animation may be substituted. Each character is drawn several times: Facing forward, rear, left and right. These are needed to show a character moving in a certain direction.



When Boingo is started, the drawings are loaded into the ST computer's memory. The cels are located and used to plot the characters to the screen. Since the cels are of a common size, one subroutine is used to plot the characters.

### Game Play

Copy BOINGO.ARC from your START disk to a blank, formatted disk and un-ARC it following the Disk Instructions elsewhere in this issue. The files BOINK.PCI, BOINKHLP.PCI, BOINKSCR.PCI and BOINKTTL.PCI must be in the same

and has four lives. The pyramid is nine tiles high and nine tiles wide at the base. Don't let Wormy fall off of the pyramid—he'll lose a life—unless he lands on one of the power discs next to the pyramid. The power discs whisk Wormy to the top of the pyramid and give you bonus points. (But don't use up the discs until you need a quick escape.)

Your goal in Boingo is to move Wormy around on the pyramid, turning all the tiles. Once a pyramid is completed, Wormy graduates to the next level. The level number is displayed next to the score



**Wormy at his best: before the action starts. Soon he'll be breathlessly avoiding those flamingos with the wraparound shades and trying to wriggle out of the grasp of the voracious Coily.**

directory as BOINGO.PRG. Double-click on BOINGO.PRG from a low or medium resolution Desktop. The assembly language source code to Boingo is in the archive file BOINGSRC.ARC.

Boingo uses the following keyboard commands:

[Undo]: quits the program

[Help]: displays instructions

[Escape]: pauses the game

Numeric keypad [1]: moves Wormy diagonally down and left

Numeric keypad [2]: moves Wormy diagonally down and right

Numeric keypad [4]: moves Wormy diagonally up and left

Numeric keypad [5]: moves Wormy diagonally up and right

Wormy starts at the top of the pyramid

and Watch out for the pink flamingos with wraparound shades—they single-mindedly bounce from the top of the pyramid to the bottom. Don't get in their way, or they'll beak you to death. And beware of Coily—his grip is deadly. The good news is that bonus lives are awarded for every 5,000 points scored. ■

*Frank Cohen has been an avid supporter of Atari computers since his first commercial product, Clowns & Balloons. He later co-founded Regent Software, an independent developer of business and productivity software packages for the ST. You can find Frank on CompuServe (76004,1573) and GENie (FCOHEN), or at Regent Software, P.O. Box 14628, Long Beach, CA 90803-1208.*



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continued from page 44

inactive computer screen. Or a card-game program could look like the ace of spades—the possibilities are endless. And you can use different Desktop Information files (NEODESKC.INF or NEO-DESKM.INF) for different uses, each with its own set of custom icons. As of this writing, over 100 custom icons have been uploaded to GENie.

NeoDesk lets you drag a file icon from the window to the Desktop itself. From there, you can simply double-click on it to run it—so you no longer have to search through folders to find the file: there it is, on your Desktop.

NeoDesk lets you open as many as seven windows (which open much faster than standard GEM windows). Clicking on the "<<" box in the lower left-hand corner of the active window sends that window to the back—or brings it to the front. It's also nice that you don't have to worry about a horizontal scroll bar in these windows—if a file icon doesn't fit horizontally, NeoDesk's "icon wrap" will move it down to the next line.

---

## NeoDesk takes up 154K while its Desktop is onscreen, but only 24K while you run another application.

---

### Desktop Menus

The flexibility of icons in NeoDesk is all well and good, not to mention fun, but what about those of us who prefer to Show As Text? Among NeoDesk's Show As Text functions is the Small Text/ Large Text toggle which lets you choose filename text size (with Large Text being

the default). Even better is the 1 Column/ ≥1 Column toggle. The 1 Column option displays the filenames as you'd expect, but the ≥1 Column option shows the filenames, sizes and dates in as many columns as your screen will allow. If you toggle off any or all of the Show Time, Show Date and Show Size choices, there will be even more room for columns (up to four).

The Set Preferences menu in NeoDesk is quite different from the one in the GEM Desktop, which has Confirm Deletes, Confirm Copies and Screen Resolution. The NeoDesk menu has Confirm Deletes and Confirm Copies/Moves, but it won't let you change screen resolution because NeoDesk *doesn't work in low resolution*. Other choices include setting your icon-dragging mode to Copy, Move or Ask (in which NeoDesk asks you whether you want to copy or move), and Status Displays, in which, during any file operation, NeoDesk will show which files are being manipulated and what's happening to them.

Save Desktop allows all choices made under the various items in the Options menu to a file called NEODESKC.INF (color) or NEODESKM.INF (monochrome). (Thus owners of both types of monitors will be able to have separate Desktops for each.)

NeoDesk also has a printer queue that can handle up to 10 files. It continues printing while you're using any GEM program and it doesn't take up any additional memory while printing files because, rather than keeping the files themselves in memory, the queue keeps only the filenames and paths in memory.

### Keyboard Equivalents

In addition to keyboard equivalents for functions such as selecting disk drives, scrolling up or down, or any of the menu entries, NeoDesk lets you run files by pressing (Shift) and a letter or number key. It's not as sophisticated a feature as the single-keypress function in HotWire, but it's a nice touch.

### Last But Not Least

Too late for this review, Gribnif released NeoDesk 2.04, which fixes some minor glitches and adds support for Monitern, BigScreen, HirezColor and HyperScreen monitors, as well as the 68030/TT; according to Gribnif President Rick Flashman, NeoDesk will work with any resolution that GEM will work with (although the current version doesn't work in low resolution). The new version now takes up less than 21K of memory when unloaded.

---

## With NeoDesk, every file can have its own unique icon.

---

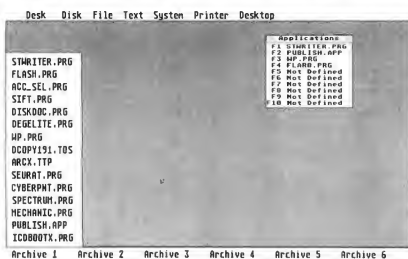
Upgrading from NeoDesk 1.0 to "2.0x" (the latest version) costs \$20, plus \$3 for shipping and handling. Upgrading from an older NeoDesk 2.0x to the latest version costs \$5, which includes shipping and handling.

NeoDesk is a fun product with seemingly endless features and a well-written, well-illustrated 83-page manual. The program may do more than you need, but it's worth more than a look, especially if you have a hard disk. So far I haven't experienced any problems with it—it seems bulletproof—and it gets rave reviews in CompuServe's and GENie's ST areas.

If you're willing to invest the time and legwork, find a friend who uses NeoDesk and play with his or her system for a while. NeoDesk may not be for you, but a good, long look is the best way to tell.

### VDOS ProQueue

The most sophisticated—but least intuitive—of the three alternate Desktop programs is VDOS ProQueue, which Marathon



**VDOS ProQueue from Marathon Computer Press doesn't allow as much creativity as NeoDesk and HotWire, but it certainly gets the job done. The menu on the left is just one of six available; you can access up to 15 programs on each.**

to locate the program you want.

VDOS ProQueue is at its best installed in RAM on a Mega 2 or Mega 4. If you run VDOS ProQueue in a Virtual-to-RAM mode of operation while using a RAM-based installation, you'll use up about 365K of memory, which is obviously too much on a 520ST or 1040ST. If you're using it in an entirely disk-based fashion, it takes up far less memory, but disk-access takes much longer.

VDOS ProQueue also has a Hot Key function, but here a predefined IControl-key combination calls a specific VDOS ProQueue function rather than a program.

Desk accessories are not available from the VDOS ProQueue Desktop. To use a desk accessory, you must click on ACCESSORY in the System menu (or press IControl-IA) and then choose your accessory.

#### Disk, File and Printer Functions

In VDOS, CHDIR (Change Directory) lets you set a default directory on a par-

Computer Press considers so innovative that they're calling it "the start of a class that is surely to emerge on the ST and other single-user non-multitasking operating systems." VDOS ProQueue uses a series of pull-down menus with the commands you'll use (ranging from standard disk functions—copy, format, etc.—to DOS utilities such as MVDIR and CHDRIVE to "System" functions such as Free Memory, Password and

Calendar) along with six pop-up menus, each of which has slots for 15 .PRG, .TOS, .TTP or .APP files—a total of 90 programs. You can also install up to 10 applications.

To assign a program to a slot, just hold down IShift and click on that slot. Then click on the appropriate drive letter and then the program you want to install. Like HotWire and NeoDesk, VDOS ProQueue cuts through the file structure

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ticular drive. CHDRIVE (Change Drive) not only lets you change the default disk drive, but you can also go to the root directory of the drive you're using in a way that's much faster than using CHDIR. CHMOD (Change File Mode) lets you read or change file attributes such as Read Only, Hide, etc.

VDOS ProQueue's Copy feature is about 40 percent faster than standard GEM Desktop copying, according to the manual, and includes a Global mode for copying multiple files with similar names. The Move command performs a copy and delete function, much like the Move feature in NeoDesk and Universal Item Selector II. The MVDIR feature, similar to the Move command, does a copy-and-delete on an entire folder and the RMDIR command deletes empty folders. The Touch function, also like that of Universal Item Selector II, lets you change the date and time of a file to the current date and time.

The Delete function lets you delete

hidden as well as normal files, but not Read Only files. You can also delete multiple files with similar names via the Global function.

LS -L (List Long Directory) shows all files contained in the current directory, including hidden, Read Only and GEMDOS files. LS -W (List Wide Directory) displays filenames and sizes in three columns and is convenient for folders containing dozens of files.

The Print command provides formatted ASCII printouts that can be paginated and titled. The Printer Code command lets you send escape-code sequences to your printer for special effects, such as italics, NLQ and enlarged print. The Tee command sends text to the screen as it sends it to the printer

### Other Commands

The Edit feature occupies VDOS ProQueue's "silent 101st definable program slot." It lets you place an editor (such as MicroEmacs) or word processor in the

VDOS ProQueue home directory to be selected later from the GEM menu or with a single keypress. The program must be renamed EDIT.PRG, however.

Heads lets you look at the first few lines of an ASCII file without having to load it into a word processor or editor. Conversely, Tails lets you check the last several lines of an ASCII file. The Search function lets you search an ASCII file for a particular string. However, it will only search the first 32K of the file. Finally, Textwind lets you load the first 2,500 lines of a file into memory and then move around in it using slider bars. Unfortunately, it expects a carriage return/linefeed at the end of every line and will likely produce an error if there's no carriage return/linefeed at the end of the file.

Audit, in the System menu, lets you keep track of your computer's usage by recording the times you executed (or exited) programs under VDOS ProQueue control. According to the manual, this helps "keep tabs on CPU usage, aid in ▶

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security, and determine usage patterns." The SYSMAP command determines the free space remaining on all connected drives and checks for a clock card, printer status and remaining memory.

The Password feature lets you add an eight-character password containing numbers, letters or control codes. It's nothing that someone with a little ingenuity couldn't crack, but, says the manual, it will "keep honest people honest at a multi-user site."

The Calendar feature is nice, but limited. You can get information for any month of any year, but you have to go forward or backward through the years, one at a time.

And finally, Recover is a last-gasp means of giving you a paddle for whatever creek you're up. Occasionally ProQueue will come across an otherwise unrecoverable error, but if you use Recover, you can tell the system where the home directory is so it can read in the necessary VDOSPRO.INF file again. Of

course, Recover won't get you out of every jam, but at least there's some hope.

### Impressions

If you work with your ST every day, especially if you're a programmer, ProQueue might be for you. Program operation seems clean (if unspectacular) and the pop-up menus are fast, but I had to refer to the manual constantly. However, the

page numbers, which is awkward when you're searching for a particular page.

On the whole, VDOS ProQueue does so much that it boggles the mind. Its interface isn't as friendly as HotWire's or NeoDesk's. VDOS ProQueue takes some getting used to; it's not for the casual user, but it's a worthwhile addition for the power user. ■

### PRODUCTS MENTIONED

**HotWire**, \$39.95. Code-head Software, P.O. Box 74090, Los Angeles, CA 90004, (213) 386-5735.  
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**NeoDesk 2.0: The Desktop Alternative**, \$49.95. Gribnif Software, P.O. Box 350, Hadley, MA 01035, (413) 584-7887. (On GEnie: GRIBNIF.)  
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**VDOS ProQueue**, \$69.95. Marathon Computer Press, P.O. Box 68503, Virginia Beach, VA 23454-9433, (804) 460-5227.  
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## VDOS ProQueue does so much that it boggles the mind.

documentation is clear and concise, describing all program functions in alphabetical order. The only problem with the manual is that each of the 10 sections and appendices has its own set of

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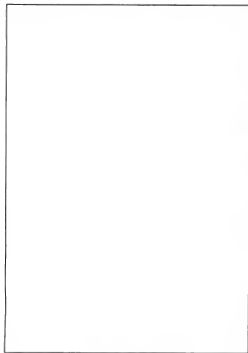


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