

ATARI CONNECTION™

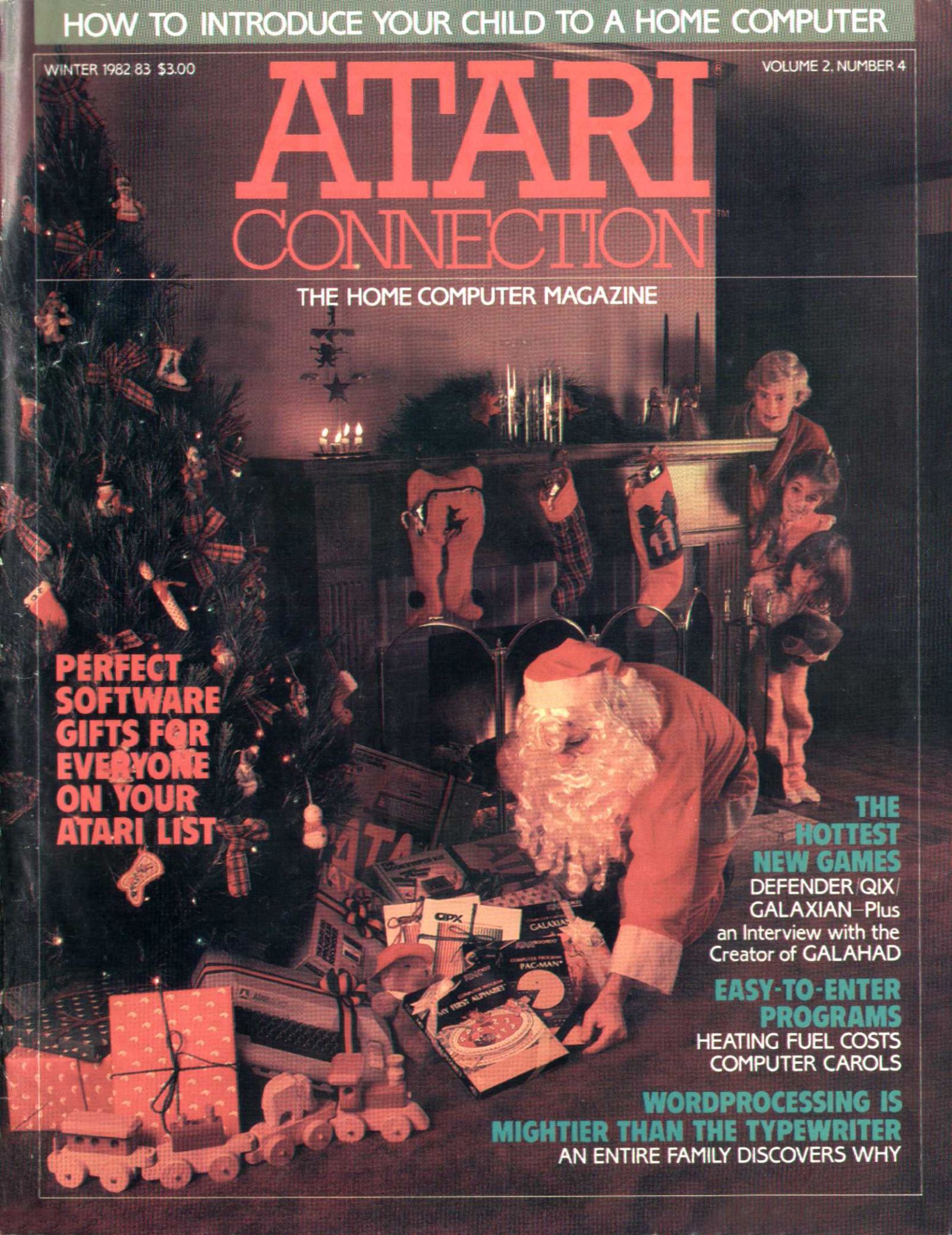
THE HOME COMPUTER MAGAZINE

**PERFECT
SOFTWARE
GIFTS FOR
EVERYONE
ON YOUR
ATARI LIST**

**THE
HOTTEST
NEW GAMES**
DEFENDER / QIX /
GALAXIAN - Plus
an Interview with the
Creator of GALAHAD

**EASY-TO-ENTER
PROGRAMS**
HEATING FUEL COSTS
COMPUTER CAROLS

**WORDPROCESSING IS
MIGHTIER THAN THE TYPEWRITER**
AN ENTIRE FAMILY DISCOVERS WHY



WHY USER-WRITTEN SOFTWARE REALLY STACKS UP TO THE BEST

There's a lot of Atari users out there. And many of them write software.

They really know what users like—and what user's want. Because honestly, who knows more about users than other users?

The Atari Program Exchange—APX—publishes user-written software for ATARI Home Computers. Which means all APX software is written *by* and *for* people just like you.

Their Home Management programs are written by people who manage their *own* homes.

Their Home Office programs come from people whose offices really *are* right at home!

The APX Personal Interest line is written by those with a natural love for the subjects they choose.

And APX games are written by game-players with one single-minded objective: FUN.

So next time you're ready to invest in some new software, see how APX stacks up against the rest. And you'll see why ATARI Home Computer users make such great software writers.

In fact, you could get so carried away that you might end up writing your own software.

If you do, send it to APX!

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LEADING APX TITLES

Entertainment

Attack!	Galahad and the
Avalanche**	Holy Grail
Blockbuster	Outlaw**/Howitzer
Dog Daze	Eastern Front (1941)
Downhill	747 Landing Simulator
Salmon Run	Seven Card Stud

Education

Counter	Mapware	Starware
Math UFO	Cubbyholes	Video Math
Frogmaster	Number Blast	Flashcards
Letterman	Spelling Genie	Wordmaker

Personal Interest and Development

Advanced Music System	Astrology
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Personal Finance and Record Keeping

Family Budget	Weekly Planner
Family Cash Flow	

System Software

Mapmaker	Chameleon
Disk Fixer	Extended fig-FORTH
DDT	T: A Text Display Device
Supersort	Ultimate Renumber Utility
Instedit	ATARI Pascal Language

...and more than 100 other titles.

**Indicates trademark of ATARI, Inc.



APX-FOR USERS BY USERS

THE ATARI
GIFT CATALOG

HOLIDAY
GIFTS FOR THE
ENTIRE FAMILY

(See Inside Back Page)

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ATARI CONNECTION

THE HOME COMPUTER MAGAZINE

EDITOR'S TERMINAL



"What do I use my computer for?"

A friend of mine, who's opinion of computers stems from the late 60's movie, *2001, A Space Odyssey*, asked me what I used my computer for? The question wasn't asked sincerely. He hasn't forgotten *HAL*, the ominous, homicidal computer that starred as the villain in the film.

HAL, as you may remember, almost succeeded in carrying out his diabolical plot to destroy the crew of a spaceship destined for Jupiter. The lone surviving astronaut managed to foil the plot by performing an electronic lobotomy on *HAL*'s brain. *HAL* was last heard prattling nursery rhymes as he faded into oblivion. Audiences cheered and laughed. We were quite angry at computers back then. They threatened our lives—or so we thought. Of course, the times have changed—for most of us that is—but not my friend.

My friend thinks I have a little "HAL" sitting in my living room. But my 7 year-old daughter, who's never seen *2001 A Space Odyssey*, thinks of our computer as her "friend." She's not only fearless, she uses it more than I do. And my wife uses it for word processing her film scripts. Her professor wanted to know what kind of typewriter she used. "A word processor," she replied. First he was surprised she said, then he became defensive, as if he too were having a "HAL Reaction." The latest word is that he's now impressed with her work. But now, my wife says: "He's more critical of my scripts since

they're easier to read than the other students' scripts...then again I'm learning more as a result."

As for me, I use our home computer for word processing and simple programming (very simple). Here at Atari, I find VisiCalc to be almost indispensable for calculating the magazine's budget, production costs and print run. (It may interest you to know, that a good part of this magazine's editorial content is produced on an ATARI Word Processor.)

My friend, who's no lightweight when it comes to intellectual discussions, wasn't easily swayed by "uses and applications." He needed something else to hang his hat on. I showed him my personal computerized bank statements produced by a simple VisiCalc model. I then told him the story of how I presented them to the manager of my bank during a dispute over my checking account balance. I was in error...the old *garbage in, garbage out* rule for computing. I had entered the wrong figures into the program. But the look on the bank manager's face when I pulled out my own computer bank statement was well worth the price of my mistake!

I think my friend left with a change of mind. The idea of owning your own little computer appealed to him as a "safeguard" of sorts against those big "HAL" computers that send him mindless parking citations or refuse to acknowledge his insurance payments. Yes, the times have changed. Computers can now be thought of as friendly—especially *home computers*. I mean, I'm certainly not about to allow an ill-tempered computer to stay in my house.

May you enjoy your holidays and this special Christmas issue of ATARI CONNECTION. And may we all have another exciting new year being part of what I think is one of the major stories of this century: home computing.

Ted Richards
Editor

All product illustrations and specifications are based on authorized information. Although all descriptions, articles and programs are believed correct on the date of publication approval, accuracy cannot be guaranteed. The Atari Home Computer Division reserves the right to make changes, from time to time, without notice or obligation, in colors, prices and materials and to change or discontinue products.

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SPECIAL FEATURE HOME WORD PROCESSING

By Jim Inscore

The typewriter is not quite ready to be tossed upon on the industrial junk heap. Contraptions like the hand-cranked cash register and the mechanical adding machine were early victims of transistors and microprocessors. The trusty typewriter, on the other hand, has persevered thus far—but its time may be running out.

There's no doubt, the typewriter will occupy a hallowed spot in the history of this incredible century. Its significant contribution to the growth of our modern society can't be denied. In fact, most of us still rely upon the ubiquitous typewriter to make our written communications reliable, uniform and easy to read.

But the cash register and adding machine have been replaced by electronic counterparts which are faster, quieter, and which are even "intelligent," by virtue of their microprocessor memories. And now the typewriter finds itself facing a formidable electronic challenge: *the powerful computerized word processor.*

The Electronic Page

Computerized word processing has become the heart of the electronic office, where information is processed and where sending an electronic letter cross-country is sometimes easier than sending a memo down the hall.

Small wonder when you consider all the advantages. With a typewriter, it may take hours or days manually typing page after page, over and over, through many revisions to finish a plan or report. It clearly wastes time...not to mention paper and precious mental energy.

Like a typewriter, an electronic word processor lets you type and

create pages of text. The important difference is that a word processor actually creates a "video-page" which you write and save electronically. Video-pages offer the unique advantage of being easily edited and formatted.

With electronic editing, there's no need to retype an entire page to fix a misspelling, rewrite a sentence or

reorganize the headings. You simply go back to the problem, make the few changes necessary, then resave and print out the page. With electronic formatting you can change margins,

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SPECIAL FEATURE

Continued from page 1

indent paragraphs, or add space between lines—all by making a few simple keystrokes. A multi-page document can be completely reformatted, with page numbers and headings added automatically, in just minutes. It's easy to imagine how word processing has made offices more productive.

Hanging on at Home

At home, however, things haven't changed much—yet. The little old portable typewriter in the den has become an important family fixture.

On Monday, it gets used to put the finishing touches on a book report for John's English class. John is a good writer but not much of a typist. His two-finger pecking chews through almost 20 sheets of paper per 5 page report. Not to mention the bottle of dried correction fluid on his fingertips.

Tuesday, Sue's working on a term paper on Women in the Law. She's up 'til 2 a.m., bleary-eyed, typing notes that she knows she'll have to edit and retype later, perhaps several times, once she gets down to the actual writing.

Wednesday night, Dad has cornered the trusty old typewriter to work up some ideas for a meeting. He's got plenty of thoughts in his head, but he's not sure what order, he wants to present them in. After 20 passes, typing fatigue has set in. And he's long ago forgotten his ideas.

On Thursday, Mom is working against a tight deadline on a press release for the upcoming elections. It has to be perfect—no mistakes. She knows how to turn a mean phrase, but she's not always too sure of her spelling. Every time she stops to look up a word, she loses her train of thought. The anxiety becomes unbearable. She's not sure she'll make the 3:30 deadline.

On the weekend, young Danny and his friends decide to put together a Star Wars newsletter for the local kids. They've got some great stories, but they're not happy with all the XX's peppering the manuscript.

Replay with the Word Processor

Let's take a look at our little family scenario again, only this time played

out on an ATARI Home Computer instead of a typewriter.

Sue's notes for her book report become far more useful to her with the ATARI Word Processor. By creating separate files for each book or article she is taking notes from, she sets up information that she'll easily be able to use later. The computer's ability to save, insert and move around whole blocks of text will allow her to simply start writing. When she needs her first reference, she'll retrieve the notes from the appropriate file and insert it right into the page she's been working on.

The same text moving capability helps Dad organize those ideas he's putting together for the presentation. It's a real time saver! His vague thoughts have been honed to clear, concise ideas.

Danny's bunch may not care about getting all the facts straight; their creativity naturally turns the writing process into a fantasy game. The word processor unleashes their creativity while giving them the ability to make everything just right. It's a confidence builder that might just make the difference for a budding young talent.

For Mom, the word processor provides instant relief. Instead of stopping to ponder her words, she keeps her train of thought rolling. Once she's finished, she goes back, looks up those words she wasn't quite sure of and—voilà!—changes them with just a few keystrokes. The result: deadline made, and an important issue presented to the voters.

And what about John? Well, he just loads in the word processor and starts jamming away. He's still fumble fingers on the keys, only now, nothing's stopping him. He taps his way through all five pages, mistakes and all. But instead of crumpling it all up and throwing it away, he simply goes back, reads over each page on the screen, deleting mistakes and inserting corrections as he goes. Once he's done, there seem to be gaps and holes everywhere. But, shifting over to formatting mode, he makes the computer automatically reformat the

page, set all the lines to their proper length—even justify the margins. His book report now not only sounds good, it looks good. And that's worth an A plus!

In fact, John's English teacher has discovered that word processing can be taken a step beyond. She answers her true calling as creative writer and poet who publishes in small press literary journals and anthologies. A maverick at heart, she's not intimidated by technology as is her circle of arty friends. Hand-written journals, kept in hand-bound blank books, seem superficial to her. She's discovered a truly avant garde way of writing: *stream of consciousness on a word processor*.

Since she types faster than she can write, the video screen fills rapidly with words, sentences, paragraphs, pages, lines of poetry. Spelling, punctuation, syntax, locution, verb tenses are forgotten. The words flit across the video-page unrestrained. Tomorrow she will make sense out of the writing. She'll print-out tonight's thoughts, then edit; maybe cull the thread of a story from the mayhem. The diskette journal is filled by the month's end. It will then be carefully labeled by its date and the memorable story titles it contains. Works in progress, poems, short stories, and essays are kept on other diskettes. Pages, paragraphs, and sentences can be gathered from the journal diskette and transferred to the larger works. All electronically. All done with a word processor.

The fact is, whatever the writing task, a word processing program for your ATARI Computer can help you do it quicker, easier and better. Of course you may need to add some peripherals to your home computer system to enjoy word processing's convenience. But when you do, we're sure everyone in the family will find it much easier to get through those writing tasks successfully.

You may even find something else to do with that old typewriter!

Jim Inscore is the Manager of the Marketing Publications Writing Group.



Gifts for everyone on your ATARI list

By Paula Polley

Aunt Jean? She's going to love her gift this year. It's an Atari software program. See, Aunt Jean has always wanted to travel to Europe, and it looks like she may go to Rome next summer. So for her, the Conversational Italian computer language gift from Atari is—perfecto!

For Dad? With his baseball card mail order business, the Bookkeeper would be a great gift. It will give him a way to organize his expenses, keep track of his orders, and figure out his profits. And with the time he saves, he'll be able to watch more baseball.

Here's one for Mom—the ATARI Music Composer. It will give her some fresh ideas for teaching her junior high music classes. And she'll enjoy being able to recreate electronic Chopin as well as write and save her own compositions!

Lots of Billy's friends will be getting video games this year. If we give him the ATARI BASIC programming language, he'll not only learn to program, he'll be able to create his own exciting games! And Janet, with all her college application forms and senior reports, will definitely have a head start with a new word processor program.

Teddi's got stars in her eyes with her new Astrology program from APX. And she's taking down birth

dates and times to do a chart for everyone in the family. That is, as soon as she finishes the one on her boyfriend—and all her girlfriends' boyfriends.

You see, your ATARI Computer can be anything you want it to be.

It's the software from Atari and APX (Atari Program Exchange) that changes your computer from a financial information service to a music machine to the nation's number-one arcade game.

ATARI Home Computer software makes perfect gifts—simply because with each different program, your home computer presents a totally unique experience.

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Continued from page 3

Sensational Educational Gifts

My First Alphabet

This award-winning ATARI Home Computer program is sheer delight. Whether you give this program to preschoolers just learning their letters and numbers or to connoisseurs of computer graphics, My First Alphabet will hold them spellbound.

It's a gift that brings on smiles—time and time again.

Counter - APX

One, Two, Three, Four. Four sailboats pop onto the screen. In this enticing APX preschool tutorial program, your child is rewarded with graphics and music for correctly counting the number of sailboats. Or five-legged Gorks. Or banana cream pies.

Give a child Counter this year. And see how advanced their arithmetic will be by next year.

Touch Typing

For anyone who doesn't type yet—or those who still eke by on two fingers—Touch Typing is the type of gift they'll forever appreciate.

With prompts, drills and quizzes, Touch Typing lets you set the pace. It calculates words-per-minute. It keeps track of your errors and points out recurring mistakes before they turn into habits.

Conversational Languages

A combination of audio and visual tutoring is the most effective way to learn to speak a foreign language.

That's why the ATARI Conversational Language courses are so powerful. While you hear the character on the screen introduce himself, you see the written phrase in both English and the language you're learning. Choose from Italian, German, French or Spanish programs for gifts that open doors to whole new worlds.

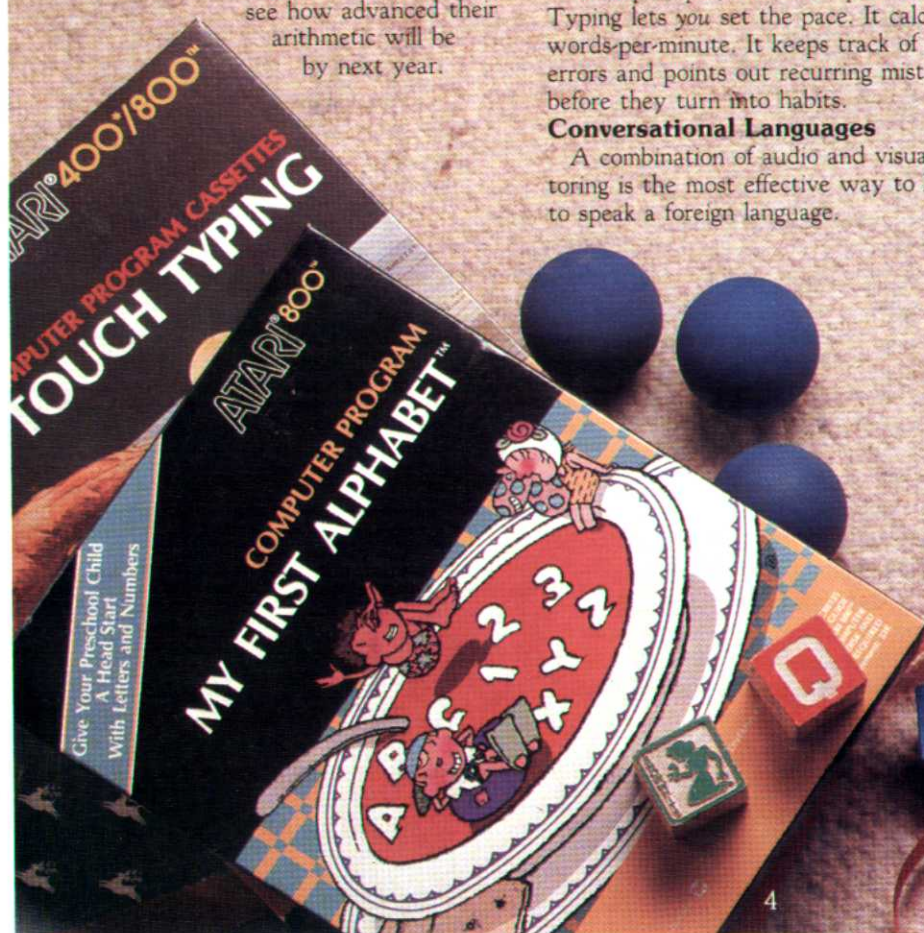
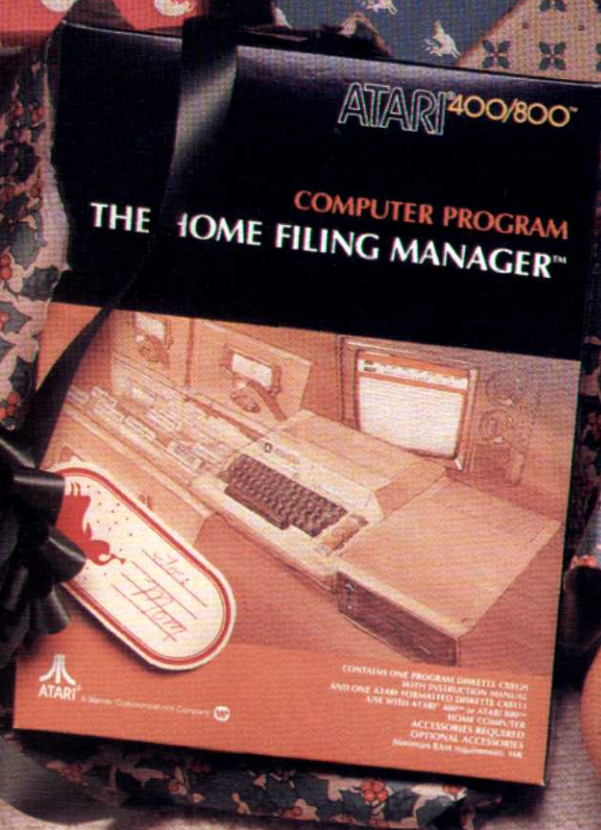
Software For The Home

Family Vehicle Expense - APX

Whether your family has one car—or an entire fleet—Family Vehicle Expense from APX is something that keeps the wheels rolling.

It's really a great gift for those who use their car for business or job-related travel.

Programmed to accommodate up to six automobiles—your Rolls, the “cherry” Chevy or the Rabbit Convertible—this program organizes expenditures into 14 different categories. Some categories, like gas and repairs, are further divided into



Give Mom software instead of sportswear

subcategories like payment methods.

Family Vehicle Expense is a practical gift for anyone in the driver's seat.

Recipe Search 'N Save - APX

Instead of another cookbook, give Mom a recipe organizer—Recipe Search 'N Save from APX.

It organizes your recipes by ingredients, categories, and family favorites—all at the same time.

No more wading through mounds of cards and clippings to find that lasagna recipe your family loves so much.

Find it under Pasta, or Lasagna, or even Casseroles. Recipe Search 'N Save will find and print your recipe in half the time you used to spend looking for it.

The Home Filing Manager

It's a gift you might want to give Mom before Christmas. Because it's perfect for organizing Christmas card addresses—and shopping lists for those big holiday dinners.

Mom will find The Home Filing Manager useful in lots of other ways, too. She can use it to log in those exemplary report cards, do an insurance inventory, or keep track of whose turn it is to do the dishes.

Personal Fitness Program - APX

For anyone who's fitness conscious—and especially for those who aren't—this

simple but thorough APX exercise program fits the bill.

There are only eight exercises in all. But by completing the steps shown by the detailed graphic illustrations, you'll have worked on your flexibility, strength, stamina, coordination, circulation and body tone. Taking into account age, heart rate, and present activity level, this program helps you set your own pace and chart your progress.

Give someone the Personal Fitness Program. And watch the computer help get them in shape.

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The Bookkeeper

Lots of Moms and Dads—even some kids—run businesses out of their homes. For them, the fun of the holiday season can be dampened by those end-of-the-year accounting projects.

That's where The Bookkeeper comes in. It's more than just a computer gift. It's a professional investment for those who are their own bosses.

Once The Bookkeeper is set up, there'll be a lot more extra time for enjoying all the other things your home computer will do.

The Home Filing Manager

For anyone who needs a fast, convenient filing system, The Home Filing Manager makes a great gift. It's a computerized index card filer that will instantly retrieve any information you've stored.

Use it to catalog your Christmas card list, keep tabs on your stamp collection, store phone numbers, or organize your Pavarotti tapes.

Everyone's into at least one something. So here's something that's perfect for everyone: The Home Filing Manager.

Give A Home Information Center

Check the latest gold price. Order a pair of gold earrings. Find out the best year for Golden Napa Valley Chardonnay. Or see what accommodations are available on Chicago's Gold Coast.

Shop the entire nation for the best bargain on a video tape recorder. Charge it to your major credit card. And have it shipped directly to your home.

These are but a few of the hundreds of communication opportunities available to those who add TeleLink to their ATARI Home Computer system.

With TeleLink, your home computer will tie in to bigger computers of all kinds, in all fields, all across the country. Via your telephone line, you can both send and receive unlimited amounts of information.

You can try three of the computer-age information services free! With ATARI TeleLink or The Communicator kit you receive one free hour of the following services:

Have them open
up an office

Tie Into Compuserve

You can choose to open an account with a computer link-up called CompuServe Information Service. In addition to a full spectrum of news categories, CompuServe also offers video entertainment: from games and biorhythms to a national CB computer line. Through this incredibly popular CB simulation service, computer owners all over North America are able to meet, talk, and even leave messages for one another. What better way to tie into other computer owners?

Tie Into THE SOURCE

When you have an account with THE SOURCE, AMERICA'S INFORMATION UTILITY, your TeleLink ties you into hundreds of electronic services: from UPI newswire releases and both job and resume lists to reservation services and discounted electronic mail-order shopping called Compu-U-Star. Not only do "electronic shoppers" save money by easily finding the best discounts, they also save on gas, time, and personal energy.

Tie Into The New York Stock Exchange

Hook up to the New York Stock Exchange with a subscription to the Dow Jones News/Retrieval Service. In addition to accessing stock market quotes just fifteen minutes after they are posted, this continuously updated business information service gives you business news, economic reports—even historical statistics and transcripts.

Diskette Librarian - APX

Here's a great gift for ATARI Computer owners who have already accumulated a confusing collection of diskettes. This helpful and practical APX program sets up a detailed library system.

Once you load your Diskette Librarian, you'll be able to sort, print, or browse through your collection of programs and data diskettes in a fraction of the time it used to take.

Give Diskette Librarian to someone who loves to use their home computer. Even if that someone is yourself.

Gifts That Are Shared By All

Astrology - APX

The program star-charters have long been waiting for. Just enter your birth date, time, and location and watch a beautiful full-color drawing of your natal chart emerge on the screen. Even your planetary aspects are revealed in an easy-to-read chart.

The back of the user's manual tells you what it all means.

How well do the stars really know you?

Music Composer

For the maestro on your list, there's no finer gift than the ATARI Music Composer.

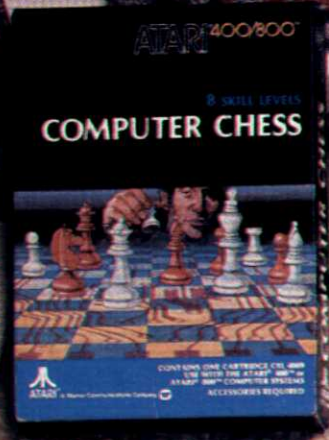
You can create up to ten phrases of music with up to four simultaneous tracks. Manipulate tempos. Transpose keys. Save and retrieve any piece you've composed.

If you're tired of the same old holiday carols, Music Composer will let you write a few of your own.

Continued on page 8.



Games make the
greatest gifts



Continued from page 7.

Centipede

It's the game that has everyone scrambling to the arcades—to wrestle with feisty fleas, surprise attacking spiders, magic mushrooms—and last but not least—that squiggly, squirming centipede.

And now Centipede is available exclusively to ATARI Home Computer owners to play at home.

We don't have to tell you who to give Centipede to. You know.

Blockbuster - APX

Now you can master that frustrating colored cube puzzle without all that wear and tear on your fingers. Or, with Blockbuster from APX, you can have your computer solve and print step-by-step solutions to a cube you have in hand.

All six sides and every panel can be manipulated by using the paddle controllers. Make an entire series of moves with one single command. Or mix up the panels and have the computer do the work of solving it.

Computer Chess

For the amateur or seasoned Chess fiend, there's no better sparring partner than their ATARI Computer.

The computer sets up the board for a full-fledged encounter. Or you can set it up to challenge the computer on any specific play. Use those special Chess problems from your daily newspaper. Then see who's the master: you or your home computer.

SCRAM

Don't melt down!!! That's the object of this analytical and educational game. SCRAM, a simulated nuclear power station, teaches you the intricacies and dangers of monitoring a real plant.

In the first part of the game, players are given a tour of the plant and trained to qualify as a Reactor Operator. Once you can read and react to all the indicators, you're ready for the qualifying exam: the SCRAM game.

Blackjack Casino - APX

Now the whole family can play like high-rollers without the expense of traveling to Las Vegas.

Using the Five-Card Charlie rule, Blackjack Casino lets you double down when you have fewer than five points, split pairs, even take insurance.

Use your joystick to specify the stakes. Card counters beware: the computer knows the entire deck!

Space Invaders

Here's the game that started the whole computer game revolution. Try to save the moon from attacking space demons.

There is one slight problem with giving someone Space Invaders: you might end up with too many rec-room invaders.

PAC-MAN

Everyone knows about the arcade rage of the decade: PAC-MAN. But only those with an ATARI Home Computer will get totally authentic PAC-MAN graphics and sounds right at home.

This is an Atari classic that game players will really gobble up.



Star Raiders

There's no such thing as fair play in this tailgunner's view of a campaign waged in the cosmos.

As a Starship Commander, you'll have to act fast to vaporize wave after wave of attacking Zylon fighters. And take advantage of friendly starbases to refuel and repair your ship.

For the veteran intergalactic warrior, Star Raiders will be a sure-fire hit.

Gifts That Make More Gifts

ATARI PILOT

Within minutes, ATARI PILOT (with "turtle" graphics) will have you generating your own sounds and creating original graphics—a programming language that offers immediate gratification. Totally.

ATARI PILOT is the easiest language to use for programming with your ATARI Computer. Don't be intimidated by the fact that they say it's for kids. Even if you can't compute square roots

on your pocket calculator, you'll be able to program with ATARI PILOT.

ATARI PILOT is a gift that will change someone's whole relationship with their ATARI Computer.

ATARI Microsoft BASIC

Speak to your ATARI Computer in ATARI Microsoft BASIC to make it create anything from database and calculation programs to musical tunes, graphics and games. There are already hundreds of programs written in this powerful computer language.

For those who already program in ATARI BASIC—and those who don't—ATARI Microsoft BASIC is easy to learn, and easy to use. Based on the popular Microsoft BASIC, the Atari version combines many programming statements into one—to give you much more programming power.

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With ATARI Assembler Editor, and some prior programming knowledge, there's very little you can't make your computer do.

Give the computer whiz in your family Assembler Editor this year—you may get back some original software next year.

Paula Polley is a Senior Writer for the Atari Home Computer Division.

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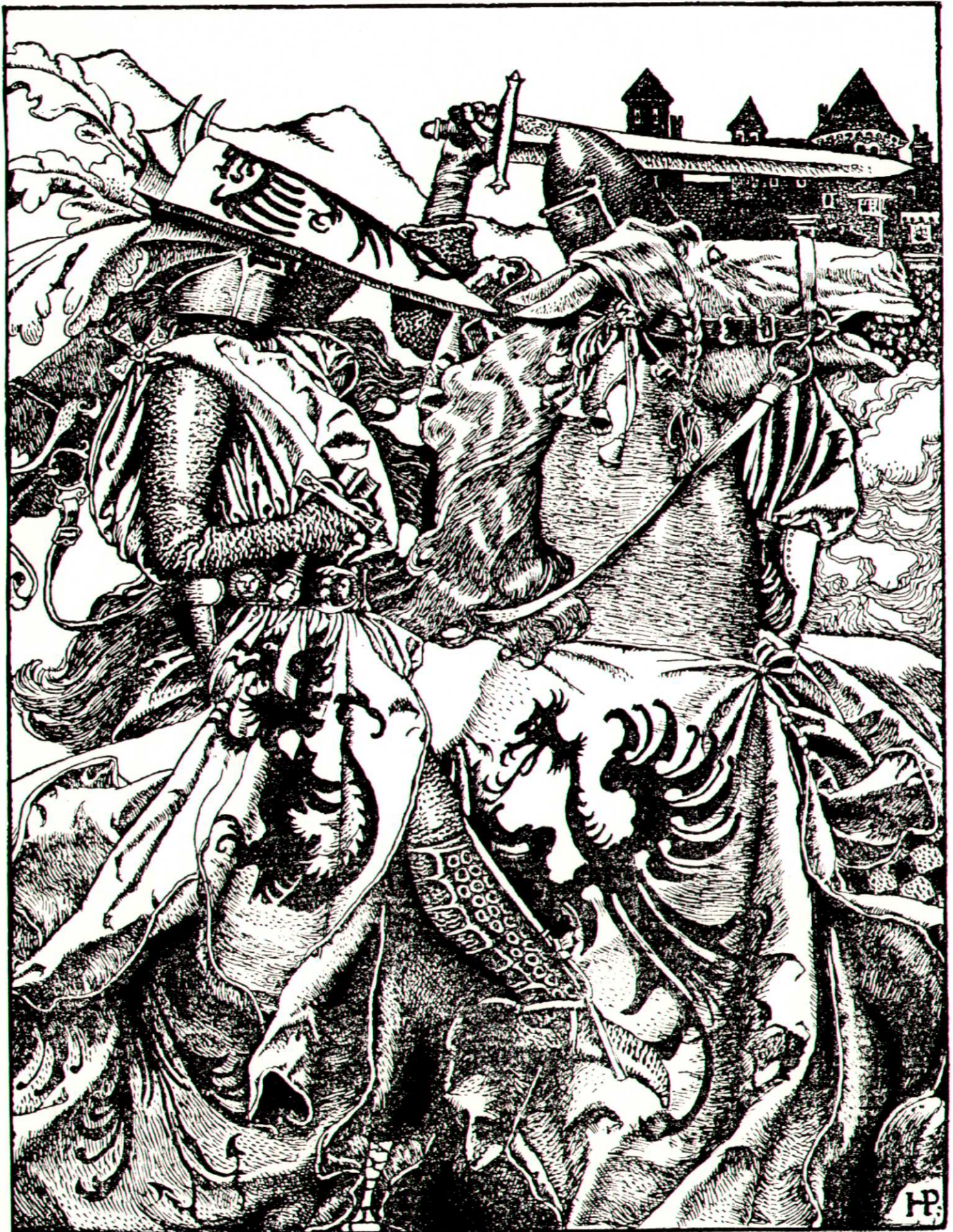


Illustration circa 1903, Howard Pyle, reprinted from *The Story of King Arthur and His Knights*, Dover Publications, N.Y., N.Y.

Galahad and the Holy Grail

By Kevin Rardin

Do you yearn for a journey through time—to those mythical days of chivalry and honor when King Arthur of Camelot and his Knights of the Round Table ruled with a noble and virtuous hand? Then prepare thyself for *Galahad and the Holy Grail*, a truly chivalrous new adventure game from the ATARI Program Exchange (APX). *Galahad* takes you, a knight on the noble quest for the Holy Grail, to a medieval land alive with enchantment and fraught with peril.

Your quest demands you do battle with evil knights, kill treacherous spiders, slay the fire-breathing dragon, and explode the vicious Killer Rabbit with the Holy Hand Grenade. If you're virtuous and stout of heart, you'll find the Holy Grail. But now your journey's just begun, for you must also return the Holy Grail to Camelot.

Your travels in Camelot will carry you through lands of visual splendor and into the vast interior of this ancient land of legend. You'll find ready passage into these "rooms" of *Galahad* through either the Black Castle or the White Castle. But two magic portals hidden amongst the forests and rivers of Camelot also provide transport to the magical realm. With almost a hundred rooms to explore, you'll spend hours just finding your way around.

When *Galahad* was first submitted to APX by program author Douglas Crockford, some APX staff reviewers stayed up until 4 o'clock in the morning caught within the game's web of enchantment. On my first quest for the Holy Grail, I just wanted to see what each room looked like—and for the first two weeks I spent nearly all my off-work hours (and some work hours) exploring. In all that time, I managed to see little more than half the rooms!

As you begin your quest, you're transformed into a diamond-shaped knight. The honors of knighthood are bestowed upon you in the Chapel room by Arthur's own hand, and your sacred mission lies ahead. You move the knight symbol with a joystick controller, making use of all eight travel positions. The quest moves along quickly and is full of suspense. An evil knight may appear at any time. Only the most dashing swordplay defeats a knight, and even the best of swordsmen can't slay these evil marauders every time.

If an evil knight slays you or if you succumb to *any* of the hazards, you're returned to the Chapel room and given another life to begin again. There's no limit to the number of reincarnations, but a past life may come back to haunt you. Lives aren't given cheaply, though. The foes you've slain are also resurrected to imperil your further travels.

You'll find several charmed treasures to help you find the Holy Grail. The sword, of course, can slay other knights, the spiders, even the Killer Rabbit—if you're quick. I've heard from other seekers of the Holy Grail that you can slay the dragon with the sword. But whenever I tried, I was singed to a cinder.

On most surfaces in the game your movement is slow. But a magical action wedge helps you sprint your fastest and leap your highest when moving on otherwise slow surfaces. To protect you from most evil creatures along the way, there's a magic ring. Wear it and you'll sneak past spiders, the dragon and even the vile Killer Rabbit.

There are three sealed doors you'll have to open in order to find the Grail—the color-coded keys are hidden in three rooms that are off the beaten path. You can reach only two of them by passing through magic

Continued on page 12



You've arrived, sword in hand, at the White Castle. Cross the threshold but keep your sword drawn. Anything may befall you!

SPECIAL FEATURE

Continued from page 11.

portals—then you have to find your way back. You must seek the third key somewhere in the Black Castle.

Each room instantly appears as you move across the edge of your viewing screen. As you "flip" from room to room, each possesses its own splendors and hazards. You can spend hours lost in a maze. Just when you think you've solved the puzzle, you bump into an enchanted wall and no matter how hard you may struggle, you're stuck. The next thing you know, the wall is drawing you toward one end of the room, where you either explode or are hurled back into another mysterious part of the maze.

At other times, you might be moving through a patch of forest and suddenly fall through a magic portal. Who knows where you are? You could be trapped. Then again, you may have found a secret passage to the Holy Grail.

Once you've found the Holy Grail and returned it to Camelot, a whole new adventure begins—a never-ending quest much like that of the gallant knight Sir Galahad in those glorious days when honor and chivalry ruled. As the lights dim in Camelot, you'll discover your new quest is much more challenging than the first.

You and your friends can engage in a tournament-style quest by agreeing on the number of lives for each seeker of the Holy Grail—say, one to five each. How you keep score is also up to you, for this is a quest of honor—just as it was in the days of Camelot.



This is the forbidden room of the Viking Ark. Is a magic portal to the Grail Room hidden here? Only the most courageous knight will uncover the Ark's dark secrets.

The *Galahad and the Holy Grail* game manual provides you with a complete guide to your quest for the Holy Grail. Tips and pointers as well as some notes on the design of the game are included. Doug Crockford has revealed only the minimum information you need to play *Galahad*. Not only is *Galahad* a game of honor

and noble deeds, but one of discovery as well. Doug has also included a complete reading list of Arthurian legend and suggested some good movies that will enhance your experience within this video-Camelot.

When all is said and done, I trust you'll agree: *Galahad and the Holy Grail* is one of the most challenging and rewarding computer games to pass through an ATARI Home Computer.

Galahad and the Holy Grail requires an ATARI 800 Home Computer, a minimum of 32K RAM, an ATARI 810 Disk Drive, and a joystick controller.

Suggested Retail Price: \$29.95

Kevin Rardin is a Senior Writer in the Atari Home Computer Division.

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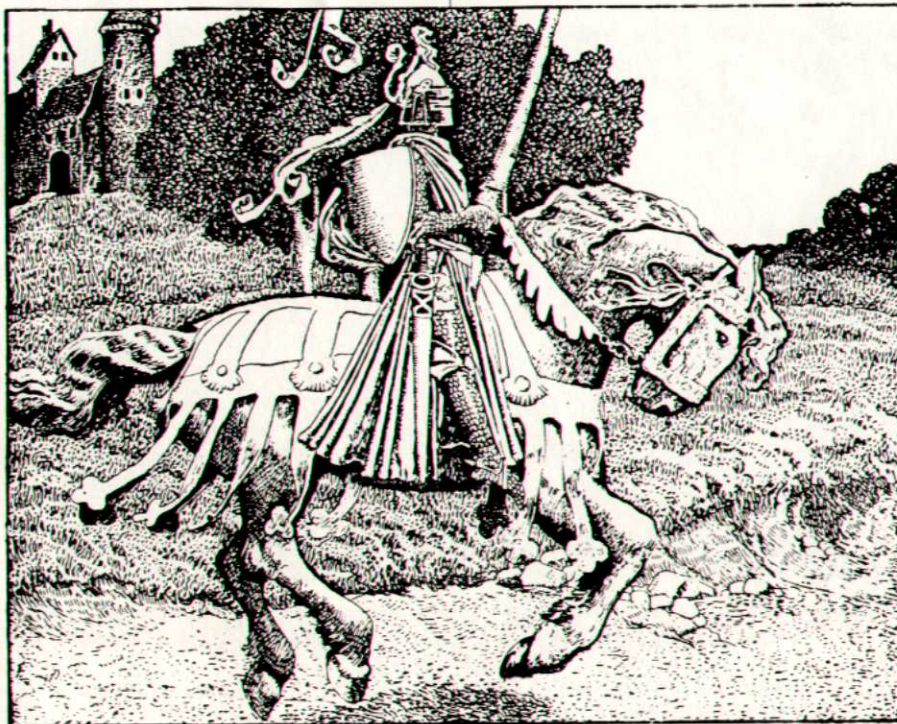
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AN INTERVIEW WITH DOUG CROCKFORD



ing Arthur and the Knights of the Round Table is an ancient legend—the grandfather of the modern sword and sorcery adventure epic. Doug Crockford, whose deft programming artistry created the enchanting *Galahad and the Holy Grail*, admits to being under the spell of mythical Camelot.

The program was submitted to APX last Spring and won 1st prize in the Summer Quarter APX contest (entertainment category). Since winning this prize, along with eligibility to compete for the annual \$25,000 Atari Star Award, Doug Crockford has come a long way. He now works under the guidance of celebrity game designer Chris Crawford, here at Atari's Corporate Research and Development lab—indeed APX program authors can go far.

We interviewed Doug to provide some background on how a program like *Galahad* is developed and gain some insight into the kind of personality it takes to drive a good game all the way to excellence.

CONNECTION: Was *Galahad* the first program you tried to create with your ATARI Home Computer?

CROCKFORD: No, I tried some other things. I was going to do a word processor; I wanted to create a music processor that would display music on the screen and let you edit it much the same as a word processor. But I started those projects before I understood the capabilities of the machine. In all cases, I went beyond what was practical. So, with *Galahad*, I scaled down my expectations and found a very, very good fit with the machine. One of the things that makes the game so good is how well it is suited to the abilities of the ATARI 800 Home Computer.

CONNECTION: That's apparent when you play the game. What motivated you to create this kind of game?

CROCKFORD: There's a game on the VCS 2600 called *Adventure* which

literally inspired *Galahad*. One of the reasons I bought the ATARI 800 Home Computer in the beginning was that I hoped *Adventure* would make the cross-over from the video game machine to the computer as did *Space Invaders*, but that never happened. So I decided to try and do it myself and, in the process, ended up with something that is quite different, but still in keeping with the intent of *Adventure*.

CONNECTION: I've noticed in playing the game that there's a strange dimensional quality to some of the rooms. In fact, several rooms are rather odd. Can you explain this?

CROCKFORD: In designing the rooms and their relationships, one to another, I was able to map surfaces which couldn't possibly exist. Some structures are woven back inside each other, like mobius strips. It isn't clear the first few times you play it but even though they are impossible structures, you're able to navigate them successfully, even without realizing their impossibility.



CONNECTION: The Dragon Room comes to mind as well as the Grey Maze inside the White Castle.

CROCKFORD: Yes, in that particular maze it looks like you're going through 8 different rooms, when actually there are only four.

CONNECTION: Do you have names for *Galahad*'s various fields of play?

CROCKFORD: Many of the fields are simply the interiors of either the Black or White Castles. There's the Mushroom Forest, the Warlords Room. One of the problems developing a game with 96 rooms is trying to think of things to fill each room with—to make each one different. After awhile when my imagination caved in, I just thought of all the computer graphics I had seen and used those images to model screens for the rooms.

CONNECTION: In your User's Guide, you provide an lengthy reading list of Arthurian legend as well as a list of several "King Arthur" movies. Do you consider yourself a scholar on the subject?

CROCKFORD: I wish I were. I've done quite a lot of reading, but couldn't classify myself as an expert. I've read all the books in the list.

CONNECTION: You mention the movies *Excalibur*, *Knightriders* and *Monty Python and the Holy Grail*. How much were you influenced by Monty Python?

CROCKFORD: Quite a lot. There are some elements in the game that were inspired by that movie. I got the idea for The Holy Hand Grenade and the Killer Rabbit from Monty Python.

CONNECTION: You seem to have included both legend and some elements of the frivolous in the game. How did you get the idea for the "action wedge?"

CROCKFORD: I was thinking of an old commercial for tennis shoes. There was a kid leaping over a log and the jingle said something like, 'Run your fastest and jump your highest.' I put that in the manual and that's what the action wedge does for you.

As we finished the interview, Doug demonstrated a new game module he'd been working on. Called "Crockford's Trench," for the time being, it simulates an attack on a planet. The effect is somewhat reminiscent of the raid on the Death Star Wars. Moving the joystick you begin a high speed dive trench, trying not to hit the walls as it reels out in front of you. Not yet a part of any specific game, the simulation is as close to real-time animation as any I've seen. We at Atari are excited that Doug Crockford has come to work for us and anxiously await the results of his next game design. His personal goal? "To top Star Raiders!"

Kevin Rardin



SALMON RUN

By Myrna Johnson and Gretchen Nicholas

Salmon Run is a colorful, fast-paced saga of Sam Salmon's determined travels up the river to rendezvous with his true love, Samantha Salmon. Using your quick reflexes to avoid the treacherous river hazards in his path, you help Sam leap waterfalls, escape Bertha the Black Bear's claws, and hide from passing hungry seagulls on the prowl for Salmon steak.

As you race against Sam's allotted lifespan, you will steer our determined fish upriver along a jagged shoreline to his long awaited liaison with his beloved Samantha. A charming surprise of frolicking animation and music accompany Sam and Samantha's romantic union. Their playful tailwagging affection spawns a petite bebe, Sam Jr. But young Sam Jr. soon finds himself at the beginning of the river. Now, he too, must retrace the fishsteps of his father, Sam Sr. and complete the arduous quest for his true love. (Only 4 mini-fillet salmon can be accrued, no matter how many times Sam and his descendants successfully complete their amorous journey.)

This game has excellent sounds to accompany the realistic graphic setting of Sam's world. You can hear sea gulls screech as they pass overhead, the gurgling of the river, and the splash of Sam's waterfall leaps.

In order to score the really big points, you have to reach level four, which is four successful trips for Sam up the river. The best way is to stay



Don't let Sam the Salmon become steaks — and watch out for that net or he'll never reach Samantha! *Salmon Run* is a fun way to learn about the spawning cycle of the salmon.

close to the left riverbank, as it is easier to evade the fishermen's nets. All of the bears attack Sam from the right bank, so cruising safely along the left bank will allow you that extra second of reaction time. Especially when you encounter Bert the Polar Bear, who is particularly nasty. He leaps up from the bottom of the screen, and wastes no time in snatching Sam from the water for a fish fillet dinner.

Sam is also capable of snorkeling under water, like any normal fish. You can make Sam disappear from view and swim under the fishermen,

bears and waterfalls, by pressing the fire button while pulling back on the Joystick Controller for no more than one second. But be careful, because Sam swims slower under water, and his short life will expire even quicker!

Salmon Run can be that special fun gift for the entire family, as it can be played by ages 8 and up. *Salmon Run* portrays the natural spawning cycle of the Salmon, an interesting learning experience for the younger family members, and it's action-packed for the older members.

(*Salmon Run* is available on cassette or diskette. The cassette requires 16K RAM, and diskette requires 24K RAM. It can be played

by one to four players, and requires one joystick controller per player. Suggested Retail Price is \$22.95 for both cassette and diskette.)

Myrna Johnson and Gretchen Nicholas—Myrna is a Word Processor Operator for Marketing Communications, and Gretchen is the Senior Clerk for Atari Users' Group Support.



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EASTERN FRONT

By Dave Menconi

Eastern Front (1941), by Chris Crawford, is a beautifully detailed computer video game which will match the demanding standards of both military buffs and wargame aficionados. Even your basic quarter-tossing alien blaster will no doubt discover why this game is one of APX's top sellers, but Eastern Front is not your average video game. Conventional video games sharpen your reflexes—the more you play them the more you train your reflexes, and therefore the better you do. Not so with Eastern Front. In this game, the computer's advanced artificial intelligence techniques, programmed by Chris Crawford, force you to sharpen your mind.

Eastern Front is a computerized simulation of the German invasion of Russia during World War II, code-name "BARBAROSA." As the German field marshal commanding dozens of German Panzer and infantry divisions, one of the largest mechanized attack forces ever created, you amass your units along the Eastern frontier, opposite an even larger Russian army. You get a "feel" for the way the German commanders thought and worked during the actual campaign. As you become better at the game, you develop strategies similar to those used by the real commanders. In this respect, the simulation is like a very fluid, "hands on" history lab on a diskette.

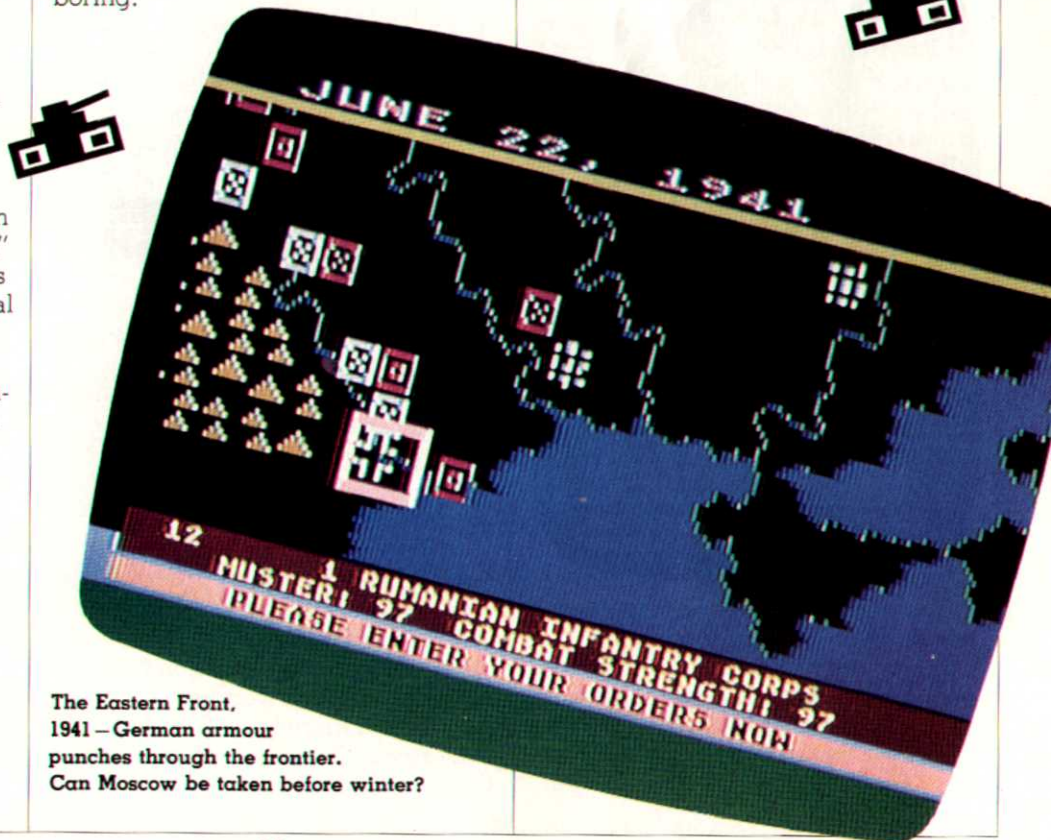
In an interview with the author, Chris Crawford, I questioned the accuracy of this history lesson. "An expert would find a number of details that aren't quite right," he replied. "But the important principles—the lessons the game conveys—are very accurate, very true to life."

Chris (a former astronomy professor at University of California, Davis) says the game has some important lessons for people who aren't history buffs as well. According to Chris, success in warfare is not gained by mere brute force but by careful application of that force.

"Maneuver and planning are the key," Chris says. "Concentrate your armor on weak points, punch through, then bypass and encircle strong groups of Russians." Players who master this "simple" strategy discover Eastern Front is fun to play and relatively easy to win—but never boring.

Eastern Front leads its players into an entirely new dimension for home computer games. A dimension where you match wits not only with the computer, but the programmer (Chris Crawford) and the course of history itself.

(Diskette version requires an ATARI 800 Home Computer with 32K RAM, an ATARI 810 Disk Drive and an ATARI Joystick Controller. Cassette version requires an ATARI 400 or ATARI 800 Home Computer with 16K RAM, an ATARI 410 Program Recorder and an ATARI joystick controller. Suggested Retail Price: \$29.95)



The Eastern Front, 1941—German armour punches through the frontier. Can Moscow be taken before winter?

NEWS FEATURES

APX FIRST PLACE WINNERS

YOU'RE A WINNER!

By Paula Polley

You licked the stamps...they're on. You've checked and rechecked the address: 155 Moffett Park Drive, Sunnyvale, California 94086. You feel the manila envelope for the last and umpteenth time to make sure your diskette or cassette is still there. You drop it in the slot marked "Out of Town" with your fingers crossed and your circulation racing.

Then you wait.

Maybe a week. Maybe two. But it seems like decades.

Finally, one evening—preoccupied with something totally unrelated, like an assignment deadline, car trouble or that job interview—you get this call.

"Hello..." you answer in your usual unassuming way.

And the guy on the other end introduces himself as Mike Downie, Software Reviewer for APX, the ATARI Program Exchange in Sunnyvale, California.

You don't know why you didn't drop the phone. Or how you managed to talk to him like he was just a neighbor calling to borrow your Asteroids cartridge...but you did.

"Sure, I can experiment with adding another variable," you agree.

"I was thinking the second mode could use a little more sound, too," you admit.

A week later you get another call, "Our panel of judges," explains the voice from Sunnyvale, California, "has chosen *your program* as the

\$2,000 winner in its category."

This time you *do* drop the phone.

Four times a year the ATARI Program Exchange conducts a competitive review of the programs they've selected to publish that quarter. The judges, upper management employees from all departments of the Atari Home Computer Division, review these works on the merits of Human engineering, Originality, User Easiness, Implementation, Documentation, and Interest Level.

First, second, and third place prizes are awarded in four different categories. The four categories are: Consumer, Education, Business, and Systems. So, there are actually 12 APX prize winners every three months.

TYPO ATTACK

By David Bueler

Typo Attack is absolute proof that learning can be shot full of fun. The sound and graphics that sixteen-year-old David Bueler built into his fast-action, typing-driller, rival those of any game you've ever played.



The bottom of the screen suggests a row of seven typewriter keys. Delightfully animated bugs, birds, and stars tumble down toward the keys. Each key is marked with the one character that can destroy the menacing Typo Attackers. If you know the

keyboard, you have a sporting chance.

If you don't, a few games of *Typo Attack* will improve your typing skills.

David created *Typo Attack* in his home in St. Paul on his Atari 400 Computer and 410 Program Recorder.

REAL ESTATE CASH FLOW ANALYSIS

By Richard Lingren

So you think there's more money in real estate? But you're not sure which investments would earn the greatest returns? This fall's winner, *Real Estate Cash Flow Analysis*, will help.

By inputting variables such as vacancy time, personal tax status, loan amortization, rents, and cash flow, Richard Lingren's program lets you compare the profit potentials in different investment options.

This is a highly professional program for serious investors.

Richard Lingren is a C.P.A. and a Professor of Business at Graceland College in Iowa.

SYSTEMS SOFTWARE BASIC XA

By Thomas Newton

If you're a BASIC Programmer, here's a system that'll become your constant companion. Thomas Newton calls his first prize winner *BASIC XA* because it's an Extended ATARI BASIC.

BASIC XA is the most versatile and powerful programming utility yet designed for use with ATARI BASIC.

List your variables individually. Or present the values of every variable in a simple double-column list.

BASIC XA allows you to change the name of any variable by answering only one prompt. You can cross reference all the statement line numbers for a given variable. And delete within the parameters of any of the system's functions.

In 'check' mode, *BASIC XA* detects programming errors and spells them out in everyday English. No more referencing numbers in

NEW PRODUCTS

ATARI NUMERICAL KEYPAD

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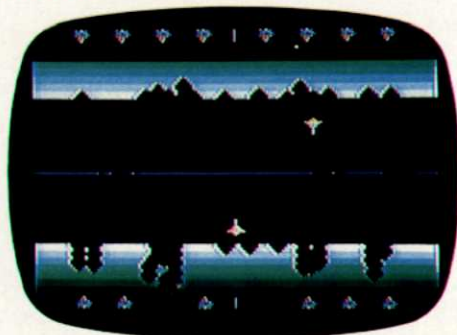
books. It catches certain bugs not caught by regular ATARI BASIC. BASIC XA also includes a handy renumbering system.

Thomas Newton, seventeen-year-old author of BASIC XA, lives in Pittsburgh where he's working on his Ph.D.

QUARXON

By Scott Ludwig

Once you see the lush tropical colors in Scott Ludwig's *Quarxon* it's easy to guess where he lives. Scott programmed this exciting droid-against-droid fantasy at his home in Hawaii.



In addition to his rich colors, the judges were impressed by the game-play originality of *Quarxon*. With joysticks, you maneuver one of two droids in 'human vs. human' or 'human vs. ATARI Computer' combat. The wall separating each droid has perpetually-moving openings through which you zap your opponent or blast his protective turf. Try to eliminate his fellow tribe members lurking behind his turf and you've won the game.

Sounds complex? There's more. Too much time in one spot causes isotropic aids to be given to your enemy—or secondary crushing walls to hinder your attack.

For seventeen-year-old Scott, *Quarxon* will be his first published program.

Are your fingers tired of reaching across your computer's keyboard to type in a long string of numbers? The ATARI CX85 Numerical Keypad can put those numbers at your fingertips so you can enter them quickly and accurately—calculator style.

For quick action and instant familiarity, the ATARI Numerical Keypad is styled after a standard ten-key adding machine. A raised dot on the 5-key provides a familiar cue to those of you used to touch-typing. Accountants, bookkeepers or anyone who uses the new Bookkeeper from Atari will discover a new dimension in using their ATARI Home Computer. An added plus is that the keypad also works with the Atari version of VisiCalc—the popular electronic spreadsheet that allows you to create your own personal financial models for your business or home office.

The keypad works instantly with either The Bookkeeper by Atari or VisiCalc. With The Bookkeeper all you do is plug in the keypad and the function keys let you answer yes or no questions with a single keystroke, delete characters on a line or "escape" to a previous menu. When used with VisiCalc, you can move the cursor with four function keys in any of four directions with a single keystroke. With either program you simply press the +ENTER key to register your entries and a minus key lets you signal negative numbers. The ATARI CX85 Numerical Keypad turns your ATARI 800 Home Computer into a powerful accounting machine—at the touch of a few buttons.

But the Numerical Keypad isn't just for accountants. Each of the 13 numeric keys can be reprogrammed to act as any key on your computer's

keyboard. The four function keys can be quickly reprogrammed to operate as the START, SELECT, OPTION and BREAK keys. Or have them perform any program function you like. Key codes can be reassigned by modifying the supplied keypad handler on diskette. You can reprogram it using POKE statements in ATARI BASIC or the handler can be more extensively modified using the ATARI Macro Assembler and Program-Text Editor. Complete instructions for the BASIC programmer are included in the convenient user guide. Technical Reference Notes for advanced programmers are also included in the package.

The ATARI CX85 Numerical Keypad requires an ATARI 810 Disk Drive and can only be used with an ATARI 800 Home Computer. The Numerical Keypad is available through your local ATARI Computer Retailer.



The ATARI CX85 Numerical Keypad adds rapid calculator-style number entry to your ATARI 800 Home Computer's growing list of talents.

NEW PRODUCTS

Not One, Not Two, But Three Hot New Games From ATARI

3250

By Steve Englehart

This year the yuletide holidays bring you not one—not two—but *three* chances to bring the thrills of an arcade video game into your home! Yes, Atari knew that one game alone wouldn't fill your stocking, so we came up with three hot ones to keep you going through the cold months—GALAXIAN, DEFENDER, and QIX!

And you know, arcade games look and play like arcade games on your ATARI Home Computer. It's got the memory, the graphics and the sound to deliver the fast-paced action that arcade games are known for. So scramble into your cockpit, power up your computers, and prepare for high adventure!

GALAXIAN

From the far stars come the invading Galaxians, strange winged creatures who stream across our skies like thunderclouds. There's no time to raise the Earthfleet and fight back—you alone are in the air and ready to counter the Galaxian attack.

As the stars scroll past, you slide your ship from one side to another to dodge the invaders' fire and give back as good as you get. In their front lines are the blue Drones, purple Emissaries and red Hornets, all dedicated to protecting their bright yellow Commanders. The more

powerful the Galaxian, the more points you score for destroying them. But if you destroy them all—another wave comes winging in. (And after the first few waves, several surprises come winging in, too.)

DEFENDER

Okay, so you overcome the invading Galaxians here on Earth. But far out in space, another determined planet is facing another cataclysmic battle. There, aliens so evil that no one has dared name them are besieging the planet's humanoid inhabitants, kidnapping them and transforming them into mutants. Backing these aliens is incredibly advanced technology, in the form of attack ships known as Baiters, Swarmers, Bombers and Pods.

Fortunately, the leaders of the planet long ago used *their* technology to devise the ultimate warship—Defender.

The ATARI Home Computer version of Defender is far more responsive to its controls than is its arcade counterpart, due to the Atari joystick. In the arcade, you move up and down with a lever, thrust with a button, and reverse with another button—while in our version you do it all with one controller, thereby saving yourself precious seconds. And in Defender, nothing's more precious than time.

Defender fires missiles in the direction it's facing, and if overwhelmed it can detonate one of its three smart bombs to destroy every alien on the screen (you press the space bar on your keyboard). Good Defender players like to save their smart bombs for extreme emergencies, but newcomers like me face extreme emergencies about every thirty seconds. The other available life saver is hyperspace, which you activate by hitting any key except ESCAPE, CONTROL, SHIFT or BREAK. Hyperspace warps you away from your attackers (though perhaps bringing you back in the midst of a second batch).

Your viewscreen shows your immediate area, but a scanner at the top of the screen shows a much wider view. You need this scanner because you're defending the whole planet, and once an alien strikes you have very little time to speed to your humanoid's rescue.

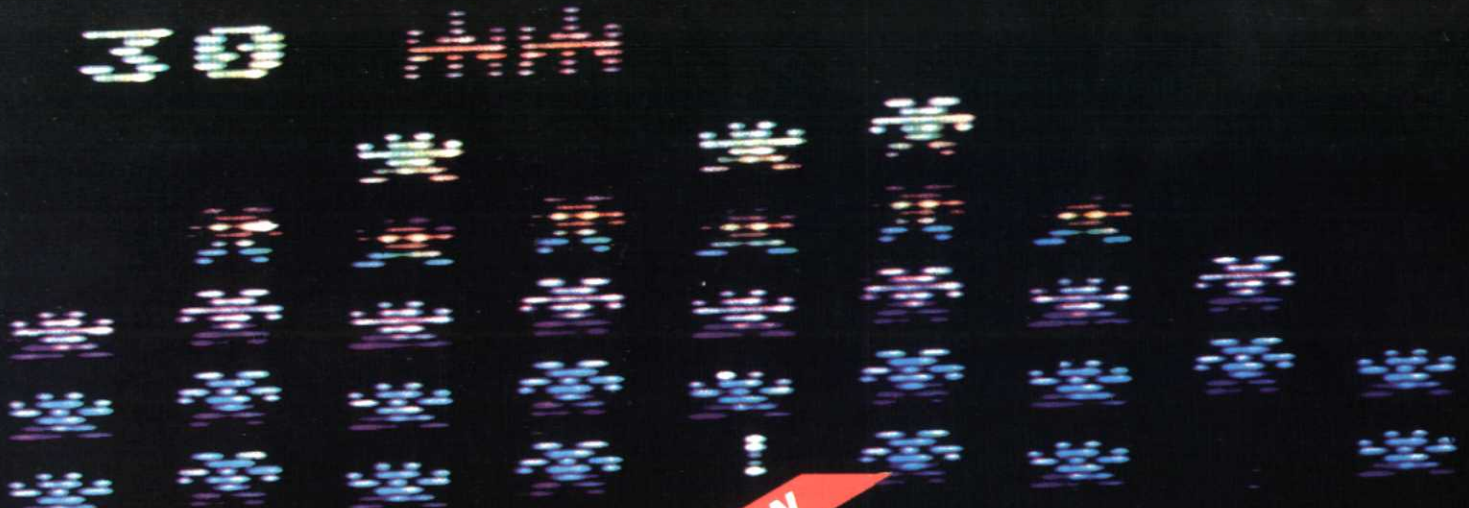
Defender is one of the most popular video games ever created—because it's one of the most complex. Only the ATARI Home Computer's advanced features can bring a game of this caliber into your home.

QIX

And somewhere else altogether, in a land where three dimensions are unknown, a strange sort of geometric war is being fought by two-dimen-

DEFENDER

But fly to another world, one inhabited by humanoids, and you'll find other aliens attacking in force. Their only hope: the fantastic spaceship called Defender!



GALAXIAN

There's no escape! If you fly above Earth, the grasping Galaxians come to you, seeking to overwhelm our world!

sional creatures who make the Galaxians and the Defender-baiting aliens seem like a flock of woolly lambs.

Within a rectangular box, a spinning helix called Qix is out to destroy any line it can find. You draw these lines, called Stix, with your marker, venturing out into the box and marking out an area. If you succeed, you gain points as the area fills in with brilliant color. Mark out more than 75 percent of the box and win bonus points. But if you fail, you lose your marker, and you only have three of them. You can fail by being hit by the Qix, but you can also fail by losing your nerve—if you stop drawing, your line turns into a fuse and energy sizzles along it to destroy you. Even if you don't stop, crackling Sparx are

running around the lines at all times, and if one of them touches you, you lose. Yet you soon forget about losing, because the thrill of successfully challenging the odds takes over. The more successful you are, the more Qix and Sparx you face—and that's the way you like it!

We know what you like. We're Atari!

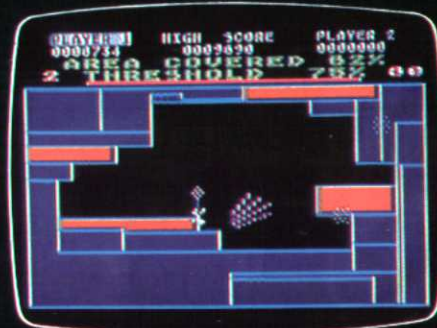
Requirements

Each of these games requires an ATARI 400 or ATARI 800 Home Computer with a minimum of 16K RAM. Each package contains the game cartridge and a colorful owner's manual, at a suggested retail price of \$44.95.

Availability

Galaxian and Defender in December. Look for Qix in January.

Steve Englehart, a former writer for Marvel Comics, is a Senior Writer with the Atari Home Computer Division.



QIX So quit this dimension altogether, for a world of only height and width, where you can challenge the whirling Qix!

NEW PRODUCTS

JUGGLES' RAINBOW AND JUGGLES' HOUSE

TWO NEW DELIGHTFUL EDUCATIONAL GAMES JUST FOR PRE-SCHOOLERS

By Teddi Converse

When you get these two new software programs, your computer may turn out to be perpetually unavailable, because your child will be using it. But while your children's attention will be intently focused on the TV screen as they play these games, they will be *learning* too!

Juggles' Rainbow and Juggles' House are Atari's newest learning games especially designed for three to six-year-old children. Both games provide a perfect way to introduce

your child to your ATARI Home Computer.

Juggles' Rainbow and Juggles' House use colors, sounds and lively animation to illustrate and teach basic concepts like directions, recognizing the shapes of letters, and counting.

The first program, Juggles' Rainbow, teaches the concepts of "above, below, left and right." Juggles' House teaches "inside, outside, upper and

lower." Both programs come with helpful keyboard overlays which



minimize the number of keys children need to press on the computer keyboard. As keys are pressed, colored bars appear on the screen along with short, musical sounds. The Juggles' Rainbow program is divided into three sections. When the child finishes each section they are awarded a picture playground and can fill in the picture, creating dancing colored rain and rainbows, a butterfly with bright wings, and a windmill with rotating colored blades.

With Juggles' House, children place furniture inside the friendly clown's house and place things like birds and trees that belong outside of the house. For the upper and lower picture playground, children put toys on the upper or lower shelf of a toy case.

Creators of Preschool Software

Both Juggles' Rainbow and Juggles' House were designed by The Learning Company, an early learning software development company located in California's Portola Valley. The company, founded in 1982, began creating software for children aged three to thirteen with the specific goal of making programs that turn the home computer into a learning tool that helps children learn to think conceptually.



"Typically," says Ann Piestrup, an educational psychologist and primary founder of The Learning Company, "when a child starts to learn reading and writing, the teacher stands at the blackboard, draws a line, and tells children, 'Start at the upper, left corner of your paper, put down the pencil above the line, and curve to the right to make a circle.' A five-year-old child may not deal easily with so

many abstract words in one sentence."

These early learning programs make an exciting game out of spatial concepts.

"Active learning is the key idea to these programs," explains Piestrup. The child gets to manipulate graphics to explore a world. He or she controls the action all the time which really gives children a sense of control, of mastery. To children this is very important."

The programs also come with colorfully illustrated instruction guides that contain other activities to do with your child in order to reinforce the concepts learned, and other ways to play with the programs.

Ann Piestrup and her associates at The Learning Company conducted extensive field testing of the Juggles' Rainbow program at Bing Nursery school on the Stanford University campus.

"The teachers at Bing observed that some of the children were really transformed by the experience of Juggles' Rainbow being in the classroom," Piestrup explained. "There was one little boy who by the middle of the year had never taken his coat off before, in fact he really didn't like being there. He was one of the most hesitant about the computer and he would stand and watch the other children for a long time. But he finally tried it. He was very tentative about it, but once he began using the computer, he took his coat off, got very comfortable and from then on always wanted to be the first one to play with it. He had achieved a sense of mastery."

It has also been observed that children turn their experience with the computer into a very social activity. Leslie Grimm, also of The Learning Company notes, "I've visited a lot of schools and typically there are not enough computers for all the children to work with. So they assign two children to each computer. What happens is that it isn't enough for the child alone to relate to the computer. The computer gives them rewards, but no matter how great the reward is, the child wants to share it with

another human being. And that's what happens...it's a social experience."

Clearly, an ATARI Home Computer is a unique learning tool that young children can greatly benefit from. With programs like Juggles' Rainbow and Juggles' House, learning is turned into a colorful and exciting new kind of game. And the self confidence

that the kids achieve by learning to use a computer is something they will never forget.

Juggles' Rainbow and Juggles' House will require 32K RAM and an ATARI Disk Drive. Package includes program diskette, and colorfully illustrated learning guide.



KIDBITS

FOCUS ON KIDS

MACY'S CITYKIDS JOIN THE COMPUTER AGE

By Jim Carr

Macy's Citykids have joined the computer age!

Naturally, they met PAC-MAN and Blinky, and played Centipede when they did—but more importantly, the Citykids discovered that video games aren't the only kind of fun to be found on a home computer.

Citykids is a twice-a-year special event hosted by Macy's Herald Square department store to expose New York City-area children to exciting and provocative new experiences. One previous Citykids program, for example, was co-hosted by the Children's TV Workshop of New York.

The latest Citykids event this fall featured the ATARI 400 and ATARI 800 Home Computers—accompanied by PAC-MAN, Blinky, and Centipede, but also by the ATARI PILOT programming language with "turtle" graphics as well as educational programs such as States and Capitals, My First Alphabet, and Video Math Flashcards.

The Special Events Center on the fourth floor of the Herald Square store became a computer workshop with a half-dozen ATARI Home Computers—three ATARI 400s and a like number of ATARI 800s—set up for use by inquisitive New York Citykids.

In addition, various software pro-



grams for ATARI Home Computers were demonstrated by Atari Representatives in the computer sales department. For example, Harold Schiffman, Atari's Eastern Regional Sales Manager, showed My First Alphabet one day while Dan Finer, Atari's Assistant Eastern Regional Sales Manager, demonstrated ATARI PILOT, Atari's special educational programming language which features "turtle" graphics.

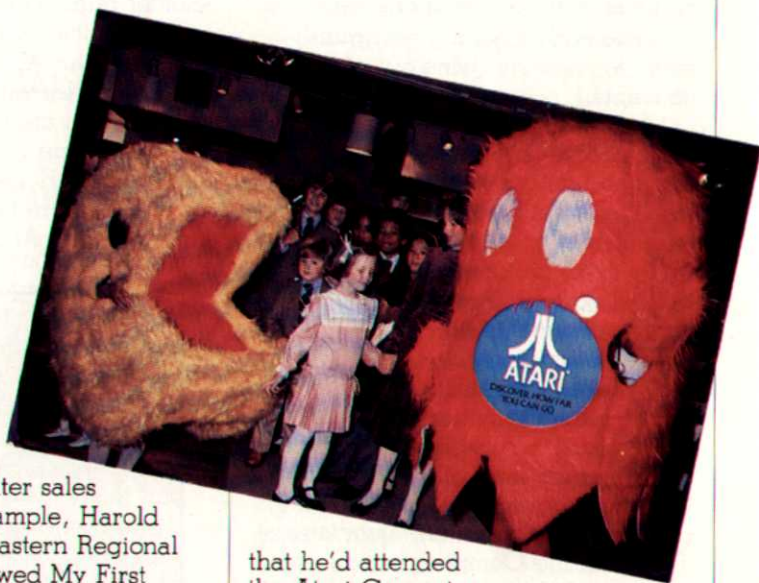
"These demonstrations were designed to show our CityKids and their parents the importance of the computer as a tool for home education," said a Macy's of New York spokesman.

Children who attended a fashion show held in conjunction with the Citykids program had the opportunity to have their picture taken with PAC-MAN and Blinky. Another day's special activities featured "Katie and the Computer," an original play performed by a New York-area theatrical group.

Fifty Citykids took part in the Centipede contest which climaxed the week's activities, according to David Localio, Atari's Sales Marketing Coordinator for the Eastern Region.

The winner, Conrad Carelli of Rego Park, N.Y., won an ATARI 400 Home Computer plus a Centipede cartridge. Conrad had a bit of an advantage over his competitors, noted Localio.

"Conrad had dropped in at the Special Events Center the first day of the Citykids program and explained



that he'd attended the Atari Computer Camp in East Stroudsburg, PA." said Localio. "I told him he could use one of the other computers as long as he explained to the other children what he was doing."

"It worked out very well," added Localio. "Conrad had a number of kids watching him, and he's very good at showing how to use the ATARI Computer."

Jack Swergold of Brooklyn, N.Y., finished second to Conrad and won a Centipede cartridge. Six other semifinalists won record albums courtesy of Warner Bros. Records and Tapes, and all 50 Citykids who took part in the Centipede competition received Atari T-shirts.

"The Citykids program was an absolute success," Localio added. "We gave out 600 Atari T-shirts during the week, and had large crowds at both the Special Events Center and at the special presentations."

The event was so successful, in fact, that Macy's hosted similar one-day ATARI Computer programs at branch stores in Albany and White Plains, N.Y., and Stamford, Conn.

Jim Carr is a senior writer for Marketing Publications in the Atari Home Computer Division.

KIDBITS FIND THE BUG WINNER

Great News! Just as we were sitting down to write this issue's column on our "Find the Bug" winner, our old friend, Lord Motley Bugnut of Centipede fame, returned from an arduous trip up the Amazon in search of Bitheralipticus and insisted that if people were finding bugs around here, he should be the one to decide who was best at it! So, without further ado, Lord Motley...

Harrumph! It does so gladden my heart to see the dedicated lot of bug-hunters who inhabit the world of Atari! When I began my career—in the reign of the old Queen, bless 'er—there were but few of us! Why, I remember—what? Get on with it!

Harrumph! You young people are certainly in a hurry these days. This is nothing like a trip up the Amazon! I was just going to tell you that our winner is fourteen-year-old David Whitefield, and here is his letter:

Dear Atari Connection:

I found the bug in your "Find the Bug Contest" of the fall issue. It is on line 130, and can be corrected by

changing the line to read:

```
130 Q=(LEN(M$)+(LEN(N$)+6))
      :Z=A+(-2*(OP=45))+B
```

I am fourteen years old and live in Harleysville, Pennsylvania. Our family has an ATARI 400 and a 410 Program Recorder. We have been getting the Atari literature ever since we purchased our computer last January, and I enjoy it very much. The rest of my family hasn't used the computer much, mainly because I am working on it every free moment.

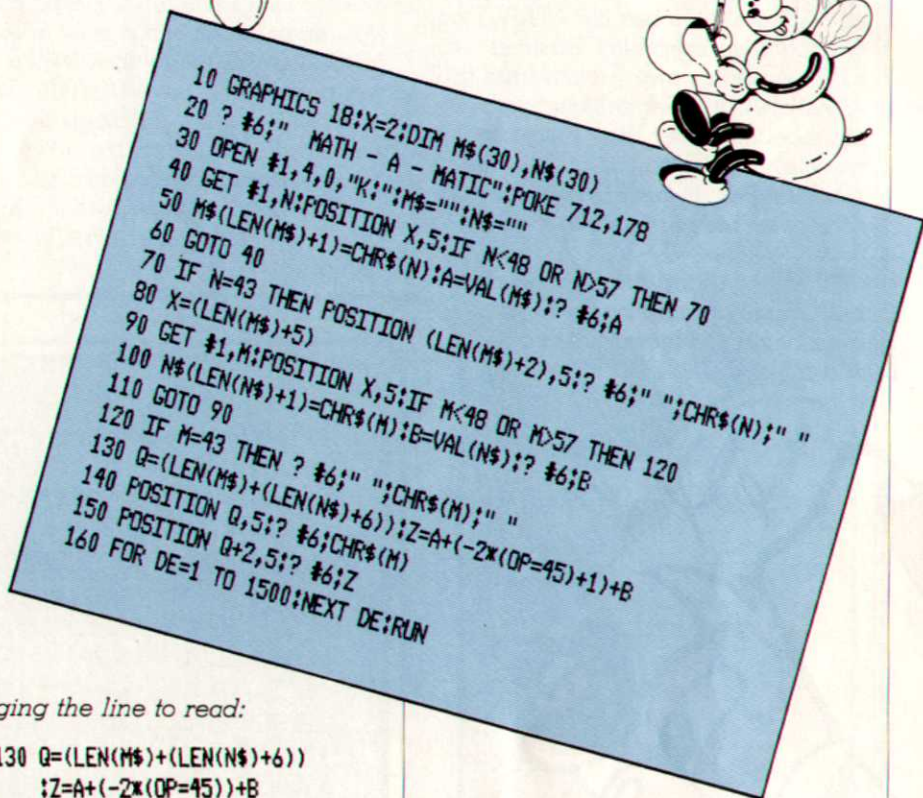
I used my ATARI 400 last spring in my Junior High School science project—a computer simulation of an empirical study of a moving body in a rain storm. When you are required to get from point A to point B while it is raining, it seems natural to run so that you will not get wet. Interestingly, my analysis shows that there is an optimum speed to travel, but it is not running. A brisk walk is better.

I entered my project in four levels of competition from the Junior High School Fair to the Pennsylvania State level and received first place in all competitions. Needless to say, I like my ATARI Computer very much.

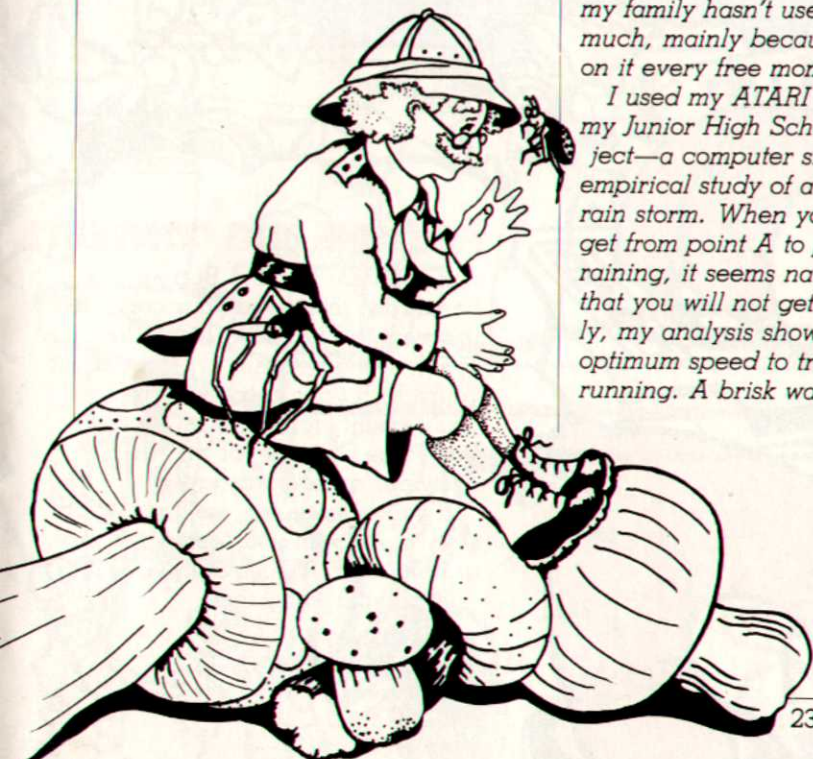
Sincerely yours,
David Whitefield
Harleysville, PA

Now isn't that clever? Although, David, I could have told you that traveling up the Amazon involves a great many rainstorms, and I always use a brisk walk to pass through them. (Of course, I am a bit stout for running.) Nevertheless, I am most pleased and proud to present you with one of my ATARI Centipede game cartridges. And congratulations to all our other contestants. You all found the Bug, bless you, and may you have the same fine luck ferreting out this issue's pesty Bug.

Listed above is Find the Bug program. To debug the program, simply replace line 130 with David's solution.



```
10 GRAPHICS 18:X=2:DIM M$(30),N$(30)
20 ? #6;" MATH - A - MATH":POKE 712,178
30 OPEN #1,4,0,"K:";M$="";N$=""
40 GET #1,N:POSITION X,5:IF N<48 OR N>57 THEN 70
50 M$(LEN(M$)+1)=CHR$(N):A=VAL(M$):? #6;A
60 GOTO 40
70 IF N=43 THEN POSITION (LEN(M$)+2),5: ? #6;" ";CHR$(N);" "
80 X=(LEN(M$)+5)
90 GET #1,M:POSITION X,5:IF M<48 OR M>57 THEN 120
100 N$(LEN(N$)+1)=CHR$(M):B=VAL(N$):? #6;B
110 GOTO 90
120 IF M=43 THEN ? #6;" ";CHR$(M);" "
130 Q=(LEN(M$)+(LEN(N$)+6)):Z=A+(-2*(OP=45))+B
140 POSITION Q,5: ? #6;CHR$(M)
150 POSITION Q+2,5: ? #6;Z
160 FOR DE=1 TO 150:NEXT DE:RUN
```



KIDBITS

FIND THE BUG

Santa's up-to-date on the computer age. He wants to use his ATARI Home Computer to keep his Christmas list, so he wrote his own list program in ATARI BASIC. Santa likes his list in alphabetical order, but every time he types in a good boy or girl's name, there's a Bug in his program that scrambles the names in the wrong order.

If you can Find the Bug, you can help Santa out and be excused from having to leave him cookies and milk.

CHAD KUBO

First, type the Santa's List program into your ATARI Home Computer exactly as it's listed, then type RUN. Now enter a few *first names* of some good kids you may know. When you're finished, press RETURN twice, and you'll see the problem. You'll also notice a few of the names are suddenly missing. That's because Santa's List has magical powers that allow only good children's names to be recorded!

If you Find the Bug and fix it, Santa's List will sort the names you entered (plus eliminate the bad boys and girls names) and list them in alphabetical order when you press RETURN twice.

Have fun and Find the Bug!

Find the Bug program by Dave Menconi and Ted Richards.

```
10 DIM NAME$(100),TEMP$(10)
20 NAME$=" ";NAME$(100)=" ";NAME$(2)=NAME$:GRAPHICS 2
30 ? #6;" ENTER 10 NAMES"? #6:#6;" EACH LESS THAN TEN"
40 ? #6;" CHARACTERS LONG"? #6:#6;"HIT 2 returnS AFTER"
50 ? #6;" THE LAST NAME":FOR N=1 TO 10:POSITION 1,8
60 ? #6;"NAME # ";N;"?":INPUT TEMP$
70 IF TEMP$<>" " THEN NAME$(N*10-9,N*10)=TEMP$:NEXT N
80 GRAPHICS 18:POSITION 5,5:#6;"SORTING"
90 FOR J=1 TO N-1:FOR I=1 TO 9*(N-2) STEP 9
100 IF NAME$(I,I+9)>NAME$(I+10,I+19) THEN GOTO 130
110 TEMP$=NAME$(I,I+9):NAME$(I,I+9)=NAME$(I+10,I+19)
120 NAME$(I+10,I+19)=TEMP$
130 NEXT I:NEXT J:GRAPHICS 18
140 FOR I=1 TO (N-1)*10 STEP 10:IF RND(0)<.2 THEN 160
150 PRINT #6;" ";NAME$(I,I+9)
160 NEXT I
170 POSITION 0,10:#6;" HIT ANY KEY"
180 ? #6;" TO GO AGAIN":POKE 764,255
190 IF PEEK(764)=255 THEN 190
200 POKE 764,255:GOTO 20
```

CHRISTMAS LIST
RAY
LO
J

FIND THE BUG CONTEST!

If you can Find the Bug and fix Santa's list then send your corrected program to THE ATARI CONNECTION, along with a short story about yourself. If your entry is correct, you'll qualify for a special Find the Bug Prize Drawing for an ATARI Defender game cartridge!

If you're a winner, we'll print your story along with your corrected program in THE ATARI CONNECTION.

Send your entry to:

FIND THE BUG
c/o THE ATARI CONNECTION
60 E Plumeria
P.O. Box 50047
San Jose, CA 95150

PROGRAM PUZZLE

By Tom Hudson

What is the first thing you think about when someone says "Christmas?" OK, after "presents," what is the next thing you think of? A Christmas tree, of course!

Our Program Puzzle will draw a Christmas tree. If you don't think that sounds too exciting, wait until you see the background.

To make the Christmas Tree program work, you have to unscramble the program lines. First, type the program into your computer exactly as it's listed. Now SAVE your program by recording it either on a cassette tape or diskette. Next try shifting the

program lines around by simply typing new line numbers in front of each program line. For example, if you think line 50 should be line 30, then delete the number 50 and type in 30, then press [RETURN]. Now you go to the old line 30 and decide what line number it should be and so on, until you think you have it right. (HINT: two of them already have the correct line number.)

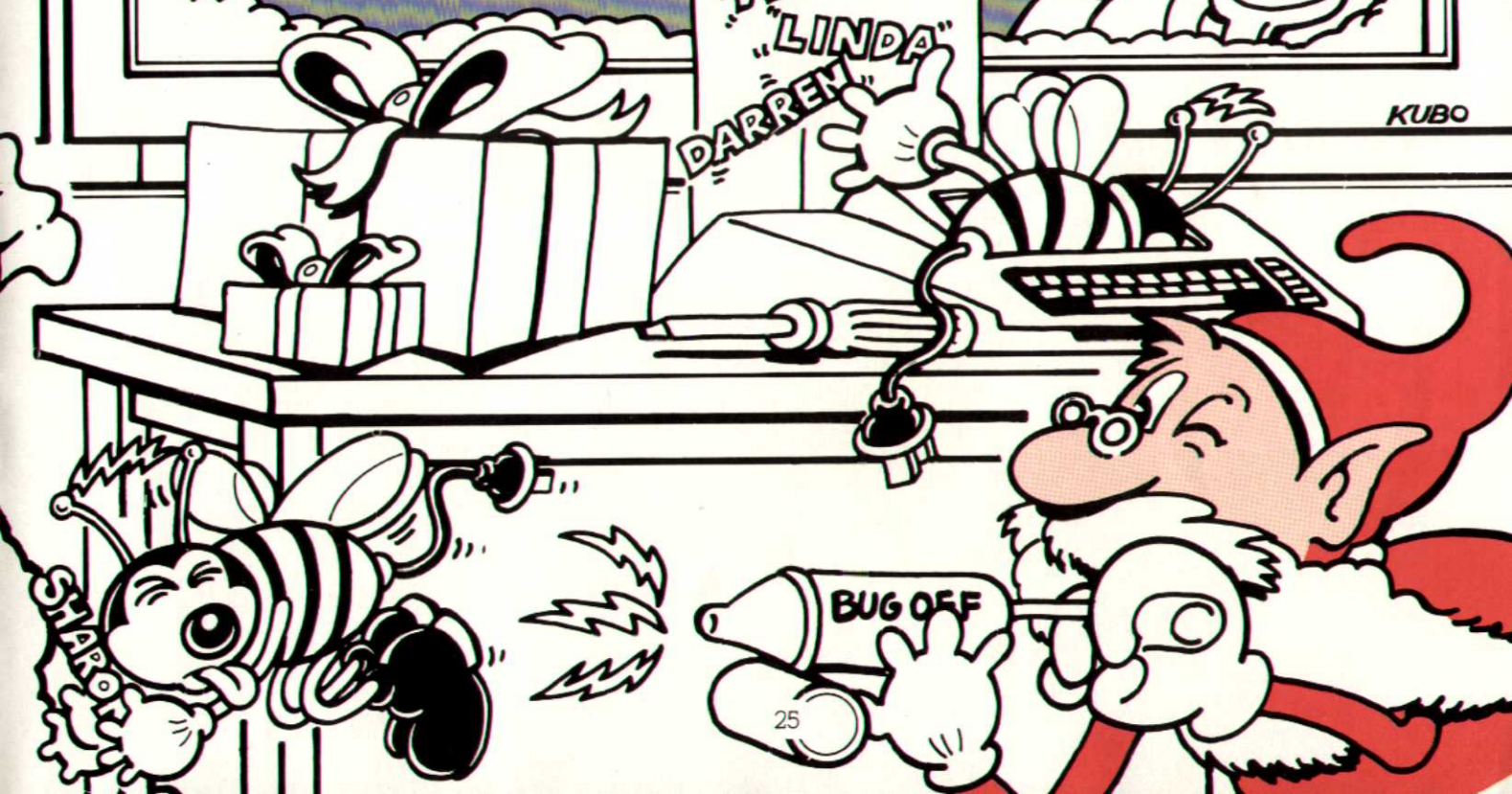
For extra challenge, see if you can add lights to the tree and presents underneath.

MERRY CHRISTMAS!

Tom Hudson is a Sales Training Specialist with the Atari Home Computer Division

```
10 DRAWTO 41,36:DRAWTO 39,36
20 GRAPHICS 21:SETCOLOR 4,12,0
30 COLOR 2:PLOT 39,44:DRAWTO 41,44
40 SETCOLOR 1,0,1:COLOR 3:SETCOLOR 0,12,14
50 SETCOLOR 2,12,6:XIO 18,#6,0,0,"S:"
60 POKE 1667,212:POKE 1668,142:POKE 1669,26
70 PLOT 56,36:DRAWTO 40,3:DRAWTO 40,4
80 POKE 1670,208:POKE 1671,76:POKE 1672,128
90 PLOT 24,36:DRAWTO 38,36
100 DRAWTO 39,43:DRAWTO 40,43:DRAWTO 40,37
110 POSITION 24,36:POKE 765,3
120 POKE 1664,232:POKE 1665,142:POKE 1666,10
130 POKE 1673,6:A=USR(1664)
```

Answer on Page 42.



**COMING
ATTRACTIONS**
**COMING
SOON
TO YOUR
ATARI HOME
COMPUTER**

E.T.™ PHONE HOME!

You've probably seen that ad for the ATARI 2600 Video Computer System—the one telling you about their new E.T. game—and you've probably asked yourself "When will the game for the ATARI Home Computer be out?" Well, the simple answer to that is "in the early spring," but there's more to it than that. We started our version from scratch to take full advantage of our computer's advanced sound and graphics capabilities.

In the ATARI Home Computer game we have a beautiful, scrolling, multi-screen map of Elliott's world, from his neighborhood to the hills and forest surrounding it.

As Elliott, you venture into that world to find the phone pieces E.T. needs to call his ship back to Earth. The time you have to do it is limited, though, because E.T.'s life-energy is running down—and both agents and scientists will chase you if they find you. But if you're like Elliott, you won't let them stop you from helping E.T.

As you search for the phone pieces, you stay in touch with your extra-terrestrial friend—just like the movie. E.T.'s counting on you to come through so he can "phone home." You can't let E.T. down—neither will our game for the home computer. The color, the graphics and the sound all combine to bring you hours of entertainment, exploring Elliott's neighborhood and helping your friend, E.T.

So stay in "touch." E.T.™* Phone Home is coming soon to your home computer—from Atari.



TELECOMMUNICATIONS LOBBY LETTERS OF AMERICA

COMPU-SERVE'S NEWEST SERVICE FOR EVERYMAN U.S.A.

By Dr. G

The old Doctor has gone off the deep end over *Lobby Letters of America*—the latest way to telecompute. The Doctor uses Lobby Letters to deliver his opinions and questions to national leaders and organizations around the country—around the corner. You too can tell them what you think with Lobby Letters, whether it's a complaint, comment or compliment to a national or international official, agency, or organization, corporation or the mass media. Designed to serve the common man, Lobby Letters is for people who have an opinion or interest they want heard or an axe to grind or whatever.

What's the catch? There are only two small ones: there's a charge for the service and Lobby Letters will only write letters about nationally known issues, movies, TV shows, consumer products or services.

Lobby Letter's reason: "It's too difficult to get information about issues that have no impact..." But on a vast variety of national or international issues, Lobby Letters can provide a valuable service for you. Professionals who you can dial up on your computer at a moment's notice will act as your personal lobbyist on practically any recognized issue. Whether you disagree or agree with an issue, Lobby Letters will compose a clever, informed and hopefully effective letter, custom-written just for you.

O.K., you say you're sold and can't wait to fire off a letter to your favorite lawmaker—so how do you send a Lobby Letter?

First you must combine an ATARI Home Computer with a couple of standard Atari accessories, namely an ATARI 830 Acoustic Modem, an ATARI 850 Interface Module and a TeleLink I Cartridge and WAMMO

you've got a powerful communications system. (The ATARI Communicator kit contains everything you need to get started, including a free hour on the three major information services: CompuServe, THE SOURCE and the Dow Jones News/Retrieval Service.)

Lobby Letters is easy to use and easy to find. Just dial a local (in most cases) phone number, place the telephone receiver on the modem, type into the computer your own personal ID number and your secret "password." The CompuServe Information Service will now appear on your TV screen. From there, all you have to do is type in the command "Go LLA-1" and PRESTO!—Lobby Letters of America appears on the screen. A complete explanation of the Lobby Letters service is provided by CompuServe at this point. Included is a section called "How Lobby Letters Works," which contains sample Lobby Letters, including both satirical and serious letters, a section on "How to place a lobby letter order," plus there's a feedback hotline that allows you to tell the folks at Lobby Letters what you think of them! It's quite a service, with literally thousands of possibilities!

You simply supply the name of the person, organization, or product and describe the comments in as little as a line of conversational English. Also, when placing the order, you must specify whether you prefer a serious or a satirical letter. Lobby Letters will then compose a professional-looking letter based upon your comments. Lobby Letters supplies the correct address and then sends you the finished letter to sign and mail. The cost of each letter is \$3.50 and is billed to the customer's account by CompuServe. Additional copies of your letter can be addressed to other persons for

an additional \$1.50 per copy.

Lobby Letters is a fascinating service that the Doctor personally recommends. In fact, the old Doctor was ordering a couple of Lobby Letters last night and almost burned the kitchen up. The doctor's latest recipe for "Way Crispy Chicken" got out of hand and turned into "smoked fowl" while the Doctor was peppering the nation's movers and shakers. I think these last two letters (one to my state Governor and one to a network news service) will get some results, but if they don't at least the old Doctor knows they're aware of his opinions. And in today's world I think you'll agree that's the important thing.

Happy Holidays from Doctor G,
and have a very expressive New Year!



Dr. G is the alter ego of Pat Lee, Project Manager for the Sales Merchandising Department in the Atari Home Computer Division.

TED RICHARDS

Interconnections

By Earl Rice

Welcome to Interconnections! For those who are new to THE ATARI CONNECTION, this is the column where we chat about the goings on among our Users' Groups. Users' Groups are computer clubs formed by owners of ATARI Home Computers as a way of sharing and learning about their computers. Some of the groups are pretty technical, but most are full of everyday people discovering their computers together. Atari has a Users' Group Support Program that helps clubs get started, and helps out, now and then, with teaching materials and technical information, as well as tips on running a successful group.

Users' Groups vary in their interests, but one thing you will notice about all of them is that they stimulate the imagination!

Kathy Berg, program chairperson of the Seattle/Puget Sound Atari Computer enthusiasts (SPACE, for short) got interested in the ATARI PILOT programming language at a meeting. Kathy is a stained glass artist, and so she is interested in graphics. She also has a two year old daughter. One thing led to another, and with a little encouragement from her group, and Atari, she developed a teaching game for young children! It's called *I'm Different*, and it helps teach pre-schoolers about logical association. It's in the APX catalog.

Along more technical lines, Jack McKirgan II is a radio amateur (WD8BNG) and is the network coordinator for The Atari Microcomputer Net Users' Group. This is a group of radio amateurs who meet 'on the air' to swap information and ideas about their computers. More than just talking about their computers, they use them to send and receive messages, even receiving (copying) Morse code. Many have found their computers useful tools in the design of antennas, and other projects involving complex computation.

The network is growing monthly, and is eager for new members. In addition to coordinating the network, Jack puts out an excellent newsletter



Tulsa Atari Users' Group Hosts Chris Crawford and Atari Users' Group Support --Tulsa, Okla.

called 'Ad Astra' (Latin for 'To the stars').

If you are a radio amateur and would like to contact this group, you can write Jack McKirgan II at:

4749 S.R. 207 N.E.
Washington C.H., Ohio, 43160

The Network operates on Sundays, 1600 Z, on 14.325 MHz.

One group that's *really* heading for the stars is an organization called Delta Vee. This organization raises money to help support our Space Program. Their most famous project to date has been their successful effort to keep the Viking Mars lander alive and well. Money from Delta Vee contributions has kept the lander broadcasting pictures and weather data for over a year past the end of its 'official' funding. Delta Vee has recently formed The Delta Vee Atari Computer Users Group. Stan Kent, founder of Delta Vee, and president of the group, figured that, since the organization was running on ATARI 800 Computers, they might as well start a group! Besides keeping track of 20,000 Delta Vee members, those ATARI 800's will soon be looking for intelligent signals from space, and showing off pictures from Mars!

As you can see, ATARI Computer Users' Groups come in all flavors, from very down-to-earth, to very space-age. With over 250 groups around the world, there's bound to be one available to suite your computing interests. If you want to find out about a group near you, or want to start one of your own, call the toll-free number for Atari Customer Service.

800-538-8543

800-672-1404

(in California)

Earl Rice is the Manager of Atari Users' Group Support in the Atari Home Computer Division.

ADDITIONAL DATA

SOFTWARE SOON VIA FM RADIO

By Jack Perron

Look out, music lovers! FM radio is going high tech. Starting in January, National Public Radio (NPR) begins experimental broadcasts of computer software over the FM airwaves. This experiment could result in your receiving computer software over the airwaves by next June.

The pilot project will be limited to the Washington, D.C./Baltimore, Maryland area at first. But if it succeeds, NPR will be bouncing its digitized signals off a satellite in space to some 267 affiliate FM stations across the U.S.

National Public Radio is probably best known for its award-winning news program "All Things Considered" and educational programs for the schools. But NPR may soon be better known for its joint venture with National Information Utilities Corporation (NIU). Their far-sighted and venturesome business agreement has given birth to a unique corporate offspring, INC Telecommunications, which will run the experimental broadcasting effort.

NPR will broadcast computer programs over FM radio into the homes and businesses of charter subscribers. The programs will be received with the help of special "radio modems," designed by NIU and leased for a monthly fee. These modems will

receive the FM signal and feed it into the subscribers' computers, terminals, or printers.

A similar experiment—on a worldwide scale—sent computer programs over AM airwaves last year. That one originated in the Netherlands, and many listeners throughout the world were able to record and run the programs on their home computers. However, many failed to receive the programs due to reception problems.

The NPR/NIU experiment seems to have solved this problem through the use of the special radio modems, which will take care of reception by itself—even while you're sleeping. If you're familiar with phone modems, you probably know they derive their name from joining the words "MODulator" and "DEMulator." A modem is therefore a two-way device for sending and receiving information. The specially designed radio modems will only receive; in other words, they will be one-way devices—similar to the pay-TV box leased by subscribers for coded reception of movies and special TV shows.

The radio modem can be connected to your ATARI 800 Home Computer through the RS-232 port of the ATARI 850 Interface Module. This arrangement will allow you to receive the computer programs and digitized information broadcast over the experimental FM radio station.

Don't worry about missing any of

your favorite programs or music over NPR, either. Although digitized sound is all bleeps, you won't be inundated with its repetitious chirpings over your local FM radio. The actual broadcasts of computer programs will be carried on the unused portion of the frequency band assigned to each station. Only those with the special radio modems will be able to "listen."

It may be this time next year, you'll be receiving special software, news and information via FM radiowaves. If so, your ATARI Home Computer will be able to "listen in" on the world of ATARI Computers while you enjoy your favorite music or catch up on your sleep!

Briefly Noted

A new journal for language arts and reading educators will emerge in mid-1983. *Computers, Reading & Language Arts*, is now accepting articles for its initial issue, says Editor-in-Chief Gerald H. Block. The new magazine will focus on computers in the English and language arts classrooms. Write CRLA, P.O. Box 13039, Oakland, CA 94661.

Every month, COMPUTE! carries *Insight: Atari*, a column by Bill Wilkinson. In the October issue, Bill shows you how to translate graphics games from ATARI BASIC into machine language—The October issue of *Electronic Learning*, a magazine for teachers using computers in the classroom, focuses on the ins and outs of educational software... *T.H.E. Journal* (September) carries California Governor Jerry Brown's proposal for establishing a statewide network of educational computer demonstration centers in the state.

Jack Perron is a Software Reviewer for the ATARI Program Exchange (APX).

HOME EDUCATION

HOW TO INTRODUCE YOUR CHILD TO A HOME COMPUTER

By **Teddi Converse**

Actually, children usually don't need much of an introduction to anything new, for most often they'll simply introduce themselves. But there are a few guidelines you might follow for making your child's first computer experience a more positive and enjoyable one.

Probably the easiest method of introducing your child to the computer is to load a program with your child and explain what is happening throughout the loading procedure. You can pay particularly close attention to explaining the parts of the computer system that need more careful handling—diskettes, for example.

It's also a good idea to use a software program that your child can enjoy, like *Juggles' Rainbow*, *My First Alphabet* or other programs designed for young children. This way, your child can begin to see the relationship between pressing the keys on the keyboard and what appears on the TV screen. In fact, this relationship is probably the most important thing to consider when deciding whether or not your child is old enough to work with the computer.



Many programs specifically designed for young children allow them to explore. Depending on what suits you best as a parent, the program can be looked at before sharing it with your child so you know what to expect, or the program can be discovered together.

Many programs also come with manuals designed to be of some interest to the child, too. Atari learning guides and instructional manuals such as *My First Alphabet*, *Juggles' Rainbow*, *Juggles' House*, and the ATARI PILOT Student Reference Guide all feature friendly, colorful, storybook illustrations designed for a child's enjoyment. Opening a program package and looking at the manual is a real pleasure for children.

Ann Piestrup and her associates at The Learning Company offered some other hints on making a first computer experience an exciting but meaningful event in a child's life.

"First, your children should know that their hands should be clean and dry before using the computer," explains Piestrup. "This is especially important in a classroom situation because of activities that involve using clay, paint, playdough or other wet and sticky substances."

"If you have a disk drive, use a program that's available on diskette to share with your child. This way, your child can hear the diskette spinning in the disk drive and grasp the concept of loading a program into the computer a little bit better."

While most children aged three to five can load a program on diskette with no problem, it's a good idea to provide some supervision for the little ones. But kids from about age six or older can handle diskettes and load programs by themselves.

You'll need to show your child how to handle a diskette, of course. The best way to do this explains Ann Piestrup: "Is to simply treat the diskette gently when showing it to your child, pointing out the places on the diskette where he or she can touch it and where he or she should not."

Children usually need only one demonstration of how to open a disk drive door, and will be thrilled to be able to insert a diskette. Just make



Bing Nursery School at Stanford, University, Palo Alto, CA

sure you explain that the diskette needs to be inserted not too forcefully in the disk drive, but far enough to stay in place.

When the computer is turned on and starts to load the program, it's a good opportunity to point out that it's taking the program that's on the diskette and loading it into the computer's memory. "Follow the wires with your hands to show the connection between the disk drive and the computer. You can also draw attention to when the BUSY light goes out on the disk drive and it stops. This gives a clearer picture for the child that something has just moved from this one big box (the disk drive) to the computer," Piestrup goes on to say.

Showing your child how to operate a computer is much like showing him or her how to operate a record player. Kids usually get the hang of how to operate the computer in very few sessions. And you just may be pleasantly surprised at how your child's newly acquired independence can also make he or she a bit more assertive—they'll be demanding their fair share of time on the family computer!

Teddi Converse is a writer for Marketing Publications in the Atari Home Computer Division.

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INTERNATIONAL NEW SOFTWARE CENTER IN THE U.K.

SOFTWARE IN THE QUEEN'S ENGLISH

By Aubrey Wallace

It has been said that Americans and Britons are one people divided by a common language. To help close the gap, as far as ATARI Home Computer systems are concerned, we're opening a software acquisition center in London, the first of many international centers planned to meet the special needs of diverse and distant international market needs.

The opening of the new London Software Development Centre will be a revolutionary new endeavor: the custom translation and production of software that is sensitive to a foreign country's people and their culture.

"Britain needs software translated and converted," says John Peeke-Vout, Atari's Manager of Home Computer Systems International Software, "because despite the considerable similarities to the United States, it is a foreign country. The British live a different way of life, have a different educational system, different government, and even different sports. For instance, they play cricket and soccer instead of baseball and football."

John, who is British, has been put in charge of the opening and operating of the London Software Development Centre. He says that up until recently most of the British computer enthusiasts have been hobbyists, and the culture is just now reaching the point where an average family thinks of owning a computer. Typical buyers feel that they should become familiar with the computer in order to keep themselves and their children up to date. They take a computer seriously, in other words, and consider it an investment in the future, especially because average consumers in the

United Kingdom have less money than those in America, and so they consider their special purchases more carefully. However, as is true almost everywhere else in the world, the most popular software is the Atari entertainment programs, which are being offered unchanged from the U.S. versions.

The second most important series is Home Education, which the London Centre will tune to the British frame of reference. "The Home Learning series is a good way for children to become educated about mathematics or whatever," John said, "but it also makes them computer-literate. The parents understand this, and see it as a way of banking on their children's prospective careers. They buy an ATARI Computer for this reason, but in the process of working with the children on it, they become more familiar with the computer and find themselves up-to-date on the computer age as well."

Again, because the British take their computers more seriously, the Centre will next convert the Home Management series, adapting it to the local tax organization, etc. The London Centre is Atari's first attempt to acquire and tailor software for a market outside the U.S. Other centers are planned for Germany and France where, obviously, the language and cultural differences will make them a more ambitious operation.

The London Software Development Centre will be located in the same building as Atari, U.K., and distribution will be carried through the normal Atari channels of hobby shops and nationwide stores. After hiring has been completed, the Centre will begin conversions negotiating contracts with software vendors for new British software.

"The ATARI Home Computer is known for its superior graphics and sounds," John said, "and we want to make certain that anything we develop will make full use of those capabilities. We've already had to educate some of the software vendors to this point. It's the sound and graphics that makes our computers exciting, creative and fun."

With the opening of the new Development Centre, Americans and Britons will most likely find they have more in common, despite the cultural differences: we'll be enjoying the benefits and conveniences of our ATARI Home Computers.

Aubrey Wallace is a senior writer with the Atari International Division.

HOME/OFFICE

HOME BANKING

NOW BANK AT HOME WITH CHEMICAL BANK'S NEW PRONTO HOME BANKING SYSTEM

By Jim Carr

Your ATARI Home Computer really is a computer you can bank on.

It can, in fact, become your own personal automated teller, thanks to a new at-home banking and information system developed for use with ATARI Home Computers by the Chemical Bank of New York.

The system, called PRONTO, promises to change the very nature of personal banking. It lets Chemical Bank's checking-account customers with an ATARI 400 or 800 Home Computer perform virtually all their usual banking transactions—balance inquiry, transfer of funds from one account to another, checkbook balancing—at their convenience from the comfort of their homes.

PRONTO also provides an electronic mail service that allows Chemical's customers to pay bills at 250 New York-area businesses and utilities.

"We believe PRONTO will revolutionize the way consumers carry out future banking activities," said John Farnsworth, senior vice president in charge of Chemical's Financial Services Division.

PRONTO isn't a new idea, but it does take a good one—two, really—a step farther, combining existing phone-in banking services with the rapidly growing video network concept.

Many banks already offer several call-in services. You can, for instance, transfer funds from one account to another over the phone. But you have to wait until you receive a monthly statement to see a record of that transaction. Video networking combines your home computer with a modem, the telephone system, and the bank's computer to let you look at your account records on your TV screen during the actual transac-

tion—just like a teller can at the bank.

"Perhaps the most useful consumer service initially will be bill paying," explained Farnsworth, "and we have more than 250 merchants already signed to participate in PRONTO's bill-paying feature."

The two hundred ATARI Computer owners who tested PRONTO gave the system high marks, according to Leslie McCuaig, PRONTO project manager for Chemical Bank. "They



PRONTO uses the ATARI Home Computer's plug-in cartridge feature to provide quick, reliable loading for its at-home banking program.

were very positive, and they've indicated a willingness to pay for the service," which will cost \$5 to \$10 per month.

In addition to the ATARI 400 or ATARI 800 Computer, PRONTO users also need a game-like cartridge which contains the banking program and an ATARI 835 Direct Connect Modem that connects the home computer to the bank's central computer over standard telephone lines. Access to the central computer is via either Tymnet or Telenet, two private data communication networking services. Network phone-line costs (about \$10 per

month) are extra and are borne by the user.

The PRONTO software makes access to the system easy for everyone, noted Farnsworth. After the cartridge is plugged into the computer and the computer is turned on, the program in the cartridge actually places the call to Chemical Bank. A "WELCOME TO PRONTO" message then appears on the TV screen along with a request for a household identification number—one of three security codes that must be entered before a user gains access to an account. The user must then type in a personal "handle" plus a personal ID number.

Once "logged onto" the system, PRONTO presents a menu with two choices, "HOME BANKING" or "ELECTRONIC MAIL." The choice of whether to pay a charge-card bill, an installment loan, or open a new account is up to the user. PRONTO can be told to make the mortgage payment on the first of every month, the car payment on the tenth, and so on—all with a few commands from the keyboard of an ATARI Computer.

ATARI Computers were Chemical Bank's choice for use with PRONTO for several reasons, noted McCuaig. "We chose them because they were in the right price range and for their graphics capability," she explained.

Initially, PRONTO will be available in the New York-area only—Chemical Bank expects to place PRONTO in nearly 3000 homes by next year. Chemical Bank, the nation's sixth largest bank, has also announced that two other banks, the Florida National Bank and Crocker Bank of San Francisco, have purchased PRONTO and plan to implement it next year.

Jim Carr is a senior writer for Marketing Publications in the Atari Home Computer Division.

COMPUTER CLASSROOM

HOW TO READ A COMPUTER PROGRAM

A LESSON IN PROGRAMMING PLUS A PROGRAM YOU CAN USE TO COMPARE HOME HEATING COSTS

By Frederic S. Langa

The other night, I asked my computer for some advice on reducing my heating bills. I sat at the keyboard and typed "RUN" to tell the computer to begin.

"Enter your first name, then press the return key," the computer said to me, printing its words on the TV screen.

I typed "Fred," in response.

"Fred, what fuel do you use now?" the computer asked.

I felt a little strange to have a machine call me by my first name, but went ahead and answered the question: "Gas."

"Tell me, Fred," it said, "How much do you spend on gas in a typical winter month? (When you type your answer, omit the \$ sign.)"

I thought for a minute, and then typed "51."

"Now, tell me the price per therm (100 cubic feet) you're paying for gas," the computer said.

That wasn't hard. I remembered my last gas bill had shown a unit cost of 47¢ per therm, so I typed, "0.47."

"OK, Fred," replied the computer, "What other fuel shall we compare gas to?"

I'd been thinking about installing a wood stove for some time, so I typed "Wood."

"Just one more thing, Fred," the computer said. "How much does a cord of wood cost these days?"

Cordwood prices seemed to have leveled off at about \$90 or so, so I typed in "90".

Instantly, the computer replied, "Fred, you'd need approximately 0.54255319 cords of wood to equal the heating value of your current monthly gas use. This much wood will cost about \$48 per month, as opposed to the \$51 you now spend. This is only the actual fuel cost. The cost of

converting from gas to wood is not included."

I was impressed with the speed and precision of the answer, and a bit surprised; I'd only save \$3 a month by burning wood; hardly worth it.

"Do you want to examine another fuel?" the computer asked.

"Yes," I typed.

"OK, Fred," said the computer, "What other fuel shall we compare gas to?"

"Solar," I replied.

As soon as my fingers left the keys, the computer had the answer. It said, "Fred, you'd need approximately 8138297.85 BTUS of solar to equal the heating value of your current monthly gas use. This much solar will cost about \$0 per month, as opposed to the \$51 you now spend.

Wonderful! But before I got carried away with dreams for solarizing my home, the computer gently reminded me, "This is only the actual fuel cost. The cost of converting from gas to solar is not included."

My computer really can "converse" this way, but the "thinking being" you're dealing with is the person who programmed the computer, not the computer itself. A program is a detailed set of instructions that tells the computer exactly what to do, and when.

The programmer must visualize each action the computer needs to perform to achieve the desired result—solve a problem, play a game, draw a picture on the TV screen—then write them down in precise order. Each line in a completed program contains one task, or one group of related tasks, for the computer to perform.

In essence, a program is simply a written record of the programmer's logic. When a home computer plays back a program, the computer

deciphers signals that create the illusion of intelligence and human thought.

If the programmer has forgotten an important step, or made a typing error, or botched the program in some other way, the computer will blindly try to follow the flawed instructions. The computer is powerless to fix the flaw. At best, it simply prints the word ERROR on the TV screen, and stops. And the programmer must fix the problem.

All this may make programming seem very difficult, but it's surprisingly easy to learn. Most first-time programmers can write their own, original programs within half an hour or so of sitting down at the keyboard. Of course, first programs aren't often very spectacular. But once you know the fundamentals, your programs become longer, more interesting, and more useful.

Most personal computers use an easy-to-learn programming "language" called BASIC, the Beginner's All-purpose Symbolic Instruction Code. BASIC resembles normal English.

For example, the word PRINT in BASIC (BASIC words are almost always capitalized) means just what it says: it's a command that tells the computer to print something—data, text, pictures—on the video screen.

However, different brands of computers use slightly different "dialects" of BASIC that are incompatible. If you want to run the same program on another brand of computer, you'll probably have to make a number of modifications. Whatever the dialect, programming in BASIC is easy to understand.

Look at the program accompanying this article: It's the one that produced the conversation about home heating that appeared at the beginning of the

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COMPUTER CLASSROOM

Continued from page 33

article. It may look confusing and complex, but it's actually quite a straightforward and elementary program, in ATARI BASIC. Here's how to read the program.

LINE 10: Program lines are numbered so that the computer can tell which instructions to follow first. (It starts with the low numbers, and works up.) Programmers like to number their lines by tens (10, 20, 30, etc.) so that there's room to go back at a later date and insert new lines to modify the program. In this case, line 10 is the first line of the program.

In ATARI BASIC, GRAPHICS 0 clears the screen of any text, pictures, or symbols, and CLR tells the computer to erase any mathematic variables left over in its memory from other programs.

LINE 20-30: The PRINT command tells the computer to write something on the screen; PRINT followed by quotation marks tells the computer to print everything inside the quotation marks. Thus, when you run this program, the words NEW SHELTER'S FUEL SWITCHING PROGRAM will appear on the screen.

LINE 40: Unlike other types of program lines, REM lines are addressed to people rather than to computers. They are REMarks or REMinders placed inside the program by the programmer. The computer ignores them when running the program.

LINES 50-60: Computers are great at handling numbers, but they need a lot of help in dealing with words. These lines prepare the computer for words it will have to deal with when the program is run.

For example, a computer normally

would deal with the word "wood" as four independent, separate letters (a W, an O, an O, and a D). The computer has to be told to group these letters together in an unbroken "string." The symbol to create a string of letters is \$. (Yes, it's a dollar sign, but it's used in programming to mean "string.")

The computer also has to be told to reserve space in its memory so it can store the string of letters, and it has to be told exactly how much space the string will take up. DIM, for DIMension, is the command that prepares the computer to reserve memory space; the numbers in parentheses tell the computer how long the strings will be. Thus DIM N\$(26) tells the computer to get ready to store the variable N, which will be a string (\$) of up to 26 letters.

LINE 70: PRINT means to write something on the screen, but these PRINT commands aren't followed by quotation marks. In fact, they're followed by nothing at all. Therefore, the computer prints, literally, nothing on the screen—blank lines.

(There are four PRINT commands, so the computer prints four blank lines.) These empty lines will appear on the screen when the program is run and will help make the rest of the on-screen text easier to read.

LINES 80-90: The PRINT commands in these lines are followed by information, so the computer will write the words within the quotation marks on the TV screen.

LINE 100: GOSUB 560 tells the computer to GOTO the the SUBroutine located at line 560, do whatever the subroutine says to do, and then come back. (A subroutine is a sort of miniprogram within a program). This

one will create a blank area on the screen.

The next portion of the line is an INPUT command. INPUT tells the computer to wait for information to be typed in from the keyboard when the program is run, so INPUT N\$ tells the computer to wait until you've typed in a string (\$) of letters making up the variable N: your name (see line 50).

The third portion of line 100 is a second GOSUB 560 to tell the computer to create another large blank area on the screen. These blank areas will ensure that the text remains well spaced and readable when the program is run.

LINES 110-130: These lines PRINT the listed information on the screen. In line 110, for example, the computer writes your name (indicated by the string variable N\$) followed by the words within the quotation marks.

LINE 140: The GOSUB 560s provide spacing on the screen. INPUT F1\$ tells the computer to pause at this point so you can type in the variable F1\$, the fuel you now use.

LINES 150-190: IF...THEN commands tell the computer to see if something is true or not: IF the first statement is true, THEN the computer carries out the instruction in the rest of the line. IF the statement is not true, the computer ignores the rest of the line and goes on to the next line.

For example, suppose your home heating fuel is liquified petroleum gas. This means the variable F1\$ (see line 140) is LPG. In line 150, the computer reads the words IF F1\$ = "OIL" and it immediately knows to skip the rest of line 150, because F1\$ is LPG, not OIL. The computer then checks line 160, line 170, and so

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10 GRAPHICS 0:CLR
20 PRINT "NEW SHELTER'S"
30 PRINT "FUEL SWITCHING PROGRAM"
40 REM IN ATARI BASIC LANGUAGE
50 DIM N$(26),Q1$(30),F1$(12),Q2$(30)
60 DIM F2$(12),A$(3)
70 PRINT :PRINT :PRINT :PRINT
80 PRINT "ENTER YOUR FIRST NAME,"
90 PRINT "THEN PRESS THE RETURN KEY,"
100 GOSUB 560:INPUT N$:GOSUB 560
110 PRINT N$,"; WHAT FUEL DO YOU USE NOW?"
120 PRINT :PRINT "[TYPE OIL, GAS, ELECTRICITY,"
130 PRINT "WOOD, OR LPG. PRESS RETURN.]"
140 GOSUB 560:INPUT F1$:GOSUB 560
150 IF F1$="OIL" THEN Q1$="GALLON":BTU1=91000
160 IF F1$="GAS" THEN Q1$="THERM [100 CUBIC FEET]":BTU1=75000
170 IF F1$="ELECTRICITY" THEN Q1$="KWH [KILOWATT HOUR]":BTU1=3413
180 IF F1$="WOOD" THEN Q1$="CORD":BTU1=15000000
190 IF F1$="LPG" THEN Q1$="GALLON":BTU1=68250
200 PRINT "TELL ME, ";N$
210 PRINT "HOW MUCH DO YOU SPEND ON ";F1$
220 PRINT "IN A TYPICAL WINTER MONTH?"
230 PRINT "[WHEN YOU TYPE YOUR ANSWER, OMIT THE $ SIGN.]"
240 GOSUB 560:INPUT GROSS1:GOSUB 560
250 PRINT "NOW TELL ME THE PRICE PER ";PRINT Q1$:PRINT "YOU'RE PAYING FOR ";F1$;"."
260 PRINT :PRINT "[OMIT THE $ OR CENT SIGN, INSTEAD OF $1.75, TYPE 1.75; INSTEAD OF 45 CENTS, TYPE .45, ETC.]"
270 GOSUB 560:INPUT UNIT1:GOSUB 560
280 PRINT :PRINT "OK, ";N$;"."
290 PRINT "WHAT OTHER FUEL SHALL WE COMPARE"
300 PRINT F1$;" TO?"
310 PRINT :PRINT "[TYPE OIL, GAS, ELECTRICITY,"
320 PRINT "WOOD, LPG OR SOLAR. PRESS RETURN.]"
330 GOSUB 560:INPUT F2$:GOSUB 560
340 IF F2$="OIL" THEN Q2$="GALLON":BTU2=91000
350 IF F2$="GAS" THEN Q2$="THERM":BTU2=75000
360 IF F2$="ELECTRICITY" THEN Q2$="KWH":BTU2=3413
370 IF F2$="WOOD" THEN Q2$="CORD":BTU2=15000000
380 IF F2$="LPG" THEN Q2$="GALLON":BTU2=68250
390 IF F2$="SOLAR" THEN Q2$="BTU":BTU2=1:UNIT2=0:GOTO 430
400 PRINT "JUST ONE MORE THING, ";N$;".";PRINT "HOW MUCH DOES A":PRINT Q2$;" OF ";F2$:PRINT "COST THESE DAYS?"
410 PRINT :PRINT "[AGAIN, LEAVE OFF THE $ OR CENTS SIGN WHEN YOU TYPE YOUR ANSWER.]"
420 GOSUB 560:INPUT UNIT2:GOSUB 560
430 USE2=(BTU1*(GROSS1/UNIT1))/BTU2
440 PRINT :PRINT :PRINT :PRINT N$;" , YOU'D NEED APPROXIMATELY"
450 PRINT USE2;" ";Q2$;"S OF ";F2$
460 PRINT "TO EQUAL THE HEATING VALUE OF YOUR CURRENT MONTHLY ";F1$;" USE."
470 PRINT :PRINT :PRINT "THIS MUCH ";F2$;" WILL COST ABOUT $";INT(USE2*UNIT2);" PER MONTH,"
480 PRINT "AS OPPOSED TO THE $";GROSS1;" YOU NOW SPEND."
490 PRINT :PRINT :PRINT "THIS IS ONLY THE ACTUAL FUEL COST. THE COST OF CONVERTING FROM ";PRINT F1$;" TO ";
500 PRINT F2$:PRINT "IS NOT INCLUDED."
510 PRINT :PRINT :PRINT "DO YOU WANT TO EXAMINE ANOTHER FUEL?"
520 PRINT :PRINT "[TYPE YES OR NO. PRESS RETURN.]"
530 PRINT :INPUT A$
540 IF A$="Y" OR A$="YES" THEN GOSUB 560:GOTO 280
550 END
560 FOR P=0 TO 10:PRINT :NEXT P:RETURN
570 REM [C] 1982 NEW SHELTER MAGAZINE

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COMPUTER CLASSROOM

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on until it reaches line 190, which begins `IF F1$="LPG"`...The computer then follows the instructions in the rest of line 190, storing the information that LPG comes in quantities known as gallons, and that the heat output of 1 gallon of LPG is 68,250 BTU's.

Because there are no PRINT statements in lines 150 to 190, you don't see the computer laboriously checking each of these lines—so you can easily get the impression that the machine is demonstrating intelligence when it winds up telling you how LPG compares with other types of fuel. But the computer is just blindly following the step-by-step instructions created by the programmer.

LINES 200-330: These lines continue the processes we've already seen, PRINTing text and blank spaces on the screen, and waiting for information to be INPUT from the keyboard. The program uses the variable `UNIT1` to represent the price of your existing fuel per unit (gallons, cords, etc.) and `F2$` to represent the name of the alternative fuel you'd like to examine.

LINES 240-390: These lines operate in exactly the same fashion as lines 150-190. The computer searches, line by line, until it finds the line that contains the correct alternative fuel, `F2$`, that you INPUT in line 330. It then memorizes what unit this alternative fuel comes in, and what the net BTU yield of each unit is.

LINES 400-420: The PRINT commands in these lines tell the computer what to write on the video screen, `GOSUB` commands create blank spaces for easy reading, and the INPUT command tells the computer to wait until you type in the value for the unit price (`UNIT2`) of the alternative fuel.

LINE 430: This is the heart of the program, the actual computation. It's ordinary high-school algebra, with two small twists: In order to avoid confusing the letter X with a multiplication sign, the computer uses an asterisk to indicate multiplication. And because home computers have no separate symbol for division, division problems are done as fractions, with a diagonal slash (/) separating the numerator from the denominator.

You don't actually have to perform any math yourself. You just type in the equation, and the computer does the rest, following mathematics instructions that its designers built into it.

LINES 440-500: The many PRINT commands here tell the computer to display the results of its calculations in a kind of electronic form letter where most of the text is standardized, and only a few words and numbers change as the program is run.

LINE 470: This contains a minor calculation within a printed line. Because the calculation itself contains no PRINT statement, the computer prints only the result of the calculation on the TV screen. `INT` preceding the calculation tells the computer to print only the `INT`eger (whole number) portion of the answer, and to leave off everything after the decimal point.

LINES 530-550: If you INPUT "YES", the computer prints a blank space (`GOSUB 560`) to keep the video screen uncluttered, and then, following the command `GOTO 280`, it GOes TO line 280. From there, it repeats the rest of the program (lines 290 to 530). This process of repeating part of a program is called "looping."

You can loop as many times as you want, so long as you keep typing "YES" in line 530. When you finally type "NO", the program ENDS in line 550; the computer stops running the program, and prints the word `READY` on the screen to let you know it's waiting for your next program.

LINE 560: This is the miniprogram, or subroutine, mentioned earlier. Subroutines can take almost any form, and be almost any length. In this case, it's a simple counting operation. `FOR P=0 TO 10` tells the computer to start counting at zero, and to stop when it reaches 10. At each new number along the way, the computer obeys the next command in the line, which tells it to PRINT a blank line on the video screen. The computer then counts the `NEXT` number in the sequence.

It repeats this process until a total of 10 blank lines are on the screen. When it gets to 10, the computer then follows the last command in the line: `RETURN`. This tells it to go back to wherever it came from, that is, to whatever line the computer was working on when it encountered the command `GOSUB 560`.

LINE 570: `REM` is another of those `REM`inders for the humans using the program.

Fredric S. Langa is Contributing Editor for New Shelter Magazine.

INSIDE ATARI

ATARI SERVICE

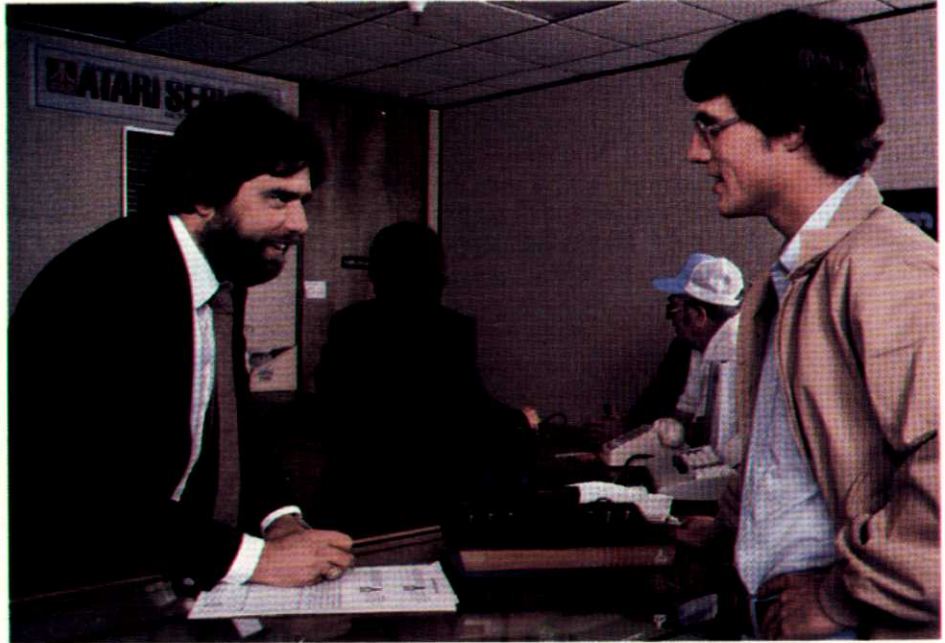
NATIONWIDE FACTORY-BACKED SERVICE
FOR ATARI HOME COMPUTERS

Many of the telephone inquiries received daily at our Customer Relations Headquarters in Sunnyvale, California, concern service needs. Occasionally, Atari products will require service and customers are relieved to know that we have a nationwide network of Atari Factory Authorized Service Centers to support their needs.

Customers need only consult their Yellow Pages under *Video Games* or *Computers* to find the facility which is most convenient to them. If no repair facility is listed, customers can get the information directly from Atari by calling our toll-free number (National 800-538-8543, California 800-672-1404).

In addition, your local Atari Retailer features special displays that easily identify the location and phone number of the Atari Service Center nearest to you. Our nationwide service network is supported by four Atari Regional Service Centers, staffed by Atari-trained professionals under the direction of Jim Prather, Field Operations Manager for Atari Service.

Each Region has a staff composed of Customer Relations personnel, who support and assist the network of Atari Factory Authorized Service Centers. Their aim is to ensure convenient, reliable and prompt service to Atari's customers. By the time you read this article, there will be over 1400 such centers nationwide helping Atari customers and contributing to our service motto, "Atari Service—Service that's as good as Atari."



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Atari, Inc. 2109 East Division Street Arlington, TX 76011	817-261-8854 800-772-5462 800-433-5140	Local Toll-free inside TX Toll-free outside TX

ENTERTAINMENT COMPUTER CHRISTMAS CAROLS

ENTERTAIN YOUR HOLIDAY GUESTS
WITH DIGITIZED CHRISTMAS MUSIC

This Christmas, have your family run down to see what Santa Claus brought while your ATARI Home Computer plays several of America's favorite Christmas carols in the background. Or hook your computer up to your stereo using the ATARI Monitor Cable (CX82 or CX89) and have your ATARI Home Computer entertain your Christmas guests with Jingle Bells, Jolly Old Saint Nicholas and Deck the Halls in high fidelity digital sound.

Just insert your ATARI BASIC car-

tridge and type the program on these pages *exactly* as written. Then type RUN and select the song you'd like to hear, or select AUTORUN to have each song play after the other in sequence.

ATARI BASIC has four variables for sound. The first, SOUND X allows you to use one of four programmable "voices" within your ATARI Computer. This Christmas music program uses three of the four voices. SOUND Y controls the pitch of the sound (your ATARI Home Computer allows

you to control 255 different pitches). The higher the number value of the variable, the lower the pitch of the sound. The Z variable controls distortion, and allows you to create different sound effects, and the last variable, W, controls the volume, and it ranges from a barely audible 1 to a loud 15.

Below is a brief description of what each line does in the program. Notice that you could add new songs to the program by designating new variables and data statements for each note.



LINE(S) WHAT HAPPENS

- 10 Opens the keyboard for input (see line 90).
 20 Sets entire screen to BLACK; sets TEXT MODE 1; and disables the BREAK KEY.
 30-80 Displays the program MENU on the screen.
 90 Looks for 1,2,3 or 4 key to be pressed. If any other key is pressed it is ignored and keyboard is checked for 1,2,3, or 4 key again.

- 100-130 Depending on your choice, designates values to be used in MUSIC ROUTINE.
 140-210 Reads DATA statements in groups of four numbers (A,B,C, and D). A,B and C are used as TONES in the SOUND STATEMENTS. D is the duration of the notes.
 190 Checks before each new note for a new key being pressed. 1,2,3 or 4 keys will stop current tune being played and begin the new choice. Any other key (except BREAK and SYSTEM RESET) will stop current tune and return to the MENU.
 230-340 DATA STATEMENTS (Music notes) for "Deck The Halls".
 360-510 DATA STATEMENTS (Music notes) for "Jingle Bells".
 530-600 DATA STATEMENTS (Music notes) for "Jolly Old Saint Nicholas".
 1000-1040 The subroutine which designates the music routine values if AUTOMATIC RUN selection is chosen.

```

10 OPEN #1,4,0,"K:"
20 GRAPHICS 17:POKE 16,112:POKE 53774,112
30 POSITION 3,1:? #6;"CHRISTMAS MUSIC"
40 POSITION 1,5:? #6;"1 deck the halls"
50 POSITION 1,7:? #6;"2 jingle bells"
60 POSITION 1,9:? #6;"3 JOLLY OLD SAINT NICHOLAS"
70 POSITION 1,12:? #6;"4 AUTOMATIC RUN"
80 POSITION 3,16:? #6;"choose a number"
90 GET #1,SONG:IF SONG<49 OR SONG>52 THEN 90
100 IF SONG=49 THEN TIME=0:DAT=230:NUM=3:X=8:RESTORE DAT:GOSUB 140:GOTO 20
110 IF SONG=50 THEN TIME=0:DAT=360:NUM=2:X=7:RESTORE DAT:GOSUB 140:GOTO 20
120 IF SONG=51 THEN TIME=0:DAT=530:NUM=2:X=16:RESTORE DAT:GOSUB 140:GOTO 20
130 IF SONG=52 THEN TIME=1:GOSUB 1010:GOSUB 140:GOTO 20
140 FOR REP=1 TO NUM
150 READ A,B,C,D:IF D=-1 THEN RESTORE DAT:NEXT REP:FOR DE=1 TO 500:NEXT DE:GOSUB 1000
160 IF D=-1 AND TIME=2 THEN RETURN
170 IF D=-1 AND TIME=3 THEN RETURN
180 SOUND 1,A,10,10:SOUND 2,B,10,7:SOUND 3,C,10,5
190 IF PEEK(764)◇255 THEN SOUND 1,0,0,0:SOUND 2,0,0,0:SOUND 3,0,0,0:GOTO 20
200 FOR DE=1 TO D*X:NEXT DE:SOUND 1,0,0,0
210 GOTO 150
  
```

DECK THE HALLS

220 REM DECK THE HALLS

230 DATA 60,144,182,15,68,0,243,5,72,182,0,10,81,193,0,10,91,217,0,10,81,193,0,10,72,182,0,10,91,144,0,10
240 DATA 81,193,243,5,72,193,243,5,68,162,0,5,81,162,0,5,72,182,0,15,81,136,0,5,91,144,0,10,96,162,243,10
250 DATA 91,144,182,20,0,0,0,1
260 DATA 60,144,182,15,68,0,243,5,72,182,0,10,81,193,0,10,91,217,0,10,81,193,0,10,72,182,0,10,91,144,0,10
270 DATA 81,193,243,5,72,193,243,5,68,162,0,5,81,162,0,5,72,182,0,15,81,136,0,5,91,144,0,10,96,162,243,10
280 DATA 91,144,182,20,0,0,0,1
290 DATA 81,193,0,15,72,243,0,5,68,162,0,10,81,193,0,10,72,182,0,15,68,243,0,5,60,144,0,10,81,193,0,10
0,144,0,10,81,193,0,10
300 DATA 72,182,0,5,64,182,0,5,60,193,0,10,53,72,182,5,47,72,182,5,45,72,217,10
310 DATA 47,81,162,10,53,91,162,10,60,96,243,20,0,0,0,1
320 DATA 60,144,182,15,68,0,243,5,72,182,0,10,81,193,0,10,91,217,0,10,81,193,0,10,72,182,0,10,91,144,0,10
330 DATA 53,91,136,5,53,91,136,5,53,91,136,5,53,91,136,5,60,91,144,15,68,81,136,5,72,91,121,10,81,96,243,10
340 DATA 91,144,182,30,0,0,0,1,0,0,0,-1

JINGLE BELLS

350 REM JINGLE BELLS

360 DATA 121,144,182,10,72,144,182,10,81,0,243,10,91,0,243,10,121,136,182,30,0,0,0,1,121,193,0,5,121,193,0,5
370 DATA 121,144,182,10,72,144,182,10,81,0,243,10,91,0,243,10,108,144,0,30,0,144,0,10
380 DATA 108,136,162,10,68,136,162,10,72,193,0,10,81,193,0,10,96,243,136,30,136,0,0,10,60,96,162,10
390 DATA 60,96,162,10,68,96,243,10,81,96,243,10,72,91,182,30,0,0,243,10,0,0,0,1
400 DATA 121,144,182,10,72,144,182,10,81,0,243,10,91,0,243,10,121,136,182,30,0,0,0,1,121,193,0,5
410 DATA 121,193,0,5,121,144,182,10,72,144,182,10,81,0,243,10,91,0,243,10,108,144,0,30,0,0,0,1,0,144,0,10
420 DATA 108,136,162,10,68,136,162,10,72,193,0,10,81,193,0,10,60,91,144,10,60,91,144,10,60,91,144,10,60,91,144,10
430 DATA 53,96,243,10,60,96,243,10,68,162,0,10,81,162,0,10,91,144,182,30,91,0,0,10,0,0,0,10
440 DATA 72,0,182,10,72,121,182,10,72,182,121,20,72,0,182,10,72,121,182,10,72,182,121,20
450 DATA 72,0,182,10,60,121,182,10,91,108,182,15,81,114,182,5,72,0,182,40,0,0,0,3
460 DATA 68,91,217,10,68,91,182,10,68,91,136,10,68,91,182,10,68,91,243,10,72,91,182,10,72,91,144,10,72,91,182,5
470 DATA 72,91,182,5,72,91,136,10,81,91,217,10,81,91,162,10,72,91,217,10,81,96,243,20,60,96,162,20
480 DATA 72,0,182,10,72,121,182,10,72,182,121,20,72,0,182,10,71,121,182,10,72,182,121,20
490 DATA 72,0,182,10,60,121,182,10,91,108,182,15,81,114,182,5,72,0,182,40,0,0,0,3
500 DATA 68,91,217,10,68,91,182,10,68,91,136,10,68,91,182,10,68,91,243,10,72,91,182,10,72,91,144,10,72,91,182,5
510 DATA 72,91,182,5,60,96,243,10,60,96,162,10,68,96,162,10,81,96,136,10,91,144,182,40,0,0,0,5,0,0,0,-1

JOLLY OLD SAINT NICHOLAS

520 REM JOLLY OLD SAINT NICHOLAS

530 DATA 64,108,162,5,64,108,162,5,64,108,162,5,64,108,162,5,72,121,217,5,72,121,217,5,72,121,193,10
540 DATA 81,128,193,5,81,128,193,5,81,128,193,5,81,128,193,5,64,108,173,20
550 DATA 96,162,243,5,96,162,243,5,96,162,243,5,96,162,243,5,108,162,128,5,108,162,128,5,81,162,128,10
560 DATA 85,121,217,5,81,121,217,5,72,121,193,5,64,121,193,5,72,121,173,20,0,0,0,1
570 DATA 64,108,162,5,64,108,162,5,64,108,162,5,64,108,162,5,72,121,217,5,72,121,217,5,72,121,193,10
580 DATA 81,128,193,5,81,128,193,5,81,128,193,5,81,128,193,5,64,102,173,20
590 DATA 96,162,243,5,96,162,243,5,96,162,243,5,96,162,243,5,108,162,128,5,108,162,128,5,81,162,128,10
600 DATA 72,114,193,5,81,114,193,5,72,121,217,5,64,121,217,5,81,128,162,20,0,0,0,1,0,0,0,-1
1000 IF TIME=0 THEN GOTO 20
1010 IF TIME=1 THEN DAT=230:RESTORE DAT:NUM=3:X=8:TIME=2:GOSUB 140
1020 IF TIME=2 THEN DAT=360:RESTORE DAT:NUM=2:X=7:TIME=3:GOSUB 140
1030 IF TIME=3 THEN DAT=530:RESTORE DAT:NUM=2:X=16:TIME=4:GOSUB 140
1040 IF TIME=4 THEN 20

Christmas Music program by Tom Hudson.

HOME COMPUTING HOME COMPUTER PHOTOS

We received so many home computer photos that we decided to share more of them with our readers.

Again, the range of ATARI Home Computer work and entertainment setups were as diverse as the families who own, and sometimes built them.

We were also impressed by the homespun versatility of your home computing centers, including easily movable furniture and setups that served dual purposes, for example the computer/cockatoo center shown here.

Needless to say, the pictures have been a delight to all of us at THE ATARI CONNECTION, and we extend an invitation for you to send us more. For now, take a look at what these particular folks have done!

Dear ATARI CONNECTION:

Having just read your magazine, I'd like to share my home computer photos. I was so proud of my "setup" that I already had photographs of my ATARI 400 and ATARI 800. I took the pictures originally just to show my buddies where I work.

I retired last March after 32 years with the Los Angeles Sheriff's Department, and since then I've become a computer nut, complete and full-fledged.

I first purchased the ATARI 400 along with a neat little cart just for games. I also have cassette programs that I ordered through your Fall APX catalog. This setup is in our den.

The ATARI 800 I bought in June is for more serious business. I chose one half of my dresser top in my bedroom. It holds an ATARI 410 Program Recorder and a 13" color TV. I hope a disk drive will be under the Christmas tree.

Yours truly,

Harold Treichler
Studio City, California

Thomas Krischan's home office uses fold down cabinet doors to protect his home computer system from dust, dirt and even a curious cat.



Dear ATARI CONNECTION:

Here are the photos of my home office Atari workstation. This design is unique in that the entire system is hidden behind cabinet doors. This protects the components from dust, dirt, cat hair and accidental spills. Hidden behind the bottom cabinet doors is the printer, which is operated quietly when the doors are closed and is still easily accessible.

There is a compartment which contains the ATARI 800, two ATARI 810 Disk Drives, Interface Module, Modem and telephone. This compartment is also enclosed by a cabinet door. This door pulls down and forms a table top to place the computer on; at just the right height for typing.

The compartment above it is open and contains a TV which is slightly raised in the rear so it slants down towards the operator. The TV power cord is dropped through the holes in the unit and is plugged into the power strip.

Sincerely,

Thomas M. Krischan
West Allis, Wisconsin

Dear ATARI CONNECTION:

We have combined a corner of our kitchen into our computer/cockatoo center. We have a very small apartment and wanted a large area for our new cockatoo parrot and a place for our computer too.

My husband built the table part that the ATARI 800 and disk drive is on so that it can be pulled out when



Harold Treichler's ATARI 400 game cart combines mobility with convenience.

APX PROGRAM CONTEST

WRITE A PROGRAM THAT HIGHLIGHTS THE 1984 OLYMPICS

The Atari Program Exchange will be celebrating the 1984 Olympics with a special contest for programs that capture the fun and spirit of the Olympic games. All programs submitted to APX between now and October 1, 1983, that focus on the summer or winter Olympic games are eligible for a bonus prize in our winter 1983 judging. Here's a chance to win an all-expense paid trip for two, to the Olympic Games in Los Angeles, plus hotel accommodations, and two three-day passes to the games, which will take place between July 27 and August 13, 1984.

In addition to a bonus prize, authors of Olympic-related APX programs can benefit from the extensive promotions and advertising planned by Atari throughout 1983 and 1984 to highlight its sponsorship of the Olympic games. These APX programs can receive even greater exposure to potential buyers than our normal broad coverage.

While we want to see traditional action games, we're especially interested in programs stressing the strategic or instructional elements of Olympic events. For example, including a handicapping feature in an action game can add another dimension to your program. We're also looking for programs in all categories, not just in Entertainment. An example of a different Olympic program would be a data base for tracking the results of each stage of each event, or for predicting future outcomes. To write these kinds of programs, you'll need a good understand-

ing of the particular sport or sports involved.

We'll be giving special consideration to the summer games, but we'll also consider programs related to winter Olympic sports.

The summer games are:

- | | |
|---------------------|---------------------|
| ■ Archery | ■ Gymnastics |
| ■ Track & Field | ■ Handball |
| ■ Basketball | ■ Field hockey |
| ■ Boxing | ■ Judo |
| ■ Canoeing | ■ Modern Pentathlon |
| ■ Rowing | ■ Shooting |
| ■ Cycling | ■ Swimming |
| ■ Equestrian | ■ Volleyball |
| ■ Fencing | ■ Weight lifting |
| ■ Football (Soccer) | ■ Wrestling |
| ■ Yachting | |

Demonstration sports (to become Olympic sports in 1988) are:

- | | |
|------------|----------|
| ■ Baseball | ■ Tennis |
|------------|----------|

The winter games are:

- Skiing: Alpine, Nordic, Ski jumping
- Biathlon (cross-country and shooting)
- Bobrun
- Luge
- Ice hockey
- Speed skating
- Figure skating: single, pair, and ice dancing

Start thinking about some strategy or instructional games along these lines and look for more details about our special Olympics judging in the spring APX Product Catalog, due out in early March 1983.

needed. There are very convenient holes in the back corners for all the cords and cables which are now out of sight. There is lots of room for magazines and storage underneath.

Chelsea, our cockatoo, loves the attention of being above the most popular area in our home.

We sure do enjoy THE ATARI CONNECTION but get it quite late up here in Canada.

Yours truly,

Sylvia and Gerry Hanna
Victoria, British Columbia



The Hanna family's "computer cockatoo center." The Hanna's pet cockatoo parrot, Chelsea, enjoys being above the most popular place in the house.

Send Us Your Home Computer Photos —

We'll choose several attractive examples and if we publish them you'll receive a *free one year subscription* to THE ATARI CONNECTION. Send your photographs to:

Home Computer Photos
c/o THE ATARI CONNECTION

BOOK PROGRAMS BONUS BOOK PROGRAMS

Racers

DemoPac #4, Atari Color Graphics, Atari Inc., Consumer Product Service

If you're planning to have a lot of people around over the holidays, Racer is a program you can bet on. Literally.

Have up to nine friends place bets on their favorite numbers. Load in racer. And watch the fun begin. The outcome of each race is a result of

random selection. So everybody gets a chance to win.

Racer was developed by Bill Bartlett and Judy Bogart of Atari Product Support. Bill and Judy are responsible for answering questions and solving problems posed by users from all over the world.

Atari Product Support also publishes DEMOPACS, collections of special programs designed to teach Atari owners more about their home computers. Reprinted from DEMOPAC #4 on Atari Color Graphics, Racer

really shows off the graphic and sound capabilities of your ATARI Computer.

Type in Racer exactly as it's printed here. When you're finished, type RUN, press RETURN, then place your bets—the race is on.

Veteran programmers can experiment with changing the sound from those of race cars to horses, fire engines, or space ships. But don't try to "fix" the race. Your quests won't like it.

```
1 REM ****Racers*****
10 GRAPHICS 2+16
20 POSITION 0,5:PRINT #6;"SELECT # OF RACERS"
30 OPEN #1,4,0,"K:":REM Opens the Keyboard for you to use.
40 GET #1,X:REM Enters keycodes from the keyboard into the program.
50 X=X-48:REM Converts keycodes into Numbers.
60 IF X<1 OR X>9 THEN 40:REM Allows only numbers 1 through 9 to be entered.
70 CLOSE #1
80 GRAPHICS 2+16:POSITION 0,4:PRINT #6;"PLACE YOUR BETS"
90 POSITION 0,6:PRINT #6;"HIT START TO GO"
100 IF PEEK(53279)<>6 THEN 100:REM Wait until START Key is pressed.
110 POSITION 0,8:PRINT #6;"AND THEY'RE OFF!"
120 FOR WAIT=1 TO 250:NEXT WAIT:REM This is a "Delay Loop."
130 GRAPHICS 3+16
140 DIM RACER(40):FOR I=0 TO 40:RACER(I)=0:NEXT I:REM Makes a "Racer."
150 POKE 708,52:POKE 709,206:REM Sets the colors for the racers.
160 REM Let the Racers go!
170 TRACK=INT(RND(0)*X)+1
180 POS=TRACK*2:REM Positions a Racer on the track.
190 COL=TRACK:IF COL>3 THEN COL=COL-3:IF COL>3 THEN COL=COL-3
200 COLOR COL
210 RACER(POS)=RACER(POS)+1:REM Set the spaces between the Racers.
220 PLOT RACER(POS),POS
230 SOUND COL,40-RACER(POS),6,10:REM Set each Racer's sound.
240 IF RACER(POS)<39 THEN 170:REM If there's no winner, advance next Racer.
250 REM We have a winner!
260 FOR WAIT=1 TO 500:NEXT WAIT
270 GRAPHICS 2+16
280 POSITION 0,5:PRINT #6;"AND THE WINNER IS #";TRACK
290 FOR VOICE=0 TO 3:SOUND VOICE,0,0,0:NEXT VOICE:REM Turns off the sound.
300 FOR WAIT=1 TO 1000:NEXT WAIT
310 CLR :REM Clear all the variables in the program.
320 GOTO 10
```

Helicopter Atari Games and Recreations.*

Reston Publishing

Helicopter is a simple ATARI BASIC program that creates a helicopter from the various letter and symbol keys on your computer keyboard. The helicopter starts its rotors, warms up, then lifts off, hovering momentarily in mid-air before flying out of view at the top of your screen. You'll find Helicopter among the

scores of excellent game and entertainment programs in *Atari Games and Recreations* by Herb Kohl, Ted Kahn, Len Lindsay and Pat Cleland.

We altered the original listing to make a more realistic "helicopter" — the original resembled a clump of alphabet soup churning into the air. But, then that's the fun part of writing your own programs: you can change and create your own versions to suit your tastes. Some of you more experi-

enced programmers will no doubt be able to make even more sophisticated improvements like controlling the helicopters flight with a joystick controller, etc. As for you novices, you don't have to know anything about programming to type this program into your computer and make it work. If you type the program *exactly* as it is listed, you too can experience the satisfaction of "programming a computer." When you're finished type RUN, press RETURN and you're whirling away!

```
10 REM * <<<HELICOPTER>>>
20 REM * BY TANDY TROWER (1980)
30 GRAPHICS 0:SETCOLOR 2,8,10:SETCOLOR 1,0,0:SETCOLOR 4,0,4
60 S=50
70 DIM A$(14),B$(30),C$(30),D$(30),E$(30)
80 POKE 752,1:PRINT "[CLEAR]"
90 X=13:Y=19
130 A$="=====(*)====="
140 B$="      ^      "
150 C$="    /[]|[]\    / "
160 D$="  /  [][] [] [] [] []%  "
170 E$=" \ [] [] [] [] /  /  "
180 POSITION X,Y:PRINT A$:POSITION X,Y+1:PRINT B$:POSITION X,Y+2:PRINT C$
190 POSITION X,Y+3:PRINT D$:POSITION X,Y+4:PRINT E$;
200 FOR T=0 TO 1000:NEXT T
210 FOR T=0 TO 300:NEXT T
220 R=20:S=240:M=1
230 FOR I=0 TO R:GOSUB 410:A$="      (*)      ":POSITION X,Y:? A$
240 FOR D=0 TO S-(I*12):NEXT D
250 SOUND 1,220,6,M
260 A$="=====(*)+ (=====":POSITION X,Y:? A$:GOSUB 410:M=M+0.1:NEXT I
270 R=70:GOSUB 350
280 R=0
290 FOR K=0 TO 23
300 POSITION 2,0:PRINT "":Y=Y-1:FOR B=0 TO 4:NEXT B:GOSUB 350
310 IF K=10 OR K=18 THEN R=40:GOTO 330
320 R=0
330 NEXT K
340 GOTO 400
350 IF Y<0 THEN GOSUB 410:RETURN
360 FOR I=0 TO R:GOSUB 410:A$="      (*)      ":POSITION X,Y:? A$
370 SOUND 1,220,6,6
380 A$="=====(*)+ (=====":POSITION X,Y:? A$:GOSUB 410
390 NEXT I:RETURN
400 SOUND 1,0,0,0:FOR B=0 TO 500:NEXT B:GOTO 90
410 SOUND 0,10,0,14:SOUND 0,0,0,0:RETURN
```

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BOOK PROGRAMS

PILOT PLAYGROUND

ColorScroller

Colorscroller flips through the entire spectrum of 255 colors that lurk within your ATARI Computer. Simply type this program into your computer exactly as listed, then when finished, type RUN. Now plug in your *Joystick controller* into the first controller port. To scroll through the computer's colors, move your joystick "up"—you'll begin with zero (black) and move up to color number 255 (254 plus zero equals 255).

The program also shows the *register number* of each color as you're scrolling. Move the Joystick "down," and you'll gradually return back to zero. Stop anytime you like and write down the number of your favorite color. This is a great program to use when changing your PILOT Pen Colors (see ATARI CONNECTION, Vol. 2, No. 2, Summer, 1982, "PILOT Update #1, Changing Pen Colors).

COLORSCROLLER

```
1 R:**** Color Scroller ***
10 GR: CLEAR
20 *INPUT
25 U(%T8=1):*PRINT
30 C:@B712=#Q
40 PA:20
50 C(%J0=1):#Q=#Q+2
60 C(%J0=8):#Q=#Q+16
70 C(%Q>254):#Q=254
80 C(%J0=2):#Q=#Q-2
90 C(%J0=4):#Q=#Q-16
100 C(%Q<0):#Q=0
110 T:;
120 J:*INPUT #Q
300 *PRINT
310 T:;Name of color?
320 A:$COLOR
330 WRITE:P $COLOR #Q
340 WRITE:P
360 WRITE:P
370 CLOSE:P
380 E:
```

POLYSPIRAL

```
1 R: **** PolySpiral ***
10 *BEGIN
20 T:;
30 T:HOW LONG EACH "SIDE"?\
40 A:#S
50 T:HOW MANY DEGREES EACH TURN?\
60 A:#A
70 T:WHAT INCREMENT?\
80 A:#I
90 T:CLEAR THE SCREEN?\
100 A:$ANSWER
110 M: Y, O, S, A
120 GR:GOTO 0,0;TURNT0 0
130 GRY: CLEAR
140 C:#C=0
150 *POLYSPIRAL
160 U:*COLORS
170 GR: DRAW #S;TURN #A
180 C:#A=#A+#I
190 C:#C=#C+1
200 J(%C<720):*POLYSPIRAL
210 J:*BEGIN
220 *COLORS
230 C:#Z=#Z+1
240 GR(%Z=1):PENBLUE
250 GR(%Z=2):PENRED
260 GR(%Z=3):PENYELLOW
270 C(%Z=3):#Z=0
280 E:
```

PolySpiral

PolySpiral lets you experiment with spirals. The program asks you: "How long each side? How many degrees each turn? What increment? and Clear the screen?" For your first few experiments, type in small numbers, from five through ten, then progress to larger and more varied dimensions. The first time you RUN the program, answer the question, "Clear the screen?" with "Yes." When the computer finishes its first spiral, it will ask for new dimensions once again. If you want to add to the first spiral, then answer "Clear the screen?" with a "No." If you want to begin anew, answer "Yes."

SPECIAL INSTRUCTIONS

Line 20 has a character you won't find on your keyboard (;). On your screen, the symbol is a graphic arrow pointing up, curved to the left. The ATARI 825 Printer will not print the graphic, instead, it prints the special character.

To enter this special graphic character, first press the [ESC] key once, then let go. Now press [CTRL], hold it down and press [CLEAR]. A graphic arrow will appear on your screen after the colon on Line 20 (T:;).

BOOK REVIEWS

Inside ATARI BASIC a Fast, Run, and Friendly Approach* By William Carris

Reston Publishing

Hard work is an unavoidable part of learning a computer language such as BASIC, or any language for that matter. Fortunately there is now a book, *Inside ATARI BASIC, A Fast, Fun, and Friendly Approach*, that makes the task a bit easier.

Author William Carris, Sales Training Director for the Atari Home Computer Division, fulfills his promise to "introduce you to the key concepts of BASIC programming while inflicting as little pain as possible." Eschewing computer jargon and flow charts, he has produced a virtual almanac of word play, a pleasurable primer. The section "Key Concepts" provides an introduction to the computer keyboard. A useful BASIC command, the FOR/NEXT loop, is compared to an Oreo cookie, which Carris takes apart like a child having an after school snack. And when he exhorts readers to "Go forth and multiply" or to "Divide and conquer," Carris refers to the execution of math problems.

Inside ATARI BASIC is designed to serve the diverse needs of ATARI Home Computer users. Beginning programmers will appreciate the step-by-step instructions and the absence of superfluous technical detail. Programming commands are each described in a few succinct sentences accompanied by short sample programs. Illustrations—most of them humorous—enliven almost every page, and often make explanations easier to understand. Thanks to a comprehensive table of contents and index, veteran programmers can quickly refer to special graphics, sound and color capabilities of the ATARI Home Computer, such as one of the new GTIA modes which offers a computerized palette of 256 hues.

Carris often injects an enlightening dose of computer logic while describing commands. He explains the IF/THEN decision capability, a critical concept in BASIC programming, in this manner. "There are only two ways to look at it. The comparison is true or it is not. If the computer finds the comparison true, it will do whatever follows THEN. If the comparison is not true, the program drops through to the next line."

For the last two years, Carris' job at The Atari Home Computer Division has been to explain computers and to teach BASIC to salespeople. He has also taught the computer language to college students and to groups of electrical engineers. Many of the same questions that repeatedly cropped up in his classes are answered in his book.

"Many writers who try to make computers easy to understand make their books seem childish," Carris says. "My book doesn't take things

overly seriously, but neither is it silly."

One of the nicest aspects of *Inside ATARI BASIC* is the way the subject of goofing up is handled. "It's simply NO BIG DEAL," Carris says, "if you make a mistake while learning how to operate a home computer." Error messages are described as ways of helping you find problems, and Carris accurately calls them "the best friends you'll ever hate."

No one will become a virtuoso of ATARI BASIC after reading this one slim volume. More complex aspects of BASIC programming are not included, such as player missile graphics and display list interrupts. The dedicated reader will finish the book with an understanding that should significantly enhance the utility of his or her ATARI Home Computer.

Carlos Greth is a Senior Writer with the Atari Home Computer Division

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A Sample Program

From Bill Carris'
Inside ATARI BASIC

```
1 REM ***Flashy Name***
5 GRAPHICS 0:CLR
10 DIM NAME$(20):POSITION 2,7
20 PRINT "TYPE IN YOUR NAME AND PRESS THE RETURN KEY"
30 POSITION 4,12:PRINT "NAME";:INPUT NAME$
40 GRAPHICS 2+16
50 POSITION (20-LEN(NAME$))/2,4:REM CENTERS NAME
60 PRINT #6;NAME$
70 POSITION 1,7:PRINT #6;"IS A FLASHY PERSON"
80 FOR FLIP=0 TO 20
90 FOR FLASH=0 TO 14
100 SETCOLOR 0,0,FLASH:SOUND 0,FLASH,10,10
110 NEXT FLASH
120 FOR DELAY=1 TO 20:NEXT DELAY
130 NEXT FLIP
140 SETCOLOR 0,0,14:SOUND 0,0,0,0
150 FOR DELAY=1 TO 1000:NEXT DELAY
160 SETCOLOR 0,0,0:SETCOLOR 2,0,0
170 FOR DELAY=1 TO 800:NEXT DELAY
180 RUN
```

BOOK REVIEWS

YOUR ATARI COMPUTER/A GUIDE TO ATARI 400/800 PERSONAL COMPUTERS

OSBORNE/McGraw-Hill

Anyone who wants to know more about their ATARI Home Computer, and make it do the things it's famous for can stop scratching their heads. *Your ATARI Computer*, the combined effort of three authors, Lon Poole with Martin McNiff and Steven Cook, is by far the most versatile of reference texts on our favorite computer. Well-organized, full of programming example and crisp diagrams, this is the book that can help you get the best from our best.

Whether you're a novice or an experienced programmer, this book will tell you exactly how you can unleash the hidden powers inside your ATARI Home Computer. Special attention is paid to both sound and graphics—features of the ATARI Computer which differ greatly from those of other computers on the market. Once you pick the book up, you'll find it hard to put down. And this isn't a science-fiction thriller, it's a computer book!

For every explanation of an ATARI BASIC command, there's an example of how to make it work in a program. Diagrams accompany all discussions of sound and graphics programming. You won't have to guess which number generates a specific note on the music scale again—the scale is illustrated and the numbers used to produce notes are printed on the scale. The same is true for graphics.

Each graphic mode is clearly explained along with programming examples which demonstrate each mode's best function. Selecting colors for all eight BASIC graphic modes is made easier with a finely detailed diagram.

Areas of interest are divided into both "introductory" and "advanced"

sections. Complete programs are included and help illustrate the many ways you can make your computer perform with only an ATARI BASIC cartridge in place. Not only do they teach programming, they're also very useful. A further detailed explanation of the ATARI Disk Operating System (DOS) is also included. The last section of the book, "A Compendium of BASIC Statements and Functions" provides excellent reference for all the things you can do with commands written in ATARI BASIC—again, program examples accompany each description.

Above all, the book *works!* The numerous appendices and thorough index help you find exactly what you're looking for. When you look up a specific problem and go to that page, what you need is there. You don't have to work through *Your ATARI Computer*, page by page either. You can thumb through it, try something and go on. If you're interested in player/missile graphics, you can go to that section of the book, read about it and concentrate on what you want to learn—not what the authors want you to learn, which is often the case with other computer books.

Obviously, Poole, McNiff and Cook have done their homework. They've learned the ATARI Home Computers inside and out and they pass along the wealth of their combined knowledge in a convenient and handy package. *Your ATARI Computer/A Guide To ATARI 400/800 Personal Computers* should easily find a place on your gift list. It's perfect for either the beginning or advanced BASIC programmer who wants to know more about their ATARI Home Computer. It'll soon be dog-eared from hours of use!

Kevin Rardin

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Answer to Program Puzzle on Page 25.

```
10 GRAPHICS 21:SETCOLOR 4,12,0
20 SETCOLOR 1,0,1:COLOR 3:SETCOLOR 0,12,14
30 PLOT 56,36:DRAWTO 40,3:DRAWTO 40,4
40 POSITION 24,36:POKE 765,3
50 SETCOLOR 2,12,6:XIO 18,#6,0,0,"S:"
60 PLOT 24,36:DRAWTO 38,36
70 COLOR 2:PLOT 39,44:DRAWTO 41,44
80 DRAWTO 41,36:DRAWTO 39,36
90 DRAWTO 39,43:DRAWTO 40,43:DRAWTO 40,37
100 POKE 1664,232:POKE 1665,142:POKE 1666,10
110 POKE 1667,212:POKE 1668,142:POKE 1669,26
120 POKE 1670,208:POKE 1671,76:POKE 1672,128
130 POKE 1673,6:A=USR(1664)
```

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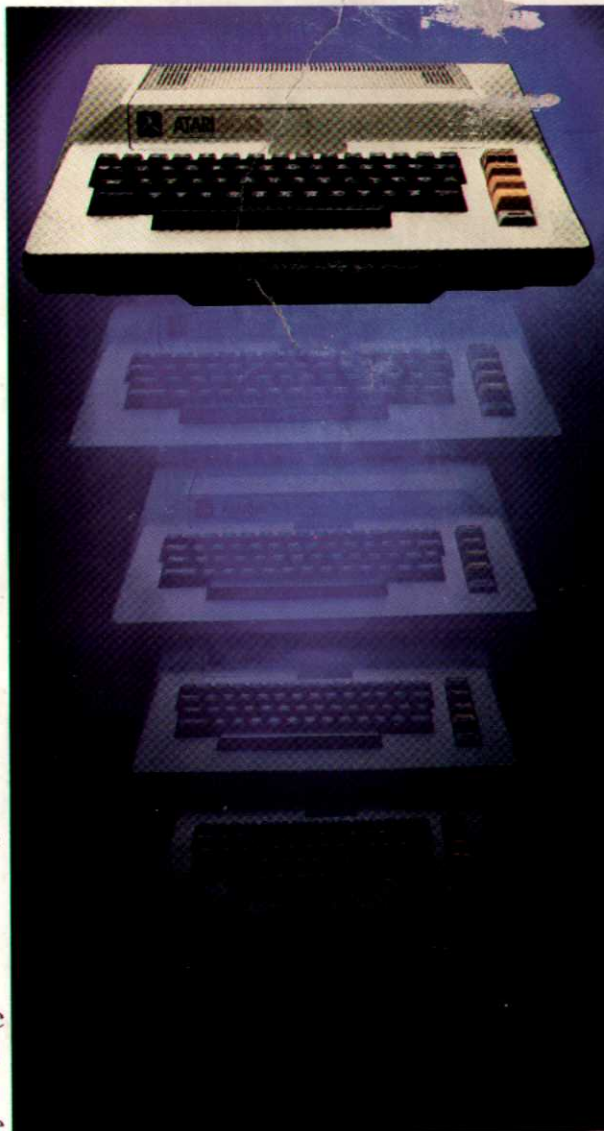
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