DISK INSIDE!

START®

#1 Guide To Atari ST

Volume 4, Number 2 September 1989 USA $14.95 • Canada $19.95

Carolyn Beard

Exclusive Sam Tramiel Interview

GAMES AND ENTERTAINMENT

Sneak Peek at New Lucasfilm Games

09
0 74470 19724 9

Unleash the Power

of your ATARI SLM804 Printer with

AT LAST,
you can add PostScript® Printing Capabilities to your Desktop Publishing System

- UPGRADE YOUR ATARI MEGA 2 AND MEGA 4 PERSONAL COMPUTER SYSTEM WITH POSTSCRIPT LANGUAGE PRINTING CAPABILITIES
- ACCESS A WIDE VARIETY OF POSTSCRIPT APPLICATIONS WITH ULTRASCRIPT ST
- ACHIEVE THE PROFESSIONAL TYPESET LOOK YOU WANT BY CHOOSING FROM THE SAME TYPEFACES OFFERED IN MOST POPULAR POSTSCRIPT PRINTERS
- ADD POSTSCRIPT COMPATIBLE FONTS AS YOU NEED THEM
- BREAK THE POSTSCRIPT PRICE BARRIER; ULTRASCRIPT ST IS AVAILABLE FOR JUST $229.95
- EXPERIENCE ULTRASCRIPT ST FOR YOURSELF

IMAGEN Corporation, a QMS company, has teamed up with ATARI to bring you UltraScript ST on the Atari Mega 2 and Mega 4 Personal Computer Systems.

Available at your local Atari dealer or order direct from:

IMAGEN Corporation
P.O. Box 58101
Santa Clara, CA 95052-8101

Or call 800/635-3997
or 408/986-9400

IMAGEN is a registered trademark and UltraScript is a trademark of IMAGEN Corporation. PostScript is a registered trademark of Adobe Systems, Inc. The Atari logo, Atari ST, SLM804, Mega 2 and Mega 4 are trademarks or registered trademarks of Atari Corporation.

CIRCLE 018 ON READER SERVICE CARD

PROCESSOR ACCELERATOR

SUPER CHARGE your ST

Tired of being in the slow lane? **Creative Microsystem's *Processor Accelerator*** for the ST line of computers provides you with a cost-effective means of "Super Charging" your machine with our 16MHZ 68000 processor board. This doubles the instruction speed of your system, and with our unique 16MHZ FastROM implementation, **overall performance improvements of 30% to 50% are attainable.**

A BLITTER and MC68881 Math Coprocessor for my 520/1040?

Yes, now you can add the Atari's MEGA chip Blitter to your 520 or 1040 ST computer. Using Atari's version 1.2 operating system ROMs, you need only pop the blitter into a socket provided and you're off and running! Existing applications software will automatically use the Blitter, vastly improving graphics speed. Pop a Math chip into the Math chip socket and programs that use it will fly!

Creative Microsystems Incorporated is proud to bring it's two years of experience building 16MHZ 68000-based accelerators to the Atari World. We are extremely pleased to be able to offer users of 520 and 1040 ST's an affordable upgrade path for your systems.

Installation: Technical experience necessary, no trace cuts required.

AVAILABILITY? NOW! CALL...

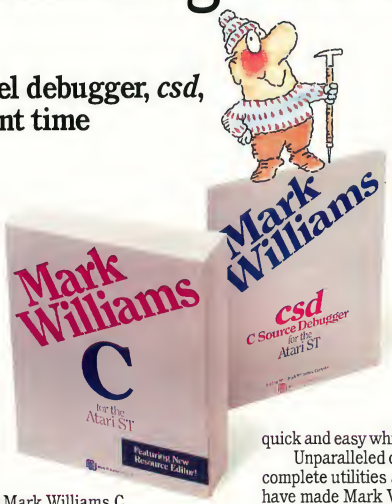
CMI Creative Microsystems Inc

CIRCLE 014 ON READER SERVICE CARD

Creative Microsystems Incorporated
19552 SW 90th Court
Tualatin, Oregon 97062
(503) 691-2552

Mark Williams Raises C Programming To A New Level.

New source level debugger, *csd*, cuts development time in half!



Now, on top of the world's best C compiler, Mark Williams brings you *csd*, the world's only source level debugger for the Atari ST!

With *csd*, you actually debug in C. Forget about trying to find bugs in clunky assembler and struggling with long dumps. *csd* gives you the interactive advantages of an interpreter plus the speed of a compiler. An indispensable companion for Mark Williams C.

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

*"*csd *is close to the ideal debugging environment…a definite aid to learning C and an indispensable tool for program development."*

–William G. Wong, *BYTE*

"This is a powerful and sophisticated debugger built on a well-designed, 'serious' compiler."

–Jonathan Sachs, *Micro/Systems Journal*

FEATURES

NEW VERSION 3.0!

Mark Williams C For the Atari ST

- ★ New! Resource Editor includes compiler/decompiler for direct access to resource text
- ★ New! Peephole optimization–faster compile times and faster code
- Full access to AES/VDI libraries with complete documentation and examples
- Source and object code for RAM disk cuts compile time in half
- Integrated edit/compile cycle: editor automatically points to errors.
- MicroEMACS full-screen editor with commented source code
- Full K & R plus ANSI extensions
- Microshell Command Processor, a powerful UNIX style shell
- Complete symbolic debugger and assembler
- Powerful utilities: make, linker, archiver, egrep, sort, diff and more
- Over 600 pages of documentation with more than 100 sample programs

New! *csd* C SOURCE DEBUGGER:

- Cuts development time in half!
- Debug in C source code not assembler
- Provides separate source, evaluation, program and history windows
- Ability to set trace points and monitor variables
- Can interactively evaluate any C expression
- Can execute any C function in your program
- Trace back function
- On-line help screens

MARK WILLIAMS C FOR THE ATARI ST: $179.95
***csd* C SOURCE DEBUGGER: $69.95**
60 DAY MONEY BACK GUARANTEE

WE'VE UPPED COMPILER PERFORMANCE, TOO!

Our new **Resource Editor** makes creating window driven interfaces with icons, alerts, pull down menus and dialogue boxes a snap. And its exclusive compiler/decompiler lets you directly access resources, making changes quick and easy while simplifying project management.

Unparalleled compiler speed, fast, compact code, complete utilities and outstanding documentation have made Mark Williams C the preferred compiler for the Atari ST. Reviewers enthusiastically agree:

"Mark Williams C may be the best implementation of C on the Atari ST to date…not only for the experienced, professional developer, but also for the weekend programmer."

–George Miller, *COMPUTE!'S Atari ST Disk and Magazine*

"…the all-around best choice for serious software development on the ST."

–Douglas Weir, *Analog Computing*

COUNT ON AN UPSTANDING REPUTATION.

Mark Williams has been producing and improving quality programming tools since 1976. A good reason why the Mark Williams C compiler is the one chosen by Atari. And just one more reason you should choose Mark Williams, too.

SPECIAL UPDATE OFFER AVAILABLE NOW!

If you already own Mark Williams C, a special update offer is available for version 3.0 and *csd* by calling Mark Williams. If not, there's never been a better time to ask your Atari dealer about Mark Williams C and *csd*. Or you can order by calling **1-800-MWC-1700.**

Mark Williams Company

601 North Skokie Highway, Lake Bluff, Illinois 60044

© 1988 Mark Williams Company

CIRCLE 021 ON READER SERVICE CARD

Exclusive Sam Tramiel Interview! . . . . . Page 16

#1 Guide To Atari ST

START

SEPTEMBER 1989 VOLUME 4, NUMBER 2

The Slither Screen Editor . . . . . pg. 86

Features

16 FROM ATARI'S OVAL OFFICE
by Mard Naman
An Exclusive Interview With Atari President Sam Tramiel

22 INDIANA JONES IS BACK!
by Andrew Reese
And He's on the ST

50 AVECTA I: EBORA
by Mark Swanson
START's Epic Graphic/Text Adventure

58 COMPUTER GAME VIOLENCE
by Amy H. Johnson and Richard P. Greenfield
Is There Too Much?

64 THE SEVEN SKULLS
by Michael Allen
A New Version of a Classic Puzzle

68 NEWSPEED
by William Schneider
Just Your Speed!

86 THE SLITHER SCREEN EDITOR
by Thomas Burglin
Spencer for Higher Levels

94 CINKO
by Michael C. Gilbert
25% More Fun than Quatro!

Indiana Jones is Back . . . . . pg. 22

Reviews

27 PRESSING THE FIRE BUTTON
by David Plotkin, Greg Perez, Dan Fruchey, Andrew Reese, Wolf Griffey and Tom Byron
START's Big Games Extravaganza

43 FLEET STREET PUBLISHER 3.0
by Dan Fruchey
The UK's Newest Foray in the DTP War

70 THE GAME MAKERS
by Chester Cox
STAC, STOS, and TaleSpin Make Game Creation Easy

89 NEWSCORE
by Jim Pierson-Perry
A Fast Track to Reading and Playing Music?

Departments

6 Editorial

8 Dialog Box

11 News, Notes and Quotes
Stephen Mortimer

13 Products Update
Marta Deike

39 Online With START
Getting the Facts Fast—With DataTimes

47 Mac & PC on the ST
Three Computers in One—For Real?

66 Disk Contents

67 Disk Instructions

74 Programming in Modula-2
An Introduction to Modula-2

77 Coming Next Month
Stacy and Portfolio!

81 The ST/MIDI Connection
Sometimes You Can Get What You Want

Indicates programs included on START Disk.

START
#1 GUIDE TO THE ATARI ST

PUBLISHER
James Capparell

ASSOCIATE PUBLISHER
John Taggart

EDITORIAL
Andrew Reese, Editor
Tom Byron, Associate Editor
Gregg Pearlman, Assistant Editor
Heidi Brumbaugh, Programs Editor
Jim Pierson-Perry, Music/MIDI Editor
Marta Deike, Editorial Assistant
James Ivers, Transmission Services

Contributing Editors: Tom Hudson, Jim Kent, Alex Leavens, Stephen Mortimer, Mard Noman, David Plotkin, David Small, David Ramsden

Contributors: Michael Allen, Thomas Burglin, Chester Cox Dan Fruchey, Michael C. Gilbert, Richard P. Greenfield, Wolf Griffey, Amy H. Johnson, Greg Perez, Carolyn Rogers, William Schneider, Mark Swanson

CREATIVE SERVICES
Kathleen McKeown-McEwen, Director of Creative Services
Jim Warner, Art Director
Kristi Johnson Simkins, Associate Art Director
Marianne Dresser, Design Production Assistant
Julianne Ossoske, Production Manager
Georgia Salkov, Photo Editor
Kate Murphy, Ad Production Coordinator

Cover Photography: Murray Close and Georgia Salkov

ADVERTISING SALES
Austin Halian,
Western Region, (415) 957-0886
Denny Riley
Eastern Region, (415) 957-0886
Diane Van Arsdall, Marketing Manager

CIRCULATION
Manny Sawit, Director
Amber Lewis-Francis, Subscription Coordinator
Dennis Swan, Distribution Coordinator
Ann Dunlap, Retail Sales Coordinator

ANTIC PUBLISHING, INC.
James Capparell, President; John Taggart, Vice-President; Donald F. Richard and Richard D. Capparella, Board of Directors; Lee S. Isgur, Advisory Board; John Cady, Controller

ADMINISTRATION
Marguerite Birch, Credit Manager
Fidez Bituin, Accounts Receivables Supervisor

General Offices, Catalog Customer Service: (415)957-0886, 8 am to 4 pm Pacific Time. START, 544 Second Sheet, San Francisco, CA 94107. **Credit Card Subscriptions and Catalog Orders:** (800)234-7001. **Subscription Customer Service:** For change of address and inquiries, include subscription label and write to START Subscriptions, PO Box 1569, Martinez, CA 94553 or call (415)372-6002, 9 am to 4:30 pm Pacific Time.

September 1989, Volume 4 Number 2. START Magazine (ISSN #0889-6216), is published monthly by Antic Publishing, Inc., 544 Second St., San Francisco, CA 94107. Third Class postage paid at Waseca, MN. **Subscriptions:** (for 12 issues with disk): $79.95 in U.S.; $87.95 in Canada and Mexico; $91.95 for other foreign addresss. **POSTMASTER:** Please send address changes to START Magazine, PO Box 1569, Martinez, CA 94553.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. START is an independent periodical not affiliated in any way with Atari Corp. ATARI is a trademark of the Atari Corp. All references to Atari products are trademarked and should be so noted. START is a trademark of Antic Publishing, Inc. An Information Technology Company.
Copyright © 1989 by Antic Publishing. All Rights Reserved. Printed in USA.

Editorial

START magazine is convinced that 1989 will wind up a big year for Atari and our lead feature will give you a good idea why. In a surprisingly relaxed atmosphere, **Sam Tramiel**, president and CEO of Atari Corp., chatted with START for almost two hours on his company's past, present and future. He spoke frankly on such topics as the Federated venture and the related problems in penetrating the U.S. market. He also talked at length about some of the new hardware Atari plans to release by the end of this year. I think you'll find what Sam had to say fascinating and revealing.

One of the main topics of the Tramiel interview was, of course, the ST. But Sam doesn't need to tell us what we already know: that Atari's premiere computer can be a very serious machine, in home and business.

The ST's excellent graphics and sound capabilities do, however, lend it to some very nonserious applications. Welcome to START's **Second Annual Games & Entertainment** issue. Last year's version was so popular that we decided to make it a yearly tradition. Here are some highlights:

It looks like George Lucas' games division is back in the ST market in a big way. START Editor Andrew Reese traveled to Skywalker Ranch where he was treated to a sneak preview of some of the new games coming from Lucasfilm, including two based on the movie *Indiana Jones and the Last Crusade*. If the games are as good as the film, then I believe Lucas has two more hits on his hands.

Then there's **Pressing the Fire Button**, START's super games extravaganza. The entertainment-software industry is a multimillion dollar business. It's no wonder then that games make up the single most abundant group of software for the ST. This issue, we present reviews of some of the hottest games available.

And finally, there's our controversial report on **Computer Game Violence**. Since computers are a major part of childrens' lives (and our own), the kinds of games they'll be exposed to should be of great concern to us all. And let's face it: some games may go too far in their graphic depiction of people killing other people. When is enough enough? We hope you find this story as important as we do.

We're particularly excited about this month's disk. It's packed with three entertaining games, including a giant graphic/text adventure. It's called **Avecta I: Ebora** and it's one of the most ambitious programs ever on a START disk. And do you recall my article in the June 1989 issue called *Arcade Addiction*, in which I claimed I made it all the way to level 32 in Arkanoid? I now confess that I had a little help in the form of **Newspeed**. Just remember: it's a *utility*!

I'm pleased with this issue and I think you will be, too. Now it's time to sit back and relax with a good-reading, good-playing magazine. ■

Tom Byron

Tom Byron
Associate Editor

for the ATARI ST

WinterTech presents . . .

The Computer Guide To The Solar System™

. . . a real-life adventure in space science!

Easy and fun for everyone, this is your passport to the TRUE WONDERS of our incredible Solar System! Dozens and dozens of dazzling 3-D graphics and animations. Instantly calculate your weight on other worlds! See atomic particles collide in the Sun's core . . . the procession of the planets in their orbits . . . the cosmic dance of Pluto and its companion, Charon . . . Eclipses . . . structures of the planets . . . and much much more!

Visa & MasterCard orders accepted. Dealer inquiries welcome. Allow 3-5 weeks for delivery. Call or write . . .

Add $3.00 S/H for each order.

Introductory Offer: $44.95

Call now! (offer ends date of the August '89 Lunar Eclipse.)

WINTER TECH™

111 Granada Court, Orlando, FL 32803
(407) 425-1199

COPYRIGHT © 1989 by WinterTech. All rights Reserved. WINTERTECH and THE COMPUTER GUIDE TO THE SOLAR SYSTEM are trademarks of WinterTech. ATARI ST is a registered trademark of Atari, Inc.

CIRCLE 083 ON READER SERVICE CARD

Color monitor and 1 MEG RAM required. (512 K version available June 15, 1989.) Not copy-protected.

Dialog Box

Letters From Our Readers

Made in the U.S.A.

I certainly am enthused now that Antic Software is representing GFA BASIC. I hope your magazine will devote a section to GFA BASIC and list short routines that would help many of us to better learn the language, especially all the new commands of Version 3.0. We also need

a good book or two, not written in Germany but in the United States, that will make use of an RGB monitor. GFA BASIC is too great a programming language to be collecting dust.

Mario Sala
Torrance, California

START will continue to support GFA BASIC in the form of programming tutorials and utilities and programs on disk. (The program Seven Skulls on this issue's disk is our first published program in GFA BASIC 3.0.) However, our programming column also supports other versions of BASICs for the ST, as well as Modula-2 (this issue), Prolog, Pascal, C and other popular languages.— START Editor

Thank You, Doctor

Thank you, Dr. Noonan, for the continued improvements to ST Writer Elite 3.0 (May 1989)! It is still the easiest and fastest word processor around (not to mention the least expensive). One question: Why do we have "Line Number" along the bottom of the page? It seems to serve no practical purpose. It only shows what the cursor location is for the line on that CRT screen, not what line of the text we have put into the computer. As I write, I quickly fill up the screen and then it always says "Line: 21." Why bother?

Ralph Kalatucka
Los Angeles, California

This is one of the more controversial features of ST Writer. Some people consider the line counter buggy because it doesn't give you the absolute line position in the file; others take advantage of knowing their position on the screen. For example, if you are setting up tables with lots of white space between the columns, knowing your relative position on the screen can help you ensure that you're on the right line.— START Editor ■

Regent Responds

Megatouch is a system of conically shaped steel springs that fit into the keyboard of a 520 or 1040ST keyboard. Recently START printed a reader's complaint about Megatouch (May 1989). The reader noted that fewer than 95 springs were in his purchased set. The springs are measured by an electronic weight scale at the Crippled Children's Society of Los Angeles. Like a bag of potato chips, Megatouch is sold by weight, not by volume. To avoid future problems, we have increased the weight limit. Megatouch owners will most likely find more than enough springs in a set.

So what happened to the complaining reader? Regent has received 47 complaints of the same nature, and each of these customers was sent a new bag of springs to make up the difference.

By the way, Regent was recently informed by another manufacturer that the name Megatouch has been trademarked. Therefore, later this month we will change the name of Megatouch to Megatouch Springz. (Kind of catchy, don't you think?)

Frank Cohen, President
Regent Software

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.

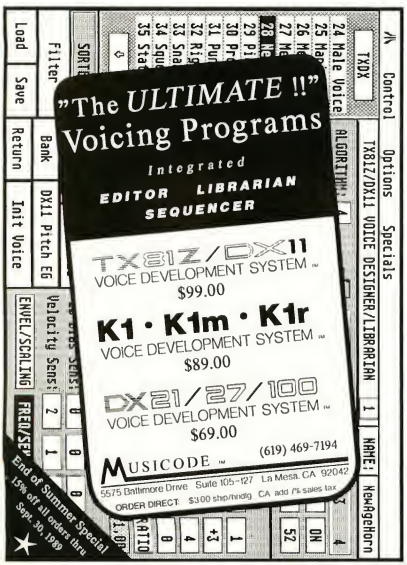
SUBMISSION INFORMATION

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.

How much is YOUR time worth?

Turbo ST turns your 520/1040 ST into a speed demon. Check out **Turbo ST** at your local dealer or download our free demo from your favorite bulletin board.

Upgrades to version 1.6 are only $5 with your original disk. For more information, call (407) 657-4611, or write to SofTrek, P.O. Box 5257, Winter Park, FL 32793. CIRCLE 078 ON READER SERVICE CARD



CIRCLE 076 ON READER SERVICE CARD

WORDUP 2.0

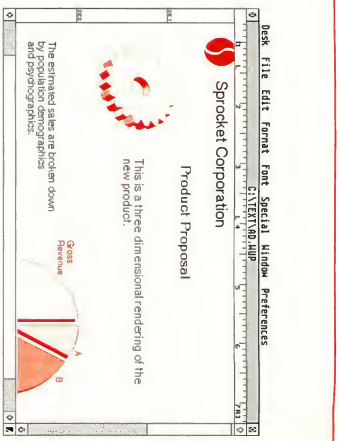
WordUp is the only Atari ST/MEGA™ word processor that can integrate multiple fonts and pictures.

New Features!

- Faster
- Over 60 Improvements
- Font Sizes 2 to 50 Points
- Hanging Indents
- Import GEM Metafiles
- Type Foreign, Math, and Symbol characters into documents and dialog boxes
- More memory for documents

Metafile Feature

- Use logos, diagrams, and math equations drawn in Easy-Draw
- Use CAD-3D pictures
- Use LDW Power business graphics



Easy-Draw™ Migraph, CAD-3D™ Antic Software, LDW Power™ Logic Design Works, WordUp™ Neocept

CIRCLE 022 ON READER SERVICE CARD

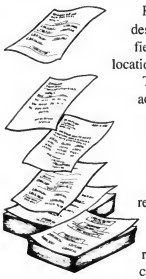
*dB*MAN V

All the power of dBASE III+ and more for your Atari ST!!

dBMAN V, in a package of three separate functions: Database Management, Report Printing, and Program Development, is the only database management program which has all the power, flexibility, and capacity that you'll ever need!

At the Database Management level, *dBMAN V* allows you to structure, enter, retrieve, and modify data. At home, ***dBMAN V*** can keep track of your recipes, address book, video tape library, and more. In the office, ***dBMAN V*** can be programmed to manage your entire business including inventory control, payroll, invoicing, and billing.

At the Report Printing level, *dBMAN V* has an integrated, high-powered, and fully relational report writer that allows you to create reports in a flash with absolutely **no programming!**



Report layouts are designed by placing fields at the desired locations on the screen. This can easily be accomplished with the built-in cut, paste, and copy functions. The finished screen-layout reflects the printed output. From simple personal reports like recipe cards, mailing list, and video tape libraries, to complex business reports such as inventory count sheets, packing lists, employee payroll reports and customer billing statements are easily created.

At the Program Development level, *dBMAN V* is the only database manager for the Atari ST that is compatible with the dBASE III Plus language. With this awesome programming power, you can develop and customize any programs to fill your home and business needs. For your home, create a check book program, with complete bank statement balancing to manage your personal finances. For your office, customize a complete accounting system to fit your business needs.

Also available for ***dBMAN V*** is the high performance Greased Lightning compiler. This compiler fully supports macros, and executes dBASE programs up to 16 times faster than dBASE III Plus.

dBMAN is also available on Novell Netware, IBM PCNET, PC DOS, SCO Xenix, UNIX on NCR Tower, NEC ASTRA XL, Motorola 8000, Altos, Microport 286 and 386, Apple Macintosh, and Commodore Amiga.

dBMAN V's features:

- ✓ dBASE II and dBASE III Plus compatibility
- ✓ Easy-to-use, pull-down menu interface to create, add, edit, and report database information
- ✓ 320 programmable commands and functions
- ✓ Password protection and data security at field level
- ✓ Easily transport your dBASE III data files and programs between Atari ST and PC's
- ✓ Extensive data validation including range checking
- ✓ Single command menus: vertical, horizontal, scrollable and pull down menus
- ✓ User defined pop-up windows
- ✓ Create a GEM pull down menu, mouse menu and file selector
- ✓ Run GEM application from dBMAN
- ✓ Program debugger/editor. And more...

Report Writer features:

- ✓ 9 group levels
- ✓ Up to 255 columns and 255 lines per page
- ✓ Page headers, page footers, group headers, group footers, titles, summaries, and body lines
- ✓ Print labels up to 99 across
- ✓ Conditional printing of any items
- ✓ Compute running sums, counts, averages, minimums and maximums
- ✓ Relate and report from up to 9 database files with lookup (one to one) and scan (one to many) relations. And more...

Specifications:

- ✓ Field types: Character, Numeric, Date, Logical, Memo
- ✓ Maximum characters per field: 254
- ✓ Maximum number of records per database: 2 billion
- ✓ Maximum number of index files: no limit
- ✓ Maximum record size: 4000 bytes
- ✓ Numeric precision: 17 digits

System Requirements:

- ✓ Atari 520, 1040, or MEGA ST with one floppy drive and 480K free RAM.

VersaSoft Corporation
4340 Almaden Expressway, Suite 250
San Jose, CA 95118
Phone: 408-723-9044
Telex: 650-2635806
Fax: 408-723-9046

dBASE II, III, and III+, Novell Netware, IBM PCNET, DOS, Xenix, UNIX, NEC ASTRA XL, Motorola 8000, Altos, Microport 286 and 386, Apple Macintosh, Atari MEGA ST, 520, and 1040, and Commodore Amiga, are registered trademarks of their respective owners.

CIRCLE 081 ON READER SERVICE CARD

News, Notes & Quotes

What's Happening in the Atari World

By Stephen Mortimer
START Contributing Editor

Atari First-Quarter Earnings

Atari's first-quarter earnings for 1989 revealed both good and bad news for the company. Sales were down to $88.8 million in 1989, compared to $98.3 million in the first quarter of 1988, a decrease of 10 percent. Operating income was $6.2 million, compared to $15.3 million last year—a 60 percent decrease. Net income in 1989 decreased 42 percent, falling to $3.3 million (6 cents per share) from $5.7 million (10 cents per share) in 1988.

The 1988 earnings reflected the losses from Federated operations. Since Federated is now considered a discontinued operation, its losses will no longer affect corporate earnings.

Gregory Pratt, Atari's vice president of finance and chief financial officer, cited the lower earnings as a result of a 40 percent decline in the video games business. Additionally, the dollar rose 10 percent in value, causing lower profit margins for Atari since its products are made in Taiwan. The good news was a growth of 15 to 20 percent in the computer business. The number of units shipped this year increased significantly over last year. ■

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

ATARI CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF INCOME

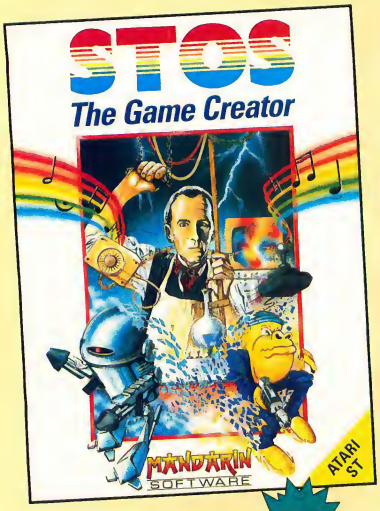
(in thousands, except per shore doto)		Quarter ended April 1, 1989	Quarter ended April 2, 1988
NET SALES:		$ 88,776	$ 98,321
Operating Income		6,169	15,271
Income from continuing operations before income tax		3,411	16,202
Provision for income taxes	(Note 1)	123	1,128
Income from continuing operations		3,288	15,074
Discontinued Operations	(Note 2)	—	(9,400)
NET INCOME		$ 3,288	$ 5,674
EARNINGS PER COMMON AND EQUIVALENT SHARE:		$ 0.06	$ 0.26
Net Income		$ 0.06	$ 0.10
Number of shores used in computation		57,781	57,951

NOTES

(1) The tox provision for the continuing operations of Atari has been reduced by approximately $1.3 million in respect of the benefit of the losses of discontinued operations for the quarter.

(2) Represents operotions of the Federoted Group. In Morch 1989, the Compony decided to discontinue its operotion of Federated and reflected this decision in 1988 by writing off its remaining investment in Federated and providing for anticipated financial obligations and losses arising from this investment. The Company is pursuing various options and intends to complete this disposition in 1989.

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

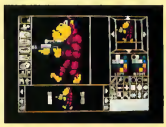


Unleash Your Imagination!

Design the game of your dreams...

Convert your ST into the ultimate game writing machine. STOS revolutionizes BASIC. Its simple-to-use interface and 320 commands give you the power to create *fast, exciting games*. Whether you're a competent programmer or have never written a game before, STOS is the tool you need to *create your own masterpiece* (or edit someone else's).

In one impressive package you get: STOS Basic, sprite editor, room designer, character set editor, icon editor, music editor, screen compacter—**PLUS,** three free games which show you just what can be achieved with this unique package. There's **Zoltar, Bullet Train and Orbit** - and each game is written entirely in easy-to-understand STOS Basic, which means you can modify or customize each one to your heart's content. Change the music, the sprites, the difficulty level. Design some new screens... And by examining the programming you'll learn how to create your own games from scratch.



This is the Game Creation program that hit the top of the European best seller charts within one week of launch—now TERRIFIC SOFTWARE brings this English Best Seller to the U.S.!

- Move and animate up to 15 sprites at once - with full collision detection between each sprite
- Add a musical soundtrack which plays on interrupt or use one of the pre-defined sound effects to add that professional touch
- Define up to 16 different types of scrolling areas
- Create pull-down menus with one command
- Grab the sprites from your favorite games
- Compact Neochrome or Degas screens - or even sections of screens

ONLY $59.95

...Let your adventure creation begin!

Adventure game writing made easy! Produce your own professionally illustrated adventure games with STAC, the ST Adventure Creator. STAC is a unique, easy-to-use program that lets you produce exciting, top quality, graphically illustrated adventures.

STAC is a compact program under 100K long. This leaves 300K on a basic 520ST and a whole lot more on Mega STs.

This 2-Disk package includes: STAC, Quick Start File, Small Demonstration Adventure, Variety of Character Fonts, a Slide Show of Sample Adventure Screens and a very comprehensive 70 page manual. **PLUS** SHYMER– a complete 150K adventure.

LET YOUR CREATION BEGIN !

ONLY $69.95

"A Superb Accomplishment"
—Atari ST User

"An Excellent Product"
—Atari ST Update

- Graphic Editor/ Designer
- Character Font Editor
- Printer options
- LINK feature enables adventures of unlimited size to be created
- Over 120 different conditional actions
- Loading screen option
- Music in messages
- Print text anywhere, even over graphics

TERRIFIC SOFTWARE

Look for these game and adventure creation tools at your favorite store, or call 800-234-7001 to order by phone.

Inquiries: Terrific Software, 544 Second St., San Francisco, CA 94107. (415) 957-0886

MM8S

Terrific Software, Antic Software and Antic are trademarks of Antic Publishing, Inc.
*STOS is a trademark of Mandarin Software, U.K.; STAC is a trademark of Incentive Software, U.K.; *Atari ST is a registered trademark of Atari Corp.

Products Update

New ST Software and Hardware

Compiled By Marta Deike
Start Editorial Coordinator

Hand Scanner from Migraph

Migraph announces the release of their **Hand Scanner** (introduced at Spring '89 COMDEX). Now *you* control the scanning, recreating only the images and parts of images that you want in your DTP projects. The new instrument (which plugs into your ST's cartridge port) scans a four-inch width at 100 to 400 dots per inch. You can choose among such options as half-tone, line art or contrast scanning and then watch your work through a window on the unit itself. Migraph includes a "light" version of their bit-image editor, Touch-Up, in the Hand Scanner package. Hand Scanner, $499. **Migraph, 200 S. 333rd Street, Federal Way, WA 98003, (800) 223-3729.**

Migraph's new Hand Scanner allows you to selectively scan images for your DTP projects. Plug it into your ST's cartridge port and go!

Switchable Operating System

Did you just buy your new TOS 1.4 ROMs only to discover that some software won't work with them? Now there's help for those compatibility blues. From Bill's Designs comes a product that will let you run your original TOS in ROM or switch to the new TOS version 1.4 (or any other TOS for that matter), and go! The **S.O.S.** (for Switchable Operating System), consists of a socketed board with an external switch. S.O.S., $70 (price does not include ROMs). **Bill's Designs, 1246-A Nike Street, Huntsville, AL 35808, (205) 837-4018.**

New CAD Package for the ST

Beta-CAD brings you a CAD package that requires just your 520ST and a monochrome monitor. It runs entirely from RAM, with over 1,700 entities and 500 levels available. In order to speed common functions, keyboard commands and mouse control are used to execute such functions as stretch, duplicate, rotate and auto-intersect. "Auto-dimensioning" places leader lines, arrowheads and repositionable dimensions or text anywhere on the screen with a quick click of your mouse. There's also instant online help with a list of commands and functions. Beta-CAD, $89.99, **Beta-CAD, 31 Millard Road, North Attleboro, MA 02760, (508) 695-9175.**

Hard Drive Boost

Keep your ST Hard Drive performing at its peak with MichTron's **Hard Drive Turbo Kit**, a multi-utility package that caches, optimizes and backs up your hard drive. The package includes two programs, MichTron's Toolkit and M Cache. Toolkit not only backs up but also optimizes your hard drive, restoring ▶

its speed. Toolkit also lets you check disk statistics and run a consistency check. M Cache increases the speed and efficiency of your drive by holding recently accessed disk sectors in your computer's memory, thus eliminating the time-consuming step of rereading information. Hard Drive Turbo Kit, $59.95. **MichTron, 576 S. Telegraph, Pontiac, MI 48053, (313) 334-5700.**

Hard Drives from Future Systems

Future Systems recently released its family of hard disks for the ST. The new **FS series** of hard drives offer the ST user both high performance and large storage capacity at an affordable price.

The FS series includes three configurations: 30, 50 and 80 megabytes. All three models are self-contained, external units with their own internal power supply, cooling fan and controller/interface. A second DMA channel for daisy chaining additional peripherals is provided with each drive. FS-30, $749; FS-50, $849; FS-80, $1199. **Future Systems, Inc., 21634 Lassen Street, Chatsworth, CA 91311, (818) 407-1674.**

Games

Broadway comes to your ST with Cinemaware's extravaganza of sight and sound, **The Kristal**, a 3D-adventure game based on the original stage musical, The Kristal of Kronos. You are Dancis Frake, a space pirate who seeks the long-lost Kristal of Kronos. Emerging from a timeless dream with no memory of who you are or where you're from, you must discover the secrets of your past. There are scores of interesting characters—all carefully crafted to express personality—who provide you with vital clues, but you're not without enemies, and they're on a steadfast course to obliterate you and your quest. Sixty different colorful scenes promise to keep this production engaging. The Kristal, $49.95. **Cinemaware, 4165 Thousand Oaks Blvd., Westlake Village, CA 91362, (805) 495-6515.**

High drama and humor abound in Cinemaware's The Kristal. The fate of the universe is in your hands, but how will you save the world when you can't even remember your name?

Based on the popular but deceased television series, **Miami Vice** by Intra-Corp puts you in the Ferrari's driver's seat as the slick crime fighter, Crockett. Your chase will take you through the land of the palm trees, racing your Ferrari through the Art Deco district and your speedboat to Stiltsville. There are eight levels of difficulty to challenge you and the colorful graphics accentuate the titillating dangers of fighting crime, Miami-style. Miami Vice, $39.95. **Intra-corp, 14160 S.W. 139th Court, Miami, FL 33186, (305) 252-9040.**

Hustle your friends or computer in the new billiards program, **World Snooker** by Artworx. In each of the six different versions, you can zoom in for precise shot alignment, take back missed shots, set the table for trick shots and even watch an instant replay of the last shot. The computer will give you a demonstration and then let you have a practice session.

Also from Artworx, **Colossus Chess X** pits your strategic mind against a computer that grows more cunning with each game. The unique feature of this chess simulation is its ability to learn new lines of play based on its experience playing against you. Colossus understands all the rules including under-promotion, the fifty-move rule and "all draws by repetition." It also handles all the standard mates including the very difficult King, Bishop and Knight versus King. There are four different sets of chess pieces and six different playing modes. World Snooker, $24.95; Colossus Chess X, $34.95. **Artworx Software, 1844 Penfield Road, Penfield, NY 14526, (716) 385-6120.** ■

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.*

Aardvarks
Music & Computer
is just a phone call away...

We're new,
but you'll find us fast,
friendly,
and reliable.

Aardvarks is the one-stop source for all your hardware and software needs.

- o Authorized Atari Dealer/Service Center
- o Low prices on all hardware (call for quote)
- o European and domestic software at competitive prices

Call today! (813) 932-6366

- * **Free shipping in continental U.S.A.**
- * **No surcharge for credit cards**
- * **COD's welcome**

7525A N. Armenia Tampa, FL 33604 (813) 932-6366
CIRCLE 017 ON READER SERVICE CARD

NEW!!
LINE FONTS
Magnetic Images
for PageStream™ and Publishing Partner™

Disk 1	Disk 5
Avant Garde	✪Dingbats□*
Courier*	Symbols*
Calligraphy	8 Bit*
Disk 2	**Disk 6**
Times	Set of 11
HelveticaNarrow*	PostScript
16Bit *	screen fonts
Disk 3	**Disk 7**
Chancery	Script *
Bookman	Devine *
Chicago	Gothic *
Disk 4	**Disk 8**
Palatino	Brush Script *
Schoolbook	Marlow*
Computer*	Chamfer *

$34.95 per disk +2.50 P&H

* BONUS!! Includes font for MiGraph's Touch-Up!

Magnetic Images
P.O. Box 17422, Phoenix, AZ 85011 (602) 265-7849
VISA • MasterCard • Amer Express • Check • COD

CIRCLE 019 ON READER SERVICE CARD

CIRCLE 045 ON READER SERVICE CARD

Atari is entering a new era in 1989 with a new generation of computers joining Atari's product line, and, hopefully, making its mark in the marketplace. START recently approached Atari President Sam Tramiel with a request for a wide-ranging, no-holds-barred interview for publication in our pages. This is the result, a START exclusive.

From Atari's Oval Office

An Exclusive Interview With Atari President Sam Tramiel

BY MARD NAMAN
START CONTRIBUTING EDITOR

Atari President Sam Tramiel is a busy man these days. With several new computers scheduled for U.S. release in the last half of 1989, Tramiel has his hands full. But he took time from his busy schedule in early May to meet with START's editors at Atari headquarters in Sunnyvale, California. There, over his favorite in-office lunch (a tuna submarine sandwich and a soda), the president graciously and openly revealed the company's exciting new products and plans.

Sam Tramiel is unpretentious and straightforward, and he knows what he likes. When it comes to machines, about the only machines that excite him as much as Atari's new products are Enzo Ferrari's automobiles, of which he has owned several classics. But now on to the computer equivalent of a Testa Rossa: Atari's new TT.

START: Let's talk about Atari's newest computers. Tell us about the TT.
Tramiel: The TT is great. It should be just dynamite. It's a very, very versatile classic machine. And the price of the machine is one that will really shake up the marketplace. It will be a dynamite machine.

One version of the TT is a 6-meg machine which will run UNIX, TOS and emulate MS-DOS. It will have a lot of expandibility, six or more VME full-sized cards, many rotating devices can fit into it—four or six, depending on their size. It's a much more upper-end machine. What that will sell for I'm not sure.
START: Half the price of anyone else out there?
Tramiel: Yes, but we recognize who we are, and our marketplace is the mass market. I'm not going to pretend we're going after IBM and Apple and Sun. But we'll have a great machine and if people want to buy it, God bless them, here it is.
START: It sounds impressive. A multisync monitor will handle it?
Tramiel: The multisync monitor will definitely handle it. Also, a slightly adjusted VGA color monitor and slightly adjusted VGA monochrome monitor will handle it as well.
START: Will you be marketing monitors to go with the product?
Tramiel: Absolutely. We'll be marketing Atari monitors.

Stacy and the Portfolio

START: When will the Stacy (the much heralded laptop ST) be shipping?
Tramiel: It should be shipping this summer.
START: Are Stacys going to be shipping to developers soon?
Tramiel: There are no plans. There's nothing really to develop on it that's any different than the 1040ST, because it is a

1040. So we haven't rushed it from a development point of view.

START: Is there room in the box for a modem?

Tramiel: No, there's no room in the box, but there is a 72-pin expansion slot in the back to do special things with if you want to. It's for musicians especially. For modems, of course, you can plug into the RS-232 modem port in the back.

START: Is the 72-pin bus port the same as the Mega bus port so that any product that was originally developed for the Mega, like the Moniterm monitor, would work if you wanted?

Tramiel: Electronically, it's exactly the same.

START: Can the Stacy be hooked up to a color monitor or TV?

Tramiel: It goes into a color monitor if you want it to, but it does not go into a TV.

START: How many Stacys do you hope to ship?

Tramiel: A lot. I have no idea what the marketplace will require. The responses at Hannover and COMDEX were greater than I expected. I was amazed at COMDEX; people went crazy for the Stacy there. I've underestimated the laptop market before when we were at Commodore, and maybe I'm underestimating again, but my guess is 5,000 units a month. And if the market wants more, we're very happy to make more, no problem.

START: Will Stacy be made at the same plant in a parallel production line as your other products?

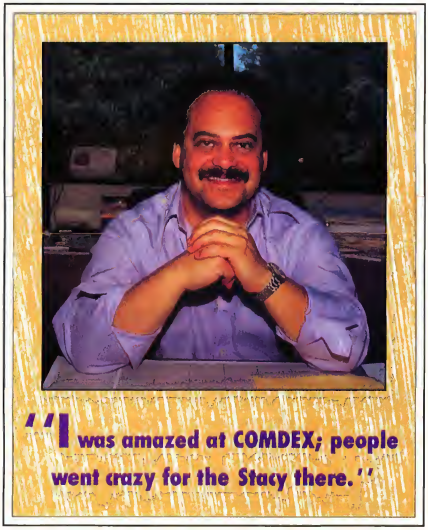
Tramiel: Yes, in our factory in Taiwan. We have the capacity to make 35,000 Stacys a month, if the market wants it. That's the tooling that was set up for production.

START: We understand you've completely redone the plant and redesigned the production line so you could take on all the new projects.

Tramiel: And we're looking at getting new factories going as well, all with surface mount technology and all the latest equipment.

START: Will these be overseas?

Tramiel: Unfortunately, yes. I wish we could do it in the United States, but so far it isn't economically viable from a tax point of view and everything else. The U.S. doesn't make it easy.



START: Even Houston?

Tramiel: Houston is a little bit better in terms of property cost, but in terms of taxes, it's a Washington issue, not a Houston issue.

START: The Portfolio (the hand-held IBM PC-compatible computer)—how many do you project to ship?

Tramiel: We project to be shipping about 200,000 pieces between now and the end of the year. That's my "guesstimate."

START: Did you think that would be the case when you first latched onto the DIP prototype?

Tramiel: We thought it would do well, but the reaction has been well beyond our wildest expectations. Initial inquiries are just gigantic. The number of pieces I gave you, 200,000, is our conservative production number. I would say the demand from our subs around the world and from our customers are three times that. We would rather be sold out, have it go crazy, then in 1990 we can make more if they want that much more.

START: When will the Portfolio be coming?

Tramiel: To the U.S., my guess would be late June. We have to get one of the peripherals to finish the testing at FCC. Everything seems to be okay. They want a peripheral plug-in to the expansion port. Then they'll know everything is okay. They want a system configuration, not just the unit by itself.

START: You have the RAM cards and everything?

Tramiel: Oh, yes, RAM cards, ROM cards, PROM cards.

START: We're looking forward to that. Will you carry the Portfolio or the Stacy while traveling?

Tramiel: I'm going to have both, personally. The Portfolio will be in my briefcase at all times. I'm going to have my diary and my address book put in there, and do simple word processing and simple spreadsheet stuff on that little machine. When I go on long trips, I'm definitely bringing the Stacy with me for the airplane.

START: We saw PC3 boxes in-house here. Are you shipping PCs in the U.S. now?

Tramiel: No, we're still shipping outside the country only. We showed our first ▶

machine for the U.S. at COMDEX, and this is definitely coming to the United States market, contrary to some published reports. We're calling it the PC4, it's a 286 machine, 16 megaHertz. That will be our first PC product for this country.
START: What's the price?
Tramiel: It will sell for $1,995 suggested retail price. A minimum one-meg configuration comes with the machine, with a three-and-a-half-inch, 1.44-megabyte drive and a 60-meg hard drive built in.
START: Will that be marketed through business computer centers?
Tramiel: Yes.

ATW

START: When the TT was first talked about, our understanding was that with the TT and the ATW (Atari Transputer Workstation) you would be going after the graphic workstation market, which would mean a direct sales channel and a sales force in-house.
Tramiel: To be very clear, we're shipping ATWs in Europe now and, again, for a specific reason; it's not just to keep it out of the United States. We feel this machine is unique, it's very, very powerful, and Europe is embracing it more quickly than the U.S. Universities and software companies have bought the machine in Europe; some big manufacturers, like Volkswagen have bought the machine and are doing testing with it.

We'll bring it to the U.S. probably by the end of this year, when there's some software running on the machine. The U.S. is a very, very tough marketplace and to introduce a new operating system again into the U.S., there has to be something to support it, whereas Europe is more flexible on new concepts of that sort. And it is a European machine. It's an INMOS chip. S.G.S. Thompson just bought INMOS, so it's French, Italian and English. The whole common market wants to support it. Governments are supporting it. Schools are supporting it. When they've done that with all the software running on it, then we'll bring it back to the United States.

The TT could also be a workstation-type of machine. We have no intentions whatsoever to hire an outside sales force. That is not our direction. We are a mass-market company. We need retailers – we're not going direct. So on the ATW and the TT, it's through specialty stores. They will go and sell the workstation machines.

Distribution and Leasing

START: Will Atari have in-house or third-party leasing consumer credit plans for the machines, like Apple does?
Tramiel: Yes, we do plan that.
START: For the mass-marketing channels, are you going to go back into the department stores?
Tramiel: Not yet, but not because we don't want to. I don't think they're ready for it yet. They've backed out of that business, almost all of them. A few of them are dabbling in it but not very seriously. For the TT and ST, to go back into the real mass market the machines have to become more popular again in the U.S. A guy goes to a mass marketer and says "I know what I want to buy and I want it for the lowest possible price." Then he'll go to K-Mart and buy it. But if he doesn't know what he wants to buy, he goes to a specialist. If we go back to the mass market, it will only be with the lowest-end machines. The highest-end machines will be supported by specialists.
START: We've heard all kinds of numbers about how many dealers you now have. We've heard everything from 230 to 500 existing Atari dealers. Can you help us out with an accurate number?
Tramiel: Yes, we now have approximately 250 business/specialty-type dealers and about 200 MIDI-type dealers. That might be the confusion – if you add them together it's close to 500.
START: When you say specialty dealers . . .
Tramiel: All Atari computer dealers. We call computer dealers specialty dealers.
START: There's reportedly going to be another classification called BCC – Business Computer Centers. Is that included in that figure?
Tramiel: Yes, it is.
START: Just to clarify, you're not going back to mail order?
Tramiel: Correct. To be clear, we never went to them. They got the machines through distributors, and we couldn't control it so we stopped selling to distributors.

Education Market

START: The education market is a very difficult nut to crack, with the Apple II in there. What are Atari's plans?
Tramiel: The educational market is a very important marketplace. We have a customer called Computer Curriculum Corp., based in Palo Alto, and they sell approximately 10,000 1040s a year in the educational market.

There are two distinct educational markets today. One is the type that just buys computers, puts them in the classrooms and says "Kids, play. Hack away with them." That's dominated by Apples and PC clones.

Then there's the structured course-work-type of computer system, networked together with 16 or so computers in a classroom. The kids are sitting at the computer working with the teacher and going through a whole course. I've been told by CCC we have at least 25% of that marketplace. That is a growing market and CCC is using the STs exclusively for that.
START: There was a product announced as the "Apple II in an ST." A company in Florida announced it, but we never heard anything else from them.
Tramiel: On the IIs and IIGS compatibility, we've been pushing that very hard for a number of years. The people in Florida have just not come through with it, so I've become quiet about it. If they come through with it, God bless them. But I think the Apple II now is becoming

less and less of an important thing, even for schools. The machine has really gotten tired.

START: It certainly has, but the breadth of software out there . . .

Tramiel: Yes, but the schools are definitely going more upmarket now. With the TT, we will no question have MS-DOS compatibility, either through our friend in Florida, Avante-Garde, or elsewhere. We're also doing that with the TT. We have a contract with a company in the UK and in Sunnyvale, so we will have MS-DOS running under UNIX. The TT will run at AT or XT speeds, depending on whether you have the high-end or low-end machine. The difference is because of the memory available. To run AT emulation you need a lot of memory.

What's NeXT?

START: What do you see the TT doing to NeXT?

Tramiel: I hope it clobbers them. I hope to be making money from the TT before NeXT comes out in any volume.

START: We can't see why anyone would buy a NeXT when there's a TT available.

Tramiel: I agree.

START: And you'll be shipping the TT with two operating systems?

Tramiel: We'll be shipping the computer with TOS in ROM in the machine. And a lot of software will run right from the ST world into the TT world. We've done some experiments and a lot of the software works, unless it uses some special hardware and special tricks, in which case they have to adapt to the TT to work properly.

The UNIX will be a separate operating system that you can buy for the machine. Because of the royalty rates, we can't afford to bundle it in. And I'm hoping we can retail this software for the UNIX at $299 for a UNIX 5.3.1 system. To me that's a lot of money. We're not used to charging that much for an operating system – we always put it in the machine.

START: You mentioned TOS 1.4. Will that be shipping shortly?

Tramiel: We've already been shipping TOS 1.4 to developers and it will be sold as an upgrade kit to people who want to buy an upgrade kit. We're putting it into Mega production already. I guess its retail value will be $99 or less. It's basically available now.

Also, one more thing on the TT: we will be shipping keyboards included in the price, not like Apple does.

START: Is that a new keyboard or the Mega keyboard?

Tramiel: The TT will be available with either a Mega-like keyboard or an even higher-end keyboard.

START: Will that be with the Stacy keyframe that has such a nice feel?

Tramiel: There's a thing called DIN, which is a European organization that sets standards. They've just established for 1989 a new DIN standard for keyboards. If you want to sell your keyboards for offices, you must be at these specs. The TT keyboards will meet the new DIN standard – it's got the right angle, it won't make your wrists tired and all those things. It won't be exactly Stacy, but something like that.

START: It will have that good feel?

Tramiel: It's even a better feel than the Stacy keyboard. It's actually the same keyboard that we have in the PC4 machine.

START: What can you tell us about the Blitter upgrades?

Tramiel: We'll have two upgrades. One, the 68000, will be a 64-pin package that includes a Blitter chip. There will also be upgrades in the flat pack which will go in some 1040 boards. So there'll be two versions of the upgrade: It will be TOS 1.4 and the Blitter package.

START: That's not the $99 package.

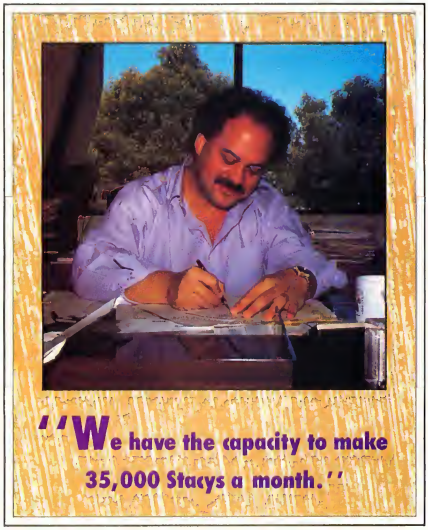
Tramiel: No, that's just for the TOS 1.4.

START: We've heard that it's not going to be possible to upgrade 1040s or 520s with Blitter chips.

Tramiel: Some will be easier to do than others. We will be making kits available for upgrade but because of the earlier revisions of the machine, it will be hard on some machines, to be honest. In later 1040s and 520s, we actually put a spot on the board for the Blitter, and those will be quite easy to upgrade.

START: For price and availability, check with dealers?

Tramiel: Yes. ▸



68020

START: There's probably no reason to do it, but are there any plans to do 68020 add-in boards?
Tramiel: Not at all. The 020 was a mistake. It just didn't work and caused big grief and the 030 took care of that.
START: About the math coprocessor 68881. There are a number of hardware products out there that have a spot for it. They're just awaiting software. Atari also at one point announced a coprocessor board. If you don't want to upgrade your monitor but just want to add a coprocessor, is there a plug-in board for the bus?
Tramiel: Correct. We've been shipping that for the Mega ST for a long, long time – ever since the Mega came out. On the TT, there will be a 68881 socket in the machines.

How Widespread Is the ST?

START: How many STs are installed in the U.S.?
Tramiel: We don't give country-by-country numbers. Obviously, we've been shipping more than the lion's share outside the United States, especially since late 1987 and 1988. Around the world now I'm guessing that it's approaching one-and-a-half-million machines. It's a sizeable market.
START: Is Atari going to be increasing support for third party vendors?
Tramiel: Antonio Salerno is our new third-party software evangelist. He has a lot of experience in software. We're trying very hard to increase our support to third-party people. We are planning to have either a number of small [developers'] conferences or one big conference.
START: A LAN product, Ethernet, was announced in Germany.
Tramiel: There were four to be exact. An industrial one, less fancy ones, and one from Spain as well.
START: Will Atari be adopting one or co-marketing any of the hardware add-ons here?
Tramiel: We are planning an Ethernet-like board for the ST Mega world. And for the TT world it will be DMA-type boards and there are Ethernet boards that have wide compatibility. So we're definitely going in the Ethernet direction.
START: A while ago, Promise-LAN was announced. What happened?
Tramiel: It was canceled. It just didn't work out.
START: Will Atari be supporting, encouraging, discouraging or offering the use of any of the 68000C16 boards?
Tramiel: We're taking a neutral position. We're doing nothing about it. I hope people do very well with it. I wish them all the luck in the world. We did some experiments on the 16-megahertz 68000 and we saw minimal improvement in the performance of the machine. Overall it was just not worth the difference.

U.S. First

START: We appreciated the promise you made both at COMDEX and World of Atari [in Anaheim] that the U.S. will get new products first, that this is the year of the U.S.
Tramiel: No question.
START: Any projection on ST sales or ST family sales this year in the U.S.?
Tramiel: It's really a guess. We're rebuilding almost from scratch in the U.S. But if we don't sell 100,000 machines here this year, then there'll be big trouble.
START: Could you outline some of the ways you expect to do this?
Tramiel: Setting up dealers is the main way of getting a new base of distribution. We get so many letters from people around the country who want to buy an ST but the nearest dealer is 700 miles away. So we have to set up a new distribution network of good dealers. And then, of course, support them with advertising locally. Then we have the national groups set up again, thinking up national advertising. That's the plan of attack.
START: So support for the machine – repair, warranty repair – again will be handled by the dealers?
Tramiel: Yes.
START: With minimal, only necessary involvement from the corporation?
Tramiel: A lot of involvement from us, supporting the dealers.
START: But not directly with the consumer?
Tramiel: If the consumer wants to come back to us directly, we'll fix it for him.
START: We've heard dealers have had a hard time getting warranty parts. Is that situation being corrected?
Tramiel: I've been *promised* that it's been taken care of – a while ago. We have a new service manager – he's in charge of it and he's quite professional. I've made it very clear to him and the factory that we *must* have spare parts for the products.
START: One thing that disgruntles dealers is when they have to cannibalize inventory. They end up with unsaleable machines because they have to put the mother board in a customer's machine and await an Atari replacement.
Tramiel: It disgruntles me also! I agree.

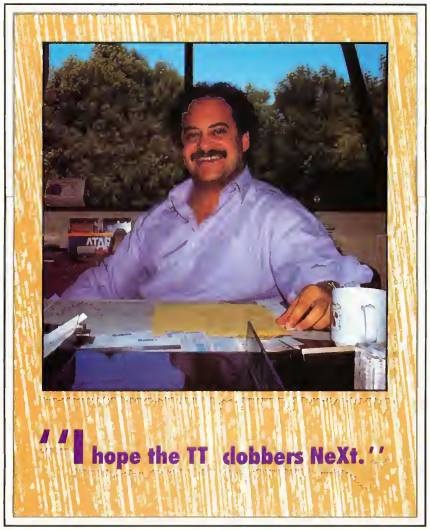
Let the Chips Fall . . .

START: What about the 80860 chip, the 64-bit chip that's been called the N10. It's apparently a new Intel chip that supports 3-D graphics and shading. What are the corporate plans?
Tramiel: We're looking now at the next generation of machines that we'll get involved with. First, we think it will be a RISC-based system. And the 80860 is one we're looking at. We're also looking at the 88000 series from Motorola.
START: What about the 68040?
Tramiel: That's definitely going to happen. That's in the ST family. From the 30 to the 40 is total compatibility, it's just more powerful.
START: You're planning a 68040 upgrade for the ST?
Tramiel: For the ST family.

CD-ROM, Federated and Hotz

START: CD-ROM—are you close?
Tramiel: We made the first 500 machines and shipped them around the world. Now we have to get software people to work more on them. Everything's ready to go—we just need more software for it. We have one program, just completed in the U.S., called the History of the World. We hired a CD-ROM product manager, who started with us yesterday, with a lot of CD-ROM experience, and his task is to get more titles on the CD-ROM.

As the father of three kids, I love the CD-ROM, but there's got to be more software. Because for educational use, it's just amazing, a tremendous resource.
START: How do you see the future of CD-ROM?
Tramiel: I see it as being a big business. And not only big business, a tremendous tool for educational purposes. I think we'll have more software ready for the machine by the end of the year. I hope in 1990 we'll launch other products. When we first showed it, we were just premature on the software side. Everything was ready, we had a great encyclopedia on it, but that was it. CD-ROM is a great idea and no one's really done anything with it yet.
START: When is the "drop-dead date" for the Federated split?
Tramiel: We're doing it as fast as we can. Everything is going ahead. We've reduced the losses tremendously. We've closed stores. L.A. is still going quite strong, as is Texas. We're negotiating with a number of people right now to sell the company. It was an expensive mistake, but it's over.
START: In our experience with Federated, they didn't have a handle on which computers they were selling.
Tramiel: That's only one of the things they didn't have a handle on. That we could have lived with. They didn't have a handle on anything really. It was a disaster, and we just couldn't fix this one.
START: What about the Hotz MIDI musical instrument?
Tramiel: The Hotz machine is truly an experiment. I hope it does very well.



Unfortunately, I am not a musician—I play the stereo. My brother Leonard is a real musician. He taught himself. He's really into music a lot and Leonard thinks the thing is just amazing. He just loves it. This thing is radical, revolutionary, it's a whole different concept. We're going to support it and give it a go.
START: It's difficult for people who haven't seen it to imagine how it works . . .
Tramiel: It's difficult even seeing it! You touch this pad and you do different things and all this great music comes out.
START: Any false rumors you'd like to put to rest?
Tramiel: There's a rumor I heard somewhere that my father is selling all his Atari stock. This became a serious rumor. And he's not.
START: So would you say now is a good time to buy Atari stock?
Tramiel: (laughs) I can't comment on that. It's against the SEC rules. But I'm not selling!

START: How many computers do you think you've sold in your lifetime?
Tramiel: I would guess well over 10 million. When I was at Commodore we were building 400,000 C64s a month for a couple of years.
START: How old were you when you started at Commodore?
Tramiel: My father started it when I was 8 years old. I used to work in the warehouses. I started sweeping floors and shipping goods. And then I worked my way up, working in every department in the company, literally. I started working full time when I was 22, in 1973.
START: One last thing. We'd like to arrange to take new photos of you.
Tramiel: Fine. I have less hair now, so it's a whole different image. (laughs) ■

Mard Naman is a freelance magazine and television writer and a Contributing Editor of START.

Atari Corp.
1196 Borregas Ave.
Sunnyvale, CA 94086
(415) 745-2000

Photos by Murray Close

And He's on the ST

BY ANDREW REESE START EDITOR

You hear just a few notes of the theme song and you know immediately what's coming: it's an Indiana Jones movie. Or in this case, an Indiana Jones game – or two Indiana Jones games! And the nice thing is that these games aren't just

If you're an Indiana Jones fan—and who isn't—then you've probably already seen* Indiana Jones and the Last Crusade *six or seven times. It's the best of the three Indy movies that's come to your local theater and, thanks to Lucasfilm Games, it's also coming to your ST this summer. START visited Lucasfilm Games recently for an exclusive preview of their two new ST Indy games. We were impressed!

movie rip-offs; they're well-designed and eminently playable.

Lucasfilm Games recognizes that there are two different types of gamers and have tailored a different game for each: an arcade game for the joystick set and a graphic adventure for adventurers. By the time you read this, you should be able to find both of the games on your dealer's shelves. Just look for the distinctive marbled box and the word, "INDY." Only the ST and Amiga will have both games; other formats will see only one or the other.

Goin' To Movie Heaven

When START received an invitation to visit Lucasfilm Games in Marin County, California, we accepted immediately. It meant more than just a visit to George Lucas' incredible Skywalker Ranch; it also marked a new commitment by Lucasfilm Games to the development of ST products. And if you're familiar with their prior work, then you understand the significance of this.

Lucasfilm Games was founded in 1983. Among its early successes were Ballblazer and Rescue on Fractalus, the innovative and graphically striking 8-bit games. The first ST game to be released in the marbled Lucasfilm Games box was 1989's Zak McKracken and the Alien Mindbenders (reviewed in the July 1989 issue of START), followed by Battlehawks 1942 (to be reviewed in the next issue).

Skywalker Ranch is located in a rural ▶

Charging down a walkway aboard the Zeppelin, Indiana Janes tries ta reach the biplane carried abaard the airship. This sequence alsa is a part of both the Actian and the Graphic Adventure Games.

In the movie ''Indiana Janes and the Last Crusade,'' Indiana Janes finds himself abaard a Zeppelin after escaping fram Castle Brunwald. In *Indy*, The Actian Game, Indiana must battle Nazi guards with his fists and whip ta escape.

As the rain falls outside Castle Brunwald, Indiana Jones must use his whip to swing into the room where his father is being held captive. ''Indiana Jones and the Last Crusade'' may be the last Indiana Jones movie, but Indy will live on in Lucasfilm Games' two new *Indy* games long after the movie ends.

area north of San Francisco. Its 300+ acres are dotted with meticulously re-created turn-of-the-century buildings, all of which fit into the setting perfectly – you'd swear they've been there since 1900. (Lucas has even constructed a history for the buildings – the $10-million main house was built by a retired sea captain and the "winery" by one of his rebellious sons.)

But the buildings' interiors belie their antique exteriors. The weathered brick winery, for example, is the Technical Building, home of Sprocket Systems, Lucasfilm Ltd's state-of-the-art post-production and sound design facility. And if you're looking for Lucasfilm Games, why, it's in the Stable House, of course.

Action and Adventure

We were hosted in our visit by A.J. "Red" Redmer, Director of Software Development. Redmer joined Lucasfilm Games from Maxis, where he completed SkyChase, the notable head-to-head air combat game.

Our first look was at *Indy*, The Action Game. This game is designed for the arcade gamer and features three "scenes" based on the movie. In the first, you play the part of Indiana Jones as a Boy Scout, and try to wrest the Cross of Coronado from graverobbers. Your escape is along a circus train, pursued by the angry graverobbers. If you escape, the second scene requires you to find your way out of the Venetian Catacombs without being burned up, eaten by rats or squashed by falling walls. Making your way out of the Catacombs takes you to Schloss Brunwald where you must climb across the face of the castle during a lightning storm that shakes the building.

For those persistent gamers, the third scene begins inside a Zeppelin, as you try to locate a biplane to make your escape, while battling Nazis and solving a ladder-type maze. The final portion of this scene takes place in the Temple of the Holy Grail where you must solve three tests to reach the Grail before your father dies. It's nonstop action and only for the strong-willed.

As of this writing, plans are to let gamers begin the game in either of the first two scenes or continue the game from the last point of play. You'd better be good and you'd better be quick in this game, because it's no place for the cautious! Just be sure you don't lose your head.

Parts of *Indy*, The Action Game reminded us of the 8-bit game Zorro with its use of a whip and the need for impeccable timing to make it through. The

Indy, The Action Game parallels the plot of the movie ''Indiana Jones and the Last Crusade'' and begins with a scene of Indiana Jones as a young Boy Scout battling graverobbers for the Cross of Coronado. *Indy*, The Action Game has good graphics, smooth gameplay and, of course, the Indiana Jones theme.

16-by-16 pixel character graphics are quite nice and the music is, naturally, the Indiana Jones theme. Copy protection is off-disk, based upon a heiroglyph table that accompanies the game. *Indy*, The Action Game should provide arcade fanatics with many nice, long and challenging play sessions. It's planned for a June release on the ST.

Indy, the Graphic Adventure Game alsa parallels Steven Spielberg and Georgе Lucas' movie, but adds alternatives unavailable ta the movie Indy. In Schloss Brunwald, Indiana Janes must salve several puzzles, including twa which revalve araund this kitchen scene. A clue: dogs lave a nice piece af beef.

SCUMMy Animated Adventures

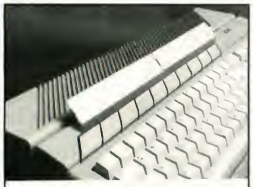
Lucasfilm Games is one of the leaders in the development of animated graphics adventures, thanks in no small measure to SCUMM, their proprietary "Script Creation Utility for Maniac Mansion." Now in its fourth version, SCUMM is an integrated system for creating adventure game scripts that control all elements of a graphic adventure. SCUMM is a hybrid language that was developed in-house at Lucasfilm Games. It follows a C-like structure, but allows multi-tasking, i.e. multiple parallel scripts to follow the actions of more than one character and to provide several different methods to solve the game.

Indy, The Graphic Adventure Game was created with SCUMM (and several of its strangely named sub-systems) to follow the basic plot of the movie. But where most movie-based games typically fall short by aping the movie plot too closely, *Indy* is based on a concept of "out-Indying Indy." You can get through the game by following the plot of the movie, but your results will differ depending on your cleverness, your "Indy quotient." And this game lets you choose your own style of adventure as you go along.

"There are three parallel paths in *Indy*," says Red. "You can use the mouse point-and-click method as in Zak, but you can also choose to fight your way through the game or talk your way through it. I think that it will allow the player to customize the game experience to one that suits him or her best."

In fact, you can switch among these methods as the need (or your mood) seems to call for. For example, to escape from Castle Brunwald, you can escape on the ground and try to talk your way past the guards, steal a biplane and fly out (while fighting enemy planes) or ride out on a Zeppelin by using the point-and-click method. You can even choose to steal the Zeppelin's on-board biplane and switch into the action mode, but first you must solve several puzzles and negotiate a maze. If you run into a guard, you can then try to talk your way out or fight. There's a nice zoom technique into the fight sequences and the fights are well animated. It's your choice how you want to play the game. ▶

Sean Cannery plays the part af Dr. Henry Janes, Indiana Janes' archealagist father, in the mavie ''Indiana Janes and the Last Crusade.'' The relatianship that is develaped between the Janeses is carried an in the new Lucasfilm games.



Functionz™, A complete function key labeling system includes 6 specially engineered plastic label stands, label maker program disk, and complete instructions. Only $19.95. For extra plastic stands, **Supply Package** only $12.95.

Regent
SOFTWARE
P.O. Box 14628
Long Beach, CA 90803-1208 USA
(213) 439-9664 • FAX (213) 434-2310

CIRCLE 026 ON READER SERVICE CARD

Chicagoland's Largest Atari ST Dealer!

Biggest Software Selection, Including Import Titles & Magazines

Computers
Software
Service

Software Plus

Wheeling
520-1717

Hanover Park
837-6900

Chicago
338-6100

Created using Calamus

CIRCLE 056 ON READER SERVICE CARD

In the movie ''Indiana Jones and the Last Crusade,'' Indiana Jones and his father pass through this airport to catch a ride on the Zeppelin. In *Indy*, The Graphic Adventure Game, things aren't quite as easy as Harrison Ford and Sean Connery find it. You might want to ''borrow'' this gentleman's tickets.

Indeed, Red expects that reviews of *Indy* will vary widely. "Each reviewer will see virtually a different game, depending upon the choices he or she makes along the way. All of the dialogue is linked throughout the game, so that if you've spoken to someone near the start, the characters will respond differently in dialogue and actions later on."

These games aren't just movie rip-offs.

The graphics have been much improved since Lucasfilm Games' earlier efforts. Where Zak McKracken was created with SCUMM version 2.0 with a resolution of 160-by-200 pixels and character-based graphics, Indy is being created with SCUMM version 3.0. Its resolution is 320-by-200 pixels with pixel-based graphics, Z-clipping and smooth animation, both in the characters and backgrounds. The difference is noticeable. Says Red, "We've left the Commodore 64 world behind. Gone is what we call the 'Zak walk.'"

Indy, The Graphic Adventure Game will come with a Grail Diary that's necessary to solving many of the puzzles in the game. Lucasfilm Games has even turned the off-disk copy protection scheme into part of the game by creating integral puzzles that must be solved with the aid of the Grail Diary.

All in all, *Indy*, The Graphic Adventure Game is an ambitious undertaking and one that looks like it will raise graphics adventure game standards to a new level. It's due out in its ST version in early fall. And Lucasfilm Games promises that this will not be the last new adventure to come out on the ST. They've already announced a new fantasy adventure called Loom and promise two more new titles on the ST before Christmas. With the care they've shown on *Indy*, they should be winners. Watch for them at your local theater, I mean software dealer.

By the way, you just can't beat up some of the guards in *Indy*. If you run into one of the big brutes in the Castle, try getting him drunk. Just remember that a guy that big takes a lot more than a stein of beer to put him on the floor. . . . ■

PRODUCTS MENTIONED

***Indy*, The Action Game**, $39.95, and ***Indy*, The Graphic Adventure Game**, $49.95. Lucasfilm Ltd., P.O. Box 2009, San Rafael, CA 94912, (415) 662-1800.

CIRCLE 164 ON READER SERVICE CARD

PRESSING THE FIRE BUTTON

START's Big Games Extravaganza

Last year's special Games and Entertainment issue was so popular we just had to do it again. In an expanded version of our popular ''For the Fun of It'' department, we present reviews of eight of the hottest new games now available for ST. We've even included a book to help you become a true joystick jockey!

BAAL

Reviewed by David Plotkin

BAAL is a colorful, well-animated game that effectively combines strategy and arcade elements into a very playable contest. In this thriller from Psygnosis, you're a member of an elite team that must defeat BAAL, the essence of all evil, who has been freed by an unwary archaeologist. The battle begins as you materialize in the bizarre underground lair of BAAL.

In the game, you are represented by a space-suited soldier, armed with a rocket pack and laser rifle. You control your alter-ego with a joystick and you're given five lives. The underground lair itself is a world of catwalks connected with ladders, so negotiating your way around this world can be tricky.

First Things First

The first trick you need to learn is how to leap over the missing sections of the catwalk. Your leaping capacity is limited, but you can clear short gaps. Press the joystick up and to the right to activate the jump feature. However, if you miss this crucial diagonal move, which is easy to do with any joystick, the soldier falls to his death.

BAAL has also put up force fields throughout his domain that will block your way at every turn. Fortunately, there are also electrical generators which provide the power for the force fields—blast these with your laser and a force field disappears. However, you must find out by trial and error which generator controls which force field. The generator and its force field may be widely separated, so it may take a while to puzzle this out.

As you might expect, the hazards of BAAL's lair aren't limited to inanimate objects. A huge variety of interesting (read "bizarre") creatures populate the caverns, including spitting serpents and ▶

bouncing, winged gargoyles. Most of these shoot at you, although your personal force field can withstand many hits. Some creatures simply can't be shot, as they are too low to the ground, and you must avoid them as best you can. Others are incredibly agile, and you must time your shots carefully to hit them. The touch of any creature is fatal, so be careful.

Your Equipment

Your equipment consists of your force screen and the laser rifle. The screen and rifle are powered from a battery pack, the condition of which is shown as a blue bar on the left side of the screen. When the energy runs out, you die. There are also cannisters of rocket fuel strewn about the cavern. You can't travel from some groups of girders except by entering a special chamber, which engages the rocket pack on your back. You must then find another of these chambers somewhere in the cavern to disengage the rocket pack before the fuel runs out (about 20 seconds) or you'll explode. Of course, you don't know where the other chambers are, so you must search frantically to find one before it's too late.

Your laser rifle is effective against the cavern's creatures which require many shots before they're destroyed, especially in the early levels. The laser rifle has four power levels, but to upgrade it, you must find power cartridges in the caverns. Even a Level 2 laser is a significant improvement over Level 1 (which has no effect on some of the denizens), while a Level 4 laser is truly awesome.

Thoughout the cavern are pieces of the war machine necessary to defeat BAAL. You must find these, pick them up and then transport to the next level. There are, according to the instructions, three levels, although I must admit I've not seen them all. You can also recharge your power pack at special stations located infrequently throughout each level. It is here that some of the humor of BAAL shows—the refueling stations look like old gas station pumps, complete with BP (British Petroleum—remember, this game comes from England) stamped on the base. The refueling stations also let you save your position, something almost unheard of in arcade games, but welcome in a game as big as this one. Unfortunately, you can only save a single game in progress, but this game is not erased from the disk if you die, so you can go back and start at that point again.

After an archaeological blunder, BAAL, the essence of all evil, has been released from his underground lair. As a member of an elite team you must defeat BAAL and stop the spread of his vile existence. So goes the scenario in this latest arcade thriller from Psygnosis.

There is a Problem

The graphics and animation in BAAL are very good. The colors are sharp, and your soldier and the creatures are gorgeously rendered and smoothly animated. The sound is also excellent, with the digitized explosions and the hum of the electrical generator when you're near it.

There is one problem with BAAL: there are sections of girders which can't be exited unless you have the correct equipment. Generally, this isn't a problem because you can't get to those sections without having collected the equipment beforehand, but there is an exception to this rule: when you die, you're not reincarnated in the same place. Instead, the game "seeks a timegate" which may set your new man down some distance from where you died. You often end up on one of these inaccessible sections, and there's no way off except to jump and die. Even then you often get placed right back on the same section. Very frustrating.

The world of BAAL is huge, and this is one of the few arcade games I've found necessary to map out. You can play it for a long time without seeing the end, and it has that indefinable something that keeps you coming back for more. I highly recommend BAAL.

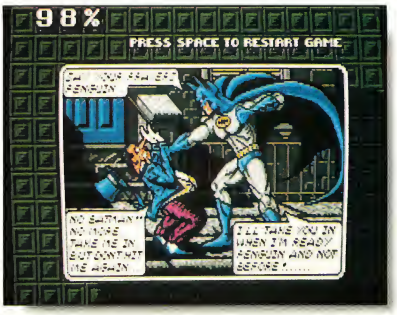
BATMAN

Reviewed by Greg Perez

With DC Comics celebrating the 50th Anniversary of their ever-popular Batman series, the summer release of the long-awaited Batman movie, the new Batman television series in the works and a slew of Batman merchandise on the market, it would seem that the Caped Crusader has returned to make his mark in 1989. It's no surprise then that Ocean Software, in conjunction with DC Comics, has in-

troduced Batman to the computer world.

Yes, that's right Batfans. It's time to don the old cape and cowl and step into the boots of the Dark Knight himself. Batman: the Caped Crusader pits the mysterious Batman against two of his most cunning foes. The game is an innovative mix of an arcade game and a comic book, where our hero must fend off brutal street thugs and annoying robot penguin pea-shooters while tracking down the bad guys.



Haly DRAM chips, Batman! Will that pesky Penguin be successful in his bid ta rule Gatham City? Will that ''funny man'' Jaker actually harm ta the Bay Wander? These are just a few af the questions that anly yau and the Caped Crusader can answer in the latest graphic epic fram Data East.

A Dynamic Duo of Disks

Batman includes two game scenarios, each on its own single-sided disk. The first scenario puts Bruce Wayne, better known as Batman, on the trail of that obnoxious bird-brain, the Penguin. Your adventure starts in the Batcave, where several useful items are lying around. Gameplay is joystick-controlled. When Batman picks up an object, an inventory screen scrolls into view, displaying all usable items. Also on this screen is Batman's current health, represented by a picture of the Caped Crusader's face. As time progresses, the face slowly degenerates into a skull. The only way to fully replenish Batman's energy is by finding food, a very scarce resource to say the least (that is, if you don't use the right methods). Your options are represented by colorful icons. To choose an option, move the Bat-cursor with the joystick and press the fire button.

Now, after Batman collects the needed items in his cave, it's time to tackle the dingy streets of Gotham City. Beware: within the shadows lurk the Penguin's own personal thugs, who would rather shoot off your pointy bat-ears than give you the time of day. You can send these mobsters packing by flinging your Batarang (a useful item found in the Batcave) at them or using the classic hand-to-hand method (BIFF! POW!). After Batman slaps them around a bit, the thugs usually leave a packet of food that will only partially satisfy Batman's appetite. Stocking up on food by beating up thugs is a good idea.

Batman is an innovative mix of an arcade game and a comic book.

Along the side streets and alleys, you may come across items that will help you unlock secrets for certain puzzles. When they're used in the right place, a number at the top of the inventory screen will rise. This number represents the percentage of the game you've completed so far. To aid the aggravated joystick jockey who doesn't have the faintest idea what piece of evidence goes to what puzzle, a message appears on certain screens that have clues in them. This is very helpful to the novice crime-buster. I often find myself slamming my head against the computer desk a few hundred times because I had overlooked the clue that could have saved me a lot of time (and food) in trying to locate the correct object needed to open a door (clues like "In a *pickle*?," for instance).

Batman's graphics are very impressive. From the Batcave to the urban scenes of Gotham City, every frame is detailed down to the scum on the street (including the thugs). When I mention the word "frame" I mean the separate screens that appear as you move from one room to the next. As you leave one frame it fades and is overlapped by another. This method gives the look and feel of a comic book.

The Caped Crusader and the other characters are superbly animated. The sound—well, it could have been better. There is a soundtrack (a computerized, not digitized, version of the original Batman theme), but after a minute of listening to it, I gladly turned it off.

And What of the Boy Wonder?

Holy DRAM chips! I haven't even mentioned Batman's trusty sidekick Robin! In the comic book, Jason Todd, a.k.a. the *new* Robin, was murdered by the Clown Prince of Crime, the Joker. (Actually, Robin was killed off by hundreds of vicious readers who called in and demanded that he die!) Well, as coincidence would have it, Batman's teen prodigy doesn't ▶

appear in the first scenario. However, he does appear in Scenario 2, "A Fete Worse Than Death." The dastardly devious Joker has kidnapped Robin and challenged Batman to rescue the Boy Wonder before several strategically placed bombs beneath the city explode!

Gameplay in this scenario is basically is the same, though a little more cerebral than the first, and requires more puzzle-solving skills to complete it.

Bat Wrap-Up

Batman is the most intriguing arcade adventure I've played in a long while. The graphics are top-rate, the action is fast and the plot is very challenging. Yet, this is a second-rate game to me because there's no save-game feature. I soon realized how important this was after I spent almost three hours on the first scenario. I had nearly completed it (about 90 percent) when Batman suddenly dropped dead due to lack of food! I nearly cried —so close, yet so far.

The lack of a save-game feature hardly encourages you to start all over again from the beginning. A problem like this could easily turn people off from the game. Will the programmers at Ocean Software rewrite Batman into a better game than it already is?

Tune in again—same Bat-time, same Bat-channel!

TETRIS

Reviewed by Dan Fruchey

I'm pretty picky when it comes to choosing video games. While I enjoy a wide variety of games I prefer those that incorporate quick action and enough puzzles to make the game enjoyable without actually becoming work. Tetris from Spectrum HoloByte is such a game. And, if I don't miss my guess, it will become a classic that will even be enjoyed by those who are typically non-gamers.

Gameplay

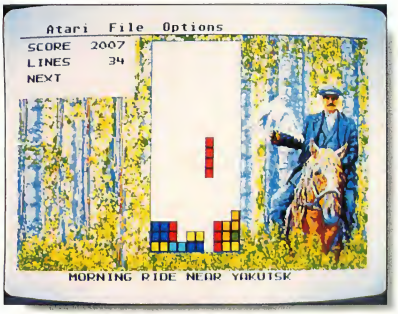
Gameplay in Tetris is actually quite simple. Any one of eight randomly selected pieces begins to drop slowly from the top of the screen toward the bottom. Your job is to rotate and move the piece left or right so that it fits precisely with others as they come to rest at the bottom of the screen. As each piece makes contact with the ground or other pieces this process repeats.

When a horizontal row of 10 squares is completed without any gaps between pieces, it vanishes from the screen. The less time you take to maneuver pieces into position, the greater the score.

Gameplay continues until rows with gaps reach the top of the screen and the growing stack overflows. As your skill and accuracy increases, the shapes begin to drop faster, allowing less time for placement and rotation. Tetris uses keyboard input to manipulate the pieces. Five keys from the keyboard or keypad are required to move, rotate and drop the pieces. Any command can be selected from the GEM menus or you can use keyboard macros.

There are 10 skill levels available as well as an option that will let you place pieces on the screen randomly, and choose faster drop speeds. A tournament play option allows up to six players in rotating match play. For those keen on competition, the "Top Ten Comrades" can save their names for posterity. You can optionally display statistics and levels, access help menus, pause gameplay at any time and abort games in progress.

The actual playing area only uses the center of the screen. The rest of the screen displays images of the USSR. Pictures include scenes from daily Russian life, space flight and more. The better you become the more scenery you get to see. Tetris is accompanied by a lively musical score that keeps pace with the falling pieces.



From Russia with love comes Tetris, a puzzle of addictive proportions. Tetris was ported to the ST by Spectrum HoloByte.

Tetris as an Educational Tool

Most seasoned game players will be challenged by Tetris. It is a moving jigsaw puzzle that requires quick thinking and the ability to picture possible configurations within your mind. The game can be educational for children as well as an enjoyable pastime for adults. Correct placement of pieces provides a reward of sound and music that will encourage increased concentration and quicker problem solving to receive the

audio-visual bonuses. The game requires basic use of logic and allows children to experiment with organization.

My only gripe with Tetris is that it won't work on a monochrome monitor. I suspect that many people who bought their computer solely for its business applications would love to play Tetris. The lack of a monochrome version notwithstanding, Tetris is sure to please everyone.

WAR IN MIDDLE EARTH

Reviewed by Andrew Reese

For generations, J.R.R. Tolkien's masterful work of fantasy and adventure, "The Lord of the Rings" trilogy, has captured the imaginations of readers everywhere. In it, Tolkien created an engrossing world of hobbits, orcs, Nazguls, wizards and warriors fighting for control of Middle Earth, a mythical location in the time just before the Age of Men.

No one had ever attempted to capture the scope and depth of the Lord of the Rings trilogy in a computer game. Until now, that is. Mastertronics has recently released War in Middle Earth, a graphic adventure from Melbourne House that recreates the epic struggle over the One Ring that can mean doom or salvation to Middle Earth.

You play the part of Frodo Baggins the Ring-bearer in your attempt to destroy the One Ring on Mt. Doom in the heart of Mordor. You'll have help, of course, the Fellowship of the Ring: Gandalf the Grey, Aragorn, Boromir, Pippin, Sam, Merry, Gimli and Legolas, plus Fangorn the Ent, Theoden, Eomir and all of the rest of the wonderful cast created by Tolkien.

War in Middle Earth comes on three single-sided disks with a useful and detailed manual and an excellent map of Middle Earth. By the way, you'll need the map, not only for general directions, but also for the off-disk copy protection.

In War in Middle Earth, J.R.R. Tolkien's characters are immediately identifiable by race, but identifying which character is Frodo and which is Merry or Sam is not possible at a glance. Still, this game with its multiple levels of play and its ability to change the plot of the Lord of the Rings is an enjoyable challenge.

You must enter certain map coordinates when called for or you're out of the game (and you should be).

Trouble With Spiders

It certainly helps to have read the Lord of the Rings trilogy when you play War in Middle Earth. If you have, you can follow the book's plot and stand a reasonable chance of success in destroying the Ring. But if you want to change the course of history in Middle Earth, you can do that, too. In one playing, I kept the Fellowship together and massed an assault on Minas Morgul, along the west side of Mordor. I was successful in destroying the orc army there, but was slaughtered at Ciris Ungol. Shelob, the man- (or hobbit-) eating spider, ended up with the Ring and high-tailed it for Barad Dur, the lair of the evil Sauron. When Sauron gained the Ring from Shelob, Middle Earth was doomed. Oh well!

In preparation for this review, I reread the trilogy—what a good excuse! But then I anticipated more than the game could deliver. A computer screen just can't capture the flavor of Tolkien's writing in, for example, the beauty of Lorien, the wonder of Treebeard or the horror of Shelob's lair. Not that it's a bad game, mind you—it's authentic and enjoyable as far as it can go in this medium. It's just not all I had hoped for.

A Game (and World) Unlike Any Other

War in Middle Earth is unique in its interface. There are three levels of graphics, ranging from animated characters at the lowest level to an overall map of Middle Earth at the highest. In between is a scrolling "tactical" map campaign level that gives you control of the characters and battle units you have available. You'll probably spend most of your time at the lower two levels in order to direct your characters and to see what they and their evil counterparts look like. You'll also need to go to the lowest level for the battles that are an inherent part of the game.

Your characters can interact with some of the other characters in Middle Earth. Some will provide you with necessary information and others will give you gifts that are vital to the survival of members of your band. Unfortunately, it's impossible to capture the whimsy of Tom Bombadil or Gimli the Dwarf's enchantment with Galadriel in a brief ▸

conversation.

The animation at the lowest level is nicely done and all of the characters are identifiable by race—i.e, men, hobbits, elves, dwarves, ents, etc. However, all of the characters of a single race look alike. The only way to tell which hobbit is which, for example, is to click on each one and read the resulting dialog box. You can't even tell Sauron from the Nazgul; they're all rather pedestrian black-hooded figures.

Once you have clicked on a character, you can determine his status by "looking into the pool of Galadriel" (clicking on the status icon) or manipulating any objects that character possesses.

Sigh!

I wanted so much to love this game as much as I love Tolkien's works. That proved impossible, but I certainly enjoyed myself and isn't that what playing a game is all about? I think that I will return to War in Middle Earth in the future to try a new approach or two. I certainly can't fault Mastertronics for making a strong effort to capture Middle Earth on a computer screen.

War in Middle Earth is not for everyone. It has many of the characteristics of a unit-strength war game and even resembles the old Dark Tower electronic board game in the battles. If you want to try your hand at defeating the evil forces of Sauron in a fascinating and well-designed game, take a look at War in Middle Earth. But read Tolkien's masterpiece trilogy first. It's available wherever fine books are sold.

SPACE HARRIER

Reviewed by Wolf Griffey

The Land of Dragons has a problem. Someone or something has assembled an army of what may be the most vile, ugly-natured and just plain nasty creatures ever to pollute the galaxy. This once peaceful world must now seek help from an outside source.

Enter Space Harrier, one of the most experienced Astral Exterminators in the galaxy. Yet, even with his legendary skill and cunning, this will be one tough assignment. Can Space Harrier do a good enough job to keep his hero status intact? What kind of score do you think you can rack up on this colorful, fast-action game based on the arcade hit from Sega?

The Land of Drogons hos o problem thot even Roid con't handle. As the intergalactic exterminator Space Harrier, you must rid the dragons' planet of pests that make even cockroaches look good. These and other hazards await you in the game bosed an the Sega arcade hit (distributed by Mindscape).

Our Hero

Computer-game heroes come in many forms and usually have lots of super powers. Space Harrier, on the other hand, has only a few powers that are out of the ordinary. First, he can jump and hang in the air, like the Harrier Jet—a great aid in dodging or shooting targets high off the ground. Second, Space Harrier is tireless. He'll run, jump and fire as long as he needs to or until the bad guys finish him off.

The third and last of Space Harrier's powers is in his number of lives. Like the proverbial cat it takes nine hits to do him in. His lives are in three sets of three. You then have about 10 seconds to revive him after a set has been used up. It's the first two powers that will allow you to keep the losses down. (Note that Space Harrier has no protective armor or energy shields.)

Space Harrier does have a special weapon for blasting those baddies though. It's what I would describe as a Plasma cannon and it's very effective on most of his targets.

Unfriendly Obstacles

The unfriendlies appear in ever-increasing numbers of varied forms as Space Harrier moves from one stage to another. And the higher the stage, the more obstacles there are for Space Harrier to dodge while facing new menaces. Those menaces range from stone heads to flying plant-like beings to floating fire breathing snakes to creatures that are part animal, part machine. There are even formations of alien ships that shoot energy spheres. And this is just part of the fun.

You'll find the worst of your enemies at the end of each stage. They're the leaders and there's no way around them—you just have to blast your way through. Here, it'll take a lot of swift, sure dodging to stay alive. It will also take a generous amount of firepower to finally destroy them. Only then can Space Harrier rest

a few seconds, before he takes on the next set of dangers in a new and more dangerous stage.

Good Friend Euria, Scoring and Some Tips

In stages 5 and 12, Space Harrier gets to rest his weary legs and arms. These are the Bonus Stages and here on the back of a friendly dragon named Euria he gets to fly over the land. Riding Euria gives Space Harrier a new power: with a mere touch he can destroy almost anything. Since a good deal of the time it takes to get to these stages is spent on dodging the items that the cannon has no effect on – like trees, poles and metal towers – this new power will let you take them out much more easily.

In Space Harrier you get points for staying in one piece, moving through to the next stage and, of course, for blasting monsters away. Bonus points are given in stages 5 and 12 whenever something is touched and destroyed.

Experience is really neccessary to stay healthy in this fast mover. You must dodge not only the baddies, but any item on the screen. When I say that this game has solid graphics, take it literally! Some of the creatures are affected by the cannon only during certain times of their apperance on screen, so watch for patterns and go for them at that time only. Last of all, you can adjust the joystick or mouse response by using the [+] or [-] keys. And speaking of the control system: go with a mouse – it's easier on the hand and control is much smoother than with a joystick.

Go for It

I like Space Harrier. The colors are rich, the graphics full and solid and updating of the screen never got in way of my enjoyment.

So, I say go for it – Space Harrier is a game I'll be coming back to from time to time just to see if I still have the touch.

MINIATURE GOLF SIMULATIONS

Reviewed by Tom Byron

I really love to play miniature golf. In the middle of the summer, when the days are long and hot, it's fun to gather up family and friends and head out to a night of "putt-putt" action. Now that fun has come to the ST in two simulations that you're sure to find addictive.

ZANY GOLF FROM ELECTRONIC ARTS

If Salvador Dali were asked to write a computer game based on miniature golf, I don't think he could produce anything half as bizarre as Electronic Arts' Zany Golf. Excellent graphics and a clever sense of humor make this surreal simulation, with its jumping burger and moving holes, every bit as crazy as the title implies. But don't be fooled by all the fun – Zany Golf can be challenging and demanding.

A quick skim through the thankfully brief manual, and you're ready to tee up. For a little entertainment let the title screen run its course – the animation is impressive and worth the look.

The First Hole

Once you've seen the opening sequence through, press any number from 1 to 4, depending on how many people wish to play. Now you get to wait – and wait and wait, because disk access in Zany Golf is very slow.

Zany Golf is every bit as crazy as the title implies.

Each of the nine holes has a preview screen showing the hole's layout and providing a hint on how to play it. Some hints are helpful, some aren't. When you're on the green you can press [H] to return to that hole's preview screen to gain a proper perspective.

Zany Golf, from Electronic Arts, is every bit as crazy as the title implies. In this surreal takeoff of putt-putt golf, you must maneuver your ball past jumping homburgers and through giont pinball machines. In the course of action you're treated to some of the funniest graphics ever seen on the ST.

When the first hole finally appears, you forget your impatience and get down to business. The hole is called Windmill and if you can negotiate your ball through the opening at the base of the windmill, you'll get an extra stroke. (I've found that if you set your ball on the middle tee and aim straight across to ▶

the far wall, you have a much better chance of making it in.)

Game Control and Bonuses

Gameplay in Zany Golf is controlled through the mouse. To hit the ball, place the cursor on top of it and hold the left mouse button down. Now, pull away from the ball, in the angle that you'd like it to go. With this rubber-band type of control you have to be careful not to pull back too far or you'll find your ball shooting in all the places you wish it wouldn't. Once you're satisfied with the angle, release the mouse button, then watch where the ball goes. Note that a dotted white line follows the ball when you pull the cursor back. You'll see what a problem this can be when you come across a hole that has a light background (there are several).

Besides the mouse there are other ways to control the ball, ways that are peculiar to the particular hole. In one hole, for example, you can move the ball around the course by shaking the mouse and activating a series of fans.

Zany Golf gives you a set number of strokes at the beginning of the game. If you use them all up, the game is over and you don't advance to the next hole. However, Zany Golf does give you a number of ways to gain bonus strokes. These chances appear randomly but are a big help if you get them. For instance, touch the "Tinkerbell" fairy and you can get up to five bonus strokes. The fairy pops up most often in hole 2, Hamburger hole. I wouldn't make the burger jump until you hit the fairy or you may get a hole in one and lose the bonus strokes. Oddly enough, Zany Golf does not award a bonus stroke for holes in one.

Nine Holes

There are a total of nine holes in Zany Golf. This may not seem like a lot, but once you see how not-so-easy this game is, nine will seem like plenty. In my experience the most difficult holes are 5 and 9. Hole 5 is the Pinball Machine and this is the screen where the game seeks to punish you for daring to make it this far. Patience is the only advice I can give you there. Hole 9 is very hard because it has to be – it's the last one. But if you collect plenty of bonus strokes by the time you get there, then you shouldn't have a problem completing it.

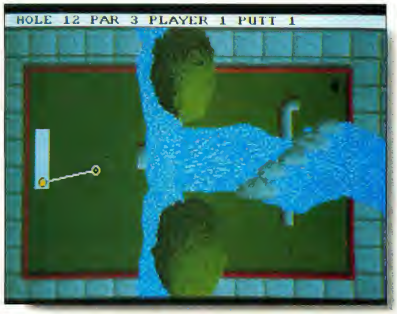
Well I did complete the whole Zany Golf course, and I must admit I was little disappointed with the end. You'll see what I mean when you make it through. Still, I had a lot of fun getting there.

This just in: the June issue of the British magazine *ST Action* gives a very interesting Zany Golf tip. At the ninth hole, Energy, shoot the ball into the mouse hole when the mouse's eyes flash red. This will give you access to a 10th "mystery" hole.

Familiar Control?

Like Zany Golf, Hole-in-One is mouse-controlled but that's where the similarity ends. Instead of pulling out from the ball, and thus away from the hole, you actually pull *toward* the hole. This is a significant difference because aiming the ball this way becomes a lot easier. Thankfully, the line that extends from the ball is solid and easily distinguishable.

Hole-in-One plays up to four people and fully utilizes the ST's GEM interface. At any hole you have access to a number of options that can help gameplay when it gets its toughest. Hold down the right mouse button and move your cursor to the top of the screen. Here you can do anything from quitting the game to seeing an instant replay of your last shot (especially helpful when you aced that particular hole and want to study how you made the shot for future reference). Also from the options menu you can choose Retry to play the hole again and again even if you get an "over-stroke limit" message. This option will let you play a hole until you make it.



If you're in the market for a true miniature golf simulation, you'll find it in Hole-in-One Miniature Golf from Digitek. The game plays up to four people and fully utilizes the ST's GEM interface.

HOLE-IN-ONE MINIATURE GOLF FROM DIGITEK

If you're looking for a miniature golf simulation that's based a little more on reality, you'll find it in Hole-in-One Miniature Golf from Digitek. Hole-in-One is much more of a simulation than Zany Golf and much more complex.

Hole-in-One comes on two disks and gives you 36 holes instead of nine. The second course is presented as a bonus for getting through the first disk ▶

Get Clicking With Your Atari ST!

Subscribe to START magazine with disk

Tutorials on START Disk brings the expertise of top ST programmers right into your computer.

Manage the power of your ST, and make your computing more enjoyable with utilities on START disks.

Stimulate your imagination and your reflexes with games on START Disk! How-to tutorials show you how to write your own pulse-pounding games.

YES! Sign me up for 12 issues of START magazine plus DISK for the low price of just $79.95.

☐ Bill me
☐ I'm enclosing payment
☐ Check enclosed ☐ Visa ☐ MasterCard

Credit Card # Exp. Date

Signature

Name

Street

City State Zip H89A

Please allow 4-6 weeks for delivery of first issue. Canada & Mexico residents add $18 per year. Other foreign add $25 per year. Foreign subscribers (not including Canada) must send full payment. Payment in U.S. funds. California residents add 6½% sales tax.

START SUBSCRIPTIONS P.O. Box 1569 Martinez, CA 94553

THE #1 ATARI ST MONTHLY
START®

For Faster Service Call

Toll-Free **1-800-234-7001**

Visa or MasterCard Only

If you do make it through this disk without going over par, you can advance on to the second disk which contains some holes that rival Zany Golf in their craziness. This bonus course is very tough—I've made it there several times but the best I can manage so far is 38 over par! There are no chances for bonus strokes.

Screen access in Hole-in-One is slow, though it's considerably faster than Zany Golf. It's interesting to watch the screens fade in and out when you move on to the next hole.

In the first portion of Hostage Rescue Mission from Mindscape, your task is to place your marksmen in strategic locations overlooking the captured embassy building. Your assault troops are superbly animated and controllable.

General Observations

If you like miniature golf, you'll like both Zany Golf and Hole-in-One. It's difficult to say which is better because the games are as different as they are similar. Zany Golf is fun and entertaining, if a little disappointing at the end. But I personally like Hole-in-One better because it's much more of a miniature golf simulation and is as challenging as the real thing.

HOSTAGE RESCUE MISSION

Reviewed by Andrew Reese

Hostage Rescue Mission is one of those games that seems to have everything going for it—great graphics, great music, great sound effects, multiple levels of play and a variety of challenges for the arcade gamer. And it works on many levels. But I have misgivings whether I'd recommend this game for those it's aimed at: kids.

The scenario is simple. Your embassy has been taken over by terrorists who have taken hostages. You are the leader of an elite team of commandos assigned to retake the embassy and save the hostages. You have six men available, three marksmen and three assault troops.

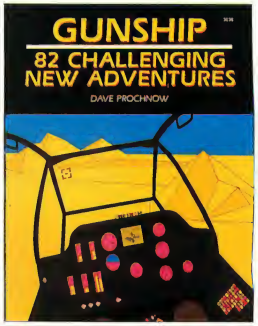
Hostage Rescue Mission comes on two copy-protected disks with a "Top Secret" Briefing Booklet that contains instructions for play and tips for survival. In addition to the physical copy protection, Hostage Rescue Mission also uses a "keyword" style of off-disk copy protection. There are six missions and three levels denoted by ranks, but you must complete the most difficult mission at each rank before you can be promoted and try the next level.

The First Wave: The Marksmen

Your first task is to place your three marksmen at strategic points around the embassy. By pressing [F1], [F2] or [F3], you can choose which one to move and [Escape] toggles between the map and the movement screens. The movement screen is a very nicely done horizontally-scrolling strip of cityscape viewed from eye-level. To move a man, you use the joystick to run, dive, crawl and jump along the sidewalks while the terrorists try to gun you down in the beams of moving searchlights.

The graphics in this section are spectacular. Your men are fully animated and respond quickly and appropriately to your joystick movements. If you need to take cover, your men will dive convincingly over a wall or through a window. And if they die, they slump realistically (too realistically?) to the sidewalk. When you switch to the map, a little angel rises from your dead comrade's last position, a macabre touch.

Once you have your three marksmen in position, a helicopter drops the remaining three members of your team on the roof. After a disk swap (this game does not recognize two drives), you must place your assault troops along the eaves where they can be covered by the marksmen. This part is easy, but getting them into the embassy safely is a challenge.



In *Gunship: 82 Challenging New Adventures* Tab Baaks presents helpful hints and tips for veterans of the popular helicopter flight simulatar from Micraprase.

View To a Kill

If you select one of the marksmen and switch to his vantage-point, you'll see the embassy building from over the sharpshooter's shoulder and a magnified circular view through through his sniper-scope. By moving the joystick, you can move your scope horizontally and vertically to see if there are any terrorists in the windows. If there are, you can press your trigger (the fire button) to kill them. The sounds of the windows breaking and the terrorists dying are digitized and startlingly real. You have to be careful on the levels above Training, however, since that silhouette in the window can just as easily be a hostage as a terrorist. A nice touch is that the 'scope view moves realistically; it's not rock-steady, but wobbles just as a real telescopic view does.

Once you've eliminated as many terrorists as you can with your marksmen, it's time for the assault. Once again, it's viewed from the vantage-point of your marksmen. Your assault troops (selected by the [F4], [F5] and [F6] keys) must drop down their ropes and break through a window to enter the embassy. It's a bit tricky to learn the sequence of movements and if you drop too fast, you're dead. Also, if you drop in front of a window with terrorists, they kill you immediately.

If you make it through a window, you have to locate and gun down any terrorists. There's a nicely done mini-map of each floor that shows their positions and which way you're facing. If you're in danger, your name will flash and you'd better turn and eliminate the threat with your machine gun or, that's right, you're dead.

The Personal Touch

If you get the drop on a terrorist, you can spray him with your machine gun and watch him slump bloodily to the floor (ain't games fun?). The graphics inside the embassy also are excellent. And again, don't shoot too quickly—killing hostages is bad form. Any hostages you do rescue, however, will follow you, one at a time. Deliver each one to a top floor room and you can then attempt to rescue another.

Your job is complete only when you have killed all of the terrorists and rescued the hostages. You'll then be told how you did and, if you were on the toughest level (code-named Assault), then you can move on to the next series.

Hostage Rescue Mission was created by Infogrames, the French software publisher and is exceptionally well-designed. The defects are few: as mentioned before, it does not recognize two disk drives, there is no save-game feature, disk accesses between sequences are lengthy (although there are no disk accesses during a sequence) and if you want to restart the game at any time, you must re-enter the key word. On the plus side are truly excellent graphics, sound, music and game design.

I must return to the misgivings I mentioned above. This is a violent game and the killing is personal and graphic. Making the enemy terrorists seems to make the violence easier to accept, given the headlines we've all endured over the past decade. But that doesn't make this game any easier to recommend for young people. If you want to see the state-of-the-art in killing games, this is it. But take a careful look at it before taking it home to your kids.

GUNSHIP: 82 CHALLENGING NEW ADVENTURES

Reviewed by Wolf Griffey

In Tab Books' *Gunship: 82 Challenging New Adventures*, Dave Prochnow gives you 183 pages of hints, tips and scenarios that will make you a true ace at Micropose's Gunship combat helicopter simulator.

More than a Manual

You'll find each chapter of *Gunship* useful and interesting. The "Earn Your Wings" chapter of the book features a thorough introduction to the cockpit of the McDonnell Douglas AH-64A Apache attack helicopter, with plenty of illustrations. There's a good thumbnail description of the differences between fixed-wing and rotor-wing flight dynamics, answering the big question of why it's so tough to land copters the right way.

Each chapter of *Gunship* is useful and interesting.

There's also a tutorial chapter that leads you by the hand through an orientation flight, with illustrations of how the view should look when you do everything correctly. Four additional flight-instruction lessons—packed with hints and tests for proper controlled flight—prepare you for a final solo whirl. This level of training is a must for the new Gunship jockey. And you hardened deadsticks can use it, too—refresher courses never hurt. Believe me, this is not wasted flight time.

But the "Historical Helicopter Adventures" section is what makes Prochnow's book more than just a manual. Each adventure has a mission profile and setup, including type of helicopter, speed, armament and objective. Missions 1 to 34 go from the Korean War to the Vietnam War. Set up Gunship according to the mission profile and off you go. Contemporary Helicopter Warfare and Allied Deployment are covered in missions 35 ▶

to 61. These show you why the Apache has the punch it carries—and how to really use it.

Final Missions

The final missions are called "Congressional Medal of Honor" and "Breaking Records." You'd better get really good before going for the brass ring in Congressional Medal missions. You'll need more than the massive firepower to keep from walking home. Staying inside the mission profiles will make you think about how to really handle the ship and use tactics. Record Breakers is for those hotsticks who want to make the Apache outperform itself. One bad move and the record will stand, beckoning the next challenger.

Gunship is too good of a program to collect dust on your software shelf. *Gunship: 82 Challenging New Adventures* pumps new life into an already exciting flight simulator. ■

David Plotkin is a chemical engineer at Chevron U.S.A. and a contributing editor for START. Greg Perez attends East Lake High School in Oldmar, Florida; Batman is his first review for START. Dan Fruchey is a paramedic in Santa Rosa, California and wrote the review of Calamus in the May 1989 issue. Andrew J. Reese is the Editor of START. Wolf Griffey is a Product Manager for Antic Software. Tom Byron is the Associate Editor of START.

PRODUCTS MENTIONED

BAAL, $29.95. Psygnosis, Ltd., P.O. Box 483, Addison, IL 60101, (800) 669-4912.
CIRCLE 168 ON READER SERVICE CARD

Batman, $24.99. Ocean Software, distributed by Data East USA, Inc., 470 Needles Drive, San Jose, CA 95112, (408) 286-7074.
CIRCLE 169 ON READER SERVICE CARD

Gunship: 82 Challenging New Adventures, $12.95. Tab Books, Blue Ridge Summit, PA 17294-0850, (717) 794-2191.
CIRCLE 173 ON READER SERVICE CARD

Hole-in-One Miniature Golf, $39.95. Digitek Software, 8910 N. Dale Mabry Executive Center, Suite 37, Tompa, FL 33614, (813) 932-4564.
CIRCLE 172 ON READER SERVICE CARD

Hostage Rescue Mission, $44.95. Mindscape Inc., 3444 Dundee Raad, Narthbraok, IL 60062, (800) 221-9884.
CIRCLE 162 ON READER SERVICE CARD

Space Harrier, $49.95. Mindscape, Inc., 3444 Dundee Raad, Northbraak, IL 60062, (800) 221-9884.
CIRCLE 162 ON READER SERVICE CARD

Tetris, $39.95. Spectrum HalaByte, 2061 Challenger Drive, Alameda, CA 94501, (415) 522-1164.
CIRCLE 170 ON READER SERVICE CARD

War in Middle Earth, $49.95. Virgin Mastertronic Inc., 711 West 17th Street, Suite G9, Casta Mesa, CA 92627, (714) 631-1001.
CIRCLE 163 ON READER SERVICE CARD

Zany Golf, $39.95. Electranic Arts, 1820 Gatewoy Drive, San Matea, CA 94404, (415) 571-7171.
CIRCLE 171 ON READER SERVICE CARD

Zephyr and STPlus
P.O. 1197, Berkeley, Ca. 94701...Order # (800)759-1110

$1249 STACTION $6.00

The S-TEFAX by TECO with software for your ST lets you bring artwork into your ST and fax full pages of graphics and text to and from your ST and other Fax machines. This is a high quality fax with RS232 connection & software!

ST Software at 30% Discount!

Wordperfect	189.95	Battle Chess	37.50	Ultra Script
DBMan 5.0	179.95	Falcon	35.00	HP,SLM,Eps$
PageStream	139.95	DungeonMst 2 !!	27.95	175
FleetStreet 2.PS	149.95	R-Type	29.95	520STFM
Calamus	199.95	Populous	37.50	$629
SIGNUM 2	299.95	Archipelagos	28.95	30 MegHD
Publisher ST	99.95	F-16 Combat	37.50	$629
WordUp	55.95	Robocop	35.00	50 MegHD
Fontz	24.95	Ballistix	29.95	$799
Degas Elite	41.95	Running Man	37.50	SF-314
TouchUp	139.95	Heroes of Lance	29.95	$189
Phasar	62.95	Silkworm	29.95	Spectre
LDW POWER	104.95	Total Eclipse	29.95	GCR
Data Mgr Prof.	104.95	Airborne Ranger	35.00	$275
Superbase Pers.	55.95	Precious Metal 4	45.00	1200bps
EZ Grade	27.95	*We have 1865 ST pro-*		Modem
Neodesk 2.03	34.95	*ducts at discount. Just call,*		$89
		WE'VE GOT IT! Music, tool		$120FlashCable

The Atari Folio
Not a laptop, but a true pocket computer(MSDOS), that interfaces thru a parallel port right to your ST or any other computer. $349

Join our Game of the Month Club:$10 to join. Each month get the best and newest game at an extra 5% off, plus STACTION for $5 if you want! We keep you out in front !!!!!!!

Cambridge Z88
With a serial port, full size keyboard, word processor built in this is the perfect student or business peripheral for your ST at $489.

CIRCLE 091 ON READER SERVICE CARD

Getting the Facts Fast—With DataTimes

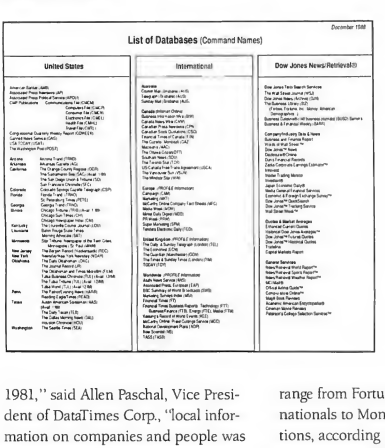
BY GREGG PEARLMAN
START ASSISTANT EDITOR

Let's say you're a reporter and you need as much information as possible—and pronto—about the latest scandal from Washington. Your newspaper maintains a "morgue" that's fairly current, but not *completely*, and that means that you're in for hours of viewing microfiche and taking notes. This wouldn't happen if your paper subscribed to DataTimes.

DataTimes is an online database containing virtually every story and editorial from dozens of local and national newspapers, wire services and trade publications from all over the United States and the world. Like Dialog and Knowledge Index from Dialog Information Services, Inc. (see the Online With START column in the October 1988 issue of START), DataTimes is an incredibly vast storage house of data, but it's not nearly as difficult to use. And if you do have trouble, DataTimes holds free monthly seminars.

One main use of DataTimes is for the scenario mentioned above. Television and radio news teams also use the service, not just newspaper and magazine staffers. "At the time DataTimes began in ▶

Figure 1. The DataTimes quick reference card gives you most of the information you need. For instance, if you don't know how to spell a word, you can truncate it and add a wildcard (like ATAR*). The system will give you a list of possible spellings.



December 1988

List of Databases (Command Names)

United States

International

Dow Jones News/Retrieval®

Figure 2. The complete list of publications in DataTimes' database, as of December 1988. So far, *The New York Times* and *Los Angeles Times* haven't made the list, but DataTimes is working on it.

1981," said Allen Paschal, Vice President of DataTimes Corp., "local information on companies and people was typically inaccessible through any online service. This was a market niche that was missing, and we figured that if this information was available for research, we could fill that niche."

DataTimes Corp. started with the *Daily Oklahoman* in Oklahoma City. Their clipping files were converted to electronic media and put online, specifically for the newspaper staff. "We figured that if it could work here, it could work anywhere," Paschal says.

The Oklahoma Publishing Company, owners of the *Daily Oklahoman*, bought out the majority interest of DataTimes in late 1983 and began expanding in 1984. Now DataTimes is the largest provider of electronic magazines anywhere. "We expanded in one market after other," says Paschal.

DataTimes has about 30 magazines online, including *U.S. News and World Report*, *Business Week*, *Forbes* and *Fortune*; industry-specific magazines, such as *Computer Reseller News* and *Computer Systems News*; and travel, health and industry magazines. For a quick overview of important DataTimes commands and a full list of databases, see *Figures 1* and 2.

The people who use the service range from Fortune 500 types to internationals to Mom-and-Pop organizations, according to Paschal, but it's primarily used by the publishing and broadcast media. "We have very, very few general consumer subscriptions. It's not common for a consumer to research another person or company. I could see students doing research, but overall, individual consumers comprise less than 1 percent of our subscribers."

DataTimes has users in the legal and law enforcement fields, banks, credit agencies and accounting firms. Academic users include university libraries and metro library-type systems. "We're used by PR and ad agencies, too," says Paschal, "anyone with a quick need for research information on their competitors or clients. When a business wants to subscribe—we have 446 different information sources—we go out there and meet with them, one on one."

Over 300,000 businesses worldwide access DataTimes, but since the company is privately owned, people don't know much about it. "We're kind of a shy company in a way and haven't been involved in too much PR work," says Paschal, "but though we haven't sought much coverage, we certainly endorse it when the opportunity arises.

Paschal says that according to a Digital Information industry-wide survey dated February 23, 1989, DataTimes is the fastest-growing online service in the country, having expanded about 75 percent in 1988. "We're just at the tip of the iceberg of our business potential. We're growing so fast that it's almost chaotic—and hard to keep up with."

Is the Price Right?

DataTimes is certainly profitable for newspapers and other publications. While they can access their own databases for free, they also receive royalties, sometimes as much as 50 percent, for user access.

One thing that helps these publications—and DataTimes Corp.—make money is the price for using DataTimes: a $1.42 to $1.83 *per minute* access rate ($85 to $110 per hour). Global searches cost $2.75 a minute ($165 per hour). DataTimes also charges a one-time startup fee of $85, however, colleges and other academic bodies can obtain educational discounts. But although the access rates have increased slightly over the past four years, it costs less to automate a newspaper now than it was four years ago.

Doing Your Homework

DataTimes has no clipping service, but it does have some gateways, including Dow Jones News Retrieval, which has stocks and historical quotes, which date back 15 years. Once they're placed in the database, stories are never deleted.

Each story has an access number. Articles are displayed in full text, not as abstracts, and the database is updated each day. Classified and paid advertisements are not stored in the database.

Search fields vary among newspapers. Some fields are "intelligent": a search in the *San Francisco Chronicle* for stories involving Elizabeth Taylor will dig up stories involving "Liz Taylor" as well. The same is true for "George Bush," "President Bush" and "Vice President Bush." Each newspaper's head librarian decides on

the searchable keywords for each article.

Online help is available, but the quick reference card tells you "about 80 percent of what you need to know," according to DataTimes Account Executive Vickie Hutchinson. "But in terms of your search, you're at the mercy of the person with the byline. Therefore, this kind of service might affect the way articles are written – in the future, stories might be *geared* toward this kind of service."

Coverage and Service

"California's especially good for us because there are so many publications there," says Hutchinson. "We cover California pretty well. San Francisco subscribers spend about 46 percent of their online time searching the *Chronicle* for local information.

"As soon as we sign a contract with a company, we begin compiling the database as of that day. DataTimes has had a contract with the *San Francisco Chronicle* since January 1, 1985. We've had the *Daily Oklahoman* for the longest time – since 1981. People ask us if we're interested in 'going back in time,' but from a commercial standpoint, we really aren't. Over 80 percent of searches are on topical things from the last two years."

What's Next?

"We're working with a couple of companies regarding graphics," said Paschal. "There are still lots of kinks to work out, but our service may have graphics within two years."

DataTimes fills a unique niche in online services. If you have the need and the money, look into this online repository of recent history. ■

PRODUCTS MENTIONED

DataTimes, fees vary.
DataTimes Corp., Parkway Plaza, Suite 450, 14000 Quail Springs Parkway, Oklahoma City, OK 73134.
CIRCLE 163 ON READER SERVICE CARD

DATEL COMPUTERS 800-782-9110 *ORDERS ONLY MON-SAT 8AM-6PM (PST)
CUST SERV / TECH 702-454-7700 TU-SA 10AM-6PM
CALL US FOR LOWEST PRICES ON OTHER SOFTWARE / HARDWARE

ST DEEP SCAN BURST NIBBLER - ONLY $49.99
Copy entire disk - even highly protected programs in under 60 seconds!!
*Works with one drive or two *Multiple copy option allows many backups from one original *Copy 1 or 2 sides up to 85 tracks and 11 sectors *Works on 520 or 1024 ST-color or mono *Special format parameters for non standard formats *Unique "INFO ANALYSER" displays vital disc parameters including sector distribution, dispersion, interleave, etc *Easy to use Icon driven program takes the mystery out of Disc back up.

ST SUPER TOOLKIT - ONLY 24.99 (mono monitor only)
A powerful package of utilities for all ST models.
*Read up to 85 tracks and 255 sectors! *Find/Replace function will scan for value and replace it automatically *Info mode displays vital disc information *3 different editor modes-Drive, Disk or File *Direct select function for Bootsector,Directory sector *Fully Menu/Icon driven HEX/ACSII edit modes - directly on the disk *Unique 2 disk compare function - scans both disks and reports on differences..perfect for the disk hacker! *Full printer support

3.5" EXTERNAL 1 MEG DRIVE - ONLY $179.99
*Slimline extra low profile unit - only 6" long *Top quality drive mechanism *Fully compatible - 1 meg unformatted capacity *Can be formatted to 85 tracks and 11 sectors *Complete with power supply and connecting cable - No more to buy

1 MEG INTERNAL DRIVE UPGRADE - ONLY $129.99
*Replace internal 500K drive with a full 1 Meg unit *Top quality drive Easily fitted *Full instructions *Direct plug in replacement *No special skills needed *Minor modification to enclosure is required *Remember,quality is most important

GENISCAN ST - ONLY$324.99
*An easy to handle Handy Scanner featuring 105 mm scanning width & 400dpi resolution enables you to reproduce graphics & text on your computer screen *Adjustable switches for brightness & contrast *Cut & paste editing of images *Save images as Degas, Neo, etc

VIDEO DIGITISER- ONLY $139.99
*On-board 32k of RAM allows real-time frame grabbing *Capture pictures into defined window*Multi-window display *Accepts input from camera or VCR *Cut and paste editing facility *Up to 10 screens can be stored at one time for animation, etc.

PRO SAMPLE STUDIO - $109.99
*A complete sound sampling package for the ST *100% machine code software for real-time functions *Saved files are compatible with other sampling systems *Sequencer for playback via keyboard or MIDI input.

EPROM BOARD - ONLY $24.99
*Complete Eprom Board & case *Accepts up to 4 X 27256 Eproms *Mapped into the cartridge area *Attractively styled case *High grade PCB * 64K or 128K blocks

TRACKMASTER - ONLY $ 59.99
*A must for the disk hacker *Plugs into disk drive port of the ST *Displays track number, disk side and read/write status as the head moves along the disk *Two-digit LED displays up to 85 tracks *Works on Int. or ext. drives

ST TIMEKEEPER - ONLY $49.99
*Simple plug-in battery-backed calendar clock cartridge *Fits into cartridge port *On-board clock chip *Lithium battery backed lasts up to 5 years*Automatically adjusts for leap year etc *Exact time, date available on power up.

REPLACEMENT MOUSE - ONLY $44.99 FULLY COMPATIBLE

CALL US FOR THE BEST PRICES ON ALL YOUR SOFTWARE/HARDWARE NEEDS

DATEL COMPUTERS
3430 E. TROPICANA #67
LAS VEGAS, NV 89121

*ADD: $4.00 Shipping/ Handling in the Continental U.S. : $7.00- PR, VI, AK, HI, FPO, APO: $10.00- Canada / Mex.: C.O.D. orders add $3.00 to above shipping charges

SPECIFY COMPUTER MODEL WITH ORDER
VISA/MC / Checks / Money Orders / C.O.D. Accepted - Please call for return authorization number - Returns subject to 20% restocking fee.

CIRCLE 050 ON READER SERVICE CARD

MOVING?

NAME_____
NEW ADDRESS_____
CITY_____
STATE/ZIP_____

Fill in coupon and mail to:
START Subscriptions
P.O. Box 1569
Martinez, CA 94553

PLACE CURRENT ADDRESS LABEL HERE.

SOFTWARE DISCOUNTERS OF AMERICA

S.D. of A.

USA/Canada Orders—1-800-225-7638
PA Orders—1-800-223-7784
Customer Service 412-361-5291

- Free shipping on orders over $100 in continental USA
- No Surcharge for VISA/MasterCard
- Your Card is not charged until we ship

ORDER LINE HOURS: Mon.-Thurs. 9:00 AM-9:00 PM Fri. 9:00 AM-7:00 PM Sat. 10:00 AM-4:00 PM Eastern Time.

INFOCOM

20 lethal tons of massive fighting power are primed for battle & you're in control. Explosive warfare, complex strategy & a huge universe.

Battletech
List $49.95
SDA Discount Price $33

ACCESS	
Leader Board Golf w/Tourn. Disk #1	$16
ACCOLADE	
Bubble Ghost	$22
Test Drive	$25
ACTIVISION	
Battle Chess	$33
Battlehawks 1942	$33
Zak McKracken	$19
ANTIC	
Bo Bo	$23
Crash Garrett	$25
Cyber Print	$33
Cyber Paint 2.0	$49
Cyber Sculpt	$59
Flash	$19
GFA Basic 3.0	$65
Phasar 3.0	$59
Spectrum 512	$44
STAC Adventure Creator	$51
STOS Game Creator	$44
ARTWORX	
Bridge 5.0	$23
Centerfold Squares	$19
Colossus Chess X	$23
Daily Double Horse Racing	$19
Linkword Languages	Call
Strip Poker 2	$25
Strip Poker Data Disk: Female #4 or #5	$14 Ea.
World Snooker	$16
AUDIO LIGHT	
Music Studio 'BB	$39
BRODERBUND	
Downhill Challenge	$23
Karateka	$23
Sky Chase	$25
Star Wars	$25
Superbike Challenge	$6.BB
Typhoon Thompson	$23
CINEMAWARE	
Defender of the Crown	$33
King of Chicago	$16
Kristal	Call
Rocket Ranger	Call
S.D.I	$16
Sinbad	$16
CODEHEAD	
G+ Plus	$23
Hot Wire	$25
Multi-Desk	$19
DATA EAST	
Bad Dudes	Call
Batman	$25
Platoon	$25
Robocop	Call
DATA SOFT	
Alternate Reality: City	$26
Android Decision	Call
Firezone	$23
Global Commander	$26
Hunt for Red October	$32
Lancelot	$26
Rubicon Alliance	Call
Sorcerer Lord	$23
Time & Magik	$26
DIGITEK	
Hole in One Plus	$19
Western Games	$19
ELECTRONIC ARTS	
Arcticfox	$14
Artura	$25
Awesome Arcade Pack	$32
Bard's Tale	$32
Double Dragon	$26
Empire	$32
Lords of Conquest	$14
Marble Madness	$14
Mavis Beacon Typing	$29
Pinstripes	Call
Powerdrome	Call
Star Fleet 1	$35
Zany Golf	$26
EPYX	
Art & Film Director	$49
Axe of Rage	$25
Battleship	$19
Death Sword	$19
Devon Aire	$33
Final Assault	$16
Games: Winter Edition	$33
Impossible Mission 2	$14
Project Neptune	$25
Space Station Oblivion	$16
Sub Battle Simulator	$9.BB
Technocop	$33
Tower Toppler	$33
Winter Games	$9.BB
World Games	$9.BB
World Karate Championship	$14
FREE SPIRIT	
Sex Vixens From Space	$25
FTL	
Dungeon Master	$25
Talespin	$33
Tetra Quest	$25
Time Bandit	$25
MICROLEAGUE	
Baseball 2	$39
WWF Wrestling	$33
B7 or BB Team Disk	$14 Ea.
MICROPROSE	
F-15	$25
Gunship	$33
Silent Service	$25
MINDSCAPE	
Action Fighter	$25
Alien Syndrome	$25
Balance of Power 1990	$33
Captain Blood	$33
Combat Course	$25
De Ja Vu 1 or 2	$33
Gauntlet 1 or 2	$33 Ea.
Harrier Combat Sim.	$33
Indiana Jones	$33
Thunder Blade	$33
Hostage	$29
Out Run	$33
Road Raider	$25
Shadowgate	$33
Space Harrier	$33
Uninvited	$33
OMNITREND	
Breach	$25

2 Dynamite INTRACORP Titles At New Low SDA Prices!

Business Card Maker

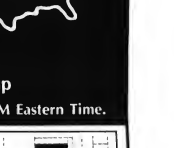
Murder On The Atlantic

Dungeon Master 2	Call
Oids	$23
INTERSECT	
Interlink	$25
Revolver	$33
I S D	
Calamus	$199
Dyna Cadd	$447
Masterplan	$59
VIP Professional	$95
LDW	
Club Backgammon	$23
Power Spreadsheet	$95
Vegas Craps	$23
Vegas Gambler	$23
MASTERTRONIC	
Scrabble	$26
Scrupples	$26
MICHTRON	
Air Ball	$25
Fleet Street Publisher	$95
Goldrunner 2	$25
H. Drive Turbo Kit	$39
Hyperfont	$33
International Soccer	$25
Leatherneck	$25
Master CAD	$129
St. Replay 4	$89
Paladin	$25
Universe 2	$33
ORIGIN	
Autoduel	$25
Moebius	$25
Times of Lore	$25
Ultima 3	$25
Ultima 4	$39
PROGRESSIVE	
Superbase Professional	$189
PSYGNOSIS	
Baal	$19
Ballistix	$23
Captain Fizz	$19
RAINBIRD	
Carrier Command	$29
Corruption	$29
UMS Amer. Civil War or Vietnam Disk	$14 Ea.
Universal Military Simulator	$33
SIERRA	
Black Cauldron	$25
Gold Rush	$25
King's Quest 1, 2, 3 or 4	$33 Ea.
Leisure Suit Larry	$25
Leisure Suit Larry 2	$33

TAITO

The game that dominated the video arcades & college campuses in the early '80s is here! Billions of levels with escalating intensity.

Qix
List $29.95
SDA Discount Price $19



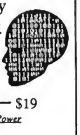
Manhunter	$33
Mother Goose	$19
Police Quest 1 or 2	$33 Ea.
Space Quest 1, 2, or 3	$33 Ea.
Tetris	$19
SIMON & SCHUSTER	
Star Trek: Rebel Univ.	$25
SPECTRUM HOLOBYTE	
Falcon	$33
Orbiter	$25
Tetris	$19
SPOTLIGHT	
Death Bringer	$25
Federation	$25
Speedball	$25
Total Eclipse	$25
SPRINGBOARD	
Certificate Maker	$25
C.M. Library Disk	$19
SSI	
Demon's Winter	$25
Heroes of the Lance	$26
Phantasie 3	$26
Questron 2	$33
Red Lightning	Call
Star Command	$33
Warship	$39
SUBLOGIC	
Flight Simulator 2	$33
Jet	$33
Scenery Disks: #7-East Coast	$18
#9-Chicago	$18
Hawaii	Call
TAITO	
Alcon	$14
Arkanoid	$14
Arkanoid 2: Revenge	$19
Bubble Bobble	$19
Operation Wolf	$19
Qix	$19
Rambo 3	$19
Renegade	$19
Sky Shark	$19
THREE SIXTY	
Dark Castle	$25
Warlock	$22
MARK WILLIAMS	
C Source Debugger	$49
Mark Williams C	$119
UNICORN	
Decimal Dungeon	$25
Fraction Action	$25
Math Wizard	$25
UNISON WORLD	
Art Gallery 1 or 2	$19 Ea.
Art Gallery: Fantasy	$19
Fonts & Borders	$23
Print Master Plus	$25
MISCELLANEOUS	
dB Man 5.0	$144
ST Host Adaptor	$97
ST Talk Pro 2.0	$25
Turbo ST	$33
Word Perfect	$179
ACCESSORIES	
Big Mouse Pad 8½ x 11	$7
Bonus 3½ DSDD	$11.99 Bx.
Disk Case (Holds 30)	$6.BB
Disk Driver Cleaner 3½	$6.BB
Epyx 500XJ Joystick	$14
GTS 3½ or 5¼ Drive	Call
IB Drive	Call
IMG Scan	$65
Sony 3½ DSDD	$16.90
Supra 30 meg Drive	Call
Wico Bat Handle	$17
Wico Ergostick	$18

SDA Brings you New Popular Utilities by CodeHead Software

HOT WIRE $25
The Ultimate ST Shell

MULTI-DESK $19
Unlimited Desk Accessory Power

G+plus $23
A Powerful & Complete Replacement for GDOS



FIREWARE

As a swashbuckling space pirate you'll battle ruthless villians & interact with strange alien life forms. Incredible animation. Fiendish puzzles.

The Kristal
List $49.95
SDA Discount Price $33

P.O. BOX 111327—DEPT. ST—BLAWNOX, PA 15238

*Please Read The Following Ordering Terms & Conditions Carefully Before Placing Your Order: Orders with cashiers check or money order shipped immediately on in stock items! Personal & Company checks, allow 3 weeks clearance. No C.O.D.'s! Shipping: Continental U.S.A.-Orders under $100 add $3; free shipping on orders over $100. AK, HI, FPO, APO-add $5 on all orders. Canada & Puerto Rico-add $7.50 on all orders. Sorry, no other International orders accepted! PA residents add 6% sales tax on the total amount of order including shipping charges. CUSTOMER SERVICE HOURS: Mon.-Fri. 9 AM-5:30 PM Eastern Time. REASONS FOR CALLING CUSTOMER SERVICE—412-361-5291 (1)Status of order or back order (2)If any merchandise purchased within 60 days from S.D.of A. is defective, please call for a return authorization number. We will not process a return without a return auth. #! Defective merchandise will be replaced with the same merchandise only. Other returns subject to a 20% restocking charge! After 60 days from your purchase date, please refer to the warranty included with the product purchased & return directly to the manufacturer. Customer service will not accept collect calls or calls on S.D.of A.'s 800# order lines! Prices & availability are subject to change! New titles are arriving daily! Please call for more information.

MODEM OWNERS: You can order on-line from our Atari ST Shop via the CompuServe and GEnie electronic malls.

Fleet Street Publisher 3.0

The UK's Newest Foray in the DTP War

BY DAN FRUCHEY

Fleet Street's actual-size editing screen. The screen fonts are indicative of size and position only and are not as sharp as they are when printed.

Two years ago, Fleet Street Publisher, a desktop publishing program imported from England, had its moment in the sun and then quietly disappeared. Although the product was well made, it was generally ignored by U.S. consumers and, for the most part, it passed from memory.

There were many reasons for the program's passing: an underdeveloped publishing market, a lack of printer drivers and a higher-than-average price contributed to the program's downfall. Today, with a more mature market and more realistic expectations from users, the product could do quite well.

MichTron and Mirrorsoft Ltd. have reintroduced Fleet Street Publisher to the United States market. Significant revisions to the software, additional printer drivers and the support of one of the largest publishers of ST software all contribute to make Fleet Street Publisher 3.0 a product worth examining.

General Overview

Fleet Street Publisher 3.0 is designed to meet the needs of all ST users. The program runs on any ST or Mega computer, regardless of memory configuration or hardware combination. (The manual recommends a monochrome monitor, as the rectangular pixels used in medium resolution on a color monitor don't portray a proper screen image, and if you use low resolution, plan on a lot of scrolling during page layout).

The package contains three double-sided disks (or six single-sided disks on request) and a well-indexed 265-page manual that includes tutorials, glossaries, a catalog of clip art included on the disks and an overview of desktop publishing uses and concepts. The program can be run immediately with most system configurations. However, laser printer owners must make some simple changes in fonts and drivers prior to use.

Fleet Street intelligently creates additional font sizes in increments as small as 1/100 of a point.

Fleet Street uses the standard GEM ▶

Like Calamus and Timeworks Desktop Publisher, Fleet Street lets you zoom in or out to various levels. This screen is double-sized.

drop-down menus and windows. Along the left side of the screen there are also seven icons for switching modes, a clipboard and a trash can. The layout of the screen and menus is identical to earlier versions, but many new options accessed from the drop down menus give Fleet Street much more power.

General Layout

Pages can be generated automatically using predefined formats and unusual page sizes can be defined manually. If large pages prove inconvenient, you can piece together posters or banners using multipage documents; the only limitations seem to be printer capabilities and the amount of RAM available.

Margins, gutters and column guides are all set when a page is created. You can arrange these layout elements with up to 1/100 unit accuracy using a variety of common measuring systems including points, picas, millimeters, centimeters or inches.

You can use rulers or guides with separately adjustable horizontal and vertical functions for manual layout. For exact sizing and placement you can also view and enter x,y coordinates when creating columns or text and graphic blocks.

Text and Font Manipulation

You can create and edit text on screen or import it with word processing commands intact from WordPerfect, 1ST Word or Word Writer ST. If you're using ST Writer or another word processor that is not supported, Fleet Street has a desk accessory that strips the file's control codes prior to importation. (Editor's note: *If your file is in ST Writer format, we suggest you use SIFT, START's Instant File Translator, from the June 1989 issue.*)

You can route text between columns or between pages. If text loaded into a column exceeds the room available, an icon will indicate that the text should be routed to another location. Standard options such as search, search and replace, cut and paste, copy and delete are all available. You can define up to 20 text macros for commonly used style and format options.

Another handy feature provides constant updates for statistics such as word count, font size and justification modes.

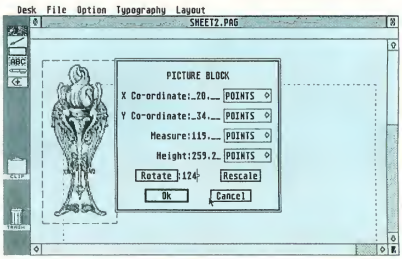
These constant reminders are a great help when editing documents.

Word, letter and line spacing are all freely adjustable and a user-defined table allows discretionary hyphenation of words. Another table allows insertion of justification parameters such as justify full, right- or left-justify, or center text in a column.

Make no mistake—Fleet Street Publisher 3.0 is a powerful publishing program.

Fleet Street uses GDOS fonts in a unique way that allows a greater variety of size and style options. Actual fonts serve as templates for intermediate point sizes. Most programs that use GDOS fonts can only access the actual sizes available and a doubled duplicate of each size. Thus, typically, a program that uses 10, 12 and 14 point fonts can also double these sizes to get a series of rougher 20, 24 and 28 point sizes.

But Fleet Street intelligently creates additional sizes in increments as small as 1/100 of a point. Although you may



Fleet Street's Picture Block function lets you rotate image graphics in one-degree increments and size an image to exact dimensions. Fleet Street 3.0 will let you rotate vector graphics also.

only have a font in 10, 12 and 14 point sizes, the program can translate this data into any font size up to 255 points. This size emulation isn't perfect, however. A 10-point font emulating a 60-point font will appear rougher than the same font generated from an 18-point font.

At the same time, Fleet Street offers a greater variety of text style options than other programs that use GDOS fonts. Text can be skewed, outlined, thickened and underlined, as in other GDOS programs, but it can also be flipped, mirrored, inverted and overlined. The underline and overline can be adjusted to any distance from the text and the thickness of the line can be adjusted – a must for larger font sizes. Text can be shaded in any intensity from one percent to 100 percent, small caps (uppercase letters in both upper and lowercase letter sizes) can be automatically generated and more.

Fleet Street will use any GDOS font, but the package includes six font families in many sizes. Also, a utility included with the package can compress fonts so that they will consume less RAM and disk space.

One of my favorite options is the ability to configure and save default settings for most program options.

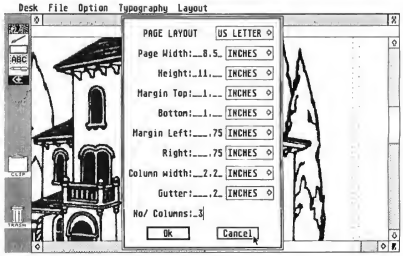
Graphic Functions

Fleet Street imports pictures in image (.IMG) and metafile (.GEM) formats. A separate included utility will also convert NEOchrome, DEGAS and Art Director pictures to image format.

Once a bit image picture is loaded into Fleet Street, it can be cropped, rotated in one-degree increments, edited or scaled to any printer. Pictures can be sized automatically or duplicated according to any measurement scheme you desire (points, picas, millimeters, centimeters, inches).

Currently metafiles (graphics imported from Easy Draw, CAD-3D, Athena II, etc.) can only be copied and sized, not edited. This is standard when importing vector graphics.

Lines and boxes can be defined using virtually any line thickness. You can fill them with any of the standard GEM patterns and keyboard input of specific xy coordinates allows precise sizing.



The Fleet Street Page Layout function. It's all right in front of you: you can set up the size of the columns, the space between them (gutter) and the margins.

Printing and ''Other'' Options

Unlike common GDOS programs, Fleet Street can zoom or magnify pages in sizes from 12.5 percent to 200 percent of the original. Extensive help menus and status reminders are available.

One of my favorite options is the ability to configure and save default settings for most program options. Once you've used the program enough to decide what you like, you can save a custom setup.

A collection of 148 graphics is included with Fleet Street covering a wide range of images. With the inclusion of graphics, everything you need to publish is at hand.

Fonts and printer drivers for most 9-pin and 24-pin dot matrix printers are included. There are also fonts and drivers for the Atari SLM804, Hewlett-Packard and Postscript laser printers.

Fleet Street prints lightning fast on the Atari laser printer. A typical time for printing a page ranged from 30 seconds to one minute. Obviously dot matrix printers take longer but the time needed to produce a page was not excessive.

Since some printers have much slower printing speeds, there is a draft printing mode to speed up preliminary copies. You can also print files to disk as images and then load them into other programs or even reload the pages in Fleet Street as pictures.

Personal Impressions

Initially I was a little overwhelmed by Fleet Street. The many options and suboptions with their configurable design can be confusing. Because of the sheer number of options available I found myself referring to the manual frequently and, until I set up my own system defaults, use was sometimes cumbersome.

Make no mistake – Fleet Street Publisher 3.0 is a powerful publishing program. I would especially recommend it to computer users who currently own GDOS products or have access to GDOS fonts.

There are only two shortcomings I'd like to see addressed. First, the program doesn't use grids. This is an invaluable ▶

1st STOP

1st STOP

Computer Systems Ltd
7085 Corporate Way Dayton, Ohio 45459

all 50 states dial toll – free (orders only)
1-800-252-2787
Tech/Info line – (513) 438 – 0551
9am – 9pm M – F / 10am – 6pm Sat (EDT)

We specialize in the Atari ST line.
If you don't see it listed, call anyway!
Most items shipped within hours.
Why pay retail? Call today!

ST SOFTWARE

1st Word Plus 3.14 ..... 59.95
5 – Star Combo Pak 36.95
Action ST 28.95
Arcade Force IV 36.95
Archipelagos 34.49
Arkanoid II 27.49
Baal 26.49
Barbarian II 27.49
Batman ..... call
Battle Chess 33.49

Send self – addressed stamped envelope for full catalog.

Prices change in the 2 months since we designed this ad – call for latest pricing.

BBS 3.0 (MichTron) 27.95
Blockbuster 27.49
CAD 3D 2.0 ..... 57.49
Calamus 176.49
Free 300 dpi IMG clip – art disk with Calamus.
Calamus Font Editor 63.49
Calamus Outline ..... call
Captain Blood 31.49
Chronoquest 29.49
Combat Course 27.49
DataManager Pro 119.95
DataManager ST 47.49
dBman V 139.49
Demons Winter 29.49
Devon Aire 33.49
Double Dragon 28.49
DigiSpec 1.22 ..... 29.49
Dungeon Master 23.95
Easy – Draw 3.0 ..... call
Emmanuelle (Adult) 27.49
Falcon 28.95
Fontz ST 23.49
G + Plus 22.49
Graph Maker 42.95
Gunship 33.49
HiSoft Basic 48.49
HotWire 25.95
Interlink ST 25.49
ISS 31.95
King of Chicago 18.49
Kings Quest IV 32.49
Leisure Suit Larry II 34.49
Mavis Beacon Typing 35.49
MasterLink ..... call

WE SERVICE ATARI EQUIPMENT

Mayday Squad 27.49
Menace 27.49
Mickey Mouse 27.49
MidiMax 33.95
MultiDesk 19.49

☆☆ 1st STOP ST DRIVES ☆☆

MMS – 01K – 3.5" DS/DD, 85 – track Floppy Disk Drive Kit. No soldering. Easy to assemble – Takes less than five minutes! List Price $199.95 Intro Price **$149.95**.

Introducing the Dynamic Duo:

MMS – 02 – 3.5" DS/DD, 85 – track Floppy Drive.

MMS – 03 – 5.25" DS/DD 40 track Floppy Drive (Good for use with PC – Ditto & PC – Ditto II).

Both drives have impact – resistant metal cases and Toshiba drive mechanisms guaranteed for 1 year. Custom switcher available (free if you purchase both drives). From Magic Media Services exclusively for 1st STOP.

List Price for either drive $219.95 Intro Price **$169.95**.

Music Studio 88 ..... 35.49
NeoDesk 2 ..... 31.49
OmniRes 23.49
OutRun 32.95
PacMania 29.95
PageStream 119.95
PC Ditto 74.95
Personal Pascal 77.49
Populus 34.49
ProCopy (Latest version) 21.49
Publisher ST 79.49
Questron II 32.95
Real GhostBusters 29.77
Space Quest III 33.49
STAC Adventure Creator 43.95
STAccounts 94.95
Starglider II 31.49
Stellar Crusade 37.49
STOS Game Creator 44.49
Strip Poker II 26.49
SwiftCalc ST 47.49
Talespin 33.49
Test Drive 25.49
The Games (Winter Ed.) 33.95
Thunderblade 26.49
Titan 31.49
Total Eclipse 27.49
Touch – Up 1.5 ..... call
Turbo Kit (MichTron) 37.49
Turbo ST 33.49
Universal Military Simul. 32.49
Universal Item Sel II 13.95
War in Middle Earth 33.49
WERCS 31.49
WordPerfect 4.1 ..... 148.95
Word Quest 3.0 ..... 18.49
WordWriter ST 47.49
World Karate Champ. 16.95

ST HARDWARE

Discover Cartridges ..... call
Drive Master 32.49
Drives ..... call
DDP, FSI, IB, 1st STOP
EZ – Ram II 99.95
Hard Disks (Supra, ICD) .... call
Modem (Zoom 2400) ... 117.49

3.5" DS/DD Disks .84 each with purchase

Monitor Master 34.49
Mouse Master 28.49
PC Ditto II ..... call
Printers ..... call
Panasonic, Star, NEC
Printer Cables 7.95
Spectre 128 ..... 139.49
Spectre ROMs 114.95
Tweety Board 38.77
VideoKey 69.49
VIDI – ST 147.49
10" Mouse Ext. Cable 3.95

MasterCard DISCOVER VISA

ORDER INFO: No extra charge for credit card orders – C.O.D. $3.95 – Next day delivery extra – Alaska & Hawaii UPS Blue Label only – APO & FPO – Canadian orders minimum $5 – Ohio residents add sales tax – Allow 10 business days for personal or company checks – Returns subject to 20% restocking fee – Defectives require return authorization number to be accepted for repair or replacement – Prices subject to change without notice – call for latest prices and availability – We check all credit card orders for validity

CIRCLE 016 ON READER SERVICE CARD

layout aid and, although I can live without grids, they speed up page design. Second, I consider a wide range of keyboard macros a must and, although Fleet Street does use keyboard macros for text commands, it lacks macros for most commands from the drop-down menus.

Still, the program works well and I never encountered a lock-up or system failure of any type (thunderous applause). Fleet Street is a worthwhile addition to MichTron's line of Atari products and to the desktop publishing market.

Ultrascript and Fleet Street

To increase the potential of Fleet Street, MichTron has signed an agreement with Imagen to bundle Fleet Street with Ultrascript, the Postscript emulator. The package includes the Lucida family of fonts. Fifty other fonts can also be purchased directly from Imagen.

Ultrascript increases the clarity of text output. It lets you output Postscript-compatible files of high quality to an HP Deskjet, Atari laser or dot matrix printer (9- and 24-pin).

The sample pages I have seen look outstanding and I have high expectations for both products as a team. Before you get too excited, however, there is a catch: you must have at least two megabytes of memory available to use Ultrascript and Fleet Street together. Whether or not the products can be used separately with less RAM consumption remains to be seen; tests with both products were not quite completed at the time of this writing.

Fleet Street uses GDOS fonts in a unique way that allows a greater variety of size and style options.

If you already own Ultrascript or you don't have two meg of memory, don't despair. MichTron will let you purchase Fleet Street separately. It will be released some time in August. Pricing for Fleet Street, 3.0 upgrades, and Fleet Street with Ultrascript were not announced prior to deadline for this article. Keep your eyes open for pricing information here when it becomes available. ■

Dan Fruchey, formerly the desktop publishing columnist for ST Applications, works as a paramedic in Santa Rosa, California and runs a small clip-art business on the side.

PRODUCTS MENTIONED

Fleet Street 3.0, no price
set. MichTron, Inc., 576 S. Telegraph, Pontiac, MI 48053, (313) 334-5700.
CIRCLE 161 ON READER SERVICE CARD

3 Computers in 1— For Real?

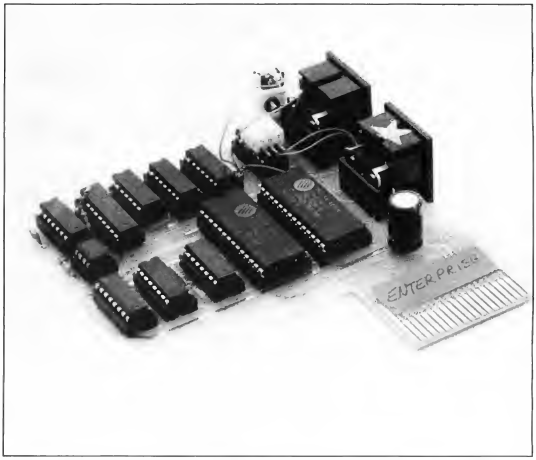
BY DAVID PLOTKIN
START CONTRIBUTING EDITOR

Spectre GCR from Gadgets by Small and pc-ditto II from Avant-Garde Systems, Inc. represent major upgrades to the Macintosh and PC emulation available for the ST. Both were shown publicly for the first time at the World of Atari show held at the Disneyland Hotel in Anaheim on April 22.

Spectre GCR

Spectre 128 has improved with each software upgrade. Version 1.9 includes support for sound, thus opening up a whole world of new Mac programs for ST users. The biggest problem with Spectre 128 is that you can't read Mac disks directly without Data Pacific's $300 Translator One. Instead, you must somehow get the information onto a Spectre- or Magic-formatted disk, either by having a Mac available or downloading from an information service (i.e. GEnie or CompuServe).

Spectre GCR changes all that. It's a cartridge, somewhat larger than its pre-



Spectre GCR plugs into your ST's cartridge part, but you must run the disk drive cable from your ST to the cartridge. The cartridge can be connected anywhere in the drive chain, although you'll get the best results if it's last in the chain—unless you have an external flappy drive with only a single flappy part.

decessor—in order to accommodate a considerably larger number of chips and add two disk drive connectors. Spectre GCR plugs into the cartridge port as before, but then you must run the disk drive cable from your ST to the cartridge. The cartridge can be connected anywhere in the drive chain, although Dave Small recommends that it be last in the chain for best results. If it's not, you must run a cable from the second drive connector in the cartridge to your B drive. One example of when Spectre GCR cannot be the last drive in the chain is when you have an external floppy drive with only a single floppy port.

Two questions arise immediately about Spectre GCR. First of all, does it work with Megas and 1040STs, with internal disk drives? It does indeed, since it controls the drives just by being in the chain—it doesn't have to be between the computer and the drives. Also, what happens if the cartridge is connected to the drives, but not plugged into the computer? Actually, nothing happens, except, of course, you can no longer emulate a Mac. Your drives continue to work normally, and you don't have to disconnect the drives from the cartridge.

And how does Spectre GCR work? In a word, fast—*real* fast.

Fast—Real Fast

And how does Spectre GCR work? In a word, fast—*real* fast. It's faster than Twister-formatted disks, faster than Spectre- or Magic-formatted disks, and so much faster than Data Pacific's Translator One that it makes you wonder how you ever put up with those excruciatingly slow data transfers. In fact, Spectre GCR can read and write Mac disks as fast as the Mac itself—and the Mac is fast: an entire 800K disk can be read in 1 minute, 15 seconds.

Spectre GCR is also easy to use. You don't need to know the format of the disk you are using. It can be native Mac format, Magic or Spectre. Spectre GCR will figure out the correct format and read and write to the disk in that format automatically. And if you're in Atari's native GEM mode, Spectre GCR will recognize it and be invisible.

The $299.95 price of Spectre GCR includes a complete Mac emulator (less the necessary Mac ROMs, which must be purchased separately) that can read and write Mac disks directly. Since it costs the same as a Translator One alone, it's clearly a better deal to buy Spectre GCR, thus getting the most advanced Mac emulator in the process. It's an even better deal for Spectre 128 owners: they

Thundering Games and 3-D Music.

Don't settle for monotonous mono ever again! Atari has hidden three sound channels inside your ST. Tweety Board unleashes that full sound capability in minutes, with a solderless, internal installation that's compatible with all ST hardware and software. With Tweety Board, even your old games will suddenly sizzle and sound like you've always wished they could.

"TWEETY BOARD is a cookin' fool! You ain't lived 'till you heard a fireball in DM let loose through TWEETY...Wow! I can't believe I am booting old-timers just to hear 'em...Music Construction Set is one million percent better than before!"
-Ralph Mariano, ST Report

Tweety Board™
ONLY $59.95 plus shipping & handling

For Orders or Information
Call *602-322-6100*
CIRCLE 033 ON READER SERVICE CARD
1135 N. Jones Blvd. • Tucson, AZ 85716

Practical Solutions®

can upgrade for $199.95 by returning their old Spectre cartridge to Gadgets by Small (but keep the ROMs—you'll still need those for the new Spectre GCR cartridge).

Ditto for pc-ditto

As reported in this column in the May 1989 issue of START, pc-ditto II is now based in hardware in order to add speed to the excellent but slow PC emulation provided by pc-ditto. However, the design of pc-ditto II changed since that column and it is no longer a cartridge. Instead, it's a small circuit board that must be placed inside the ST. The installation is solderless, requiring nothing more than clipping the board to the 68000 CPU in your ST. However, since this involves opening up the ST, you should have it installed by a qualified technician if you are at all unsure of yourself "under the hood." If it will make you feel any better, I had mine installed by a technician—I'm not taking any chances with my $1,400 computer to save $25!

Something else has changed about pc-ditto II too, something which makes it worth the extra trouble to install it. First, a little background: A "plain vanilla" IBM XT has an 8088 CPU which runs at 4.77 mHz. This is adequate, although many of the more powerful programs and complex animated games really come into their own only with the 80286 class of chips, which run at between 8 and 12 mHz. This chip is in the IBM AT (and clones). The Norton System Index (SI) has become a standard in the PC world. It measures how fast a computer runs and encompasses such elements as disk access, internal chip calculations and RAM/ROM access. An XT has a Norton SI of 1.0, while ATs generally range between 2.5 and 3.0. The original pc-ditto had an SI of about .2—about one-fifth the speed of an XT. And pc-ditto II? Well, it runs at an incredible SI of 3.0—well into the AT range.

The reason pc-ditto II is such an exciting product is that with this single development, a wide range of PC products has been opened to the ST user. Spreadsheets recalculate at full speed, modem programs work as designed and a huge selection of games become playable and enjoyable. In the months ahead, we'll look at some of the best of these programs, which heretofore couldn't be used effectively on our STs, and detail the operation of pc-ditto II. ■

David Plotkin is a chemical engineer for Chevron U.S.A. and a Contributing Editor for START.

PRODUCTS MENTIONED

Spectre GCR, $299.95. Gadgets by Small, Inc., 40 West Littleton Blvd., #201-211, Littleton, CO 80120, (303) 791-6098.
CIRCLE 165 ON READER SERVICE CARD

pc-ditto II, $299.95. Avant-Garde Software, 381 Pablo Point Drive, Jacksonville, FL 32225, (904) 221-2904.
CIRCLE 166 ON READER SERVICE CARD

TOAD COMPUTERS
The Hard Disk Specialists

ICD's FAST Hard Drives Include A Built In Clock, Fan, and Power Supply, And Are Totally Expandable!

AS LOW AS $499!

ICD's FAST System

FAST 3.5" Drives		FAST 5.25" Drives	
20 MB 40ms	$525	**20MB 65ms**	**$499**
20 MB 28ms	$545	40 MB 40ms	$595
30 MB 40ms	$575	40 MB 28ms	$647
30 MB 28ms	$595	65 MB 40ms	$684
50 MB 40ms	$625	65 MB 28ms	$703
50 MB 28ms	**$657**	**85 MB 28ms**	**$739**
100 MB 40 ms	**$969**	**All Software Included!**	

Two 3.5" Drives or One 5.25" Drive May Be Placed Inside the FAST Case. Let Us Know If You Require a Special Configuration. CALL FOR LATEST LOW LOW PRICING!

(301) 544-6943
TOAD COMPUTERS
556 Baltimore Annapolis Blvd.,Severna Park, MD 21146
These prices reflect a 4% discount for money orders, certified, or personal checks. We accept Visa, MC, and Discover. MD residents add 5% sales tax. Call if you have further questions.
FREE SHIPPING!!

CIRCLE 012 ON READER SERVICE CARD

THE HARD CHOICE

FS-50

Future Systems' standards for affordable excellence continues. The FS-50 has design and engineering that clearly separates it from the competition. Sleek and sophisticated, this powerful disk system makes a strong design statement in a high-tech matte black finish.

The FS-50 is a 50 mb hard drive* that comes fully formatted and is DMA plug compatible with all ATARI-STs. The FS-50 has its own internal power supply and cooling fan, and comes with software that allows formatting as multiple virtual drives.

Deciding to add hard drive performance to your ATARI?
FS-50...The Hard Choice.

FUTURE SYSTEMS, Inc.
21634 LASSEN ST.
CHATSWORTH, CA 91311
818-407-1647 FAX 818-407-0681

*Formatted to 46 mb, but also available in 30 & 80 mb capacities.

CIRCLE 024 ON READER SERVICE CARD

ON DISK

Avecta I: Ebora

START's Epic Graphic/Text Adventure

BY MARK SWANSON

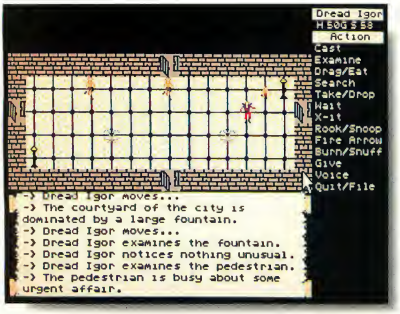
A wondrous adventure awaits you in the files AVECTA.ARC and AVECTDAT.ARC on your START disk.

nce long ago a powerful magic-user called the Player, and a mighty barbarian prince named Eirik, traveled across the island of Ebora, which lies off the western side of the continent Avecta. Their destination was Kilkaney, the walled city, where they planned to meet with the Grand Mage Leveth. But all was not well, for one night, as the travelers slept, the Player was tormented by strange and inexpressible nightmares, filled with demons and darkness. In the morning the Player awoke to find Eirik gone, with only the prince's trusted sword left behind.

After a frantic search, the Player continued to Kilkaney to seek the help of his old friend, Leveth. Your adventure begins in his room, and with Leveth's help you must find Eirik before his principality crumbles to evil forces. ▸

Something sinister is afoot in the magical land of Ebora: someone, or something, has kidnapped great Prince Eirik and you must find him before his principality falls to ruin. Are you up to the task? In one of the most ambitious programs in its history, START presents you with a huge graphic/text adventure that's sure to keep you challenged for hours on end. The game requires a color monitor.

SARAH VALDRON



The Avecta I: Ebora main screen. From here you can move, fend off attackers, cast spells and whatever else unfolds as you begin a journey of a lifetime.

The Adventure Begins

To run Avecta I: Ebora, copy AVECTA.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC AVECTA.ARC following the Disk Instructions found elsewhere in this issue. When you have successfully un-ARCed AVECTA.PRG, delete AVECTA.ARC. (Do *not* delete any files from your *START* or *START* backup disk.) Now copy AVECTDAT.ARC onto this disk and un-ARC this file, which contains the data files for Avecta I: Ebora. The game disk should contain AVECTA.PRG, CAVE.DAT, DEMON.DAT, DTROND.DAT, FILL.DAT, GRAFX.DAT, OUTSIDE.DAT and TROND.DAT. At the Desktop, double-click on AVECTA.PRG to begin your search for Prince Eirik. The program was written in Alcyon C and assembly language and runs in low resolution only.

At the title screen you're given three options: Quit, New and Restore. To make a selection, simply press the letter on the keyboard that corresponds to the first letter of the option. Press [Q] to quit Avecta and return to the Desktop. Press [N] start a new game or [R] to restore a saved game. All games are saved with the extension .SAV. If you begin a new game you will be placed in a room with Leveth. Here you'll be asked to type in your name (you'll be known by that name throughout the game). Press [Return] to begin your adventure.

At the Avecta Attack screen you can fight off the various ghosts and goblins that stand in the way of finding the prince. If an attack inflicts any damage, a red mark will appear on the wounded character. Certain spells are effective here also, but use them with care, lest you harm yourself.

Gameplay

Avecta gameplay is deceptively simple. As a fairly powerful magic-user, you're presented with a menu of possible actions. You may find yourself either in a dungeon or outside. If you're in a dungeon, you have a number of choices which are explained in the sidebar accompanying this article. If you're outside you can do only three things: Move (which you do with the mouse), Examine (press [E]) and Exit (press [X]).

Avecta was designed to play intuitively, i.e., you do things that seem logical at the time. For example, if you possess a potion that renders you immune to fireballs and you think you'll soon face characters that hurl fireballs, it would then be wise to drink the potion.

Hit Points

Your health is tracked by the number of "hit points" you have remaining. You begin the game with 50. If that number falls to zero or less, you die. Hit points are always displayed beneath your name on the game screen next to the letter H. Beside the hit-point number, you'll notice either a P or a G. A P means you have been poisoned and that you'll die soon unless you can cast an "Unvenom" spell. A G means that you haven't been poisoned and you can continue on your merry way.

Spell Units

As a powerful magic-user in Avecta you can cast a wide variety of spells (which are explained later under "Actions"). Casting spells uses up a lot of magical energy, which is measured in "spell units." You begin the game with 60 spell units, and whenever you cast a spell, you lose the number of spell units equal to the level of the spell. (For example, a fourth-level spell requires four spell units.) To cast a spell you must have at least as many spell units remaining as the level of the spell. When your spell units are gone you can cast no more spells. You'll see the number of

spell units remaining on the screen next to the letter S. See the sidebar for a detailed explanation of each spell and its cost in spell units.

Some spells create a temporary change in your abilities. If an ability has been altered, a letter will follow the spell-unit number to identify the ability which has been altered. For example, if the letter A follows the spell-unit number, you are currently affected by an armor spell. This is also explained under "Actions."

Status Window and Inventory

To get a report of your status, you can either press the [Spacebar] or click on your character. Your health and spell status will then appear in the upper right-hand corner of the screen.

The status screen also lists what you're holding in each hand. Click on Good Hand or Other Hand to move an item from inventory to hand; clicking on No Choice puts the currently held item into inventory. Click on Inventory to view the current inventory without affecting the contents of your hands. Note: you cannot use these menus to move torches or gold into your hands; however, lighting a torch automatically puts it in your other hand.

To return to the game screen, press the [Spacebar] again or click on Quit.

Actions Menu

Avecta gives you up to 16 actions to choose from, depending on the circumstances. To the right of the game screen you'll find the Actions menu. Choose an action by clicking on it or by pressing the first letter of the action.

There are two actions that are not listed in the Actions menu: Move and Attack. You move using the mouse; simply click on the square you wish to move to. Attack is explained below. Note: you may terminate some actions before they are completed by pressing the [Spacebar]. For example, if you move across a room and a group of hostile creatures suddenly appears in the destination area, just press the [Spacebar] and try something else.

Attack

Attack is one of two actions not accessible through Avecta's Actions Menu. Choose the Attack option when you're pitted against any unfriendlies such as goblins or trolls.

To attack an opponent, you must be directly adjacent to the creature and you must have a weapon in one of your hands. Now, point the cursor directly on top of your opponent and click. Avecta will analyze the circumstances and determine if the attack is permitted. If combat is allowed, a dialog box will appear in the upper right-hand corner of the game screen showing your current status (and that of your opponent) and the success of your previous attack, if there was one.

This dialog box also shows your opponent's current combat posture, which will be determined by the situation. For instance, if you're fighting a goblin, the goblin will assume one of three postures during each round of combat: mace/all, mace/std or mace/def—the goblin is fighting with a mace and has three possible modes of attack: all out, standard, or defensive. An "all out" attack is berserk mode, in which the attacker is indifferent to any damage suffered. Defensive mode is a parrying posture in which your opponent is seeking a hole in your defenses. Standard mode lies between all out and defensive. Opponent attack modes are random, and any one can come up at any time.

As the attacker, Avecta gives you one of four choices: (A)ll out, (S)tandard, (D)efensive or (F)all back. Either click on your choice or press its keyboard equivalent. Choosing (A)ll out, (S)tandard or (D)efensive commits you to a round of combat. Select (F)all back to break off combat and return to the main game screen.

When you choose to fight, a list of your opponent(s) appears in the Opponent Window in the lower right-hand side of the screen. The name of each opponent is followed by a letter, which describes the status of the opponent. For example, if an O follows the name, it means the opponent has negligible damage; an L, M or H means your opponent has already suffered low, moderate or heavy damage; an X, P or C means your opponent is either dead, panicked or magically charmed.

Examining Objects

At the Actions menu, Avecta lets you examine objects or creatures in a room and objects in your inventory. In order to examine an object in the room you must be adjacent to the object; creatures, however, may be examined from afar. You may examine inventory items at any time; examine objects in hand by clicking on yourself after selecting Examine from the Actions menu.

Avecta gameplay is deceptively simple.

Drag/Eat

Drag/Eat lets you either drag an object in the room to another location, or swallow an object in hand or in your inventory. To drag an object, simply click on it. You are then asked for the destination. Now, click on the part of the screen you want to drag the object to. Note that some objects are attached to the floor, while others may be too heavy for you to drag.

Depending on the circumstances, you may wish to swallow an object in your inventory or in your hand. To swallow an object, first invoke (D)rag/Eat and then click on the object in the inventory or on yourself (if the object is in hand). Avecta will determine if swallowing the object is allowed, and any consequences thereof. ▶

Search

You may search your immediate vicinity by invoking this command from the Actions Menu. Note that searches are not always successful immediately and that continued searches may be necessary to find a well-hidden object.

Take/Drop

Click on an object to take it and place it in your inventory. You'll be informed immediately if the object cannot be taken. To drop an object, call up the inventory list and click on the object.

Wait

If you wish to do nothing for a short time, you can select Wait at the Actions Menu. For example, if a monster is charging toward you and you wish to stand your ground, you can select this command to wait. Wait time equals about one second of game time.

Xit

To leave the room you're in, select Xit from the Actions Menu, then move to a doorway.

Rook/Snoop

Rooking, a term used among Avectan thieves, refers to picking locks. The character may attempt to unlock any locked object using this function, or may listen at any exit from the room, hence "Snoop." If you're successful at Rooking a lock, you'll be told in text at the bottom of the screen. If you Snoop successfully, what you heard will also be printed the bottom of the screen.

Fire Arrow

If you have a bow and arrow(s), you may fire an arrow at any creature in the room. Simply choose Fire Arrow from the Actions Menu and click on your target. Note that you need two free hands to use a bow.

Burn/Snuff

Some rooms have no natural illumina-

Casting Spells

At the Avecta Actions Menu, select Cast to cast a spell. In order to cast a spell you must have sufficient Spell Units. Remember that the number of spell units remaining is always displayed under your name in the upper right-hand corner.

When you choose to cast a spell, a second menu appears. These are the current spells known to you. To the right of the spell is the number of spell units required to cast that spell. To choose a spell, simply click on it. The higher the level of the spell, the longer the casting will take to complete. Click on Cancel to return to the main game screen without casting a spell. Be careful, because some spells will cancel the effect of a previous spell. For example, casting an Armor spell on a character already under the influence of a Speed spell will cancel the Speed spell.

Available Spells and the Costs

Cure (Spell Units (SU): 1)—This spell lets you cure a wound to yourself or another character. After you choose Cure, you are then prompted to select the target of the Cure spell. A random number of hit points will be restored upon completion of the spell.

Search (SU: 1)—Performs a search of all hidden objects in your immediate vicinity with a 100 percent chance of successfully finding them. See the Search function for details of the outcome. If you opt to take any discovered object, the Search spell is automatically terminated.

Freeze (SU: 1)—If it succeeds, the Freeze spell will halt any creature dead in its tracks for an indeterminate (but reasonably long) time.

Unvenom (SU: 1)—Removes all poison from the creature or character upon which it is cast.

Vorpal (SU: 1)—Some creatures, such as ghosts, exist on an ethereal plane and are thus immune to normal weapons. By casting the vorpal spell on yourself, your weapons are able to strike these creatures. When you're under the influence of a Vorpal spell, the letter V will follow the number of spell units.

Speed (SU: 2)—Temporarily endows you with incredible speed. This means that any action, other than casting another spell, can be accomplished much faster than usual. The letter S will follow the remaining spell units as long as this spell is in effect.

Armor (SU: 2)—Surrounds you with a magical armor that reduces damage caused by attackers. The letter A will follow the remaining spell units as the Armor spell is in effect.

Disarm (SU: 2)—Sometimes an object is protected by a magic spell designed to prevent you from performing some action on it—like searching a trunk, for instance. The Disarm spell disables the Trap spell placed on the object, though there's no guarantee that it will work.

Bolt (SU: 2)—Unleashes a traveling bolt of electrical energy toward a foe. When the bolt strikes, it does a fair amount of damage to its target's nervous system.

Thief (SU: 2)—Duplicates the action of a master thief upon a material object. This spell creates the same result as a successful Rook/Snoop action. If the object is locked, the Thief spell will open it. If the selected object is also an exit from the current room, such as a door or hole, you'll be informed of any creatures heard through the exit.

Fear (SU: 3)—Causes any creature upon which it is cast to panic immediately. The creature will then attempt to leave the room. If the creature cannot exit, it will simply cower for the duration of the spell. The fear spell is not permanent. A creature in a state of panic is denoted with a P following its name in the opponent box.

Fireball (SU: 3)—Unleashes a fireball at an attacker. The fireball will incur more damage than a bolt.

Blink (SU: 3)—This is a two-step spell that lets you teleport any creature from its current location in the room to any other location in the same room. When you cast this spell, you're first asked to select the target of the blink (*you* may be the target). You're then asked for the destination of the blink spell. If successful, the spell will move the target to the new location.

Reveal (SU: 3)—Displays any hidden objects, other than those *inside* another object, in the current room.

Heal (SU: 3)—Like the Cure spell, this spell heals all wounds on its target. But like the Unvenom spell, it also removes poison from its target.

Prism (SU: 4)—Causes a laser vortex to travel from you to the target, who is then penetrated by the laser rays trapped in the vortex. This spell, if successful, does a tremendous amount of damage.

Block (SU: 4)—To prevent pursuing creatures from entering doorways, use a Block spell to seal the door.

Charm (SU: 4)—If it's successful, casting charm upon a creature will make it friendly temporarily. A charmed creature will then do everything in its power to defend you. Charmed creatures are denoted with a C following their name in the opponent box.

Wallfire (SU: 4)—Literally cremates any living character in the immediate vicinity—including you, if you're unfortunate enough to be caught in it.

Destroy (SU: 4)—Cast a Destroy spell against any object in a room to completely annihilate it. The Destroy spell is useless against exits and any object that has a spell already cast on it.

continues on page 56

tion, so you may light a torch if you have one. You may extinguish (Snuff) a lit torch and put it in inventory at any time by clicking on Burn/Snuff at the Actions Menu while holding a lit torch in the other hand. A lit torch will burn out after a certain amount of time, and Avecta will inform you that the torch is flickering.

Give

You may give the object in your good hand to another friendly player character. If that character is not adjacent, the program assumes the player giving the object is attempting to throw the object to the other character and will then place the object at the location specified, and it is up to the receiving character to pick up the object. If the two characters are adjacent, the transfer is automatic.

Voice

If the situation calls for it, you can take over any friendly character by invoking the Voice command. From then on that character behaves as if he were another player. All the actions available to you, with the exception of Voice, are available to the friendly character. Game play will alternate between you and the other character. The name of the character whose turn it is will be at the top of the action menu. At any later time, control of the character may be relinquished by using the voice command.

Quit/File

Select Quit/File to call up an alert box with three options. Abort cancels the quit operation and returns to the game. Quit leaves Avecta and returns you to the Desktop. Clicking on File brings up another alert box with three options. Clicking on Stop cancels the operation. Selecting Save lets you save the game to disk; selecting Load lets you load a previously saved game. Avecta save game files are approximately 14K long; Avecta assumes the file has the extender .SAV. ▶

Although Avecta doesn't have a pause feature *per se*, you can pause the game by selecting Quit/File. Simply click on Abort when you are ready to continue.

Acknowledgments

Avecta I: Ebora is a big game and I wish you luck. I would like to thank Johanna Swanson, whose patience and skill in developing the graphics and plot for the game went above and beyond the call of duty; and Dennis Snell, whose play-testing, suggestions and general support are responsible for all the best features of the game. I would also like to thank Alphonso, Babaran, Molly Keebler and Milotha for their inspiration—long may you live in the annals of Avecta! ■

Avecta I: Ebora represents "a considerable effort in time and tears" for author Mark Swanson. He lives in Willington, Connecticut and this is his first program for START.

Summon (SU: 5)—The Summon spell will teleport a random number and type of creature who will arrive in a fighting frenzy and in a charmed state. These creatures will fight against creatures that are attacking you. If there are no remaining opponents for these creatures, they will fight among themselves until only one remains.

Death (SU: 5)—If successful, this spell will cause the immediate death of its target.

Life (SU: 5)—Resurrects a fallen comrade, complete with any objects the dead comrade was carrying that the other characters have not pilfered while the character was dead. In order to cast the spell, the body of the dead comrade must be in sight.

Teleport (SU: 5)—Lets the caster teleport to any other room. To invoke this spell, you must possess a device called a seekshard, which must have been placed upon the floor of the room to which the caster wishes to teleport. Seekshards are extremely hard to come by—once you reach the room to which you've teleported, pick up the seekshard. Seekshards are susceptible to discharge spells placed on doorways, etc., by foes guarding against teleportation entry.

NEW!

"INVENTORY CONTROL . . . at CASH REGISTER PRICES!"

CRICIT™ BAR CODE + PLUS

CRICIT is an *integrated* **Cash Register & Inventory Control** package. For the price of a cash register, you can own the **complete** Bar Code Ready CRICIT System.

- **Complete cash register** functions
- Flexible **inventory control** for 65,500 products
- **Daily, period and yearly reporting**
- **Price/product labels** with optional bar code
- **Reads bar code directly from packaging**
- **Coupon issue and redemption**(fixed or % of sale)
- **Customized receipts, inventory and reporting**
- **Ready-to-mail purchase orders** with automatic re-order calculation
- **Commission calculation** for 15 sales clerks
- **Mailing lists** in list and label formats
- **Lay-aways, auto-discounts, stock searches**
- **Categories, departments, non-stock items**
- **Between-store reporting** via modem
- **User-friendly** error correction and training manual

$249 U.S. / $299 CDN

Demo disk is available for $7 U.S. / $9 CDN

Nice & Software
103 Queen Street S.
Kitchener, Ontario
Canada N2G 1W1
(519) 744-7380

Dealer and Distributor Inquiries Welcome

CIRCLE 029 ON READER SERVICE CARD

COMPUTEREYES™

Capture Color Video Images: only $249.95

Capture B/W Images: only $149.95

Now you can easily and inexpensively acquire images from any standard video source – videotape, camera, disk – for display on your ST. Capture time is less than six seconds, and you have complete control of displayed color levels (or gray scales in monochrome).

ComputerEyes has everything you need: Interface hardware, complete easy-to-use software support on disk, and owner's manual. It fully supports all ST graphics modes and a variety of image formats and is compatible with virtually all popular graphics programs Think of the possibilities!

ComputerEyes is backed by a one year warranty and the success of over 10,000 systems sold. Satisfaction guaranteed or return it within ten days for full refund Demo disk available, $3. See your dealer or order direct For more information call 617-329-5400.

To order call 800-346-0090
or mail your order to: Digital Vision, Inc
66 Eastern Avenue, Dedham, MA 02026
VISA, M.C. or COD accepted
S&H: $4 for ComputerEyes
Mass. residents
add 5% sales tax

DIGITAL VISION

CIRCLE 015 ON READER SERVICE CARD

Enhance your publishing power.

Migraph Hand Scanner.

Add scanned graphics to all your projects quickly and easily with the Migraph Hand Scanner.

The Hand Scanner provides a scanning window over 4" wide with four scanning resolutions: 100, 200, and true 300 and 400 dots per inch. It also offers adjustable contrast, three dither settings for scanning halftones, and a special setting for line art.

Build your own library of images. Logos, photographs, books, illustrations . . . provide you with an unlimited supply of art.

Touch-Up,™ Migraph's high resolution image editor, lets you scan *and* edit your images. Powerful editing tools include crop, invert, resize, flip, cut and paste, multiple zoom levels, a full array of paint tools, and much more.

When your images are "pixel perfect", import them into your favorite ST publishing programs like Calamus, Fleet Street, PageStream, and Publisher ST. In addition, several save formats let you use your images on the PC and Mac.

The Migraph Hand Scanner and Touch-Up. Powerful tools for professional publishing.

For all Atari ST and Mega systems with monochrome or color monitors, 1MB memory and 3.5" DS disk drive.

See your dealer today for more details or call us direct. Dealer inquiries invited.

MIGRAPH INC

200 S. 333rd St., Suite 220 Federal Way, WA 98003 (800) 223-3729 (206) 838-4677

© Copyright 1989 Migraph, Inc. The Migraph logo is a registered trademark and Touch-Up is a trademark of Migraph, Inc.

CIRCLE 075 ON READER SERVICE CARD

It's a fact that most computer games contain some violence. But when is there too much? Is there a fine line between ''acceptable'' violence and excessive violence? Are there industry standards that guide the presence of violence in games? And how does this violence affect children? In a provocative study, START sought answers to these questions based on games currently available for the ST.

I s

Playing computer games, you can save Earth from aliens, fight crime, explore dungeons, spend a night in a haunted house, deliver papers, learn math or navigate a maze. You can be a sports star, soldier, hitchhiker, amnesiac, archeologist or frog. But you can also shoot, stab, kick, cut or bomb people; blow planes out of the sky, toss grenades into an Asian village or launch nuclear missiles at obstacles in your path.

Computer games are a $260 million a year business, according to the Software Publishers Association. By some estimates, 80 percent of that money is spent on violent programs that may adversely affect those who play them. Most affected are children and teenagers, who game makers say are a large percentage of players. More than 150 groups across the country endorse a boycott of war toys, some going so far as to propose

BY AMY H. JOHNSON AND RICHARD P. GREENFIELD

Computer Game Violence

There Too Much?

that the computer game industry be regulated like any other that produces a dangerous product. Spokespersons for software publishers say their games are no worse than many other forms of entertainment and that they're only producing what consumers want. Here's a look at the controversy and a few of its causes.

Operation Clean Streets

Your orders come directly from the Chief of Detectives: wipe out the nicotine ring. It's a dangerous assignment. The instruction manual for Broderbund's Operation Cleanstreets warns, "Tracking down your foes is just the start. Because they'll never surrender without a struggle. You'll have to outfight them every step of the way. Kicking. Punching. Dodging." And that isn't hyperbole. You don't make arrests in this game, and the "dope" you confiscate isn't held for evidence. It has to be burned in a convenient ashcan fire and when it goes up in smoke, you get extra energy to go about finding and seizing and destroying even more.

You operate in a series of ghetto cityscapes – littered streets lined by brick tenements, docks, dingy basements, deserted basketball courts. One attacker tries to knife you, another tries to whip you with a chain and yet another tries to slice you with a chainsaw. When you run back to throw the dope in the fire, angry neighbors fling bricks at you from the windows. You encounter and battle ▶

In Broderbund's Operation Cleon Streets your orders come directly from the Chief of Detectives: wipe out the nicotine ring. You don't make arrests in this game, and the dope you confiscote isn't held for evidence.

bat-wielding black people wearing neon pastel clothes and hightops, ninja-suited Asians armed with samurai swords and shuriken and a leather-clad woman with a bullwhip.

"When we first got the game it was a little different," explains Jenay Cottrell, a spokesperson for Broderbund. "We added the black Chief of Detectives, and we emphasized that this person was out there fighting crime. There really is no effort to key on bad stereotypes. We did make an effort to show a broad range of criminals that this undercover cop is going up against."

Broderbund has no written policy to review the contents of games, but Cottrell says each project is reviewed by a committee consisting of eight to nine people, including the president, the chairman of the board and the chief operating officer of the company.

According to Cottrell there have been no complaints about the content of Operation Cleanstreets. "Actually, we have gotten some letters telling us how much some users enjoyed being in the shoes of someone fighting crime," she says.

The players of Operation Cleanstreets, according to information provided by Broderbund, are predominantly male between the ages of eight and 18. Broderbund considered the possibly desensitizing effects of graphic video game violence, "but when you compare it to some of the other games out there," Cottrell says, "or even to what is shown on television, this cop is out there fighting crime . . . at worst this is what we call a karate-type program, just one of a number of games where you are a good person fighting evil."

Death Sward, from Epyx, gives you two ways to kill Fundar (and far him to kill you). One way is to hack him to death, bit by bit. Or you can chop off his head.

In Technocap, also from Epyx, your mission is clear: ''Eliminate all thugs before they eliminate you.''

Some of the people you meet in Sierra On-Line's Manhunter: New York aren't exactly friendly; for example, if you fail to win over the denizens of a seedy Brooklyn bar one will pick you up and crush your head. Save your game often because the tiniest slip and you're history.

Death Sword and Technocop

You are Gorth, son of kings, heroic, honorable and skilled with a sword. Off you go to right an injustice, the kidnapping of the beauteous Princess Mariana by the unscrupulous sorcerer Drax.

But the programmers of Epyx's Death Sword put a few obstacles in your way, notably Drax's guard Fundor, as skilled with a sword as yourself but lacking your purer qualities. You must battle Fundor in an enchanted forest, a lava pit, the dungeon of Drax's palace and in

his throne room. And no matter how often you kill Fundor, another swordsman appears for your next encounter.

There are two ways to kill Fundor (and for him to kill you). One way is to hack him to death, bit by bit. To do this you must deliver 12 body blows, which are indicated by red blood splotches appearing onscreen. Or you can chop off Fundor's head and see it tumble from his shoulders while a red fountain of blood shoots skyward from his neck. His body topples to the ground and a knee-high green hominoid drags it away, kicking the severed head off-screen.

In Technocop, also from Epyx, you start off behind the wheel of a high-tech cop car that barrels down the road, heading for the crime scene displayed on your dashboard computer. Depending on your skill level your car may be armed with a machine gun, a rapid fire cannon or even small tactical nukes. Lest that seem like overkill, the instruction booklet is quite clear: "Remember the golden rule of crimefighting: Eliminate all thugs before they eliminate you."

Welcome to the world of high-tech law enforcement. Around your wrist is an all-purpose crime computer that displays the suspect's identity, orders to "eliminate the criminal or bring him back alive," radar that indicates the direction of your prey and two weapons. One is a lethal .88 magnum and the other a net gun that just immobilizes the target and takes longer to deploy.

At the first crime scene you are attacked just outside the entrance to a run-down building. But be careful! A little boy plays between you and your attacker. If you fire your magnum, your attacker explodes into a pool of twitching, bloody sludge. But the child accidently gets in the way and also falls down into a lifeless heap. Killing an innocent bystander costs you 5,000 points, but it may get you into the building faster. It's just a trade-off in Technocop.

"Many forms of entertainment contain a certain amount of violence," Epyx spokesperson Don Transeth points out. He includes toys, TV, movies, arcade games, comic books, cartoons and sports as examples. "So it's kind of hard to put a stake in the ground in the computer game area and say that this is the one making people do things they wouldn't ordinarily do," he says.

Epyx has not had any formal meetings to discuss the possible harmful effects of violent games, but "we do review all our products, carefully, as you can imagine," Transeth says. The company, however, has no written policy or standards regarding game contents, according to Transeth. Epyx develops a wide range of games, he explains, some of which, in the action genre, are more violent than others. Such games are a small percentage of their overall product line, Transeth says, but he is unsure of the exact number.

Manhunter: New York

Thirteen years in the future, aliens invade Earth. Two years later, some humans are still fighting, but you're a collaborator, a Manhunter. Your job is to track down and eliminate resistance to the Occupation. Your instructions are to "conduct yourself in a manner suitable to your position. Treat your fellow earthlings with the indifference they deserve."

Sierra On-Line's Manhunter: New York begins with you tracking the illegal human resistance to Bellevue Hospital. On your arrival, you see the resistance has blown a hole in the hospital wall, directly opposite the morgue. You walk in and are confronted with a toe-tagged, green corpse and learn one of the aliens' secrets: they gestate in the exposed chest cavity of dead humans. If you don't move away quickly enough, a swarm of them flies off the corpse and eats away your face right down to the skull.

This is a puzzle game, requiring you to negotiate mazes, demonstrate physical skills and unravel clues. Some of the people you meet aren't exactly friendly; for example, if you fail to win over the denizens of a seedy Brooklyn bar one will pick you up and squeeze your head until your skull explodes and your brains splatter on the ceiling. Save often, because failing any of the tests can get you killed.

"It is our general guideline to tend away from violence in our games," Sierra On-Line spokesperson Kirk Green says. "Manhunter is the exception to that rule," Green claims.

The company has no written policy about what kinds of violence can be represented onscreen, according to Green. He says not many children will be exposed to the explicit depictions of death in Manhunter: New York because "younger kids cannot afford the game as much. These games usually go to more of an upscale audience, mostly adults and more of a sophisticated science-fiction fan crowd."

Lucasfilm Games

At the games division of Lucasfilm Ltd, General Manager Stephen B. Arnold says, "We have no published standard, but a personal standard not to do anything particularly violent like a 'hack-and-slash.' We might do a representational violence – a fantasy, a human fighting an alien, for instance – but not human beings hacking and slashing other human beings in a graphic and gratuitous way, especially in a game targeted to kids."

By way of example, Arnold cites the new ST Lucasfilm game Battlehawks 1942, which portrays aerial combat in the Pacific theater in World War II. A player may choose to play either the American or the Japanese side, however, when an opposing plane is shot down, the pilot bails out and the game does not permit the victorious pilot to strafe the pilot parachuting to safety. Arnold says this lockout was deliberate and representative of standards that ". . .we evolved ourselves and set our own creative standards. We are part of a company that considers itself a family-entertainment ▶

ATARI ST

PUBLIC DOMAIN and SHAREWARE

$2.75
1-19 disks per order

$2.50
20 or more disks per order

SHIPPING: $3 US, $4 Canada

Many of the programs we offer are easily as good or better than commercial programs costing much more. Join thousands of satisfied Atari ST owners who have turned to AccuSoft for quality software.

Software Power Without the Price!

108 Ramdisks and Print Spoolers (many of each).
135 A great clone of the game Monopoly - you'll love the graphics. (COLOR).
138 Wheel-of-Fortune 2.0 Game - A favorite! Can even make your own puzzles (COLOR).
139 Spacewar 3.0 - Exciting arcade game for 2.
155 DGDB - "The Great German Videogame" - excellent game (JOYSTICK/COLOR).
162 Stoneage Deluxe - A fantastic arcade game. Make your own games. (JOYSTICK/COLOR).
192 Picture Utilities #2 - Many great programs. Convert pictures between resolutions, more...
214 Kids #3 - Several great kids programs, incl. a Concentration game (COLOR).
223 Speech #1 - The ST will speak (read aloud) your own text files! And more speech examples...
255 Business. Visicalc Spreadsheet clone w/doc. Also 100 business form letters.
294 DeskPac Plus - Powerful all-in-one desk accessory: notebook, phonebook, alarm, calc,...
300 Monochrome Programs - Qix game, amazing demo, plus mono emulator for color monitors.
315 Two flexible database programs, a nice working PD spreadsheet, more ...
334 JILCAD 2D - Fully working CAD program! Powerful... (DBL/1MEG/best in MONO).
336 AIM 2.3 - Digital Image Processor - let's you do amazing things with pictures! (1MEG).
337 Cyberscape Animation - The BEST ST graphics and sound demo (DBL/1 MEG/COLOR).
359 Music Studio #6 - Many songs plus several PD Music Studio song player programs.
392 Anti-Virus disk - Virus detector and killer, ...
409 Uniterm 2.0d - The best ST modem program! Tons of features including a GEM interface.
413 Assistant Chef - Great recipe program (COLOR).
414 Geneological Tree and Astronomy programs.
446 ST Writer Elite 3.0 - Great word processor - has optional GEM/mouse interface. Address book.
520 Great Chess game, Boggle, Cribbage, more...
522 ST Vegas - Poker, Slots, Roulette... (COLOR).
524 PacMan and Midway strategy game (COLOR).
528 Jumpster (QBert Clone), multiplayer Monopoly, HiQ Peg game, trading game (COLOR).
529 Superb arcade game (ROCM) and tennis game (COLOR/JOYSTICK).
544 Deluxe Fontmaster ST - Superb! (MONO)
550 Opus 2.0 - Fantastic spreadsheet.(DBL/MEG)
575 Monkeys and Balloons arcade game and Guess-A-Sketch (Pictionary). (COLOR)

Also disks for PC Ditto / Magic Sac / Spectre 128.

Mention START Magazine on your first order and receive FREE our interactive Catalog Disk describing the more than 500 Atari ST disks we currently have available. If you aren't ordering yet, just send $3 (to cover shipping/handling) to get your copy of our valuable Catalog disk.

Check or Money Order. (COD - $3 extra) U. S. Dollars Only! - Ohio add 5.5% tax. Shipping per Order: $3 US/APO, $4 Canada

AccuSoft Public Domain
P.O. Box 02214, Dept. 3A
Columbus, OH 43202

CIRCLE 025 ON READER SERVICE CARD

business. Just as Lucasfilm wouldn't do a slasher movie with all the cinematic gratuitous violence, we wouldn't do a slasher game for the same reasons."

Asked about the proliferation of violent games and their popularity, Arnold replies "I haven't seen all of them but there is no doubt there are some things out there that are inappropriate. I think that the same rules need to apply here as in other entertainment projects – it is possible to represent those things, violence and conflict, which are a part of our world in a context which is not gratuitous or shocking." Arnold also notes, parenthetically, that the games division at Lucasfilm is profitable without the explicit blood and gore.

National Coalition Studies

After playing Manhunter: New York children aren't likely to crush their playmate's heads; neither are they likely to hack their playmates after playing Death Sword, or find a gun and kill someone after playing Technocop. But copy-cat violence does occur in about one percent of the cases known to psychiatrist Dr. Thomas Radecki, founder of the National Coalition on Television Violence. The effect that his research has found is mostly a short-term increase in aggression.

In a study where he observed the playground behavior of preschool, second and fourth graders after playing with a Captain Power gun, building with construction toys and doing schoolwork, Radecki measured an 80 percent increase in hostile chasing, hitting, hair-pulling and sitting on top of other children after the interactive gun game. And while he concedes that daily fluctuations in children's aggression are extreme enough to account for the increase, he says he is virtually certain, based on his research and eight other studies, that violent computer games produce harmful long-term effects.

"The very minimum we should do is treat them like any other dangerous consumer product," he says, and put warning labels on the package. He lists their possible bad effects, such as desensitization to violence, thinking violence solves problems, increased acceptance of militarization policies and a tendency to slip into violent behavior when faced with a real-life conflict.

Radecki says newer computer games are "more intense, more graphic and undoubtedly more harmful." They depict more realistic people and weapons than those of a few years ago, he explains, and the trend is to make the player participate in "clear, aggressive acts by a character with whom (they) can easily identify." Lessons learned in these games, he claims, are much more likely to be carried over into the real world.

Radecki approves of Texas Instruments' line of educational video games, Donkey Kong, Jr. Math, Sesame Street games, exercise video games, some sports games and skill games like Paper Boy. He also says games like Pac-Man aren't harmful because their violence is abstract and not easily imitated. In real life, a person can't swallow a ghost.

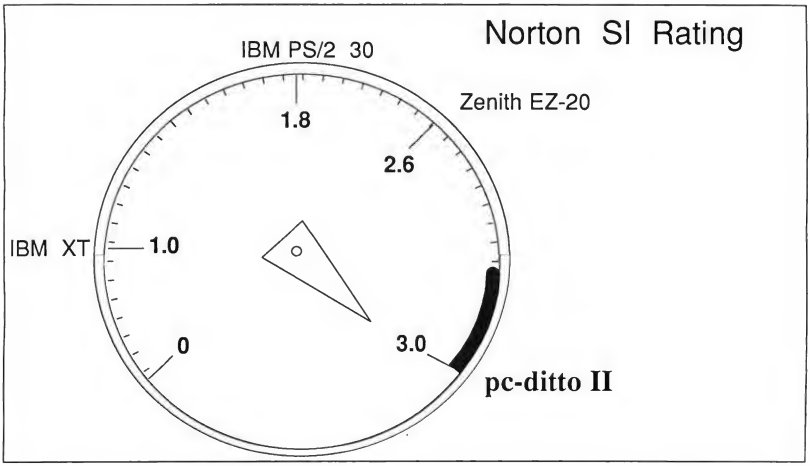
Larger Questions

Questions about the content and explicit violence in computer games raise larger questions about these same characteristics in other forms of popular entertainment. Game makers point to television as a more pervasive source of explicit violence; so, for that matter, are the "other guy's games." All of which begs the real question of what standards, if any, should game makers follow, and how can they be inspired in the face of countervailing market pressures? ■

Amy H. Johnson played her first computer game, Adventure, 11 years ago. She works as a software developer and freelance journalist. Richard P. Greenfield is an internationally published columnist on Pacific Rim technology with emphasis on the entertainment industry.

pc-ditto II

By Avant-Garde Systems



IBM **XT** **COMPATIBLE** !

IBM **AT** **PERFORMANCE** !

ATARI **ST** **PRICE** !

$299.95

Now! Run the most popular IBM software on your Atari ST...

FAST !

See pc-ditto II at your local Atari dealer or write for free information.

Yes. Please send me more information !

Avant-Garde Systems, 381 Pablo Point Drive Jacksonville, Florida 32225

Name_____

Address_____

City_____ **St**_____ **Zip**_____

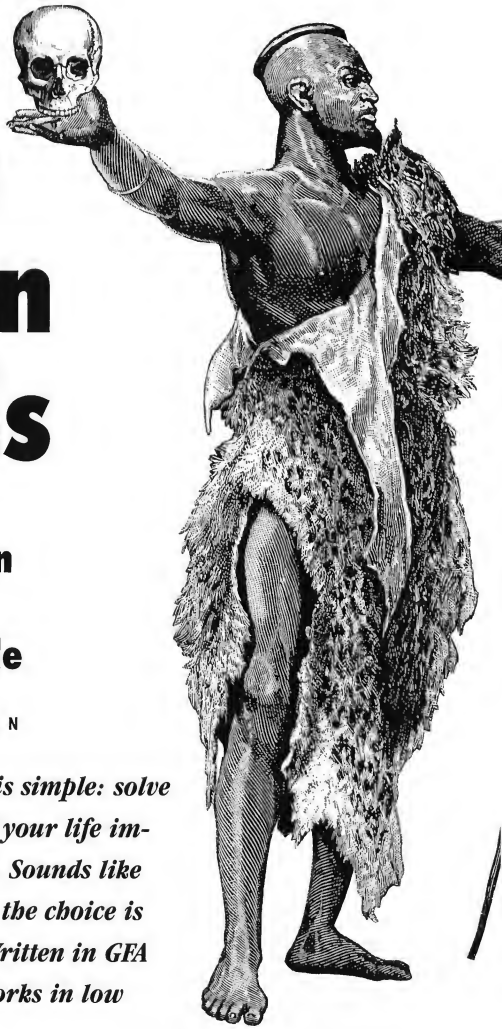
CIRCLE 003 ON READER SERVICE CARD

ON DISK

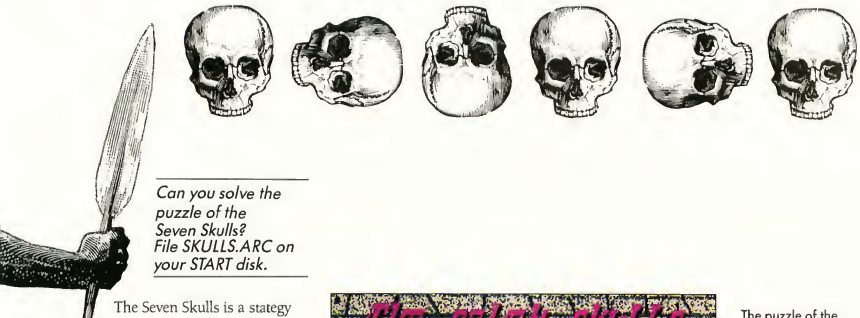
The Seven Skulls

A New Version of a Classic Puzzle

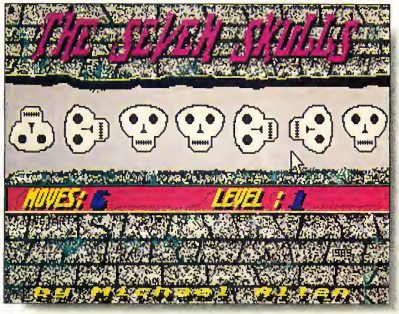
BY MICHAEL ALLEN



Your goal in The Seven Skulls is simple: solve the puzzle or spend the rest of your life imprisoned by a tribe of savages. Sounds like an easy choice, doesn't it? But the choice is a lot easier than the puzzle. Written in GFA BASIC 3.0, The Seven Skulls works in low resolution only.



Can you solve the puzzle of the Seven Skulls? File SKULLS.ARC on your START disk.



The puzzle of the Seven Skulls looks a lot easier to solve than it is. If the challenge proves too great for you, read the last paragraph of the article for hints.

The Seven Skulls is a stategy game in which you are the captive of an ancient tribe with just one chance to escape. You must solve the puzzle of the Seven Skulls by aligning all the skulls in the upright position. If you turn a skull, it will rotate clockwise 90 degrees, but so will the skulls on either side of it. The Seven Skulls also has seven levels and each level becomes harder as you progress. To be freed, you must complete all seven levels, otherwise you earn a rank in the tribe and will remain there performing your new (and certainly unpleasant) duties.

Seven Skulls, was written in GFA BASIC 3.0. Since GFA 3.0 does not yet have a compiler, we've included the run-only version of the language on this issue's disk. Copy SKULLS.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC the file following the Disk Instructions elsewhere in this issue. Set your computer to low resolution and double-click on GFABASRO.PRG. In the item selector that comes up, select SKULLS.GFA. The file DUNGEON.PI1 must be in the same directory.

Practice Makes Perfect

The game presents two options: Practice or Normal. Practice sessions give you up to 1,000 moves to complete the puzzle; Normal allows 30 moves per level. Using either a joystick or the mouse, move the pointer to the skull you want to move, then press the trigger or mouse button to rotate the skulls. There is a counter on the screen which shows the number of moves you've taken so far and the current level. Press [Escape] to quit, continue with the current game or restart the current level.

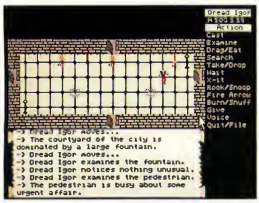
Some Hints

(Editor's note: *If you want to figure Seven Skulls out by yourself, stop reading here.)*

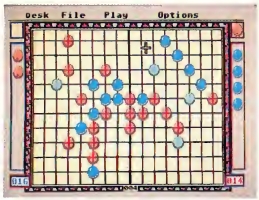
First, rid the screen of any skulls facing sideways. On the first level there will usually only be one (if it's not upside down). Click on the sideways skull, then move one position to the right and click again, then continue moving toward the right, clicking on each skull, regardless of position, until you have six skulls facing sideways. Now go to the center of each set of three and rotate them once. You now have seven skulls in either the right-side-up or upside-down positions. Now, either the skulls will be positioned in a manner that is obviously easy to solve or you must manipulate them to attain six upside-down skulls and one right-side-up skull. Again, move to the center of each set of three and rotate them into place. *Be careful not to get any skulls sideways!* Always rotate twice, once you have rid the screen of sideways skulls, so you don't get them back! ■

Michael Allen is a staff sergeant in the U.S. Air Force and works as a satellite repair technician. This is his first publication in START.

Disk Contents

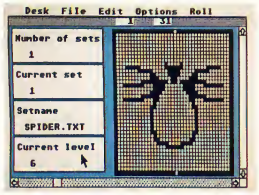


Avecta I: Ebora . . . . . pg. 50



Cinko . . . . . pg. 94

Seven Skulls . . . . . pg. 64



Slither Screen Editor . . . . . pg. 86

Step Into the World of Adventure!

This issue's lead program, **Avecta I: Ebora**, is a full-fledged graphics adventure game by Mark Swanson. It's controlled completely with the mouse, so you don't have to worry about the computer's vocabulary as you get to the business at hand. When you run Avecta, you'll search from the town of Kilkaney to deep in the orcs' cavern for the lost Prince Eirik as you try to solve the puzzle of the mage Leveth's mysterious condition. Files AVECTA.ARC and AVECTDAT.ARC; runs in low resolution.

If Avecta doesn't keep you busy, or graphics adventure games aren't your style, we've got two other games on the disk for you this month.

Cinko, by professional games programmer Michael Gilbert, has its roots in several oriental strategy games. Win this challenging game by placing five stones in a row—or by capturing seven pairs of your opponent's stones. Play against the computer or a friend for hours of fun. File CINKO.ARC; runs in low resolution.

For a twist, try Michael Allen's program **Seven Skulls**. The object of this game is to turn all seven skulls so they are all right-side-up—the catch? You can only turn skulls in sets of three! File SKULLS.ARC; runs in low resolution.

Arcade game action got you down? Set your own pace with William Schneider's **Newspeed**! This terminate and stay-resident program actually lets you *slow down* your computer so that you can catch up to your favorite game. Yes, Virginia, there really is a level 33 to Arkanoid. File NEWSPEED.ARC; runs in any resolution.

Once you've used Newspeed to slow down Slither (January 1989 START) so you can actually finish the game, it's time to make some new levels. Use Thomas Bürglin's **Slither Screen Editor** to edit up to 10 sets of 30 levels at once. File SSEDT.ARC; runs in any resolution.

Finally, START presents our new Programming in Modula-2 column. This issue, Carolyn Rogers introduces Modula-2 and compares the language to BASIC, C and Pascal by showing you versions of a **sort demo** in four different languages. File SORTDEMO.ARC; runs in any resolution. ■

GET YOUR START DISK
CALL 1 (800) 234-7001

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."

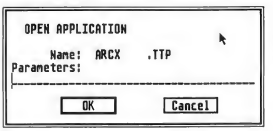
Now, put your START Backup disk in Drive A of your computer and double-click on the Drive A icon to see the disk's contents.

Un-ARCing the Files

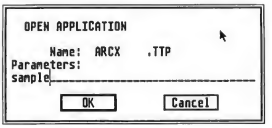
To use START's compressed disk files, please follow these steps:

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). ■

ON DISK

BY WILLIAM A. SCHNEIDER

Newspeed

In "Arcade Addiction" in the June 1989 issue of START, Associate Editor Tom Byron said he'd had "a little help" in reaching level 32 of Arkanoid by Taito. Newspeed gave him that help. It's a utility that slows down many arcade games for the ST—without slowing* you *down.

It's not really cheating—it's an aid. File NEWSPEED.ARC on your START disk.

The Atari ST is a fast game machine—sometimes too fast. If you or your kids like to play games on your ST, I am sure that at one time or another you have wished for a way to slow a game down.

Even though most games have varying levels of difficulty, an even easier level is often desired when you're just learning a game or when a younger person is trying to play. My 9-year-old wanted to play Slither in the January 1989 issue of START. We booted our machine and tried the "slow game" menu option—and it was too fast. But with Newspeed, our troubles were over.

Newspeed lets you add your own levels of difficulty by slowing down your machine. As you improve, you can increase the machine's speed until you have returned to normal.

As a bonus, the ability to cold or warm boot your machine from the keyboard is also provided.

What Does it Do?

Copy NEWSPEED.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC NEWSPEED.ARC, following the Disk Instructions elsewhere in this issue. NEWSPEED.PRG is a TSR (terminate and stay resident) program. It can be included in your AUTO folder to run at boot time, or it can be run at any time from the desktop. It will install some machine code (less than 2,800 bytes) that will remain in memory until you reboot your machine.

Once Newspeed is installed, activate it in either a GEM or non-GEM environment, in any resolution, by pressing [Control] and [Alternate] simultaneously. Your screen will go to black and white and you will see the following prompt at the top of your screen:

Select: Del (CBoot), Bksp (WBoot), 0–9

Newspeed is now waiting for a key from the keyboard. Your options are as follows:

Key	Action
Delete	Cold boot
Backspace	Warm boot
0	Normal speed
1-9	Adjusts the amount that the machine will be slowed down, with 1 being slightly slower and 9 being the slowest.

After you press a key, your program will be resumed with its colors restored, after a two-second pause that gives you time to get your joystick or mouse ready to continue your game.

The Slow Key Combo

You can customize Newspeed to respond to different key combinations using the patch program NSCONFIG.PRG, which is also in NEWSPEED.ARC. Make sure NSCONFIG.PRG and NEWSPEED.PRG are in the same directory and double-click on NSCONFIG.PRG. At the prompt, enter the number corresponding to the key combination you wish to use and press [Return]; the combinations are [Control]-[Alternate], [Control]-[Left Shift], [Control]-[Left Shift]-[Alternate] or [Left Shift]-[Alternate]. Next, enter the length of time in seconds to display Newspeed's opening screen when it is first installed. (You may want this on screen long enough to remind you of the current "hot key" combination.) NSCONFIG.PRG will automatically patch the new parameters into the Newspeed program, or inform you if there's an error.

My 9-year-old wanted to play Slither, but even the ''slow game'' was too fast.

Possible Problems

Newspeed can always be accessed from the desktop and can usually be accessed from within a program. However, you should not try to access Newspeed while disk I/O is in progress or while the Desktop is being drawn.

Because Newspeed may interfere with other terminate and stay resident programs, we recommend you only install Newspeed when you want to play a game. After all, although Newspeed will slow down Word Writer to a snail's pace, most word processors don't save your high score to disk. . . .

Once you have set your desired speed, it will continue until you change it again or reboot. This will affect all operations with the exception of disk I/O and sound. The delay routine is disabled during disk I/O, but the execution of the code between reads and writes will still be slowed down.

If you have trouble changing the speed during a game, go back to the program's opening menu and try again. If you cannot change the speed in your program while it is running, you will have to change the machine speed from the Desktop before you run your program.

An example of this is Star Raiders from Atari. The opening game screen includes a menu bar at the top of the screen. As long as this screen is active, Newspeed can be accessed. However, after you have started a game, you cannot access Newspeed without returning to the opening menu screen.

Newspeed will not work with most autobooting games because it cannot reinitialize itself when the computer is rebooted. Test to see if Newspeed works with a game by running Newspeed, putting the game disk into drive A and double-clicking on the program inside the AUTO folder. (Some games, such as Arkanoid, have programs in the root directory instead.) If this doesn't work, Newspeed will probably not work with that game. Do *not* attempt to install Newspeed in the AUTO folder of a copy-protected game disk.

Newspeed *will* work with many of your favorite public domain and START games.

Level 33 in Taito's Arkanoid, which the START editorial staff *finally* reached—but not without the help of Newspeed. Not only did Newspeed slow things down, but it actually helped improve Arkanoid scores when we played ''legitimately.''

Check Out the Code

NEWSPEED.S is the assembly source code and is included on your START disk. It was written with AssemPro, but few changes would be required to use the source with another assembler. The code is heavily commented and provides an explanation of how it works.

You will find Newspeed to be a valuable addition to your software library. Not only will you use it to slow down games, but the methods used in Newspeed can be used as a starting point for writing your own TSR code. With a little work, you too will be able to write code that adds new options to programs written by others. ■

William Schneider is a chemical engineer and plant manager for a Fortune 500 company. He is the author of "The Byte Mechanic" published in START Special Issue #4.

The Game Makers

STOS, STAC and TaleSpin Make Game Creation Easy

Do you have a dream game, but don't know how to go about getting it done? Do you wish you had the tools to create that game easily without having to learn complex programming techniques? Well, here's your chance.

Three "game creators" have recently been released that will help you develop any kind of game—from arcade shoot-em-ups to graphic/text adventures. Each of these programs—STOS and ST Adventure Creator (STAC) from Terrific Software and TaleSpin from Microdeal—will have you creating exciting games in no time at all.

STOS

Mandarin Software's STOS (distributed by Terrific Software) is a whole new form of BASIC designed specifically to produce arcade games. It's a different enough dialect that it requires some study, but it's not particularly difficult and the manual includes detailed tutorials for each new feature.

These features, as stated on the packaging, read like a wish list—or perhaps a boast list. Not only does STOS make claim to simple creation of sprites, it permits up to 15 separate sprites on one screen. These screens may be faded in and out, ellipsed, stored in memory banks or strings and imported from NEOChrome or DEGAS paint programs. "Up to 13 windows" may be overlaid, and your own GEM-like windowing

environment—complete with a self-designed menu line—can be created "with one command." Four main programs and 12 accessories can be held in memory at once. Pictures can be enlarged and shrunk, and music and sound effects can be added from the disk library or created with STOS commands. The list goes on and on.

Opening the box reveals three disks—not too daunting yet. Here's the (ulp!) manual, roughly the size of a Dostoyevsky novel. Calm yourself. Though there's quite a bit of work required (nothing comes easily), the STOS manual is tutorial in nature, and includes an extensive guided tour of the features in its second chapter. A run-through of this tour will let you know if STOS is really what you're looking for.

As a BASIC language, you'll find STOS similar to good old Atari BASIC in that error messages are quick (often during input) and direct, with almost 90 error code numbers. Finding bugs is also aided by the most powerful trace routine I've seen; it's a command called FOLLOW which tracks in three different manners. The STOS disk-handling functions are simple, yet thorough, and it seems to have found a means to move entire blocks of data in the quickest ways possible. You can continue programming while your sprites run across your screen—a little distracting, but it proves that there's some speed in this BASIC.

STOS's greatest strength lies in its handling of sprites. There are two sprite creation (and drawing) programs included, one of which will create sprites only for low resolution. The other creates sprites for any resolution, but is comparatively limited. The manual could have been much more helpful here.

Actually, there are a number of ways in which the manual could be more helpful. It's infuriating to discover that STOS can only access one bank of sprites during one program *after* you've saved, created and saved three different sprites under three different files. And perhaps I'm just a bit thick, but I can't seem to get the SPRITE2 creator to read a DEGAS file.

Mandarin has included three sample games, two of which are very nice. Bullet Train is not much of a game, but shows just how fast STOS is. Zoltar is Galaxian with hair on its chest. Finally, Orbit out-Arkanoids Arkanoid itself, plus it's "designable."

If you have any familiarity with BASIC, you'll enjoy the results you get with STOS. Every boast it makes, each claim of speed and "naturalness" of its commands, comes true. Even a nonprogrammer like me finds STOS friendlier the more I use it.

TaleSpin's documentation reads as if it's meant to be read.

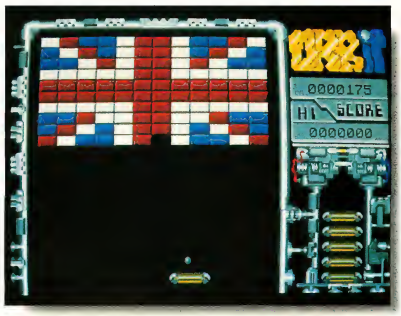
(Editor's Note: *A compiler is now available for STOS from Terrific Software for $34.95. Also, STOS will* not *work with TOS Version 1.4., so be sure you have an earlier version of TOS before you buy it.*)

TaleSpin

Now that mouse-driven computers like the ST are common, there's a new kind of graphic adventure on the market that requires no typing—just a simple point and click on an object on the screen. TaleSpin, from MichTron/Microdeal, lets you create this type of adventure even if you've never programmed before.

Simplified, TaleSpin has you design the adventure on the screen first, then draw figures, objects and backgrounds. After combining the various pictures into "pages" (or locations or rooms as standard adventures have called them), you can add text in captions or dialogue balloons similar to those in comic strips. Sound effects may be created and added, including digitally recorded sound using MichTron/Microdeal's Replay 4. As you might expect, an adventure using these graphics and sounds will take up a tremendous amount of space, so you may find TaleSpin's CHAIN command (using more than one disk for your adventure) necessary.

TaleSpin's documentation reads as if it's meant to be read. You'll want to have TaleSpin up and running as you glide through the manual, experimenting with the examples as you go along. There are numerous illustrations to give you a ▶



More than just a game creator, STOS is actually a programming language, reminiscent of Atari BASIC. This screenshot is from Orbit, one of the sample games that come with the STOS package. A STOS compiler is now available.

TaleSpin, from Microdeal, presents the budding game developer with a new kind of graphic adventure because no typing is required in the games it creates. Simply paint and click on any object on the screen and see what happens. This scene is from The Grail, a TaleSpin adventure also from Micradeal.

break from monotonous reading. For a colorful, graphics-dependent program like TaleSpin, this only seems appropriate. The program is not difficult to understand, so the manual is more than adequate.

The type of adventures created with TaleSpin may not be to everyone's taste. They resemble an interactive comic book at times, rather than text-heavy adventures. On the other hand, we may be looking at the next generation of adventuring. It's very close to what you've seen in Dungeon Master and Shadowgate, or the adventure games from Cinemaware (like Rocket Ranger).

TaleSpin comes on two disks, one of which is the program and utilities. The other includes pictures, sound effects and a slimmed-down version of the company's Grail adventure. Examining Grail's "pages" is a great tutorial on how to use TaleSpin to its best advantages, but I'm willing to bet that Atarians will find even more possibilities. Sadly, TaleSpin only works on color monitors.

STAC, The ST Adventure Creator

With ST Adventure Creator (STAC), I've been able to write the adventures that have thus far only existed on paper. And because of STAC, there's no reason why the number of good adventures for the ST shouldn't multiply like rabbits.

STAC is yet another import from England (also distributed by Terrific Software), and like TaleSpin, includes something I've rarely seen in a British ST program: quality documentation. The program itself is easy to use, mostly resembling a database. In fact it's so easy, I spent more than an hour playing with it before I even picked up the manual.

How user-friendly a program is often depends on how friendly the people behind the program are. The STAC folks are eager to give you value in this package, with lots of freebies. A drawing program that's easily as good as any graphics software on the market is included, but you can still import DEGAS or NEOChrome pictures if you prefer. These pictures can also be saved in Degas or NEOchrome format. As a bonus, STAC includes a slideshow program that pulls pictures from a floppy or RAM disk. And finally, STAC includes a sample adventure which has been placed in the public domain.

Incentive Software, the program's creators, licenses you to trade, give away or market any adventure created with STAC, as long as STAC is credited. The STAC source code is unique and can be easily identified so be sure to give credit where credit is due or you may find your game pulled out of circulation very quickly.

STAC's user friendliness extends to the manual's tutorial, though more illustrations would be useful. With calm assurance, you're taught how to create your adventure, with frequent reminders of all the steps required to prepare it. Follow the steps outlined in the tutorial, and you'll find your adventure falling into place and onto your disk in no time at all. There is one thing you won't find in the manual: STAC treats the quotation mark key as if it's above the 2, just like it is on the Atari XE keyboard. It won't slow down a true typist, but it is curious.

If you prefer text adventures only, you'll find STAC cooperative. You can have screen after screen of text—rich, descriptive text—and a parser as advanced as microcomputers can stand. We nonprogrammers can approach the level of either Planetfall or the Pawn, or a level of display not seen before: text directly on the pictures in dialog bubbles like

```
     -- MAIN MENU --
Free Memory 808027

A Adverbs
B Begin where ?
C Conditions ( local )
D Disk menu
E Font editor
F Graphics
G High priority conditions
H Low priority conditions
I Messages
J Nouns
K Objects
L Printer menu
M Room descriptions
N Special conditions
O Toggle screen resolution
P Verbs
X Erase adventure

 ENTER  Enter adventure
Please choose one of the above.
```

Developing the type of graphic adventure you want is easy with the ST Adventure Creatar (STAC) from Terrific Software. Nonprogrammers will find the interface and documentation especially user-friendly.

you see in comics. And STAC lets you add music and sound effects to your adventure. All in all it's pretty astounding.

Like Talespin, STAC runs only in low and medium resolution. Thankfully, it can run in 40 columns even if the adventure was written in 80 columns. The price seems a bit high, but you get all the power you pay for. For around $70 you get an adventure creator, a terrific drawing program, a nice slide show program and an outstanding sample adventure. The adventure—in which you play Sherlock Holmes' secretary who must set right all the Mother Goose stories and find her missing cat—is worth a good $20. There's no doubt the STAC package is worth it.

You can develop any kind of game, from arcade shoot-em-ups to graphic adventures.

But is STAC for you? If you're an adventurer, then an emphatic yes! If you're not, if you absolutely *hate* adventure games, try it anyway—you're liable to get hooked.

Which One's for You?

This is almost a trick question. I'd say that any ST owners worth their salt should own all three. But if you're purely an adventurer, or a frustrated adventure creator, then I strongly recommend STAC and TaleSpin. If you're only interested in arcade shoot-em-ups, get STOS and study the manual thoroughly.

Of the three game creators reviewed here, STAC remains my favorite (I really love wordy adventures!). It's easier to create a STAC adventure than an arcade game with STOS and it reqires fewer steps than TaleSpin. Also, TaleSpin limits a players options—you can do what's on screen and that's all! That limitation also creates an extremely easy player interface. Developing a TaleSpin adventure is a chore, almost becoming a programming task.

The differences are greater than any similarities between these tools; it really is an apples and oranges comparison. A STAC adventure may be less easily interfaced for a *player* (type, type, type), but it's easy on the developer. TaleSpin, conversely, can be tedious for the developer, yet very friendly to the player. STOS, being a language, can be as complex or simple for the player as the programmer wishes.

Each program makes full use of the ST's sound chip (no MIDI capability, however) and graphics potential. In fact, TaleSpin and STAC are nearly identical in this respect.

In the end only you can determine which type of game you wish to create. Classic text adventures (with or without pictures)? "Picture-click" adventure? Or arcade game? It's up to you. ■

Chester Cox has been playing adventure games since before he owned a computer. Besides playing games, he's the Emperor of the Atari Computer Club of Denver, head of the No D&D Gamers and a staff sergeant in the Air Force.

PRODUCTS MENTIONED

STAC, the ST Adventure Creator, $69.95; **STOS the Game Creator**, $59.95. Distributed by Terrific Software, 544 Second Street, San Francisco, CA 94117, (415) 957-0886.
CIRCLE 167 ON READER SERVICE CARD

TaleSpin Graphics Creations System, $49.95. Micradeal U.S.A., Inc., 576 Sauth Telegraph, Pantiac, MI 48053, (313) 334-8726.
CIRCLE 161 ON READER SERVICE CARD

EXCLUSIVE PROGRAMS ON DISKS!

If you bought this issue of START without the disk, you're missing out! Order the companion disk full of great, enjoyable programs from top ST experts. Order your disk by mail using the order card in this issue. For even faster service, call:

Toll-Free:

1-800-234-7001

7 am-6 pm PST
Visa/MasterCard orders only

Each disk is $10.95 plus $2.00 handling & mailing.

An Introduction to Modula-2

BY CAROLYN ROGERS

Among the many languages currently available for the Atari ST, Modula-2 is an often overlooked gem. This column is aimed at introducing both the novice and professional programmer to this powerful language.

In the Beginning

Modula-2 (**Modu**lar **La**nguage 2) was created by Swiss computer scientist Niklaus K. Wirth as a successor to Pascal, which he also developed. It was designed to correct some of Pascal's problems, such as its inability to support separate module compilation and lack of access to low-level machine operations and multiprocessing. Although Modula-2 retains some surface similarities to Pascal, it contains syntactical and conceptual differences that indicate a more mature, refined language.

Modula-2 is a highly structured language. A Modula-2 program is composed of small blocks of code designed to handle one or two specialized functions required by the main program. In Modula-2 there are three distinct types of modules:

1. **Program module**: This is the master module which controls program flow. The program module accesses independently developed libraries of procedures and functions. (The difference between a procedure and a function is that a function returns a value of some type and a procedure does not.) When compiled, the program module will produce an .LNK file which is used by a linker to pull all the independent parts together.

Modula-2 corrects some of the problems with Pascal.

2. **Definition module**: This module contains information needed to interface with a calling program. It includes the declaration of any constants, types, variables, procedures or functions that must be made available to a calling program. When compiled, the definition module produces an .SYM file. This .SYM file contains a unique identification code which is incorporated into any .LNK file created when an implementation or program module is compiled. The definition module must therefore be compiled first. A new value is created whenever the definition module is compiled. This means that even if you made no changes to the actual code, an error occurs if you don't recompile all programs that call it. This is to prevent the master interface from being changed without the programmer's knowledge.

3. **Implementation module**: This module contains the actual code to perform whatever functions are defined by the definition module. All information is private, or opaque, to a calling program. When compiled, the implementation module will produce an .LNK file. This file is used by a linker program to pull together the code in the program module .LNK file and the library .LNK files to create an executable .PRG program.

The beauty of separating the definition and implementation code of a module is that you may modify the implementation module without incurring complications in a calling program. Of course, if the definition module is modified, those changes must be reflected in any existing code.

There are three distinct types of modules.

As with any programming language, the syntax of Modula-2 consists of a set of rules that govern the building of a Modula-2 program. In his book, *Programming in Modula-2*, Niklaus Wirth divided these rules into five classes:

1. **Identifiers**: A sequence of letters and digits used to identify a variable or constant. The first character of the sequence must be a letter. Identifers in Modula-2 are case-sensitive; therefore, LoopCount and LOOPCOUNT would be seen as two different variables. Modula-2 reserved words cannot be used as identifiers.

2. **Numbers**: These can be either integers or real numbers and cannot contain non-numeric characters. However, real numbers must have a decimal point and may also contain the letter E, used to denote an exponential value. Integers may be designated as octal or hexadecimal numbers by following the number with a B for octal or H for hexadecimal.

3. **Strings**: Strings are a sequence of characters that are enclosed in quotation marks.

4. **Operators and delimiters**: These are special characters and reserved words, written in capital letters, which are the most basic building blocks of the language. They may not be used as identifiers.

5. **Comments**: These are sequences of characters enclosed between the comment brackets (* and *). They may be placed anywhere in the code and are ignored by the compiler.

Sort 'em Up

Now that we have the rules, let's illustrate them by following the development of a selection sort program. Copy SORTDEMO.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC SORTDEMO.ARC, following the Disk Instructions elsewhere in this issue.

Figure 1 is the main program file, SORTDEMO.MOD. The first line contains the reserved word MODULE, used to indicate the module name SortDemo. The FROM and IMPORT statements import procedures from other modules, making them available to the SortDemo program. In this case SelectSort and MAXSIZE are imported from Sort, which we are going to create. WriteCard, WriteLn and WriteString are imported from the standard library InOut. BConIn and Device are imported from the BIOS library, ConOut is imported from the GEMDOS library and Random is imported from the XBIOS library.

In Modula-2, the core syntax is used to build libraries of code to handle input and output. These are not part of the definition of Modula-2, but are included as part of a standard library supplied with a particular compiler. VAR denotes the beginning of the variable declaration section. Modula-2 requires that all variables and constants be declared explicitly before use. The variables Numbers and SortedNumbers are declared as arrays of CARDINAL numbers. The variables x and y are declared as CARDINAL. The type CARDINAL is for positive whole numbers and zero. The variable wait is a LONGCARD variable, which is for whole numbers with a range greater than CARDINAL. There are also the following types:

```
INTEGER  : a positive or negative whole number
REAL     : a real number
BOOLEAN  : one of two logical truth values: TRUE or FALSE
CHAR     : an ASCII character from 0 to 128
LONGINT  : a whole number with a greater range than INTEGER
ARRAY    : a fixed number of elements of the same type that are identified
           through an index
RECORD   : a group of different types, for example:
           TYPE DogInfo = RECORD
                  Breed : ARRAY[0..20] OF CHAR;
                  Sex   : CHAR;
                  Name : ARRAY[0..20] OF CHAR;
                        END;
SET      : a subrange or enumeration of a specified set, for example:
           TYPE WeekDays = (Sun,Mon,Tue,Wed,Thr,Fri,Sat);
           Day    = SET of WeekDays;
POINTER  : pointer to a block of dynamic storage, for example:
           NAME = POINTER to ARRAY[0..20] OF CHAR;
```

The reserved word BEGIN denotes the beginning of the program code. The first statement clears the screen. The second statement, WriteLn, is a standard library function to skip a line. Next there is a FOR loop that fills the Numbers array with random CARDINAL values. The program then calls the SelectSort procedure, sending as parameters the array to be sorted and the array that will contain the sorted values when the procedure returns. After the sort there is another FOR loop used to print both arrays. The program then waits for the user to press a key. Finally there is an END statement followed by the program name.

Figure 2 shows the definition module for the sort program, SORT.DEF. The reserved words DEFINITION MODULE identify the module name as Sort. This name must also be used by the corresponding implementation module. The declaration section consists of one constant MAXSIZE and one procedure SelectSort.

The core syntax is used to build libraries of code to handle input and output.

Finally, the implementation module for the sort demo, SORT.MOD is shown in *Figure 3.* The reserved words IMPLEMENTATION MODULE followed by the name Sort indicates that this is the corresponding module for the Sort definition module.

Next, the PROCEDURE SelectSort is defined. The following VAR declares variables that are local to the SelectSort procedure. The code between BEGIN and END SelectSort marks the boundaries of this procedure. The first code statement is a FOR loop to copy the values of the original array into the sort array. The next loop starts at the beginning of the array and within the second loop compares each y value with the current x position. If a lesser value is found they are swapped. At the end of each pass the current x position in the array is correctly sorted. The last statement END Sort marks the end of the implementation module.

If you are familiar with BASIC, C or Pascal, I have included the comparable source code for the selection sort for each language. I attempted to make the program demo for each language as generic as possible. However, the Random-Number function will require a compiler-specific call. The demo files are as follows: Modula-2 (SORT.DEF, SORT.MOD, SORTDEMO.MOD), Pascal (SORTDEMO.PAS), ST BASIC (SORTDEMO.BAS) and C (SORTDEMO.C).

Figure 1: This is the moin module of the Modula-2 sort demo. It is on your START disk os SORTDEMO.MOD in the orchive file SORTDEMO.ARC.

```
MODULE      SortDemo;
FROM BIOS   IMPORT BConIn,Device;
FROM GEMDOS IMPORT ConOut;
FROM InOut  IMPORT WriteCard,WriteString,WriteLn;
FROM Sort   IMPORT SelectSort,MAXSIZE;
FROM XBIOS  IMPORT Random;

VAR
   Numbers,SortedNumbers : ARRAY[0..MAXSIZE] OF CARDINAL;
   x,y                   : CARDINAL;
   wait                  : LONGCARD;

BEGIN
   ConOut(CHR(27)); ConOut(''E''); (* Clear the screen *)
   WriteLn;                        (* Skip o line *)
   FOR x := 0 TO MAXSIZE DO        (* Fill the array with random volues *)
      Numbers[x] := CARDINAL(Random() MOD 200);
   END;
   SelectSort(Numbers,SortedNumbers);
   WriteString('' UNSORTED ARRAY          SORTED ARRAY''); WriteLn;
   FOR x := 0 TO MAXSIZE DO
      WriteString(''              ''); WriteCard(Numbers[x],5);
      WriteString(''                    ''); WriteCard(SortedNumbers[x],5); WriteLn;
   END;
   wait := BConIn(CON); (* Wait for a keypress *)
END SortDemo.
```

Figure 2: This is the definition module of the Modula-2 sort demo. It is on your START disk as SORT.DEF in the archive file SORTDEMO.ARC.

```
DEFINITION MODULE Sort;
CONST
   MAXSIZE = 20;

PROCEDURE SelectSort(VAR Numbers,SortedNumbers : ARRAY OF CARDINAL);
END Sort.
```

Figure 3: This is the implementation module of the Modula-2 sort demo. It is on your START disk as SORT.MOD in the archive file SORTDEMO.ARC.

```
IMPLEMENTATION MODULE Sort;
PROCEDURE SelectSort(VAR Numbers,SortedNumbers : ARRAY OF CARDINAL);

VAR
   x,y,temp : CARDINAL;
BEGIN
   FOR x := 0 TO MAXSIZE DO
      SortedNumbers[x] := Numbers[x];
   END;
   FOR x := 0 TO MAXSIZE-1 DO
      FOR y := x+1 TO MAXSIZE DO
         IF SortedNumbers[x] > SortedNumbers[y] THEN
            temp := SortedNumbers[x];
            SortedNumbers[x] := SortedNumbers[y];
            SortedNumbers[y] := temp;
         END;
      END;
   END;
END SelectSort;
END Sort.
```

Further Reading

If you are interested in additional information the book *Modula-2: A Seafarer's Manual and Shipyard Guide* by Edward J. Joyce is good for beginners. For more advanced information *Programming in Modula-2* by Niklaus Wirth is the definitive book on the language. ■

Carolyn Rogers is a professional programmer living in North Little Rock, Arkansas. She wrote START's first Modula-2 program, Poker Solitaire, which was published in the April 1989 issue.

PRODUCTS MENTIONED

Modula-2: A Seafarer's Manual and Shipyard Guide, by Edward J. Joyce, 1985, Addison-Wesley, 1 Jacob Way, Redding, MA 01867, (800) 447-2226. Call for price.
CIRCLE 174 ON READER SERVICE CARD

Programming in Modula-2, by Niklaus Wirth, $20.50. Springer-Verlat, 175 Fifth Avenue, New York, NY 10010, (800) 526-7254.
CIRCLE 175 ON READER SERVICE CARD

Coming Next Month

Stacy and Portfolio!

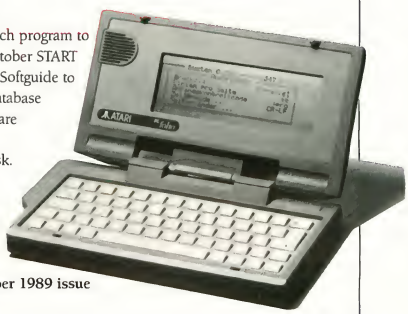
In the October issue of START Magazine, we'll take a firsthand look at Atari's newest computers, the Stacy and the Portfolio. Join us for a test drive of the ST laptop and the pocket-sized MS-DOS sensation.

We'll also review version 1.5 of DynaCADD and present a special program on the START disk to convert your CAD-3D files to DynaCADD format.

And if you're looking for a professional-level calendar and appointment manager, look no further than the Schedule Maker on the October 1989 START Disk!

Trying to decide which program to buy? If you have the October START disk, you'll have our ST Softguide to help. It's a searchable database of all available ST software and it's available only on your START disk.

There's a whole lot more in this feature-packed issue! You won't believe it when you see it!



Watch for the October 1989 issue of START! ■

COMPLETE YOUR START LIBRARY

Get Your Back Issues Now

You'll want to have every issue handy for quick reference. The START library... it's there when you need it!

FALL 86

Features: Seven Word Processors Examined, All About the Floppy Disk Controller, C Languages Compared.

On Disk: Reversi; Mousetrap; Probing the Floppy Disk Controller; FujiBoink.

Reviewed: Four C Languages: Alcyon, Lattice Megamax and GST.

WINTER 86

Features: Jack Tramiel Interview, Buyer's Guide.

On Disk: Noise Doodling; Address Book, Auto-Dialer, Label Printer; ST Writer Secrets.

Reviewed: Mark Williams C, Menu+.

SUMMER 87

On Disk: The aSTronomer; Text Compression and Huffman Coding with Personal Pascal; Flicker Animation Program, MIDISAVE.

Reviewed: Timeworks' Word Writer ST, Data Manager ST and Swiftcalc ST; Five BASICs compared.

WINTER 87

Features: The Atari Mega 4; Zoomracks; The ST in Hollywood; How Not to Shop at a Computer Store.

On Disk: STARTKey; ST Writer Meets the Mouse.

Reviewed: Macintosh and PC Emulators; Dac-Easy and STAccounts; 1st Word Plus; Superbase Personal.

SPECIAL ISSUE #2

Features: Drawing and Painting Programs Overview; Desktop Video; How to Set Up Your own MIDI Studio; Rock'n'Roll with Atari; Shopping List of Music Hardware.

On Disk: The Cartoonist; MIDI View; Ear Trainer.

Reviewed: Synth-Droid and Xsyn Patch Editors; Music Studio and Music Construction Set.

SPRING 88

Features: Earthquake; Upgrading Your ST; Dave Mason Interview.

On Disk: Home Budgeting; Exploring Prolog; 1987 Tax Template; Battle for the Throne.

Reviewed: Personal Finance Programs; Desk Accessories Compared.

SPECIAL ISSUE #3

Features: The ABCs of Desktop Publishing; The ST in Business; Business Graphics; Database Overview.

On Disk: CardSTack Database; START Selector; Play the Market.

Reviewed: WordPerfect; F-15 Strike Eagle.

SUMMER 88

Features: Three Years with the ST; Mick Fleetwood Interview.

On Disk: Planning Traveler; Writing Your Own Help Files; Fractal Landscape Generator; Klondike Solitaire.

Reviewed: Microsoft Write.

SPECIAL ISSUE #4

Features: Games & Entertainment

On Disk: Naval Battle; World Discovery; Guitar Simulator; Byte Mechanic; ReSTART.

Reviewed: Dungeon Master; Chessbase; Four SonicFlight Patch Editors; Quantum Paint 1.2.

FOR ORDERS ONLY CALL TOLL-FREE

1-800-234-7001 7 am-5 pm PST

MasterCard & Visa Only

Or send your check to: START BACK ISSUES, 544 Second Street San Francisco, CA 94107; California residents add 6½% sales tax.

OCTOBER 88

Features: Programming Under Pressure.

On Disk: Vocabularian; Brickworks; ST Microscope

Reviewed: Desktop Publisher ST; SMPTE Track; Digidesign's Softsynth; C Language Overview.

NOVEMBER 88

Features: The ST and MIDI.

On Disk: AVS; SciPlot; Appointment Calendar.

Reviewed: LDW Power; Steinberg/Jones MIDI Power; Superbase Professional.

DECEMBER 88

Features: Hardware.

On Disk: Wombats II; Sant BBS; Discovery Construction Set; Five Sort Routines.

Reviewed: Moniterm's Viking Monitor; DynaCADD; Five Hard Drives Compared; Ricoh PC Laser 6000.

JANUARY 89

Features: Editor's Choice.

On Disk: GFA BASIC 2.0; Spanish Mastery; STARTKey Revisited; Slither.

Reviewed: GFA BASIC 3.0; C-Lab's Creator and Notator.

FEBRUARY 89

Features: Thanks for all the Fish; ST:1999.

On Disk: Dah-Ditter; Moon Calendar; Kamikaze Chess; Killer Chess; VCR Organizer.

Reviewed: Atari's Planetarium; Robtek's Skyplot; Mirage Sample Editors.

MARCH 89

Features: Three Artists Who Use the ST; Software Rental.

On Disk: Seurat Draw and Paint Program; Assembled Saucers; ST Coloring Book.

Reviewed: Graphics and Animation Programs Compared; Digigram's Big Band; Overview of Six CAD Programs.

APRIL 89

Features: Jimmy Hotz's MIDI Magic; Dr. T Interview; The New TOS ROM Error Codes.

On Disk: ST Writer Elite 3.0; Poker Solitaire; RAM Baby.

Reviewed: Utilities; R/C Aerochopper; MIDI Draw.

MAY 89

Features: CompuServe's Sports Forum; Atari Goes to College.

On Disk: Space Wars 2400; GFA Object; 1988 Tax Template; SIFT (START's Instant File Translator).

Reviewed: Buyer's Guide to Telecommunications Programs; Calamus.

JUNE 89

Features: Do-Anything Business Computer; Arcade Addiction.

On Disk: GFA Vector; Match Quiz ST; Screenwriting with WordPerfect; ST Pinochle; Exploring Spreadsheets; Traveling Mattes.

Reviewed: Juggler II; Switch/Back; Revolver; Graphics Tools from Migraph; MIDI Drummer.

START LIBRARY ORDER FORM

ISSUE	MAG. W/DISK	MAG. ONLY	DISK ONLY
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐

QTY:			
	× $14.95	× $4.00	× $10.95
	$	$	$

=

☐ Payment Enclosed ☐ Check ☐ Visa ☐ MasterCard

Name _____

Address _____

City _____

State _____ Zip _____

dollar amt. ordered $_____

shipping/ handling _____

Foreign (add $1 per item) _____

California residents add 6.5% sales tax _____

Total amount enclosed US funds only $_____

Quantities are limited and we cannot guarantee that all back issues are available

Shipping/handling charge is 50¢ per item whether you order the magazine with disk, the magazine only or the disk only. There is a flat fee of $5.00 for orders of ten or more.

Send to: START BACK ISSUES, 544 Second Street, San Francisco, CA 94107

Public Domain Software

Over **800** Disks Available for the Atari ST

Only $4.00 Each

Utilities, Games, MIDI, Applications, Music, Graphics, Educational, Clip Art
Same Day Shipping Telephone Support Free Catalog Updates

FREE Disk & Catalog

Receive a coupon good for a **FREE** Public Domain Disk with any purchase when you Call or Write for our **FREE** Catalog.

(800) 347-6760

#57 - Tease Me Adult Animation (Color)
#145 - Five Children's Programs (Color)
#196 - World Text Adventure (Color/Mono) ST Breakanoid (Color Only)
#239 - Mailing List Database (DBL)
#244 - Strip Breakout (Color Only)
#245 - R Draw - Paint Program (Color/Mono - Req. 1 Meg RAM)
#374 - Two Database Programs PrintMaster Cataloger
#393/394 - PrintMaster Graphics
#395 - Desk Manager, Screensaver V2.0 RAM Disk, Disk Cache
#399 - Degas Elite Printer Drivers
#400 - 7 Disk Labeling Programs (w/100 Pin Feed Disk Labels $6.95)
#443 - Intersect RAM Baby (RAM Disk/Print Spooler) DCOPY - do everything Utility Prg
#456 - Bolo Breakout Game from Germany (Req. 1 Meg RAM)
#468 - Accessory Ace V1.2, Mouse Speed
#475 - Werty's House of Horror (Adult Game/Color Only)
#491 - Star Trek - The Next Generation w/Digitized Voices (Req. 1 Meg RAM/DBL/Color Only)
#499 - The Accessory V1.2 Multifunction Accessory
#500/600 - Publishing Partner Fonts
#506 - OT Com V0.11 - Shareware Communications Package w/Docs
#509 - Mark Johnson's Shareware C Compiler (DBL)
#511 - Dungeon Master Maps Levels 1-7
#512 - Dungeon Master Hints/Character
#514 - Monochrome Emulator V3.0
#533 - PrintMaster Graphics/Borders
#535 - Tree Chart - Geneology Program
#536 - Vanterm V3.71 - Terminal Program
#551 - Kid Shapes Ages 2-8 (Color Only)
#553 - Kid Publisher Ages 4-12 (Color)
#555 - The Assistant Chef Electronic Cookbook (Color Only)
#557 - Children's Programs (Color Only)
#567/728 - Desk Accessories
#575 - Sheet V2.0 Shareware Spreadsheet
#588 - Pac Man, Hangman and 5 others (Color Only)
#590 - Dungeon Master Utilities
#596 - Pictionary Type Drawing Game
#599 - PageStream Fonts, Font Converter
#650 - Text Output Accelerator
#651 - ST Virus Killer V2.1, Super Boot
#655 - ST Writer V3.0 w/Spell V2.8
#667 - Benjamin's ABC's for Kids (DBL)
#679 - Disk Cataloger/Label Printer (DBL)
#688 - H.P. LaserJet/DeskJet Utilities
#689 - Pictionary Type Game (Color Only)
#690 - Opus V2 Spreadsheet (1 Meg/DBL)
#694 - Turtle Hard Disk Backup V3.0
#696 - Hard Disk Utilities
#699 - Children's Programs: Kid Color, Kid Adder, Kid Story, Kid Sketch
#700 - ST Xformer V2.4 - 8 Bit Emulator
#720 - Dungeon Master Maps Levels 8-14
#721 - Drawing Programs
#723 - Lottery Programs
#726 - Children's Programs: Numerical Go Around, The Wolf and 7 Kids Adv.
#741 - Copystar V1.0, Address Book Base
#749 - Barnimals - Listen/Guessing game

Introductory Offer - Above Disks Just

$2.99 Each

The Atari ST Book

of Tips, Instructions, Secrets and Hints for the 520, 1040 and Mega ST begins where the Atari Owner's Manual left off, providing step by step instructions that helps both beginning and experienced users to get the most out of their ST's.

$16.95

ST Xformer Cable

Run 8 Bit programs on your ST! Use 5 1/4" or 3 1/2" disks! Loads & Runs protected disks!

$19.95

Receive the latest version of ST Xformer ***FREE*** with purchase of cable when you mention this ad.

Lowest Prices on Software

Call with your best price on any Domestic or European software title for the ST, we will meet or beat it and give you a FREE Public Domain Disk!

Dungeon Master: Chaos Strikes Back $18.95

Lotto File

A Lottery Database
For all 1/1 Through 7/65 Lotteries
Allows Bonus Numbers

Completely GEM Based - Add/Edit up to 999 Games per Disk Store and Auto Check your play slips - Trends Charts Past Performance Chart - Interval and Statistics Charts Number Pairing up to 6 Numbers - Wheeling up to 924 Sets User Definable R/N Generator Number - Hit/Miss Graph Sum Deviation Graph - Number Cross Referencer and more

$17.95

Computer Tutor Videos

#1 - Beginners Guide
#2 - Timeworks' Word Writer
#3 - Timeworks' Publisher ST
#4 - Word Perfect

$24.95 Each

BRE Software Dept. SRT
352 W. Bedford, Suite 104
Fresno, CA 93711

Customer Service/Inquires
(209) 432-3072

VISA
MasterCard

Shipping: P.D. Disks $2.50 Ground, $4.00 2nd Day Air, Canada $3.00 Air Mail; Other Items $3.00 Ground, $5.00 2nd Day Air, Canada $6.00 Air Mail; C.O.D. Add $4.00 (US Only). Visa/Mastercard $15.00 Minimum.

CIRCLE 007 ON READER SERVICE CARD

See us in Tokyo!

The great world of ATARI hardware & software is even available in Japan! See us in Tokyo for your ATARI needs.

日本の東京にもあります。こんなお店…

ATARI グッズ在庫豊富です。

OPEN 10:00~20:00年中無休

ANDY'S MUSIC

シンセサイザーショップ 03-360-0251
コンピューターショップ&ソフトショップ 03-360-0252

〒164 中野区東中野4-2-2

CIRCLE 002 ON READER SERVICE CARD

MUSIC ENGINEERING TECHNOLOGY

Bachelor of Science Degree
and Certificate Programs

Curriculum Integrates:

- Electronics / Computer Technology
- MIDI & Music Composition Skills
- Expert teachers / Small class size
- Fully equipped lab environment
- Individual MIDI workstations
- Class room theory / Hands-on labs
- College credit for work experience

PREPARE FOR YOUR CAREER
Music / Electronics / Computers

Cogswell Polytechnical College
10420 Bubb Road
Cupertino, CA 95014
(408) 252-5550

Financial Aid Available

Accredited by the Senior Commission of the Western Association of Schools and Colleges.

CIRCLE 010 ON READER SERVICE CARD

Sometimes You Can Get What You Want!

BY JIM PIERSON-PERRY
START MUSIC/MIDI EDITOR

Hello, campers! Time to catch up on some new MIDI software while you're soaking in the rays. We will also look at some of Atari's new hardware and promotional activities that should boost its already commanding position in the MIDI market even higher.

Atari's new ST laptop computer, the Stacy, will be a hot item for MIDI enthusiasts. It's portable, inexpensive (under $1,500) and can handle everything a 1040ST can—including MIDI.

Beggar's Banquet?

Not by a long shot. My database shows well over 225 MIDI programs and hardware components for the ST, with more arriving every week. And that's not even counting the upgrades as developers improve their programs' capabilities.

Speaking of upgrades, the new version of Notator from C-Lab (distributed in the United States by Digidesign) supports the Atari SLM804 laser printer and HP Deskjet. Their most recent releases are patch editors for the Korg M1 and Matrix 6 synthesizers.

Copyist DTP (version 1.6) from Dr T also works with the SLM804 and is the only ST scoring program that directly supports Ultrascript and the Imagen Crescendo music fonts. The latest from the Doctor is Guitaristics, a guitar training program that also provides a good bit of music theory.

Not an upgrade, but advancing the state of the art is ADAP II from Hybrid Arts. This long-awaited direct-to-disk digital recording and editing package is now shipping and, word has it, performance is fantastic.

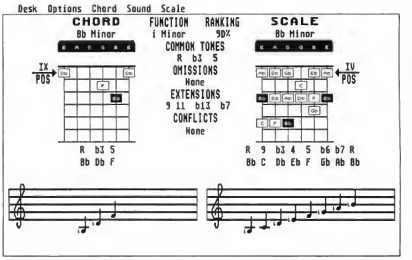
Following on the success of their TX81Z patch editor, Musicode has released two more patch editors: the DX21/27/100 and K1 Voice Development Systems. Those looking for a solid first sequencer should look at Final Cut from Legend Software, currently shipping version 2.3. As many sequencers pass the one-meg memory requirement, it's reassuring to find good ones that still run on the 520ST.

Another sequencer that likes the 520ST just fine is Twelve from Steinberg/Jones. Basically a stripped-down version of their Pro 24 III (from 24 to 12 tracks), Twelve is admirably suited for live performing where memory can be stuffed with your sequences rather than program code. On the horizon is Avalon, a generic sample editing program.

MIDImouse announces Ultra MIDI, which combines the functions of a sysex librarian, MIDI mapper, playback sequencer and more into a total music performance workstation. They have also entered the music education field with three programs in the MIDI Music Lessons series: Note Wizard, Scale Master and Chord Magic.

We have first releases from two new ST MIDI developers. The first is MIDIMAX from Codehead Software, well known for their ST utility programs. MIDIMAX is a real-time MIDI message processor that provides event filtering, controller remapping, modal harmonizing, multiple ▶

keyboard splits and macros to set up customized MIDI environments. Equally impressive is Beethoven, a new scoring program distributed by Samson Technologies. This combines sequencing with real-time notation, then adds advanced editing features to provide a total musical DTP system. (Editor's note: *At presstime, Samson Technologies was planning to rename Beethoven, but no new name, or price, had been set.*)



Sample display from Guitaristics, the new guitar/keyboard fingering and music theory educational program from Dr. T.

Jumpin' Jack's Flash

Not to be outdone by all the great software, Atari is kicking out the jams on the hardware side with new products having lots of appeal to musicians.

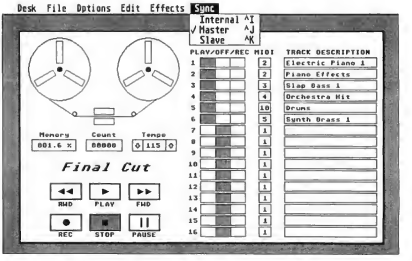
Probably the biggest news is the debut of Stacy, the Atari laptop. If you have been following START's coverage, you should know that Stacy is the portable equivalent of a 1040ST with several nice, convenient features. The basic model runs about $1,495 and provides one megabyte of memory with a double-sided disk drive and a 640-by-400-pixel monitor. A trackball replaces the mouse.

Did you know that Stacy has a big sister, Stacy Pro? (Come on Atari, how about a better name?) This version will be available about two months after Stacy starts shipping (this is currently pegged for June in time for the NAMM show) and starts with two megabytes of memory, expandable up to four meg. Stacy should be ideal for performing musicians: all the MIDI power of the ST in a form suited for the road and stage.

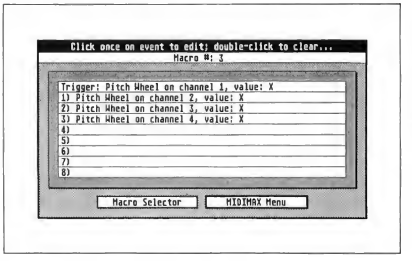
Another hot item is the Atari CD-ROM player. Eagerly awaited since its preview a couple of years ago in Antic, it is finally ready to go. The estimated price tag of $599 is close to Jack Tramiel's original goal of $500 (allow for inflation). One of the first releases for the Atari CD-ROM player will be a collection of sampled sounds in Sound Designer format from Optical Media. And yes, it works as a regular CD player when you're done computing for the day.

The ST continues to garner new users from the ranks of established professional musicians. Some of the newest "celebrity users," covering a wide range of styles, are Eddie Van Halen, the Beach Boys and Debbie Gibson.

Finally, I hope many of you were able to attend the MIDI show put on during the April "World Of Atari" at Disneyland. Co-sponsored by START and *Keyboard* magazines, it was hosted by Michael Pinder of Moody Blues fame with appearances by Mick Fleetwood, Jimmy Hotz and, not surprisingly, Sam Tramiel. ■



Main workscreen from Final Cut, the sequencer program from Legend Software. As many sequencers pass the one-meg memory requirement, it's reassuring to find good ones that still run on the 520ST.



Sample MIDI macro created with MIDIMAX from Codehead Software. This example watches for pitchbend events on channel 1 and echoes them on channels 2-4.

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

PRODUCTS/COMPANIES MENTIONED:

MIDIMAX, $49.95. Codehead Software, P.O. Box 74090, Los Angeles, CA 90004, (213) 386-5735.
CIRCLE 153 ON READER SERVICE CARD

Matrix 6 Editor, M1 Editor, no price set; **Notator**, $595. Digidesign (U.S. distributors for C-Lab), 1360 Willow Run, Suite 101, Menlo Park, CA 94025, (415) 327-8811.
CIRCLE 154 ON READER SERVICE CARD

Copyist DTP, $399; **Guitaristics**, $79. Dr. T's Music Software, 220 Boylston Street, Suite 306, Chestnut Hill, MA 02167, (617) 244-6954.
CIRCLE 150 ON READER SERVICE CARD

ADAP II, $3,495. Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064, (213) 826-3777.
CIRCLE 151 ON READER SERVICE CARD

Final Cut, $89.95. Legend Software, 3508 34A Avenue, Edmonton, Alberta T6L 5E8, Canada, (403) 450-0736.
CIRCLE 155 ON READER SERVICE CARD

Chord Magic, $69.95; **Note Wizard** , $69.95; **Scale Master**, $69.95; **Ultra MIDI**, $229.95. MIDImouse Music, P.O. Box 877, Welches, OR 97067, (503) 622-4034.
CIRCLE 156 ON READER SERVICE CARD

DX21/27/100 Voice Development System, $69; **K1 Voice Development System**, $89. Musicode, 5575 Baltimore Drive, Suite 105-127, La Mesa, CA 92042, (619) 469-7194.
CIRCLE 157 ON READER SERVICE CARD

Optical Media International, 485 Alberto Way, Los Gatos, CA 95032, (408) 395-4332.
CIRCLE 158 ON READER SERVICE CARD

Beethoven, no price set. Samson Technologies Corp., 485-19 South Broadway, Hicksville, NY 11801, (516) 932-3810.
CIRCLE 159 ON READER SERVICE CARD

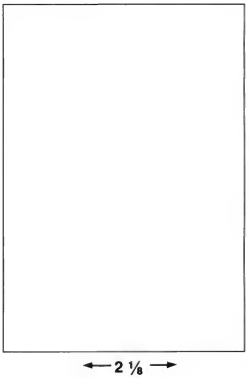
Avalon, no price set; **Twelve**, $89.95, Steinberg/Jones, 17700 Raymer Street, Suite 1001, Northridge, CA 91325, (818) 993-4091.
CIRCLE 160 ON READER SERVICE CARD

START
#1 Guide to the Atari ST
Shopper's Mart

How Do You Reach Over 70,000 ST Users Every Month?

An Ad in the START Shoppers Mart promotes your product to a marketplace of over 70,000 Atari ST users and owners. It's the economical way to advertise in START — the magazine which sells more products to Atari ST users than any other advertising vehicle.

For more information on displaying your ⅓ page ad with other industry advertisers call Diane Van Arsdall, your Shoppers Mart Sales Representative.



DISPLAY ADVERTISING RATES

1× $300.
3× $750.
6× $1450.

Shoppers Mart
Sales Representative:

DIANE VAN ARSDALL
544 Second Street
San Francisco, CA 94107
(415) 957-0886

Order Toll Free
800-558-0003
Order Info and WI Orders
414-357-8181

Since 1982
ComputAbility
Consumer Electronics

Order Toll Free
800-558-0003
Order Info and WI Orders
414-357-8181

Atari ST Compatible Hardware Specials

SupraDrive

30 MB Supra Drive - ST.....629 DEL
30 MB Mega Drive - ST.....629 DEL
40 MB Mega Drive - ST.....779 DEL

CALL FOR LOW PRICES ON OTHER SUPRA PRODUCTS!

Free Delivery to the 48 contiguous states of the USA.

Indus GTS-100
$ 189

IB 5.25" Drive
$219

No Credit Card Surcharge

Accessories

Drive Master	34.95
Monitor Master	34.95
Mouse Master	34.95
Mouse House	4.95
Mouse Pad	5.95
Tweetie Board	49.95
Video Key	64.95
3.5" Drive Cleaning Kit	5.95
6 Way Surge Protector	14.95

MODEM PACKAGES

Packages Include:
Flash V1.6 Software & St modem cable

Supra 2400	Avatex 2400HC
$155	*$165*

PANASONIC Printers

1180 192 cps draft/38 cps NLQ	189
1191 240 cps draft/48 cps NLQ	229
1124 24 pin (HOT)	329

STAR Printers

NX-1000 144 cps	165
NX-1000 Rainbow (color)	229
NX-2400 24 pin	299

Modems

Avatex 1200E	69
Avatex 2400	139
Supra 2400	129

IMG Scanner
$74.95

DVT VCR HARD DRIVE BACK-UP SYSTEM

NEW! HARD DRIVE BACK-UP SYSTEM NEW!

- Uses standard RCA cables
- Standard video tape cost:$5 - $7

NOTE:
VCR NOT INCLUDED!

$209 Delivered

- Stores up to 360 megabytes
- Stores - 8 megabits per minute
- Fits easily into the ST cartridge port

FREE DELIVERY
In the contiguous 48 states

ICD PRESENTS..... FA ST HARD DRIVE KIT

FEATURES:
- Built in time clock with battery backup
- Low-noise fan for efficient cooling
- Under-monitor design requires no additional desk space and provides a monitor stand for ST computers
- Adjustable legs adjust the monitor and provide cable clearance
- Allows booting directly from the hard drive
- Handler provides error checking on the DMA bus.

SINGLE 3.5" DRIVES	DUAL 3.5" DRIVES (Twice the Storage)
ST-138N 30 MEG...629 DEL	2-ST-138N 30 MEG...969 DEL
ST-157N 49 MEG...669 DEL	2-ST-157N 49 MEG..1049DEL
ST-177N 60 MEG...899 DEL	2-ST-177N 60 MEG..1499DEL

ALL HARD DRIVES ARE Seagate SCSI

•FREE DELIVERY IN THE CONTIGUOUS 48 STATES •

Mon - Fri 9 am - 9 pm CST
Sat 11 am - 5 pm
800-558-0003

Your ST STORE that's as close as YOUR PHONE
Since 1982
ComputAbility
Consumer Electronics

Mon - Fri 9 am - 9 pm CST
Sat 11 am - 5 pm
800-558-0003

STR-9- 89

ST HARDWARE IS LOCATED ON THE LEFT PAGE

ST SOFTWARE SPECIALS

ST Productivity & Education Software Specials

1st Letters and Words 18.95
1st Shapes 18.95
1st Word-Plus 67.95
220 ST 32.95
3D Developer's Disk 19.95
3D Font Package 1 or 2 ..... 17.95
3D Plotter & Printer Driver 17.95
A-Calc Prime 25.95
A-Chart 14.95
AB-Zoo 19.95
Abacus Books ..... CALL
Adap 1549.95
Adv. of Bimbad 31.95
Aegis Animator 43.95
Aesop Fables 31.95
All About America 36.95
Animal Kingdom 24.95
Arabian Nights 31.95
Art and Film Director 48.95
Assempro 39.95
Athena II 67.95
Award Maker 24.95
Back Pak 64.95
Base Two 39.95
BBB 3.0 ..... CALL
C-Breeze 25.95
Calamus 189.95
Font Editor 64.95
Certificate Maker 25.95
Chart Pak ST 32.95
Circuit Maker 67.95
Copyist 2 ..... 159.95
Cryptal 14.95
Cyber Control 39.95
Cyber Paint 48.95
Cyber Sculpt 54.95
Cyber Studio, The 58.95
Architectural Design Disk 19.95
Cartoon Design Disk 19.95
Future Design Disk 19.95
Human Design Disk 19.95
Microbot Design Disk 19.95
Video Titling Design Disk 19.95
Cyber Texture 32.95
Cyber VCR 49.95
Data Manager ST 48.95
Datamaps 17.95
Datamaps II 17.95
DB Man 5.0 ..... 144.95
Decimal Dungeon 24.95
Degas Elite 38.95
Deluxe Minidoom 39.95
Desk Cart 68.95
Desk Top Publisher 89.95
Education Graphics 25.95
People, Places, Things Graphics 25.95
Symbols & Slogans Graphics 25.95
Dig'i-Drum 24.95
Dig'i-Spec 29.95
Drafix 114.95
Drafix-Large Data Plotter 87.95
Draw Art Pro 49.95
Dr. Tay Pub Lib/Easy Draw 64.95
Dyna Cad 449.95
Easy Draw 64.95
Easy Score 67.95
Easy Tools 32.95
Electro Calendar 35.95
EZ-Grade 25.95
Fast 31.95
Finances Plus 119.95
Fingers 34.95
Flesh 1.8 ..... 19.95
Flashback 79.95
Fleet Street Pub 2.0 ..... 92.95
Font Pak 1 for Easy Draw 25.95
Fontz 22.95
Forth MT 32.95
Fraction Action 24.95
Fusion 27.95
GDOS Fonts 22.95
Genesis 49.95
GFA Basic 3.0 ..... CALL
Ghostly Grammers 31.95
Gin Patch 104.95
Hard Drive Turbo Kit 39.95
Hi Soft Basic 48.95
Hi Soft Pro Basic 104.95
Hi Soft Dev Pak 64.95
Hi Soft Wanda 32.95
Hi Soft Saved 25.95
Hohwire 25.95
Hyper Font 49.95
Hyper Switch 19.95
ID Copy 21.95
ID Disk Utility 21.95
ID Hard Disk Back Up 21.95
Informer, The 67.95
Interlink 64.95
Invasion 19.95
Juggler 2.0 ..... 32.95
K-Data Level II 199.95
K-Graph 3 ..... CALL
Keyboard Contr Sequencer 149.95
Keys 48.95
Kid Talk 18.95
Kilmarnie 24.95
Labelmaster Elite 27.95
Lands of the Unicorn 21.95
Laser C 2.0 ..... 124.95
Debug/Laser C 48.95
LDW Basic 2.0 ..... 54.95
LDW Power 99.95
Logic Master 31.95
Logistix Jr. 57.95
Macro Mouse 27.95
Magical Myths 31.95
Make it Move 49.95
Maps and Legends 22.95
Mark Williams C 114.95
Mark Williams C68D 43.95
Master Cad 124.95
Master Link BT ..... CALL
Master Plan 58.95
Master Tracks Pro 239.95
Math Talk 18.95
Math Wizard 24.95
Mavis Beacon Typing 32.95
Maxi Flying Yoke 89.00
Micro Cookbook 32.95
Micro Lawyer 39.95
Mid Mac 32.95
Midi Maze 25.95
Mighty Mail 32.95
Minidoom 25.95
Mint 57.95
Mother Goose 19.95
Mouse Tracks 64.95
Music Construction Set 33.95
Music Studio 88 ..... 38.95
Navigator, The 32.95
Neo Desk 2.0 ..... 31.95
O Spooler 32.95
OmniRes ST 22.95
P.I.E 19.95
Page Stream (pub pmr pro) 127.95
Paintpro 32.95
Partner Fonts 1 or 2 ..... 19.95
Partner Forms 19.95
Partner ST 32.95
PC Ditto 64.95
Personal Draw Art 1 ..... 19.95
Personal Money Mgr. 32.95
PHASAR 58.95
Powerplan 49.95
Preschool Kidprogs 25.95
Printmaster Plus 24.95
Art Gallery 1,2,or 3 ..... 18.95
Fonts & Borders/PM 21.95
Pro Copy 22.95
Pro Drum 19.95
Pro Midi 19.95
Pro Sound 19.95
Pro Sound Designe 64.95
Protext 124.95
DMI 886 ST 31.95
Quickfren 22.95
Ray Trace 32.95
Read & Rhyme 24.95
Read-A-Rama 31.95
Regent Base 1.1 ..... 79.95
Regent Word II 48.95
Replay 4 ..... 89.95
Revolver 32.95
Roland D/110 ..... 74.95
Scan Art 32.95
Scan Pix Illustrations 24.95
Scan Pix Pets and Animals 24.95
Scan Pix Religious and Holidays 24.95
Score Writer 25.95
Shadow 19.95
Space Math 25.95
Spectrum 512 ..... 43.95
Speller Bee 18.95
ST Art Director 48.95
ST Becker Text ST 87.95
ST Control 54.95
ST Replay 4 ..... 89.95
ST Spritle Factory 25.95
ST Talk Professional 18.95
Super Charged EZ Draw 99.95
Superbase Personal 46.95
Superbase Pro 3.0 ..... 189.95
Swiftcalc 25.95
Swiftcalc ST 48.95
Sympte Trac 414.95
Sync Trac 269.95
Technical Draw Art 1 ..... 19.95
Textpro 32.95
Thunder 29.95
Time Link 33.95
Touch Up 134.95
Trimbase 64.95
Tune Up 32.95
Tunesmith 87.95
Turbo ST 32.95
Unisyn 34.95
Utility Plus 39.95
Video Key 64.95
VIP Professional 64.95
Word Perfect 179.95
Word-Up 48.95
Wordwriter ST 48.95

IF YOU DON'T SEE IT - CALL!

NEW LOW PRICES

ST Recreation Software Specials

86 Team Disk for MLBB 18.95
3D Break-Thru 25.95
Academy 24.95
Action Fighter 25.95
After Burner 32.95
Airball 24.95
Airball Construction Kit 17.95
Alcon 11.95
Alien Bytnrome 25.95
All Aboard 17.95
Alternate Reality 25.95
Android Decision 22.95
Anuals of Rome 22.95
Artic Fox 13.95
Arkanoid 14.95
Art & Film Director 48.95
Arturo 28.95
Attack on London 21.95
Autoduel 24.95
Awesome Arcade Act. Pack 32.95
Axe of Rage 32.95
Balance of Power: 1990 ..... 32.95
Ballistix 19.95
Barbarian 25.95
Bard's Tale 31.95
Batman 25.95
Battle Chess 32.95
Battle Ship 19.95
Battlehawks 1942 ..... 32.95
Bat 19.95
Better Dead Than Alien 21.95
Bismark 25.95
Black Cauldron 25.95
Black Lamp 17.95
Block Buster 25.95
Bosch 25.95
Bridge 5.0 ..... 22.95
Bubble Bobble 25.95
Bubble Ghost 22.95
California Games 32.95
Captain Blood 32.95
Captain Fizz 19.95
Carrier Command 29.95
Casino Gambling 25.95
Centerfold Squares 21.95
Champ Wrestling 14.95
Chessmaster 2000 ..... 28.95
Chronoquest 32.95
Clue Master Detective 28.95
Colony, The 32.95
Combat Course 25.95
Corruption 29.95
Crash Garrett 25.95
Crazy Cars 25.95
Curse Bunter 19.95
Cyber Complex 18.95
Death Sword 19.95
Defender of Crown 32.95
Deja Vu 32.95
Deja Vu II: LusVegas 32.95
Demon's Winter 28.95
Devon Aire Diamond Caper 32.95
Dive Bomber 14.95
Double Dragon 26.95
Dragon Force 29.95
Dream Zone 25.95
Dungeon Master Part II CHAOS 18.95
Dungeonmaster 24.95
Empire 31.95
Extensor 18.95
F-15 Strike Eagle 25.95
F-40 Pursuit Simulator 44.95
Falcon F-18 ..... 32.95
Fiendish Freddy's Big Top o' Fun 32.95
Final Assault 14.95
Fire and Forget 25.95
Fire-Brigade 32.95
Fire Zone 23.95
Flight Simulator II 32.95
Foundation Waste 24.95
Galactic Conqueror 44.95
Games: Summer Ed 28.95
Games: Winter Ed 28.95
Gauntlet 32.95
Gauntlet II 25.95
Gladiator 25.95
Gold Runh 25.95
Goldrunner 1 or 2 ..... 25.95
Guild of Thieves 29.95
Gunship 35.95
Harrier Combat Simulator 32.95
Hero's of the Lance 25.95
Hint Disk for Bard's Tale 15.95
Hit Disk #1DR #2 (Michtron) 32.95
Hole In One Miniature Golf 18.95
Home Casino 25.95
Hostage 29.95
Hunt for Red October 33.95
Ikari Warrior 25.95
Impossible Mission II 14.95
Indoor Sports 32.95
International Soccer 25.95
Into the Eagle's Nest 25.95
Jet 32.95
Jinxter 25.95
Joker Poker 32.95
Journey ..... CALL
King 25.95
Karateka 22.95
King of Chicago 17.95
Kings Quest I,2,3,4 ..... 32.95
Kosmic Kreig 25.95
Lancelot 26.95
Leader Board Duo Pak 17.95
Leatherneck ..... See Hit Dk #2
Leatherneck 4 Player Adaptor 13.95
Leisure Suit Larry 25.95
Leisure Si Larry 2 Look'n for Love 32.95
Lock On 25.95
Lords of Conquest 13.95
Lords of the Rising Sun 32.95
Lost Dutchman Mine 32.95
Major Motion ..... See Hit Dk #2
Manhunter New York 32.95
Menbis 17.95
Merble Madness 14.95
Match-point 25.95
Menace 19.95
Metrocross 17.95
Metropolis 2000 BT 22.95
Micro League Baseball II 39.95
Obeliske 24.95
MONOPOLY 25.95
Murder of the Atlantic 25.95
Night of the Town 22.95
Obliterator 25.95
Off Shore Warrior 25.95
Orks 21.95
Omega Run 25.95
Operation Wolf 25.95
Orbiter 39.95
Overlord 25.95
Paladin 25.95
Pay Off 32.95
Phantasm 22.95
Pinball Factory 25.95
Platoon 25.95
Plutos 19.95
Police Quest 32.95
Prison ..... CALL
Q-Ball 19.95
Quest 21.95
Questron II 31.95
Rasten 25.95
Rebel Charge @ Chickamauga 38.95
Rebel Universe 25.95
Red Alert 11.95
Red Lightning 39.95
Red Storm Over London ..... CALL
Reel Fish'n 29.95
Renegade 25.95
Road Raider 32.95
Road Wars 20.95
Roadrunner 32.95
Rocket Ranger 32.95
Rubicon Alliance 20.95
S.D.I 32.95
Savage 25.95
Scrabble 25.95
Search For The Titanic 25.95
Sentry 19.95
Shadowgate 32.95
Shinobi ..... CALL
Shogun ..... CALL
Shoot the Moon 25.95
Shuttle 225.95
Silent Service 25.95
Slipheed 22.95
Sinbad 32.95
Skate Wars 32.95
Sky Blaster 18.95
Sky Chase ..... CALL
Sky Shark ..... CALL
Skyfox 14.95
Sorcerer Lord 23.95
Space Cutter 19.95
Space Harrier 32.95
Space Quest 1 or 2 ..... 32.95
Space Quest 3 ..... 38.95
Space Racer 19.95
Speed Buggy 25.95
Spitfire 40 ..... 24.95
Sports-A-Roni 17.95
STAC The Adventure Creator 44.95
Star Command 33.95
Star Fleet 134.95
Star Glider II 29.95
Star Wars 25.95
Stelller Crusade 36.95
Stir Crazy (Bobo) 17.95
STOS The Game Creator 38.95
Street Cat 13.95
Street Soccer 28.95
Strip Poker 225.95
Female Data 18.95
Sub Battle Simulator 14.95
Super Star Hockey 32.95
Super Star Soccer 32.95
T.V. Sports Football 32.95
Tet Bpln 32.95
Tenghnwood ..... See Hit Dk #2
Techno Cop 32.95
Temple of Doom 32.95
Terror Pods 25.95
Test Drive 25.95
Tetra Quest 25.95
Tetris 21.95
Three Stooges 32.95
Thud Ridge ..... CALL
Thunder Blade 32.95
Time and Magic 26.95
Time Bandits ..... See Hit Dk #2
Times of Lore 29.95
Titan 29.95
Tonic Tile 25.95
Total Eclipse 25.95
Tower Toppler 32.95
Trailblazer 32.95
Trails of Honor 32.95
Typhoon Thompson 22.95
Ultima III or IV 38.95
Undersea Commando 32.95
Unlimited 14.95
Universal Military Simulator 32.95
Civ War UMS 14.95
Vietnam War Data UMB 14.95
Universe II 32.95
Uridium 25.95
Vampire's Empire 18.95
Vegas Gambler 22.95
Virus 19.95
War In the Middle Earth 32.95
War ship 38.95
Wargame Construction Bel 22.95
Warlock 21.95
Western Games 14.95
Willow 25.95
Winter Games 14.95
Wizard Wars ..... CALL
Wizard's Crown 25.95
World Games 14.95
WWF Micro Wrestling 39.95
Xevious 19.95
Zany Golf 26.95
Zero Gravity 25.95
Zynaps 32.95

ARKANOID II 19.95
BECKERCAD ST..... 239.95
HARLEY DAVIDSON 32.95
OPERATION WOLF 19.95
PIRATES! 29.95
POPULOUS 32.95

No surcharge for MasterCard
To Order Call Free
800-558-0003

MasterCard
P.O. BOX 17882,MILWAUKEE,WI 53217
ORDER LINES OPEN
Mon-Fri 9am-9pm CST Sat 11am-5pm

Since 1982
ComputAbility
Consumer Electronics

No surcharge for Visa
Telex Number 9102406440
(ANSWERBACK = COMPUT SBLW UQ)

For Technical Info, Order Inquiries, or for Wisc. Orders
414-357-8181

ORDERING INFORMATION: Please specify system. For fast delivery send cashier's check or money order. Personal and company checks allow 14 business days to clear. School P.O.'s welcome. C.O.D. charges are $4.00. In Continental USA include $3.00 for software orders 8% shipping for hardware minimum $5.00. Master-Card and Visa orders please include card #, expiration date and signature. WI residents please include 5% sales tax. HI, AK, FPO, APO, Puerto Rico and Canadian orders, please add 8% shipping. Minimum $6.00. All other foreign orders are 18% shipping, minimum $18.00. All orders shipped outside the Continental U.S. A are shipped first class insured U.S. mail. If foreign shipping charges exceed the minimum amount, you will be charged the additional amount to get your package to you quickly and safely. All goods are new and include factory warranty. Due to our low prices all sales are final. All defective returns must have a return authorization number. Please call (414)357-8181 to obtain an RA# or your return will not be accepted. Prices and availability subject to change without notice.

The Slither Screen Editor

BY THOMAS R. BÜRGLIN

Spencer for Higher Levels

Give Spencer a new place to play with SSEDT.ARC on your START disk.

Slither put you in the role of Spencer the Snake. Your task was to guide Spencer through 30 levels, skillfully negotiating him through obstacles of increasing difficulty. Spencer would eat the apples in his path, growing a little longer with each apple.

The problem with Slither is that some may think it is too difficult, whereas the experienced arcade gamer might consider it too easy. To make things more challenging, Slither lets you load new levels into the game. The original Slither article describes the file format for alternate Slither levels, but these files must be bit-mapped and are difficult to create by hand.

That's where the Slither Screen Editor comes in. With it you can create your own levels using a paint program-type interface. Copy SSEDT.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC SSEDT.ARC, following the Disk Instructions elsewhere in this issue. If you'd like to start by warming up your Slither fingers, we've included a sample file, SPIDER.TXT, which you can load into Slither and begin playing new levels.

To start designing your own levels, double-click on SSEDT.PRG to run the program from any resolution. The file SSEDT.RSC must be in the same directory. The Screen Editor lets you have up to 10 sets of 30 levels each in memory at once; each level is divided into 40-by-40 units the width of the snakebody. You can cut and paste between levels and fields.

Once a set has been loaded or newly created, the screen work area will be opened as a window. There are four boxes on the left that indicate how many total sets of fields are currently in the computer memory, the current set and field and name of the current set. New sets will be named UNTITLED.TXT.

The right side of the screen shows a Slither field; the field is made up as a grid to represent the units of the field. The two openings at the top and bottom of the field are the entrance and exit for the snake. Be sure not to block these, or else Spencer will get nowhere in a big hurry. Once you move the mouse cursor inside the field the shape of the cursor changes and you will see the coordinates of the current mouse position. Click the mouse on a unit to set a point; this point will be a barrier when you load the file into Slither. Keep the mouse button down as you move to draw continuous lines. To erase existing points, click on a point that is already set; again, hold the mouse button down to erase many points at a time. If any mirror planes have been set in the symmetry function (see below), the drawing will be symmetrical as chosen. The symmetry functions will work in the same way for erasing as for setting points. To draw perfectly horizontal or vertical lines, keep the [Shift] key pressed while drawing a line.

The window slider bars are used to move between sets and fields. Clicking on the horizontal arrows moves you by one field up or down. Clicking in the shaded area of the scroll bar moves you five fields up or down. The vertical bar moves you between different sets. Clicking on the vertical arrows or in the shaded area moves you up or down a set.

The File Menu

The menu bar gives you a wide range of editing commands:

- New [N]: creates a completely new set of 30 fields. A new editing window will appear.
- Load [L]: loads a previously created and saved set of fields. Select the filename using the standard GEM item selector.
- Save [S]: saves the current set to disk. You can save the entire set or a subset; a dialog box asks you for the start and

In our January 1989 issue START published Slither, a fast-paced, high-action arcade game by Thomas Bürglin. Slither came complete with 30 devilishly difficult levels, but now you can design your own doom—er, levels, with the Slither Screen Editor. The program runs in any resolution.

end level to save. Next, enter the destination level. This level serves as an offset; in this way you can save, for example, levels 1-10 as levels 16-25. Confirm your selection by clicking on OK (click on Cancel to go back to the program). Select a filename from the standard file selector box and click on OK. If it's a new file the default name will be UNTITLED.TXT.

Using an offset to save sets to disk gives you a great tool for testing new levels; simply save the field to disk in a separate file as level one or two to immediately see how tough (or impossible) it will be.

- Close [R]: closes the current set. An alert box will tell you if you have made unsaved changes to that set.
- Quit [Q]: leaves the program, notifying you if the sets in memory have any unsaved changes.

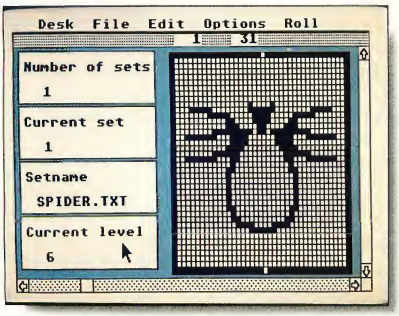
The Edit Menu

- Copy [C]: copies the current working field on screen into a buffer that can be pasted into another field later.
- Cut [U]: copies the current field into the buffer and erases the screen field.
- Erase [E]: erases the current screen field.
- Paste [P]: pastes the contents of the copy buffer into the current field by overwriting it.
- And [A]: performs a logical AND on the contents of the copy buffer with the current field. Points set in both fields will be set.
- Or [O]: performs a logical OR on the contents of the copy buffer and the current field. Points set in one or the other will be set.
- Xor [X]: performs a logical XOR on the contents of the copy buffer and the current field. Only points set in one but not the other will be set.
- Exchange [H]: This is a flag that determines the behavior of the Paste, And, Or and Xor function. If Exchange is checked, the original working field is put into the copy buffer, replacing the previous field in the copy buffer. For example, using the Paste function with Exchange turned on is equivalent to swapping the working field with the buffer.

The Options Menu

- Goto [G]: a dialog box asks you which set and level you want to go to work. (This is an alternative to using the horizontal and vertical slider bars.)
- Copy set [T]: copies all 30 levels of a set into a buffer. This will overwrite the contents of the field buffer.
- Paste set [V]: pastes the 30 levels in the copy buffer into the current set. ▶

ROBERT KOFFCKY



The Slither Screen Editor lets you create fiendish new levels for Slither using an intuitive paint program-like interface. This screen is from the sample file SPIDER.TXT in the SLITHER.ARC file on your START disk.

• Symmetry [Y]: a dialog box lets you choose from several different arrangements of mirror planes for drawing. Click on the icon of the pattern you want to use.

The Roll Menu

• Up [up arrow]: this rolls the contents of the current working field one unit up. Points on the top row will wrap around to the bottom.

• Down [down arrow]: this rolls the contents of the current working field one unit down. Points on the bottom row will wrap around to the top.

• Left [left arrow]: this rolls the contents of the current working field one unit left. Points on the leftmost column will wrap around to the right.

• Right [right arrow]: this rolls the contents of the current working field one unit right. Points on the rightmost column will wrap around to the left.

Epilogue

The Slither Screen Editor was written in Laser C. Some of the drawing functions use Line-A calls for increased speed. There is one flaw in Slither: when I originally designed it, it did not use external levels. Thus the field background of the title screen is actually the first level. If you designed a new first level, don't be surprised to see your level in the background of the title.

Well, I hope that you will be able to come up with lots of devious levels to challenge yourself and your friends. Load the sample fields into Slither to get a feeling how nasty it can be. ■

Thomas R. Bürglin is a research scientist in molecular biology. He is in the United States on a two-year stipend from Switzerland to finish his Ph.D.

ProCopy ST BACKUP UTILITY

You can't backup your software because copy protection locks you out. **ProCopy** is the key!

- Protects against the accidental loss of expensive software
- Works with all Atari STs
- Copies both S/S & D/S disks
- Use with 1 or 2 disk drives
- Not copy protected
- **FREE** shipping and handling
- **TOLL-FREE** telephone number
- Updates are only $12 with return
- Orders shipped same day
- Disk analyze function included

Dealer Inquiries Welcome

VISA MasterCard and C.O.D. orders

$34.95

Call (800) 843-1223

Send check for $34.95 (overseas add $2.00 for air mail) to:

PROCO PRODUCTS

P.O. BOX 665, CHEPACHET, RHODE ISLAND 02814 USA
(401) 568-8459

Available Internationally in Europe and Australasia

THE MOVING FINGER CO.
Building 2
Shamrock Quay
Southampton, SO1-1QL
England
Tel. 0703-227274

TECH-SOFT COMPUTER WHOLESALE
324 Stirling Highway
Claremont
Western Australia 6010
Tel. 09-385-1885

CIRCLE 035 ON READER SERVICE CARD

Get A Complete

START
#1 GUIDE TO THE ATARI ST

Call

800-234-7001

(6 am to 6 pm Monday through Friday PST)

Get the disk in your hands fast!
Ask for SDS989
For same day service ask for the disk desk.

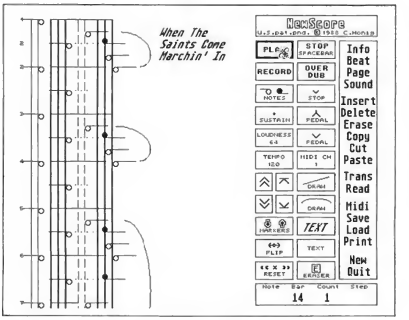
Challenge Tradition With Newscore

A Fast Track to Reading and Playing Music?

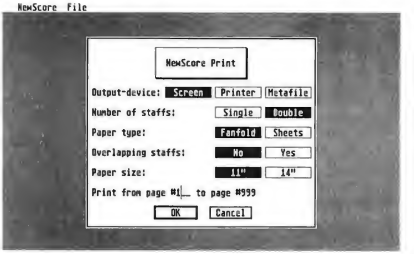
BY JIM PIERSON-PERRY
START CONTRIBUTING EDITOR

Learning to read music notation is one of the hardest tasks for budding musicians. Whether you play a grand piano, saxophone or just sing in the choir, there is no escaping it. Unfortunately, many people become frustrated trying to relate the abstract notation symbols from sheet music to the physical keys on their instruments.

Newscore is an integrated sequencer/scoring program based on an alternative music notation system developed in the Netherlands. It uses a piano roll format where the notes to be played are shown on a representation of piano keys. The direct visual mapping of notation to instrument makes it easy to start playing music.



Main working screen for the Newscore program. The actual score takes up the majority of the screen with the operations toolbox to the right. The music is read like a piano roll, from top to bottom, on a staff that represents a piano keyboard.



The dialog box from the printing module of the Newscore program. Options are screen preview, save score to a GEM metafile (and import into other graphics programs for additional enhancements) or printout.

What's the Score?

The basis of the Newscore notation system is to show notes by their positions on a color-coded piano keyboard. The stem direction, left or right, denotes which hand is to play the note. All notes in a chord lie on a single stem. Once played, a note is held down until the next note for that hand comes along or a "stop" symbol (rest) appears. This makes note duration a function of the distance between successive notes on the score rather than an intrinsic note property as in standard notation.

The staff is a generalized keyboard with vertical lines representing black keys. Middle C is highlighted by adjacent dashed lines to orient the score. The score itself is read from top to bottom and divided into equally spaced regions called bars—the equivalent of measures in standard notation. Each bar is subdivided into beats that mark the rhythm. All notes are placed on a beat. ▶

Additional markings denote sustain pedal, staccato notes and note sustain. Some familiar symbols have been kept from standard notation to express slurs, trills, loudness, repeats, etc.

Program Overview

The Newscore program lets you enter music from a MIDI keyboard or with the mouse. You can then quickly see it displayed onscreen in the new notation. The score can be edited, enhanced with text and graphics and printed on an Epson-compatible dot matrix or Atari SLM804 laser printer. The program functions on two levels. As an educational tool, it provides a rapid feedback system to learn the notation and start reading music. It can also be used as a simple sequencer just to play music and have fun.

The main program contains the sequencer module. Score printing is done by an independent program that can be run as a stand-alone application or internally through the sequencer. Newscore runs on all ST/Mega models and is not copy-protected. It was written in GFA BASIC and requires GDOS (supplied on the program disk for printouts). Newscore was designed for a monochrome monitor, but an auxiliary program is provided that enables color monitors to emulate high resolution. Desk accessories cannot be accessed in the main program but are available through the printing module.

Newscore's auxiliary program enables color monitors to emulate high resolution.

A brief manual attempts to summarize both the Newscore notation system and program operation. Fortunately, the program is intuitive enough to use on its own, since the manual is sketchy about most operations and would greatly benefit from a tutorial and screen shots. The MIDI set-up section also contains an error regarding use of a master keyboard with slave synthesizer. If set up as written, it will only work if the master has internal MIDI merging (not typical) and the slave has MIDI Thru (which the Casio CZ-101, for example, doesn't).

Making Music

The sequencer module is the engine of the program. Music data can be captured from a MIDI keyboard or entered on the screen staff by placing notes with the mouse. The only MIDI events recorded are MIDI channel, note pitch, note-on velocity and the sustain pedal

THE WORLD OF ATARI

Produced by ST World Magazine in cooperation with Atari Corporation.

AUGUST 19 - 20, 1989
SATURDAY 10AM - 6PM
SUNDAY 10AM - 5PM

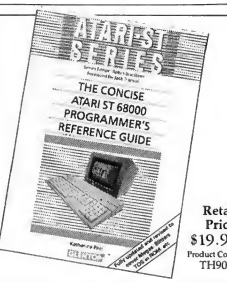
DALLAS, TEXAS
HOLIDAY INN HOLIDOME
$5.00 ONE DAY $10.00 TWO DAYS

AIRFARE, ROOM RESERVATIONS CALL:
(800) 842-9034 9AM - 5PM PST
Additonal show information call (503) 673-2259

See the full line of Atari products from the game machines to the MEGAs, even the new PC Folio and demonstrations by major third party supporters such as: MichTron, Astra Systems, ICD Inc., Gadgets by Small, Avant-Garde, Antic, Best Electronics and much more!

CIRCLE 043 ON READER SERVICE CARD

No Atari ST programmer, novice or professional, should be without this manual!



Retail Price: $19.95
Product Code: TH9050

The Concise Atari ST Programmer's Reference Guide

One book has it all! This comprehensive, compact guide covers all three ST operating systems, including the Mega ST. You'll get detailed technical information in a condensed, group tabular format about:

- Atari ST hardware, expansion ports, and peripheral interface circuits
- Memory management and resources
- Control of serial I/O, screen functions and file handling
- System calls for GEM and TOS, A-line graphic functions, keyboard command instructions and blitter
- System variables, configuration registers and the MC68000 instruction set

Write to order:
Atari ST Programmer's
Reference Guide Offer
544 Second Street
San Francisco, CA 94107

Antic Software

Or call toll free:
1-800 234-7001
24 Hours a Day
(MasterCard and Visa only)

CIRCLE 006 ON READER SERVICE CARD

controller. No other controllers, program changes or sysex data are saved. All data goes into a single track, the initial recording as well as any later overdubs.

MIDI Thru is supported, without rechanneling, but the implementation is flawed. When recording or overdubbing, the Thru operates only for MIDI channel 1. Even if you're entering notes with the mouse, you will not hear them unless MIDI Thru is set to MIDI channel 1. The actual notes, however, are captured correctly and played on the designated channels during playback. Overdubbing a note with the same note on a different MIDI channel erases the original one; this precludes voice doubling.

The reset command is only partially operative. It's supposed to send an "all notes off" message but only works occasionally and then just for MIDI channel 1.

To add notes to the screen staff with the mouse, you left-click to place them and right-click to erase them. Their velocity and MIDI channel can be set and altered using screen numerical controls. The sustain pedal controller can be turned on or off throughout the staff; alternatively, single notes can be marked to sustain on an independent basis using a sustain symbol. Notes can only be entered in step-time with the mouse. If you use a MIDI keyboard to enter music, you must record in real time – at least the tempo can be set low to relax the time pressure.

Music data can be played back either through MIDI or the ST's three internal sound voices (monitor speaker), but not both at once. The program does not support internal sound voices created by the G.I.S.T. program.

The playback tempo can be set at any value from 40 to 240 beats per minute, but the tempo cannot be varied during playback. The sequencer internal timing resolution is 96 pulses per quarter note, more than adequate for most needs. It has no problems reproducing triplets, 64th notes or grace notes on playback. The program does not send clock data, nor can it synch to an external source, thus limiting its use with a drum machine.

Edit Audit

Once music data has been entered into Newscore, there's virtually no way to change it at the individual note level, short of deleting and re-entering it. Only sustain and attack (staccato) can be modified. No controls are provided over the sequencer quantizing operation, precluding easy correction of timing errors. A transpose command can be used to shift the entire song, or a marked portion of it, up or down by up to 12 semitones regardless of MIDI channel.

Moving up to a regional level of editing opens a few more options. Sections of a staff can be cut or copied and pasted, much like a word processor. The mouse is dragged along the staff to ▶

SIDELINE SOFTWARE
850 N.W. 57th Court - Ft. Lauderdale, Florida 33309 - (305) 938-9755
IMPORTERS OF FINE EUROPEAN SOFTWARE
VISA
1-800-888-9237
MasterCard

ROBOCOP	$30.00
RUNNING MAN	$32.50
POPULOUS	$32.50
FUSION	$32.50
NIGHT HUNTER	$32.50
MILLENIUM 2.2	$32.50
AIRBORNE RANGER	$32.50
STORM TROOPER	$30.00
SILKWORM	$30.00
TIMESCANNER	$30.00
KRISTAL	$35.00
RED HEAT	$32.50
SAVAGE	$32.50
VOYAGER	$30.00
GRAND MONSTER SLAM	$30.00
MAYDAY SQUAD	$30.00

CALL US - NEW TITLES DAILY ! !

MAGAZINES

ST ACTION	$5.00
ST WORLD	$5.00
ST USER	$5.00
THE GAMES MACHINE	$5.00
ST FORMAT-W/DISK	$10.00

Yearly Subscriptions Also Available

ATARI ST SERVICE
520, 1040,MEGA, XL & XE
UPGRADES & PARTS
ALSO AVAILABLE
Dealer Inquires Invited

CIRCLE 028 ON READER SERVICE CARD

define the desired region, anywhere from a single beat to the entire song. A similar approach can be used to define a region for deleting groups of notes. Sections can be deleted or space can be opened up in the staff to insert new notes. Once started, all of these operations can only be canceled by clicking the right mouse button—an important fact that was omitted from the manual. Any other keyboard input triggers the edit action, and there is no Undo function.

Several means are provided to move quickly through the screen staff display. Cursor buttons let you jump to the start or end, or advance up or down by one screen length. Moving the mouse pointer to the top or bottom of the screen scrolls the display. You can also use the mouse to adjust the bar counter to a desired destination—press [Return] and the display jumps to it. In general, screen movement is fast and smooth. Only with staffs containing slurs or lines does scrolling slow down noticeably.

The score can be saved as a GEM metafile and imported into desktop publishing programs.

Song playback normally begins from bar 1 and continues to the end, but markers can be placed to change the start and stop bar boundaries. The marked-off region can be as little as one beat. The playback bar counter shows elapsed bars from the start marker rather than the actual bar number which can be confusing. The markers also can be used to delimit the transposition function—handy if you just want to change the key for part of a song.

One weakness of the program becomes painfully obvious during editing. Whenever you make any change, there is a time lag between clicking the playback button and when the music starts. For a test song with 60 bars of music, adding just one note with the mouse caused a 45-second delay. Deleting a single note took another 60 seconds. Any change to the staff causes the delay—even just adding text and not changing any note at all. It gets worse as the number of changes increases; adding or deleting just three notes sent the delay up to 90 seconds. Even using markers to restrict the playback region to just a single beat, it still took 12 seconds to hear the results of adding one note.

★ Computer Garden ★

Wilkes-Barre & Scranton's Favorite Computer Store

Abacus		**Canon**		**Michtron**	
Forth/MT	$33	IX12 Scanner	$599	Dewpac ST	$65
ST AssemPro	$39	IX12F Scanr	$1099	ST Replay 4	$95
Accolade		ST Interface	$299	**Migraph**	
Pinball Wizard	$23	**Cinemaware**		Easy Draw	$65
Test Drive	$25	Def. of Crown	$33	Easy Tools	$33
Alpha		King, Chicago	$18	Font Pack 1	$25
Powerprint ST	$29	SDI	$18	Labelmaster	$30
Switchback	$57	Sinbad	$18	PersDrawArt 1	$20
Antic		**Digital Vision**		Pro. Draw Art	$39
Cyber Studio	$59	Computereyes	$179	Scan Art	$33
Cyber Control	$39	**Epyx**		Supercharged	
Cyber Sculpt	$60	Art & Film Dir.	$55	Easydraw	$95
Cyber Paint	$50	Tower Toppler	$33	Tek DrawArt 1	$20
Cyber Texture	$33	**FTL**		Touch-up	$119
Cyber VCR	$46	Dungeonmster	$25	**Mindscape**	
GFA Basic 3.0	$65	Oids	$23	Captain Blood	$33
Spectrum 512	$44	Sundog	$25	Gauntlet	$33
Atari		**HP**		Indiana Jones	$33
520STFM	$Call	Deskjet	$579	Eagles Nest	$25
1040ST	$Call	Deskjet Plus	$699	Road Runner	$33
Mega-2 ST	$Call	**ICD** *Hard Drive*		Shadowgate	$33
Mega-4 ST	$Call	FA-ST 30 M	$699	Space Harrier	$33
Megafile 30	$Call	FA-ST 50 M	$899	Superstar Ice	
Stacy Laptop	$Call	FA-ST 100M	$1299	Hockey	$33
Laser Printer	$Call	**Intersect**		Uninvited	$33
Avant-Garde		Interlink	$25	**Neocept**	
PC-Ditto	$Call	Revolver	$33	Fortel	$25
PC-Ditto II	$Call	**ISD/Ditek**		Word-Up	$49
Avatex		Calamus	$179	**Panasonic**	
1200e modem	$69	Cal. Font Ed.	$65	1180 printer	$189
2400 modem	$139	DynaCADD	$Call	1191printer	$239
Modem cable	$15	ST accounts 2	$95	1124 printer	$339
Beckemeyer		VIP Prof.	$65	Printer cable	$15
Hard Disk tools:		**LDW**		**Prac.Solution**	
Accelerator	$33	LDW Power	$95	Drive Master	$40
Sentry	$45	**Megamax**		Monitor Mastr	$40
Toolkit	$23	Laser C	$119	Mouse Master	$33
MT C-Shell	$95	Laser DB	$50	Video Key	$70

Tweety Board	$45
Proco	
Procopy 1.60	$30
Progressive	
Suprbas Pro	$219
Psygnosis	
Menace	$20
Captain Fizz	$23
Baal	$20
Ballistyx	$23
Chrono Quest	$30
Terrorpods	$25
Obliterator	$25
QMI	
Deskcart	$70
Seymor-Radix	
IMG-Scan	$79
Sierra	
Liesure Suit II	$33
Manhunter	$33
Police Quest 2	$33
Soft Logik	
PageStream	$119
Supra	
Modem 2400	$129
Cable	$15
Timeworks	
Datamanager	$49
Desktop Pub.	$79
Partner	$33
Swiftcalc	$49
Wordwriter	$49
Trio Eng.	
Digispec	$35
Unispec	$45
ST Control	$55
Versasoft	
DB Man 5.0	$150

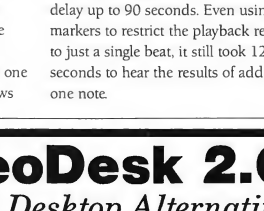
Order toll-free: **1-800-456-5689**

For information call 1-717-823-4025. Mail orders: send check or money order to COMPUTER GARDEN, 106 W. CAREY St., PLAINS, PA 18705. Be sure to include sufficient postage (Overpayments are promptly refunded). PA customers add 6% tax. Cash COD's OK. 3% charge for VISA-MC-AMEX.

CIRCLE 047 ON READER SERVICE CARD

NeoDesk 2.0

The Desktop Alternative



The Ultimate Upgrade For The Atari ST!!

Now with Custom File Icons!!

High-Speed File & Disk Operations (No More Multiple Disk Swaps!) • 20-30% Faster Enhanced Windows • Needs as Little as 24K of RAM • Place Program and Data File Icons on Desktop • Place Picture on Desktop • Complete Icon Editor • Batch Files • 20 Character Editable Disk Volume Name • Replacement Control Panel w/ Corner Clock, Screen Saver and Blitter Control • Printer Queue (Up to 10 Files at Once) • Keyboard Equivalents • Mono & Color Support • Improved Disk Formatting • Install Application (This one Works!) • File Templates • 85+ Page Illustrated Manual

For Only = $49.95

GRIBNIF SOFTWARE

To Order: Call (800) 999-GRIB or send check to: (add $3.00 for S & H) P.O. Box 350 · Hadley, MA 01035 Questions? Call (413) 584- 7887 • Fax: (413) 584-2565

CIRCLE 073 ON READER SERVICE CARD

Enhancements and Output

Several graphics tools are provided to enhance the appearance of your score, including drawing lines and slurs (curved lines) and placing text anywhere on the screen. Two sizes of text are supplied as GDOS fonts, one suitable for titles and the other for fingering or performance notes.

The score can be saved as a GEM metafile and imported into other applications programs for additional graphics modifications or desktop publishing. Newscore can also read song files in standard MIDI file format (level 0). This lets you import songs created with other sequencers and see them under the Newscore notation system.

Printer drivers are supplied for Epson-compatible 9- and 24-pin printers and the Atari SLM804 laser printer. Output can be previewed on-screen before committing to hardcopy. Even on a 9-pin dot matrix printer, the output quality is good.

Conclusions

The Newscore notation system is described as a new approach to reading music that lets you start playing tunes in minutes. My experience has been that this is indeed the case. Both my 6- and 8-year-old children were able to sit down at the piano and easily pick out tunes written in this format. Benefits of this system for non-keyboard instruments are less obvious.

More problematical is the program's description of being the "ultimate music language and sequencer." Musical pedagogy aside, it is clearly inadequate as a sequencer compared to other commercial or even public domain programs. Particularly painful is the claim of unrivaled speed in view of the gross delays in auditing editing changes.

Even given that the program is intended primarily as a musical education program and *not* as a dedicated sequencer, Newscore earns a cautious recommendation. The underlying principle is good: Newscore notation can provide a quick route to reading and performing music. To achieve any degree of acceptance, however, the program must be fixed to improve editing, allow step entry from a MIDI keyboard, correct the MIDI Thru problems and increase execution speed. The developer is aware of these concerns and is addressing them immediately. With these improvements, Newscore could be just the ticket to open up the world of music to those still waiting at the door. ■

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

PRODUCTS MENTIONED

Newscore version 1.01, $99. Newscore, Inc., 200 South Tryon Street, Charlotte, NC 28202, (704) 376-3085.
CIRCLE 150 ON READER SERVICE CARD

Completed - in triplicate

FORTRAN, PASCAL AND NOW C

For some two years Prospero have provided the complete programming solution for the Atari ST and GEM, provided you wished to program in Pascal or FORTRAN, as indeed a good many of you did. However it was always clear that a hole existed in the market for a top quality C compiler with full access to GEM and an easy to use environment. We believe that we have filled that hole.

Completed Family.
Choosing a programming language has always been a problem. Each language has its own strong points and you always seem to want those features not in the language you have. Therefore our three languages are fully interlinkable, so you can get the best of each language in the same program. Better still, the three products all look and feel the same so you always feel at home with each.

Completely Standard.
Another problem with programming has been that source code is not as portable as you may believe – not all C's are the same. We have done our bit to lessen the problem by making all our compilers conform fully to the relevant standard (with extensions of course), so that if the text-book says your compiler should do something, you can be sure ours will.

Completely Documented.
There is not much point in having a powerful compiler and GEM library if you can't use it, so we provide very extensive documentation. For example each GEM function comes with a definition, explanation and an example. The C version of the manual contains 1000+ pages and stretches to four volumes!

Complete Package.
People who don't know Prospero might not appreciate the full extent of what we put in: Compiler, multi-window editor, linker, librarian, source level symbolic debugger, program cross-referencer, documentation, free technical hotline support and example programs. For the really heavy duty programmers, MC68881 hardware floating-point libraries are available.

Complete Programming Solution.
So now we have the complete Atari ST programming solution in Pascal, FORTRAN and C. Pascal is $149, C and FORTRAN are $199 each, and all three can be bought for $499 ($5 handling per order).

Why not write or phone today for a free demonstration disk and information pack, and sample the complete programming solution for yourself? Available from Rosoft Distribution, 3862 Lonsdale Ave., N. Vancouver, BC V7N 3K6 (604) 980 9365, or direct from Prospero in the USA.

Prospero Software

LANGUAGES FOR MICROCOMPUTER PROFESSIONALS

100 Commercial Street, Suite 306, Portland, ME 04101, USA Tel:(207) 874 0382 Fax:(207) 874 0942

CIRCLE 036 ON READER SERVICE CARD

CINKO

25% More Fun than Quatro!

Cinko was derived from several closely related ancient board games. This fast-moving game of skill for one or two players resembles checkers in its ease of learning and simplicity, yet approaches chess in its strategical varieties. Cinko requires a color monitor.

Get five in a row with CINKO.ARC on your START disk!

Cinko is a contemporary game that combines the best elements of Go (one the oldest games in the world), Niniku-Rinju, and Pente. Copy CINKO.ARC and ARCX.TTP onto a blank, formatted disk and un-ARC the file, following the Disk Instructions elsewhere in this issue. Set your computer to low resolution and double-click on CINKO.PRG. (The files CINKO.RSC, CINKOPC1.PI1 and TITLE.PI1 must be in the same directory as CINKO.PRG.) At the title screen press the [Spacebar] to bring up the playing board.

In Cinko, players take turns placing stones on empty intersections on the board. The player with red stones moves by pressing the left mouse button; the other player places blue stones by pressing the right mouse button. You must place the stones on intersections of the lines, rather than on the squares. You cannot place stones on the outer lines of the grid.

There are two ways to win Cinko: by placing five or more stones in a row (horizontally, vertically or diagonally, with no empty spaces between stones) or by capturing seven or more pairs of your opponent's stones. When a player wins, you will hear a rapid series of tones and the winning sequence of stones will light up. Start a new game by pressing the left mouse button.

Captures

Whenever your opponent has two and only two stones which are adjacent, those stones are vulnerable to capture. The pair can be captured by bracketing its two ends with your own stones. Captures can be made along diagonal, horizontal or vertical lines.

All four stones involved must be consecutive and in a straight line. As soon as the capturing play is made, the captured stones flash green and are removed from the board. A single stone is placed in view along the border so that you can see the number of captured pairs from each player.

Conversions

At the start of each game eight aqua-colored stones are placed randomly on the board. An aqua stone is neutral until a player converts it surrounding it with two of his or her stones. Like captures, conversions can be made diagonally, horizontally or vertically. When a neutral stone is surrounded, it will flash to indicate a conversion and then change its color to that of the appropriate player.

Alarms

Whenever a player has three stones in a row open on both sides or four stones in a row, the other player will be notified by an alarm and the open row will flash. The idea is not to win because of your opponent's oversight, but to win in spite of your opponent seeing every threat!

Scoring Points

Playing with points introduces new strategies into the game by challenging both players to take calculated risks in order to gain as many points as possible. When the game is over, points are counted and scored as follows:

- Five stones in a row: 5 bonus points.
- Four stones in a row (still remaining

BY MICHAEL C. GILBERT

on the board at the end of the game): 1 bonus point.
- Each pair captured from the opponent: 1 bonus point.

The Menu Bar

In addition to the Desk menu, Cinko has three drop-down menus. Under the File menu is Quit, which quits Cinko and returns to the Desktop.

Under the Play menu, select New Board to begin a new game. The Edit Board option lets you edit a board, either to take back a mistake or to set up the board for computer analysis. After clicking on Edit Board, you can remove a stone by pointing at it with the mouse and holding down [Control] while pressing the left mouse button. Left-click to place a red stone; right-click to place a blue stone. To continue playing, click on Edit Board again.

Clicking on Reset scores sets both players' scores to zero. Clicking on Winner starts lets the winner of the previous game start. In Cinko, the first player has a slight advantage. When you play against the computer you make the first move of the first game. Letting the winner of the previous game start adds a new dimension to the games by providing additional challenge to skilled players. The Undo option takes back the last move.

You can edit a board to set it up for computer analysis.

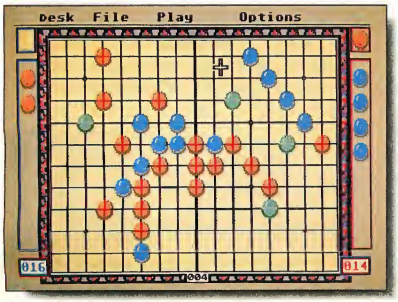
Under the Options menu, you can choose one- or two- player mode. Under the Options menu you can turn on or off alarms and whether neutral stones will be set up on the playing board. You can also select the level of play (against the computer) – select Advanced for a challenge suited to world-class play!

Answers to Common Questions about Cinko

Does six in a row win? Yes, six or more stones in a row wins the game as well.

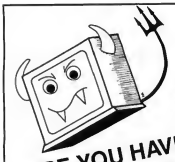
Can I break up a five-in-a-row by capturing one of its stones? No; when a player gets five in a row, he or she wins immediately.

What happens if I form a pair between two enemy stones? You cannot "capture yourself" by moving into a captured position. Instead, the pair remains on the board. ■



Cinko combines elements of Pente, Go and Niniku-Rinju to make a challenging game you can play against the computer or a friend. Win Cinko by lining up five stones in a row, or by capturing seven pairs of your opponent's stones.

Michael C. Gilbert is a professional programmer for a small firm that develops supervisory control and data acquisition systems. He has been writing commercial software for the ST since its inception, including Peggammon, a backgammon variation published by Artworx.



VIDEO MADNESS

ARE YOU HAVING A DEVIL OF A TIME FINDING AN RGB CABLE?!

We Do The Weird And Unusual Cables

AMIGA – ANALOG – MAGNAVOX –
APPLE IIGS – SONY –
MITSUBISHI – SEARS –
ATARI TO 5 BNC OUTPUTS

$25.00 to $35.00 + shipping & handling

Atari to IBM Type Disk Drives - 14 MDin to 34 FH Atari Midi Y Cable. Call For Prices!!

REDMOND CABLE

For The Dealer Nearest You!

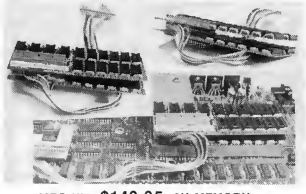
EAST COAST 615-478-5760

WEST COAST 206-882-2009

CIRCLE 027 ON READER SERVICE CARD

Z-RAM 3-D/4MEG

520ST/520STFM/1040ST MEMORY EXPANSION UPGRADE KIT



4MEG KIT $149.95 0K MEMORY
COMPLETE KIT WITH 2 MEG RAM $439.95
COMPLETE KIT WITH 4 MEG RAM $689.95

3-D DOUBLE-DECKER DESIGN SANDWITCHES TWO BOARDS INTO SPACE OF ONE!

4-MEG UPGRADE FITS COMPLETELY INTO VIDEO SHIFTER METAL BOX WITH ROOM TO SPARE!!!

WILL WORK WITH 1MEG CHIPS 120NS OR EVEN 150 NS SPEED. THE MOST RELIABLE IN THE MARKET DUE TO SOLID GROUND,POWER AND DATA CONNECTIONS.
COMPLETELY SOLDERLESS INSTALLATION

$35.00 INSTALLATION SERVICE:
SHIP US YOUR ST AND IN 72HRS.
GET A 4MEG MACHINE BACK!!!

ZUBAIR INTERFACES, INC.
WE DESIGN, MANUFACTURE & SERVICE OUR PRODUCTS
5243B PARAMOUNT BLVD.
LAKEWOOD, CA 90712
CALL US FOR A COMPLETE BROCHURE
(213) 408-6715 FAX:(213) 408-6748

CIRCLE 020 ON READER SERVICE CARD

Renting Software,

Five years ago, we were ahead of our time.

Haven't You Caught Up Yet?

Call toll-free outside Texas: 1–800–433-2938
– Inside Texas call: 817–292-7396

WEDGWOOD RENTAL
5316 Woodway Drive
Fort Worth, Texas 76133

CIRCLE 049 ON READER SERVICE CARD

HAVE A QUESTION ABOUT YOUR SUBSCRIPTION?

Get an answer fast:

Call:
(415) 372-6002

Write:
Start Customer Service
P.O. Box 1569
Martinez, CA 94553

?

Advertisers List

	READER SERVICE NO.	PAGE NO.
AARDVARKS MUSIC & COMPUTER	017	15
ACCUSOFT	025	62
ANDY'S MUSIC	002	80
ANTIC SOFTWARE	005,006	12,90
AVANT-GARDE	003	63
BRE SOFTWARE	007	80
COGSWELL COLLEGE	010	80
COMPUTABILITY	009	84,85
COMPUTER GARDEN	047	92
CREATIVE MICROSYSTEMS	014	3
DATEL	050	41
DIGITAL VISION	015	56
FIRST STOP	016	46
FUTURE SYSTEMS	024	49
GRIBNIF	073	92
IMAGEN	018	IFC
MAGNETIC IMAGES	019	15
MARK WILLIAMS	021	4
MICHTRON	023	BC
MICROTYME	032	98
MIGRAPH	075	57
MUSICODE	076	9
NEOCEPT	022	9
NICE & SOFTWARE	029	56
PRACTICAL SOLUTIONS	033	48
PROCO PRODUCTS	035	88
PROSPERO	036	93
PSYGNOSIS	077	IBC
REGENT	026	26
REDMOND CABLE	027	96
SIDELINE	028	91
SOFTREK	078	9
SOFTWARE DISCOUNTERS	042	42
SOFTWARE PLUS	056	26
START		35
ST PLUS	091	38
ST WORLD	043	90
SUBLOGIC	045	15
TOAD COMPUTER SERVICE	012	49
VERSASOFT	081	10
WEDGEWOOD	049	96
WINTERTECH	083	7
ZUBAIR	020	96

DON'T FORGET!

Advertising Deadlines for the December Issue
Insertions: September 1, 1989
Ad Copy Due: September 8, 1989
On Sale: November 1, 1989

Be sure to mention START when contacting these advertisers—all of whom support the Atari ST Computer.

Advertising Sales

Western Region
Advertising Sales Representative:

AUSTIN HOLIAN
544 Second Street
San Francisco, CA 94107
(415) 957-0886

Address all advertising materials to:

KATE MURPHY
Advertising Production Coordinator
START
544 Second Street
San Francisco, CA 94107

Eastern Region
Advertising Sales Representative:

DENNY RILEY
544 Second Street
San Francisco, CA 94107
(415) 957-0886

AUTHORIZED SERVICE CENTER FOR ALL ATARI PRODUCTS

MICROTYME

A DIVISION OF MICRO PERIPHERALS, INC.

VISA* MasterCard DISCOVER

4049-51 MARSHALL RD. • KETTERING, OHIO 45429

HARDWARE

ST'S. . .IN STOCK!!!

Color Monitors . . . . . CALL
Mono Monitors . . . . . CALL
SF 314 Drive . . . . . CALL
GTS 100 Drive . . . . . CALL
I8 5¼ Drive 199
Navarone Scanners . . . . . CALL

PRINTER'S DEVIL HI-RES GOOS FONT & CLIP ART PACKS IN STOCK! (Great for Desktop Publishing!!)

MODEMS

SX-212 300 /1200 bps . . . . CALL
Avatex 1200E 79
Zoom 2400 125

ATARI ST SCANNERS, SOUND & VIDEO DIGITIZERS In Stock!

SUPRA 2400

HAYES® COMPATIBLE

$124.95

6' ST MODEM CABLE 9
(With Purchase Of Supra)

HARD DISK DRIVES FOR ST'S

SUPRA 30 MB HARD DISK

$649

OTHERS.....CALL

ICD 20 MB HARD DISK

$599

OTHERS, INCLUDING TAPE BACK-UP . . . CALL

PRINTERS

PANASONIC . . . . . call for latest
1180 . . . . . CALL
1191 . . . . . CALL
1124 . . . . . CALL
Panasonic Brand Rib . . . . . CALL

STAR . . . . . Call for latest!
NX-1000 . . . . NEW! . . . . CALL
NX-1000 Color . . . . . CALL
1000 Ribbon (Blk) 6
1000 Ribbon (Color) 8

OLYMPIA . . . . . simply, the best!
NLD modes use 18 x 24 matrix!
NP-30 . . . . 130 CPS 199
NP-80s . . . 240 CPS . . . changeable font cards 349
NP-136 . . . . 15 inch 529

ACCESSORIES

ST Dust Covers . . . . . from 8
Mouse Mat 5
Power Strip w / Surge 15
Deluxe Power Strip w / Surge 24
Drive Master 32
Monitor Master 32
Mouse Master 29
EPYX 500 XJ Joystick 15
WICO Ergo Stick Joystick 17
Printer Stand-Heavy Duty 13
Mail Labels 3.5x15/16-500 pk 4
1000 pk 6
Compuserve Starter Kit 24
On-Line Encyclopedia Kit 36
Printer Cable 6' 14
Modem Cable 6' 14

MIDI

Midi Cables 5' to 25' . . . . . CALL
Software (Hybrid Arts etc.) . . . CALL

★ ST SOFTWARE ★

10th Frame Bowling 26
220 ST (Terminal Emulator) . . . 15
3D Breakthru 26
AB Zoo 27
Advanced OCP Art Studio 39
Air Ball 23
Air Ball Construction Set 17
Algebra 1, 2, 3 . . . . . ea 14
Aliants 19
All About America 41
Alt 21
Alternate Reality-The City 32
Alternate Reality-The Dungeon 32
America Cooks Series . . . . . ea 9
Architectural Design 11
Arctic Fox 23
Art Gallery 1, 2, 3 . . . . . ea 19
Assem Pro 37
Autoduel 24
Award Maker 27
Balance of Power 32
Bally Hoo 27
Barbarian 25
Bards Tale 31
Base Two 45
Basketball (Two on Two) 26
Battle Droidz 25
Battlezone 19
Beyond Zork 34
Biology 1, 2, 3 or 4 . . . . . ea 14
Bismarck 28
Black Lamp 17
Blockbuster 27
Boulderdash Construction Kit 17
Braincaxs 15
Breach 27
Bridge 5.0 24
Bubble Ghost 24
Business Tools 26
Cad 3D (Ver. 2.0) 57
Calamus 175
Calamus Font Editor 62
Captain Blood 31
Carrier Command 29
Certificate Maker 25
Championship Baseball 27
Championship Wrestling 26
Chartpak 54
Chessmaster 2000 26
Chrono Quest 29
Circuit Maker 2 62
Clip Art 1, 2, 3, 4, 5, 6 . . . . . ea 13
Club Backgammon 23
Color Computer Eyes 169
Colorburst 3000 25
Copylist Level 2 158
Cosmic Relief 26
Cracked 21
Crazy Cars 25
Cyber Control 39
Cyber Paint 48
Cyber VCR 45
Dark Castle 27
Data Manager ST 46
Datatrieve 33
DB Man 149
Death Sword 13
Deep Space 31
Defender of the Crown 31
Degas Elite 38
Demon's Winter 25
Desk Cart 67
Digi Drum 14
Dive Bomber 19
Dr. Drums (DR T) 19
Dr. Keys (DR T) 19
Drafix 129
Dungeon Master 2 18
Dyna Cadd 429
Easy Draw (Regular) 63
Easy Draw W / Supercharger 95
Easy Tools 32
Elite 22
Empire 34
Expert Opinion 72
EZ Score Plus 95
EZ Track Plus 43
F15 Strike Eagle 24
Falcon ST . . . . (Low, Low) . . . . CALL
Fast Basic 59
Fast Basic M Compiler 19
Fire and Forget 25
First Cadd 2.0 33
First Letters & Words 25
First Shapes 25
First Word Plus 59
Flash . . . . . (Great!) 18
Flight Simulator 2 32
Scenery Disks . . . . . ea 18
Font Disks (Pub Part) 1-6 . . . . . ea 20
Fonts and Borders 24
Fonts ST 22
Foundations Waste 26
Fraction Action 24
G + Plus 21
Gateway 31
Gauntlet 31
Genesis (Molecular Modeler) 59
GFA Basic 3.0 59
GFA Basic Book 27
GFA Companion 32
GFA Compiler 38
GFA Draft Plus 49
GFA Dulck Reference Manual 12
GFA Ray Trace 59
Gladiator 25
Global Commander 28
Gold Of The Realm 24
Gold Rush 25
Goldrunner 26
Goldrunner 2 27
Goldrunner 2 Scenery Disks . . . . . ea 7
Gone Fishin' 28
Great Chefs Vol. 1, 2, & 3 Set 39
Gridiron (Football) 19
Gunship 26
Hard Disk Backup 23
Harrier Combat Simulator 34
Heroes Di The Lance 26
Hi Soft Basic Pro 109
High Roller 27
Hollywood Hijinx 19
Human Design Disk 19
Hunt for Red October 32
IB Copy 23
Impossible Mission 2 27
Indiana Jones Temple of Doom 31
Interlink ST 24
International Soccer 25
Into The Eagles Nest 24
Inventory Manager 52
Jet 33
Jinxter 27
Joust 18
Juggler . . . . . (New Version) 32
Karate Kid 2 27
Karateka 23
KCS Level 2 189
Kid Progs 27
Klndarama 24
Kings Duest 1, 2, 3 or 4 . . . . . ea 31
Knickerbockers 12
LDW Power Spreadsheet 89
Label Master Elite 26
Lattice C 109
Leaderboard Dual Pack 15
Leatherneck 25
Leisure Suit Larry 1 or 2 24
Lock Dn 24
Lords of Conquest 13
Lords of the Rising Sun 31
Macro Mouse 25
Magic Sac Plus 89
Magic Sac Roms . . . . . CALL
Major Motion 25
Marble Madness 27
Mark Williams C 114
Rockford 22
Santa Paravia 19
Scan Art 32
Scrupies 29
SDI 33
Shadow 18
Shadowgate 34
Shard of Spring 27
Shuffleboard 19
Silent Service 24
Sinbad 19
Sky Fox 14
Space Duest 1 or 2 . . . . . ea 31
Space Duest 3 41
Spectrum 512 41
Spelling Bee 19
Spiderman 7
Spy vs Spy 3 (Arclic Antics) 19
Stat Disk Drives Inside & Out 18
ST Gem Programmers Ref Man 15
ST Internals Book 15
ST Intro to Midi Book 15
ST Machine Language Book 15
ST Pool 21
ST Talk Pro 17
STAC 44
STDS 39
Star Fleet 1 37
Star Raiders 19
Starglider 2 26
Stellar Crusade 36
Strip Poker 2 25
Sub Battle Simulator 25
Sundog 25
Super Base Professional 174
Super Star Ice Hockey 31
Swift Calc ST 46
Take Note 52
Tanglewood 25
Terror Pods 25
Test Drive 1 or 2 24
Test Drive 2 Extra Disks . . . . . ea 14
The Stooges 34
Thunder 26
Time Bandit 24
Top Gun 11
Trailblazer 32
True Basic 52
Tune Smith (DR T) 95
Tune Up 31
Turbo ST 32
TV Sports Football 31
Typhoon Thompson 21
Uninvited 31
Universal Item Selector 12
Universal Military Sim 31
Vampires Empire 20
Vegas Craps 24
Vegas Gambler 23
Video Titleing 22
Vip Professional (Gem) 129
War Ship 38
Wargame Construction Set 22
Winter Challenge 11
Wizards Crown 25
Word Perfect 159
Word Up 47
Word Writer ST 46
World Games 12
World Karate Championship 19
WWF Microleague Wrestling 29
Xevious 19
Zak McKracken 27
Zany Golf 26

★ ST SOFTWARE ★

N Vision 29
Neo Desk 2 33
New Tech Coloring Book 15
Night On The Town 22
Ninja 14
Obliterator 25
Ogre 27
Olds 24
Omnires 23
Orbiter 25
Page Stream 115
Paint Pro 33
Paintworks 14
Paperboy 25
Partner Fonts 21
Partner ST 43
PC Ditto 2 . . . . . Low . . . . . CALL
Perfect Match 27
Personal Pascal 66
Phantassie 1, 2 or 3 . . . . . ea 26
Phasar 3.0 58
Pinball Wizard 24
Pirates of the Barbary Coast 17
Planetarium 33
Platoon 25
Police Duest 1, 2 32
Prod of Radiance 25
Prime Time 27
Print Master Plus 26
Prison 25
Pro Copy . . . . . (Latest Ver.) 28
Publisher ST 79
P Dall 21
Quantum Paint Box 31
Quink 11
Ractan 25
Read & Rhyme 24
Renegade (Outcast) 14
Road Runner 26
Ruedwars 22

★ ST SOFTWARE ★

HOURS: M-F 9 a.m.-9 p.m. EST
SAT 9 a.m.-5 p.m.

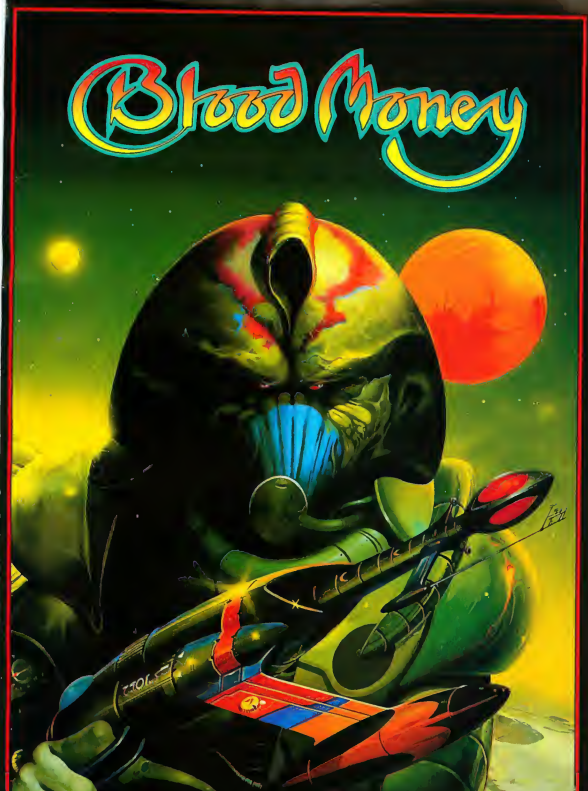
ALL 50 STATES CALL TOLL FREE
1-800-255-5835

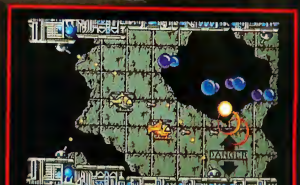
For Order Status or Tech. Info, Call (513) 294-6236

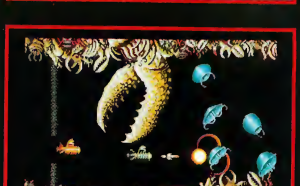
TERMS AND CONDITIONS

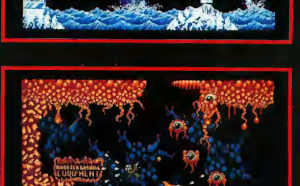
• NO EXTRA CHARGES FOR CREDIT CARDS! • Minimum order $15 • C.O.D. Yes, if all Shipping Charges are PRE-PAID • SHIPPING: Hardware, minimum $4; Software and most accessories, minimum $3 • Next day shipment available at extra charge • We ship to Alaska, Hawaii, Puerto Rico (UPS Blue Label Only), APO and FPO • Canadian orders, actual shipping plus 5%, minimum $5 • Ohio residents add 6% sales tax. • Please allow 2 weeks for personal or company checks to clear • All defective products require a return authorization number to be accepted for repair or replacement • No free trials or credit • Returns subject to 15% re-stocking charge • Due to changing market conditions, call toll free for latest price and availability of product. FOR YOUR PROTECTION, WE CHECK ALL CREDIT CARD ORDERS FOR FRAUD.

CIRCLE 032 ON READER SERVICE CARD









BLOOD MONEY

The ultimate arcade game

Hold it right there. Are you REALLY ready for this one? Have you got the courage to load up the experience that makes all the other games you've played seem prehistoric?

Because **BLOOD MONEY** is simply the best arcade game you've ever seen. It has a staggering 1 **megabyte** of bit-mapped graphics, an amazing **400K** of sound effects and music and the most gripping gameplay you've ever tackled in your life. **BLOOD MONEY** just leaves the competition for dead and takes you into new realms of arcade action.

But it's going to be tough. From the instant you hear that driving soundtrack you'll be plunged into a maelstrom of sheer destruction, as you plunder the four Outer Planets in a kamikaze quest for gold and glory. The aliens in **BLOOD MONEY** set some vicious traps, and it will take all your skills just to survive.

Use your awesome firepower wisely and you'll turn those aliens into blood money that can earn you extra weapons and equipment. And you're going to need them, because there are no easy screens in **BLOOD MONEY**. It's a life and death struggle that demands all your tactical genius and shoot-em-up know-how before you battle through to confront the four planetary Guardians.

With its vast bit-mapped graphics, superb animation, blistering sound, devilish obstacles, awesome firepower and 1 or 2 player options, **BLOOD MONEY** is the greatest challenge yet faced by any games player with a passport to outer space.

It's here. It's ready and waiting for you. But are you sure you're ready for **BLOOD MONEY?**

Two joysticks required for two-player game
Screen Shots are from the Amiga version

AMIGA $39.95 ATARI ST COMING SHORTLY

Psygnosis Ltd.
PO Box 483
Addison Illinois 60101
800-669-4912

PSYGNOSIS

CIRCLE 077 ON READER SERVICE CARD

ProText

The Last Word Processor You'll Ever Need

ProText is a fully integrated word processing package combining the features of a word processor, text editor, and a command line interpreter all in one easy to use package.

ProText includes features usually found in word processing packages costing several hundred dollars more. These features include: a spell checker, automatic page formatting, screen attribute display, footnoting, header text, footer text, mail merge, unlimited document size, cut and paste operations, on screen help, full macro functions, full support for most popular printers, and a command line interpreter. This allows *ProText* to be used effectively in program development and reduces time wasted switching to an editor.

The combination of these powerful features has created a unique working environment. *ProText* can be used to compose a letter, write a book, develop a program, and much more.

ProText is available from MichTron for the IBM PC, Amiga, and Atari ST for the retail price of $199.95.

MichTron®
576 S. Telegraph, Pontiac, MI 48053
Orders and Information (313) 334-5700

CIRCLE 023 ON READER SERVICE CARD