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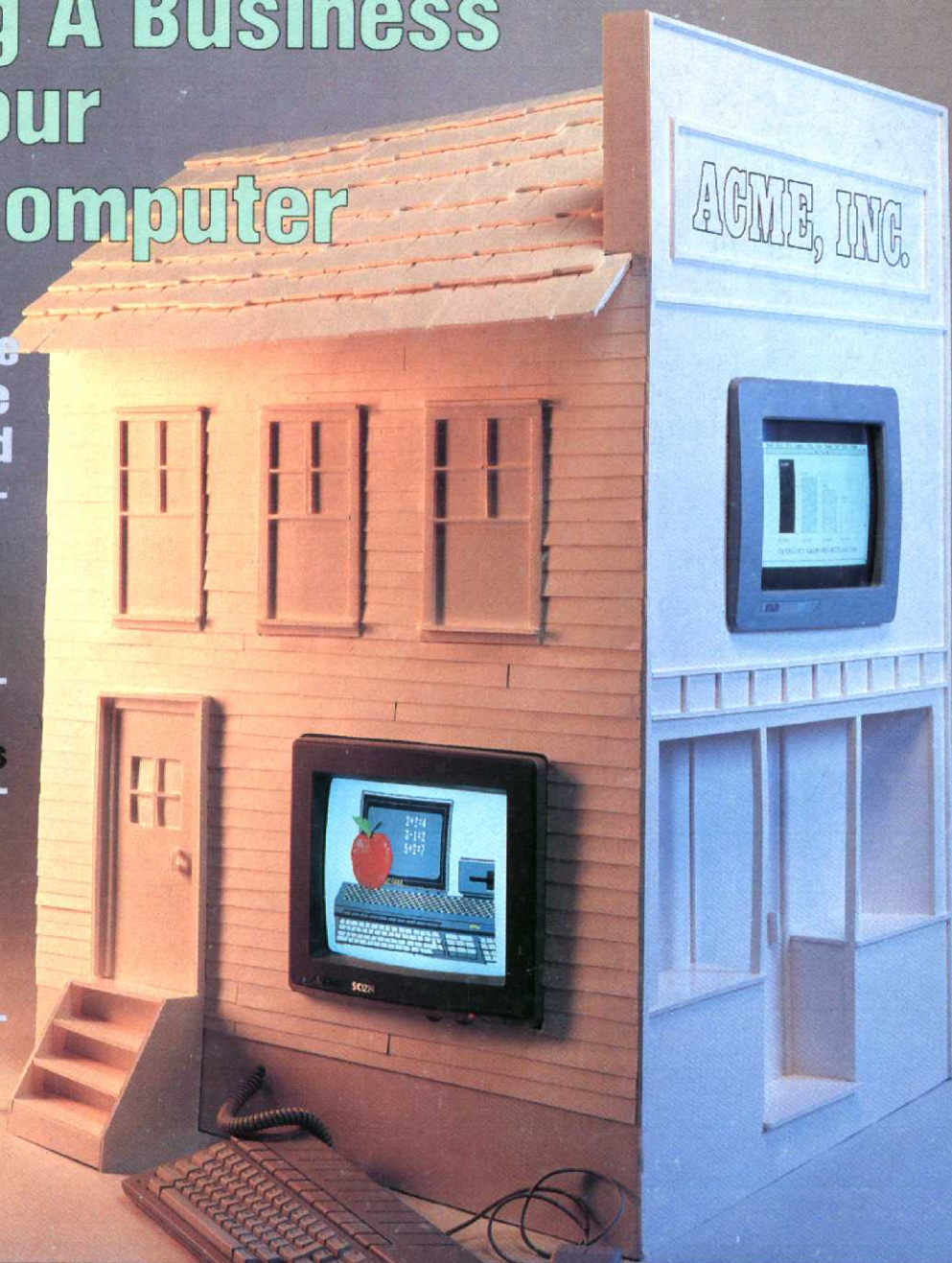
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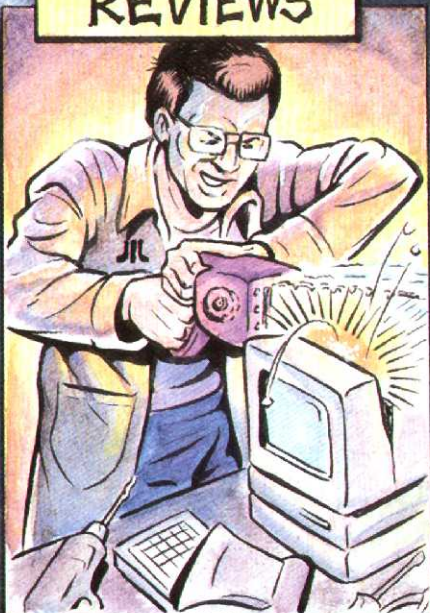


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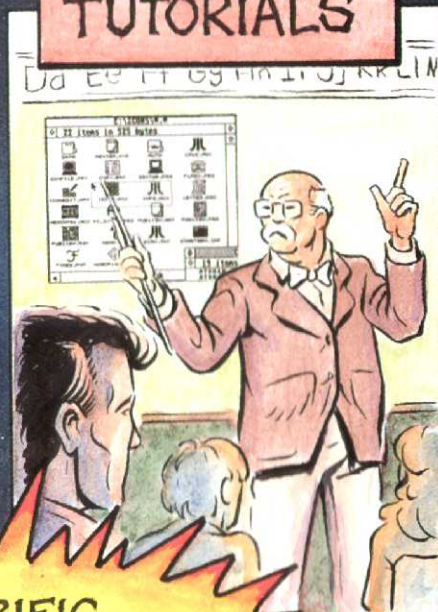
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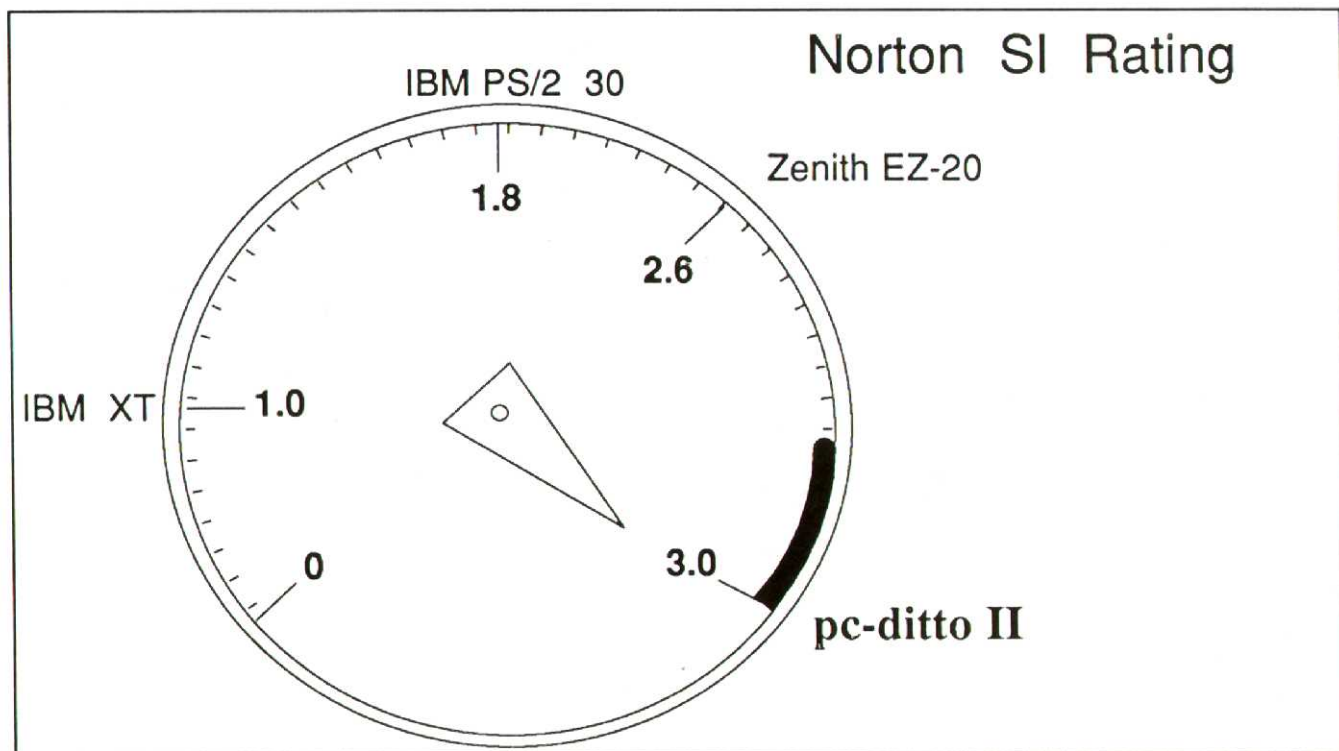
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El Cal Update

Dear Editor:

I was really delighted to see the review of *El Cal* in the November/December issue of *Atari Explorer*, not only because it was well-written and dealt with a program I wrote, but also because presenting vertical market software in an Atari magazine somehow makes our computer look more "legitimate." The reviews of *DynaCADD* and *Informer II* amplify that impression.

One little thing: the pink gremlins who mess up typesetting (you know the guys, don't you?) caused some confusion—a misprint in the Debonair Software address. The correct address appears below.

J. Andrzej Wrotniak
Debonair Software
P.O. Box 521166
Salt Lake City, UT 84152-1166

Thank You Again, Sam

Dear Editor:

I would like to use this forum to publicly thank Mr. Sam Tramiel and Atari Corporation for the donation of the Mega ST2 color system currently being used in my third grade classroom.

Just to say thank you is not enough. As teachers in today's society, we sometimes feel alone in our quest to better the lives of the children we teach. It is nice to know that there are men like Mr. Tramiel who are willing to help. I know that God will bless him for his act of kindness.

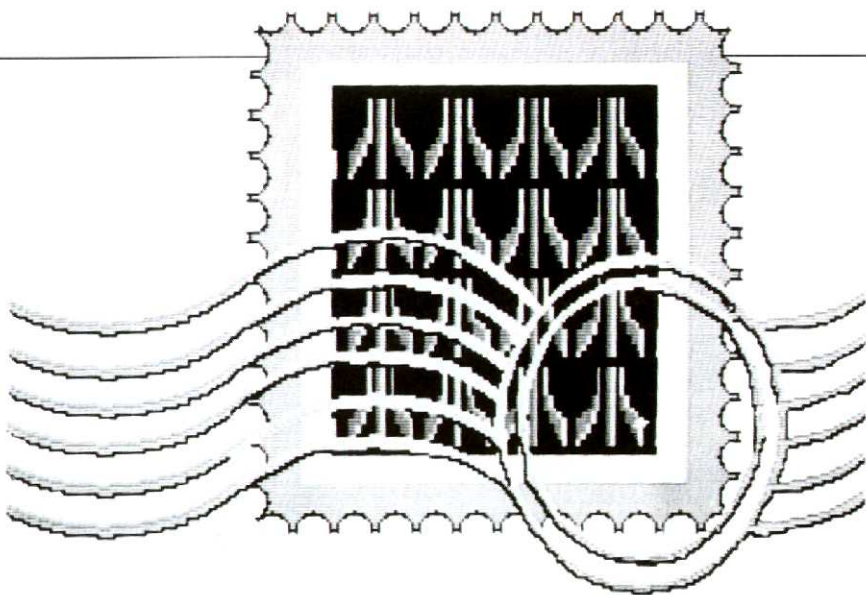
I have been using computers in my classroom for many years (I purchased nine of them myself) and have taught computer classes for teachers. I can say without reservation that the Atari ST is the best computer for education. It will do everything my administrator's Mac will do and at a fraction of the cost. My dream is to network 12 STs in my classroom.

James W. Sharrock
Union County Elementary School
Rte. 2, Box 3000
Blairsville, GA 30512

Show Me

Dear Editor:

What is Atari doing to promote and support their products? Recently, I noticed on MTV an Amiga commercial with the Pointer Sisters and NASA. I thought they were Atari supporters.



Letters To The Editor

I have seen *many* Amiga TV commercials that make it look the best. I have *never* seen an Atari commercial.

No one knows about the ST. Support has dropped, and I sometimes feel like a fool when I talk to Amiga owners.

What is Atari doing? Over a year ago they said they would improve relations with customers and dealers and advertise nationally . . . so *show me*.

Dennis LaFontaine
61 Winter St.
Lewiston, ME 04240

Well, they have hired a new advertising agency—Chiat Day of Macintosh/Superbowl/Lemmings fame—and we in the New York area did see a TV commercial for the Lynx game system back around Christmas. More than that we don't know. If you hear (or see) anything, drop us a line.

8-Bit Support

Dear Editor:

I am an Atari 8-bit user and would like to commend you on your continuing coverage and reviews of products for the 8-bit series. But I also think that you could do more to promote these products.

There are many fine original games, e.g. the fabulous *Draconus* from Cognito, and ST games that have 8-bit counterparts, e.g. *The Pawn*. In addition, many fine business, home, and educational applications—*Silent Butler*, the *Syn* series, and the *Tink & Tonk*

line—are also available.

Many 8-bit users do not know about these programs—especially new users, such as owners of the XE Game System who are wondering what else their fantastic game machine can do. I think it would be helpful if you could recap, review, or re-review some of these existing programs for the benefit of newer users.

If the 8-bit series is to survive, more must be done to promote it. The 8-bit machines are fantastic, so let's support them.

Dag Hugdahl
P.O. Box 84
Bricelyn, MN 56014

Most of the product reviews you see in Atari Explorer originate when the manufacturer sends a copy or unit to our offices for evaluation. We, in turn, decide whether to review the product in-house or send it to one of our contributing editors, who might have some special knowledge or expertise to qualify him or her to evaluate it.

Other reviews are submitted "over the transom" by literate users who take a chance and send us evaluations of products they use regularly.

Obviously, manufacturers are most interested in promoting their new products, so we seldom, if ever, receive packages that are more than a few months old. In fact, in the past, when we have accepted reviews of older products for publication, we have received little support from the manufacturers, who often are simply selling out current

supplies of a package prior to discontinuing it. On two occasions, we were asked not to run a review of an older game package, because the publisher did not want to generate any demand for the few remaining units in stock.

So, a large part of the problem we face when we think about reviewing old favorites for new readers (which, by the way, we think is a good idea) is in simply obtaining the products we want to review. Therefore, we challenge you readers again: If you have a tried and true 8-bit program you think other Atari users would like to know about, write a review and send it in. If we like it, we'll publish it and pay you for it.

The only stipulation is that any product you review must be readily available. (Include a profile box like the one that accompanies all reviews in the magazine, and tell your audience exactly how to order the item you are writing about.) Telling the already frustrated family of 8-bit users about a great product that they can't get will not generate good will—for you, for us, or for Atari.

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The Atari Home Office Revolution

By current estimates, as many as 25 million Americans are now earning a significant portion of their income working at home. Yet, as impressive as the numbers sound, the home-office revolution is just beginning. By the end of the century—just ten years away—the effects of this massive and increasing change-over will be felt at every level of American social and economic life, from tax reform to the administration of social programs. Indeed, the home-work revolution may ultimately provoke a reassessment of the opposing principles now used to assess the very value of labor itself. As economists are now discovering, neither the philosophy of Keynes nor that of Marx can fully describe the behavior of a decentralized post-industrial, capital economy in which the workers own (and live alongside) the means of production.

To large extent, the home-office revolution is being fueled by micro-chip technology. In the hands of visionaries like Jack Tramiel, this has made powerful desktop computers, FAX machines, and other office equipment affordable to people like you and me. Our cover story, "The Atari Home Office," by Edmund Mann, which begins on page 22, shows some of the many ways in which Atari owners are using their machines to set up home businesses at every scale. Whether you want to earn a little extra on the side, or embark on a new career, Mann's article is chock-full of encouragement and practical tips on getting started.

According to our recent Reader Survey results, reported beginning on page 8, many Explorer readers have already jumped on the home-work bandwagon. Productivity applications such as word processing, spreadsheet and database, desktop publishing, and CAD (Computer-Aided Design) are used more often by Explorer readers than any other category of software. Fully 71.8% of respondents own more than one computer—strong evidence that in these households at least one Atari system is dedicated to regular office use, either as part of a home-based business, or as a platform for taking work home from a conventional job.

While these results may surprise some, I was not surprised at all. For

my own part, I've always identified the Atari computer with work—both in traditional office settings and at home. I bought my first Atari—an old flip-top 800—in 1982. Later that year, I payed for the system by selling my first article to a computer magazine: a tutorial about Atari graphics. Shortly thereafter, I was hired by that same magazine as Technical Editor, setting up an Atari workstation at the office so that I could bring work home. Since coming to Explorer four years ago, I've worked exclusively at home—churning out articles using a variety of Atari systems; communicating with Explorer's main offices by telephone and modem. My telephone dialer/database accessory, presented starting on page 42 and available by mail or for download from the major information services, exemplifies the kind of powerful, intuitive software that, in combination with Atari hardware, makes this productive lifestyle possible. We hope you enjoy it, and invite your comments.

New Expire Dates

You may notice that the issue of Atari Explorer you hold in your hands is dated Spring, 1990, rather than March/April. Don't panic! Due to production delays, our January/February issue arrived a little behind schedule. To minimize the effect of this disruption on you, our readers, as well as on our advertisers (who naturally like an issue to remain on the stands for a predictable amount of time), we've decided to combine Explorer's March/April, May/June, and July/August issues into Spring and Summer, returning to our regular production schedule with the September/October 1990 issue.

If you are a subscriber to Atari Explorer, please note that we have extended your subscription by one issue to make up for the deficit. Thus, if your subscription was due to expire with the September/October 1990 issue, it will be extended automatically to include the November/December issue. Brand-new subscriptions, as well as longer two- and three-year subscriptions will, of course, be extended in similar fashion. This change should already be indicated on your mailing label. ■

By JOHN B. JAINSCHIGG

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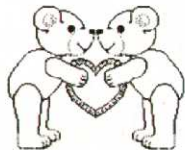
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Who You Are And What You Want

Results of our Reader Survey

Who reads *Atari Explorer*? That's what we set out to determine when we ran a comprehensive reader survey questionnaire last fall. Many readers—332 to be exact—took the time to fill out the two-page questionnaire and return it to us.

We divided the results into three major parts: 1) demographics and computer usage; 2) comments about Atari, its computers, and our magazine; and 3) readership of material in *Atari Explorer*. Presented here are the results from the first two parts; the third part will be in the next issue.

Computer Ownership

We tabulated 20 separate categories of computer ownership ranging from owning only one 8-bit computer to owning multiple Megas, PCs, and other machines. (See Table 1.) We also summarized these data in several ways, including owning any 8-bit computer, owning ST(s) only, and owning a PC along with an Atari computer(s). Incidentally, when we say "PC," we mean any IBM PC or clone—desktop or portable.

Roughly three quarters—74.4% to be exact—of readers own an ST or a Mega, and about one half (49.4%) own an 8-bit. About one half (50.6%) own only an ST or a Mega, one quarter (25.6%) own *only* an 8-bit, and one

quarter (23.8%) own both an 8-bit and an ST or Mega.

Along with their Atari system(s), 28.9% of the respondents own a PC, while 16.5% own another type of system (most often Commodore, Apple, Tandy, or Sinclair!).

One highlight from the ownership data is that a whopping 71.8% of *Explorer* readers own more than one computer and 33.9% own more than one Atari computer. While one would ex-

pect a certain amount of upward migration from older 8-bit machines to newer ones or from 8-bit to ST or Mega, we were somewhat surprised to see the 6.9% ownership of multiple STs or Megas.

Along with inquiring about ownership, we asked readers what Atari computer they use most often. ST is the leader with 57.0%; 8-bit is 25.6%; and Mega 17.5%. We noticed some fairly significant differences in usage between

Computer(s) Owned	People	Machines	Person/ Machines	Percent
One 8-bit only	23	23	1.0	6.9
More than 1 8-bit	30	73	2.4	9.0
8-bit + other	10	29	2.9	3.0
8-bit + PC	22	69	3.1	6.6
520 ST only	21	21	1.0	6.3
1040 ST only	35	35	1.0	10.5
Multiple STs	7	16	2.3	2.1
ST and 8-bit	40	96	2.4	12.0
ST and others	16	42	2.6	4.8
ST, 8-bit, others	11	38	3.5	3.3
520 ST and PC(s)	18	50	2.8	5.4
1040 ST and PC(s)	27	76	2.8	8.1
ST, 8-bit, PC	14	50	3.6	4.2
Mega only	15	15	1.0	4.5
Mega and ST	11	25	2.3	3.3
Mega and 8-bit	9	25	2.8	2.7
Mega and other	3	6	2.0	0.9
Mega, 8-bit, ST	5	17	3.4	1.5
Mega, PC, other(s)	15	44	2.9	4.5
Total	332	750	2.3	100.0
Any 8-bit	164	420	2.6	49.4
8-bit, no ST	85	194	2.3	25.6
Any ST	205	466	2.3	61.7
Any Mega	58	132	2.3	17.5
Any ST or Mega	247	512	2.1	74.4
ST, Mega, no 8-bit	168	286	1.7	50.6
Any PC	96	289	3.0	28.9

Table 1. Computer Ownership

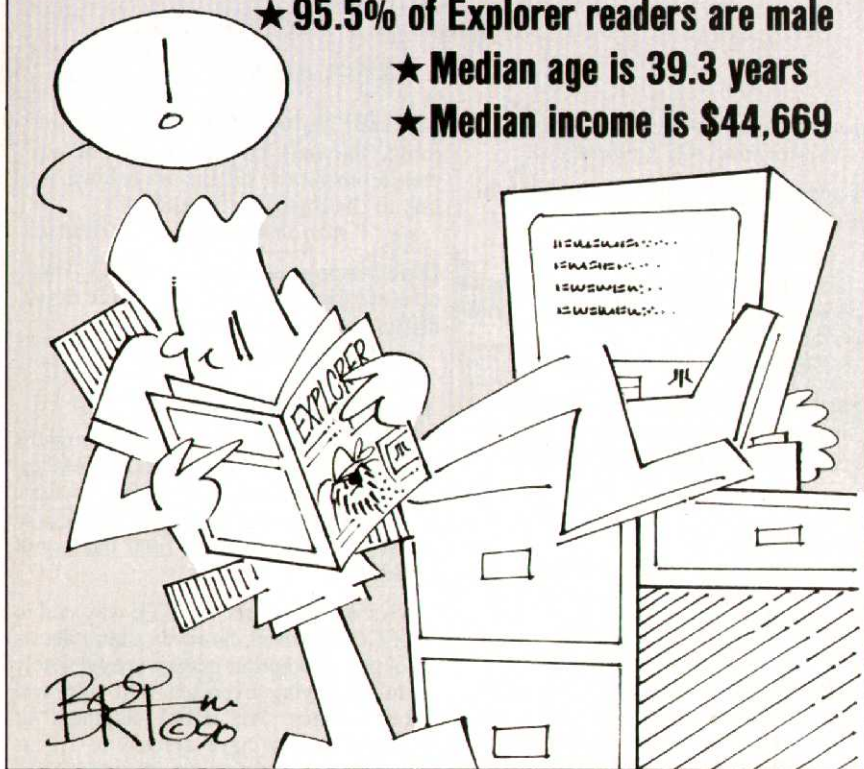
By DAVID H. AHL

Reader Survey Highlights:

★ 95.5% of Explorer readers are male

★ Median age is 39.3 years

★ Median income is \$44,669



these groups, so we broke down the data analysis by these three groups. As we got further into it, another group emerged, namely people who own a PC along with one or more STs, so we broke those respondents out as a fourth group.

Demographics

The readers of *Explorer* are predominantly male (95.5%). Female readership is highest among 8-bit owners (7.1%) and lowest among ST and PC owners (1.7%). (See Table 2.)

The median age of *Explorer* readers is 39.3, with no significant variation among owners of different computers.

The median household income of *Explorer* readers is \$44,669. Variation among computer owners is quite pronounced with 8-bit owners having a median income of \$36,807, ST owners \$40,984, Mega owners \$54,389, and ST and PC owners \$54,860.

Computer Usage

We ranked overall usage of different applications by adding frequent and occasional usage together. Word processing was the clear leader with 94.0% of respondents listing it. Games was second with 73.2%, followed by graphics (68.4%) and databases (64.2%). Communications was next with 54.8% usage, and bringing up the rear were spreadsheets (44.9%), education (40.1%), and music (37.3%). Most frequently listed as a write-in was desktop publishing with an occasional mention of computer

aided design (CAD).

Usage varies somewhat depending upon the computer most used. Not surprisingly, among 8-bit users, games and educational applications are used more widely than in the other groups. Games are also more heavily played on Atari systems among users who also own a PC, probably because they are doing their business applications on the PC.

When we isolated frequent usage from total usage, differences really popped out. For example, among ST and Mega owners, word processing is listed as a frequent application by eight times as many people as list education.

Playing games is the second most frequent application, but it is trailed closely by graphics and communications (except among people who also own a PC—who apparently use their PC for communications).

Frequent users of spreadsheets are few (20.2%), reflecting, in part, the dismal spreadsheet software available for Atari computers.

Frequent database usage also ranks rather low (29.9%), largely because—if you'll allow me to speculate again—there is no really excellent relational database software for Atari computers, and even the flat file packages much to be desired when compared to similar applications for other computers.

Most applications (with the exception of word processing) had more occasional users than frequent users. Not so with music. ST and Mega owners are

into it either seriously or hardly at all. In numbers, 21.1% list music as a frequent application, while only 14.2% list it as an occasional use.

Sources of Information

Among all respondents, just over one third (35.8%) use some type of commercial information service. Usage is lowest among 8-bit owners (30.6%), higher among ST owners without a PC (39.0%), and highest among Mega owners (50.0%).

Eight-bit owners tend to favor CompuServe (76.9% of info service users), followed by Genie (34.6%) and Delphi (15.4%).

ST and Mega owners lean to Genie (65.6%), followed by CompuServe (55.9%), Delphi (12.9%), and others.

We would have an easier job selling advertising if *Explorer* were the only computer magazine that readers read. Actually, 11.8% of our readers do not get another computer magazine, but the other 88.2% read one or more others.

This survey was done before *Analog* and *STlog* discontinued publication, and before *Antic* went to a newsprint stock, so these results do not accurately reflect the current situation. But for what it's worth, here they are.

Other magazines read by 8-bit owners included *Antic* (76.5%), *Analog* (63.5%), *Computer Shopper* (28.2%), a user group newsletter (21.2%), and *Byte* (8.2%).

ST and Mega owners are more likely to also read *STart* (69.6%), *STlog* (47.3%), *ST Informer* (36.4%), *Computer Shopper* (24.7%), a user group newsletter (21.5%), *Byte* (13.8%), or one of the ST-specific publications like *ST World* or *ST X-Press* (6.5%).

Interestingly, people who own a Mega are *least* likely to read another computer magazine; 20.7% read only *Explorer*.

Reader Comments

Many readers were very complimentary to us saying things like "keep up the good work" and "by far the best magazine in the field." Thanks. We can always use a nice pat on the back. But it's not easy producing a magazine that is a crowd pleaser, as you can see from some of the following comments.

Issue Frequency

Your mag could only be improved upon by publishing it monthly.

—Manager, 37, Pennsylvania, and about 50 other respondents!

Total Survey	Total	Percent
Total Respondents	332	100.0
Female	15	4.5
Male	317	95.5
Age		
To 19	24	7.2
20-29	51	15.4
30-39	103	31.0
40-49	85	25.6
50-59	47	14.2
60-69	12	3.6
70 and over	6	1.8
Median age	39.3	
Income		
Under \$15K	26	7.8
\$15-24K	45	13.6
\$25-34K	67	20.2
\$35-49K	79	23.8
\$50-74K	64	19.3
\$75-100K	24	7.2
\$100K plus	12	3.6
No answer	13	3.9
Median income	\$44,669	
Magazines Read		
Analog	98	29.5
Antic	104	31.3
STart	173	52.1
STLog	118	35.5
ST Informer	90	27.1
Byte	41	12.3
Computer Shopper	85	25.6
Current Notes	12	3.6
ST World	14	4.2
ST X-Press	7	2.1
User Group News	71	21.4
Explorer Only	39	11.7

Table 2. Demographics

I like *Explorer*; bi-monthly frequency seems about right.

—Engineer, 26, New Jersey

More 8-Bit Articles

Please publish more articles and software for the old but good 800s.

—Disabled, 45, Oregon

Let's see more articles on 8-bit uses.

—Teacher, 34, Brooklyn.

I am sick to death of reading about STs. If you don't run more 8-bit info real quick, I may cancel my subscription.

—Truck driver, 25, California

Please keep us up to date on 8-bit news. That's why I subscribe to your magazine.

—Student, 15, Miami

You cover interesting subjects like A.I. programming, but you should give 8-bit examples along with the ST ones.

—Plumber, 33, Oregon

Why don't you reprint 8-bit articles from old issues of *Explorer*, *Creative*

Computing, and other magazines?

—Contractor, 41, Kentucky

I'd appreciate seeing much more 8-bit material and less ST stuff.

—Student, 16, Brooklyn

Put more emphasis on 8-bit products, especially utilities, applications, and how-tos.

—Electrician, 34, New Jersey

Your 130XE coverage is excellent, but I wish you could devote more pages to it.

—College student, 19, Michigan

More ST Articles

Forget the 8-bit features. I flip through them and feel I have wasted money.

—Pharmacist, 27, Florida.

Make the magazine all ST. The 8-bit line has one foot in the grave and the other on a banana peel.

—Government secretary, 34, Italy

Devote more time and space to the ST.

—Dock worker, 38, Pennsylvania

Atari Support

We've supported Atari 8-bit products for years and would like to see continued 8-bit support from Atari.

—Female, 40, Arkansas

I am a registered ST developer, but I haven't heard from Atari for over 3½ years.

—Researcher, 39, California

My 130XE does all I could want and more. The only problem is lack of support from Atari, all the way down the line to the third-party vendors.

—TV station manager, 40, Arkansas

I tried to open an Atari store, but Atari offered no incentive and made it so difficult that I gave up.

—Realty investor, 64, Florida

Atari Computer Availability

Several letters have arrived requesting the status of Atari computer availability. Atari US confirms short supply of some Atari products due to unexpected sales of those same items in the final quarter of 1989.

As we went to press, the STE was said to be FCC approved, however, manufacturer of other computer items were purposely reduced having expected that approval much sooner. An initial shipment of Mono monitors have arrived to fill as many back orders as possible and Atari stated that more are due soon. Also subject to low supply have been 520ST's and 1040ST's which are expected to be effected by the offering of the STE and STACY.

Atari US reports that they regret being short on these items and sincerely apologize to dealers, developers and users who have been anxiously awaiting them. They hope to have most back orders filled shortly and invite inquiries as to the product availability on a weekly basis.

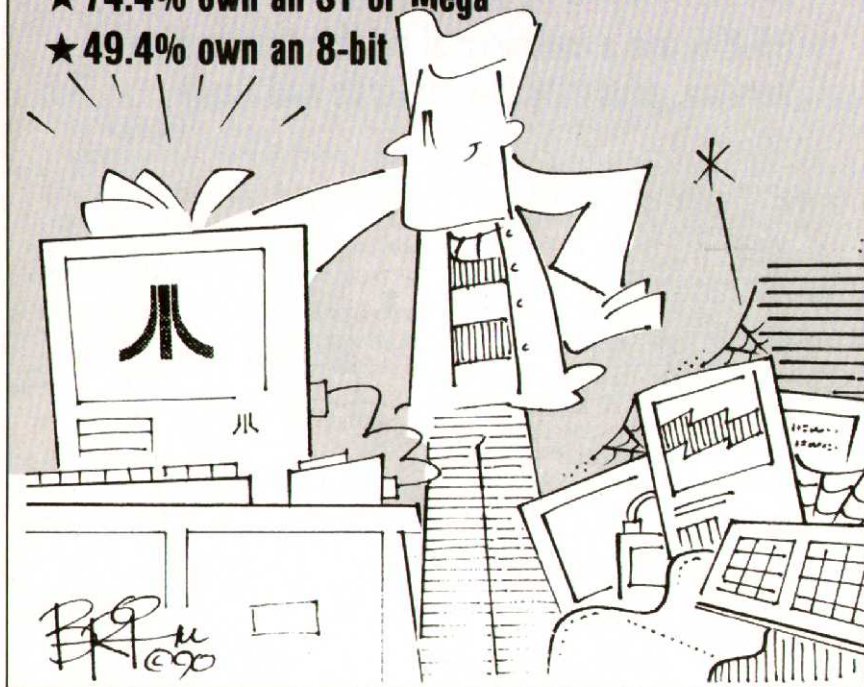
Total Survey	8-bit	ST	ST, PC	Mega	Total
Total Respondents	25.6	39.2	17.8	17.5	100.0
Overall Computer Use					
Word Processing	94.1	93.8	96.6	91.4	94.0
Spreadsheet	43.5	43.8	52.5	41.4	44.9
Database	68.2	58.5	66.1	69.0	64.2
Communications	55.3	52.3	54.2	60.3	54.8
Graphics	67.1	66.9	72.9	69.0	68.4
Music	43.5	32.3	33.9	43.1	37.3
Education	49.4	33.8	45.8	34.5	40.1
Games	84.7	68.5	74.6	65.5	73.2
Frequent Usage					
Word Processing	74.1	80.8	81.4	75.9	78.3
Spreadsheet	14.1	19.2	30.5	20.7	20.2
Database	32.9	30.8	28.8	29.3	30.7
Communications	34.1	36.2	27.1	44.8	35.5
Graphics	24.7	30.0	25.4	39.7	29.5
Music	7.1	20.0	18.6	25.9	17.5
Education	17.6	11.5	10.2	8.6	12.3
Games	54.1	43.1	47.5	27.6	44.0
Use Info Service	30.6	31.5	39.0	50.0	35.8
Compuserve	23.5	17.7	22.0	27.6	21.7
Genie	10.6	19.2	23.7	37.9	21.1
Delphi	4.7	3.1	1.7	12.1	4.8
Others	3.5	3.8	8.5	1.7	4.2
Median Income	\$36,807	\$40,984	\$54,860	\$54,389	\$44,669

Table 3. Computer Usage

★71.8% own more than one computer

★74.4% own an ST or Mega

★49.4% own an 8-bit



The potential of the ST has been completely stifled by mom-and-pop retailing. Why don't you run mail order ads? Let's see some competition.

—Student, 28, California

Only one store in Houston offers the 8-bit line. Atari should encourage dealers not to give up the 8-bit line.

—Grill cook, 18, Texas

I have four Atari XLs and four children, all of whom want a Nintendo, because Atari isn't bringing out any new action

or adventure games for them. When the ST came out, Atari said that 8-bit owners would not be abandoned; that's a joke!

—Mother, 41, South Carolina

(Actually, Atari and others brought out a fair number of new games for XL/XE systems in 1989. Check out the ads from B&C ComputerVisions, American Techna-Vision, and San Jose Computer for the latest listings.)

Due to our remoteness, we must buy by mail order. Why don't you carry any

mail order ads?

—Mother, 32, Maine

(As part of its policy to support retail dealers, Atari does not allow us to carry ads for mail order ST and Mega hardware.)

Why doesn't Atari publish a book of all hardware and software products (Atari and third-party) available for 8-bit computers?

—Engineer, 41, California

(Arrays, Inc. published such a book in 1983. The 348-page book with its comprehensive software reviews was a huge undertaking. Unfortunately, sales of the book did not justify updating and reprinting it annually, and the first volume was the only one ever done.)

Atari, Pro

I'm new to computers and love the ST.

—Female, 50, California

The more I try to use my Commodore and HP computers, the more I love my Atari. The 800XL seems to try to help you use it.

—Engineer, 48, New Jersey

Atari, Con

(We do receive some letters offering criticism of Atari and their product. As a publication responsible to promote Atari computers, we do not feel it appropriate to detail those comments in these pages. If there are problems beyond isolated purchasing inconveniences or defective product ratios, we will not avoid those issues and we will let you know. One of the most common comments is in regard to the lack of advertising found for Atari products. Addressing that concern may be appropriate here. First, Atari US acknowledges that they would like to do more in advertising, but there are hidden factors in regard to that issue. One is that eligible dealers are entitled to co-op funds which are reimbursement for advertising they place when and where they want it. Secondly, a great deal of funds are dedicated to trade shows, brochures and user group fairs. Atari US has stated that a multi-million dollar ST/MEGA/STE/STACY ad budget is being finalized for publication soon. In the meantime, many entrepreneurs in the retail business look at spending a percentage of their gross sales in advertising of their own business.)

Editorial Suggestions

Need truly easy-to-understand instructions for "easy" programs that are any-

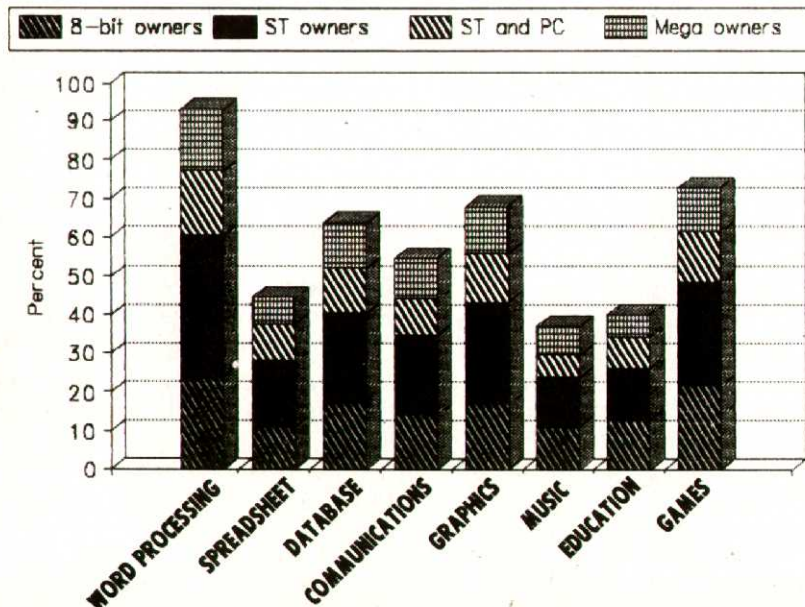


Figure 1. Computer usage broken down by ownership.

thing but easy (like *Abacus Paint Pro*).
—*Nurse, 39, Texas*

Many of us need more basic, entry-level information.
—*Technician, 31, Texas*

Run more advanced articles and more tutorials.
—*Mechanic, 32, Ohio*

Would like to see a Tech Talk column to answer reader questions.
—*Letter carrier, 43, Ohio*

More business products, programs, and successful application articles.
—*Store owner, 50, Ohio, and more than 40 others*

Please: Hints and tips on desktop publishing.
—*Air traffic controller, 32, Belgium, and many others*

Would love more help for starting MIDI musician; a simple direct approach with diagrams.
—*Ass't hotel manager, 26, New Orleans*

You really need a serious MIDI music column.
—*Biologist, 30, Washington*

Instead of digitized noise that you call music, how about running articles on speech synthesis and recognition?
—*Consultant, 40, Florida*

How about more fine arts and graphics applications?
—*Artist, 33, Illinois*

Anything at all on CAD/CAM applications.
—*Machine shop owner, 36, Kansas*

I am dying to learn more about 68000 assembly language, C, and GFA Basic. I'm on a beginner's level with assembly languages, mainly because the documentation assumes skills I don't have. Please run more programs that show concepts, tricks, etc.
—*Engineer, 45, New York*

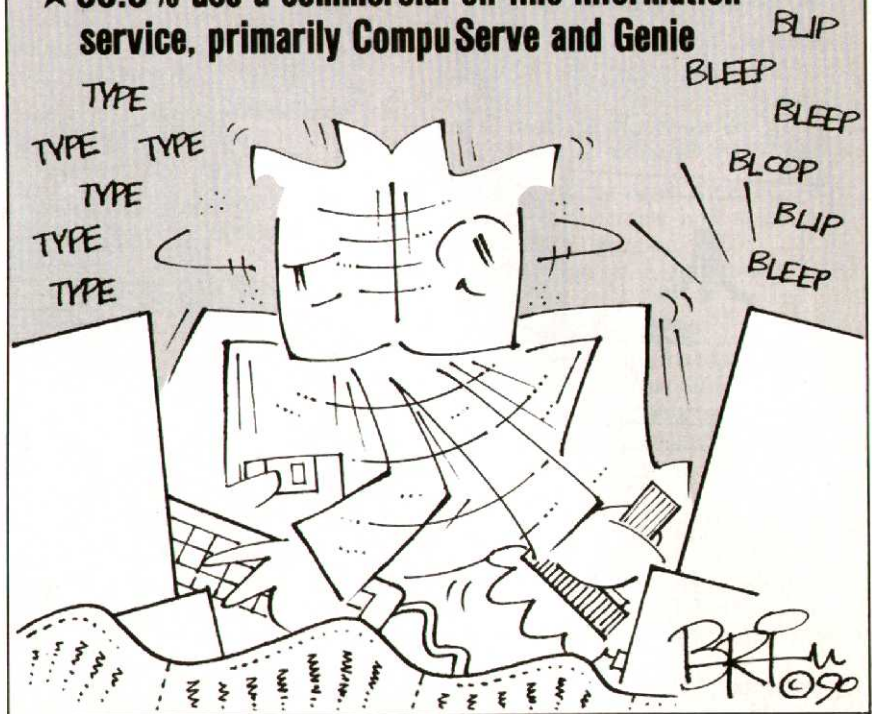
Would like a beginner's column on C. Your current material is too advanced.
—*Production manager, 46, Pennsylvania, and many others who requested more on C.*

Would like programming tutorials in Pascal and C, and also the GEM interface.
—*Programmer, 40, North Carolina*

Run more about how to modify GEM and how to manipulate text objects.
—*Postal employee, 55, Sweden*

★ **Word processing is the most used application (94%) followed by games (73.2%)**

★ **35.8% use a commercial on-line information service, primarily CompuServe and Genie**



How about a Mac emulator column and a UNIX column?
—*Government instructor, 47, Texas*

More graphics, MIDI, and programming in C and Basic.
—*Photo lab manager, 28, Hawaii*

I'd be interested to learn how the Portfolio can be connected up with an 8-bit system.
—*Engineer, 38, Salt Lake City*

How can an HP DeskJet be interfaced to an XL/XE? Can you connect a Tandy 100 to an Atari 8-bit? How? Can it read the disks from the Tandy portable drive?
—*User group president, 35, Reno*

Tell about memory expansion, true 16-25 MHz accelerators, color palette expansion for existing STs. Also Cyber control tutorials.
—*Teacher, 39, Montana*

Instead of articles about new products for old Atari users, why not report on old products for new Atari users?
—*Air crew, 28, West Germany*
(See our response to the letter on this topic in *Letters to the Editor* in this issue.)

Want construction projects like robotics, alarm system control, using cartridge ports.
—*Ad copywriter, 35, New York*

Need help that goes beyond the man-

uals. Examples: using a color ribbon on the SMM804, how to use *dBMan*, how to beat the popular games, and where to buy and sell Atari items with no dealer or user group nearby and no modem. Question: why do Atari hard drives cost so much more than equivalent PC ones?
—*Writer, 41, Illinois*

Disk or No disk?

Would like programs on disk like other magazines.
—*Student, 18, Australia, and many others*

Explorer would be the best Atari mag if it came with a disk.
—*Technician, 28, Canada*

Don't make us buy a disk with your magazine.
—*Contractor, 46, Vermont*

More Reviews

Please review more games.
—*Programmer, 37, Massachusetts*

Your game reviews are the best! Most magazines review only two or three per issue.
—*Student, 19, Illinois*

Fewer game reviews! Just feature the exceptional ones.
—*Pharmacist, 27, Florida*

Lessen the emphasis on game reviews. How about reader surveys on software. After all, who knows its strengths and

foibles better than those who live with it?

—Composer, 37, California

I would like to see more reviews of serious business software.

—Business owner, 44, Florida, and more than 30 others

Please review more databases and educational programs and fewer games. I still don't know what a spreadsheet is for.

—Letter carrier, 46, Washington

I'd like to see more reviews of science and educational software above the high school level (like *Cardiac Arrest*).

—Physician, 26, Iowa

Run reviews of scanners and OCR software.

—Biologist, 40, New York

Your reviews and announcements of Atari products follow the party line so much that they are useless.

—Logistician, 47, Virginia

(We try our best, but being owned by Atari Corp. does put a bit of a damper

on objectivity when it comes to parent company releases.)

How about a real review of the TT; not the Atari propaganda?

—Physician, 39, California

Present reviews are too subjective. Don't be super critical, but call a spade a spade.

—Property manager, 59, California

Reviews are well-balanced now. I like combination of a few in-depth single product reviews and many shorter reviews in "Software Survey."

—Engineer, 38, California

You should run in-depth comparisons of products in various categories like databases or laser printers for use with Atari computers.

—Writer, 44, Virginia, and others

Occasionally print a chart of all hardware and software reviewed in the past year with a short evaluative comment about each item.

—College student, 21, Ohio

Need periodic summaries of everything

you have published in particular categories like word processors, printers, emulators, etc.

—Professor, 44, Georgia

Wish List

I'd like to see more of the old games like *Pac-Man* and *Q*bert* as well as *Lotus 1-2-3* and *dBase* offered for the ST.

—Government clerk, 35, Louisiana

Could you tell us about Atari stock, the company itself, P & L, and what it means to us.

—Telephone operator, 20, Wyoming (Similar comments from about 20 others.)

Sure would be nice to see TOS 1.4. Why not run honest interviews with Atari engineers and programmers. —not the Tramiels.

—Technician, 38, New York

I'm sick and tired of Atari vaporware. Don't run new product announcements of Atari products until they are really available.

—Mathematician, 48, Maryland

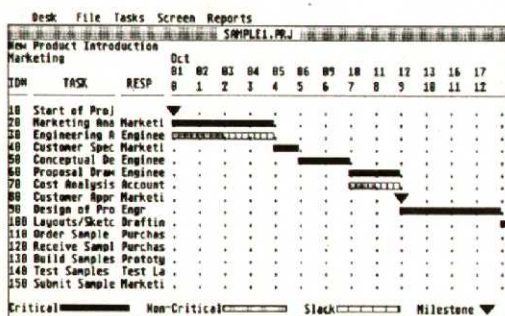
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CHARTING FEATURES

Historical timeprice data can be graphed in several formats including high/low bars or low, high, or closing price lines. Volume data may be superimposed. You may zoom in (at any magnification) on or pan to any region of interest. GEM window control points (scroll bars, arrows, sliders, etc) are used to control your display. Up to four stocks can be plotted simultaneously, each in its own window. Time scales can be matched between windows (scrolling one window will cause all others to scroll synchronously).

ANALYSIS FEATURES

Cyclic analysis tools include moving averages, residuals analysis, derivatives, RSI curves, and Fourier analysis. Identified cyclic components can be saved for future reference and use. Buy and sell indicators include Trend Line, Trailing Loss Level, and Moving Average breakthroughs. Tools may be applied to historical data creating hypothetical "what if" transactions or may be used to identify real buy and sell signals. All analysis features are generated and examined interactively with the graphic displays.

NEWS & REVIEWS



By DAVID H. AHL

**Shopping for a Portfolio,
hard disk safety
and efficiency,
enhancing your ST,
new products from Europe,
and more**

Shopping For A Portfolio

Atari ran full-color, double-page spread ads for the Portfolio in *Fortune*, *Smithsonian*, and several other upscale magazines in November. The ad listed an 800 number to call to place an order. Although about 25% of all computer hardware is purchased by direct mail and telephone, the majority of customers still prefer to buy from a retail store where they can actually see the product before taking it home. Hence, we thought it would be more representative of real-world customers if we bought our Portfolio from a retail store.

So we started phoning Atari dealers to see who had machines in stock. We called 14 dealers around the country from the Dealer Directory listing at the back of the magazine. Of the 14, four did not carry it, one of which told us,

"We've had trouble getting them; you'll probably have to order one directly from Atari."

The other ten all carried the machine, and most reported it was selling very well. One dealer had already sold out of his initial stock but offered to order one for us. Nine had the Portfolio in stock, mostly at the suggested list of \$399 with a few offering small discounts for payment in cash. Ironically, the only place that we could not find any dealers was the New York metropolitan area (where we are located).

Of the nine dealers who had the Portfolio, most also had in stock at least one of the three memory cards (32K, 64K, or 128K) and the all-important smart parallel interface (for \$49) which includes the file transfer software that lets you hook up to a desktop PC or a printer.

Dealers reported that with respect to memory cards, most customers were opting for either minimum price (32K for \$79.95) or maximum memory (128K for \$199.95) with the 64K card left sitting on the shelf. It is a shame that low power drain memory is so expensive; I just bought 1Mb of memory for my PC clone for \$128.

Coming next issue: learning to use the Portfolio.

Thoughts About Backups

Since I recently had a hard disk failure (on the above mentioned Taiwanese PC clone, not my Atari ST) in which the 80Mb hard disk *and* the high-speed tape backup failed simultaneously, I've been giving a great deal of serious thought to backup systems.

Owners of PCs and clones have the luxury of choosing from a wide selection of hardware backup systems as well as some truly excellent software packages (*Fastback Plus* from Fifth Generation Systems, for example) for backing up to floppy disks in an efficient way.

Unfortunately, the same is not true in the ST world. Of course, Supra has been selling its FD-10 removable floppy disk drive for some time now. Packing 10Mb on a very high density 5¼" floppy disk, it was a fast, reliable system. However, Konica, the manufacturer of the drive itself has discontinued it, so Supra is closing out their last few units.

With no similar drive available, Supra opted to build a system around the Syquest removable hard disk drive, which provides even faster access (28 ms) and higher capacity (44Mb) than the FD-10. Dubbed the Supra 44R, it

sells for \$1200 with each removable cartridge going for about \$139.

Bear in mind, if you intend to use this as a backup device, it should be installed *in addition* to your fixed hard disk drive. If the 44R is your *only* hard disk drive, even though you remove the cartridge for safekeeping, if it is exposed to a magnetic field or the data somehow gets corrupted, you are out of luck.

For a somewhat smaller outlay (\$900), you can step into the ICD FA*ST tape backup system. Although hardly the speed of the 44R, the ICD system (see review in January/February 1990 issue) races along at a speed of 6.5Mb per minute by utilizing software to read from disk, build tables, and write to tape practically simultaneously.

Although generally fast and reliable, we found out the hard way that the ICD unit doesn't work with older Atari SH204 hard drives. If you've never heard the sound of gnashing teeth, just call John Jainschigg and ask him what happened when he tried to back up his filled-to-the-gills Atari SH204 hard drive on the ICD tape system. On the other hand, we probably have some of the oldest SH204 drives in captivity; most customers with newer 204, 205, and Megaflex drives or non-Atari drives will find that the ICD backup tape unit works just fine.

Also in the Atari backup derby is Seymour/Radix (of Image Scanner fame). S/Y makes a \$250 unit called DVT (for data to video tape, perhaps?) that you connect between your VCR and computer. With a transfer rate of something under 1Mb per minute, the DVT is considerably slower than the ICD unit, but it is marginally faster than backing up to floppies, and you don't have to sit there feeding new disks to your computer during the whole process. To backup, you can simply start the process and head off to bed, letting the device do its thing for the next few hours.

The two main downsides to the DVT unit are (1) dragging your VCR to within shielded cable range of your computer and (2) restoring data. To restore, you have to pay close attention to what's going on during the entire process—about an hour per 20Mb—so you can instantly press the VCR pause key when the tape gets ahead of the hard disk.

Believe it or not, the tape can deliver data at a considerably higher speed than the hard disk can tuck it away in the right files—particularly as you near



Smart parallel interface lets the Portfolio transfer files to and from a desktop PC.

the capacity limit of the disk. (In fairness, I should mention that, if you don't press the pause in time, you have to rewind only to the beginning of the last block of data, not to the start of the tape.)

If you want to combine the purchase of a new state-of-the-art backup system with a trip to the (former) Berlin Wall, Marvin AG sells an erasable optical disk drive (made by Sony), the Cadis 650 with the stupendous capacity of 600Mb. Actually, with the very respectable access speed of 60 ms, the Cadis 650 might tempt you to do away with your hard drive altogether.

From Across the Pond

Reminders: (1) These are my factoids and viewlets, not those of Atari Corp. (2) Don't write or call us for information on foreign products. Most foreign manufacturers are not prepared to export products—particularly in low quantities—to the U.S., nor can they offer suitable documentation or support. When products become available here, we will let you know.

What ever happened to Atari's long-awaited hot new TT computer? Although shown at Fall Comdex and slated for U.S. sale in the first quarter of 1990, reports are that initial production is going to Germany. It has a 68030 running at 16 MHz, which, at the time of the original announcement, seemed like a blazing speed. Now, with the Macintosh IIc running at 25 MHz, and 33 MHz 386's becoming commonplace,

a speed of 16 MHz seems almost languid.

On the other hand, the TT boasts both a 256-byte instruction cache and a 256-byte data cache as well as six proprietary chips for enhanced graphics performance.

Standard in the TT are 2Mb of RAM with a 30Mb hard drive, VME expansion bus, network interfacing, two serial ports, and MIDI, stereo PCM sound, DMA, and SCSI ports. It has six screen modes including, 320×480 pixels with 256 colors, 640×480 with 16 colors, and 1280×960 pixels in monochrome. Price in Germany is the equivalent of just over \$3000.

The replacement for the ST, the STE ("E" for extended), has also been rolled out in Germany. (It too is scheduled for sale in the U.S. in the first quarter of 1990.) Fully software compatible with the ST, the STE has the blitter chip as standard, improved stereo sound, additional joystick ports, hardware scrolling, and a palette of 4096 colors—although the screen modes remain identical to those of the ST. The basic unit comes with 1Mb of RAM, but it can be easily upgraded to 4Mb using SIMM plug-in modules.

Speaking of a large palette of colors, Matrix, a maker of monitors in Germany, sells a color video controller, the C128, for the ST which, among other things, claims to allow you to produce 16 million colors at a resolution of 850×512 pixels.

Another Matrix board—this one for

the Mega—has its own 82786 mpu which gives you 16 colors at 1280×1024 pixel resolution or 256 colors at 800×600 pixels. For a mere(?) \$1000 too.

Another German company, Eickman Computers, has a monitor conversion unit, which sells for about \$370, that lets an ST drive a standard multisync monitor in all three of the ST screen resolutions. With this setup, you can do hi-res monochrome DTP and play lo-res color games all on the same 14" multi-sync monitor.

For a lot less money, Talon Technology (243 N. Hwy 101, Solana Beach, CA 92075) offers the OmniSwitch (\$89.95) which not only drives a multi-sync monitor but has output for composite video, audio, and two external floppy disk drives as well.

Side note: The diagonal picture measure of a 14" monitor is about 13.2" compared to about 10.5" on the Atari color monitor. This difference may not seem like much, but the total image area is about 40% larger.

Tuning Up Your Hard Disk

You may have noticed that your hard drive seems slower today than the day you bought it. "Impossible," you say, "it revolves at the same speed. How can it be slower?"

Actually, the drive itself runs at the

same speed, but its effective data transfer rate degrades over time. This is because when a disk is new, its entire storage capacity is unused and therefore contiguous. Your ST can write to and read from a contiguous area very quickly.

However, after storing and deleting files, the storage space becomes fragmented. The more files you add and delete, the more fragmented it becomes. Most operating systems—TOS/GEM included—compound this problem, because they always try to utilize the first pieces of unused (and fragmented) disk space before moving on to the contiguous area of free space.

After a year or so, it is not unusual for the file transfer rate of a hard disk to slow down significantly, as the computer spends more and more time moving the heads around the surface instead of reading and writing data.

To combat this problem, several programs have appeared which purport to defragment your hard disk and, therefore, bring it back up to its rated speed. They do this by taking your fragmented files and rewriting them in areas of the disk that are still contiguous, after which they delete the files in the fragmented area, making it into contiguous free space.

Unfortunately, our experience with these programs has not been especially

good. If your disk is jam full—say 19.5Mb on a 20Mb disk—the program has so little room in which to manipulate files, it just can't rearrange things to produce much improvement.

Furthermore, this limitation is even more pronounced when your hard disk is formatted into several logical disk partitions. For example, if your 20Mb drive is formatted into four 5Mb partitions, most of the defragmentation programs work within the confines of a single 5Mb partition and don't utilize free space in other partitions to optimize the defragmentation process.

Moreover, if they find an error—say two files apparently sharing the same disk space or a bad track—the ST programs, in contrast to those available for the PC, simply notify you of the error but don't give you any options for correcting it.

Until a second generation of defragmentation programs comes along, your best bet for tuning up your hard disk is to spill out all your programs onto floppy disks, delete all the files on your hard drive, and then copy them back from floppies. Be sure to turn off the computer before copying back the files; otherwise TOS will "remember" that a given file was in the directory and will write it back to the same (fragmented) space. Turning off the computer deletes this temporary memory of the file directory.

Hit the Accelerator

With the Mega, TT, STE, and all these faster, hotter computers coming out, what's a fellow to do with his four-year-old ST? Speed it up, of course. Both software and hardware approaches are available.

While the Atari hardware blitter chip is well entrenched in first place on my lifetime list of vaporware, it finally seems to be reasonably widely available at a very affordable price (\$40 to \$50). The main thing a blitter will do for you is dramatically speed up most graphics operations, especially text scrolling, redrawing windows, and animation of all kinds.

When the ST first came out, Atari promised that the next revision would have a blitter socket. Apparently this was never implemented, so the only way to add a blitter chip to an existing ST is by unsoldering a great many connections and wiring in your own socket—definitely not a project for the faint-hearted or the inexperienced. Another way to add a blitter is with an add-on board like the one made by CMI (read



Atari TT computer uses 68030 microprocessor to offer users true 32-bit processing.

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on).

While waiting for the hardware blitter to appear, several frustrated programmers wrote software blitters which are now available commercially and through public domain/shareware sources at very attractive prices.

How do these software blitters work? Essentially, they use more efficient machine code to replace portions of the normal GEM ROMs that were originally written in C. Most of the software blitters concentrate on speeding up the display of text on the screen and the redrawing of windows, two of the least efficient areas of GEM.

These programs work best with word processing and other text-based applications—but *not* with desktop publishing and other programs that use GDOS to draw text. This is because GDOS and most DTP programs have already replaced the text elements of the Atari ROMs with routines of their own.

Also, these software blitters will work only with “well behaved” applications programs. If a programmer has bypassed areas of the Atari ROMs, the software blitters may not work correctly in all cases. But for the most part they offer worthwhile improvement for very little cost.

For a considerably more dramatic improvement in performance—albeit at a price of about \$300—two hardware accelerators are available. Both use a 16 MHz 68000 to replace the Atari 8 Mhz chip, but that is about all they have in common. These products are the Turbo 16 from Fast Technologies (P.O. Box 578, Andover, MA 01810) and the CMI Processor Accelerator from Creative Microsystems (19552 S.W. 90th Court, Tualatin, OR 97062). **WARNING** at press time: CMI hasn't been answering their phone lately and our local repair shop here in New Jersey tells us they are out of business.

The Turbo 16 is a tiny board with a 16 MHz 68000 on the upper level and several fast static RAM chips underneath. It achieves a 50% to 80% speed improvement over the standard ST by using the RAM chips as cache memory, so the mpu doesn't have to access the much slower main system memory.

According to Jim Allen of Fast Technologies, 70% of what a program does is grab an instruction and execute it; the other 30% of the time it moves data around. The Turbo 16 concentrates on improving the 70% execution time by keeping the program instructions in high-speed cache memory. Thus, when



SpectraColor billboard with Atari's Lynx ad was seen by millions during Macy's Thanksgiving Day parade.



Sam Tramiel flips on the switch for the Times Square billboard to launch the Lynx portable color game system.

the cpu is executing program instructions, it runs at a full 16 MHz, but accessing main memory must be done at the rated ST speed of 8 MHz.

CMI takes a somewhat different approach with its larger 4"×6" daughter-board containing a 16 MHz 68000 along with sockets for upgraded 16 MHz TOS 1.4 ROM chips, blitter, and 68881 math coprocessor. By using applications that take advantage of the 68881 (not much is available yet), the CMI accelerator can produce a theoretical speed improvement of 600% or more.

Kelly McArthur of CMI explained that while the 16 MHz processor gives users a little added speed, it is fundamentally hindered by the 8 MHz ST system bus. However, adding fast ROMs, a math chip, and a blitter provides the kind of night-and-day improvement that people are looking for.

Which product would I recommend? First of all, I'm not convinced that most users are “compute bound.” I use my computer for word processing, spreadsheets, database work, and some graphics, and in general I spend far more time thinking about what I'm going to do or type next than I do waiting for the computer to do something.

Maybe in the CAD/CAM and DTP worlds, things are different. If so, perhaps the 50% plus improvement in compute speed offered by the Turbo 16 is worth \$300. If you happen to use a software package that takes good advan-

tage of the 68881 math coprocessor, then you may be a candidate for the theoretical 600% improvement of the CMI system, but bear in mind that in addition to the accelerator itself (\$300), you'll have to spring for a blitter (\$40-\$50), 68881 math coprocessor (\$50-\$90), and upgraded 16 MHz Atari ROMs (\$??—if you can find them).

Both Fast Technologies and CMI are looking into 68030 cpu replacement/improvement products. Unfortunately in designing the ST, Atari broke many of Motorola's "rules" for 68000 machine architecture, thereby making upgrading to an '020 or '030 quite difficult. Two of the biggest problems to overcome are Atari's use of A-line and F-line opcodes (for graphics and linking) which Motorola reserved for floating point and memory management operations.

As a result of this, designers of '030 upgrade products will have a tough time implementing virtual memory while maintaining compatibility with existing ST software. I have no doubt that they will eventually succeed, at which time

we should see some fascinating new products in the Atari world.

Lynx Portable Game System

If you recall, we told you about the Atari portable color game system in the September/October 1989 issue. Since then, it has been formally christened "Lynx" and placed on sale in the New York area.

In case you didn't read the review, the \$179, one-pound Lynx has a 3 1/2" color LCD screen with a resolution of 160x102 pixels, 16 colors, multiple sprites, a 4.0 MHz mpu, 64K of RAM, an eight-directional joystick, and two sets of two fire buttons (for right and left handed players).

Five game cartridges are available for Lynx: *California Games*, *Blue Lightning*, *The Gates of Zendocom*, *Electrocop*, and *Chip's Challenge*.

Ramping up for production took longer than expected, so only the New York market got Lynx systems in time for Christmas. Reportedly, 70,000 systems shipped, and many retailers, including FAO Schwartz and our local

Toys 'R' Us sold out in a few days. Other stores, like several local Kay Bee outlets, had ample stocks a week before Christmas, while Tops Appliance Center and Kiddie City never got any at all.

Obviously, success or failure can't be measured by three weeks of sales in one market, so we'll be watching the Lynx closely in 1990 to see if it can help Atari reclaim the lead in the games market from archrival Nintendo.

Also on the games front, we note with sadness the passing of *Atarian* magazine after just three issues. Obviously we are biased—we were producing the magazine, after all—but *Atarian* had aroused much enthusiasm among its readers and we think it could have contributed substantially to Atari's success in its ongoing battle with Big N.

If you have a subscription to *Atarian*, you are entitled to a refund on the issues you did not receive. If you have not yet received a letter from the company describing your options, call or write to Games Division Head Ron Stringari (1196 Borregas Ave., Sunnyvale, CA 94086, (408) 745-4968). ■

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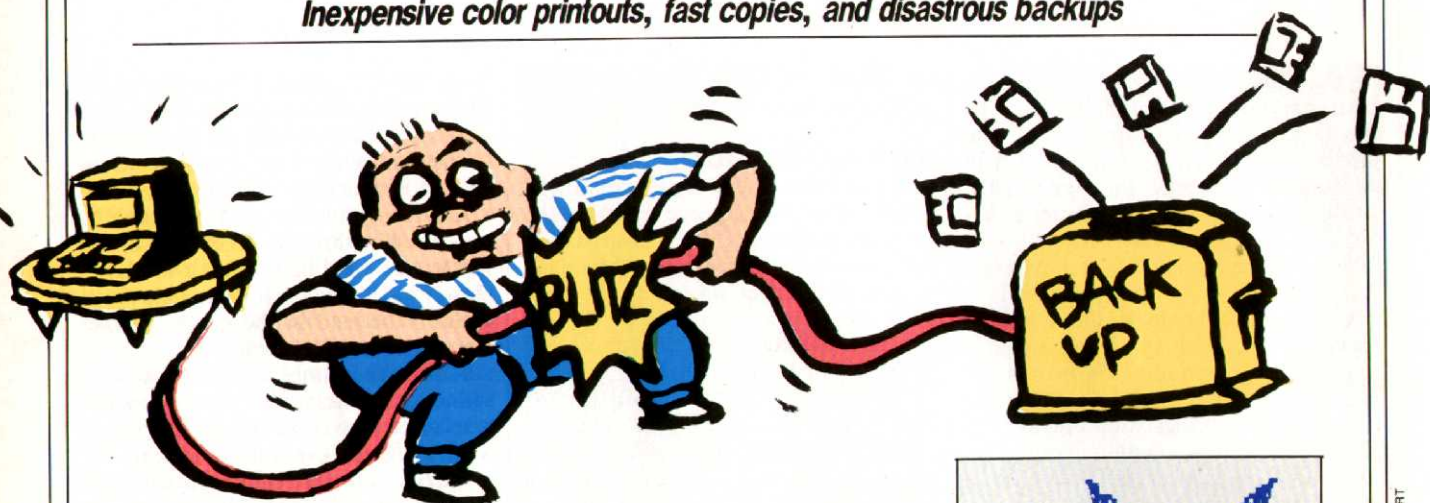
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User Friendly

By DAVID NOYES

As the stream of new 8-bit software for the Atari 800/XL/XE computers slows to a dribble, it is refreshing to find every so often that someone still cares. In this case, the someone is Innovative Concepts, who have recently introduced printer drivers to be used in conjunction with *Print Shop* and *Print Shop Companion*.

What's so unique about that? Glad you asked. The drivers are for the Epson LQ 500/800 and compatible 24-pin printers, the Okimate 10 (neither of which I have), and... surprise, surprise... the venerable Atari 1020 4-color plotter.

Yes, for the cost of the plotter (I've seen it advertised mail order for \$14.95, brand spankin' new) and the printer driver (\$14.95), you can now print thousands of *Print Shop* icons in any of four colors.

Simply load the driver, remove it from the drive, load either *Print Shop* or *Print Shop Companion*, and you're ready to go. The driver remains RAM resident; you do not have to modify your *Print Shop* software.

Of course, the 1020 driver does not allow you to print all four colors at once, but with a little creative flair and by switching pens, you can make multi-colored *Print Shop* icons.

The technique is essentially the same one you use when printing with different colored ribbons. You must first edit

the icon you want to print, deciding which portion you want to appear in which color. Then, after printing the first color, you must roll the paper back to the *exact* spot at which you started to print, change pens, and print the next part of the icon in the next color. If you fail to return the paper to the proper place, the *registration* will be off, and either lines won't meet or your whole image will appear fuzzy.

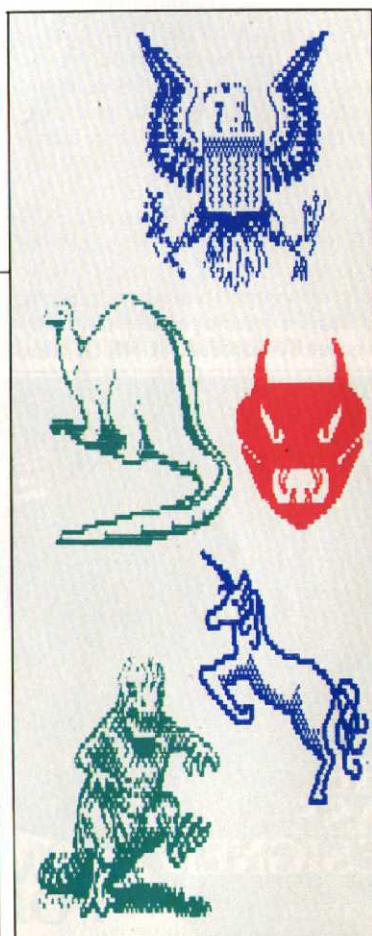
How does the finished product look? Well, to my untrained eye, a tad better than dot matrix output, but for the price, not to mention the color capability, an absolute *must* buy!

To order your copy of the software, write or call Innovative Concepts, 31172 Shawn Dr., Warren, MI 48092, (313) 293-0730, Compuserve: 76004,1764.

Blitz

Do you cringe when you have to write to a copy-protected disk? Do you worry that you'll somehow degauss some of your most important copy-protected software? Do you hate paying outrageous prices for backups of copy-protected software?

If you can answer yes to any of these questions, Blitz is for you! While checking out the New Files library of AtariPro on Compuserve about a month ago, I came across a file called BLITZ.ARC. The brief description of the file indicat-



Examples of *Print Shop* icons plotted in color.

ed that it included instructions and a schematic for fabricating a special drive cable for the ST, plus PD software for backing up "most" protected ST commercial software.

As I am fanatic about having all of my software backed up and don't want to pay the high price that the most reliable copy programs command, I decided to download the file. After unARcing

the file, I read through the text. It claimed that for approximately \$22 (for a drive cable and a 25-pin RS-232 plug) you could, by following the wiring schematic (which I printed with *Page-Stream*) fabricate the drive cable. Two drives are required, and the second one must be connected not only to the ST Drive Out but to the 25-pin Printer Out.

This new cable, in conjunction with the Blitz PD copy program, which was also in the file, allows you to copy most protected ST software. The documentation went on to boast that it would, in fact, copy even programs that defied other software or cartridge-based backup utilities.

I was intrigued. Since it was a Sunday, and my local Atari dealer was closed, I took my one and only cable—the one that connected my second (external) drive to the ST—and chopped it in half, I then made a quick trip to the local Radio Shack and picked up the appropriate connector.

I rushed back home, dug out my soldering iron, solder, tape, and some scrap wire, and began work. As there is (according to the instructions) no specific scheme to the color coding on Atari drive cables, I used my ohmmeter to be sure that I was connecting to the proper pins. It took me (a klutz at electronics) about an hour to make the cable.

The moment of truth was at hand. I had either destroyed a perfectly good drive cable, or created an indispensable utility. . . Then a third possibility flitted through my brain: What if it wasn't a utility at all, but a cleverly designed hardware/software version of a virus intended to destroy STs and their hard disks? I quickly suppressed the thought, loaded Blitz, and began to make copies.

It worked. In fact, it exceeded my expectations, allowing me to back up every single piece of copy-protected commercial ST software I own. Some required more than one attempt; the docs state that things get out of synch sometimes. With a bit of experimentation, however, I found a way to improve the synchronization. If the copy didn't work, I tried again, setting Blitz to copy both sides of the disk—even if the original was only single-sided. This seemed to improve the yield.

Subsequent to my experimentation with Blitz, Blitz2, a turbo version, has appeared on CompuServe in the same file area. I downloaded it and found that Blitz, which was quite fast to begin with, because it reads and writes simultaneously, had been made even faster.

In turbo mode, you can copy a single-sided disk in 25 seconds; a double-sided disk in 50. Some formatters take that long, or longer! I will not dwell on the ethics of disk copying (you already know what you should and should not do), other than to say that if Blitz is used for its intended purpose—to make backup copies (for the owner) of commercial software, or as a sector copier for your PD and Shareware disks—it is a tremendous utility.

The author/designer of Blitz is unknown, the files were uploaded to CompuServe by the folks at Atari Interface

Hard Drive Turbo Kit and, following the instructions precisely (something that I don't always do), backed up the four partitions on my hard disk with the TAR Backup option. I then put the disks in a safe place, hoping never to have to use them.

Unfortunately, it wasn't long before I needed them. I accidentally (obviously no one would ever do such a thing on purpose) wrote a floppy disk "image" (a different backup option) to my boot partition, instead of vice versa, and was unable to access my hard disk.

Did I panic? No way . . . I had my

What if it wasn't a utility at all, but a cleverly designed hardware/software version of a virus intended to destroy STs and their hard disks?

magazine. I have heard rumors, but try as I might, I have been unable to verify them, and so will not pass along my suspicions.

By the way, if you shop carefully, the cable can cost you even less than the estimated \$22. I priced out a cable and connector for \$18. A hint: the cable Atari provides is barely long enough; try to get a longer, third party cable. Also, I have seen the Blitz cable and software being sold commercially for as much as \$49—a bargain considering what Blitz can do—but believe me, if I can make it, you can make it. Give it a try. You'll surprise yourself.

Two final caveats: 1) Although you modify only a cable, you do so at your own risk. 2) The Blitz cable can only be used for Blitzing. If you use your only drive cable as I did, you must buy an unmodified cable to use for normal disk operations.

Back Up and Start Over

Do you have a hard disk for your ST? Are you concerned about having so much valuable data stored on pieces of rapidly spinning magnetic media. Do you back up your hard disk? Are you thinking about backing it up? If so, read on.

A few months ago I purchased an Atari Megafile 30, and eventually, as it began to fill up, I decided that a backup was in order. I bought MichTron's

TAR backup copies. So, I formatted and re-partitioned the hard disk. I then booted the Toolkit, the portion of the *Hard Drive Turbo Kit* used for backup and recovery, and chose the Recover TAR option. It didn't work; I got a "files out of synch" error message.

I called MichTron and recounted my tale of woe. In response, the person I spoke with asked me if I used an alternative file selector. I answered that, indeed, I use the Little Green File Selector, an excellent PD accessory.

He replied, "Oh, that's why . . . there is a problem when using the Toolkit backup options with other than the standard GEM file selector resident."

I reminded him that the documentation was mute on any such incompatibility problem and was told, that the software currently shipping has documentation that does mention the problem. That, of course, is great for anybody who purchases a recently shipped Toolkit, but no help to me or anyone else who buys older stock at his local Atari retailer.

I was, and am, out about 20 meg of data. The moral? Don't depend on backups you haven't tested. Consider trying new backup software on a partition of your hard disk before you really need it. Don't wait for an emergency to discover that an undocumented incompatibility or other minor defect has corrupted your data. ■



Photography by Jeff MacWright

The Atari Home Office

*Your computer can help you create the kind of job
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The two Atari ST computers—a 520 and a 1040—in the office in the basement of my home allow me to work—whenever I want to—and earn enough money to have most of the things that I need and want. I use them to write magazine articles, papers to use in court proceedings, building inspection engineering reports, and hardware and software user manuals.

I am only one of many people who use their computers at home to earn substantial amounts of money. If you, too, yearn for the comfort and convenience of an at-home, computer-based business, read on and learn some of the tricks of this growing trade.

Convenience or Necessity

Two of my friends work from home because it is convenient for them. The husband of this couple is a lawyer; his wife owns a collection agency. They converted their garage into an office to house the collection agency, and the family room into a law office. They have been using this convenient office space since 1978.

My friends use their personal computers and a database program to create an information file about each new debtor when the account is turned over to them for collection. That information is merged with boilerplate text which is retrieved to automatically print personalized collection letters. The same software records payments as they are received and prepares monthly reports and checks to send to their clients.

When people refuse to pay their debts or break their promise to pay, the same database information is merged with the boilerplate legal documents text, and one of the personal computers is used to type the summons, complaint, and instructions for the private process

server or the sheriff. About 95% of the lawsuits are not contested, and all of the papers to enter a default judgment are built from the same database of information.

When a suit is contested, the attorney uses his computer to type non-standard motion papers and to answer any motions made by the defendant's lawyer. After a judgment is entered, the computer and database are used to institute and keep track of post-trial proceedings.

Occasionally, foreclosure proceedings must be initiated to sell the debtor's home or business at public auction. The proceeds of that sale are used to satisfy the judgment. When foreclosure proceedings are instituted, the only new things that must be added to the database information are the legal description of the property and the date the judgment was entered.

This couple earns several hundred dollars per hour, working just a few hours per day at home, with a staff of two rather than the 15 people who would be required if the work were not so automated.

Another successful home office business venture was started by a woman who is afflicted with multiple sclerosis. She learned how to use a word processing program as part of the occupational therapy offered by a hospital near her home. Because she had worked as a medical secretary before she became disabled, the hospital then hired her to type its surgical reports.

The hospital installed a personal computer and a printer in the woman's home, and every morning a courier delivered to her cassette tapes on which doctors had dictated their surgical reports. She transcribed the tapes, printed out the reports, and gave them to the

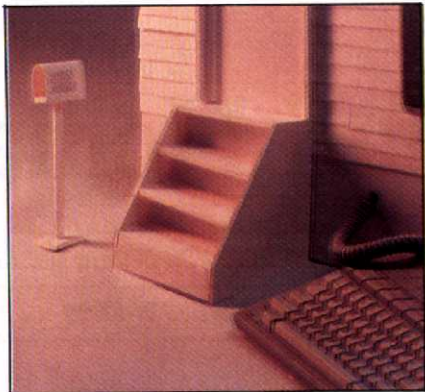
By EDMUND D. MANN

courier to return to the hospital the next morning.

Recently, the hospital installed a modem in her home, so the finished documents are now sent via modem, over the phone lines, to be printed on a laser printer at the hospital. The tapes are sent to her by Express Mail every day.

Thus, this friend is able to earn the same salary she would earn if she were not disabled, and she never has to worry about transportation or bad weather.

In the same manner, many law firms have found a solution to their chronic need to replenish secretarial staff.



It is great to dress casually, not drive to an office, dive into my back yard swimming pool when it's hot, and fall out of bed to get to work.

When a woman leaves to raise a family, she is offered the opportunity to continue to work—at home—and receive her salary even after the baby is born.

The law firm installs a modem-equipped personal computer, a transcribing machine, and an answering machine (sometimes a Fax machine, too) in the secretary's home or apartment. When the dictation is done, the tape can be either sent over the phone line and recorded at the secretary's home or Express Mailed to her home.

When the document has been typed and proofread, it is sent via modem back to the law office, where it is printed. If revisions must be made, they can be done by another secretary at the office or by the originating secretary in her home.

The mother who works at home is usually thrilled with the arrangement, because she can work for a flat per-page rate during the time her children are sleeping, playing, or at school. She also gets to keep more of her paycheck, because she no longer incurs the expenses of commuting, eating out, and maintaining an office wardrobe.

Engineering, Atari-Style

In addition to using my Atari ST computers to prepare court papers and magazine articles, I use my STs to help people who contemplate buying homes, co-op apartments, condominiums, and

commercial buildings. Clients meet me at my home; typists who work for me perform their work in a nearby office building, because town zoning laws prohibit me from operating a commercial office in my home.

To help prospective buyers learn more about the properties they plan to buy, their attorneys refer them to my company, which inspects each building carefully and publishes an engineering-type report, complete with termite certification, which satisfies even the requirements of FHA mortgages.

We also do work for lawyers who require building inspections in the preparation of cases for and against insurance companies, builders, and contractors. Licensed professional engineers and AIA registered architects either perform or supervise the inspections, so they can testify as expert witnesses if necessary.

Being trained as both an engineer and a lawyer, I wrote boilerplate documentation and a database of questions to be answered in the course of a building inspection. I originally wrote the text for use on CPT word processing computers, but in December 1985 I began converting the files for use with my Atari 520 ST. Now, I have several thousand paragraphs of boilerplate text on disks that can be used with either the 520 or my newer 1040s.

When a client phones to request a

pre-purchase building inspection and report, I ask questions, record the answers, and set up a tentative appointment for one of my inspectors to visit the building and meet with the seller; I encourage the buyer to join them.

I then use the 1040 in my home office to pull from the database a series of questions—based on construction methods and materials and the type and age of the building—to ask the seller about the building and to guide the inspector in looking for defects that might exist in anything from the foundation to the chimney.

Those questions are indexed to the stored boilerplate text (usually by checking a box or filling in a blank line). When the interrogatories are answered, those pages and a dictated tape are brought to my office where typists assemble the boilerplate paragraphs, fill in the blanks with data found in the completed questionnaire, transcribe the dictated tape, and incorporate all the information in a report format.

The lawyer and client receive a 25- to 75-page, very detailed, narrative-style engineering-type report setting forth every defect that was observed. The report also advises the client about aspects of the building and its equipment that may be approaching or past their normal life expectancy and provides an estimate of repair or replacement cost in today's dollars. The client can then use the information contained in the report to help him decide whether or not to buy the property or to negotiate the price.

The software my staff and I use to prepare these reports is *1st Word Plus v. 3.14*. For the books, manuals, and magazine articles I write, I use *Word-Perfect*.

Working at Home: Pros and Cons

Working from home has both advantages and disadvantages. On the positive side, it is great to dress casually, not drive to an office, dive into my back yard swimming pool when it's hot, and fall out of bed to get to work.

My neck and back were injured in an automobile accident, and when my back begins to bother me, I often lie down on a heating pad—something I would feel rather strange doing in a regular office environment.

If you are thinking of starting a home office, however, you should also know that for most people working at home is much more than a 9:00 to 5:00 job. For most of us it is a 7:00, 8:00, 9:00, or 10:00 a.m. til the task is done job—

whether that occurs at 11:00 a.m. or 11:00 p.m.

That is, for me, the biggest disadvantage to working from home; it is too easy to become so absorbed in a project that I occasionally toil until I'm so exhausted that I must re-type the entire document the next day.

Office Services

In the New York metropolitan area typists and secretaries with word processing knowledge and skills command salaries ranging from \$7.50 per hour (\$300 per week) to more than \$600 per week, depending on their individual skills and experience and how close to the City they live. Some legal and medical secretaries earn more than \$35,000 per year.

However, because traditionally most typists and secretaries are women, many of whom drop out of the work force when they marry and have children, ads for jobs requiring typing or word processing skills are always plentiful.

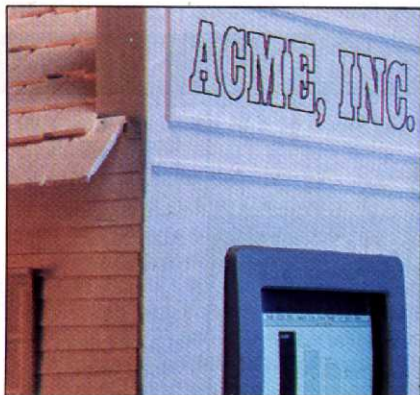
If you have secretarial or bookkeeping skills and want to use your Atari computer to help you earn money, look first at your own situation. If you are now bound to your home because your children are young or otherwise need your care, or you are physically disabled, or you are retired and need or want more money than your pension provides, or you just want to stop commuting to and from an office, analyze your skills and the knowledge you acquired before you stopped working.

That done, do what temporary employment agencies do: phone individual practitioners and firms in your area that do work similar to what you have done in the past. Ask to speak to the person in charge of hiring, and ask him or her if the company is in need of any part-time help.

Then, when you get to the interview, suggest to the interviewer that modern technology precludes the need to provide workspace for all employees. Offer to work as an independent contractor; say that, rather than work in their office and be paid an hourly wage plus benefits, you prefer to work on a piece work basis.

As a guide to help you know how much to charge, here on Long Island, NY, many people get \$3 per page to do word processing, plus an additional \$1 per page for revisions that require a page to be retyped.

Often small neighborhood business



the amount you have earned during the year.

Most astute businesspeople try to get what they need for the lowest price, so don't be surprised if you are offered less money than you seek. Remember, however, that the company must pay a temporary agency at least \$20 per hour—even though that agency may pay you only \$7.50 per hour—and that the aforementioned benefits add 30 to 40% to the cost of most people's salaries.

Communication Services

Can you write succinctly and accu-

Do what temporary employment agencies do: phone individual practitioners and firms in your area that do work similar to what you have done in the past.

offices and retail merchants employ part-time help, because there is not enough work to justify the expense of an additional full-time employee. Every business needs someone to type correspondence and reports or perform data entry tasks in conjunction with a manual bookkeeping system or a computerized database or spreadsheet program. Architects, doctors, dentists, lawyers, and other professional people can often make good use of part-time help, too.

Tell the people with whom you speak that as an independent contractor, you will deliver quality work when it is needed. Point out that the business will save money on expensive office space, equipment, and benefits and that it will be paying only for work actually performed—no sick days, holidays, coffee breaks, or other downtime.

For these reasons and because you will have to pay your own taxes and provide your own insurance, ask for at least 50% more than the going full-time rate for the type of work you propose to do. That should compensate you adequately for the wear and tear on your computer and peripherals and the supplies you must buy to do the job—and enable you to pay your taxes and insurance bills.

Yes, you must pay taxes. Any company for which you work as an independent contractor must send IRS form 1099 to the IRS and to you, reporting

rately to report what you have seen? Then take a camera, notebook, and tape recorder with you wherever you go. If you see a serious accident or other newsworthy event, take photographs, ask questions of witnesses, and be certain to get the correct spelling of their names. As quickly as you can, write a report.

If the event is newsworthy and you have done a good job writing it up, you might be able to sell your story or photos to a newspaper. And if the editors like your work, they might offer you a part-time job as a "stringer," a freelance reporter who covers municipal—town council, zoning board, school board, etc.—meetings.

Do you have artistic talent? Did you study advertising, public relations, or communications in school? Have you a personal computer with lots of RAM and either a laser or a 24-pin dot matrix printer? Have you mastered your desktop publishing software? If so, a world of lucrative, small-scale custom publishing awaits your talents.

An approach some people use in selling this type of service is to begin your phone conversation with the key person in the organization for which you want to work by asking, "Mr. _____, if I could help you increase your sales at least 5% would you be willing to meet with me for a half hour?"

When the prospective client says, "Yes," tell him your name, that you do

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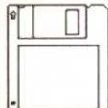
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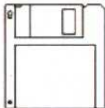
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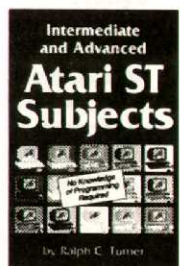
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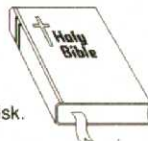


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freelance public relations work, and that you promise that, if he will grant an interview, you will give him some fresh marketing ideas. If you have artistic skills but are not a professional writer, sell only your ability to create great advertising layouts and artwork to be used in the ads his people write. If you also have the ability to write advertising copy, sell the complete service.

After you sell yourself enough to get the appointment, but before you go to the interview, learn as much as you can about the product or service that person or company sells. And when you get to the interview, remember that no one has a monopoly on ideas. Before you give away any ideas you might have developed, ask what he does, what he did that did not work, and what now works best for him.

If he has already tried what you propose and failed, try to learn why it failed. Better timing, coupled with your expert layout, typography, and copy might make the difference on the second go round. For example, I scheduled the grand opening of my enlarged store for Easter Sunday, April 7, 1970. Kiddy rides were set up, full-page double-truck newspaper ads were published, and we awoke that morning to sub-freezing temperatures and an unexpected 7" of snow on the ground. Another time, the exact same preparation would probably have yielded much higher sales.

Have you worked in a personnel or management office? Do you know what a good job résumé should contain? I know a husband and wife team that earns a very good income writing résumés for graduates of the several colleges and universities here on Long Island.

Using two personal computers and two photocopiers in their home, they prepare professional-looking résumés. They charge \$35 per page to write and provide job seekers with 50 copies of the document, plus \$3 per personalized cover letter.

Selling Your Services

I learned a long time ago that it is impossible to sell anything to anyone unless the prospective buyer both wants and needs the product or service. I also learned that it is easy to sell anything if you use your energy to help your prospect buy rather than to sell.

If you are a shy person and worry that you will have difficulty selling yourself or your services, I suggest one of the

Dale Carnegie Institute programs. The teachers of your course may not be able to get the butterflies out of your stomach, but I can almost guarantee that they will teach you how to make them fly in formation.

After you have had about six months of experience selling (or trying to sell) your services, you may want to try one of the Dale Carnegie sales courses. Learning and applying the techniques they teach can be very helpful to both budding and experienced salespeople.

When you go for that interview, be prepared! Put samples of your work into

produce the kind of professional output your clients are looking for? Most important, do you know how to use your computer and software properly?

If you do not now have the skills you need, how close to a high school or junior college do you live? If you are really serious about starting your own business, phone the nearest one and ask for a brochure on their adult education program.

A few words of caution: Before you invest money in a new computer, new software, a memory upgrade, or a better printer with the goal of joining the cot-

Often small neighborhood business offices and retail merchants employ part-time help, because there is not enough work to justify the expense of an additional full-time employee.

crisp new file folders. If you carry an attaché case, make sure it is clean and in good condition. If you need a haircut, get one a day or two before the interview. Eat a light meal before you go to that interview so your stomach does not growl while you are being interviewed.

There usually is no need to wear your most expensive outfit, but be certain your clothing is clean and neatly pressed and that your shoes are shined.

If you are a man, choose a conservative suit. If you are a woman, wear a dress or business suit rather than slacks or a skirt and blouse. These suggestions may sound silly and superficial, but the fact is, the more business-like you look, the more seriously the interviewer will take you and your proposal.

Other Considerations

If you are reading this magazine, you probably already own an Atari computer. Does it have enough RAM to process large spreadsheets, lengthy documents, and massive address lists so you can print labels, envelopes, or personalized merge mailings for your client? Do you know how to type, or do you hunt and peck? Do you have a database program to do selective sorts? Do you have a full-featured word processing package? If so, does it include a spelling checker and the ability to do mail merge? Do you own a letter quality 24-pin dot matrix, daisywheel, or laser printer that will

tage industry, speak with a lawyer, an accountant, and your insurance agent.

Your residence might be located in a zone that prohibits any kind of office or business use. Your lawyer can check into this for you.

If you use your home as an office where people will come to visit you, you will need a rider on your homeowner's policy to protect you if someone is hurt while in your home or on your property for business reasons; your residential homeowner's insurance will not protect you unless you pay an additional premium for business-use protection.

If you can buy errors and omissions insurance, do so. That way if you lose your client's records and are sued, your legal expenses and any judgment that might be rendered against you will be paid by the insurance carrier.

If you rent your home, your lease might prohibit you from using it as an office. If it does not, you should protect yourself against liability by purchasing a tenant's liability policy with a business rider.

Whether you are able-bodied or frail, young or old, if you are ambitious, have good software, master its use, and use your personal computer and peripherals properly, you can join the more than 25 million people in the U.S. who, the Department of Labor estimates, work from their homes—and probably have fun doing it. ■

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Project management is a time-consuming manual chore. Some project managers try to keep track of every element of the job in their heads, but most people use pencil and paper, a blackboard, colored flags on a magnetic board, or some kind of marker board to plan and keep track of the activities that surround any kind of project—be it a new product introduction, a building renovation, or a satellite launch.

And the greater the number of tasks that must be accomplished before the project can be considered complete, the more difficult it becomes to make adjustments for the vagaries of weather, illness of personnel, failure of parts to arrive on schedule, and other disasters major and minor.

In the PC-/MS-DOS world, production and project managers can choose from several packages, including *Timeline*, *Super Project*, and *Project Scheduler 4*, all of which allow them to enter data that can be used to create Gantt charts and print out summary reports as needed. Until recently, however, no such useful product was available for the Atari ST.

But now managers who have availed themselves of *Power Without the Price* can call upon *Critical Path* by David Schwener, an industrial engineer whose earlier work, *Critical Path Project Manager*, is already familiar to users of Atari XL and XE computers.

The Object of the Game

The object of project management is to break a large project into small tasks.

The project schedule is a chart that lists those smaller tasks and shows the relationships between and among them.

As each task is entered, it is marked as *critical* or *non-critical*. Critical tasks are those which, if not completed on time, will cause delay of the entire project. Some delay can be tolerated in non-critical tasks, but the duration of these tasks must also be calculated. The time required to accomplish non-critical tasks is also called *slack time*.

In a complex project composed of hundreds of tasks, it is all but impossible to remember which ones must be completed when without the help of project management software. Another benefit of computer-assisted project management is that it forces the manager to think through every step of the project before starting. Careful planning leads to more realistic time estimates and more successful and on-time projects.

Critical Path can help Atari ST owners realize the benefits and economies of professional project management in their businesses and home offices.

Getting Started

The first thing you must do when starting a critical path chart is describe the project. You must name the project and enter the start and/or completion dates. If you want, you can also record the name of the project manager or the department responsible for it. See Figure 1.

The starting and completion dates are called *milestones*, and they can be changed at any time. Depending on the

Critical Path

System: Atari ST

Required equipment:
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price

Price: \$59.95

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By EDMUND D. MANN

PRODUCT REVIEW

PROJECT INFORMATION

Project Name : New Product Introduction_

Project Manager: Marketing_____

Start Date : 10/01/89_

Figure 1. The Project Information dialog box.

ID Number 60_

Start: 0_ Duration: 2_

Task Name : Proposal Drawings_____

Responsibility: Engineering_____

Predecessors : 50_____

Figure 2. The Task Description dialog box.

length and complexity of the project, *Critical Path* allows you to display elapsed time in days, weeks, or months. If the day scale is chosen, particular days of the week can be chosen. Thus, if *Critical Path* is used to plan a business project, the weekdays can be chosen; if the project can only be done when the office is closed on weekends, Saturdays and Sundays can be selected.

That done, you can proceed to enter the tasks that will make up the project. Task-related information includes the name of the task, the person or department responsible for its completion, the estimated time required to complete it (in days, weeks, or months), and the tasks that must be performed before this task can be started. See Figure 2.

For example, in building a house, the framing materials must be delivered to the job site before the carpenters can begin their work, and the roof sheathing must be in place before the roofers can begin to install the roof coverings.

You can add, delete, or edit tasks as you go along simply by choosing the desired function from the Tasks menu. Each task has a number that serves as an abbreviated way to refer to it and the information associated with it. The manual suggests numbering tasks by tens, as in a computer program, so new tasks can be inserted without having to renumber.

Project managers who prefer to work backward from the promised completion date need only enter the task Completion Date with the identification number 999, identify that as a milestone, and use the last task or tasks on the "working forward" schedule as the predecessor. *Critical Path* will then automatically adjust the other dates by lengthening or shortening the slack times.

The Gantt Chart

Critical Path displays your project in the form of a *Gantt Chart* as shown in

Figure 3. A Gantt chart is a horizontal bar graph which displays one task per row. Each row lists the task name and number at the left-hand margin followed by the name of the responsible person or department and a red or green horizontal bar if you have a color monitor or a shaded bar if you use a monochrome monitor.

The length of the bar represents the duration of the task; the color or shading tells whether the task is critical, non-critical, or slack time; and an inverted pyramid marks each milestone. The horizontal bars are superimposed on a calendar grid which extends for the duration of the project.

If, for example, a year-long project is to start on March 4, 1990, and be finished by March 1, 1991, that entire year is displayed on the grid in day, week, or month increments. A one-month-long task that must be finished by the first week in September is represented by a bar that starts the first week in July and

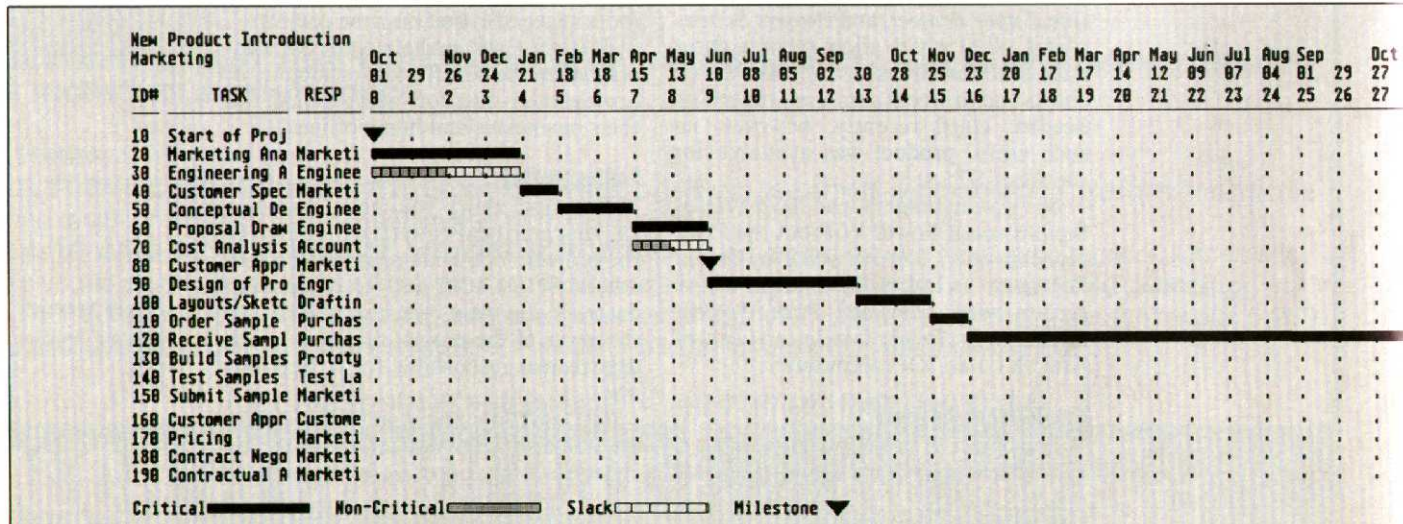


Figure 3. The full Gantt chart.

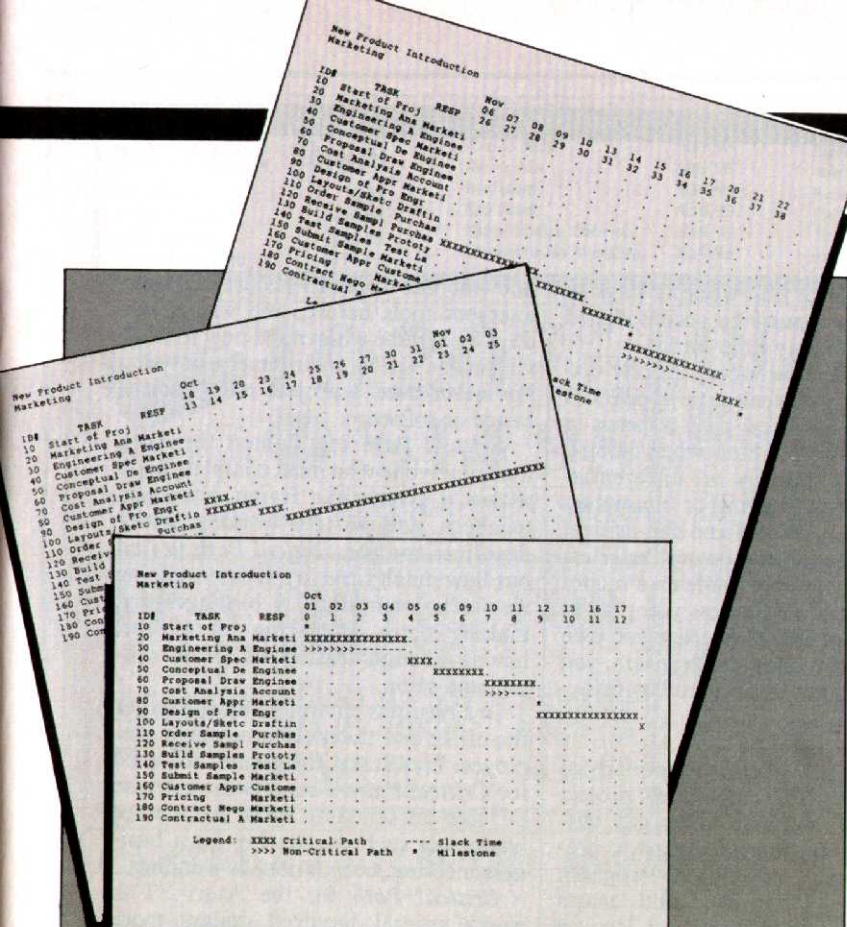


Figure 5. The Gantt chart printed out.

ID#	DESCRIPTION	RESPONSIBILITY	PREDECESSORS	START	DUR	SLACK
010	Start of Project			ASAP	0	0
020	Marketing Analysis	Marketing	10	ASAP	4	0
030	Engineering Analysis	Engineering		ASAP	2	2
040	Customer Specific	Marketing	20/30	ASAP	1	0
050	Conceptual Design	Engineering	40	ASAP	2	0
060	Proposal Drawings	Engineering	50	ASAP	2	0
070	Cost Analysis	Accounting	50	ASAP	1	1
080	Customer Approval	Marketing	60/70	ASAP	0	0
090	Design of Product	Engr	80	ASAP	4	0
100	Layouts/Sketches	Drafting	90	ASAP	2	0
110	Order Sample Mate	Purchasing	100	ASAP	1	0
120	Receive Sample Ma	Purchasing	110	ASAP	14	0
130	Build Samples	Prototype Shop	120	ASAP	2	0
140	Test Samples	Test Lab	130	ASAP	2	0
150	Submit Samples	Marketing	140	ASAP	0	0
160	Customer Approval	Customer	150	ASAP	4	0
170	Pricing	Marketing	150	ASAP	2	2
180	Contract Negotiat	Marketing	160/170	ASAP	1	0
190	Contractual Agree	Marketing	180	ASAP	0	0

Figure 6. The Summary report printed out.

extends through August. Figure 3 is a screen dump of a sample project included on the disk. The top two lines display the dates, and the second line the number of days into the project.

If the chart is too large to fit on one screen, you can move your window over the chart by using the Screen menu (Figure 4) to specify how many tasks or time units you want to move up, down, left, or right.

Hard Copy

Critical Path creates two kinds of reports. Either or both can be printed using either standard (10 pitch) or condensed type. The first is the Gantt Chart itself, which prints out the entire chart on consecutive 8½"×11" pages as shown in Figure 5.

The second report is the Summary Report which lists each task, its resource responsibility, predecessors, the entered start date, and the critical status of the task. See Figure 6.

Documentation

Critical Path comes with a succinct, well-written, printed, manual that could serve as a model for other software publishers. The first chapter contains just five pages and explains how to make a backup copy of the unprotected program disk, how to load the software, and what can be done with the package.

The second chapter is a 21-page tutorial that takes you by the hand and explains exactly how to create, save, add, delete, and modify tasks; change dates; set printer codes; and print the two kinds of reports.

The third chapter is a very thorough

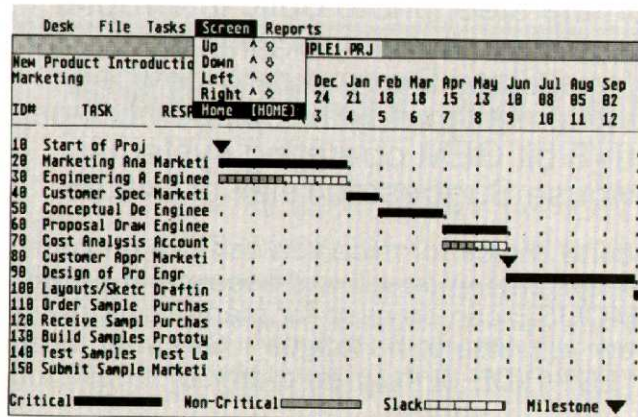
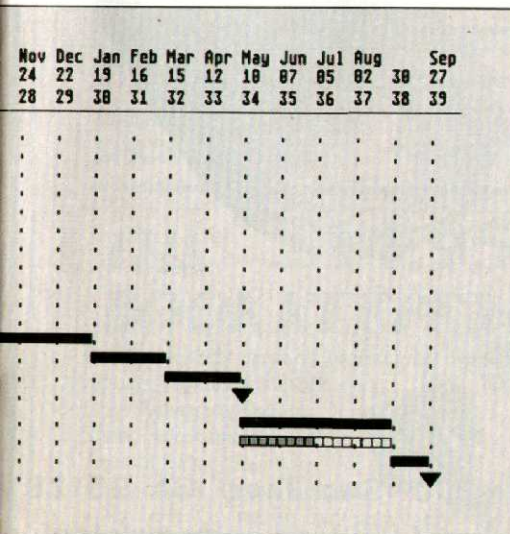


Figure 4. The Screen menu allows the user to move the display window over the chart in task or time unit increments.

PRODUCT REVIEW

63-page explanation of the commands, which can be initiated from the keyboard or from the pulldown menus. The index makes it easy to find specific information.

Anyone who is familiar with the Atari ST and has prepared any kind of production schedule by any other means should be fully productive in about eight hours, which includes the time to first read the manual from cover to cover.

Schwane Software does offer technical support—on your nickel—but the program is so easy to use that few people will have questions.

Cons

I noted only two weaknesses in the pre-production software sent to *Atari Explorer* for evaluation. (The enhancements were in Beta testing when this evaluation was written and will be included with an update.) The first minor inconvenience is that no provision is made for holidays. For that reason, when a holiday occurs while the project is underway, you must add the appro-

priate number of non-working days to every task that must be accomplished during that holiday time frame.

The second pertains only to color systems. While a critical path appears in red and a non-critical path appears in green on a color monitor, when doing a screen dump there is no differentiation—either via shading or characters used—between critical and non-critical paths. The screen dumps used to illustrate this article were made on a monochrome system, and unless you plan to illustrate an article or prepare your own instructions for using the program, you probably will not be bothered by this.

Pros

Critical Path is better than many of the expensive PC-/MS-DOS project management software packages currently available. It can be used to prepare precisely calculated Program Evaluation and Review Gantt charts and Program Evaluation and Review Technique (PERT) reports. It is easy to learn and easy to use, and can probably be learned in less than one day by any-

one who has worked with project management tools before, and within two days by anyone who knows how to work within the GEM environment but who has never used a project management board or software.

Critical Path can lighten the work load of anyone who must complete a job within a given time frame. Students, teachers, and writers working under deadlines can use *Critical Path* to find out how much time to allocate to doing research, compiling a bibliography, making notes, preparing an outline, having a rough draft typed, proofreading, and so on.

In a business environment, the larger the office and the more projects its employees undertake, the greater the need for *Critical Path*. The software can also be used to schedule tasks for service businesses such as catering for a business meeting, convention, or wedding.

Critical Path for the Atari ST is worth several hundred dollars more than it costs. If you have any need whatsoever for the kind of information it provides, don't hesitate to buy it. ■

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STalk The Market

Quidnunc Software offers a useful program for tracking the performance of stocks

The image shows a large, detailed stock market ticker board. The board is filled with columns of numbers and stock symbols, representing a typical financial data display. Overlaid on the left side of the board is a silhouette of a man in a suit, wearing a hat and holding a magnifying glass, looking intently at the data. The background of the board is a light color, and the text is in a dark, monospaced font. The overall appearance is that of a classic financial data visualization from the late 1980s or early 1990s.

By MIKE HARRINGTON

In the long run, investing in the stock market is one of the few reliable ways to keep one step ahead of inflation. Yet, exactly when you invest can make an enormous difference in the outcome—even setting aside such anomalies as the October 1987 crash.

The easy rule of thumb is “buy low, sell high,” but identifying the right time to buy and sell requires analysis, insight, and luck. *STalk the Market* will help you with the analysis and perhaps give you some insight. Luck you must make for yourself.

The term *transaction timing* generally refers to any technique used to determine when stock or other financial securities should be bought and sold to maximize financial gain. These timing techniques are based on the premise that, over time, stock prices fluctuate in a recurring and predictable pattern.

STalk The Market provides an integrated package of customized graphics, databases, and spreadsheets tailored to utilize the standard tools used in financial transaction timing (ft). Key functions included in the program provide you with the ability to set, predict, and simulate Valid Trend Lines (VTL), Trailing Loss Levels (TLL), Trading Cycles, Moving Averages, Cyclic Components, Residuals from Moving Averages, and Fourier analyses.

Organizing Your Transactions

STalk the Market uses several ledgers to organize your stock transactions. Each transaction entry in a ledger includes the date of the transaction, the type of transaction (buy, sell, deposit, or withdrawal), the share price for the transaction, the number of shares traded, the commission charged, and the cash flow of the transaction.

The program provides three ledgers for use with each stock file. The *permanent* ledger is where the data for real transactions is recorded. This is the only ledger that is actually saved with a stock file; thus it is the only ledger that retains data between loadings. By default, the data in the permanent ledger is protected from change, so it is difficult to confuse ledgers and accidentally overwrite valuable data.

In contrast, the *quotation* ledger and the *simulation* ledger are volatile files in which data for historical charting and simulation is stored when you manipulate multiple hypothetical buy and sell transactions, VTLs, TLLs, or any of the other transaction timing methods. They provide temporary storage, allowing

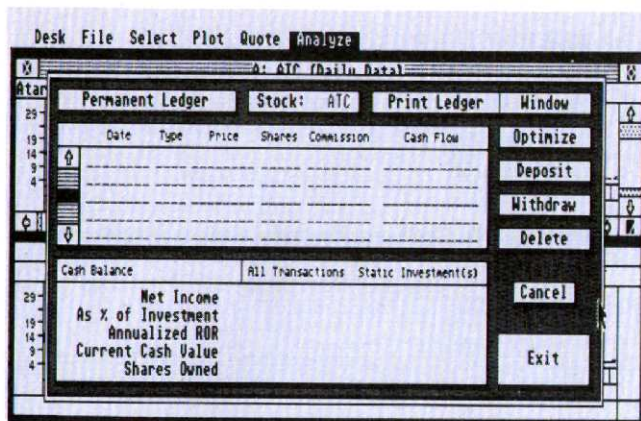


Figure 1. Editing the permanent ledger from within the Analyze Menu.

you to study the results of your stock trading experiments without damaging your permanent ledger.

STalk the Market is not an integrated stock portfolio management package. Although the software provides extensive capabilities for displaying, manipulating, modifying, and printing the ledgers, each stock is recorded, charted, and analyzed as an independent file. The program does not provide any capability for mixing transactions or ledgers between files.

The Stock Information File

The ledgers and the historical data records that accompany a particular stock issue are stored on disk in a Stock Information File (SIF). Historical data consists of a date; the high, low, and closing prices; and the volume traded. Without historical data, you have no SIF.

STalk the Market provides two methods for creating historical data.

Method one is an edit function (Figure 1) that can be used for manual entry. This method, when used for any purpose other than the editing of existing information, is time-consuming, mentally exhausting, and undesirable. [The publisher says that editing has been streamlined in version 1.02—Ed.]

Method two uses a Hayes-compatible modem to download one or more historical data files directly from the Dow Jones News/Retrieval (DJN/R) information service. Sign-up is as simple as dialing the toll-free number provided on a brochure that accompanies *STalk the Market*. If you have access to Tymnet or Telenet, you can be on-line within 30 minutes.

A special offer included with *STalk the Market* waives the DJN/R start-up

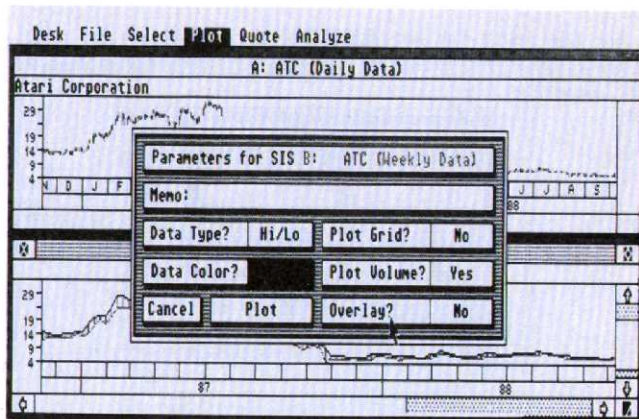


Figure 2. The Set Parameters dialog box selected from the Plot Menu.

STalk The Market

System: Atari ST

Version reviewed: 1.01

Required equipment: None; printer, modem, and 1Mb RAM recommended

Copy protection: None

Summary: A slightly buggy but useful investment tool

Price: \$79.95

Manufacturer:

Quidnunc Software

Suite 175

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fee, so you pay only the \$12 annual service fee. Payment choices are direct billing or American Express. For details concerning hourly rates, call (800) 522-3567.

DJN/R offers both daily and monthly data. *STalk the Market* allows you to download either or both quite quickly. A daily segment consists of 12 trading days (DJN/R keeps the most recent 22 segments of daily historical data—a little over a year's worth). At 1200 baud, I downloaded an average of 8.75 daily segments per minute. Monthly segments (one segment=one year of data) download in about nine seconds.

Dow Jones Averages—Transportation, Utilities, 65 Stocks, and the oft-quoted Industrials—can also be downloaded into an SIF and treated just like normally traded stocks. DJN/R does not include monthly composites for these averages in their databases, but this is no problem, since *STalk the Market* provides its own utility for con-

verting daily composites into weekly or monthly data.

Version 1.02 includes limited support of data retrieved from Compuserve as well as DJN/R.

Using the term *portfolio* very loosely, *STalk the Market* allows you to create a portfolio file that consists of a list of the stocks for which you want to download data. The portfolio may consist of many stocks, but the download processing utility in versions 1.0 and 1.01 of *STalk the Market* will crash when working with a large stock list. The incoming data is not lost when that happens, but you must manually re-initiate the processing utility. Thomas Bushaw at Quidnunc Software assures me that there is no such limitation in version 1.02, but I have not tried it.

The GEM Environment

STalk the Market is a GEM program; all menus, dialogs, edit boxes, and windows are mouse driven. For those who prefer keyboard options, the program provides a quick-key alternative for most of the available options.

Depending on the memory available in your machine, you can display and manipulate up to four open windows and active files at once. Because daily, weekly, and monthly data are considered separate SIFs, three of the four windows are almost a necessity. Without them, you would not be able to view all three composites of the same data simultaneously.

The initial windows are used to display historical data graphically. On a color monitor, in medium resolution, you can color code the various graph lines and overlays. This function is not available in high resolution.

STalk the Market allows you to over-

PRODUCT REVIEW

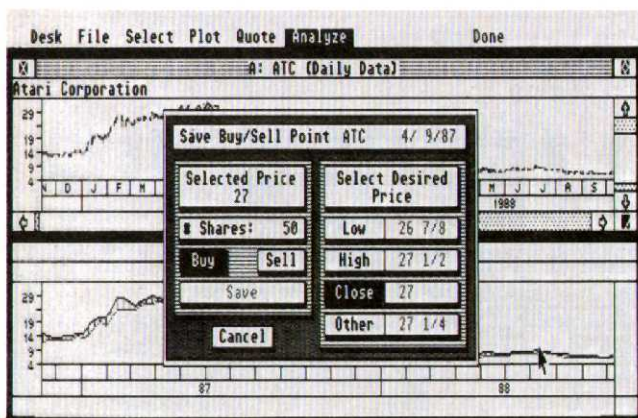


Figure 3. Using the Screen Pick option from the Analyze Menu to select buy/sell points.

plot an SIF (Figure 2), which will display a complete stock history on a single screen, or you can zoom in to a single plot point. By means of the View Data function, you can fan the mouse across a plot line that displays the physical data for each individual point. This function can also be used to select buy/sell points (Figure 3).

reasonable for me to describe more than a few of the fundamental selections—thus the following discussion does not do justice to the ftt abilities of this software.

Every stock transaction involves a commission charged by the broker who performs the transaction. To track the success or failure of ftt accurately, it is

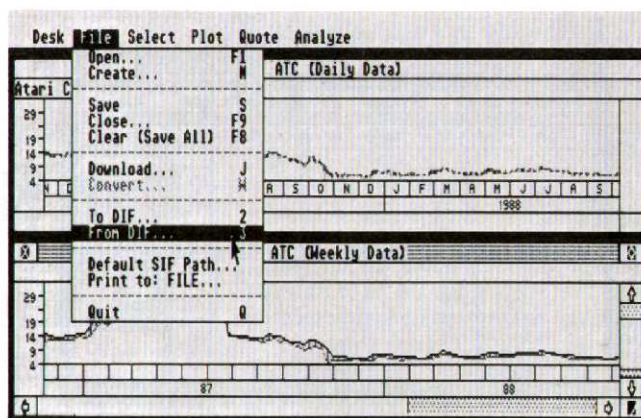


Figure 4. The File Menu. Note that the weekly screen plot displays high/low overlays.

by the program simply are not suited for serious brokerage work.

Real World Values

Perhaps the simplest stock transaction is a purchase and sale combination that will hopefully produce a net monetary gain. *STalk the Market* provides a gain/loss calculator that allows you to create and examine individual hypothetical buy and sell transaction pairs (Figure 6).

The following results are displayed: elapsed days between the buy and the sale, investment cost, value after sale, total commission charge, net income, and annual rate of return.

Through access to the quote ledger, the whole set of hypothetical buy and sell transactions can be examined and manipulated, and cumulative results can be displayed and printed.

Although the buy and sell displays are valuable, the true ftt horsepower of *STalk the Market*, shows itself in the various capabilities available from the Analyze menu (Figure 7). These capabilities fall into three primary categories.

Cyclic Components. The techniques for establishing predominant cyclic components include manual entry, rubber-banding, Fourier analysis (Figure 8), and moving average/residuals analysis. These tools are used to establish the length of VTLs and to suggest your trading cycle.

Real Buy and Sell Points. These points can be entered manually or determined from analysis of VTLs, TLLs, and moving averages. *STalk the Market* includes utilities for creation, display, and selective deletion of VTLs and TLLs.

Historical Transaction Simulations.

Dow Jones News/Retrieval offers both daily and monthly data. *STalk the Market* allows you to download either or both quite quickly.

STalk the Market also allows you to save your graphic displays as *Degas* picture files (Figure 4). And, you can save to and load from spreadsheet DIF files, which is a blessing for those who do not have modems.

Version 1.01 of the software also allows you automatically to adjust historical data due to stock splits. This is a full-featured function that can handle almost any realistic split ratio. Unfortunately, the values previously contained in your ledgers are not updated to reflect these changes.

A Complex Program

STalk the Market is a complex program. Clicking on one of the root menus often opens a submenu, which in turn opens one of many secondary windows, most of which are packed with editing options. In fact, *STalk the Market* has so many functions that it would be un-

important to include these charges, because they can significantly influence your realized profits and losses.

STalk the Market automatically includes these charges in all its calculations, but there is a major problem—the calculations are often inaccurate. Although the software allows you to edit commission data (Figure 5), I found it impossible to create a combination of schedule data that would match the Merrill Lynch (my wife is a registered sales assistant with that company) method of calculating commission.

On a cash output range spreading from a low of \$50 to a high of \$10,000, the differences between the actual commission on a given transaction and the calculated value produced by the program went from a near match to as much as a \$700 shortage in the *STalk the Market* calculations. The five adjustable commission schedules provided

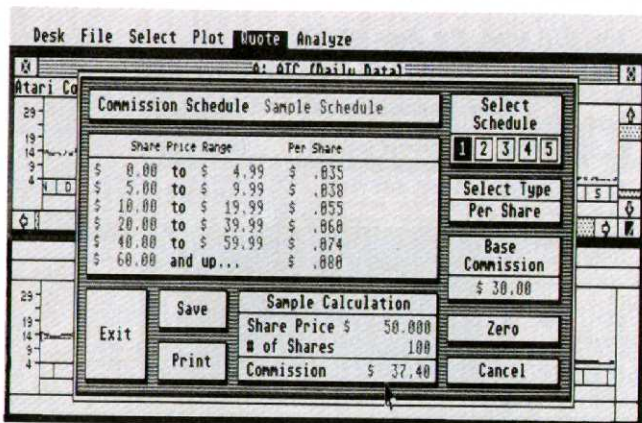


Figure 5. Editing the Commission Schedule for a given buy/sell from the Quote Menu.

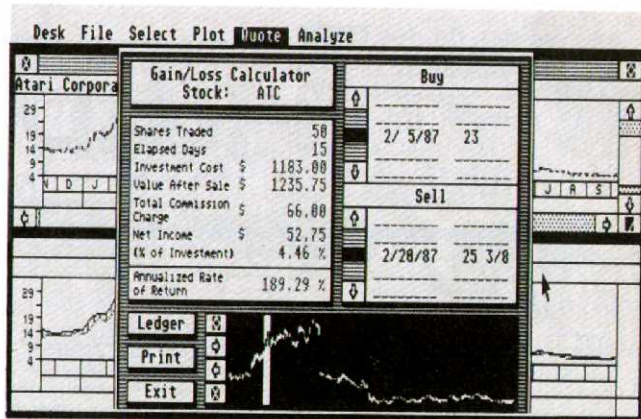


Figure 6. The Gain/Loss Calculator incorporated into the Buy/Sell function of the Quote Menu.

Using either manual mode (you do the work) or automatic mode (based on variables that you control, *STalk the Market* does the work), you can study historical data, day-by-day, as if it were in the present. This allows you to test and develop your skill in using the tools of *STalk the Market* to better predict good buy and sell points. These skills

can then be applied to real present data as it occurs.

Documentation

A detailed, 205-page, soft cover manual, complete with a nicely organized table of contents and an accurate index, accompanies *STalk the Market*. The manual includes an introduction to fit, a

list of fit terms and definitions, and walk-through instructions for the basic routines. Version 1.01 of the software also includes a partial demo routine.

The manual is packed with information. Anyone not familiar with the tools of fit will surely learn many things from it, and experienced users may benefit as well.

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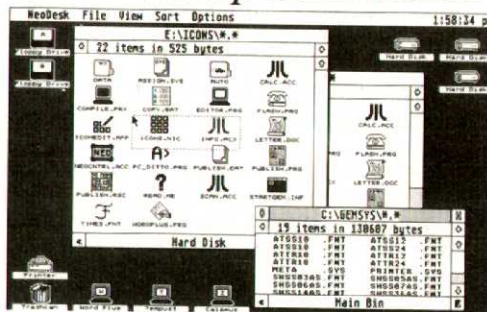
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PRODUCT REVIEW

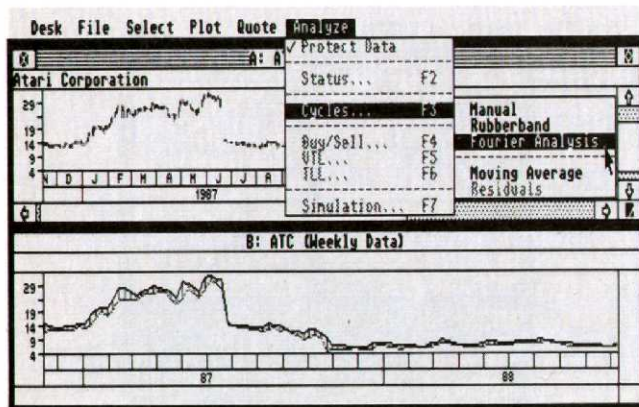


Figure 7. The submenus available from the Analyze Menu.

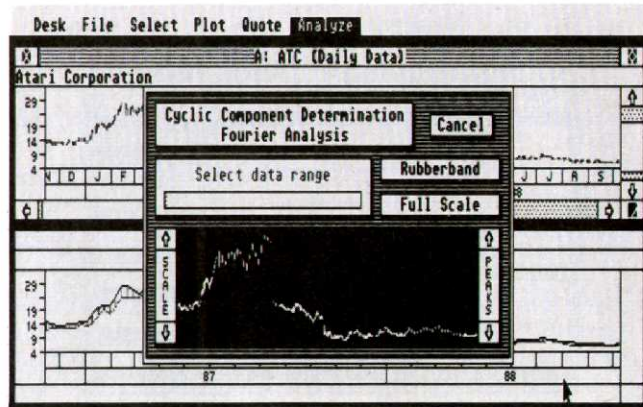


Figure 8. The Fourier Analysis selection box.

Still, I am not pleased with some of the methods employed by the author. When trying to follow certain instructions, you are often referred to some other section of the manual from which you are referred to yet another section. Constant page marking, page flipping, and cross-referencing can quickly cause you to lose your train of thought. Thus, by the time you grasp the instructions, you have forgotten what you were trying to accomplish.

System Requirements

STalk the Market is a large program which requires nearly 270K of RAM for its own code and resources. The software will execute on a stock 520ST, but the utility of the program will be severely limited. I highly recommend at least 1Mb of RAM.

STalk the Market does not use any special printer control codes, so no special printer driver is required. In fact, the software does not require that you have a printer. You should, however, have one if you want to derive maximum benefit from the package.

If you do not already own one, purchase a Hayes-compatible modem. Again, while this piece of hardware is not required, it is, in fact, necessary.

STalk the Market runs decently from either a single-sided or a double-sided floppy disk drive. It runs much quicker from a hard disk drive, and since the software is not copy-protected, installation on a hard drive does not require any special procedures.

Conclusions

Apart from the previously mentioned bugs, *STalk the Market* executes quickly and efficiently. As a useful brokerage tool, the software has tremen-

dous yet not fully realized potential.

The failure of the program to calculate commissions accurately greatly reduces its real-world value, however. Perhaps other firms use a less complicated commission schedule than Merrill Lynch, but for my personal needs *STalk the Market* failed to produce usable values.

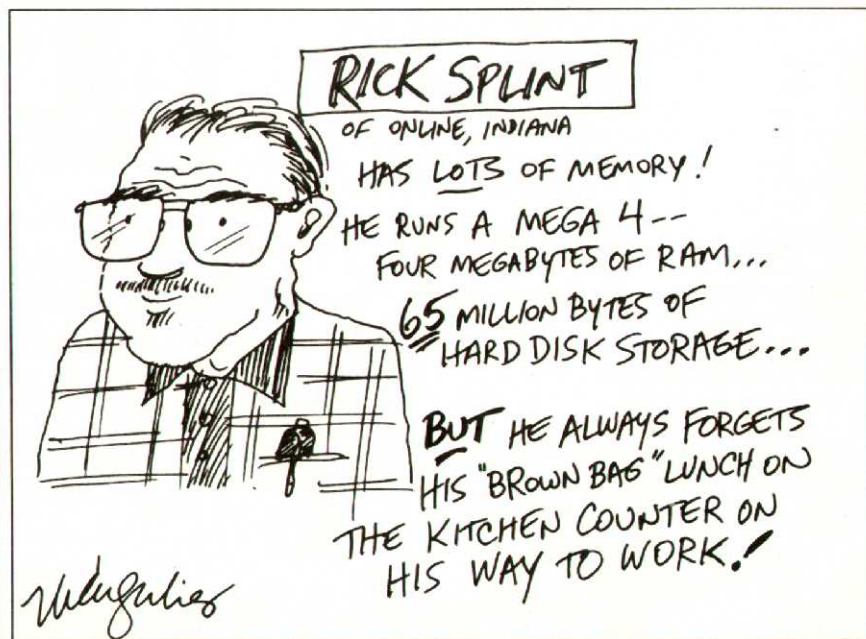
For me, *STalk the Market* is a useful tool for approximations. The graphs show historical movements of particular stocks and indicate valid trends based on those movements. By using this information in conjunction with other factors, such as current market conditions and relative economic conditions, you can gain useful insights for future financial transactions.

Although pleased with the ease of use

provided by the ledgers, I was disappointed that there was no method of indicating and updating stock split data within a ledger. This shortcoming limits the utility of even the permanent ledger to approximation.

STalk the Market is an excellent fit educational tool, but it needs more commitment to real-world values and storage needs. With *STalk the Market*, Quidnunc has made a strong beginning, but the software needs fine tuning. When I take time to enter portfolio data into a computer, I want the results to be accurate, valid, informative, inter-relative, and suitable for submission to a client or even the IRS.

Nevertheless, *STalk the Market* is a valuable and relatively inexpensive investment tool. I recommend it. ■



UltraMIDI

A total control workstation for the Atari ST from MIDImouse

Workstation" seems to be the current buzzword among MIDI developers. *UltraMIDI*, for example, calls itself a "total control workstation," but it can more accurately be described as a MIDI mapper/system exclusive librarian/sequence playback module. Whatever you call it, it is an extremely versatile and innovative piece of programming.

UltraMIDI puts your MIDI rig entirely under the control of a master keyboard: no more fiddling with patch librarians and sequencers on a gig, no more repatching MIDI cables, no more manual configuration of MIDI devices. By integrating mapping, librarian, and playback functions and making them remotely selectable via MIDI, complex parameter changes characteristic of sequenced music become possible in live performance.

Be My Slave

Mapping is the process of translating MIDI messages of one kind into another, a procedure that can range in complexity from simply rechannelizing the note-on/off messages from a master controller to transposing and inverting pitch data, converting aftertouch into continuous controller messages, scaling and inverting pitch bend, and so on. *UltraMIDI* will map almost any MIDI channel message into any other, a correspondence that is referred to as a "master/slave relationship."

A master MIDI event can be mapped into more than one slave. You define both master and slave messages by specifying their channel, type, and range of values. Therefore, MIDI messages coming from a controller which match the channel and type of a master event and which fall within its range will be converted into slave messages with the designated channels, types, and ranges. The applications are limitless: splitting a keyboard into different MIDI channel

zones, toggling between two synths by means of sustain-pedal position, using a pitch-bend wheel to simultaneously cross-fade between patches and open a filter . . .

You can also designate the playback of standard MIDI files as slave events and control their loading to and erasure from memory in the same manner. This remarkable feature permits the performer to trigger the playback of sequenced material simply by hitting a synth key, and thus makes it unnecessary to enslave the band to the lockstep of a computer for an entire piece of music when only a particularly nasty part of a tune needs to be sequenced. System exclusive dumps can be executed as slave events too, so you can send patches and configure your instruments all at one time.

Up to 255 different master/slave relationships can be active at once. This aggregate of masters/slaves is referred to as a *map* and is activated either by a designated MIDI event called a *trigger*, or by using the numeric keypad on the ST.

A Send field and a Reset field are also assigned to each map. The Send field is a list of MIDI events that are transmitted each time the map is selected and typically consists of set-up data such as program and mode changes. The Reset field is a list of events that are sent when exiting the current map; it is useful for resetting mode changes made in the previous Send field.

A collection of up to 255 maps is referred to as a *song*, and represents all of the mapping options available for the performance of a single piece of music. *UltraMIDI* holds up to 20 songs in memory at a time as a *set*; a set also includes Sequence and Bulk lists, which contain the names of all the sequence and system exclusive files which are to be played or transmitted as required by the maps in a set. You can save and load

By DAVID SNOW

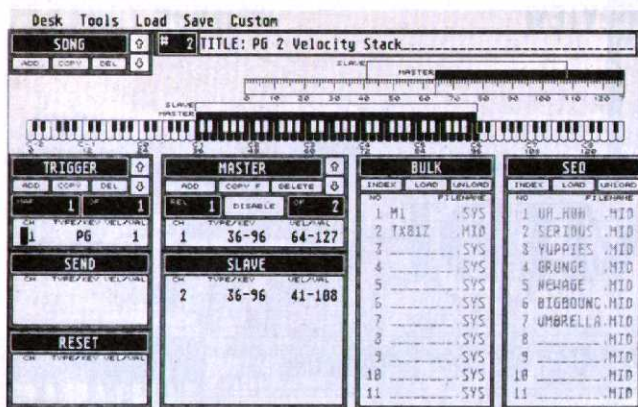


Figure 1. UltraMIDI editing screen.

either individual songs or complete sets to and from disk.

Let's Interface

The *UltraMIDI* user interface is friendly and well organized. The program operates in two modes, edit and playback. The edit screen displays the trigger event, send list, reset list, and master/slave list of the currently selected map.

Every map within a song, and the first map of each song, must be assigned a unique MIDI event as trigger; when entering or editing trigger events, the program automatically alerts you to duplicate entries. You can select which map you wish to edit by clicking on the up/down arrows in the trigger field, or by clicking on the Add button to bring up the next unassigned map. Clicking on the Delete button will erase the currently displayed map, and the Copy button will copy the current map to a desired destination. The master/slave field is likewise provided with arrows and buttons for editing the master/slave list.

Multiple options are provided for entering data: typing it in, clicking and dragging on icons, and via MIDI transmission. Keyboard and ruler icons are provided for graphically entering note, velocity, and controller values. Values can be entered directly from a MIDI controller by holding down selected computer keys while transmitting data from the controller.

At the top of the edit screen are the current song number and title, with corresponding up/down arrows and Add/Copy/Delete buttons. The edit screen also displays the Bulk (sysex) and Sequence file lists for the current set. Files can either be simply indexed on these lists for loading later on by means of a mapping instruction, or be loaded directly into memory for immediate access. Keeping files indexed without loading optimizes available memory. You can type file names directly into the Bulk and Sequence fields or add

them to the lists from a GEM file selector box after clicking on a Load button.

UltraMIDI also permits you to customize your working environment with options relating to alert messages and file backups.

More Fiber Than Oat Bran

Selecting the Bulk In/Out entry under the edit screen Tools menu activates the Bulk Librarian, which records and transmits system exclusive messages. If your MIDI device can initiate a sysex dump from its controls, click on the librarian RECORD button and start the transmission.

You can record multiple sysex dumps in one shot if they follow one another within approximately two-thirds of a second. When transmission is complete, you are presented with a GEM file selector that allows you to save the dump in Standard MIDI File format.

Clicking on the librarian Transmit button presents a file selector box from which to pick a sysex file to transmit. For those MIDI devices that have no panel controls to initiate sysex dumps, a dump request prefix can be typed in and transmitted before recording (get out your owner's manuals); dump request prefixes can also be saved to disk for later retrieval.

Come Play With Me

Press F10 to move from the edit screen to playback mode. The play screen displays the titles of all songs in memory, with the currently selected song title highlighted. A song can be selected by clicking on its name in the list, by pressing computer function keys F1 to F10 (for songs 1 to 10) and QWERTY number keys 1 to 0 (for songs 11 to 20), or by transmitting the MIDI trigger event of the first map of the song from your controller.

Maps 1 to 10 within the selected song can be activated from the ST numeric keypad as well as by their associated MIDI triggers. Computer keyboard

PANIC BUTTON

On right mouse key send:

Exit

CH.1	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.2	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.3	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.4	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.5	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.6	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.7	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.8	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.9	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.10	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.11	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.12	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.13	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.14	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.15	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono
CH.16	All Off	OSC=0	VCF=0	Aft=0	Sus=0	PB=64	Mono

Figure 2. Panic button definition screen

control is also provided to halt sequence playback and looping. A status box in the corner of the screen displays the current map number and sequence playback status.

Mapping can be disabled and re-enabled by pressing the space bar; in the event of total disaster, the right mouse button acts as a panic button to globally reset your system, turning all notes off, resetting continuous controllers, etc. Reset messages must be defined for each MIDI channel in order to accommodate the requirements of your setup. Like all other program settings, the panic button configuration can be saved to disk.

The *UltraMIDI* disk includes a playback-only program, which functions in a similar manner to *UltraMIDI*'s playback mode, but which leaves a greater portion of computer memory free for sequence and bulk file loads. This module can be either run directly from the desktop, or executed from the Tools menu in *UltraMIDI*.

An alternate version of the playback module, called the Remote Display Module, is available at a nominal fee to registered owners of *UltraMIDI*. This program uses the LCD display of certain synthesizers for prompts and error messages, so you can leave your computer monitor at home when you go on a gig. Yamaha DX-7 series and Roland D-series keyboards have been tested with the Remote Display Module; synths by Oberheim and Kurzweil will follow. *UltraMIDI* owners should contact MIDImouse to see if their instruments are supported.

And Now the Verdict

Speed is the potential Achilles' heel of any real-time MIDI processor, but *UltraMIDI* caused no noticeable delay in throughput, even while playing a fast, controller-laden sequence and simultaneously re-routing the input from a keyboard. The program operates by searching its lists of trigger and master events

whenever a MIDI message is received and acting upon it if a match is found. The user's manual warns that maps with a large number of master events to search and songs with a large number of map triggers to search may cause audible delays, but I had no success in inducing this problem.

Speaking of the manual, I think that it presumes too much of the first-time user and fails to give enough examples of how to apply the program. The pyramid structure of set/song/map/master/slave is logical and easy to navigate once you grasp it, but these terms are bandied about without so much as a simple overview of the program structure being presented first. The documentation is being rewritten, and MIDImouse reports that these shortcomings will be addressed.

UltraMIDI is a GEM application that permits access to desk accessories while in edit mode. The program appears to be essentially bug-free except for a few glitches. When repositioning a desk accessory such as the Atari Control Panel on the screen, the UltraMIDI

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Summary: Real-time MIDI processing software loaded with features

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edit window redraws itself over the accessory. Also, an obscure but fatal error occurs when you type a period after an eight-letter file name in the Bulk or Sequence field. These problems are being addressed by the author.

The program supports the playback of Standard MIDI Files in format 0 and defaults to 120 beats per minute unless the file contains a Set Tempo meta-event. A revision in the works will allow tempo changes from within the program. Also, UltraMIDI does not currently permit the mapping of polyphonic aftertouch and tune request events, but these too are promised in the upgrade.

UltraMIDI is a unique, open-ended tool, the use of which is largely uncharted territory. A performing MIDI musician can have a gig's worth of set-ups (patch dumps, sequences, etc.) instantly available at the touch of a key and at the same time exploit the creative possibilities of mapping.

It is not really a compositional program *per se*, since it does not record sequence data (another reason that "workstation" seems a misnomer; how about "playstation"?), but it is fantastic for improvisation.

Mapping sequences to note-on events allows you to create an arrangement of a tune in real time. In this regard it is not as flexible as Open Mode in Dr. T's Keyboard Controlled Sequencer which allows sequences to be overlapped, but it is more responsive and can be performed directly from a MIDI controller. The down side of all of this is that a great deal of preparation and experimentation are necessary to get your maps, songs, and sets in order. But once that is done you have a lot of power at your fingertips. ■

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The Ultimate Address Book

Every time I try to write a "serious" piece of software, I achieve a new level of respect for people who actually do this kind of thing for a living. Writing a computer program has two phases: design and implementation. Orthodox theory suggests that these phases are cooperative and that they have a common goal: making the best software possible.

Nonsense. As any real programmer can tell you, the object of design is to prove that implementors lack ingenuity, imagination, and flexibility (not to mention an aesthetic sense), while the object of implementation is to prove that designers are airheads who can't think in linear terms. Software—if and when it appears—is entirely a by-product of this left brain/right brain conflict.

Things get especially painful when you try to implement a program you have designed yourself, because you can't win either way. Still, I occasionally get the urge to hack—usually when commercial software somehow screws up. *Exemplum gratia*, a few weeks ago, I replaced Lucrezia Borgia, my tried-and-true 1040 ST, with a brand spanking new Mega 4, named Despina after the lusty soubrette in Mozart's "Cosi Fan Tutte" (N.B. *Byte* magazine has still not taken notice of the fact that my computers all have *much* cuter names than Jerry Pournelle's.)

With her four megabytes of RAM, blitter, and other accessories, Despina *sa servir*. Unfortunately, she's incompatible with QMI's DeskCart utility system, one of whose functions—the address book—I've grown very fond of.

Faced with this problem, any sensible person would simply have downloaded one of the numerous public domain address book programs available on CompuServe, Genie, or a local BBS. Me? I decided to write my own and share it with you. Well, Mom never said I was bright—just that I was pretty.

Well, I'm not pretty any more. A few days playing "sport death" with Despina and the Mark Williams C Language Development system have taken the color from my cheeks. But here it is: the ultimate address book/phone dialer.

Presenting PHONE.ACC

Okay, okay, maybe not the *ultimate*, but I don't have a month, and I need to make some phone calls, and PHONE.ACC is still a good bit more powerful than your typical address book database.

For one thing, it is totally freeform. Most address book programs want you to fit your address info into stupid little blanks with stupid little headings like Name, Street Address, and Home phone. Unfortunately, this doesn't work for the kinds of information people ac-

tually want to keep in address books. I mean, under which heading does one write "Gabrielle, 6'3" Ford model, met at LaGuardia Airport," or "Jack's girlfriend's parents' summer house: (408) 555-1212"?

No, what people really need is a lot of freeform space in which to write down their freeform junk. That's why a PHONE.ACC record contains ten 40-character lines of text—plenty of room for an address (or two) and a bunch of phone numbers.

And speaking of phone numbers, I don't know about you, but I usually have more phone numbers than addresses to worry about. I mean, you know somebody for a couple of years, and the numbers begin to accumulate: home, current job, previous job (but he still plays on their baseball team), current girlfriend, ex-girlfriend (and now occasional fling), etc. That's another advantage of big, freeform records: lots of room for numbers and—equally important—for notes to identify them! PHONE.ACC lets you enter a normally-punctuated phone number, plus notes, on any line—up to ten, auto-dialable numbers per record. It can dial both voice and modem calls using a Hayes-compatible modem as a telephone interface.

But wait . . . there's even more. The PHONE.ACC autodialer is (now get this!) *reasonably sophisticated*. I mean, okay,

By JOHN JAINSCHIGG

it doesn't employ AI pattern recognition algorithms to recognize legitimate phone numbers. In fact, you can trick it into dialing a zip code. But if you do, the program *is* smart enough to think, "Okay, I've got only five digits here—this must be a PBX extension!"

In fact, as long as you observe some simple, natural rules, PHONE.ACC is able to tell the difference between PBX extensions, local numbers, long distance, and international calls, and can supply all the weird dial-out codes, flashes, call-waiting cancellations, MCI prefixes, and international direct dial codes you like, automatically. It will remember your local area code and suppress it when you try to dial a local number as a long distance call. And even if you have a number that's weird enough to fool the PHONE.ACC decision-making process, you can usually flag it in such a way that it will autodial correctly.

More yet. PHONE.ACC keeps records in alphabetical order (how's *that* for innovation?), and it lets you use letter keys to jump from section to section—kinda like the tabs on a real address book (rhetoric fans, note "kinda like": this is a visual *simile*, not a metaphor).

You can also page through your records one by one, forwards and backwards (technology fans, note "forwards and backwards": this is a circular, doubly-linked list). You can even mark records for later attention (either individually, or in groups via the SEARCH function), and jump from mark to mark—a great way to keep simple sublists of names and addresses.

And . . . and . . . that's about it. Nope, you can't address envelopes. Nor can you output lists of names and addresses, either to printer or disk. And, while we're at it, you can also forget multicriteria searches, saving sublists, automatic tie-in to a calendar/appointment book, and numerous other features—features, indeed, that I know perfectly well how to add. Unfortunately, such things take time, and if this feature is any later than it already is, I'll be fired and have to support myself as a programmer.

The Rules

When you turn your computer on, PHONE.ACC loads automatically from the root directory of your boot disk. Once loaded, it searches the root directory for a two-line ASCII file called PHONE.PTH, containing pathnames for your address database and dialer con-

figuration files, in that order. If it finds them, PHONE.ACC will load these files automatically into memory from wherever you have hidden them. Otherwise, the accessory will come up with an empty database and default configuration, permitting you to load database and config files manually, or create them as necessary. PHONE.PTH can be created on any standard word processor, or PHONE.ACC can help you create it.

When the accessory is called up from the Desk menu, it displays the dialog box shown in Figure 1. Functions and features are discussed below.

CLEAR

Clicking on the CLEAR button prepares the dialog box for entry of a new record. (When the database is completely empty, as it is when the accessory fails to find PHONE.PTH on the root directory of the boot disk, a cleared record is automatically displayed.) Address and other data can then be entered

alphabetization process—a record must contain at least one letter, or entry is not permitted).

Normally, you will want to put proper names in the first line of each record—last name first and first name last (e.g., enter John Jainschigg as Jainschigg, John), though other systems are possible.

UPDATE

Once a record has been added, it can be modified by bringing it up on the data-entry screen, editing it, and clicking on the UPDATE button. The UPDATE function is smart enough to realize when modifications to a record affect its alphabetical order in the database. In such situations, the program will display an alert, asking if you want to keep the old record while adding the new, or replace the old record with the new.

SEARCH

When the SEARCH button is clicked,

Under which heading does one write "Gabrielle, 6'3" Ford model, met at LaGuardia Airport," or "Jack's girlfriend's parents' summer house"?

by typing it on the record lines.

You can move the cursor from line to line by pressing the arrow keys or to any individual line by clicking on it with the mouse. Any line may contain a phone number, and a line containing a phone number may also include notes.

Phone numbers must consist only of digits (plus certain special character strings, discussed below), but may be punctuated normally (e.g., (201) 543-6007). Notes contained in phone number lines must consist only of letters and punctuation. (Note: before entering phone numbers, it would be wise to read over the section on autodialing, below).

ADD

Once data has been entered, the new record may be added to the address file by clicking on the ADD button. The record will be placed in the database in alphabetical order, according to the first letter it contains (this character may be preceded by digits, punctuation, and blank lines without affecting the

the subsidiary dialog box shown in Figure 2 is displayed. To initiate a search, enter a search string, select a search format (case sensitive or insensitive), and click on SEARCH & MARK. All records containing the search string will be swiftly marked, letting you page through them using the NEXT (Checkmark) and PRIOR (Checkmark) buttons (also see MARK, below).

Repeated searches do not clear pre-existing marks, so groups of records matching various criteria can be built up by performing several searches. All marks can be cleared from the database by clicking on the CLEAR MARKS button.

LOAD

LOAD displays a file selector that lets you load a new address database file.

SAVE

SAVE displays a file selector that lets you save the address file currently in memory.

PROGRAMMING

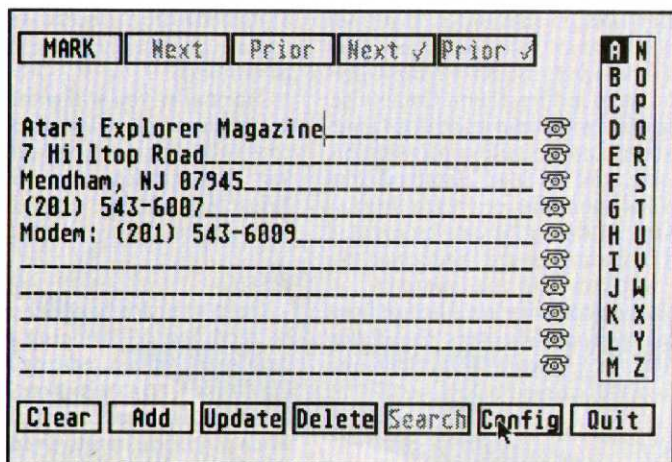


Figure 1. Main dialog box for the accessory. Note dialer buttons to the right of each address line.

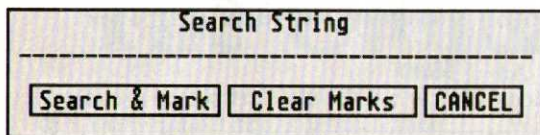


Figure 2. The Search dialog. Searches can be performed rapidly, and matching records accessed as sublists.

CONFIG

Clicking on CONFIG causes the subsidiary dialog box shown in Figure 3 to be displayed. The significance of each item is discussed in detail, below. Click on LOAD or SAVE to load or save configuration files. Click on PHONE.PTH to write the pathnames currently displayed into a new PHONE.PTH file on the root directory of your boot disk.

QUIT

Clicking on QUIT puts the accessory back to sleep. If you have made changes to the current database, PHONE.ACC gives you an opportunity to save it to

disk, prior to shutting down. If you fail to heed its warning, you must remember to save the database before turning off your computer, or your changes will be lost.

MARK

Clicking on MARK marks the current record for quick access via the NEXT (Checkmark) and PRIOR (Checkmark) keys (see below). Marks are also made as a result of searches (see above).

NEXT, PRIOR, NEXT (Checkmark), and PRIOR (Checkmark)

Clicking on NEXT or PRIOR lets you

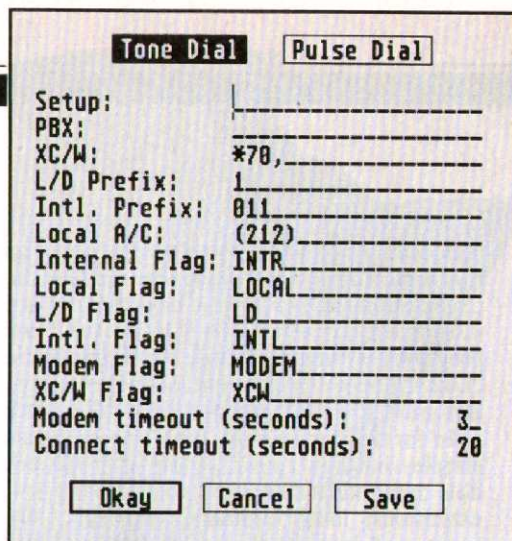


Figure 3. Configuration dialog, showing a typical range of settings. The autodialer system can perform a wide variety of functions, automatically.

move through your database, record by record. NEXT (Checkmark) and PRIOR (Checkmark) work in similar fashion, but skip from one marked record to the next, ignoring intervening records.

Alphabet Keys

The alphabet keys provide another means of leafing through your address files. Click on a letter to display the first record alphabetized under that letter. Subsequent records can be displayed by clicking on NEXT.

Hardware Hookup and Configuration

PHONE.ACC has an outlandishly sophisticated group of autodial functions, making it appropriate for all but the most esoteric telecommunications work. The program employs a Hayes-compatible modem as a dialer interface. Figure 4 shows two ways in which the modem can be connected in-line with a telephone, permitting both voice and modem calls to be autodialed.

Once your modem is hooked up, you must configure the RS-232 port of the ST to one of the baud rates supported by the modem to permit the autodialer to function. The Control Panel desk accessory is ideal for this, because it permits saving a default RS-232 configuration to disk via the SAVE DESKTOP function. Hayes-type modems usually function at both 300 and 1200 baud; some as high as 2400 baud.

For voice-call autodialing, other parameters are inconsequential. If you are making modem calls, however, the RS-232 port should be set to the proper word size, parity, stop bits, and protocol as well. PHONE.ACC can be called up and used for dialing modem calls from within any GEM-compatible telecommunications program.

The PHONE.ACC dialer works by assembling command strings and sending

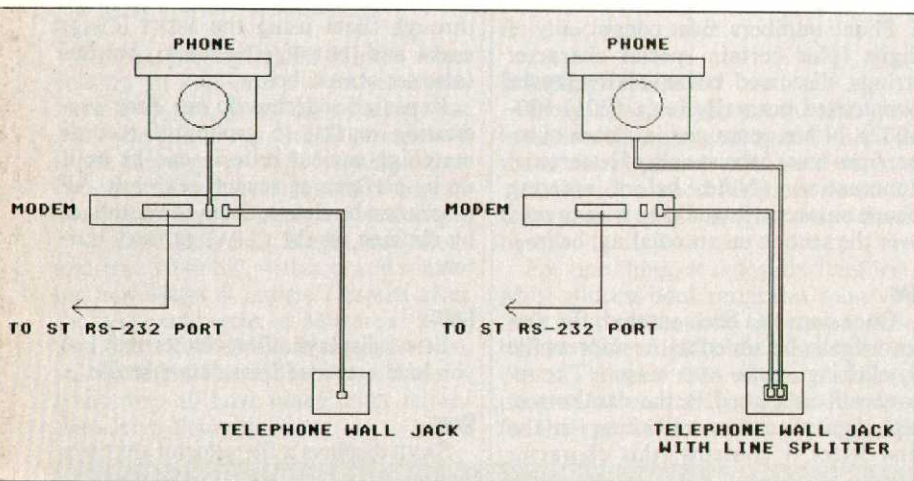


Figure 4. Two ways of hooking up a modem for use as an autodialer.

them to the modem. After each string is sent, the accessory waits for proper acknowledgement before proceeding. To insure correct functioning, your Hayes-compatible modem must be set up to provide verbose result codes (OK, CONNECT, etc.). This is the state in which most Hayes-compatible modems are delivered. If your modem is not currently set up in this fashion, check the manual to determine how to reset it. Most Hayes-type modems can be reset to this mode by sending them the command string ATZ or ATV1, followed by a return. This reset code can be provided automatically by PHONE.ACC as part of the Setup string sent before dialing any call.

Autodialing

You dial a call by clicking on the telephone button opposite a phone number. When dialing voice calls, you must lift the telephone handset before the modem has finished dialing to maintain the connection when the modem relinquishes the line.

When dialing modem calls, the accessory waits until the modem reports a connection. It then places the modem on-line and closes itself automatically, leaving you free to continue communications using your terminal program. If you have made changes to the database currently in memory, you will be given the opportunity to save it to disk before the .ACC closes. How the accessory distinguishes between voice and modem calls is discussed below.

Configuration

As noted above, PHONE.ACC manages the telephone by sending commands to a Hayes-compatible modem in the form of ASCII strings. Hayes commands have a simple syntax, described more fully in your modem manual. If you are a modem novice, it might be wise to read relevant sections of that manual before continuing.

In the simplest case, a dial command causes the following type of exchange between accessory and modem:

AT(cr)

Modem responds: OK

ATDT5551212;(cr)

Modem dials, then responds: OK

ATH(cr)

Modem goes off-line and responds: OK

The string AT (ATtention) is understood by the modem to precede any further command. In the above example, the first AT serves simply to get the modem's attention. The second AT is

followed by the command letter D (for Dial) and T (for Tone, as opposed to Pulse dialing), and a telephone number. The string is terminated with a semicolon, which tells the modem to return to command state after dialing (instead of immediately going on-line and waiting for a carrier signal). Finally, the third AT is followed by the letter command H (Hangup), which instructs the modem to relinquish the line (causing a disconnect unless the telephone handset is already raised).

Considerably more complex dial strings may have to be composed to make different types of calls. For example, the following string might be used to dial the number shown above from within a PBX:

ATDT9,5551212;

In this case, the digit 9 is dialed first, accessing an outside line. The comma causes the modem to pause long enough for a normal dial tone to be established before dialing the rest of the number. It is easy to think of more complicated examples. For example, suppose you

The accessory knows certain of the other substrings already—the basic Hayes ATtention, Dial, Tone, Pulse, Hangup, and other commands. The rest of the necessary substrings are drawn from the Configuration set and applied globally in dialing calls to which they pertain. All you need to do is define these strings once, then provide PHONE.ACC with clues as to how they should be applied to individual phone numbers.

Configuration Strings

Let's look at the different types of Configuration strings, see what they were designed to do, and learn where and in what situations PHONE.ACC applies them:

Setup: PHONE.ACC begins each dialing sequence by sending an AT (attention) command, followed by a setup string (if defined) and terminated with a carriage return. The setup string is supposed to contain commands that prepare the modem to interact properly with PHONE.ACC, assuming it is not normally set to default specs. For example,

PHONE.ACC has an outlandishly sophisticated group of autodial functions, making it appropriate for all but the most esoteric telecommunications work.

were using the accessory to make a long distance call from within a PBX that employs pulse dialing internally, but can access tone dial outside lines. Your dial string might look something like this:

ATDP9,T12125551212;

In this case, the Dial command is followed by a P (pulse dial) command, causing the 9 to be pulse-dialed. Once the outside line has been accessed, a T (tone dial) command is interposed before dialing the rest of the number.

Composing one of these complex dial strings for each number in your address file would be no fun at all. Luckily, however, much of the business of composing a dial string is very systematic, and PHONE.ACC can do it for you.

PHONE.ACC thinks of a dial command sequence as being made up of multiple substrings, one of which is the basic phone number from your record.

entering a setup string of Z will cause the command string ATZ(cr) to be sent ahead of every call, causing the modem to reset to its stored configuration.

PBX: To dial a number, PHONE.ACC starts by sending ATDT (or P, depending on whether the Tone or Pulse dial button is selected). It then sends this string, if defined, to access an outside line before dialing any local, long distance, or international call. If you are using PHONE.ACC from within a PBX, this string should probably be set to 9, (nine comma—dial 9 and pause). Otherwise, it should probably be left blank.

XC/W: Cancel call-waiting. If defined, this string is sent prior to dialing any number flagged as needing uninterrupted communication. It temporarily cancels AT&T's call-waiting feature, which normally announces incoming calls with an audible click that (besides being annoying) tends to disrupt modem communications. This string

should probably be set to *70, (star seven zero comma).

L/D Prefix: Long distance prefix. If defined, this string is sent prior to any number identified as being a national long distance call. One possible application: most exchanges now require you to dial 1 before the area code in placing a long distance call. If you set this string to 1, you avoid having to enter a 1 ahead of every area code in your database. Alternatively, this string can be used to access a long distance carrier.

Intl. Prefix: International prefix. If defined, this string is sent prior to any number identified as an international call. Setting it to 011 (the standard international direct dial access code) means that you can record international numbers starting with the country code.

acters and punctuation out (which explains why it doesn't try to dial your notes), and counting the digits that remain. Numbers of six or fewer digits are assumed to be PBX extensions; of seven digits, local calls; of ten digits, long distance; and of more than ten digits, international.

In most cases, this works fine. But it is not foolproof. For example, suppose you are using PHONE.ACC from within a PBX and have defined a PBX prefix string of 9, (dial 9 and pause) for accessing outside lines. You have tested it and discovered that four-digit internal extensions are dialed without the prefix, while seven-digit and longer local, long distance, and international calls have the prefix applied. Well and good.

Now assume you want to set up a

tance. When you attempt to dial a record line that contains more than one of these four defined flags, PHONE.ACC will complain and refuse to dial the number.

Two additional flags, which are not mutually exclusive, either to one another or to the flags already mentioned, are provided. These are the X/CW flag and the Modem flag. The former is used to identify a number as requiring uninterrupted communications and causes the cancel call-waiting string (if defined) to be slipped into the dial string on local, long distance, and international calls.

The Modem flag tells PHONE.ACC to observe modem-calling protocol in dialing a number, rather than the default voice protocol. In making modem calls, as already mentioned, PHONE.ACC waits for the modem to report CONNECT, then places it back on-line and quits, letting you continue communications via a terminal program.

XC/W temporarily cancels AT&T's call-waiting feature, which normally announces incoming calls with an audible click that tends to disrupt modem communications.

Local area code: Useful if you intend to record all phone numbers starting with an area code, as you typically would if you intended using PHONE.ACC in more than one local calling area. If defined, this string is used to search long distance phone numbers, causing a matching area code to be suppressed and the call to be dialed as local.

Warning: if you use this feature, it is important that you punctuate area codes distinctly and systematically throughout your database, employing the same convention in defining the local area code string. Otherwise, you risk accidental suppression of random portions of a number. In other words, supposing your local area code is 212, you might define this string as (212) and record all area codes with similar parentheses around them.

Flags

As you have probably noticed by now, PHONE.ACC is obliged to figure out what kind of number it is dialing before it can correctly apply prefix strings as shown above. In the absence of other clues, it performs this miracle by copying your record line to an internal buffer, stripping all of the alphabetic char-

acters and punctuation out (which explains why it doesn't try to dial your notes), and counting the digits that remain. Numbers of six or fewer digits are assumed to be PBX extensions; of seven digits, local calls; of ten digits, long distance; and of more than ten digits, international.

Police/Fire: 911

... but when you try to dial it (hopefully just as a test, and not in a real emergency!), PHONE.ACC counts only three digits, assumes it is an internal extension, and dials it as such. No good.

What you really want to do is tell PHONE.ACC to dial this number as a local call—that is, to dial 9, wait a second, then dial 911. The way this is done is to define a flag string for local calls (Local Flag), then include this string on the record line. Suppose your Local Flag string is defined as LOCAL (the default). You would simply add the word LOCAL somewhere on the record line, perhaps as follows:

Police/Fire: 911 LOCAL

... forcing PHONE.ACC to forget its preconceived notions and dial the call correctly.

Similar flags are provided to force the dialing of internal, long distance, and international calls. These flags are mutually exclusive. It makes no sense, for example, to tell PHONE.ACC to dial something as both local and long dis-

Timeouts and Special Characters

Two additional configuration fields exist:

Modem timeout determines the number of seconds the program will wait for a result code after sending a command string or dialing a voice call. If you use esoteric codes in your prefix and number strings—particularly pauses and waits—you may have to increase this number to give the modem a chance to finish working before the program times out.

Connect timeout determines the number of seconds the program will wait for a CONNECT result code after dialing a modem number.

A note about special characters: Occasionally, advanced users may find need to include Hayes-standard "dial modifier" characters in record lines. These characters include T (tone dial), P (pulse dial), R (reverse mode from originate to answer), W (wait for dial tone before continuing), comma (pause), exclamation point (flash, equivalent to pressing down the switch hook for one-half second), and the at-sign (@) (wait for quiet answer, used to access intermediate systems that do not provide a dial tone), plus the characters A, B, C, D, *, and #, which are used in accessing special touch tone functions. Because PHONE.ACC normally strips all non-digit information (including flags and perhaps an optionally suppressed area code) out of a record line before dialing, attempting to send these char-

acters through the record line is problematic.

In such situations, you have two choices. If practical, you can embed the necessary modem-control characters in one of the prefix strings, where pre-processing is not performed. This should work fine, provided the prefix string gets inserted in the final dial string at the proper location. Alternatively, you can include special characters directly in a record line by preceding each of them with a backslash (\).

The only exception is the at-sign (@), which cannot be entered visibly in a GEM edit line. To embed an at-sign, enter \- (backslash tilde). Backslashed characters not included in the above list are not passed to the modem.

Interesting Tech Notes

Written in Mark Williams C, PHONE.ACC follows the common desk accessory convention of including its GEM resources as data structures embedded in code, rather than loading them from an internal resource file. In order to function in both medium and high res, the accessory is obliged to modify the height and offset positions of its resources dynamically, prior to display. Again in common fashion for desk accessories, PHONE.ACC employs only low-level buffered disk operations, making disk access fairly speedy.

To simplify coding, the program employs no dynamic memory management, instead storing its database in an array of fixed-length structures, each read in as a block. Each record structure consists of a "mark" integer field (to store the record mark), a "next" integer field (which indexes the next record in the array), a "prior" integer field (indexing the prior record), and ten 40-character text buffers, used to store data.

The "next" field of the last record in the database indexes the first record, while the "prior" field of the first record indexes the last record. The database as a whole can thus be thought of as a circular, doubly-linked list of up to 200 elements (the limitation is arbitrary and, with simple modifications to the code, could be extended up to the limits of available memory).

This kind of data structure is extremely easy to work with, because it permits records to occupy a logical position in the database completely distinct from the physical position of data in memory. For example, the procedure for adding a record begins by searching

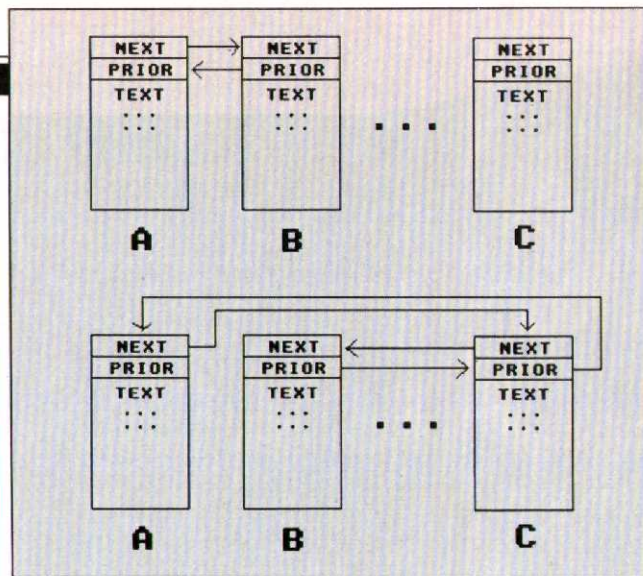


Figure 5. Adding a record. Text is placed in an empty record at an arbitrary location (C). That record is then linked into the database at its proper alphabetic location (between A and B) by modifying pointers.

the database array for a free record element (indicated by a "mark" field with value -1), irrespective of position. Data for the record is copied into the text buffers in this location. The new record is then linked into the database by finding its alphabetic place between two existing records. The pointers of all three records are then changed as shown in Figure 5.

Deleting a record is even simpler. Its "mark" field is changed to -1, indicating that the record's space in the array is now free. The "next" pointer of the record ahead of it is then set to index the record following it in the list, while the "prior" pointer of that record is set to index the record ahead of it, neatly cutting the record out of the list without having to move anything around in memory.

Other operations, such as moving from one record to the next, forward or back, handling searches, and alphabetization, are also rendered very simple by the database structure. Movement through the list is always handled by link tracing—each record carrying, in effect, a pointer to the record ahead of it, and to the record behind it.

The program is divided into four basic layers: an initialization layer, which reads data files and sets up resources; a control layer, which reads the user interface and dispatches lower-level functions; a features layer, which contains a modular function that pertains to each major feature of the program (i.e., each button of the main dialog box); and a functions layer, which contains low-level database management, resource management, and string-handling utility functions.

A major consideration in designing this kind of software is how best to pre-

vent the user from making mistakes. One way to approach the problem is to include error-checking code in the function corresponding to each feature that warns the user when an error has been made.

An alternative approach, and the one taken by PHONE.ACC, is to have the function corresponding to each feature alter the control panel after it executes, enabling certain buttons and disabling others, according to current conditions. Since disabled buttons are not even read by GEM dialog box management functions, the user is effectively prevented, in large part, from making any errors at all.

For example, when `do_delete()` detects that after it has deleted the current record, no records remain in the database, it disables the Delete key. The key is re-enabled by `do_add()`, when it subsequently adds a record.

Obtaining the program

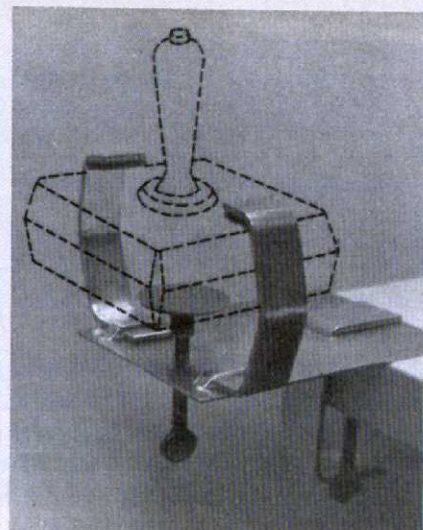
Because PHONE.ACC, written in Mark Williams C, is quite long, we have not printed it in the magazine. To obtain a hardcopy listing of the program, send a self-addressed, stamped, #10 envelope and \$1.00 to PHONE.ACC, Atari Explorer, 7 Hilltop Rd., Mendham, NJ 07945. If you own the compiler, you can make your own working copy of the program by entering the listing thus obtained in a text file, then executing the following command from the Mark Williams MSH shell command line:

```
cc filename.c -o phone.acc -VGEMACC
```

Alternatively, you can download the program and source files from the *Atari Explorer* Section (DL 8) of the Atari Vendor's Forum on CompuServe (GO ATARIVEN) or the *Atari Explorer* Topic on Genie's Atari ST Roundtable. ■

NEW

Programs and products
to help you get the most
out of your Atari computer



Joystick Holder

Duggan DeZign has released Stik-Gripper, a solid steel clamp that attaches any joystick to any table top (up to 2½" thick).

Intended to provide an "arcade feel" for gamers who prefer not to have to hold the joystick in one hand while manipulating it with the other, Stik-Gripper is especially convenient for flight simulators and other games that require both keyboard and joystick control.

The manufacturer points out that an added advantage is that the product eliminates the possibility of pulling the computer off the table by the joystick cord in the heat of battle. \$18.95.

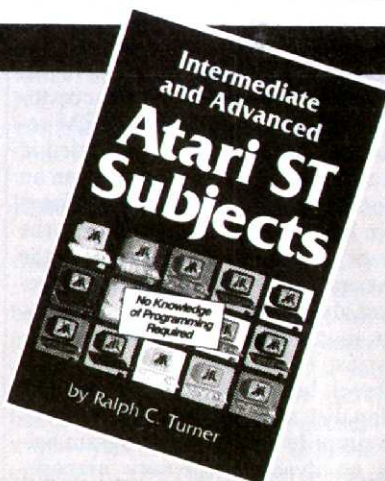
Duggan DeZign, 300 Quaker Lane, Ste. 7, West Warwick, RI 02886, (401) 826-2961.

Atari ST Topics

Index Legalis Publishing Company announces *Intermediate and Advanced Atari ST Subjects* by Ralph Turner.

Turner's second book "demystifies many of the difficult procedures and concepts that challenge the serious ST user." No knowledge of programming is required to take advantage of the step-by-step instructions designed to help both beginning and advanced users.

Topics covered include hard disk management and optimization, ASCII files, running IBM programs on the ST, backup procedures, disk structure and recovery of lost files, connecting multiple SCSI devices, sector and file editing, and SCSI ID numbers and LUN IDs.



Index Legalis Publishing Company,
P.O. Box 1822-10, Fairfield, IA 52556,
(515) 472-2293.



Portfolio Case

Caseworks introduces the PCpouch, a protective case that includes pockets designed to hold the Atari Portfolio "palmtop" computer, three of its RAM cards, and three AA batteries. The case, which is not much larger than the computer itself, has a special foam lining for impact and temperature protection.

The PCpouch constructed of water-resistant 400 Denier nylon sells for \$24.95. A glove leather model is available for \$49.95.

Caseworks, 4038-B 128th Ave. SE, Ste. 294, Bellevue, WA 98006, (800) 829-0041 or (206) 643-7557.

PRODUCTIVITY SOFTWARE

Navarone Industries announces the release of *ST Scan* version 1.5. The new version offers four new disk file formats in which scanned images can be saved to disk—*Degas Full Screen*, Tagged Image File Format (TIFF), Compressed TIFF, and Encapsulated PostScript.

The *Degas Full Screen* format allows a full page scanned image to be saved as a 72 dpi file; the previous version allowed only a portion of the image to be saved, because file size was limited to 32K.

Encapsulated PostScript, TIFF, and Compressed TIFF now permit scanned images to be imported into desktop publishing programs on IBM compatibles and Macintosh computers.

The Full Page scan feature has been enhanced to represent the scanned image more accurately by presenting it on the display screen at 72 dpi rather than the previous 75 dpi. The Full Page scan also accepts halftone and intensity settings to preview the image.

Because file size may exceed 1Mb, a dialog box now displays the progress of the save while the save is underway.

For those who prefer keystrokes to pulldown menu selections, a new collection of commands can now be executed from the keyboard. In addition, the *ST Scan* software now includes a driver for the Atari SLM804 laser printer.

A new program, *STCopy*, when used in conjunction with the SLM804 turns the computer system into a copy machine, printing up to 999 copies of a scanned page or previously saved .IMG file. \$25.

Navarone Industries, 454 Kenneth Ave., Campbell, CA 95008, (408) 378-8177.

Chameleon Software announces *My Fingertip Business* for Atari 130XE and upgraded 800XL systems. Designed especially for small businesses, the business forms package features a RAM-resident clock, date stamping, inspirational quotes, built-in disk functions, a phone book, a complete menu system, customer profiles, and the following forms: invoice/order, power of attorney, conditional sales agreement, promissory note/disclosure statement, indemnity agreement, general release, overdue account notice, request for price quote, dishonored check notice, and more. \$12.95.

Chameleon Software, 1013 Marvern Dr. E., Chambersburg, PA 17201.



Network For Atari ST

Paradise Computer Systems and SGS Software announce a complete networking system for the Atari ST. The product, called SGSnet, allows from two to 32 STs to share data stored on hard disk drives connected to a file server.

SGSnet uses the MIDI port of each ST in the network, providing a data transfer rate of 31,500 baud. The custom hardware used by the network allows continuous operation, even if a node is turned off or removed from the network.

Network activity can be monitored either from the file server or by watching the activity light on the connector box attached to each node. Up to 500

feet of coax cabling can be used to connect the nodes.

The operating system used is GEM- and TOS-compatible, and the non-dedicated file server allows users to run other programs and access files for word processing and other tasks while handling network operation.

Other features of the network operating system include open file monitoring of up to 100 files by the server, various permission settings for all nodes, automatic re-login of nodes, and automatic file locking.

The SGSnet Starter Kit, which contains the hardware and software necessary to network two STs carries a retail price of \$159.95. SGSnet Add-on Kits, which allow the addition of one extra node each, are available for \$109.95.

Paradise Computer Systems, 3485 B Sacramento St., San Luis Obispo, CA 93401, (805) 544-7130 (voice), (805) 544-3165 (BBS).

EDUCATIONAL SOFTWARE

D.A. Brumleve has announced a desktop publishing program designed for use by elementary school children. *Kidpublisher Professional* is an enhancement of the author's public domain *Kidpublisher*. The commercial version features

a greatly expanded drawing program, an automatically loaded font set, a title page option, and a faster WYSIWYG word processor with word wrap.

The program allows the child to draw and type up to five pages at a time. When printed, each page has a picture on the top half and large-type text below. The package includes a non-copy-protected distribution disk, simplified child's manual, extra labels for disk copies, and instructions for teachers and parents. \$25.

D.A. Brumleve, P.O. Box 4195, Urbana, IL 61801.



ENTERTAINMENT SOFTWARE

Strategic Simulations has announced the Atari ST version of the action/adventure *Hillsfar*. Shortly after arriving in the city of Hillsfar, each character is sent on a series of quests, which includes the completion of several arcade-style events—archery, maze exploration, arena combat, lockpicking, and equestrian challenges. Gold, experience, and magical items are the rewards. \$49.95. A cluebook is available for \$7.95.

Also available from SSI is *Star Command*, a single-player game set in the future in the deepest reaches of space. You control a crew of eight star troopers who have been assigned by the Star Command organization to save the remaining inhabitants of the galaxy from pirates and aliens. Characters travel through the galaxy in starships, exploring planets and space stations in search of objects, people, and enemies—which may be engaged in hand-to-hand or ship-to-ship combat. \$49.95.

Strategic Simulations, 675 Almanor Ave., Sunnyvale, CA 94086, (408) 737-6800.

Broderbund Software's *Shufflepuck Cafe*, a simulated air-hockey game, is now available for Atari ST computers. The game pits the player against nine

different opponents, all of whom are regulars at the cafe, a seedy saloon reminiscent of the bar in "Star Wars." Each of the opponents has a distinctive appearance, personality, and style of play. Their abilities range from the wimpy Skip Feeny, who is fairly easy to beat, to the General, who has a murderous serve. \$34.95.

Broderbund Software, 17 Paul Dr., San Rafael, CA 94903, (415) 492-3200.

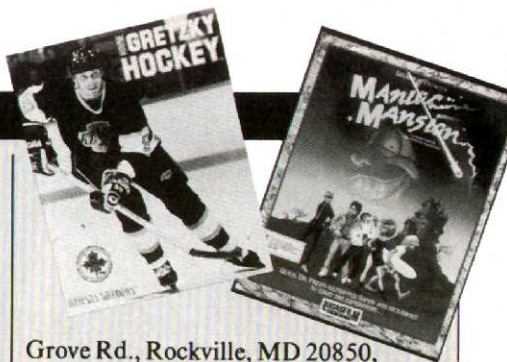
In *Manhunter: San Francisco* from **Sierra On-Line** you are a manhunter working for alien orbs, but you are undercover, having taken the place of another manhunter, who has been killed. The San Francisco skyline is buried beneath strange mounds of dirt, and somewhere in the city a scientist is conducting genetic experiments on humans. His mistakes are crawling the streets, making your life difficult. Features of this game for the ST include more than 250 different scenes, onscreen maps, and a unique command system. \$49.95.

Sierra On-Line, P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468.

Bethesda Softworks announces *Wayne Gretzky Hockey* for the Atari ST, a simulation that allows you to act as either player or coach or let the computer play both teams. You can set the pace of the action, change the length of play time, and hand pick your team, setting 11 components of skill for each player. Or, you can select a team from professionally rated International or NHL Team data disks, which are available separately.

Included with the game are four classic Stanley Cup teams—the 1970 Boston Bruins, the 1970 St. Louis Blues, the 1971 Montreal Canadians, and the 1971 Chicago Blackhawks—and the 1988 Edmonton Oilers and the 1989 Los Angeles Kings. \$49.95

Bethesda Softworks, 15235 Shady



Grove Rd., Rockville, MD 20850, (301) 926-8300.

Lucasfilm Games has announced the Atari ST version of the comedy-mystery adventure, *Maniac Mansion*. A demented scientist, Dr. Fred, kidnaps Sandy, everyone's favorite cheerleader, and carries her away to his secret laboratory, hidden (where else?) in a creepy Victorian mansion. There, with his fiendish research assistants—his wife Nurse Edna, son Weird Ed, and a bizarre kennel of unearthly pets—he prepares poor Sandy for irreversible brain surgery. But if your three-person team is clever enough and quick enough, you might just save her.

Because you choose from 14 different rescue teams, each with its own personality, the game can be played over and over without repetition. And there are five completely different endings. \$49.95.

Lucasfilm Games, P.O. Box 10307, San Rafael, CA 94912, (800) STAR-WARS.

Electronic Arts announces *Pro Tennis Tour—The Ultimate Tennis Simulation* for the Atari ST. In this game, you are a professional tennis player, ranked 64th in the world. Your objective is to improve your ranking by participating in major championships such as the Australian Open, French Open at Roland Garros, U.S. Open, and Wimbledon. The simulation boasts six training programs in which you can play against either a human opponent or the computer. \$39.95.

Electronic Arts, 1810 Gateway Dr., San Mateo, CA 94404, (415) 571-7171.



NEW Products

Eliminate Disk Labels

Weber & Sons has announced a computer identification system that eliminates the need for disk labels. The One-LabelSystem features a thin self-adhesive plastic writing surface that is affixed to the disk, allowing the user to

record information with a special marking pen.

Information thus recorded can be wiped off and replaced with more up-to-date data at will.

The One-LabelSystem Kit includes instructions, a marker, and 100 white

and 100 colored writing surfaces, which can be used on either 5 1/4" or 3 1/2" disks. The kit sells for \$39.95.

Weber & Sons, 3468 Hwy. 9, Freehold, NJ 07728, (800) 225-0044, (201) 431-1128.

New and Improved

Need to know the latest version of a software package? Find it here.

Software packages are constantly being enhanced by their publishers to add features, fix bugs, and incorporate the latest technological advances. To derive the maximum benefit from your software investment, it is important to know what updates have been made to the packages you use. If you are not using the most current version of a package, contact the manufacturer to find out what enhancements have been made and what you must do to obtain the new version.

Working from information provided by the publishers themselves, we have compiled a list of the most current version numbers of many popular 8-bit and ST software packages and software/hardware products. Program version

numbers are often found printed in the documentation, on the title screen, in a README text file on disk, or in an About . . . item in the left-most menu on the GEM desktop.

While every attempt has been made to make this list as comprehensive as possible, we realize that a few fine products may have been omitted. If you would like to see a specific program added to this list, please send your suggestion to New and Improved, *Atari Explorer*, 7 Hilltop Rd., Mendham, NJ 07945.

Note: we have not included entertainment and educational programs in this list because, as a general rule, these packages are not updated frequently.

•Bullets indicate new listings and program updates.

8-Bit Programs

Action, ICD/OSS	3.6	Parrot II, Alpha Systems	2.8
Bank Street Writer, Broderbund	1.0	Print Shop Companion, Broderbund	1.0
Blazing Paddles, Baudville	04422	Print Shop, Broderbund	1.0
Chipmunk, Alpha Systems	3.04	Scanalyzer, Alpha Systems	3.6
ComputerEyes, Digital Vision	1.3	SpartaDOS Construction Set, ICD/OSS	3.2D
Desktop Performance Studio, Virtusonics	1.4	Super Archiver, Computer Software Services	3.03
DOS XE, Atari Corp.		Super Archiver II, Computer Software Servs.	3.03EHN
•Draper Pascal, Draper	2.1	Top-DOS Plus, Eclipse	1.5+
Enhancements To Basic II, Hathaway Electronics	5.0	Top-DOS Professional, Eclipse	1c
FlashBack, ICD/OSS	1.4	Top-DOS, Eclipse	1.5a
Guitar Wizard, Baudville	11602	Turbofile Micromiser	1.0
Kyan Pascal, Kyan	2.02	Turboword Plus, Micromiser	2.0
MYDOS, Supra	4.3		
MagniPrint II+, Alpha Systems	4.1		

ST Programs

1st Word Plus, Prospero	3.14	•DynaCADD, ISD Marketing	1.70
1st Word, Atari	1.06	•El_Cal, Debonair	1.14
Accounting Series, Hi-Tech Advisers	2.10	EZ Calc, Royal	1.33
APL.68000, Spencer Organization	6.05C	•EasyDraw, Migraph	2.35
Alice Pascal, Looking Glass	1.5	Edit-8000, Savant Audio	1.3
Animatic Animation System, Kinetic Microsystems	1.0	Edit-DSS, Savant Audio	1.0
ASM 32, Memocom Development Tools	3.0	First CADD, Generic	1.1
Astronomy Lab, Personal Microcosms	1.05	Flash, Antic	1.6
Athena II, Iliad	2.0	FlashBack, ICD/OSS	2.3
Award Maker Plus, Baudville	23716	Fleet Street Publisher, MichTron	2.0
BBS Express ST, ICD/OSS	1.3	Fontz, Neocept	1.11
Beta-CAD, Beta-CAD	1.0	Fortran for GEM, Prospero	2.151
CAD 3D, Antic	2.03	Fuel-Pro, Hi-Tech Advisers	3.00
Calamus, ISD Marketing	1.09	GFA Basic, Antic	3.07
•Church Manager, Hi-Tech Advisers	3.0	Hard Disk Accelerator, Beckemeyer Development	1.13
ComputerEyes Color, Digital Vision	1.32	Hard Disk Toolkit, Beckemeyer Development	2.00
ComputerEyes Mono, Digital Vision	1.0	Hard Drive Turbo Kit, MichTron	1.25
Cyber Mate, Antic	1.1	Informer II, Soft-Aware	2.01
Cyber Paint, Antic	2.0	Interlink ST, Intersect	1.85
Dac-Easy Accounting, Dac	1.0	Inventory Manager, La Foret	1.2
Dac-Easy Payroll, Dac	1.0	Inventory Master, Royal	1.5
Data Manager ST, Timeworks	1.1	Inventory-Pro, Hi-Tech Advisers	4.10
DataTrieve, Abacus	E2.05	LDW Basic Compiler, Logical Design Works	2.0
dbMan, Atari	4.0	LabelMaster Elite, Migraph	1.0
Degas Elite, Electronic Arts	1.1	Laser C, Megamax	2.10
•Developer's Toolkit, Prospero	1.10	Laser DB, Megamax	1.1
DigiSound, Alpha Systems	1.62	MT C-Shell, Beckemeyer Development	1.20
Disk Library, Classic Image	1.2	Magic Sac, Data Pacific	6.1

Mail Merge, Regent	1.3	Solapak, Solar Powered Software	3.0
Mail-Pro, Hi-Tech Advisers	4.0	SQL Database, Regent	11/27/88
Mark Williams C, Mark Williams	3.0.9	STAccounts, ISD Marketing	2.0
Master Link, Intersect	1.2	ST Control, Trio Engineering	1.5
•Master Tracks Pro, Passport Designs	3.5	•ST Hard Drive Utility Disk, Supra	4.02
MasterPlan, ISD Marketing	1.0	ST Sprite Factory, Future Software Systems	1.1
Micro C-Shell, Beckemeyer Development	2.74	ST-Replay, MichTron	4.0
Micro RTX Developer Kit, Beckemeyer Devel.	1.13	ST-Talk Professional, QMI	2.0C
Mighty Mail, MichTron	2.1	SuperBase, Precision	1.049
Modula 2, Jefferson	1.5	SuperBase Professional, Precision	2.03
Navigator, Antic	2.0	Super Sales-Pro, Hi-Tech Advisers	4.10
NeoChrome, Atari	1.0	SwiftCalc ST, Timeworks	2.0
PC-Ditto, Avant-Garde Systems	3.01	SwitchBack, Alpha Systems	2.0
Partner ST, Timeworks	1.0	T-Basic, Dr. T	1.0
Pascal for GEM, Prospero	2.151	The Chameleon, Future Software Systems	1.0
Payroll Master, Royal	2.151	Thunder, Electronic Arts	1.32
Personal OS-9/ST, Microware	2.3	•Touch-Up, Migraph	1.56
Personal Pascal, ICD/OSS	2.05	True Basic & Run-time, True Basic	2.0
Phasar, Antic	3.0	Turbojet, Neocopt	1.20
Power Print, Alpha Systems	2.1	•Turbo ST, Softrek	1.8
Print Master Plus, Unison World	1.61	Tweakit, Savant Audio	1.4
Professional OS-9/ST, Microware	2.3	•UltraBase ST, MicroMiser	2.0
Prospero C, Prospero	1.141	Ultra-Speed Plus, Computer Software Services	1.5
Pro Text, MichTron	4.0	Unispec, Trio Engineering	1.11
Publisher ST, Timeworks	1.11	Universal Item Selector, Application & Design	3.0
Publishing Partner, SoftLogik	1.03	Utilities Plus, MichTron	1.1
•Regent Base 2, Regent	9/15/89	VIP Professional, ISD Marketing	1.2
Regent Word 2, Regent	9/14/88	Video-Pro, Hi-Tech Advisers	4.0
Regent Word Student, Regent	9/14/88	Word Writer ST, Timeworks	2.01
Revolver, Intersect	1.1	WordPerfect 4.1, WordPerfect	8/18/89
•Sales-Pro, Hi-Tech Advisers	5.0	WordUp, Neocopt	2.0
Sales-Pro Plus, Hi-Tech Advisers	4.10	Zoomracks II, Quickview Systems	1.0

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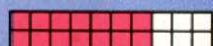
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Newell Industries
 P.O. Box 253
 Wylie, TX. 75098
 214-442-6612

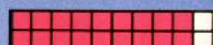
Software Survey

Lots of new role-playing and action for Atari gamers

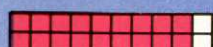
Powerdrome



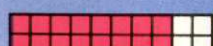
EASE OF LEARNING



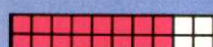
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor, joystick

Copy protection: Yes

Summary: A high speed futuristic racing game with great 3D graphics

Price: \$39.95

Manufacturer:

Electronic Arts
P.O. Box 7578
San Mateo, CA 94403
(415) 572-ARTS



Electronic Arts' most recent release for the ST, *Powerdrome*, is a simulation of high speed racing in the future. Cars are long forgotten and the racing vehicle of choice is the Typhoon, a jet-propelled aircraft that demands every bit of piloting skill you can muster.

The races take place on 3D tracks that are viewed from inside the cockpit of your Typhoon. These tracks are full of nasty surprises such as steep curves, twisting tunnels, crusher gates (giant walls that open and close), and your opponents.

To repair any damage sustained by your craft, you must pull off the track, through a green force wall, and enter the robo-pits. When you land on your pit, you are shown an overhead view of your craft and the damaged parts. By pressing keys on the keyboard, you can activate robot repair arms to remove and repair damaged parts. The robo-pits are also your source of fuel.

To add to the challenge of the game, occasional storms kick up, forcing you to pull into the pits and outfit your Typhoon with a filter designed to protect the engine. Failure to take this precau-

tion can lead to a blown engine—or two.

If you want some human competition, you can link two STs via a null modem cable. You must, however, have two original *Powerdrome* disks to use this feature.

The 3D graphics are excellent and amazingly fast. The game is also enhanced by stunning digitized sound effects, the most spectacular of which is the sound of the storm.

Piloting a Typhoon is a real challenge; I recommend *Powerdrome* to any ST gamer in search of action and excitement.

—Clinton Smith

Pirates

The life of a buccaneer on the high seas is a natural setting for a computer game, and the folks at MicroProse have released one that allows ST gamers to buckle their swashes, batten down their hatches, and enjoy plenty of action.

You begin the game of *Pirates* as a young man preparing to seek his fortune at sea. You run into a pack of buccaneers whose captain can no longer lead them, so they decide to back you. Before you can take control of the ship, however, you must pick up a sword and duel the captain for the right. Not until you defeat him can you begin your career as a privateer.

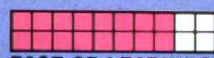
The Spanish Main, the Caribbean Sea, and the Atlantic Ocean are filled with opportunities for an enterprising seaman. England, Spain, France, and Holland are locked in a struggle for dominion on the high seas, and the governments of these powerful nations re-

ward with titles and land those who attack the ships and towns of their enemies.

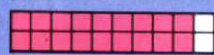
Other noble efforts include capturing pirates, finding buried treasure, transporting goods, and running errands for governors. As you acquire titles from the governors with whom you decide to do business, they tell you where to find the evil noblemen who carry pieces of maps that will lead you to missing members of your family.

You obtain the maps by defeating the noblemen in duels, and when you rescue a family member, he or she gives you a piece of a map that will lead you to a fabulous lost Inca treasure.

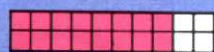
Ahh... but the name of this game is *Pirates*. There are lots of poorly defended ships roaming the seas, and hitting a city while the Spanish Treasure fleet or Silver Train is in town can net you a hefty profit. That done, however, don't expect the owners of the ships to



EASE OF LEARNING



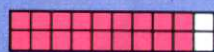
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment:

Color monitor

Copy protection: Key disk

Summary: An exciting simulation of life on the Spanish Main

Price: \$44.95

Manufacturer:

MicroProse

180 Lakefront Dr

Hunt Valley, MD 21030

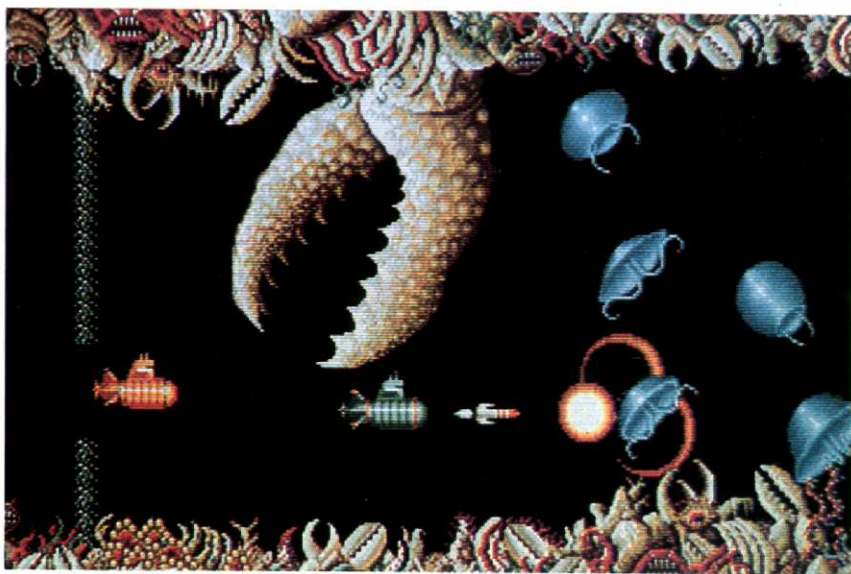
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Blood Money

OK, gamers, how often have you been confronted with this scenario: "The peaceful worlds of AmbliFred have been attacked by the evil Blarg empire. The Blarg Pfizzi-Fighters have swooped upon the unsuspecting populous and stolen the vital Snugwubbler crystals that provide life support to AmbliFred. You are the only vigilante skilled enough to pilot the AmbliFredian Ypsi-Cruiser into Blargoid space and attack the Blarg planets to retrieve the crystals. Good Luck!"

If you spend any time surveying the game market these days, you are sure to stumble across enough of these games to gag a good-sized water buffalo. Ultra-contrived banality and outrageous use of *deus ex machina* seem to be staples of the arcade game world these days. What's a poor gaming freak to do?

Buy *Blood Money* from Psygnosis, that's what. This superb piece of programming represents David Jones' second major effort for Psygnosis and is certainly one of the company's finer products. Ported from the original Amiga version, this descendent of Jones' earlier work (*Menace*) is a stunningly fresh glimpse at what can be done within the aging genre of scrolling shoot-em-ups.



Much of the allure of this game is in the simplicity of its plot. You are the young and impetuous Spondulix on vacation on the holiday world of Thanatopia, and you have just received 200 credits from your family for expenses. Now, you have two choices: You can while away your vacation days in glorious (and stupendously boring) relaxation, looking forward to your new career as a Venusian accountant... or

you can pay the generous folks at Alien Safari Promotions most of your available cash to drop you on a planet populated by the most hideous creatures to come out of ASP's bio-genetic engineering labs.

There are no pretenses here. You just get in, trash anything that moves (even anything that looks like it *might* move), and get out. If you can properly plunder all four of ASP's safari planets, you are



give you the warmest of welcomes when next you sail into one of their ports.

Along with glory and riches, you can find romance with the daughters of the governors. If you earn sufficient nobil-

ity, you may even be able to persuade one of them to marry you. Of course, a jealous suitor is always involved, and you must duel him for the hand of the woman you love.

The years eventually take their toll and force you to retire (imprisonments weaken your health and hasten this). When you do retire, your riches, land, and accomplishments are tallied, and you learn what station in life you have achieved.

Because the game has a variety of play options and difficulty levels, you will be able to play *Pirates* over and over.

The program makes good use of the mouse and has some excellent action sequences (the swordfighting and ship battles are great fun). The graphics are good and have clever touches of animation.

Sound effects complement the game nicely, and *Pirates* also offers MIDI-compatible music that is setup to work with any kind of synthesizer you might have available.

Pirates is an excellent mix of role playing, action, and strategy that will have you returning to those thrilling days of yesteryear again and again.

—Clinton Smith

	System: Atari ST
EASE OF LEARNING	Required equipment: Color monitor, joystick(s)
	Copy protection: Yes
CHALLENGE	Summary: Attractive, non-nonsense blastathon with aliens to spare
	Price: \$39.95
GRAPHICS	Manufacturer: Psygnosis Ltd.
	Distributor: Computer Software Service
DOCUMENTATION	P.O. Box 483 Addison, IL 60101 (708) 620-4444
OVERALL RATING	

assured wealth and fame. But once you accept, there's no turning back. And don't look for any help—ASP guarantees total hostility in every one of their aliens or your money back.

The actual gameplay is almost that simple. Each of the four ASP planets has a distinctive environment. The first is the Air planet of Gibba, on which you use a helicopter as your vehicle of destruction. Next is Grone, the Water

planet, where a submarine is your conveyance.

You then advance to the Ice planet of Shreek with a jet pack. To conquer the Fire planet of Snuff, however, you need a spaceship.

You begin with 200 credits, which is enough to gain access to only Gibba or Grone; you must earn your way into the higher rounds.

Equipped with the appropriate mode of transportation, you are dropped on the surface of the planet to begin your wholesale butchery. The aliens are many and varied. Most are beautifully animated; all are quite deadly. Just remember that some of these creatures are tagged for bounty, and you can earn credit for obliterating them.

But don't expect any direct deposit here. The credit chips fall from the burning debris of your victims, and you must fly in and collect them to bag the bucks. With your reward money, you can buy not only entry to other planets but weapons, enhancements, and extra lives, which are available at the outposts that ASP has thoughtfully provided along the way.

As is now traditional in scrolling fighter games, each planet has its own special final guardian, a huge creature that takes numerous blows to defeat. After days of playing, I have barely managed to reach the final guardian of the first level—and never with the ap-

propriate armaments. It takes a while to master the art of shooting, swooping, and snarfing credits.

Blood Money is a wonderfully crafted program from stem to stern. The graphics are lovely, the gameplay is addictive, and the music is atmospheric, even pleasant—high praise for a game of this sort—though sound effects can be substituted for the music. The manual is wonderful. It is clear, concise, and amusing, and includes some very interesting notes from Jones about the making of the game.

Though *Blood Money* is far from wimpy, it may not appeal to the most hyperactive gamers. Movement of your ship is somewhat relaxed, at least until you boost its drive systems at a weapons shop. Don't expect any mercy, however. The pace is furious.

The only real niggle I have is that the entire first disk appears to be devoted to the slightly pompous introductory sequence. This is fine, but it does add to the loading time and loses its appeal quickly.

It remains to be seen whether *Blood Money* can hold its own against newer contenders in this popular genre, including *Xenon II* from Imagicworks and Psygnosis' own upcoming *Stryx*. But until these make their way over from Europe, *Blood Money* gives you a lot of bang for your buck.

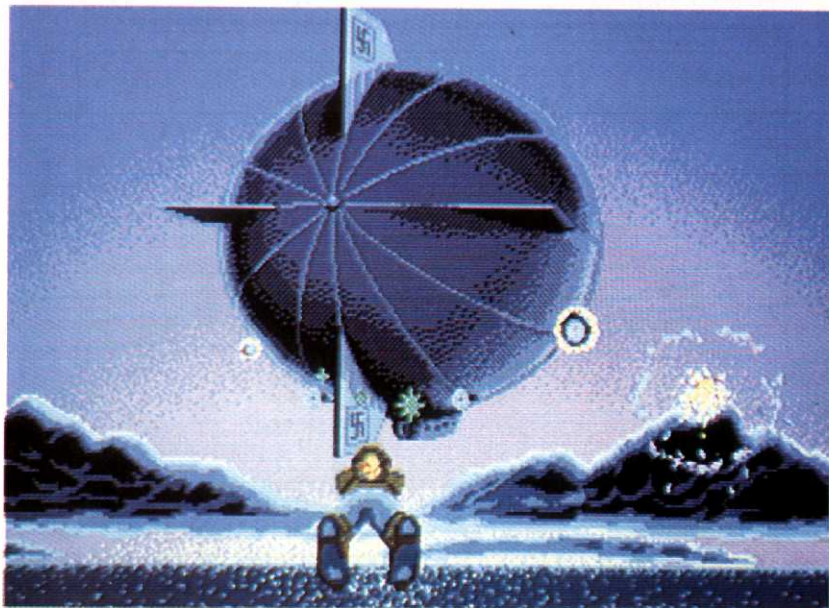
—Matthew Laurence

Rocket Ranger

The Nazis have come up with a mysterious new energy source that is enabling them to gain the upper hand in World War II. A group of scientists from the future, who live in a Nazi-occupied world, have sent you a rocket pack and a radium gun, which they hope will enable you to change the course of history as they know it.

With these devices, you become the Rocket Ranger, and from your base in Fort Dix, NJ, you must coordinate the effort to stop the Nazis. One of your tasks is to manage a global spy network. Using five spies, you must infiltrate countries in Europe, South America, and Africa, where, if your spies are not discovered, they will help you locate Nazi Rocket labs, Nazi bases, and two Lunarium stockpiles. You can also have your spies set up resistance operations to slow down the Nazi invasion.

The Lunarium stockpiles are important, because the Nazis are using the substance, which lowers male IQs, to subjugate the world. In addition, your rocket pack is powered by Lunarium, so you must locate these bases to refuel after your initial supply runs out.



One base is located in a jungle pyramid guarded by Nazi gun emplacements. Take out the guns, and you can fill 'er up. The other is a desert base protected by Nazi ack-ack batteries which you must shoot as you fly in from

above.

The five bases that house Rocket Labs are sources of parts that can be combined to create a moon rocket. Using this new rocket, you can fly to the moon and attempt to shut down Lunar-

Indiana Jones—The Action Game

Hold on to your hat, Indiana Jones is back! The Last Crusade action game, which is not to be confused with the adventure game also sold by Lucasfilm, belongs to the conquer-the-cavern genre.

The object of the game is to survive four levels of play and reach the Holy Grail (in time, of course). Sounds easy. On each level you must collect a specified artifact—which would be much easier if Indy didn't have to battle Indians, thieves, and other of ne'er-do-wells; bypass or outwit traps; climb up and down ropes; or any of the other things one normally does in a cavern.

And unless you remember to take each torch you find on the wall, the cavern darkens quickly; I spent considerable time in the dark!

Successfully recovering the Cross of Coronado and leaping from car to car on a circus train brings you to level two, where you must choose the correct arch, making good use of the red glasses and the clues included with the game. Choose the wrong arch and your search will remain fruitless. If you choose the correct arch, you have an opportunity to recover the Crusader's Shield and scale

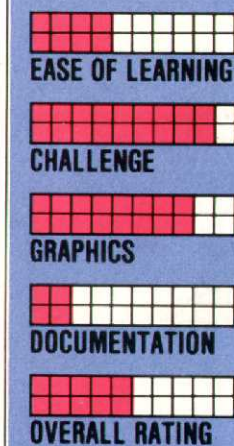
the castle wall—watching out for lightning, of course.

Level three puts you on the Zeppelin where you must recover your father's stolen Grail Diary. If you get as far as level four, you must recover the Holy Grail before your father, who has been shot, has his heart turned to stone. Here, too, you must avoid the traps set by Crusader Knights hundreds of years earlier.

One nice touch is that when you die, you return on the level you most recently attained, rather than being sent back to the beginning of the game—a great boon for players like me.

The graphics are well-done, but based on the excellent graphics that Lucasfilm used in programs for the 8-bit Atari, I expected that—and more. The documentation, unfortunately, is all but nonexistent. In fact, I called Lucasfilm to see whether I had a complete package. I did.

Other than the extremely brief instructions for loading the game, two paragraphs comprise the documentation. Also included in the package are the aforementioned red glasses and a page of clues designed to help you



System: Atari ST
Required equipment:
 Color monitor
Copy protection: Lethal
Summary: Caverns of Mars revisited
Price: \$39.95
Manufacturer:
 Lucasfilm Games
 P.O. Box 10307
 San Rafael, CA 94912
 (415) 662-1902

choose the correct arch.

I found the game quite difficult to play, a situation that was exacerbated by the lack of documentation and hints. The main problem with the game, however, is not the game at all, but the protection scheme it uses.


EASE OF LEARNING


CHALLENGE


GRAPHICS


DOCUMENTATION


OVERALL RATING

System: Atari ST

Required equipment:

Color monitor, joystick

Copy protection: Code

wheel

Summary: Another terrific

movie-style game

Price: \$49.95

Manufacturer:

Cinemaware

P.O. Box 5083

Westlake Village,

CA 91359

(800) 527-4391

(805) 495-6515

moves across the map, conquering one country after another. The only way to buy yourself and your agents the time you need is to attack the Nazi ground operations. These are guarded by Luftwaffe squadrons which must be shot down with your radium pistol. With each successful attack, Nazi efficiency is reduced by 10% (it starts out at 80%).

If the Nazis kidnap the famous American scientist, Otto Barnstorff, and his lovely daughter you must attempt a rescue by attacking the Nazi Zeppelin that is carrying them back to Germany.

Rocket Ranger uses a special code wheel form of copy protection, so you can run the game from a hard drive or a 1Mb RAMdisk, both of which allow the game to progress quickly without annoying disk access and swapping delays.

Rocket Ranger is Cinemaware's best game yet. The graphics are of the same high quality as previous Cinemaware releases; the sound effects are excellent; the music is catchy; and the action sequences offer as much challenge as many arcade games. *Rocket Ranger* is a Must Buy for Cinemaware fans.

—Clinton Smith

ium production at the source. Each lab has a Nazi guard who must be subdued in a fistfight.

The remaining Nazi bases supply support to a fleet of Nazi Zeppelins that



Computing Milestones

1943

ENIAC, the first electronic digital computer is built by John Mauchley, J. Presper Eckert, and John Von Neumann at the Moore School of Electrical Engineering, University of Pennsylvania. ENIAC contained more than 18,000 vacuum tubes, weighed 30 tons, and occupied a space 30 by 50 feet.

1947

The transistor is invented at Bell Labs by John Bardeen, Walter Brattain, and William Shockley. This device paved the way for second generation (transistor-based) computers first delivered in 1959.

1950

Alan Turing proposes his famous imitation game in the article, "Computing Machinery and Intelligence" published in *Mind* magazine. Never programmed by Turing himself, a variation of this "game" was programmed 13 years later by Joseph Weizenbaum at MIT in a program he called Eliza.

1953

The first computer checkers game is programmed by Arthur Samuel for the newly unveiled IBM 701 at IBM Corp. in Poughkeepsie, NY. Also in 1953 the book, *The Complete Strategist* by J.D. Williams is published by Rand Corp. This, the first primer on game theory, provided the theoretical foundation for many early computer game programs.

1954

The first computer blackjack game is programmed for the IBM 701 at the Atomic Energy Lab at Los Alamos, NM. Also that year, a crude game of pool—perhaps the first non-military game to use a video display—is programmed at the University of Michigan.



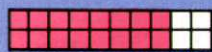
About 25% of the time the game would not load at all; it would bomb. This occurred on two different STs with two different sets of game disks. Another 25% of the time, the game refused to reload after Indy died—and he died a lot! This detracted from my enjoyment and made most of my attempts at learning the game very frustrating. I contacted Lucasfilm and informed them of my experience. They had no information or explanation to offer, so I can't say

whether this is a unique problem or a common one.

The bottom line? If you are an aficionado of cavern-type games, don't mind working in the dark, and can find a game that loads consistently and properly, this game is for you; I recommend it. If, however, you are a shoot-'em-up specialist, you will die of frustration long before you reach the Holy Grail. This game is definitely for spelunkers!

—Dave Noyes

TV Sports Football



EASE OF LEARNING



CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor, joystick

Copy protection: Yes

Summary: An action-packed arcade/strategy football game offering a full season of league play

Price: \$49.95

Manufacturer:

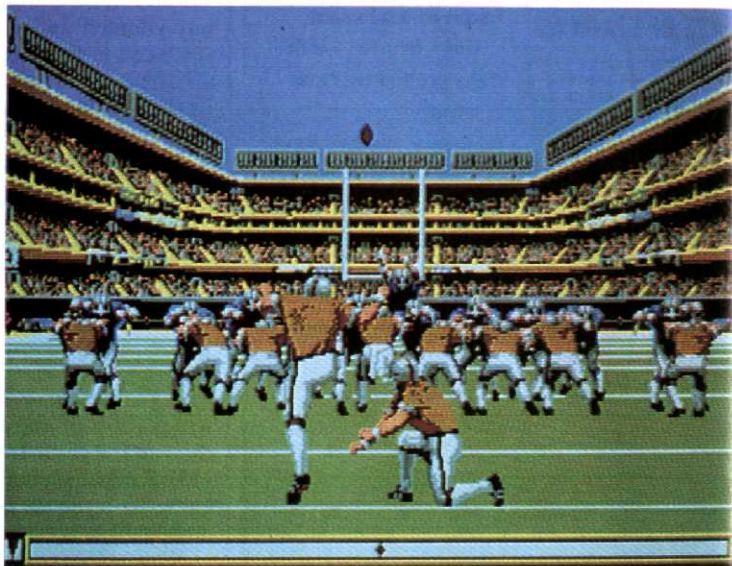
Cinemaware

P.O. Box 5083

Westlake Village, CA 91359

(805) 495-6515

(800) 527-4391



You are on your own 25-yard line . . . The quarterback calls for a long pass play . . . He takes the ball, steps back into the pocket, and launches a long spiraling pass as you race down the field with two huge defensemen on your tail . . . You make the catch, straight-arm a would-be tackler, and it's a clear run into the endzone! Touchdown!

TV Sports Football captures all the excitement of a professional football game. As a coach you call defensive and offensive plays. As a player you run, pass, and catch during a full 16-game season. Your team might even make it into the playoffs or the Super Bowl if you are good enough. *TV Sports Football* presents a good mixture of strategy, arcade action, and statistical gaming all in one package.

The first thing you do before starting play is to make a league disk. You can then edit any or all of the players on the 28 teams of the CWFL (Cinemaware Football League), changing their ratings in each of four categories—speed, strength, agility, and hands. Receivers need to be fast and must have good “hands” to catch and hold on to the football. The quarterback must be very agile to hit his receivers with a pass. And your linemen need to be strong to open holes through which your runners can move on offense, or close holes in the line on defense.

You can set up real teams or just use those provided on the disk. I set up the New York Giants with the names of real players and their relative abilities in each of the four categories as I estimated them. This is not as statistically

accurate as some other games; you cannot, for example, type in last season's stats—average rushing yards, passing yards etc.—for each Giants player. But there is plenty of football action and enough realism to make up for that shortcoming.

TV Sports Football keeps track off win/loss statistics on all 28 teams for the entire season as it progresses, and you can look at the schedules and records for any team before starting a game. Contrary to claims on the package, the program does not keep performance statistics for individual players and league leaders. Nor does the ST version offer a halftime show with cheerleaders and sports announcers.

The opening screen lets you choose whether to play an exhibition game, begin league play, practice plays, or view the schedules and standings of the various teams.

Any two teams can play head to head in exhibition. This is a good place to start actual competition after you have practiced passing and running with the ball.

In league play, you play the whole season from week one through week 16. The ST version, however, requires that you reboot after playing each game. Each week you can put any of the 14 games on Hold or Auto. Games to be played with at least one human opponent can be put on Hold, if they are not to be played right away.

Games in which both sides are played by the computer can be left on Auto. The results of these games are flashed on the screen as you play your game, just as they are on TV. You can put

games on Hold if you want to watch them later. To get through a season quickly, you can leave all the games on Auto for a number of weeks and let the computer display all the results week after week.

TV Sports Football is played from a perspective above and behind the two teams at the line of scrimmage. Each side can call defensive or offensive plays and even improvise plays. Football fans will recognize the 3-4, 4-3, and 6-1 standard defensive positions. On offense you have the shotgun, pro-set, and I formations. You must guess what the other team will do and prepare for it—just as in the real thing.

You can play *TV Sports Football* alone or with a group of friends. You can also elect either to take an active part in the game or just to act as coach and send in plays for the players to run.

You call plays with the joystick by moving it diagonally in one of four directions. On offense you choose one of the three standard formations or to kick. Then you see diagrams that show how the four available standard plays run. You can turn them around, left to right, by holding the fire button down when you select a play. This provides plenty of variety on offense and keeps the defense guessing. When you kick, you can choose to punt, attempt a field goal, or try a fake punt.

After both sides have called plays, you go to the field. You see both teams lined up in their called formations. You can either take total control of the quarterback on offense or just tell him to follow the diagrammed play and hand off the ball or throw a forward pass.

From this point on something happens that is unique to *TV Sports Football* as far as I know. If you do absolutely nothing, the computer will run the play as you called it. If you continue to do nothing, it will attempt to keep playing, using your style of playcalling. If you call a lot of pass plays, the computer calls a lot of pass plays. If you blitz a lot, it blitzes.

I have mixed feelings about this feature. A couple of times I was a little slow in calling plays (the computer waits eight seconds to see if you are still playing), and the computer took over. One minute, I was holding the other team on the 50-yard line. The next, I was watching the computer switch from my prevent-the-pass-coverage style of defense to a blitz that let the other team's wide receiver catch a long, long pass for a game-winning touchdown. I was so angry, I could have chewed nails. Not only did the computer seize control at an inopportune moment, but it called a highly questionable play—one I would never have called myself in that situation.

Despite a few minor flaws, I loved playing *TV Sports Football*. The arcade action was so real I played game after game until I was too exhausted to go on—it was 3:00 a.m. I delighted in learning what plays the other team liked to call and stopping its offense in its tracks.

I should mention that each team has its own style of play; some—like Anaheim—will throw passes all day, while others—like Atlanta—will run most of the time.

Learning to throw passes is half the fun of the game. On a pass play, you take the ball, step back, and look for an open receiver downfield. Assuming you see one, you point the quarterback's arm at him and release the ball. An x moves up field in the direction he was pointing. When you let go of the fire button, the ball travels to where the mark was. The closest receivers will try to catch it, as will the other team's defense.

The graphics in *TV Sports Football* are good to excellent. The field goal scenes are set on the field and look quite real.

TV Sports Football is an excellent football game for the Atari ST. I had more fun playing several games of the simulation than I ever have watching a whole Sunday afternoon's worth of televised football. Whether you're a life-long football fan or just like good arcade sports action, *TV Sports Football* is the game for you.

—John S. Manor

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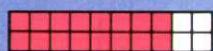
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Times of Lore

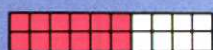
EASE OF LEARNING



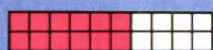
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor; joystick optional

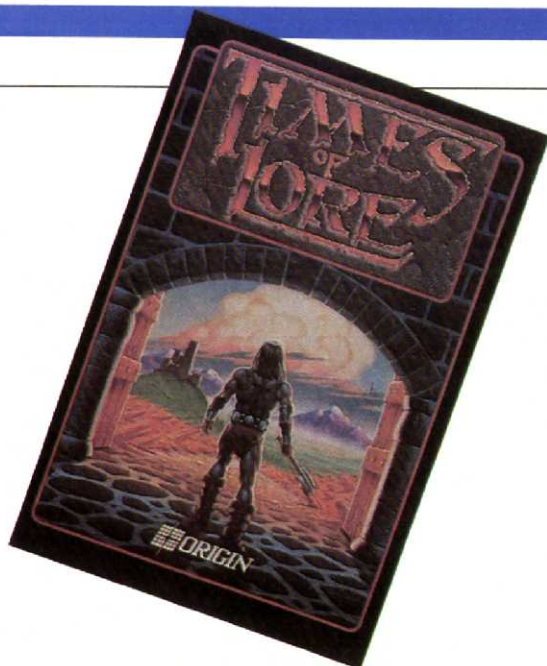
Copy protection: Yes

Summary: Fantasy role-playing action adventure that doesn't quite make it

Price: \$39.95

Manufacturer:

Origin Systems
110 Wild Basin Rd.
Ste. 230
Austin, TX 78746
(512) 328-0282



Times of Lore is an action adventure set in the days of the knights of the round table.

At the start of the game, you have three on-screen counterparts from

which to choose—a knight, a barbarian, and not forgetting female players, a Valkyrie. The characteristics of these counterparts can not be edited, and they don't change as the game progresses;

they never get any smarter or any more powerful. The only thing that does change is their physical condition, which suffers from injuries received during combat and lack of food and rest.

One of the most famous treasure hunts of all time centers around the Lost Dutchman Mine. Now, thanks to Magnetic Images, ST users can join the quest, searching the Superstition Mountains of Arizona for the famous mine.

You begin your adventure as a grizzled old prospector in the town of Goldfield. As you walk through town, aided by the horizontally scrolling screen of the ST, you can elect to visit the various buildings you pass.

A doctor's office, a saloon, a supply

store, an assay office, a bank, a newspaper office, a jail, and a livery stable line the street and provide you with goods and services that will help you in your search.

When you press the joystick button the screen switches to a scrolling overview map of the area on which you are represented by a small square. Mountains, some of which hide gold-bearing mines, are the main topographical features of the area.

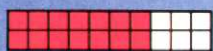
When you get near a mountain you can attempt to enter its mine by press-

ing the joystick button. If you are near the entrance, the scene switches to a side view of your character in the cave. When you find a gold deposit (represented by a glowing spot) you can press the button again to swing your pick and dig up the deposit. Take it back to the assay office to turn it into green money.

As you travel across the desert you may run into such hindrances as bandits, Indians, and rattlesnakes. If you have a gun, you may be able to fight them off; otherwise they will rob or kill you.

Lost Dutchman Mine

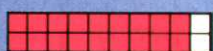
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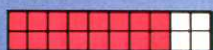
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor, joystick

Copy protection: Keyword

Summary: An entertaining action adventure with an Old West theme

Price: \$49.95

Manufacturer:

Magnetic Images
P.O. Box 17422
Phoenix, AZ 85011
(602) 265-7849



That means that the role-playing aspect of the game is less than fully developed. The sad thing is that the same can be said of the action aspect. I suspect that the authors were trying to achieve too much in one package.

The game was obviously ported over from the IBM PC to the ST, and it is to this fact that most of the complaints I have about it relate; the game was ported but not upgraded to take complete advantage of the capabilities of the Atari system.

The game screen is divided into a status area and an action area. The action area occupies only about one quarter of the screen. Even so, the scrolling in that area is very slow and distractingly jumpy. There are seldom more than three characters in the action area at one time, so you would expect that on an ST the action would be quite fast. It isn't. Origin's advertising states that *Times of Lore* "offers fast and furious arcade excitement." This may be true for IBM owners, who still think eight

colors is a blast, but this ST version is about as fast and furious as tiddly-winks!

The joystick control offers little over the keyboard control, because diagonal movements are not included. The inclusion of a joystick option is one of the few special considerations given to the ST version, and even that wasn't done right. I suppose I should be happy that a joystick routine was incorporated at all, since IBM analog joysticks are expensive and generally considered beneath the dignity of a business machine. Indeed, if it had been a full implementation, I would have had no reason to complain.

Sound effects and music are also substandard. The volume for the musical intro is too low, and when it is turned up, the static in the background eliminates the atmosphere that the musician was trying to create. When the game starts, the volume for the sound effects is much higher and must again be adjusted.

The sound of a walking character is

obnoxious in the extreme and can't be shut off. You are forced to listen to it throughout the entire game, because your feet are your only means of locomotion in the Kingdom of Albareth.

The documentation, while seeming complete, leaves the most important ingredient—the goal—to be discovered by the adventurer. As it turns out, that goal includes finding and retrieving stones that impart the ability to foretell the future.

For the graphic adventurer, *Times of Lore* could be a real treat, with its vast mythical land to explore, but for the action adventurer, exploring will be a tedious affair, with too little action to rate as an arcade game.

A *Times of Lore* conversion that really put the ST through its paces would have received my recommendation. As it stands, I can hardly suggest that ST gamers—whether they prefer fantasy role-playing, adventures, or arcade games—will like the mix. It just doesn't work that well. —*Frank Eva*

Thirst is another enemy in the desert, so be sure to have plenty of water.

Along with the adventuring, *Lost Dutchman Mine* provides a change of pace in the form of a card game with a slick shark named Dapper Dan and the opportunity to fish for food in the river—if you have the right equipment.

Lost Dutchman Mine uses both mouse and joystick to facilitate play. When you want to make selections from a menu or shuffle stuff around in your inventory, you use the mouse. When you want to move your prospector around on the screen, you use the joystick.

The graphics in *Lost Dutchman Mine* are nicely done. The game has a couple of nice digitized sound effects and offers great MIDI support.

The program is not copy-protected, so you can copy the two distribution disks onto one double-sided floppy, your hard drive, or a 1Mb RAMdisk.

Lost Dutchman Mine is an entertaining action adventure that should keep you busy for quite a while. And if the challenge of the game itself is not sufficient to keep you seated at the keyboard, perhaps the lure of a gold nugget will be. The \$100 nugget is the first prize in a contest Magnetic Images is running through the end of 1990. To enter, simply find the Dutchman, and send in your claim number on the entry form. Good Luck!

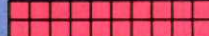
—*Clinton Smith*

Red Lightning

EASE OF LEARNING



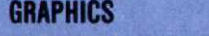
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING



System: Atari ST

Required equipment: Color monitor

Copy protection: Keyword

Summary: Detailed simulation of WW III

Price: \$59.95

Manufacturer:

Strategic Simulations

675 Almanor Ave.

Sunnyvale, CA 94086

(408) 737-6800

AIR OPERATIONS

Aircraft Types	Aircraft Description
Alpha, Mirage V	
A-18	
F-111, B-52	
Mirage III, Draken, F-104	
F-4, Tornado	
F-15, Mirage 2000	
F-16, F-18, Mirage F1	
Jaguar, A-7, Harrier	
F-117	
Mission Allotment Orders	
Strategic Recce.....23	
Deep Recce.....00	
Tactical Recce.....00	
All rest.....00	
Exit to nap.	
Flight conditions.....good	

Strategic Recce.....03
Deep Recce.....03
Tactical Recce.....03
Avionics Capability.....04
Survivability.....05
Force Readiness.....100
Total Aircraft.....23

Nobody wants World War III, but the idea of conventional ultimate conflict has got to be very intriguing, at least to the veteran wargamer. Strategic Simulations has created a scenario for such a conflict and provides the vehicle for testing all your pet theories—a new release called *Red Lightning, An Operational Game of World War III*.

Obviously, as the designers are quick to point out, certain features of the simulation had to be based on conjecture. Estimates of the combat capabilities of

Continued on next page

Red Lightning

the equipment represented were arrived at after much spirited discussion among people who have been very interested in the central European situation for years. The combat capabilities of game units are based solely on the assumed characteristics of the hardware deployed by the units. Rather than trying to make judgments about the professional capabilities of the troops using the hardware, the designers assumed that all hardware would be used with equal proficiency by all troops.

Red Lightning can be played by one person, who takes on the computer, or two people, who play against each other. You can choose to command NATO or Warsaw Pact forces. The conflict is a hypothetical general war in Europe in the early 1990's. Each game turn represents 12 hours of action in which each player can make any number of strategic moves before the computer determines the outcome.

A short game lasts for only ten days of conflict, while a long game takes 30

days. Units and air forces can be examined to the level of individual vehicles, squads, and heavy weapons.

Included with the very complete 27-page manual is a map of the area of conflict, printed on high-gloss card stock. The reverse side is chock-full of quick reference facts and figures.

A wargamer would be hard pressed to tell whether he was viewing an IBM or an Atari ST program; while the map screen is very detailed, the detail looks very IBMish. Tiny one-color evergreen trees indicate forests. Unit icons are un-intuitive boxes filled with circles or diagonal slashes. The only intuitive symbols are an anchor for the marine brigades and an inverted w that looks like a bird in flight and represents airborne units. If it were not for the fact that the mouse is fully supported, an uninformed observer might be persuaded that the program was running off *PC-Ditto*.

The menu bar provides access to all sorts of useful information, such as strategic, political, unit, and possession reports. A menu of icons down the right side of the screen allows input of travel and maneuvering directions simply by

clicking on an arrow icon. Other icons labelled U (unit), P (possession), and O (overview) are map-oriented.

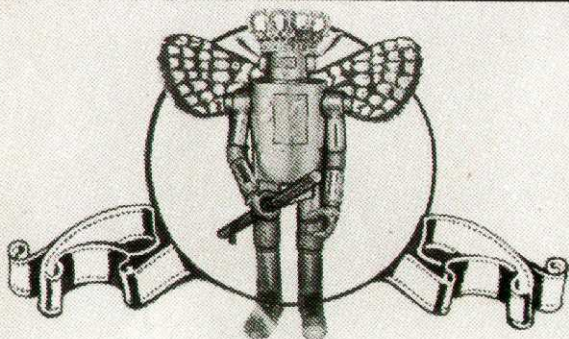
Since the screen can display only a limited number of hexes, O functions as a zoom out, so that the overall map can be displayed. From this view, you can select any hex in the battle area, and the computer will redraw the map for that area.

The program features three unique scenarios, six levels of difficulty, and seasonal configurations, as well as a number of other options that affect the overall duration of the simulation.

Aside from the fact that the joystick button seems somewhat sluggish in responding to commands, the program works. However, there are no animations and no sound effects to remind you of battle. Conflicts are represented by arrows pointing at opposing units, as in *Universal Military Simulator* (without the 3D gridwork).

Although the program lacks some of the bells and whistles ST owners have come to expect, the level of detail in the simulation makes *Red Lightning* a natural for veteran wargamers.

—Frank Eva



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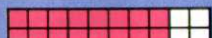
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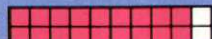
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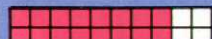
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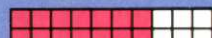
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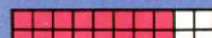
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor

Copy protection: Yes

Summary: A game of exploration that will challenge your problem-solving skills

Price: \$49.95

Manufacturer:

Epyx

600 Galveston Dr.

P.O. Box 8020

Redwood City, CA 94063

(415) 366-0606



You are the top-notch burglar, Devon Aire, specializing in missing jewels—making them become missing, that is. You have been hired by the widow Crutchfield to find the jewels her late husband hid around her mansion. An easy job, you think—a real snap.

Then you begin to explore and find that the mansion is a lot bigger inside than it looks. To make matters worse, Lady Crutchfield's husband was into genetic engineering and left some of his experiments roaming around the house. The front door is now locked, so you can't change your mind and leave; somehow, you will have to stay alive, finish the job, and find a way out of this crazy place.

Devon Aire challenges you to find a total of 16 jewels. They could be hidden anywhere; some of the hiding places are intricate puzzles and some are real stumpers. I have found two jewels that I can see but can't pick up; one is behind a bathtub and the other is in a burning fireplace. One of my favorites is the jewel in the pool room (I'm not giving much away here; you still have to find it). Others are found in more mundane places, such as behind pictures or on bookshelves.

The Crutchfield mansion is shown in a three-quarter view. You control your man with the joystick as he explores the mansion room by room. Chairs, tables, plants, grandfather clocks, and most other large objects can be pushed, pulled, and otherwise moved about within a room. Small objects like books, juice glasses and jewels can be picked up and carried from room to room, though only one at a time. If you try to pick a jewel up while holding a book, for example, the book is set down and the jewel is shown in your possession at the lower right of the screen.

Doors connect the various rooms and hallways of the mansion. You simply walk up to a closed door to walk through it. My wife and I made a rather extensive map of the Crutchfield mansion that was still by no means complete. You will find an upstairs and a dark basement to explore along with the more evident main floor.

Through trial and error we learned that you shouldn't go through certain doors until certain conditions are met. Sometimes the way back is blocked by piles of furniture or by tables laid end to end. You could move all that stuff around and out of the way were it not for those genetic experiments. Killer canaries and mean mutant pig-mice home in on you the moment you enter a room they occupy.

You have a colored bar on the lower left of your screen that shows your life energy. You lose energy slowly as you explore, and the mutants try to hasten your demise by zapping you until your energy is gone and you lose a life. You get three lives, and then you have to start over.

Fortunately, you can placate the mutant pigs with cheese. You have to find a cage to take care of the canaries. And if you hear a phone ringing, go pick it up. As long as you carry it and it keeps on ringing, the pigs and canaries will leave you alone.

Sometimes during the game it becomes necessary to climb up high to exit a room or to grab a jewel or other object that you really need. By piling small objects on top of or beside a larger object, you can reach the ceiling of any room. I found it a lot of fun to figure out what to pile where to get at a jewel, a piece of cheese, or a full glass of wine to restore my life energy.

You might, for example, have to pull

out a table, push it up against a grandfather clock and then place a juice glass on top of a bottle on top of a book to reach a high shelf above a door in the pool room. You climb by jumping onto each object in turn. Then you climb back down to go about your business.

When you find a jewel, you have to take it back to Lady Crutchfield where she is waiting in her room. When you have found all the jewels, you must find a way out of the mansion. Points are awarded for returning jewels and completing necessary tasks along the way.

The main fun of *Devon Aire* comes in figuring out how to use all the objects in each of the rooms. There is supposed to be a way to put out the fire in the fireplace where a jewel is in plain sight. Simply walking up to the fireplace and trying to take the jewel results in the abrupt end of one of your lives. There must be some object or some sequence of actions that will let you put out the fire, but I have yet to find it. The jewel behind the bathtub is also another one that will make you scratch your head. The development of an inquiring mind and a willingness to experiment may be beneficial side effects of *Devon Aire* for some players. In fact, the game would be a good tool for teaching problem-solving.

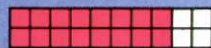
The *Devon Aire* manual is a slim booklet that provides just enough to get you started and then leaves you on your own. This is really a very simple game—one that is easy to play but keeps you busy with one absorbing puzzle after another. *Devon Aire* is one of the most original games I have played in the past year. Whether or not you ever find all the jewels and finish the game, you will find *Devon Aire* a unique challenge that draws you in and keeps you playing.

— John S. Manor

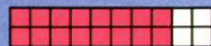
Total Eclipse



EASE OF LEARNING



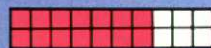
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor;
joystick optional

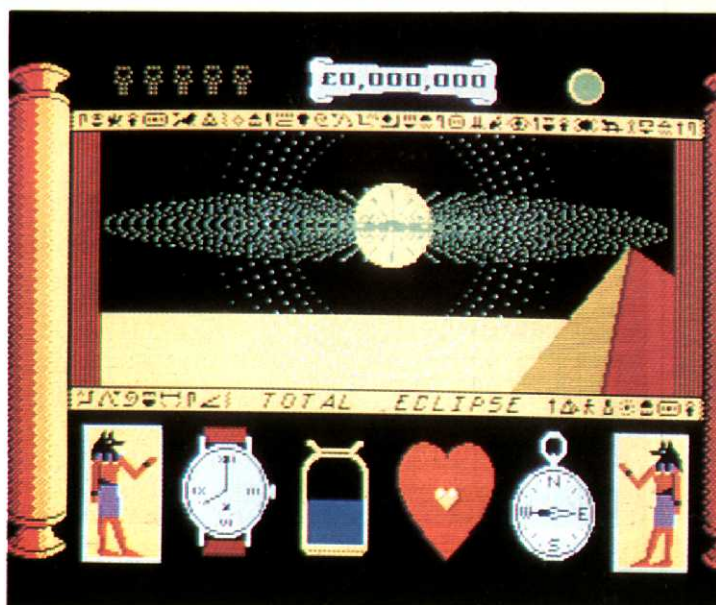
Copy protection: None

Summary: A challenging game of exploration, problem-solving, and survival set in an Egyptian pyramid

Price: \$39.95

Manufacturer:

Cinemaware
P.O. Box 5083
Westlake Village, CA 91362
(805) 495-6515
(800) 527-6515



It is October 26, 1930 and the curse of Ardognus, cast by the priest of the Sun God Ra during the reign of Hahmid II, is about to be fulfilled. The curse stipulates that any object that comes between the Shrine of Ra and the rays of the sun will be totally destroyed and its pieces showered upon the earth,

and today a total eclipse is set to occur over Egypt. You have two hours to prevent the destruction of civilization by finding the Shrine of Ra inside Hahmid II's pyramid and destroying it before the eclipse is total.

The Shrine of Ra is located at the apex of the pyramid. You start out

standing beside your airplane (a Sopwith Camel) outside an entrance to the pyramid. You have only minimal equipment—a wristwatch, a compass, a bottle for water, and a revolver.

Upon entering the pyramid, you find yourself in a short hallway in which you see a water trough, an open door, and,

Special Forces is an elite unit that accepts only the very best soldiers. The weeks ahead will be rough as you try to pass muster, but with perseverance and lots of guts you'll make it through the Special Forces school known as *Combat Course*. This package offers all the rigor and challenge of army training without the haircuts and KP.

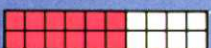
In *Combat Course*, you control a soldier as he makes his way through four basic types of demanding training course—Physical, Risk, Combat, and Combined. In the Physical courses, you do push-ups, climb brick walls, avoid attack dogs, and crawl under barbed wire and through drainpipes.

All this takes place under the watchful eye of a drill sergeant, who awards

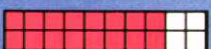
points based on your performance. He barks out orders in a digitized voice that had me jumping to attention, and you had better follow them immediately and to the letter.

In the Risk course you have to pick up dynamite charges, set them at metal doors, and get out of the way fast. You will also learn the art of picking up grenades and getting rid of them before

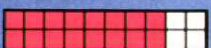
Combat Course



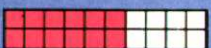
EASE OF LEARNING



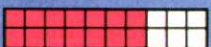
CHALLENGE



GRAPHICS



DOCUMENTATION



OVERALL RATING

System: Atari ST

Required equipment: Color monitor,
joystick

Copy protection: Yes

Summary: Arcade action with a boot camp theme; includes a construction set

Price: \$39.95

Manufacturer:

Mindscape
3444 Dundee Rd.
Northbrook, IL 60062
(708) 480-7667
(800) 221-9884



on the far wall, an ankh. The ankh is used as a key to open barred doors. Walking into a trough (or any water) fills your bottle. The mouse controls your gun; you can leave it in your holster or draw it. A set of crosshairs helps you aim it, and you have unlimited ammunition.

In *Total Eclipse*, the top half of the screen shows the scene in front of you. The graphics are of a solid-filled three-dimensional type called Freescape, which you may remember from *Dark Side* and *Space Station Oblivion*. The bottom half of the screen displays your compass, your gun, your watch, your heart, the progress of the eclipse, and the number of ankhs you have collected.

Your heart beats constantly and will beat faster after any intense exertion such as a sudden fall. You can rest to let your heartbeat slow down, but time passes quickly when you relax. If you forget to rest enough, however, you could end the game with a heart attack.

Total Eclipse is a game of exploration and survival. You walk through the connecting rooms of the pyramid, searching for the way to the Shrine of Ra. You can move in any direction, crouch, turn around, tilt your view, look

up and down, and change the length or angle of your steps.

Many rooms contain ankhs, treasure chests, and other objects. Very often things are not as obvious as they appear, so you must examine everything. Your gun comes in handy for opening chests, exploring objects on high walls, and finding secret passages.

You can save game positions and reload them, if you meet an untimely end.

In addition to the standard traps and mazes, *Total Eclipse* offers the added appeal of some challenging puzzles. If you shoot certain objects (an eye hung on a wall, for example), a message appears on the screen advising you to, "Make the match." You must then find a similar object elsewhere and shoot it, which is supposed to make something happen—I don't yet know what.

Total Eclipse boasts a great variety of connected rooms to explore, so a map is essential. One is provided for those who need extra help, but you will enjoy a much greater sense of accomplishment if you make your own.

Some of the rooms pose physical problems such as getting an ankh suspended in mid-air by a wire or crossing a room that throws up a wall each time

you step into it. Be sure to save your game often when attempting to surmount one of these obstacles—and remember your heart.

I found it easy to play *Total Eclipse*, but difficult to figure out the tricks and puzzles that hindered my progress through the pyramid—and I'm still guessing about some of them.

The graphics in *Total Eclipse* are very good. The Freescape graphics definitely give you a feeling of freedom to explore an alternate world; I really felt as though I was inside a pyramid with time running out on me. I like the extra touches of the beating heart, the watch, the blazing gun icon, and the opening animated screen of the solar eclipse.

Total Eclipse is a game of adventure and exploration. My own tastes run more toward action and strategy, but I found this adventure entertaining and absorbing. Mapping the rooms, experimenting with different paths, learning to use objects you find, and solving some of the puzzles while staying healthy and ahead of the clock, keep you very busy. I recommend the game.

—John S. Manor

they blow your hand off.

Other physical challenges include climbing ladders and riding pulleys. You must jump up on a pulley and hold on tight as you glide through the air; people have been known to drown in the waters below. Land mines and attack dogs round out the fun on this level.

The Combat course is probably the most difficult single course. Dozens of opponents come at you one at a time as you run through the course carrying your machine gun. You have to win in repeated hand to hand combat, sneak up on sentries, turn, and fire on the attackers coming from behind—all without stopping, for if you stop on any course, you lose points.

Special dangers, animated in a window at the top of the screen, appear from time to time. A simulated helicopter airstrike, for example, is announced by a loud shout of, "Enemy aircraft" from your sergeant. Other dangers include machine gun fire (using rubber bullets) and attack dogs.

As if that weren't enough, the Combined course requires you to run the other three courses one after the other, too. You are timed and accumulate points for successfully completing various actions, such as throwing grenades, set-

ting charges, and shooting. You are penalized for stopping or not living up to the high standards of the Special Forces—by losing in hand to hand combat, for example.

At first, I found *Combat Course* a bit too difficult, and jumping over oil barrels and climbing walls just wasn't that much fun. But the more I played, the more I enjoyed it. The Combined course, in particular offers an entertaining variety of challenges.

The game includes a construction set, so you can make up your own courses. I tried making up my own course with the construction set, and although the editing commands take quite a bit of learning, I think the results are worth the effort. You can set landscapes, objects (grenades, mines, barrels, pulleys), and traps and, in general, control anything you see on the screen.

Combat Course lets you save and replay "tapes" of your runs through the courses. You just click on the VCR icon at the left side of the screen to replay what you have just done. High scores are also saved to disk.

The program wins extra points for its unique theme, sharp graphics, and the digitized sound that creates a real boot camp atmosphere. The only criticism I

have is that the manual does not provide adequate instructions for using the construction set.

Combat Course provides loads of challenging arcade action. Boot camp may not be to everyone's taste, but the concept is very well-executed.

—John S. Manor

Moving Without The Mouse

ST HELP KEY

If for some reason you are ever unable to use the mouse on your ST, you can move the mouse cursor around the screen using the Alternate key in combination with the arrow keys. To move the cursor over relatively large distances, press the desired arrow key while holding down the Alternate key. To move the cursor a single pixel at a time, hold down both the Shift and Alternate keys while pressing the appropriate arrow key. A left mouse button click can be simulated on the keyboard with the Alternate-Insert key combination. ■

*Travel the Oregon Trail in this simulation
of a covered wagon trek through the Old West*



THE GAME

In *Westward Ho!* you are the head of a family of five setting out from Independence, Missouri, in the spring of 1847 on the Oregon Trail. Your objective is to arrive safely in Oregon City, Oregon.

Having saved about \$420 you must purchase a wagon for \$70, and with the remaining money you must also buy enough equipment, supplies, and livestock to sustain you on your strenuous 2000-mile journey. As you travel, you encounter the same hazards and conditions that American pioneers faced during the Great Migration—wagon fires, polluted water, wild animals, bad weather, illness, and topographical obstacles. The following hints will help you on the Trail:

- In Independence you decide how much of your money to spend on the things you need for the trip. You can spend all of your money there, but if you do, you will not be able to buy supplies at forts along the way.

- The trip is divided into two-week

segments. Between segments you have an opportunity to stop and hunt for game. Hunting may augment your food supply, but it always consumes valuable time.

- At the beginning of the game, you are asked to rank your shooting (typing) ability. When you are hunting or being attacked by hostile Indians, you are asked to type a word that sounds like a gunshot; the faster you type it, the more likely you are to hit your target. Of course, not all Indians that approach your wagon are hostile, and shooting at friendly Indians costs you time and ammunition.

If you make correct decisions along the way, you and your family will join the hundreds of thousands of pioneers who settled and developed the land west of the Rockies. If you prepare poorly or if you make foolish decisions, your bones will serve as a warning to those who come after you on the Oregon Trail. Good Luck!

states of Michigan, Illinois, and Indiana were considered settled. Settlers pushed west into Iowa and Missouri until, by 1830, Independence, Missouri, then the westernmost post office in the United States, defined the boundary of the frontier.

Independence was on the very threshold of the frontier, and for more than a decade it remained the focal point of the westward march of the pioneers. The city was ideally situated for such a role. It was three miles south of the big bend in the Missouri River, where, after flowing southeast for 2000 miles from its headwaters in the Rocky Mountains, the great river changed direction and flowed due east to join the Mississippi a few miles north of St. Louis. A few miles to the west began the vast undulating prairies and high plains that stretched unbroken to the distant Rockies.

With the lands east of the Mississippi settled, adventurers, either by choice or compulsion, gravitated to an even newer frontier—the lands west of the Mississippi. Like their fathers, they were traders, trappers, hunters, and explorers—almost certainly not farmers or settlers.

An early lure of the west was the lower Rio Grande, where inexpensive Spanish and Mexican linens and fabrics could be bought from Spanish traders. New England textile merchants smacked their lips at the thought of profits from capturing that trade. Trade with various Indian tribes was also of interest, and by 1825 a regular route

THE STORY

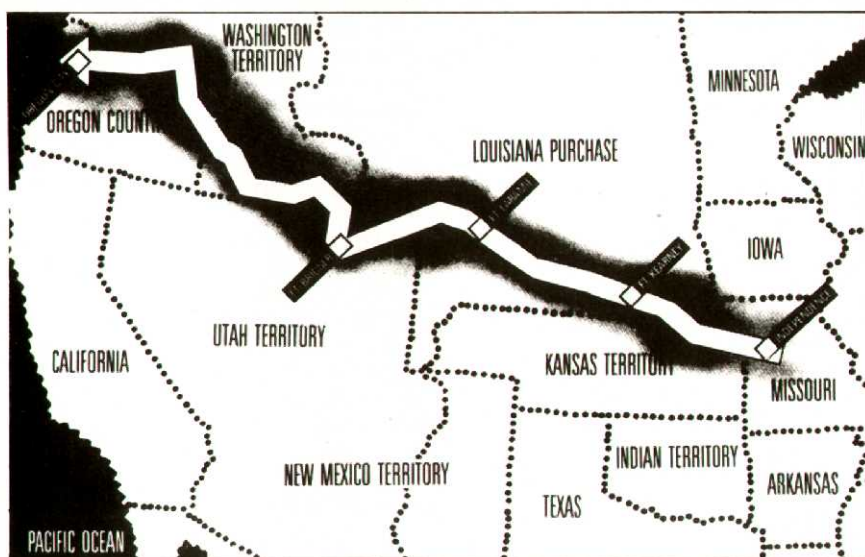
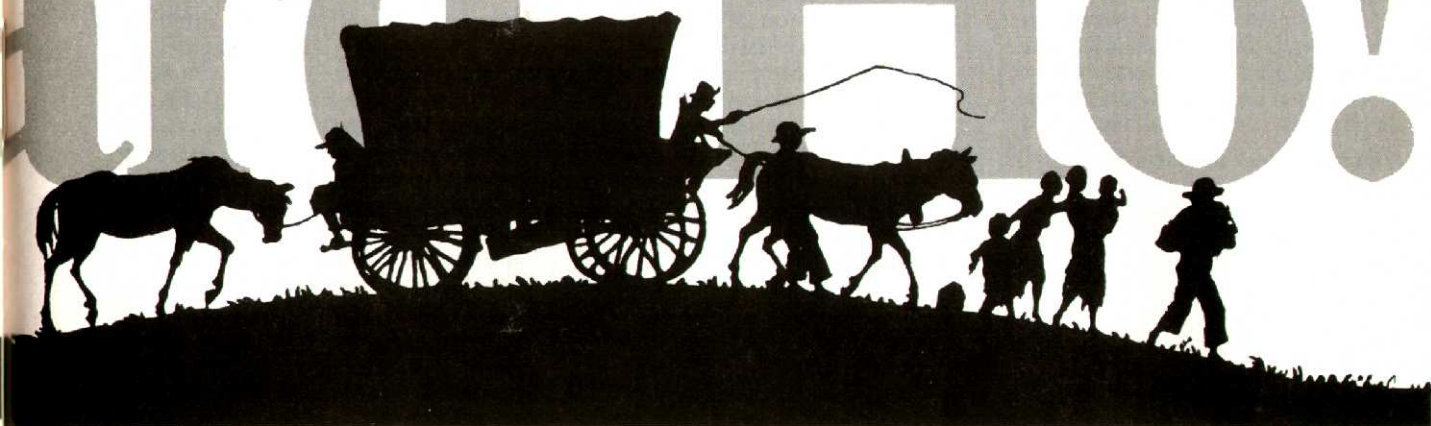
No one can say when it began. A thousand little rivulets of water trickling downhill go unnoticed until they merge into a thundering river. So it was at the beginning of the greatest mass migration of people that this country, or any other, has ever known. There was only one way to go: west—west to the farmlands in Ohio, west along the

Erie Canal to the Great Lakes, west to the tributaries of the Mississippi and Ohio rivers, and west to the rolling hills of Kentucky.

By 1825, steamboats were plying the Mississippi and Ohio rivers, and the

By DAVID H. AHL

ward Ho!



across the Kansas prairie, along the Arkansas and Purgatoire Rivers, and across the Sangre de Cristo Mountains, had been established from Independence to Santa Fe, New Mexico. This, the first of the major trails west, was known as the Santa Fe Trail.

New Destinations

By 1830, adventurers had started looking westward to destinations other than New Mexico. In 1831, Joseph Smith, Jr., set out from Independence and, upon reaching what is now Salt Lake City, declared, "This is the place." During the next three decades, tens of thousands of Mormons followed in his footsteps to escape religious persecution in Ohio and Missouri.

Meanwhile, Stephen Watts Kearney, a determined U.S. Army general, had pushed west over a southern route from Santa Fe through Arizona to San Diego, and other people had extended the northern trails west across the mountains to San Francisco (the Overland Trail) and to Willamette Valley (the Oregon Trail).

In addition, steamboats of the American Fur Company had been able to navigate up the Missouri as far as Fort Pierre, South Dakota, while smaller vessels had gotten to Fort Benton, Montana. To cement its foothold, this privately owned company was busy establishing outposts and forts throughout the northern states.

Independence, absorbed with the

Santa Fe trade to the south and the fur trade to the north, had paid little attention to the trickle of emigrants who, for several years, had been setting out for California and Oregon. However, as glowing reports began to come back from the early pioneers, the trickle swelled to a flood—900 emigrants left Independence in 1843, 3000 in 1845, and more than 5000 in 1847.

These new pioneers bore little resemblance to the traders plying the Santa Fe Trail or to the trappers in the North. They were men of the land, traveling with their wives and children. They were movers, but they had a destination, a promised land called Oregon—about which they knew as little as they knew about the road that would take them there.

Wagons and Supplies

Historically, the Conestoga wagon, which originated in eastern Pennsylvania, has always been associated with the great migration to Oregon and is depicted in scores of paintings. The truth, however, is much less colorful. The Conestoga wagon was in fact far too heavy for the long haul across the prairies and mountains, and a flatbed farm wagon, sometimes fitted with high wheels and a tent of waterproof sheeting, was generally the transport of choice. Such a wagon, sometimes called a Murphy wagon, required a team of six to ten mules or oxen to pull it when heavily laden. Most families also had a cow or two, a saddle horse, and a plow lashed to the rear of the wagon.

A bare-bones Murphy wagon cost be-

tween \$50 and \$70; high wheels, a waterproof covering, yokes, harnesses, and spare parts could bring the total cost up to \$100. A team of two oxen cost about \$25; most travelers brought six to ten animals. Although team horses could travel faster than oxen, ox teams were sturdy, dependable, and less likely to be stolen by Indians. And if worst came to worst and food ran out, the oxen could be eaten.

A guidebook of the time recommended the following food supplies for one adult for the five- to six-month journey: 150 lbs. of flour, 25 lbs. of bacon or pork, 15 lbs. of coffee, 25 lbs. of sugar, and smaller quantities of rice, beans, dried fruit, molasses, vinegar, salt, pepper, tea, spices, and baking soda. Also on the recommended list were tobacco, soap, whiskey, medicines, and matches.

It was essential that the wagon carry spare parts and tools such as yokes, harnesses, lead bars, open chain links, horseshoes, nails, ropes, hammers, axes, mallets, saws, and spades. Tar buckets—some filled with resin and grease to use on the axles, and others filled with tar to seal and waterproof the wagon before fording or floating it across a river—were also necessary.

When they arrived in Independence, most families already had some supplies and clothing. However, tales of harsh

Setting Out

The wagon trains usually went only a short distance the first day, making a sort of trial run. While they were still close to Independence, the men could ride back if necessary to buy supplies that had been forgotten.

The first weeks of travel in the spring were generally very difficult. The men frequently were not experienced at handling teams, wagons, or weapons. The snows had just melted, so the trails were like mud bogs. Most families had no idea how to pack and wound up with dangerously top-heavy or unbalanced loads. Oxen became entangled in their ropes at night, sometimes breaking free and wandering off.

The first stop for most travelers, usually reached in two or three days, was the Shawnee Methodist Mission only 15 miles from Independence. Once this was left behind, travelers would not see any signs of civilization for many long miles. After leaving the Mission, the wagon trains lumbered over the rolling prairie south of the Kansas River, following the deep ruts of the Santa Fe Trail as far as the present-day town of Gardner, Kansas. There a sign bore the simple legend "Road to Oregon."

Rivers, Indians, and Other Hazards

From there on, the wagons kept to the high prairies as much as possible, al-

with them pulling and all the family members pushing, the wagon inched to the top of the bank.

Indians, particularly the Pawnee in the area of the Red Vermillion river, did not welcome the constant stream of white men crossing their hunting grounds. In 1849, for example, after a cholera epidemic for which the Indians blamed the whites, the Pawnee, Oglala, and Sioux began attacking wagon trains with great frequency. Wagons were particularly vulnerable when crossing rivers, so the Indians often chose fords for their attacks.

In a sense, the Indians were correct about the source of cholera. It had been carried from Asia to the U.S. by sailors and passengers on ships. It reached the frontier by way of New Orleans and the Mississippi and traveled west with the wagon trains. No amount of planning or preparation could save the settlers from this hazard. Afflicted with severe pain, vomiting, and cramps, a person might display the first symptoms in the morning and be dead by noon.

In 1852, Ezra Meeker kept a log and estimated that more than 5000 people had died of cholera on the trail that year.

Living with fear of disease, the emigrants were prone to dose themselves with large quantities of medicine at the first sign of any illness on the theory that the larger the dose the quicker the recovery that might be expected. In fact, many patients were killed rather than cured by the injudicious use of medicine.

River crossings slowed the journey through Kansas and Nebraska, and most wagon trains took about three weeks to travel the 175 miles to the ford across the Big Blue River in southern Nebraska known as Independence Crossing. About six miles northwest of this crossing, trails from St. Joseph and Fort Leavenworth converged, thence following the Platte River to Fort Kearney. Having reached the Platte, the pioneers could follow its valley west, past Chimney Rock, Scott's Bluff, and to the last outposts of civilization, Fort Laramie and Fort Fetterman.

Buffalo Country

The Platte River marked the beginning of buffalo country, and few men missed the chance to enjoy some good hunting and to add to their food supply. Unfortunately, most of them had no idea how to preserve meat. The animals were generally shot in midafternoon

Indians, particularly the Pawnee in the area of the Red Vermillion river, did not welcome the constant stream of white men crossing their hunting grounds.

weather in the mountains inspired all but the most foolhardy travelers to procure additional warm clothing.

For protection as well as for hunting, travelers carried breech loading rifles, Colt revolvers, and a plentiful supply of ammunition. Most also took along mirrors, ribbons, cloth, tobacco, and assorted trinkets for trading with the Indians.

Most families joined others in Independence and made up wagon trains of from four to as many as 100 wagons. Each season, the first of these trains set out as soon as the winter snows melted. A steady stream of departures followed throughout the spring and into early summer.

though there were many streams and rivers to be crossed. The Wakarusa, Kansas, Red Vermillion, Black Vermillion, and Big Blue rivers were especially difficult for the travelers; smaller streams could be forded, but it was a day-long ordeal to cross a river.

First, the wagons had to be unloaded and the joints and seams packed with tar. After that, they were let down the bank with ropes and floated across. Supplies were floated by makeshift raft or carried by horse. Frequently tools and heavier provisions slid into the river. After the oxen had crossed, they were taken to the top of the bank, harnessed by long ropes to the wagon, and,

and left in the hot sun until sunset, when they were gutted. Perhaps one was roasted that night, but the rest were left unskinned and undivided to rot and provide a meal for the scavengers of the plain.

Along the North Platte River Valley, the wagons could generally make a speed of about two miles per hour, thus covering 15 to 18 miles on a good day. If it had been possible to maintain this speed for the entire journey, the 2040 miles from Independence to Oregon City could have been covered in about 4½ months. However, everything seemed to conspire to slow the trip: river crossings, Indian and bandit attacks, hunting, burying the dead, wagon breakdowns, muddy trails, oxen wandering off, and losing the trail.

Some wagons even rested on Sunday, observing it as a day of worship and, more often than not, repair.

Fort Laramie stood at the fork of the Laramie and North Platte rivers in eastern Wyoming. There the traveler had his first opportunity in many weeks to send letters home, buy provisions, and get information about the trail ahead. There, too, was a place to relax a bit from the constant caution so necessary on the march.

After Fort Laramie, the next objective was the Sweetwater River Valley in central Wyoming, the entrance to which was marked by Independence Rock, on which thousands of emigrants carved their names. "The Great Register of the Desert," Father Pierre Jean de Smet, a Jesuit missionary, called it. If things were going well, most travelers had reached the rock by July 4.

Looking west from Independence Rock, the emigrants could see, six miles in the distance, a V-shaped split in a rocky ridge known as Devil's Gate. The preferred route skirted Devil's Gate Canyon, but there was no question that it marked the beginning of a new and more difficult phase of the journey. Although there were many alternate routes to the Sweetwater Valley, all trails converged there for the long ascent to the South Pass across the Continental Divide.

Even in mid-July, the steep mountain walls often blocked the sun, and snow and ice frequently covered the ground. The ascent from the Sweetwater Valley was long and gradual, and the Southpass many miles in width. Hence the only real hindrances to good progress were the occasional snow and damage to wagon wheels from the rocky trail.

The travelers, having left the boredom of the plains and knowing that they had reached the halfway point of the trip, were usually in good spirits as they entered South Pass.

The Halfway Mark

Beyond the South Pass, the trail began a gradual but rocky descent of about 60 miles, across the Green River near the Wyoming-Idaho border. This

frequently had to be chipped away. Wagons were often abandoned, their occupants continuing the journey on foot. Other travelers, searching for a better route, became hopelessly lost and eventually died of hunger and thirst.

John Kerns, in his diary, recorded this about the Blue Mountains: "... it was the roughest road we have encountered on the journey, being up and down sidling mountains, into the brush and

Those pioneers who traversed the final obstacle, Deadman's Pass, saw the trail emerge from the mountains and wind down the bald face of Emigrant Hill.

crossing was an extremely dangerous one; the river was wide, deep, powerful, and ice cold. Those who successfully made this crossing were much relieved to follow the Bear River Valley for a way to Soda Springs, whence they headed northwest for 50 miles to Fort Hall, Idaho, on the Snake River. There they were forced to decide whether to continue on to Oregon or turn south to California.

Fort Hall was a welcome stop for the wagon trains. Originally built by Captain Nathaniel J. Wyeth of Boston in 1834, the fort offered needed supplies and protection from the hostile Blackfoot Indians. After leaving the fort, the trail crossed the Portneuf River and Bannock Creek and then passed the American Falls on the Snake River. This treacherous crossing led, a few miles on, to two enormous rocks known as Massacre Rocks, because hostile Indians often used them as a place from which to ambush wagon trains.

The trail then followed the Snake River for some 300 miles as it traced its circuitous course across the barren, lava-covered Snake River Plains; it finally broke out of the canyon and the mouth of the Little Boise River near the Oregon border. As they crossed the Snake River at Fort Boise, the travelers took their first steps in Oregon.

But one more barrier loomed between the settlers and the Promised land: the terrible Blue Mountains. Several times during the crossing of these mountains, wagons had to be lowered with ropes from one part of the trail to another, and canyon walls too narrow for the wagons

across a creek every 200 or 300 yards, and over stony places enough to hide all despairing sinners."

Those pioneers who traversed the final obstacle, Deadman's Pass, saw the trail emerge from the mountains and wind down the bald face of Emigrant Hill from which they were treated to one of the most spectacular views in the world. Mt. Hood and Mt. Adams could be seen in the distance, while in the foreground lay the rolling hills and fertile valleys of the Columbia River Basin.

From Walla Walla, Washington, on, still 250 miles across Oregon to the coastal settlements, most travelers kept going, driven by sheer exhilaration and determination. By all accounts, it was one of the most difficult parts of the journey.

As Medorem Crawford, an emigrant traveler, recorded, "From Walla Walla to Willamette Falls (Oregon City) occupied about 20 days, and, all things considered, was the hardest part of the entire journey—what with drifting sands, rocky cliffs, and rapid streams along the Columbia, and the gorges, torrents, and thickets of the Cascade Mountains, it seems incredible how, with our worn out and emaciated animals, we ever reached our destination." But many did, and they were well rewarded for their perseverance.

J.M. Shively, writer of one of the guidebooks about the trail, closed with the thought, "Be of good cheer—you will find a country in Oregon that will fill your desires and repay you for all your toil."

SAMPLE OUTPUT

Westward Ho! 1847

Your journey over the Oregon Trail takes place in 1847. Starting in Independence, Missouri, your goal is to take your family of five over 2040 tough miles to Oregon City.

Having saved \$420 for the trip, you bought a wagon for \$70 and now have to purchase the following items:

- * Oxen (spending more will buy you a larger and better team which will be faster so you'll be on the trail for less time)
- * Food (you'll need ample food to keep up your strength and health)
- * Ammunition (\$1 buys a belt of 50 bullets. You'll need ammo for hunting and for fighting off attacks by bandits and animals)
- * Clothing (you'll need warm clothes, especially when you hit the snow and freezing weather in the mountains)
- * Other supplies (includes medicine, first aid supplies, tools, and wagon parts for unexpected emergencies)

You can spend all your money at the start or save some to spend at forts along the way. However, items cost more at the forts. You can also hunt for food if you run low.

How much do you want to pay for a team of oxen? 125

How much do you want to pay for a team of oxen? 125

How much do you want to spend on food? 50

How much do you want to spend on ammunition? 40

How much do you want to spend on clothes? 40

How much for medicine, bandages, repair parts, etc.? 20

You now have \$ 75 left.

Please rank your shooting (typing) ability as follows:

- (1) Ace marksman (2) Good shot (3) Fair to middlin'
(4) Need more practice (5) Shaky knees

How do you rank yourself? 3

Your trip is about to begin...

Monday, March 29, 1847. You are on the high prairie.

Total mileage to date is 0

Here's what you now have (no. of bullets, \$ worth of other items):

Cash	Food	Ammo	Clothes	Medicine, par
75	50	2000	40	20

Would you like to (1) hunt or (2) continue...

Monday, July 19, 1847. You are not too far from Fort Hall.

Total mileage to date is 1220

Here's what you now have (no. of bullets, \$ worth of other items):

Cash	Food	Ammo	Clothes	Medicine, par
115	6	633	20	9

Would you like to (1) hunt or (2) continue on? 1

Type WHOP? WHOP

Right between the eyes...you got a big one!

Full bellies tonight!

Do you want to eat (1) poorly (2) moderately or (3) well? 1

Your wagon breaks down. It costs you time and supplies to f

Monday, August 2, 1847. You are following the Snake River.

Total mileage to date is 1357

Here's what you now have (no. of bullets, \$ worth of other items):

Cash	Food	Ammo	Clothes	Med
0	26	622	20	5

Would you like to (1) hunt, or (3) push on? 1

Cold weather...Brrrrrrr!... You have enough clothing to keep warm.

You're in rugged mountain country.

The going is really slow; oxen are very tired.

Blizzard in the mountain pass. Going is slow; supplies are lost.

You're exhausted and haggard, but you made it! A real pioneer!

You've been on the trail for 7 months and 23 days.

You have few supplies remaining:

Cash	Food	Ammo	Clothes	Medicine, I
0	0	0	20	3

President James A. Polk sends you his heartiest

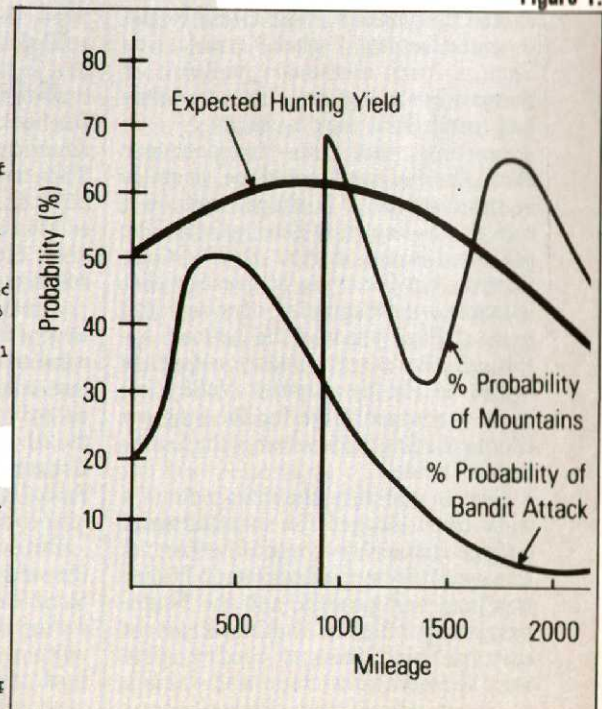
congratulations and wishes you a properous life in your new home.

Would you like to play again? N

PROGRAM VARIABLES

- A Money spent on animals
- A\$ Money to question (Y or N), user input
- B Money spent on ammo, also number of bullets
- BR Response time for typing shooting word
- C Money spent for clothing
- C1 Flag for insufficient clothes
- D Total days traveled
- DD Days of last month
- DM Total months traveled
- DA\$(n) Date, n=1-20
- DR Shooting expertise level
- E Eating quality
- EP(n) Event probability, n=1-20
- EV Event counter
- F Money spent on food
- GH Riders description (0 hostile, 1 friendly)
- GT Choice of tactics when riders approach
- I Temporary iteration variable
- J Trip segment counter
- KB Flag for blizzard
- KF Flag for stop at fort
- KH Flag for injury
- KM Flag for Blue Mountains
- KP Flag for South Pass
- KQ Flag for not enough ammo to hunt
- KS Flag for illness
- M Total trip mileage
- MA Mileage through previous turn
- MP Mileage flag for South Pass
- P Amount spent at fort
- R Money for medicine and repair parts
- RN Random number for choosing events
- SS(n) Shooting words, n=1-4
- S1, S2 Response time temporary variables
- T Cash
- X Choice of action, temporary
- X\$ Temporary string variable

Figure 1.



WESTWARD HO!



ATARI KEY

- Any Atari ST Computer
- ST Basic

```
100 CLEAR : RESTORE : CLEARW 2 : FULLW 2 : PRINT : PRINT
110 PRINT TAB(31) "Westward Ho! 1847" : PRINT
120 PRINT TAB(28) "(c) David H. Ahl, 1987" : PRINT : PRINT : PRINT
130 '
140 'Initialization
150 DIM DA$(20), EP(20), MP(16), PL$(16)
160 GOSUB 3430 : GOSUB 3530 : GOSUB 3700 : 'Put data in variables
170 PRINT TAB(18) "Press the spacebar when you're ready to go"
180 WHILE INP(2)=0 : WEND : RN=PEEK(1123)
190 WHILE RN>32767 : RN=RN-65535! : WEND : RANDOMIZE RN : CLEARW 2
200 GOSUB 490 : 'Display the scenario
210 GOSUB 690 : 'Make initial purchases
220 GOSUB 920 : 'How good a shot are you?
230 PRINT : PRINT " Your trip is about to begin..." : PRINT : GOSUB 3830
240 '
250 'Main program
260 IF M>2039 THEN 3190 : 'Reached the final segment?
270 J=J+1 : 'Iterate through 2-week trip segments
280 IF J>20 THEN 3080 : 'On the trail too long?
290 PRINT : PRINT "Monday, " DA$(J) ", 1847. You are ";
300 FOR I=1 TO 15 : IF M<=MP(I) THEN 305 ELSE NEXT I
305 PRINT PL$(I) : 'Print present location
310 IF F<6 THEN PRINT "You're low on food. Better buy some or go hunting soon."
320 IF KS<>1 AND KH<>1 THEN 370 : 'Any sickness or injuries?
330 T=T-10 : IF T<0 THEN 3010 ELSE PRINT "Doctor charged $10 for his services ";
340 PRINT "to treat your " ;:IF KS=1 THEN PRINT "illness." ELSE PRINT "injuries."
350 KS=0 : KH=0 : 'Set illness and injury flags to normal
360 M=INT(M) : MA=M : 'Update cumulative mileage
370 IF MP=1 THEN PRINT "Total mileage to date is 950." : MP=0 : GOTO 400
380 PRINT "Total mileage to date is" INT(M+.5)
390 M=M+200+(A-110)/2.5+10*RND(1) : 'Calculate how far we travel in 2 weeks
400 PRINT "Here's what you now have (no. of bullets, $ worth of other items):"
410 GOSUB 3350 : 'Print inventory
420 GOSUB 1000 : 'Stop at fort, hunt, or push on routine
430 GOSUB 1310 : 'Eating routine
440 GOSUB 1390 : PRINT : 'Riders attack routine
450 GOSUB 1800 : PRINT : 'Hazards and events routine
```

THE PROGRAM

Westward Ho! is a substantial revision of the Oregon Trail program written by Dan Rawitsch and Bill Heinemann in 1972-73 on the Hewlett Packard 2000 time-sharing system of the Minnesota Educational Computer Consortium. The original Oregon Trail program was subsequently converted to Microsoft Basic and appeared in *Creative Computing* magazine in 1977. Play of the game is similar in this new version, but the program has been structured (to some extent), simplified, and shortened by more than 300 lines.

The program consists of a main section, initializing and closing sections with five related subroutines, eight major subroutines, and six minor subroutines.

Initialization

The initialization section dimensions variables, puts data in them, displays

the initial scenario, and asks you for your initial purchases. At the outset, you have \$420, the average amount of money that a family setting out on the Oregon Trail had in 1847. A wagon costs \$70, and you can spend the rest of your money on oxen, food, ammunition, clothing, and miscellaneous supplies such as medicine, bandages, and parts.

You can spend all of your money at the outset, or you can save some to spend at forts along the way to replenish supplies when they run low. This is a tradeoff—supplies cost 50% more at the forts. However, if you lose supplies while fording a river or in a bandit attack, you may not have enough to continue.

Food is important for maintaining the strength and health of your family. A guidebook of the time recommends for each adult 150 lbs. of flour, 25 lbs. of sugar, 25 lbs. of bacon, 15 lbs. of coffee, and smaller quantities of other staples.

The average family of five (your family in the simulation) eats about as much as four adults. The above commodities in 1850 cost about 10 cents a pound in Missouri; thus an adequate food stock for your family would cost about \$60 to \$100. Of course, along the way you will hunt for fresh meat and, hopefully, find some edible plants and berries.

Although you are wearing some clothes, most travelers had to purchase additional clothing for the cold weather they would encounter in the mountains. In 1850, \$15 would buy several warm outfits; thus an appropriate budget for clothes would be at least \$50 for your family of five.

You want to have plenty of ammunition for your rifle to hunt, ward off attacks by wild animals, and defend yourself against bandits and hostile Indians. A belt of bullets costs \$1, and in general you can expect to use one or two belts per week on the trail.

A brief explanation of these purchases is displayed in the subroutine in Lines 490-670, and the amounts are ac-


```

460 GOSUB 2640 : 'Mountains routine
470 GOTO 260 : 'End of the 2-week trip segment
480 '
490 'Subroutine to print initial scenario
500 PRINT TAB(23) "Westward Ho! 1847" : PRINT
510 PRINT "    Your journey over the Oregon Trail takes place in 1847. Start-"
520 PRINT "ing in Independence, Missouri, your goal is to take your family of"
530 PRINT "five over 2040 tough miles to Oregon City." :GOSUB 3740 :GOSUB 3740
540 PRINT "    Having saved $420 for the trip, you bought a wagon for $70 and"
550 PRINT "now have to purchase the following items." : PRINT
560 PRINT " * Oxen (spending more will buy you a larger and better team which"
570 PRINT "    will be faster so you'll be on the trail for less time)"
580 PRINT " * Food (you'll need ample food to keep up your strength and health)"
590 PRINT " * Ammunition ($1 buys a belt of 50 bullets. You'll need ammo for"
600 PRINT "    hunting and for fighting off attacks by bandits and animals)
610 PRINT " * Clothing (you'll need warm clothes, especially when you hit the"
620 PRINT "    snow and freezing weather in the mountains)"
630 PRINT " * Other supplies (includes medicine, first aid supplies, tools, and"
640 PRINT "    wagon parts for unexpected emergencies)" : PRINT
650 PRINT "    You can spend all your money at the start or save some to spend"
660 PRINT "at forts along the way. However, items cost more at the forts. You"
670 PRINT "can also hunt for food if you run low." : PRINT : RETURN
680 '
690 'Subroutine to get initial purchases of player
700 INPUT "How much do you want to pay for a team of oxen";A : A=INT(A)
710 IF A<100 THEN PRINT "No one in town has a team that cheap." : GOTO 700
720 IF A<151 THEN 760
730 PRINT "You choose an honest dealer who tells you that $" A "is too much for"
740 PRINT "a team of oxen. He charges you $150 and gives you $" A-150"change."
750 A=150
760 INPUT "How much do you want to spend on food";F : F=INT(F)
770 IF F>13 THEN 790 ELSE PRINT "That won't even get you to the Kansas River";
780 PRINT " -- better spend a bit more." : GOTO 760
790 IF A+F>300 THEN PRINT "You won't have any for ammo and clothes." : GOTO 760
800 INPUT "How much do you want to spend on ammunition";B : B=INT(B)
810 IF B<2 THEN PRINT "Better take a bit just for protection." : GOTO 800
820 IF A+F+B>320 THEN PRINT "That won't leave any money for clothes." : GOTO 800
830 INPUT "How much do you want to spend on clothes";C : C=INT(C)
840 IF C>24 THEN 860 ELSE PRINT "Your family is going to be mighty cold in";
850 PRINT " the mountains." : PRINT "Better spend a bit more." : GOTO 830
860 IF A+F+B+C>345 THEN PRINT "That leaves nothing for medicine." : GOTO 830
870 INPUT "How much for medicine, bandages, repair parts, etc.";R
880 R=INT(R) : IF R<5 THEN PRINT "That's not at all wise." : GOTO 870

```

cepted as input in the subroutine at Lines 690-900. Note the conditional (IF) statements in this subroutine that do not allow you to buy less than the minimum you need, or to spend more money than you have.

The Main Program

The main program (lines 250-470) iterates through the journey in two-week segments. If you have been on the trail for more than 20 weeks, the program branches to an end-game routine. Under normal circumstances, at the beginning of a two-week trip segment, the date will be printed, injuries and illnesses treated (assuming you have enough money to pay a doctor), the mileage updated, and your inventory of supplies printed.

The expected mileage over the next two-weeks is then calculated in Line 390. In general, you will travel 200 miles plus some additional distance which depends upon the quality of your team of oxen. This mileage figure is an ideal, assuming nothing goes wrong. If

you run into problems, mileage is subtracted from this ideal figure; the revised total is printed at the start of the next trip segment.

You are then asked whether you wish to hunt, continue on, or, if it is an even-numbered trip segment, stop at a fort. In 1847, forts and missions were spaced 300 to 400 miles apart along the Oregon Trail. On the average you will cover about 75 miles per week, so you can expect to hit a fort about every four weeks (or every other trip segment). Note the function in Line 1010 that determines whether or not you are on an even-numbered trip segment; if the integer value of $J/2$ equals $J/2$, J is even; if not, J is odd.

If you stop at a fort (Lines 1100-1180), you have an opportunity to purchase supplies, but they cost 50% more than at the start. The running total of most items in your inventory is kept in dollars. Your supply of ammunition, however, is expressed as a number of bullets. This makes it easier to calculate ammunition consumption when you use

your gun to hunt, fight, or scare off animals.

The Hunting Subroutine

If you decide to hunt, the subroutine at Lines 1200-1290 is called. If you have fewer than 40 bullets, you do not have enough to hunt and you are given the option of stopping at a fort (if there is one on the current trip segment) or continuing on. Hunting costs several days of travel (45 miles) and, of course, some ammunition.

Since there is no good way to determine how skilled a marksman you are, the program asks you to rank yourself at the start of the trip (Lines 920-980). From then on, each time you are confronted with a situation in which you must use your rifle, you will be asked to type in a word that sounds like a gunshot (pow, blam, or bang).

The faster you type the word and hit Return, the better luck you will have in hitting your target.

Control is then returned to the hunting subroutine, and ammunition con-


```

880 R=INT(R) : IF R<5 THEN PRINT "That's not at all wise." : GOTO 870
890 IF A+F+B+C+R>350 THEN PRINT "You don't have that much money." : GOTO 870
900 T=350-A-F-B-C-R : PRINT : PRINT "You now have $" T "left." : B=50*B :RETURN
910 '
920 'Subroutine to initialize shooting routine
930 PRINT : PRINT "Please rank your shooting (typing) ability as follows:"
940 PRINT " (1) Ace marksman (2) Good shot (3) Fair to middlin'"
950 PRINT " (4) Need more practice (5) Shaky knees"
960 INPUT "How do you rank yourself";DR
970 IF DR>0 AND DR<6 THEN RETURN
980 PRINT "Please enter 1, 2, 3, 4, or 5." : GOTO 960
990 '
1000 'Subroutine to stop at fort, hunt, or push on
1010 IF INT(J/2)<>J/2 THEN 1060 : 'Are we on an even trip segment?
1020 INPUT "Want to (1) stop at next fort, (2) hunt, or (3) push on";X
1030 IF X<1 OR X>3 THEN PRINT "Enter a 1, 2, or 3 please." : GOTO 1020
1040 IF X=3 THEN RETURN ELSE ON X GOSUB 1100,1200
1050 IF KQ=1 THEN 1020 ELSE RETURN : 'Not enough ammo to hunt?
1060 INPUT "Would you like to (1) hunt or (2) continue on";X
1070 IF X<1 OR X>2 THEN PRINT "Enter a 1 or 2 please." : GOTO 1060
1080 IF X=2 THEN RETURN ELSE GOSUB 1200 : RETURN
1090 '
1100 'Subroutine to stop at a fort
1110 IF T>0 THEN 1130 ELSE PRINT "You sing with the folks there and get a good"
1120 PRINT "night's sleep, but you have no money to buy anything." : RETURN
1130 PRINT "What would you like to spend on each of the following;"
1140 INPUT "Food";P1 : INPUT "Ammunition";P2 : INPUT "Clothing";P3
1150 INPUT "Medicine and supplies";P4 : P=P1+P2+P3+P4 : P1=.67*P1 : P2=33*P2
1160 PRINT "The storekeeper tallies up your bill. It comes to $" P
1170 IF T>=P THEN T=T-P : F=F+P1 : B=B+P2 : C=C+.67*P3 : R=R+.67*P4 : RETURN
1180 PRINT "Uh oh. That's more than you have. Better start over.":GOTO 1130
1190 '
1200 'Subroutine to hunt
1210 KQ=0 : IF B>39 THEN 1230 : 'Enough ammo to hunt?
1220 PRINT "Tough luck. You don't have enough ammo to hunt." : KQ=1 : RETURN
1230 M=M-45 : GOSUB 3870 : IF BR<=1 THEN 1270
1240 IF 100*RND(1)<13*BR THEN 1290
1250 PRINT "Nice shot...right on target...good eatin' tonight!"
1260 F=F+24-2*BR : B=B-10-3*BR : RETURN
1270 PRINT "Right between the eyes...you got a big one!" : F=F+26+3*RND(1)
1280 PRINT "Full bellies tonight!" : B=B-10-4*RND(1) : RETURN
1290 PRINT "You missed completely...and your dinner got away." : RETURN
1300 '

```

sumption calculated as a function of the value of BR. The slower you shoot (the higher the value of BR), the greater the probability that you are unsuccessful in your hunting (see function in Line 1240).

The eating subroutine is called next (Lines 1310-1370). In it you are asked how well you want to eat, and your food consumption is calculated in Line 1350. If you do not have enough food to eat as well as you would like, you must choose to eat at a diminished level.

Next, a subroutine is called to determine whether or not you are attacked by bandits or Indians (Lines 1390-1780). The probability of attack is determined by the function in Line 1400. Toward the beginning of your journey, especially 400 to 500 miles from Independence in what is now western Nebraska and Wyoming, you have the highest probability of encountering bandits and Indians. As you get into the mountains, these probabilities decrease drastically (see Figure 1). The function within the IF ... THEN statement increases the

probability from 20% at 0 miles to a maximum of 50% at 500 miles and then gradually decreases the rest of the way.

If riders approach, you may choose one of four strategies: run, attack, ignore them, or circle wagons. Each strategy has a different cost in miles and supplies and also depends upon whether the riders were hostile or friendly. If you choose to attack, the program again goes to the shooting subroutine. If you are slow on the draw, you may pick up a flesh wound, which sets the injury flag and requires treatment by a doctor next time you stop.

The Hazards Subroutine

The longest subroutine (Lines 1800-2620) deals with hazards and special events. A random number selected in Line 1810 determines which event occurs; the program then branches to the appropriate routine to handle that event. The probability of each event is determined by the difference between successive numbers in the event array (Line 3720). For example, if a random

number between 0 and 6 is selected, event 1 occurs; between 6 and 11, event 2; between 11 and 13, event 3; and so on. Thus we see that there is the highest probability that event 19 (value between 65 and 95) will occur; this event has to do with illness from not eating well.

Most events are handled in a very straightforward manner—mileage and supplies used are subtracted and a message is printed. But four of the events—cold weather, bandit attack, wild animal attack, and illness—are more complicated.

The cold weather routine (Lines 2130-2160) checks to see if you have adequate clothing to keep warm. If not, the illness subroutine (Lines 2880-2970) is called. This routine is also called if you are not eating well enough (Lines 2560-2590).

In the illness routine, depending on how well you have been eating, you may contract a mild, bad, or serious illness. Mild and bad illnesses can be treated with your own medicine—if you have


```

1310 'Subroutine to eat
1320 IF F<5 THEN 3000 : 'Not enough food?
1330 INPUT "Do you want to eat (1) poorly (2) moderately or (3) well";E
1340 IF E<1 OR E>3 THEN PRINT "Enter a 1, 2, or 3 please." : GOTO 1330
1350 F=F-4-2.5*E : IF F>0 THEN RETURN : 'Eating more food than you have?
1360 IF E=1 THEN RETURN
1370 F=F+4+2.5*E : PRINT "You don't have enough to eat that well." : GOTO 1330
1380 '
1390 'Subroutine for riders attack
1400 IF RND(1)*10>((M/100-4)^2+72)/((M/100-4)^2+12)-1 THEN RETURN
1410 X$="" : GH=0 : IF RND(1)>.2 THEN X$="don't " : GH=1
1420 PRINT :PRINT "Riders ahead! They " X$ "look hostile."
1430 PRINT "You can (1) run, (2) attack, (3) ignore them, or (4) circle wagons."
1440 INPUT "What do you want to do";GT
1450 IF GT<1 OR GT>4 THEN PRINT "Please enter 1, 2, 3, or 4." : GOTO 1440
1460 IF RND(1)<.2 THEN GH=1-GH : 'Maybe they're hostile after all
1470 IF GH=1 THEN 1680 : 'Are they friendly?
1480 ON GT GOTO 1510, 1540, 1610, 1650
1490 '
1500 'Try to run away
1510 M=M+20 : R=R-7 : B=B-150 : A=A-20 : GOTO 1730 : 'Lose stuff when you run
1520 '
1530 'Attack the riders
1540 GOSUB 3870 : B=B-BR*40-80 : 'Firefight uses ammo
1550 IF BR<=1 THEN PRINT "Nice shooting -- you drove them off." : GOTO 1730
1560 IF BR<=4 THEN PRINT "Kind of slow with your Colt .45." : GOTO 1730
1570 PRINT "Pretty slow on the draw, partner. You got a nasty flesh wound."
1580 KH=1 : PRINT "You'll have to see the doc soon as you can." : GOTO 1730
1590 '
1600 'Ignore the riders
1610 IF RND(1)>.8 THEN PRINT "They did not attack. Whew!" : RETURN
1620 B=B-150 : R=R-7 : GOTO 1730
1630 '
1640 'Circle wagons
1650 GOSUB 3870 : B=B-BR*30-80 : M=M-25 : GOTO 1550
1660 '
1670 'Cost of each tactic if riders were friendly
1680 IF GT=1 THEN M=M+15 : A=A-5 : GOTO 1730
1690 IF GT=2 THEN M=M-5 : B=B-100 : GOTO 1730
1700 IF GT=3 THEN 1730 ELSE M=M-20
1710 '
1720 'Final messages about riders
1730 IF GH=0 THEN 1750 : 'Were riders hostile?

```

any left—whereas serious illness requires the services of a doctor (the illness flag, KS, is set) at the start of the next trip segment.

The bandits attack routine (Lines 2180-2270) is very similar to the attack by Indians routine in the previous section, except that bandits are always bad and you have no choice but to fight them.

The last major subroutine called by the main program deals with travel through the mountains (Lines 2640-2860). In the mountains, you are vulnerable to cave-ins along the trail, losing your way, and just plain slow going. In addition, you must traverse the South Pass and the Blue Mountains. The probability is set to 80% that you will get stuck in the South Pass when you first reach it, but a flag (KP) prevents you from being stuck there the entire journey. Likewise, you have a 70% chance of getting stuck in the Blue Mountains, but you will eventually get through. Blizzards, on the other hand, can occur on every trip segment while

you are in the mountains, and there is a good chance that this will happen.

If you do not have adequate food, clothing, ammunition, or medical supplies when you encounter the various hazards of the journey, chances are very high that you will die on the trail (Lines 2990-3170). If you die, a short message is displayed telling you what happened, how far you traveled, and your remaining inventory of supplies. You are given the chance to play again (Lines 3300-3330).

It is not known today what percentage of the travelers who set out on the Oregon Trail actually reached their destination. Certainly it was fewer than 50%, and perhaps fewer than 20%. If you are among the lucky few, the program will give you a congratulatory message (Lines 3190-3280), tell you how long it took, and display your remaining supplies, if any.

It is not easy to reach Oregon. Your decisions must be well reasoned, and Lady Luck must be traveling with you. But if you don't make it, you, unlike

actual families in 1847, at least, will get a chance to try again.

Save Time Typing

If you don't have time to type in *Westward Ho!*, I will furnish the program on a single-sided 3½" disk readable on a 520, 1040, or Mega ST for \$5.00 postpaid. To order, send your check or money order (no credit card, COD, or billed orders) to David Ahl, 12 Indian Head Rd., Morristown, NJ 07960. ■

Notice

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```

1740 PRINT "Riders were friendly, but check for possible losses." : RETURN
1750 PRINT "Riders were hostile. Better check for losses!"
1760 IF B>=0 THEN RETURN ELSE PRINT : GOSUB 3740 : PRINT "Oh my gosh! ";
1770 PRINT "They're coming back and you're out of ammo! Your dreams turn to"
1780 PRINT "dust as you and your family are massacred on the prairie.":GOTO 3110
1790 '
1800 'Subroutine to deal with hazards and special events
1810 RN=100*RND(1) : 'RN determines which event happens
1820 FOR I=1 TO 15 : 'Iterate through possible events
1830 IF RN<=EP(I) THEN 1840 : 'If event happened, exit loop
1835 next i : i=16
1840 IF I>8 THEN 1860
1850 ON I GOTO 1880, 1910, 1940, 1980, 2010, 2040, 2080, 2180
1860 ON I-8 GOTO 2290, 2320, 2350, 2410, 2440, 2530, 2560, 2610
1870 '
1880 PRINT "Your wagon breaks down. It costs you time and supplies to fix it."
1890 M=M-15-5*RND(1) : R=R-4 : RETURN
1900 '
1910 PRINT "An ox gores your leg. That slows you down for the rest of the trip."
1920 M=M-25 : A=A-10 : RETURN
1930 '
1940 PRINT "Bad luck...your daughter breaks her arm. You must stop and"
1950 PRINT "make a splint and sling with some of your medical supplies."
1960 M=M-5-4*RND(1) : R=R-1-2*RND(1) : RETURN
1970 '
1980 PRINT "An ox wanders off and you have to spend time looking for it."
1990 M=M-17 : RETURN
2000 '
2010 PRINT "Your son gets lost and you spend half a day searching for him."
2020 M=M-10 : RETURN
2030 '
2040 PRINT "Nothing but contaminated and stagnant water near the trail."
2050 PRINT "You lose time looking for a clean spring or creek."
2060 M=M-2-10*RND(1) : RETURN
2070 '
2080 IF M>950 THEN 2130 : 'If in mountains, go to snow; otherwise rain
2090 PRINT "Heavy rains. Traveling is slow in the mud and you break your spare"
2100 PRINT "ox yoke using it to pry your wagon out of the mud. Worse yet, some"
2110 PRINT "of your ammo is damaged by the water."
2120 M=M-5-10*RND(1) : R=R-7 : B=B-400 : F=F-5 : RETURN
2130 PRINT "Cold weather...Brrrrrrr!...You ";
2140 IF C<11+2*RND(1) THEN PRINT "don't " : C1=1
2150 PRINT "have enough clothing to keep warm."
2160 IF C1=0 THEN RETURN ELSE GOSUB 2880 : RETURN
2170 '
2180 PRINT "Bandits attacking!" : GOSUB 3870
2190 B=B-20*BR : IF B>0 THEN 2220 ELSE T=T/3
2200 PRINT "You try to drive them off but you run out of bullets."
2210 PRINT "They grab as much cash as they can find." : GOTO 2230
2220 IF BR<=1 THEN 2260 : 'Good response time?
2230 PRINT "You get shot in the leg--"; : GOSUB 3740 : KH=1
2240 PRINT "and they grab one of your oxen." : A=A-10 : R=R-2
2250 PRINT "Better have a doc look at your leg...and soon!" : RETURN
2260 PRINT "That was the quickest draw outside of Dodge City."
2270 PRINT "You got at least one and drove 'em off." : RETURN
2280 '
2290 PRINT "You have a fire in your wagon. Food and supplies are damaged."
2300 M=M-15 : F=F-20 : B=B-400 : R=R-2*6*RND(1) : RETURN
2310 '
2320 PRINT "You lose your way in heavy fog. Time lost regaining the trail."
2330 M=M-10-5*RND(1) : RETURN
2340 '
2350 PRINT "You come upon a rattlesnake and before you are able to get your gun"
2360 PRINT "out, it bites you." : B=B-10 : R=R-2 : IF R<0 THEN 2390
2370 PRINT "Fortunately, you acted quickly, sucked out the poison and"
2380 PRINT "treated the wound. It is painful, but you'll survive." : RETURN
2390 PRINT "You have no medical supplies left, and you die of poison.":GOTO 3060
2400 '
2410 PRINT "Your wagon gets swamped fording a river; you lose food and clothes."
2420 M=M-20-20*RND(1) : F=F-15 : C=C-10 : RETURN
2430 '
2440 PRINT "You're sound asleep and you hear a noise...get up to investigate."
2450 GOSUB 3740 : PRINT "It's wild animals! They attack you!" : GOSUB 3870
2460 IF B>39 THEN 2480 ELSE PRINT "You're almost out of ammo; can't reach more."

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2470 PRINT "The wolves come at you biting and clawing." : KH=1 : GOTO 3030
2480 IF BR>2 THEN 2500
2490 PRINT "Nice shooting pardner...They didn't get much" : RETURN
2500 PRINT "Kind of slow on the draw. The wolves got at your food and clothes."
2510 B=B-20*BR : C=C-2*BR : F=F-4*BR : RETURN
2520 '
2530 PRINT "You're caught in a fierce hailstorm; ammo and supplies are damaged."
2540 M=M-5-10*RND(1) : B=B-150 : R=R-2-2*RND(1) : RETURN
2550 '
2560 'Problems from not eating well enough?
2570 IF E=1 THEN GOSUB 2880 : RETURN : 'If eating poorly, go to sickness routine
2580 IF E=2 AND RND(1)>.25 THEN GOSUB 2880 : RETURN
2590 IF E=3 AND RND(1)>.5 THEN GOSUB 2880 : RETURN
2600 '
2610 PRINT "Helpful Indians show you where to find more food."
2620 F=F+7 : RETURN
2630 '
2640 'Subroutine to travel through mountains
2650 IF M<=975 THEN RETURN : 'Not in mountains yet?
2660 IF 10*RND(1)>9-((M/100-15)^2+72)/((M/100-15)^2+12) THEN 2750
2670 PRINT "You're in rugged mountain country." : IF RND(1)>.1 THEN 2700
2680 PRINT "You get lost and lose valuable time trying to find the trail."
2690 M=M-60 : GOTO 2750
2700 IF RND(1)>.11 THEN 2730
2710 PRINT "Trail cave in damages your wagon. You lose time and supplies."
2720 M=M-20-30*RND(1) : B=B-200 : R=R-3 : GOTO 2750
2730 PRINT "The going is really slow; oxen are very tired." : M=M-45-50*RND(1)
2740 '
2750 'South Pass routine
2760 IF KP=1 THEN 2790 : 'Is the South Pass clear?
2770 KP=1 : IF RND(1)<.8 THEN 2840 : '80% chance of blizzard
2780 PRINT "You made it safely through the South Pass....no snow!"
2790 IF M<1700 THEN 2810
2800 IF KM=1 THEN 2810 : 'Through Blue Mts yet?
2810 KM=1 : IF RND(1)<.7 THEN 2840 ELSE RETURN : 'Get through without mishap?
2820 MP=1 : RETURN : 'Set south pass flag
2830 '
2840 PRINT "Blizzard in the mountain pass. Going is slow; supplies are lost."
2850 KB=1 : M=M-30-40*RND(1) : F=F-12 : B=B-200 : R=R-5
2860 IF C<18+2*RND(1) THEN 2880 ELSE RETURN : 'Enough clothes?
2870 '
2880 'Subroutine to deal with illness
2890 IF 100*RND(1)<10+35*(E-1) THEN 2930
2900 IF 100*RND(1)<100-(40/4^(E-1)) THEN 2950
2910 PRINT "Serious illness in the family. You'll have to stop and see a doctor"
2920 PRINT "soon. For now, your medicine will work." : R=R-5 : KS=1 : GOTO 2970
2930 PRINT "Mild illness. Your own medicine will cure it."
2940 M=M-5 : R=R-1 : GOTO 2970
2950 PRINT "The whole family is sick. Your medicine will probably work okay."
2960 M=M-5 : R=R-2.5
2970 IF R>0 THEN RETURN ELSE PRINT " ...if only you had enough." : GOTO 3020
2980 '
2990 'Many ways to die on the trail
3000 PRINT "You run out of food and starve to death." : GOTO 3110
3010 T=0 : PRINT "You need a doctor badly, but can't afford one." : GOTO 3030
3020 PRINT "You have run out of all medical supplies."
3030 PRINT : PRINT "The wilderness is unforgiving and you die of ";
3040 IF KH=1 THEN PRINT "your injuries." : GOTO 3060
3050 PRINT "pneumonia."
3060 PRINT "Your family tries to push on, but finds the going too rough";
3070 PRINT " without you." : GOTO 3110
3080 PRINT "Your oxen are worn out and can't go another step. You try pushing"
3090 PRINT "ahead on foot, but it is snowing heavily and everyone is exhausted."
3100 PRINT : GOSUB 3740 : PRINT "You stumble and can't get up...."
3110 PRINT : GOSUB 3740 : PRINT "Some travelers find the bodies of you and your"
3120 PRINT "family the following spring. They give you a decent"
3130 PRINT "burial and notify your next of kin." : PRINT
3140 D=INT(14*(J+ML)) : DM=INT(D/30.5) : DD=INT(D-30.5*DM)
3150 PRINT "At the time of your unfortunate demise, you had been on the trail"
3160 PRINT "for" DM "months and" DD "days and had covered" INT(M-90) " miles."
3170 PRINT " You had a few supplies left:" : GOSUB 3350 : PRINT : GOTO 3310
3180 '
3190 'Made it!
3200 ML=(2040-MA)/(M-MA) : F=F+(1-ML)*(8+5*E) : GOSUB 3830 : PRINT

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3210 PRINT "You finally arrived at Oregon City after 2040 long miles."
3220 PRINT "You're exhausted and haggard, but you made it! A real pioneer!"
3230 D=INT(14*(J+ML)) : DM=INT(D/30.5) : DD=INT(D-30.5*DM)
3240 PRINT "You've been on the trail for" DM "months and" DD "days."
3250 PRINT "You have few supplies remaining:" : GOSUB 3350
3260 PRINT : PRINT "President James A. Polk sends you his heartiest"
3270 PRINT "congratulations and wishes you a properous life in your new home."
3280 GOTO 3310
3290 '
3300 'Play again query
3310 PRINT : INPUT "Would you like to play again";A$ : GOSUB 3770
3320 IF A=1 THEN 3330 ELSE PRINT "Okay. Good luck!" : GOSUB 3740
3325 CLEAR : RESTORE : GOTO 100
3330 PRINT "Okay. So long for now." : GOSUB 3740 : END
3340 '
3350 'Subroutine to print inventory
3360 PRINT "Cash","Food","Ammo","Clothes  Medicine & parts"
3370 IF F<0 THEN F=0 ELSE F=INT(F)
3380 IF B<0 THEN B=0 ELSE B=INT(B)
3390 IF C<0 THEN C=0 ELSE C=INT(C)
3400 IF R<0 THEN R=0 ELSE R=INT(R)
3410 PRINT T,F,B,C,R : PRINT : RETURN
3420 '
3430 'Subroutine to read shooting words and dates
3440 FOR I=1 TO 8 : READ S$(I) : NEXT I
3450 DATA "POW","BANG","BLAM","WHOP","pow","bang","blam","whop"
3460 FOR I=1 TO 20 : READ D$(I) : NEXT I : RETURN
3470 DATA "March 29","April 12","April 26","May 10","May 24","June 7","June 21"
3480 DATA "July 5","July 19","August 2","August 16","August 31","September 13"
3490 DATA "September 27","October 11","October 25","November 8","November 22"
3500 DATA "December 6","December 20"
3510 '
3520 'Subroutine to read distances and place names
3530 FOR I=1 TO 15 : READ MP(I),PL$(I) : NEXT I : RETURN
3540 DATA 5,"on the high prairie."
3550 DATA 200,"near Independence Crossing on the Big Blue River."
3560 DATA 350,"following the Platte River."
3570 DATA 450,"near Fort Kearney."
3580 DATA 600,"following the North Platte River."
3590 DATA 750,"within sight of Chimney Rock."
3600 DATA 850,"near Fort Laramie."
3610 DATA 1000,"close upon Independence Rock."
3620 DATA 1050,"in the Big Horn Mountains."
3630 DATA 1150,"following the Green River."
3640 DATA 1250,"not too far from Fort Hall."
3650 DATA 1400,"following the Snake River."
3660 DATA 1550,"not far from Fort Boise."
3670 DATA 1850,"in the Blue Mountains."
3680 DATA 2040,"following the Columbia River."
3690 '
3700 'Read probabilities of events
3710 FOR I=1 TO 15 : READ EP(I) : NEXT : RETURN
3720 DATA 6,11,13,15,17,22,32,35,37,42,44,54,64,69,95
3730 '
3740 'Subroutine to create a short pause
3750 FOR I=1 TO 1000 : NEXT I : RETURN
3760 '
3770 'Subroutine to read a yes/no answer
3780 X$=LEFT$(A$,1) : IF X$="Y" OR X$="y" THEN A=0 : RETURN
3790 IF X$="N" OR X$="n" THEN A=1 : RETURN
3800 PRINT "Don't understand your answer of " A$ "."
3810 INPUT "Please enter Y for 'yes' or N for 'no.' Which is it";A$ : GOTO 3780
3820 '
3830 'Subroutine to play a fanfare
3840 SOUND 1,15,8,3,7 : SOUND 1,15,1,4,7 : SOUND 1,15,5,4,7 : SOUND 1,15,8,4,9
3850 SOUND 1,15,5,4,5 : SOUND 1,15,8,4,20 : SOUND 1,0,0,0,0 : RETURN
3860 '
3870 'Subroutine to shoot gun
3880 RN=1+INT(4*RND(1)) : 'Pick a random shooting word
3890 STT=1123 : S1=PEEK(STT) : 'Start timer
3900 PRINT "Type " S$(RN) : INPUT X$
3910 IF S$(RN)<>X$ AND S$(RN+4)<>X$ THEN PRINT "Nope. Try again. " : GOTO 3900
3920 S2=PEEK(STT) : 'End timer
3930 BR=(S2-S1-DR+2)*2 : RETURN

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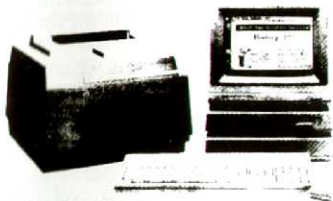
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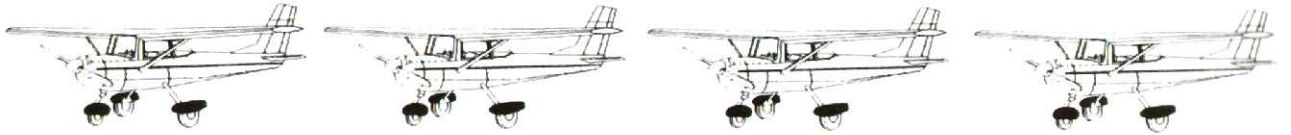
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Flight Instruction

Thanks to Charles Gulick, we who have learned to fly sitting in front of our computer screens can rejoice. The skies are about to become friendlier.

SubLogic's *Flight Simulator II* for the Atari ST can be somewhat intimidating. The manual, for example, suggests that the novice with no flight experience also obtain the latest *Flight Training Handbook*, the 6th edition of *Aviation Fundamentals*, and the *Instrument Flying Handbook*. Gulp!

I didn't happen to have any of those tomes on hand, but I did have several others, that, in the long run, probably stood me in better stead. Gulick, a self-styled authority, on SubLogic's popular program has written a raft of hardcopy adjuncts to *Flight Simulator*. We take a look at three of them here. (Others by the same author include *Flight Simulator Co-Pilot* from Microsoft Press and *40 Great Flight Simulator Adventures* and *40 More Great Flight Simulator Adventures* from Compute Books.)

With *Flight Simulator* booted and any one of these books on hand, you can expect to enjoy hours of sky high entertainment.

Runway USA: A Pilot's Guide to Destination Cities in Flight Simulator, Microsoft Press, \$9.95.

While this book, written for 800/130XE users, does include Appendix A: Flight Instruction Summary and Appendix B: Aircraft Controls—complete with a diagram of the 800/130XE keyboard and view selector controls—the author assumes you already know how to fly your airplane. If you have not mastered control of the aircraft, try *Flight Simulator Co-Pilot*, which is written for the novice.

As you travel, Gulick intersperses information on the geography of the area as well as inserting comments on local history and color to help orient you to the area. All flights in the book begin on the ground. Once you are airborne, however, you learn some pretty fancy maneuvers—power-on and power-off stalls, inside loops, step climbs and fast descents, Immelman turns, and, for good measure, a tailspin.

This book, with its 206 pages of interesting, well-written, thoroughly enjoyable reading, is as much a tour guide as a series of *Flight Simulator* tutorials.

Flying Flight Simulator, Microsoft Press, \$9.95.

Knowing that most people would rather get on with their flying adventures than spend hours reading tedious manuals, Gulick wrote this series of progressive instructional flight descriptions. With this book and a formatted disk on which to

save the flight situations, you are ready to begin to appreciate your realistic simulator.

You will enjoy the amazing realism of the ST version as you master aileron rolls, inverted flight, wingovers, and Lazy 8's. You will pilot your Cessna into the World War I zone and learn how to control your Lear jet. You will fly over and into such busy cities as Los Angeles, San Francisco, Chicago, Boston, and New York. Gulick even introduces a concept not covered in the *Flight Simulator II* manual—simulating radio-controlled model airplanes.

Along with the instructive text, the book includes charts detailing typical cruise altitude power settings and airspeeds, flight checklists and controls, and area charts. *Flying Flight Simulator* offers some truly enjoyable ways to increase your skill. Don't leave home without it!

A Flight Simulator Odyssey, Compute Books, Chilton Book Company, \$14.95.

Whether you are still contemplating the purchase of your first copy of *Flight Simulator* or you have become a veteran airman, you will enjoy the instructions and find plenty of challenge in the 120+ scenic locations described in this book.

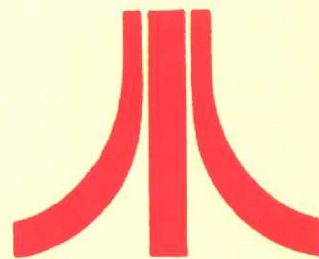
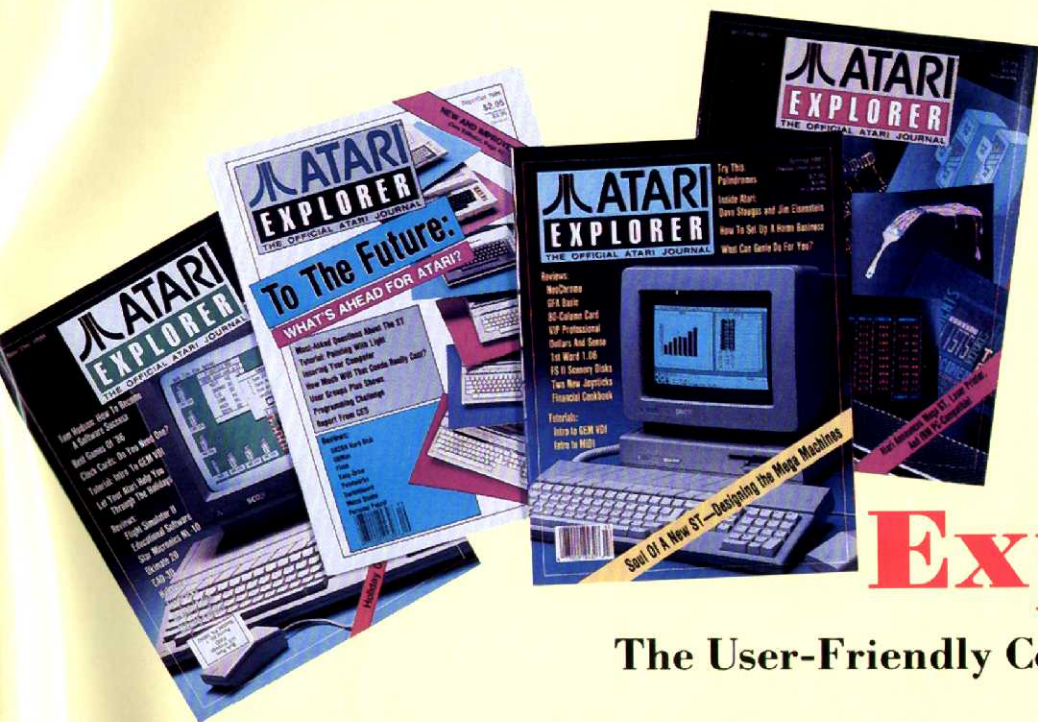
Gulick prefers keyboard control to the mouse or a joystick; he insists turns can be mastered better in this manner. He also believes the keypad and keyboard yoke provide better precision. (The ST version offers this advantage over the Macintosh.) The first flight offers ST users another bonus—an easy way to set your en route trim after SLEWING has reset the elevator to its default position.

Scenery disks explored in this book are 7, 11, and Western European Tour 14. (The program itself is much more interesting with these disks.) With Gulick leading the way, you will glide by the Washington Monument and, for equal political time, land in Kremlin Park. Whether you are taking in the sights along the Seine or buzzing a German beer hall, Gulick's instructions, advice, and comments will make your journey a pleasant one. If on, the other hand, you prefer adventure to tourism, the 30+ "wild times and shenanigans" scenarios should keep your stress level pleasantly elevated. ■

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By PAMELA RICE HAHN



Atari Explorer

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