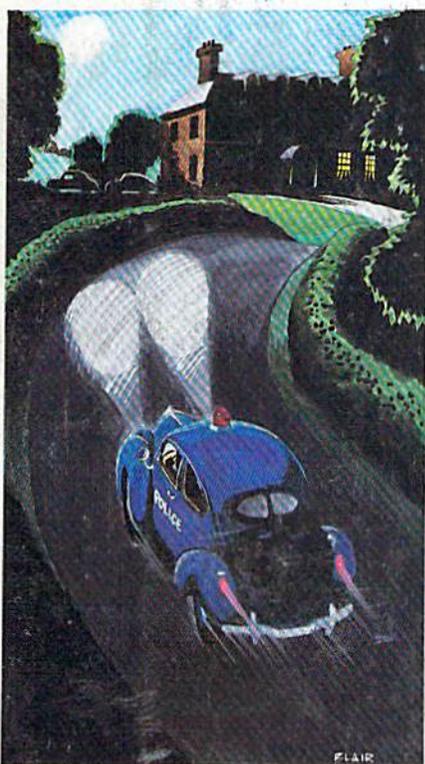


COMPUTER'S GAZETTE™

\$2.95
September 1984 ©
Issue 15 Vol. 2, No. 9
02220 £1.95 UK \$3.75 Canada

For Owners And Users Of **Commodore VIC-20™** And **64™** Personal Computers



80 Columns For The 64

Screen 80: Convert your 64 into an 80-column machine.

Custom 80: Customize your own 80-column character set.

SpeedScript Customizer

Tailor your SpeedScript screen and printer output with this short, easy-to-use program for the VIC and 64.

Also In This Issue:

Computing For Families

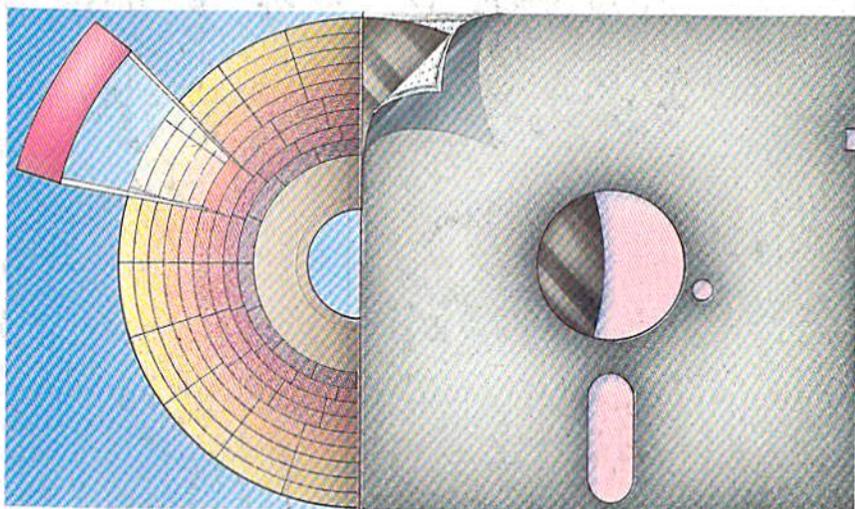
Learning To Count For VIC And 64

Home Telecommunications: The Electronic Cafe

Animating The VIC

Mystery At Marple Manor

Was it the cook? The duchess? Was it done with a knife? Or was it poison? A whodunit text adventure for one to six sleuths.

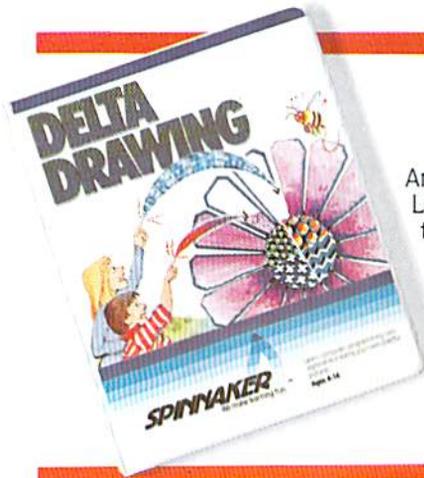


Disk Tricks

An inside look at disk tracks and sectors including four effective "how to" programs.

www.commodore.ca





DELTA DRAWING.™ Have fun creating pictures and computer programs. Ages 4-Adult.

Kids love to draw. And DELTA DRAWING Learning Program lets them enjoy creative drawing and coloring while they learn computer programming concepts. As they use simple commands to put lines and colors in



their drawings, they're actually writing computer programs!

With DELTA DRAWING, even kids who have never used a computer before can learn to do simple programming and build an understanding of procedural thinking. It's easy, clear, and lots of fun!

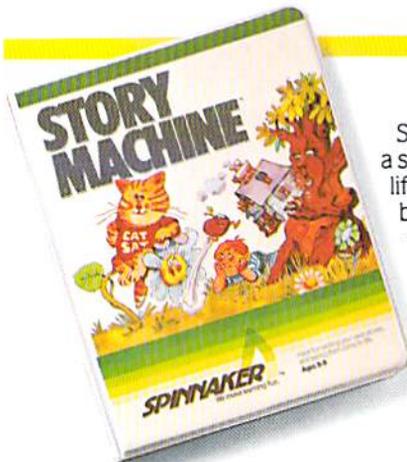
A trip through ALPHABET ZOO!™ Ages 3-8

It's a race. It's a chase. It's Alphabet Zoo, the exciting game that will have your kids zipping through the maze, after letters that fit the picture on the screen.



kids will be learning the relationship of letters and sounds, and sharpening their spelling skills. So they'll be laughing and learning at every turn.

And at the same time, your



The story of STORY MACHINE.™ Ages 5 to 9.

STORY MACHINE is like a storybook come to life. Using the keyboard, your children write their own fun little stories. The computer then takes what they've written and animates their story on the screen, com-



plete with full color graphics and sound.

STORY MACHINE helps your children learn to write correctly, become familiar with the keyboard, and lets them have fun exercising their creativity at the same time.



Disks for: Apple, Atari, IBM, Commodore 64.
Cartridges for: Atari, Commodore 64, IBM PCjr, ColecoVision.

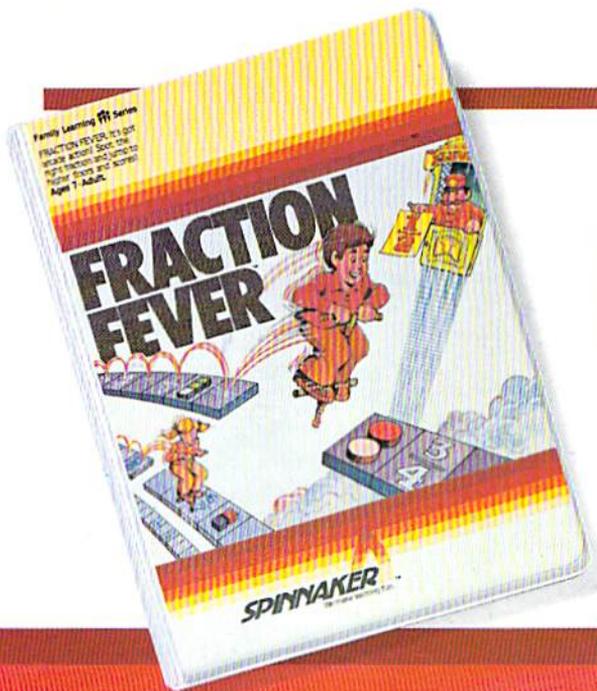
SPINNAKER'S LINE OF EARLY LEARNING GAMES IS GROWING AS FAST AS YOUR CHILD'S MIND.

Watching your kids grow up is a lot of fun. But making sure their minds grow as fast as their bodies is even more rewarding. That's where we can help. With a growing line of Early Learning Programs that are not only lots of fun to play, but also educational.

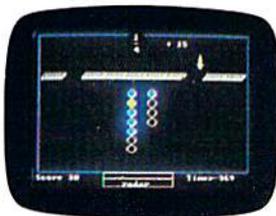
Some of the games you see on these two pages help exercise your child's creativity. Others help improve vocabulary and spelling skills. While others

improve your child's writing and reading abilities. And all of them help your child understand how to use the computer.

So if you're looking for computer programs that do more than just "babysit" for your kids, read on. You'll find that our Early Learning Programs are not only compatible with Apple,[®] Atari,[®] IBM[®] PC and PCjr, ColecoVision and Commodore 64[™] computers, but also with kids who like to have fun.

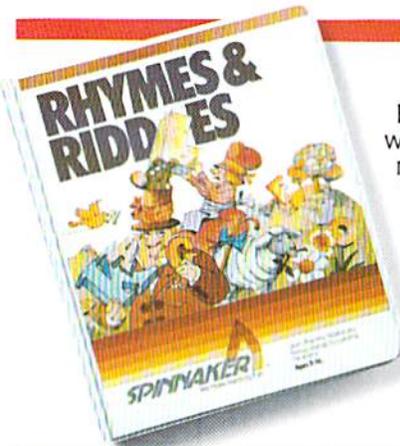


FRACTION FEVER™ brings fractions into play. Ages 7 to Adult.



FRACTION FEVER is a fast-paced arcade game that challenges a child's understanding of fractions. As kids race across the screen in search of the assigned fraction, they're actually developing a basic understanding of what a fraction is and of relationships between fractions. They're even discovering that the same fraction may be written in a number of different ways.

All in all, FRACTION FEVER encourages kids to learn as much as they can about fractions - just for the fun of it!



RHYMES & RIDDLES™ come to life. Ages 5 to 9.

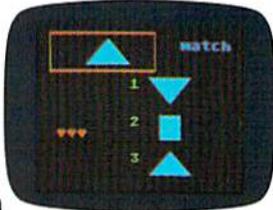
RHYMES & RIDDLES will delight your children. Because when they successfully complete the rhymes, riddles, and famous sayings on the screen, they'll see



and colorful pictures. And RHYMES & RIDDLES not only teaches children the correct lyrics to nursery rhymes and famous sayings. It also helps kids learn to read and spell while they're having fun! That's why parents like RHYMES & RIDDLES, too!

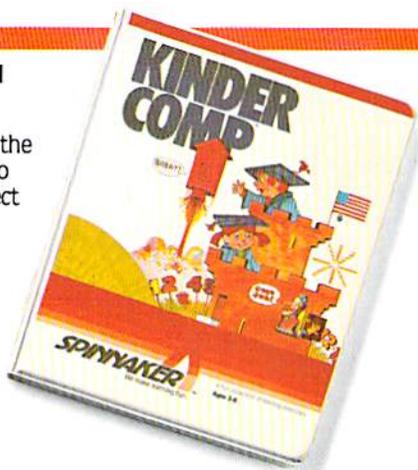
KINDERCOMP™ Numbers, shapes, letters, words and drawings make fun. Ages 3 to 8.

KINDERCOMP is a game that allows very young children to start learning on the computer. It's a collection of learning exercises that ask your children to match shapes and letters, write their names, draw pictures, or fill in missing numbers. And KINDERCOMP will delight kids with color-



ful rewards, as the screen comes to life when correct answers are given.

As a parent, you can enjoy the fact that your children are having fun while improving their reading readiness and counting skills.



FACEMAKER™ makes faces fun. Ages 4 to 12.



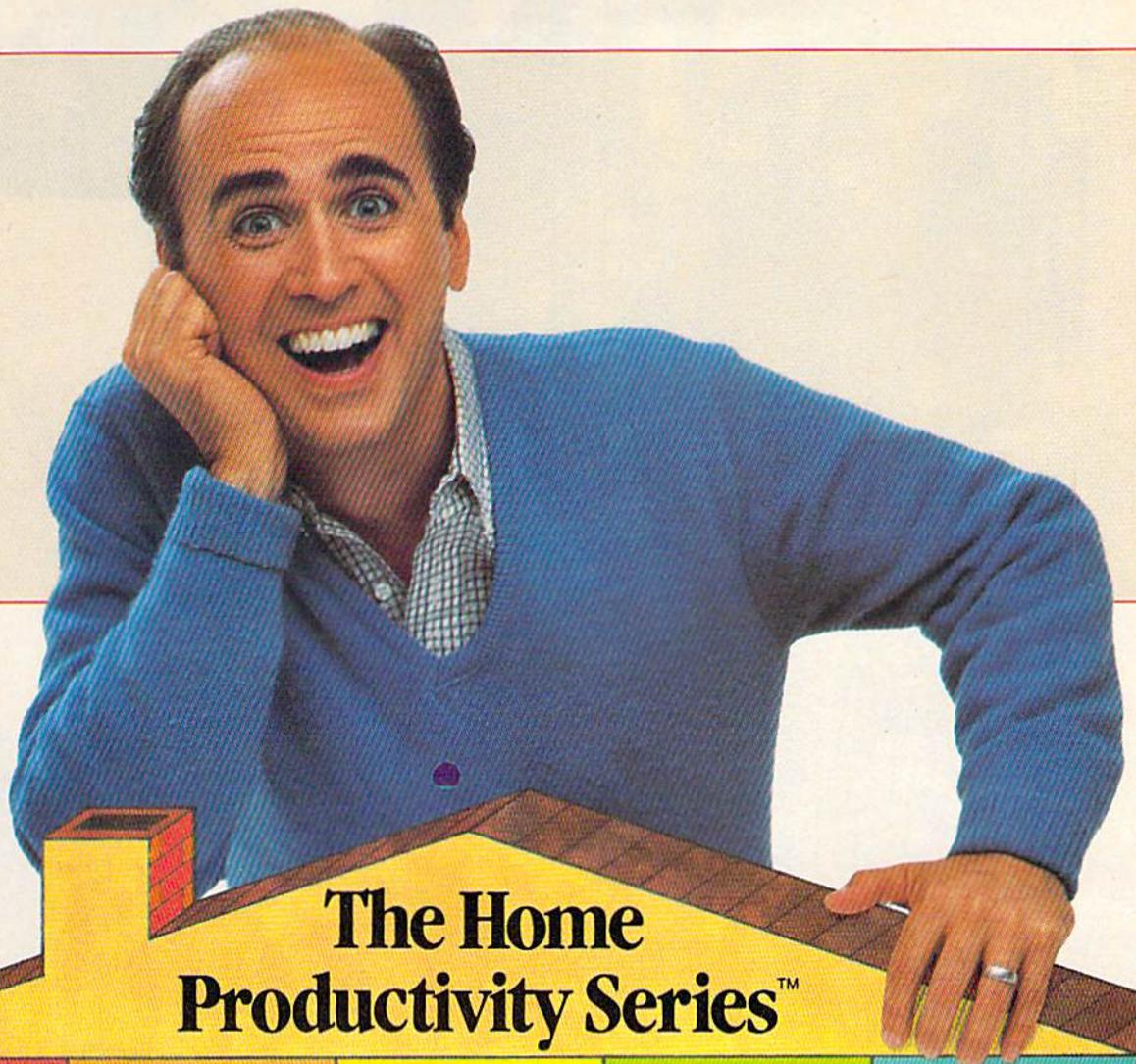
FACEMAKER lets children create their own funny faces on the screen. Once a face is completed, your children will giggle with delight as they make it do all kinds of neat things: wink, smile, wiggle its ears, or whatever their imagination desires.



Plus, FACEMAKER helps children become comfortable with computer fundamentals such as: menus, cursors, the return key, the space bar, simple programs, and graphics. FACEMAKER won't make parents frown because their children will have fun making friends with the computer.



© 1984, Spinnaker Software Corp. All rights reserved.



The Home Productivity Series™

The Home Accountant™

The Tax Advantage™

FCM™

The Home Cataloger™

Learn To Type™

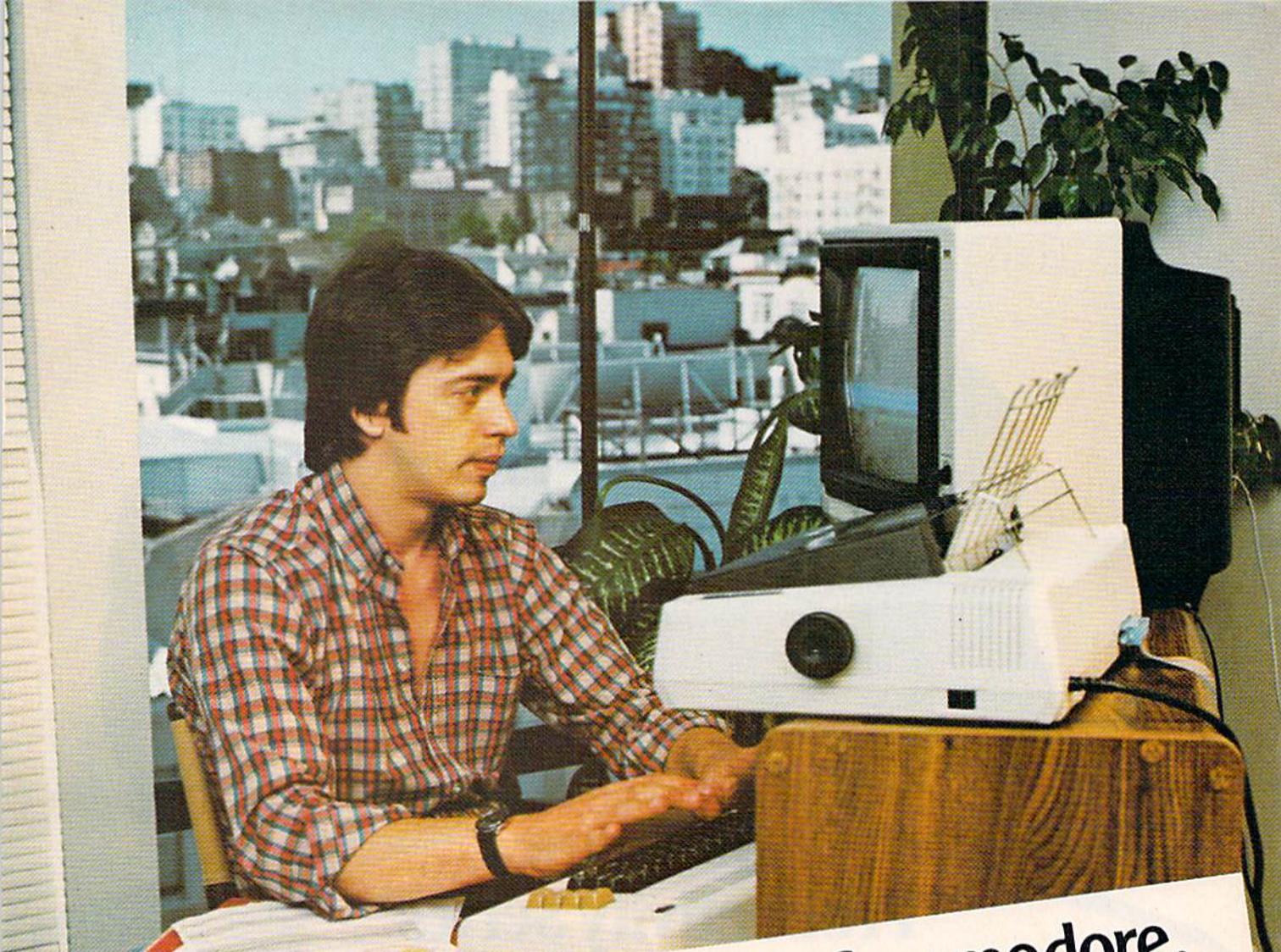
The Home Accountant™: Includes icons for 'The Home Accountant' software box, a credit card, an invoice, a statement, and a bar chart.

The Tax Advantage™: Includes icons for 'The Tax Advantage' software box, a calendar showing 'APRIL 15', a 1040 tax form, and a 'SCHEDULE A' form.

FCM™: Includes icons for 'FCM' software box, a calendar, and a Santa Claus figure with a gift bag.

The Home Cataloger™: Includes icons for 'The Home Cataloger' software box, a 'JOAN & GORDON' catalog page, and various stamps and coins.

Learn To Type™: Includes icons for 'Learn To Type' software box, a keyboard, and a computer monitor displaying 'WELL DONE! 50 WORDS PER MINUTE'.



Get more out of your new Commodore. Get Star's Gemini-10X personal printer.

"My Commodore* computer really helps with my marketing business. It does just about everything but type and lick envelopes. Which would be nice for all my direct mail."
"Well, my Gemini printer solves the typing problem. And it's made to connect right to my Commodore."

"I've used it for typesetting ads and even printing letters. The type is the most solid dot matrix I've ever seen."
"And it's great having both Commodore and Gemini graphics to play with. I've even designed my own logo."

"Buying the Gemini-10X was a good move. It made my Commodore a better computer."
Steven Clarke—San Francisco, California

With Star's Gemini-10X printer you get 120 characters per second of clean, crisp type, multi-function versatility and steady, dependable service. All at a price that works.
It's everything you need in one printer.

*Commodore is a registered trademark of Commodore Business Machines, Inc.

star
MICROICS • INC

THE POWER BEHIND THE PRINTED WORD.

200 Park Avenue • New York, NY 10166
Dallas, TX (214) 456-0052 • Boston, MA (617) 329-8560
Chicago, IL (312) 773-3717 • Irvine, CA (714) 768-4340

www.commodore.ca



With The Home Productivity Series,TM I saved money on our taxes, figured out our net worth, cataloged my wine collection, sent out 253 Christmas cards, and taught our kids to type.

Think of The Home Productivity Series as your personal survival kit. It will make your computer an indispensable tool and open up a whole new world for you and your family.

The Home AccountantTM

Do you ever wonder why your paycheck never seems to last as long as it should? Or why you're never able to save as much as you'd like—even though you earn good money?

It's tough to keep track of each dollar. But unless you do, you'll never be able to gain control of your finances and get ahead.

The Home Accountant, #1 bestselling home finance package, is the best way there is to organize and maintain your financial records. Because it keeps tabs on every penny you spend and earn, you'll always know where you stand.

The Home Accountant flags transactions for tax time, prints net worth and financial statements, handles multiple credit cards and checking accounts and has up to 200* budget categories.

In fact, The Home Accountant has helped over 300,000 people master their finances and make their lives easier.

Price: from \$74.95*

The Tax AdvantageTM

Do you dread doing your taxes? You don't have to anymore.

The Tax Advantage, another bestseller from The Home Productivity Series, makes doing your taxes a cinch. Even if you've never done your taxes by yourself or used a computer before.

As an added plus, The Tax Advantage works with The Home Accountant. So if you've been using The Home Accountant year-round, you can automatically transfer your records to The Tax Advantage and polish off your tax return in no time.

The Tax Advantage takes you line by line through the 1040 and other commonly used tax forms. Not only does the program explain every line, it automatically computes your taxes with each entry you make. So you can see how each line affects your overall picture. The Tax Advantage also does income averaging with a few simple commands.

Price: \$69.95

FCMTM

FCM is more than just the best mailing list program you can buy. It's the most versatile.

Because FCM is so flexible, you can create your own mailing labels and customize them to look the way you want. You can even add a special message line that says "Merry Christmas" for your Christmas card mailing. FCM can also print the address and message right on your envelope.

FCM works with many popular word processing programs, so you can automatically combine form letters with your mailing list. It's ideal for use in business as well as at home.

FCM is a great organizer and is super for remembering things. For instance, if you are planning a wedding or party, FCM will send out the invitations, record the RSVPs, arrange the seating, let you know whose gift you received and allow you to check off thank you notes. FCM is great to have around.

Price: from \$49.95*

The Home CatalogerTM

If you have a hard time getting organized, it's time to check out The Home Cataloger. It'll keep track of everything you own like books, wine collections, household inventories and video cassette/tape collections, to name a few.

Because it's such a flexible and easy to use program, The Home Cataloger is a terrific way to teach your children how to look after their belongings—while they learn how to use the computer.

To help you out, The Home Cataloger comes with 10 ready-to-use cataloging formats for some of the most common uses: telephone list, inventory, travel plans, restaurants, insurance policies, coins, growth (height and weight), running, studies, and book list. If you want additional categories, just add them on.

The Home Cataloger. It's the best way to organize your whole house.

Price: from \$49.95*

*depending on hardware

Learn To TypeTM

If you don't learn to type, you'll be left behind by the computer revolution. But if your children never learn, the consequences will be worse.

When we developed Learn To Type, we made it as easy and unthreatening as possible. In fact, the beginning section of Learn To Type assumes you've never touched a keyboard before.

The program uses prompts to help you, and has a drill and practice section that rates you on words per minute, telling you which fingers are slow and which are fast. You can even test your progress with the fun to play game, Eraser ManTM. Kids love it!

Plus you've got a choice of the keyboard layout you want to learn to type from—DVORAK or QWERTY.

Don't be left behind. Get Learn To Type.

Price: \$39.95

Stop by your nearest dealer and ask about The Home Productivity Series. It's a must for computer age survival.

Available for: Apple, IBM, Atari and Commodore computers. For other versions, check with your dealer or Arrays, Inc./Continental Software.

For more information and a free product brochure for The Home Productivity Series, call or write:



**Arrays, Inc./
Continental
Software**

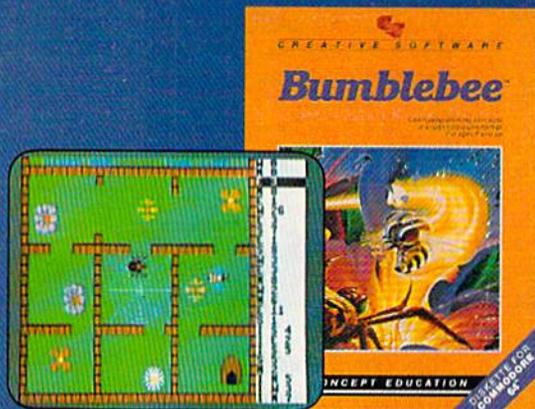
Arrays, Inc./Continental Software
Dept. GAZ
11223 S. Hindry Avenue
Los Angeles, CA 90045
213/410-3977

The Home Productivity Series, The Home Accountant, The Tax Advantage, FCM, The Home Cataloger, Learn To Type and Eraser Man are registered trademarks of Arrays, Inc./Continental Software. Apple, IBM, Atari, Commodore are registered trademarks, respectively, of Apple Computer, Inc.; IBM Corp.; Atari, Inc., a div. of Warner Communications, Inc.; Commodore Business Machines, Inc.

www.commodore.ca

Bumblebee™

Dancing a Fine Line Between Innovative Game and Educational Tool



For Commodore 64™, IBM PC™ and IBM PCjr™, and Apple™

Bumblebee is a highly interactive game which provides learning in a fun environment. That's what we call Concept Education.

Bart the Bee will demystify the programming process and teach your kids basic concepts without complex computer language. The player controls Bart by giving him instructions on how to move from flower to flower, picking up "pollen points." Bart's flight pattern must be carefully designed to avoid bumping into walls or becoming an unfortunate meal for Olga the Spider or Phineas the Frog.

Bumblebee requires logical "if-then" thinking. Your child is rewarded for accuracy and expediency and challenged by increasing levels of difficulty.

We call it concept education. Your kids will call it fun.

C R E A T I V E S O F T W A R E

Commodore 64™ is a trademark of Commodore Electronics, Ltd. IBM PC™ and IBM PCjr™ are trademarks of IBM Inc.
Apple™ is a trademark of Apple Computer, Inc.

© 1984 Creative Software

www.commodore.ca

FEATURES

Summer Consumer Electronics Show <i>Lance Elko</i>	16	*
Inside View: The Designers Behind Movie Maker <i>Kathy Yakal</i>	40	*
80 Columns For The 64 <i>Gregg Peele And Kevin Martin</i>	48	64
SpeedScript Customizer <i>J. Blake Lambert</i>	54	V/64

REVIEWS

Three Arcade Games For The VIC-20 <i>Steve Hudson</i>	62	V
CodePro-64 <i>Todd Heimarck</i>	68	64

GAMES

Mystery At Marple Manor <i>John R. Prager</i>	104	V/64
Treasure Hunt <i>Calvin Overhulser</i>	110	V/64

EDUCATION/HOME APPLICATIONS

Computing For Families: Micro Worlds For Young Children <i>Fred D'Ignazio</i>	72	*
Learning To Count <i>William W. Braun</i>	80	V/64

PROGRAMMING

Beginner's Corner: A Simplified Inventory <i>C. Regena</i>	112	V/64
Machine Language For Beginners: First Questions <i>Richard Mansfield</i>	122	V/64
Hints & Tips: IF-THEN, Logic, And Flags <i>John Michael Lane</i>	124	V/64
Disk Tricks <i>Gerald E. Sanders</i>	126	V/64
Animating The VIC <i>Mike Scharland</i>	135	V
Power BASIC: Screen Headliner <i>Todd Heimarck</i>	136	V/64
Cursor GET For VIC And 64 <i>David Mills</i>	143	V/64

DEPARTMENTS

Editor's Notes <i>Robert Lock</i>	6	*
Gazette Feedback <i>Editors & Readers</i>	10	*
Simple Answers To Common Questions <i>Tom R. Halfhill</i>	82	*
Home Telecommunications: The Electronic Cafe <i>Robert Sims</i>	117	*
User Group Update	119	*
VICreations: Simulating Hi-Res Animation <i>Dan Carmichael</i>	133	V
Horizons 64 <i>Charles Brannon</i>	140	64

PROGRAM LISTINGS

A Beginner's Guide To Typing In Programs	108	*
How To Type In COMPUTE!'s GAZETTE Programs	109	*
MLX: Machine Language Entry Program	145	64
The Automatic Proofreader	146	V/64
Program Listings	147	V/64
Product Mart	172	*
Advertisers Index	176	*

*=General, V=VIC-20, 64=Commodore 64.

COMPUTE!'s GAZETTE is published monthly by COMPUTE! Publications, Inc., Post Office Box 5406, Greensboro, NC 27403 USA. Phone (919)275-9809. Editorial offices are located at 324 West Wendover Avenue, Greensboro, NC 27408. Domestic subscriptions: 12 issues, \$20. Send subscription orders or change of address (P.O. Form 3579) to Circulation Dept., COMPUTE!'s GAZETTE, P.O. Box 961, Farmingdale, NY 11737. Second class application pending at Greensboro, NC 27403 and additional mailing offices. Entire contents copyright © 1984 by COMPUTE! Publications, Inc. All rights reserved. ISSN 0737-3716.

COMPUTE! Publications, Inc., One of the ABC Publishing Companies: ABC Publishing, President, Robert G. Burton; 1330 Avenue of the Americas, New York, New York 10019.

EDITOR'S NOTES

It doesn't seem that long ago that we were writing a farewell editorial to Commodore founder Jack Tramiel as he left Commodore amid speculation of a rift that forced his departure. Official word at the time was that he wanted to withdraw from the field and travel the world. Right. As we are all now aware, Mr. Tramiel has completed negotiations with Warner Communications to purchase their struggling Atari computer operation. What does this mean for the industry in months ahead?

Ups And Downs

Jack Tramiel has unequivocally demonstrated his ability to understand, react, and even *drive* this market. He brought us, over the years, the first fully self-contained (single package) home computer. And, across those same years, as price points were successively broken down from the high hundreds of dollars to the high tens of dollars, his aggressive leadership and product introductions gradually broke down the industry as well. The roster of casualties ranged from Texas Instruments to a significantly weakened Atari—which moved from reliably delivering millions in profit for parent Warner to millions in losses to parent Warner.

In what must provoke a sense of Alice staring through the looking glass, we now have Mr. Tramiel buying, for what really amounts to promises of things to come (e.g., massive debt restructuring), a company

that he beat down to affordability. It's an interesting world. One suspects that Mr. Tramiel—always the fiercest of competitors—may take some personal satisfaction in taking on his former namesake, Commodore, and those who implicitly or explicitly helped prod him out.

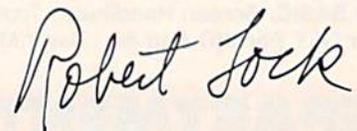
What Happens Now?

We expect there will be some senior level personnel changes at Atari. This has, in the past, been a significant "touch" of Jack's. We expect to see, in a matter of weeks or months, a gathering cloud of activity at Atari. A bit of price cutting perhaps? A hint of a new machine or two? Time will tell. Caution will have to be invoked somewhere along the line here, because, at least for now, there's a critical variable missing. A major factor in Commodore's success, and a key to Mr. Tramiel's ability to make the kinds of competition-crushing moves that gave him market leadership in the past, was what used to be a small, independent company named MOS Technology.

Commodore, aka Jack Tramiel, acquired MOS Technology back in the seventies in a stroke that eventually made them what they are today. Among other things, MOS brought us the 6502 microprocessor (long the heart of PETs, Apples, Ataris, etc.). And, more importantly, it brought

Jack Tramiel the central nervous system of his philosophy of vertical integration. Over the years, his only competitor with the same capability for inhouse chip manufacturing was TI, and they never quite mastered the art the way Jack did. We would suggest that the ownership of MOS was crucial to his continued success by providing the controllable foundation for aggressive development and price control.

To this extent, the Atari acquisition suffers, but we expect it won't be fatal. Within the traces of microcomputerdom, Jack Tramiel is a skilled street fighter, and we suspect that, before the dust settles, an emerging Atari will return with vigor and vengeance.



Editor In Chief

THE WORLD'S GREATEST BASEBALL GAME. THERE'S MUCH MORE TO WINNING THAN JUST PITCHING, HITTING & FIELDING.



Real baseball is more than just hitting, pitching and fielding. It's also your favorite major league teams, the great stars of today and the Allstars of yesteryear. It's statistics and coaching, and it's managing your own game strategy. With the World's Greatest Baseball Game, you have it all. Pick your major league line-up using the actual player and team stats. Then watch the action unfold against

an opponent or the computer. Two modes let you choose between managing and controlling your team or managing only. The World's Greatest Baseball Game—everything you could ever want except the hot dogs and peanuts.

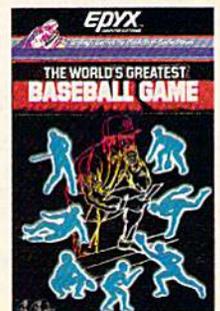
One or two players; joystick controlled.



EPYX
COMPUTER SOFTWARE

Strategy Games for the Action-Game Player

www.commodore.ca



Publisher Gary R. Ingersoll
Editor in Chief Robert C. Lock
Director of Administration Alice S. Wolfe
Senior Editor Richard Mansfield
Managing Editor Kathleen Martinek
Editor Lance Elko
Assistant Editor Todd Heimarck
Production Director Tony Roberts

Editors

Tom R. Halfhill, PC and PCjr Editor; Stephen Levy, Editor, COMPUTE! Books Division; Gail Walker, Production Editor; Ottis R. Cowper, Technical Editor; Charles Brannon, Program Editor; Selby Bateman, Features Editor

Assistant Editors

Dan Carmichael (Submissions); Gregg Keizer, Steve Hudson (Books); John Krause, George Miller (Technical); Robert Sims, J. Blake Lambert, Robert Alonso (Publications); Kathy Yakal, Editorial Assistant, Sharon Darling, Research Assistant (Features), Randall Fosner, Assistant Managing Editor (Books)

Editorial Programmers

Patrick Parrish (Supervisor), Gregg Peele (Assistant), Jeff Hamdani, Tim Victor, Kevin Martin, Chris Poer, Kevin Myktyyn

Programming Assistants

Mark Tuttle, David Florance

Copy Editors

Juanita Lewis, Joan Rouleau, Ann Davies

Proofreaders

Ethel Silver, Dwight Smith, Karen Uhlendorf, Marty Selby

Administrative Staff

Vicki Jennings, Laura MacFadden, Julia Fleming, Susan Young, Iris Brooks, Jan Kretlow

Production

Irma Swain, Production Manager; Janice Fary, Art & Design Director, Lee Noel, Assistant Editor, Art & Design; De Potter, Mechanical Art Supervisor; Terry Cash, Carole Dunton, Typesetting

Artists

Leslie Jessup, (Publications), Debbie Bray (Books); Harry Blair, Illustrator

Associate Editors

Jim Butterfield (Toronto), Harvey Herman (Greensboro), Fred D'Ignazio (Roanoke)

Operations/Customer Service

Patty Jones, Subscriber Services Supervisor; Assistants: Chris Patty, Chris Gordon, Sharon Sebastian, Rosemarie Davis; Fran Lyons, Dealer Sales Supervisor; Assistants: Gail Jones, Sharon Minor, Rhonda Savage

Customer Service Staff

Dorothy Bogan, Supervisor; Judy Taylor, Anita Roop, Debi Goforth, Jenna Nash, Elizabeth White, Mary Hunt, Gayle Benbow, Betty Atkins, Sandi Jenkins; Jim Coward (Warehouse Manager), Larry O'Connor, Dai Rees, Jack McConnell, Eric Staley, Eddie Rice, Sam Parker, David Hensley, John Archibald; Mary Sprague, Mail Room Coordinator

Data Processing

Leon Stokes, Manager; Chris Cain, Assistant

Accounting

Paul J. Megliola, VP, Finance & Planning; R. Steven Vetter, Director, Finance & Planning; Robert Bean, General Accountant; Karen K. Rogalski, Financial Analyst; Staff: Sybil Agee, Susan Booth, Anne Ferguson, Pat Fuller, Doris Hall, Anna Harris, Tracey Hutchins, Jill Pope, Shannon Roesler

Credit

David F. Carpenter, Credit Manager; Linda Miller, Credit Analyst

Purchasing

Gregory L. Smith, Purchasing Manager

Promotion

Mindy K. Kutchei, Promotion Manager

Advertising Sales

Ken Woodard, Director of Advertising Sales; Bonnie Valentino, Assistant Advertising Manager; Patti Williams, Production Coordinator; Joyce Margo, Production Assistant

Sales Representatives

Jerry Thompson 415-348-8222
Phoebe Thompson 408-354-5553
JoAnn Sullivan 619-941-2313
Ed Winchell 213-378-8361
Harry Blair 919-275-9809

Jules E. Thompson, Inc.
National and Canadian Sales Representatives
1290 Howard Avenue, Suite 303
Burlingame, CA 94010

Address all advertising materials to:
Patti Williams, COMPUTE!'s GAZETTE
324 West Wendover Ave., Suite 200, Greensboro, NC 27408

Sales Offices, The Thompson Company

New England	617-720-1888
Mid-Atlantic	212-772-0933
Southeast	919-275-9809
Midwest	312-726-6047
Texas	713-731-2605
Northwest	408-354-5553
Northern CA	415-348-8222 or 408-354-5553
Southern CA	619-941-2313 or 213-378-8361
Nevada, Arizona	619-941-2313
New Mexico	213-378-8361
Colorado	303-595-9299

COMPUTE! Publications, Inc., publishes

COMPUTE! **COMPUTE! Books** **COMPUTE!'s GAZETTE**
COMPUTE!'s PC & PCjr Magazine

Corporate Office:

324 West Wendover Ave., Suite 200, Greensboro, NC 27408

Mailing Address:

Post Office Box 5406, Greensboro, NC 27403

Distribution Center

505 Edwardia Drive, Greensboro, NC 27409

Telephone: 919-275-9809

Office Hours: 8:30 AM to 4:30 PM Monday-Friday

Chief Executive Officer Robert C. Lock

President Gary R. Ingersoll

Vice President, Finance & Planning Paul J. Megliola

Executive Assistant Debi Nash

Assistant Cassandra Robinson

Subscription Information

COMPUTE!'s GAZETTE Circulation Dept.
P.O. Box 5406, Greensboro, NC 27403

TOLL FREE

Subscription Order Line

800-334-0868

In NC 919-275-9809

COMPUTE!'s GAZETTE

Subscription Rates

(12 Issue Year): US (one year) \$24. Canada, Mexico and Foreign Surface Mail \$30. Foreign Air Mail \$45.

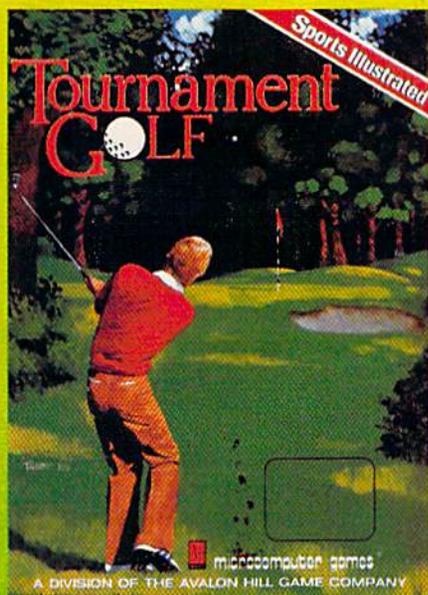
The COMPUTE!'s GAZETTE subscriber list is made available to carefully screened organizations with a product or service which may be of interest to our readers. If you prefer not to receive such mailings, please send an exact copy of your subscription label to: COMPUTE!'s GAZETTE, P.O. Box 961, Farmingdale, NY 11737. Include a note indicating your preference to receive only your subscription.

Authors of manuscripts warrant that all materials submitted to COMPUTE!'s GAZETTE are original materials with full ownership rights resident in said authors. By submitting articles to COMPUTE!'s GAZETTE, authors acknowledge that such materials, upon acceptance for publication, become the exclusive property of COMPUTE! Publications, Inc. No portion of this magazine may be reproduced in any form without written permission from the publisher. Entire contents copyright © 1984, COMPUTE! Publications, Inc. Rights to programs developed and submitted by authors are explained in our author contract. Unsolicited materials not accepted for publication will be returned if author provides a self-addressed, stamped envelope. Where programs are included in an article submission, a tape or disk must accompany the submission. Printed listings are optional, but helpful. Articles should be furnished as typed copy (upper and lowercase, please) with double spacing. Each article page should bear the title of the article, date, and name of the author. COMPUTE! Publications, Inc., assumes no liability for errors in articles or advertisements. Opinions expressed by authors are not necessarily those of COMPUTE! Publications, Inc.

PET, CBM, VIC-20, and Commodore 64 are trademarks of Commodore Business Machines, Inc., and/or Commodore Electronics Limited. Other than as an independent supplier of quality information and services to owners and users of Commodore products, COMPUTE! Publications, Inc., is in no way associated with Commodore Business Machines, Inc., or any of its subsidiaries.

Tee off with Tournament GOLF

Sports Illustrated™



Loaded with excitement from the amateur to pro levels, **Tournament Golf** features two complete 18 hole courses plus all the challenges—and frustrations of the sport of golf.

From the wind factors on the fairways and the break of the greens to the woods, roughs, and water hazards, **Tournament Golf** is a game that combines strategy, skill, and a little luck.

Playing alone or with up to three other opponents you'll choose from 14 different clubs actually controlling your drives, hooks and slices – or whiffs and flubs. You'll master putting technique and attempt difficult shots from the fringe of the green.

No matter rain or shine, you'll find **Tournament Golf** realistic and competitive. Requiring the hand-eye coordination and skill of an advanced microcomputer game combined with the strategy and tension of golf. **Tournament Golf** will score a hole-in-one with you and continue to entertain and challenge long after you graduate from amateur to Pro standing.



FAIRWAY DISPLAY

Features include:

- Two graphic displays
- Choice of 14 different clubs
- Computer-updated Scorecard
- Driving Range
- Putting Green
- 2 18-Hole Golf Courses
- Additional Courses (Pebble Beach & the Masters) available @ \$20 each

Tournament Golf is ready to run on your Apple II® (48K) or Commodore 64® computer with disk drive and joystick. Available for \$30 at leading computer and game stores everywhere, or call toll-free 1 (800) 638-9292 for more information. Ask for Operator G.

® Trademarks of Apple Computers, Inc. and Commodore Business Machines.
™ Trademark of Time, Inc.



microcomputer games®

A Division of The Avalon Hill Game Company

4517 Harford Road • Baltimore, Maryland 21214 • (301) 254-9200

www.commodore.ca

GAZETTE FEEDBACK

Editors And Readers

Do you have a question or a problem? Have you discovered something that could help other VIC-20 and Commodore 64 users? Do you have a comment about something you've read in COMPUTE!'s GAZETTE? We want to hear from you. Write to Gazette Feedback, COMPUTE!'s GAZETTE, P.O. Box 5406, Greensboro, NC 27403.

More On Disk Saves

In our July Feedback column ("Incomplete Disk Saves"), we reported that use of the VALIDATE command will purge relative files. However, after several tests, we found that this command does not seem to adversely affect relative files. It appears that disks containing relative files can be validated; it is only random files that are purged.

Read Only Memory

I own a Commodore 64, and I have two friends who own VICs. We would like to know if we can get into ROM and read the Read Only Memory.

R.K.C.

Read Only Memory (ROM) is just what the name implies—memory that can be read (PEEKed) but not written to (POKEd). ROM is used by the computer; the operating system is a good example of this. BASIC ROM (locations 49152–57343 in the VIC, and 40960–49151 in the 64) and Kernal ROM (locations 57344–65535 in both) contain the programs which control BASIC and the other functions of the computer.

Because these two blocks of memory are so important to the operation of the computer, they were designed so that you can't POKE new values there. Altering the contents of these locations would interfere with, or temporarily stop, the normal operation of the computer.

As the name implies, there is nothing to stop you from reading the contents of ROM. Remember, however, that the ROMs contain only machine language. You can't LIST the contents as you would a BASIC program. You could use a disassembler program to make the machine language easier to interpret, but you will understand little of what you see unless you are familiar with ML.

Elusive MPS-801 Printer Ribbons

As a recent purchaser of a Commodore MPS-801 printer, I've found that replacement ribbons are very hard to find.

For interested readers, I suggest using ribbon cartridges for the Radio Shack DMP-110 Printer, part number 26-1283 from Radio Shack. This ribbon is an identical replacement.

George J. Manning

Thanks for the tip. We purchased one of these ribbons and it seems to work well with the MPS-801. We continue to receive many letters about the availability of MPS-801 replacement ribbons. Our readers can surely use this information.

Machine Language POKES

I am just starting to program in machine language. I would like to know the machine language equivalent of the BASIC POKE statement.

Jeff Schiller

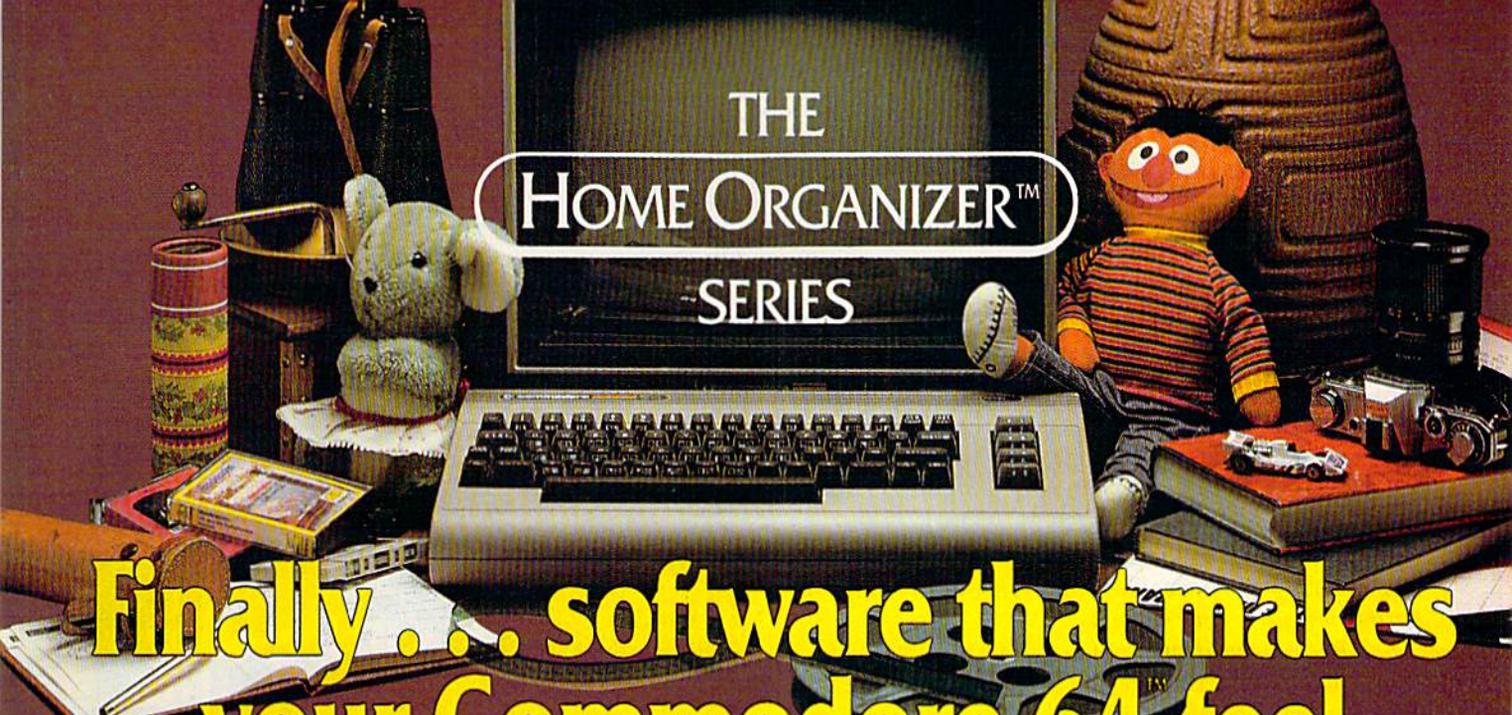
The machine language equivalents of the BASIC POKE are the store instructions (STA, STX, and STY). These will store (copy) the contents of the accumulator (STA) or the X or Y registers (STX, STY) into the memory location you specify. The general format for these instructions is: STr \$address (where r is the register, and \$address is the address in hex to be POKEd).

For example, STA \$C000 would store the current contents of the accumulator into location \$C000 (decimal 49152), and STX \$00 would store the contents of the X register into memory location zero.

You could simulate the BASIC statement POKE 53281,1 (which will set the Commodore 64's screen background to white) with:

```
LDA #$01
STA $D021
```

In addition to absolute stores, there are a variety of ways to use an index. For example, if the X register contains a three, STA \$C000,x puts the number in the accumulator into \$C003. By changing the value of X, you can create the machine language equivalent of a FOR-NEXT loop.



THE
HOME ORGANIZER™
SERIES

**Finally . . . software that makes
your Commodore 64 feel
comfortable at home**

Now your home computer can help you cook, keep your accounts, find an address or keep track of your record and book libraries—with first-class software specially tailored for the home environment.

The Home Organizer™ series includes a wide range of separate and individual programs for different activities like stamp collecting, personal banking, or home photo and movie collections. Each one is pre-programmed with a “page” format planned out by experts to make it easy for you to store and retrieve the information you’ll want for your special activity. You don’t have to program anything yourself. Just load the disk and start feeding in your data.

If you’re used to run-of-the-mill home computer software, the speed and simplicity of the Home Organizer™ series will surprise you. Each program is written entirely in “machine language”, the most basic computer code. So they search, sort and analyze your data with amazing speed.

The Home Organizer™ is fast enough to sort through your household belongings in seconds, yet so simple the children can use it to look up a phone number. Choose any or all program modules that fit your needs. They make ideal gifts, too!



“Excellence in Software”

For a full color brochure write to:

Batteries Included, 186 Queen Street West, Toronto, Canada M5V 1Z1 (416) 596-1405 / 3303 Harbor Blvd., Costa Mesa, CA. 92626 (714) 979-0920

COMMODORE 64 IS A REGISTERED TRADEMARK OF COMMODORE INTERNATIONAL

PEEKing Time

I own a Commodore 64, and I am just starting to learn machine language. I have a question about the time (TI\$) function. What location in memory do you look at to get the current value for the TI\$ function?

Corey McKinnon

BASIC's time variables (TI\$ and TI) return the current value of a built-in interval timer. PRINT TI returns a numeric value showing the current timer count in increments called jiffies, where one jiffy is 1/60 second. Thus, to display the contents of the timer as seconds, you would type PRINT TI/60.

PRINT TI\$ returns the value of TI translated into a string of characters representing the time in hours, minutes, and seconds.

The interval timer is found at memory locations 160-162 (hex addresses \$A0-\$A2) in both the VIC and 64. Location 160 ticks once every 1092 seconds (65536 jiffies), location 161 ticks every 4.26 seconds (256 jiffies), and 162 ticks every jiffy (sixty times a second). BASIC determines the value of TI by performing the equivalent of:

$$TI = \text{PEEK}(160) * 65536 + \text{PEEK}(161) * 256 + \text{PEEK}(162)$$

It then determines the value of TI\$ from the value of TI, so there are no locations which actually hold the current value of TI\$. That is, there are no locations in the computer holding the time in hours-minutes-seconds format.

You can read the clock from machine language simply by examining the contents of locations 160-162. You can also use the built-in Kernal ROM routines RDTIM (\$FFDE) to read the clock or SETTIM (\$FFDB) to set it. See the VIC or 64 Programmer's Reference Guide for more details. However, in either case, you will have to do some manipulating if you want the time in seconds instead of jiffies.

You should be aware that the clock stops running during tape SAVES and LOADS. If you set the clock and then perform one of these tape operations, the time value will be incorrect.

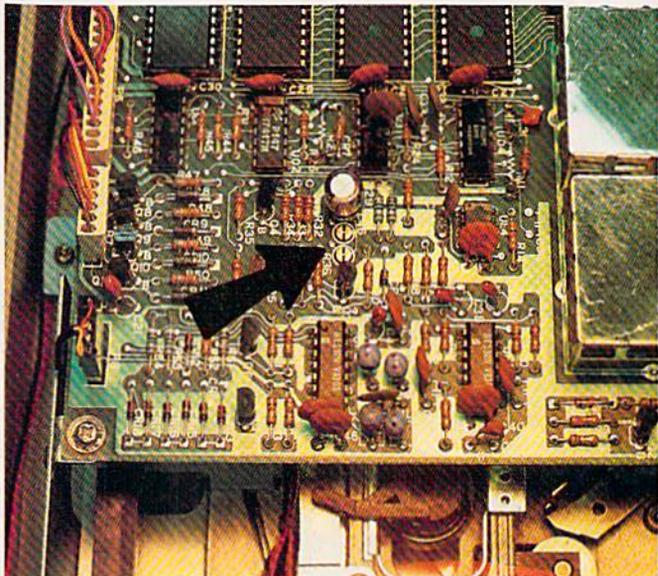
Disk Drive Device Number Change

I have two 1541 disk drives and want to change the address of one of them via the hardware method. I followed the instructions in the owner's manual, but can't tell which wires are the jumpers in question. Please help.

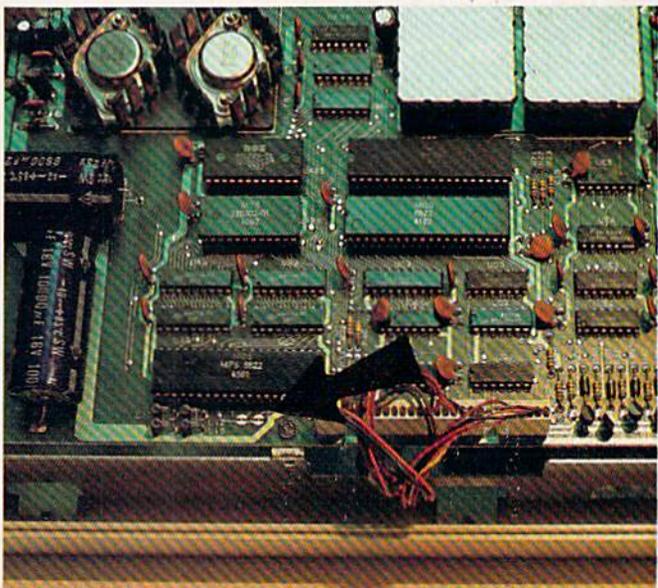
Nolan L. Green

The instruction manual's reference to jumpers might be misleading. The "jumpers" are actually two round disks of solder, each about 1/4 inch in diameter. Each disk is separated into halves, with a thin strand of solder connecting each half.

Unplug the power cord from the wall and open the disk drive following the instructions in the user's manual. On the older (white case) model 1541s, the jumpers are found on the left edge of the circuit board, just behind the long plugs with wires. On the newer (tan case) model 1541s, they are found near the center of the circuit board, toward the front. On both models, jumper 1 is nearest the front.



On the newer models, they can be found in the middle toward the front.



On the older 1541, the jumpers are on the left edge, to the rear.

Changing the device numbers is accomplished by taking a sharp, pointed object and scratching away the thin strand of solder connecting the two halves on one or both of the jumpers. Do this very carefully so as not to damage the circuit board or any other components.



Commodore 64™ Owners, Relax...

with Mirage Concepts software

Mirage Concepts has mastered the art of uncomplicating software. Before you buy—we help you determine which Mirage Concepts package will meet your need. No guesswork! With your purchase comes a menu-driven program ranked by independent evaluators nationwide as among the finest available. Relax as you learn how to operate your program with clear, concise tutorials written by professional writers... not programmers. For consultation on your special questions, technical support personnel are standing by on a toll-free basis.

For Brochures, Support
and Information, Call...

(800) 641-1441

In California, Call...

(800) 641-1442



DATABASE MANAGER, \$89.95

- 100% Machine Language • Free Form Design • Sort On Any Field • Calculated Fields
- Interfaces to W.P. • Record Size = 2,000 Characters

ADVANCED REPORT GENERATOR, \$49.95

- Companion to Database • Totals and Subtotals • Field Matching • Expanded Reports
- Sorting (Up & Down) • Calculated Fields

WORD PROCESSOR, Professional Version \$89.95

- 80 Col w/o Add'l Hdwr • 100% Machine Language • Spelling Checker (30,000 Words)
- Over 70 Single Keystroke Commands • Printer Command File • Interfaces to Database

WORD PROCESSOR, Personal Version \$39.95

- 100% Machine Language • True Word Wrap • Printed page/line/character counters
- Right Justify, Center • Printer Command File • Interfaces to Database

MIRAGE CONCEPTS, INC.

2519 W. Shaw Ave., #106 • Fresno, CA 93711

TM—Commodore 64 is a Registered Trade Mark of Commodore Electronics, Ltd.

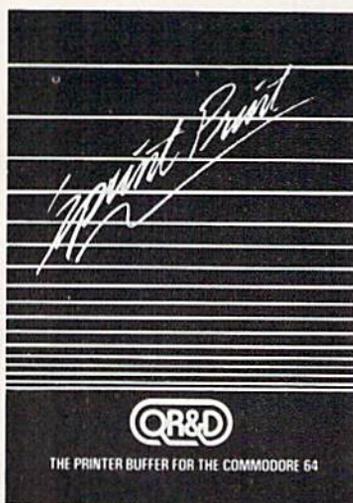
Here's a chart showing which device numbers are produced when the jumpers are cut:

JUMPER CUT	NEW DEVICE NUMBER
None	8
1	9
2	10
1 and 2	11

Changing the disk drive device numbers via the hardware method is permanent unless you're handy with a soldering iron. So don't do so unless you have to. If you're unsure about exactly what you're doing, have your local Commodore dealer do the modifications for you. 

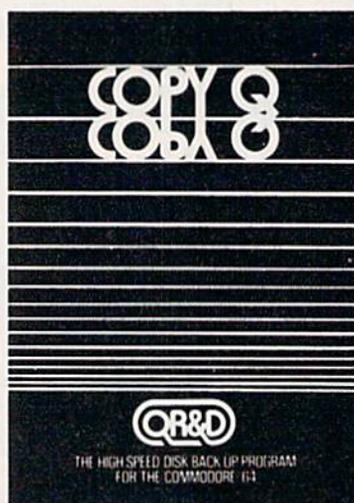
YOUR COMMODORE JUST GOT TWO TIMES BETTER

INTRODUCING SPRINT PRINT AND COPY Q



Sprint Print: The printer buffer for the Commodore 64. Sprint Print gives you control of your computer while printing, remembers everything, and enhances printer speed. Sprint Print gives the 1525 and 801 printers true descenders and underlining **\$45.95!**

CopyQ: The High-Speed Disk Back-Up Program for the Commodore 64 that backs up your copy-protected software. Copy Q recovers remaining data and files that have been lost to disk errors. No other C-64 copy program works better. Copy Q is fast, more reliable and easier to use **\$45.95!**



TO ORDER CALL (612) 831-1088

DISTRIBUTED BY RADIX MARKETING 5223 W. 73RD ST MINNEAPOLIS, MN 55435

COMMODORE® OWNERS: WE'LL CHECK YOU OUT WITH MR. TESTER™

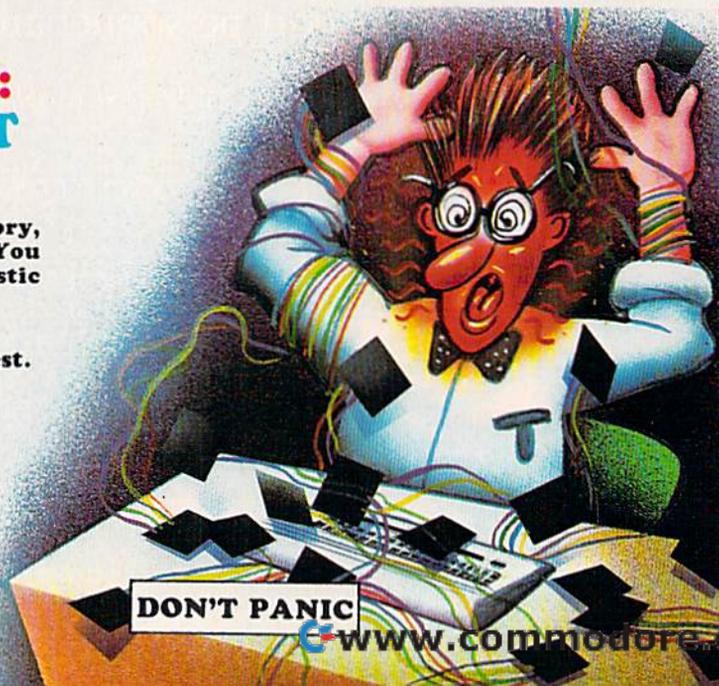
Is your Commodore 64™ Disk Drive, Printer, Memory, Joystick, Monitor and Sound Chip operating correctly? You may never know for sure. Mr Tester is a complete diagnostic that tests:

- 1.) Full joystick operation in all axis.
- 2.) Continuous or standard comprehensive memory test.
- 3.) Commodore® SID chip test for sound analysis.
- 4.) Screen alignment and color test.
- 5.) Complete read/write Disk Track and Block Test.
- 6.) Diskette format analysis to check Floppys.
- 7.) Complete printer test.
- 8.) Complete keyboard test.
- 9.) Cassette read/write test.

Micro-W. Dist., Inc.
1342B Route 23
Butler, N.J. 07405
201-838-9027

All this for only **\$29⁹⁵**

Dealer and Distributor
Inquiries Invited



www.commodore.ca

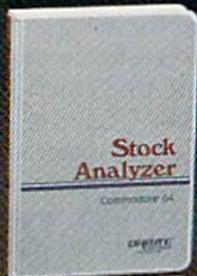
STOCK ANALYZER...

your investment advantage!

Stock Analyzer is the only complete portfolio management program for the Commodore 64. Designed to assist your investment decisions, through automatic calculations, it accurately records your stocks' performance, including: percentage and dollar gain, loss, sales, purchases, splits, and more. At the touch of a key a full series of statistical reports and charts can be generated for both individual stocks or the entire portfolio.

Stock Analyzer is the advantage you need to get maximum results from your money.

For Commodore 64



ORBYTE
SOFTWARE

P. O. Box 948, Waterbury, CT 06720 203-621-9361

Commodore is the registered trademark of Commodore Business Machines.

© 1984 Orbyte Software, Inc. All rights reserved.

The Summer Consumer Electronics Show:

A Smorgasbord For The 64

Lance Elko, Editor

The feast is on for owners of the Commodore 64. The Summer Consumer Electronics Show (CES) held this June in Chicago introduced a spread of new software and hardware that will delight (and perhaps bewilder) 64 owners.

This new wealth of choice is a testament to the growth of a computer regarded by some industry experts as a toy. "People have equated low cost with low quality," says Neil Harris, Commodore's new product design manager. But the success of the 64 has surprised even Commodore.

What worked against the 64 in its early days was the lack of software—not a problem with some other home computers, such as the Apple. But the 64 outlived a year of software famine. By Christmas of 1983, consumers had a fair choice of a lot of average programs and a few really good ones. As the 64's

Nearly 100,000 eager people crowded Chicago's McCormick Place at the Summer CES to see what's new in computers and audio and video electronics. For Commodore 64 owners, there's a lot of good news. Not so for VIC owners. Here's a summary of new products and trends, and what to look for in the months ahead.

popularity continued to grow into the new year, more and better software entered the market. Innovative design and programming, exploiting all the 64's features, translated into hotter competition for the consumer's software dollar. And this culminated at CES in a colossal smorgasbord of new products.

Although 64 owners now have a bigger and better menu, the news was not so bright for

VIC-20 owners. Commodore says it stopped manufacturing VICs in the Spring, and that leftover inventories probably would be sold by Fall. VIC users will have to be satisfied with software that's already available, write their own programs, or buy another computer. A few new products were announced for the VIC at CES, but you could count them on one hand. According to one Commodore representative, VIC sales in the U.S. had been dropping dramatically, while the 64 grew to dominate the low-end market.

Commodore presented two new computers at CES: the Commodore Plus/4, originally introduced as the Commodore 264 at the January CES, and the Commodore 16, a scaled-down version of the Plus/4. Plans for the 364, also announced in January, have been shelved.

The Plus/4 is an interesting machine and somewhat of a departure for Commodore. Named



Commodore's new Plus/4 is aimed at the more applications-oriented user.



The Commodore 16 hopes to pick up the low-end market where the VIC left off.

for its four built-in programs—a data base manager, spreadsheet, word processor, and business graphics package—the Plus/4 has been dubbed “the productivity machine.”

“Some people want practical applications and less fun and

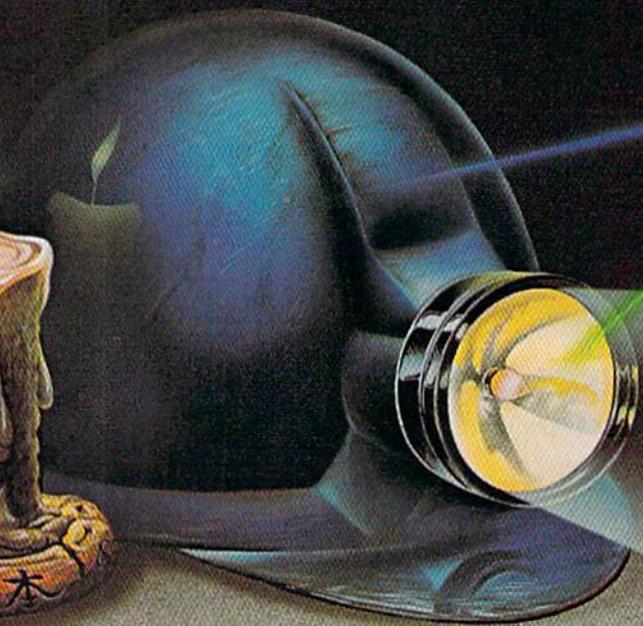
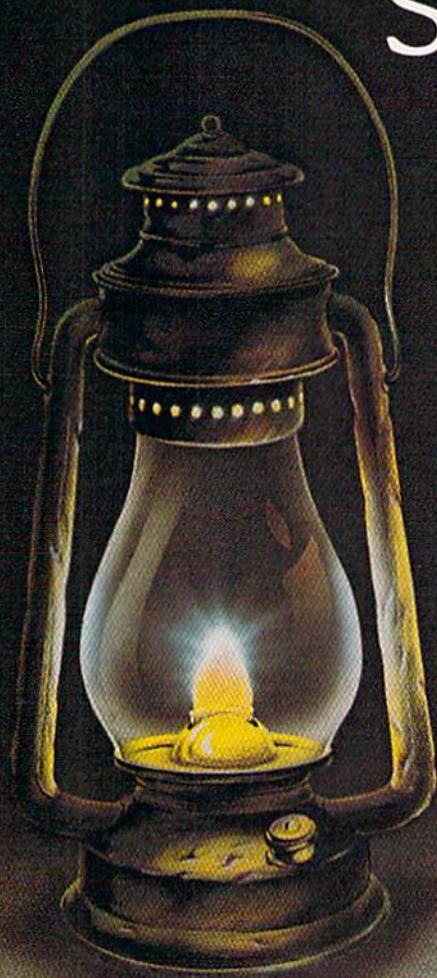
games,” explains Harris. The built-in software, originally titled 3 + 1 and designed by Tri-Micro, is integrated so that you can use *File Manager* (the data base manager) or the spreadsheet with the word processor. And *Graphics* is designed

so you can display graphs from calculations performed with the spreadsheet.

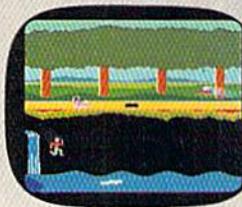
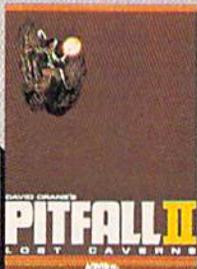
Although some people feared the Plus/4 would replace the 64, Commodore contends the new machine is aimed at a different audience—those whose primary needs are for business applications. The Plus/4, however, contains a few of the features of the 64: eight function keys, the keyboard graphics character set, and a 320 × 200 pixel high-resolution graphics screen. What’s different is a new BASIC (known as 3.5) which adds new commands (75 in all), including 11 graphics commands similar to those available with Simon’s BASIC and the 64 Super Expander. It has 64K of memory, with 60K of that available for BASIC programming. Like the Commodore 64, the Plus/4 has 16 colors, but each one now has eight luminance levels for a total of 128 separate hues. Screen windowing capability and a 12-command machine language monitor are also included.

The keyboard has a different look and feel from the 64. The function keys, one of which is labeled HELP, are placed horizontally above the keyboard. Four separate arrow-shaped cursor keys should eliminate the tedium of SHIFTING when editing on the screen. A second CONTROL key is in place of the RESTORE key found on the 64, and an ESCAPE key has

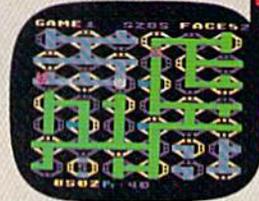
INTRODUCING ACTIVISION SEE YOURSELF IN A



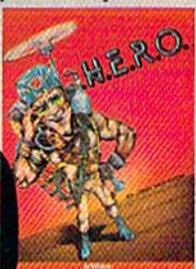
You leave the sun behind as you lower yourself down into the unexplored caverns beneath the Peruvian jungle. Deeper and deeper you go. Past Amazon frogs, condors, and attacking bats. Across eel-infested underground rivers. From cavern to cavern, level to level. Swimming, running, dodging, stumbling, you search for the gold, the Raj diamond and the thing you really treasure... adventure. Head for it. Designed by David Crane.



You have heard the elder speak of one central source and a maze of unconnected grey paths. As you connect each grey path to the central source, what was grey becomes the green of life. When all are connected, then you have achieved "Zenji." But beware the flames and sparks of distraction that move along the paths. You must go beyond strategy, speed, logic. Trust your intuition. The ancient puzzle awaits. Designed by Matthew Hubbard.

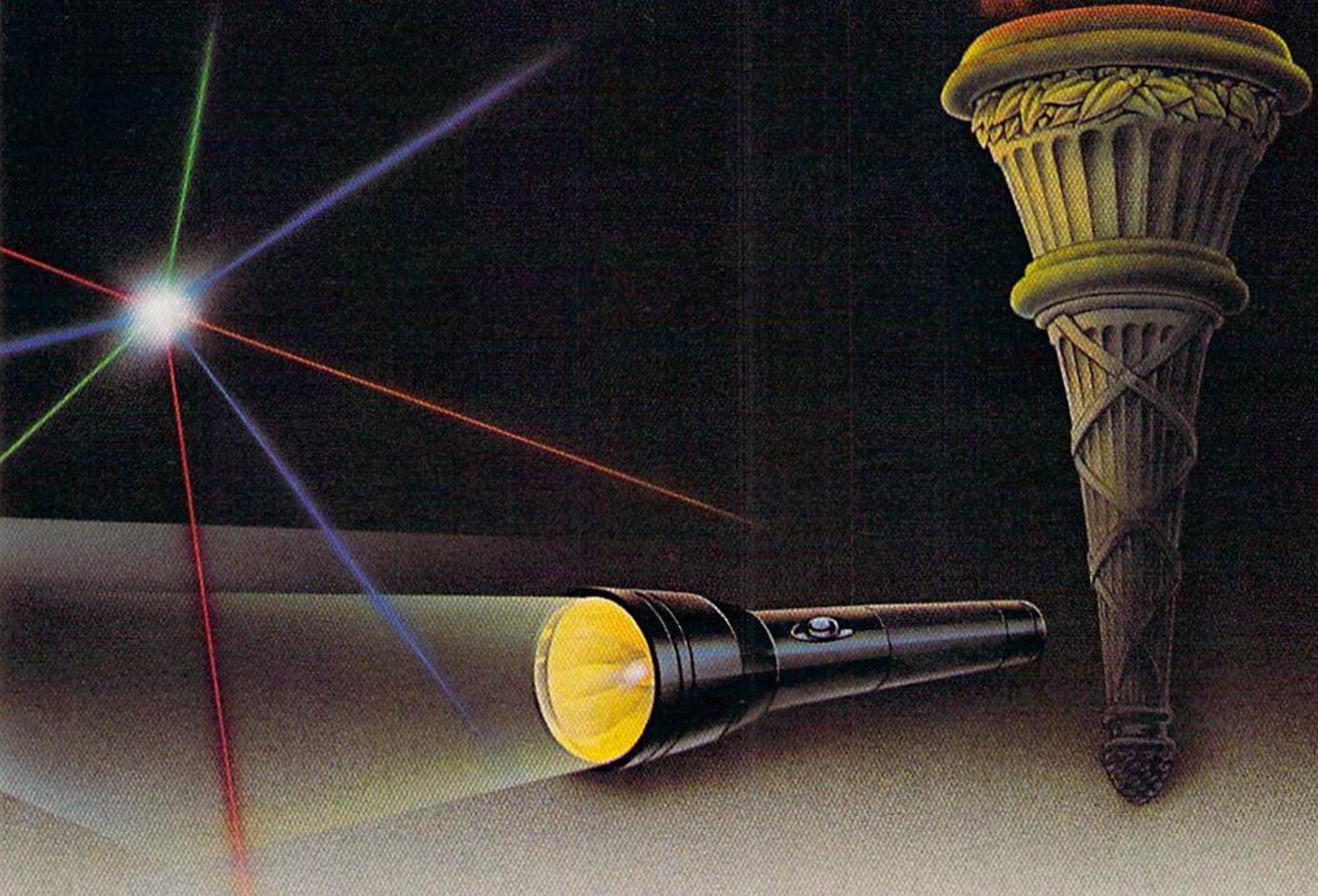


You strap on your helicopter prop-pack, check your laser helmet and dynamite. There's no predicting what you'll have to go through to get to the trapped miners. Blocked shafts, molten lava, animals, insects, who knows what lies below. But you'll go, you're in charge of the Helicopter Emergency Rescue Operation. The miners have only one chance. You. The opening shaft is cleared now, it's time to go. Designed by John Van Ryzin.



What if you were sitting in front of your Commodore 64™ programming your own Pitfall Harry™ adventure? It can happen with a little help from the creator of Pitfall Harry: David Crane. Just write your name and address on a piece of paper, tape 25¢ to it for postage and handling and mail to: The Activision C-64 Club, P.O. Box 7287, Mountain View, CA 94039. We'll send you David's Booklet, "Programming Pitfall Harry." It includes a written program that helps you create your own adventure. Go for it.

FOR YOUR COMMODORE 64. DIFFERENT LIGHT.



As you suit up you see the webbed forcefield surrounding your planet. Holding it. Trapped with no escape. No hope. Except you: The Beamrider. The freedom of millions depends on you. Alone you speed along the grid of beams that strangle your planet. You must destroy the grid sector by sector. Your skills and your reflexes alone will determine the future of your people. Take their future in your hands. Designed by Dave Rolfe.



You can almost hear the quiet. And it's your job to keep it that way. A toy factory at midnight. Did you hear something? Guess not. Wrong! Suddenly balloon valves open, conveyor belts move and a whole factory full of toys goes wild. Even the robot, their latest development, is on the loose and after you. Capture the runaway toys. Restore order. Restore peace. Restore quiet. Do something! Hurry! Designed by Mark Turmell.



You made it. The Olympics. You hear languages you've never heard. And the universal roar of the crowd. You will run. Hurl. Vault. Jump. Ten events. One chance. You will push yourself this time. Further than ever. Harder than ever. But then... so will everyone. The competition increases, now two can compete at the same time. The crowd quiets. The starting gun sounds. A blur of adrenalin. Let the games begin. Designed by David Crane.



 **ACTIVISION.**
We put you in the game.
www.commodore.ca

Commodore 64™ is a trademark of Commodore Electronics, Ltd. © 1984, Activision, Inc.

been added above the left CONTROL key.

Perhaps to further differentiate the Plus/4 from the 64, Commodore has left out sprites and the SID synthesizer chip. Instead, the Plus/4 has a tone generator similar to the VIC's, but with improved pitch accuracy.

The Commodore 16 (for its 16K RAM) is effectively a stripped-down version of the Plus/4. Dubbed "the learning machine" by Commodore, the 16 contains the same BASIC 3.5 as its bigger brother as well as the built-in machine language monitor and screen windowing capability. A rear port allows memory expansion up to a full 64K. Commodore sees this machine as a replacement for the VIC-20 and as an entry level computer for novices who aren't sure about spending a lot of money. Commodore will offer a variety of educational and recreational programs for the 16. It should be available this Fall and sell for about \$100. The Plus/4 should appear at the same time for about \$300.

Third-party software support will depend on the computer's fate in the marketplace. Obviously, there won't be a great demand for the kind of software already packaged with the Plus/4, but Commodore has already announced over 40 programs for the new machine. Many of the new titles are revisions of 64 programs: *General*

Learning, Learning Everywhere: Educational Software For Commodore From CES

Selby Bateman, Features Editor

If you own a Commodore 64, prepare to get educated. June's Consumer Electronics Show in Chicago included dozens of companies with hundreds of educational software packages for the Commodore 64 computer. Here's a brief look at some of the players and programs from CES.

There's an educational emphasis throughout the entire micro-computer market, says Neil Harris, new program design manager for Commodore.

"Educational programs now exploit the computer," he says. "And educational games have caught up to [entertainment] games in quality."

Harris ought to know. He has seen firsthand how the attractiveness of the Commodore 64's huge installed base has translated into a flood of educational programs targeted toward users of the machine. And these packages take a variety of forms: curriculum-based software, educational games, "edutainment" packages, drill-and-practice programs—the list is extensive and confusing.

The range of companies producing these programs is also wide. They include small start-up firms composed of current or former educators, large productivity or entertainment software producers who are entering the educational market, and established educational book publishers who want to carry their reputations and expertise into the computer field.

As most software producers will admit, the quality of all these products varies tremendously. And even among well-produced educational programs, the target audiences must be carefully selected. But, in general, the fierce competition among educational software producers appears to be creating a higher level of quality in recent program offerings. And concerned educators are having more of an effect on the market as a whole. (See next month's GAZETTE for a look at some of the new directions in educational software.)

Here, then, are a few of the companies and their educational products for the Commodore 64:

American Educational Computer—This Palo Alto, California, based company is one of the largest developers and publishers of curriculum-based educational software for the school and consumer markets.

At CES, AEC introduced a series of advanced spelling programs for use on the 64 and other home computers. Called

Why settle for less when you can have Mo?



Introducing Mitey Mo, the ready-to-go modem that turns your Commodore 64® into a telecommunications giant.

Mitey Mo is the complete—and affordable—telecommunications system for your Commodore 64. It will open up a world of practical and exciting uses for your computer, and it will take you online faster and easier than anything else you can buy.

Now you'll be able to send and receive electronic mail, link up with community bulletin boards, play computer games with people in distant places, do electronic banking, and tap into library resources to find the material you need for your reports. All at your convenience.

Until Mitey Mo, Commodore's 1650 Automodem was the obvious choice when you went looking for a modem for the C-64. Like Mitey Mo, it has "auto-answer"—it receives data while unattended. And both modems are "auto dialers"—you dial right on the computer's keyboard. But that's about where their similarity ends.

Suppose you dial a number,



MODEM FEATURES	USI MITEY MO	COMMODORE AUTOMODEM
Auto Dial	YES	YES
Auto Answer	YES	YES
Auto Redial	YES	NO
Smooth Screen Scrolling	YES	NO
Both Cassette and Diskette Software Included	YES	NO
Menu Driven	YES	NO
24K Software Buffer	YES	NO
Function Key Template	YES	NO
Printing Capability	YES	NO
Easy-to-Use Manual	YES	NO
Bell 103 Compatible	YES	YES
Multiple Baud Rates	YES	YES
Dual Cables Included	YES	NO
Single Switch Operation	YES	NO
Warranty	3 years	90 days

Some mighty interesting features—ours and theirs. Yours to decide.

and you find that it's busy. Mitey Mo has "auto redial"—it hangs up and redials immediately until it gets through. With the other modem you have to redial each time—and somebody with auto redialing can slip in ahead of you.

Mitey Mo is menu-driven. It lists the things you can do on the screen. Select a number and you're on your way. Since Automodem isn't menu-driven, you'll be hunting through the manual a lot.

Mitey Mo has only one switch, the customized software does the rest. Every family member will find it

easy to use. With the other modem you'll have to remember to check three switches, otherwise you may be answering when you mean to be originating.

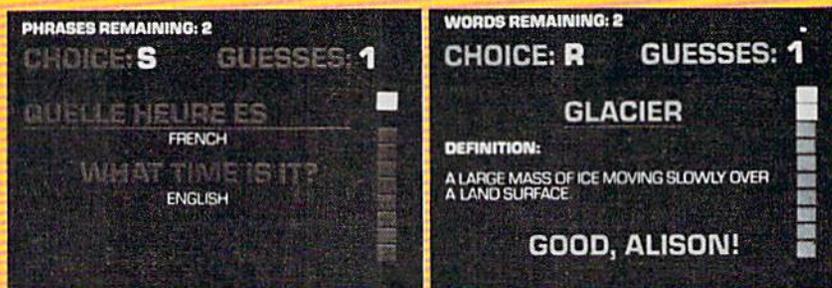
Mitey Mo gives you access to twelve pages of memory (24,000 bytes), so you can store data and review or print it later. The other modem doesn't let you store or print anything.

Mitey Mo is half the size of the other modem. The very latest technology allows miniaturization and increased reliability, as well. Mitey Mo is so reliable, we gave it a three-year warranty. The other modem gives 90 days, then you're on your own.

Not only will you find Mitey Mo mighty useful, you'll find it mighty reasonably priced. When you consider how much more you get for the money, there's really no other choice.



USI 71 Park Lane
Brisbane, CA 94005
(415) 468-4900
www.commodore.ca



The Matchmaker Series from American Educational Computer uses a variety of quiz formats to address most subjects in standard elementary and junior high curricula.

Ledger, Logo, Zork I, II, and III, Wizard of Wor, Gorf, Deadline, Magic Desk II, Easy Script/Plus, Easy Calc/Plus, and others.

A brand new offering exclusively for the Plus/4 is a series called "vertical market application templates." These disk-based programs are designed for specific applications such as manufacturing, the retail industry, personal financial planning, construction, maintenance and service, and professional services. A variety of new educational programs for the Plus/4 will also be available.

Disk-based software for the Plus/4 will run on the new parallel-interface SFS 481 disk drive (not 64 compatible). This drive is significantly faster than serial-interface 1541 disk drives. A new letter-quality daisywheel printer, the DPS 1101, is also designed for the Plus/4. It prints at 18 cps (characters per second) and features proportional spacing which can be selected manually from the front of the machine.

Several other printers were announced by Commodore: the MPS 802, a bi-directional impact dot matrix printer which can print at 60 cps; the MCS 801 color dot matrix printer (see "Horizons 64" elsewhere in this issue for a close-up look); and the MPS 803, a dot matrix printer designed for use with the Commodore 16.

Other new hardware includes the 1531 Cassette Unit

AEC Spelling, the new software teaches the spelling of over 4000 words and allows the user to enter additional words. Using a test-teach-test method of instruction, the spelling series addresses the needs of students in grades two through eight.

AEC also announced the second generation in its Matchmaker series on subjects in standard elementary and junior high school curricula. Aimed at Commodore 64 and other personal computer users at home, the series includes coverage of U.S. Government, World History, Biology, French, and Science I, II, and III. (American Educational Computer, Inc., 2450 Embarcadero Way, Palo Alto, CA 94303.)

DLM Teaching Resources (Developmental Learning Materials)—A publisher of educational materials for more than 15 years, DLM has numerous titles in its series of "Arcademic" Skill Builders and Drill Builders for grades one through six. Among its packages for the 64 are *Alien Addition*, *Meteor Multiplication*, *Demolition Division*, and *Dragon Mix*, all using colorful graphics and action game formats to interest children. (DLM Teaching Resources, P.O. Box 4000, One DLM Park, Allen, TX 75002.)

Koala Technologies—In association with Henson Associates, Inc. (creators of the Muppets) and Sunburst Communications, Koala (producer of the popular Koalapad) introduced a



The Muppet Learning Keys computer keyboard from Koala Technologies teaches the alphabet, numbers, colors, and shapes to children three years and older.

ATARI SOFT. All the hits your computer is missing.

It's showtime.

Time for ATARI SOFT™ to show you six exciting, brand new games that are destined for stardom.

Games that can be played on your Commodore 64, IBM PC and Apple II. (Some titles available on IBM PC jr. and VIC 20*)

First, there's *Gremlins*, based on the characters from the original film presented by Steven Spielberg.

Then there's *Crystal Castles*™ where Bentley Bear™ journeys through all sorts of tantalizingly difficult paths and ramps in his endless quest for gems.

In *Donkey Kong Jr.*™ by Nintendo,™ Junior tries to rescue his father against immense odds. And speaking of Donkey Kong, there's also *Mario Brothers*™ by Nintendo.™ This time, Mario and his brother Luigi battle creatures on four levels of floors, encountering all sorts of treacherous enemies.

In *Track And Field*™ you can compete by yourself or

head-to-head with another player. But each player must beat qualifying times, heights and distances before they can compete in each of the grueling six events.

Typo Attack is the much-acclaimed, fun-filled program that

allows you to enjoy developing your typing skills at any level.

And still playing to the delight of audiences everywhere are *Pac-Man*,™ *Ms. Pac-Man*,™ *Jungle Hunt*,™ *Battlezone*,™ *Donkey Kong*,™ by Nintendo,™ *Centipede*™ and *Pole Position*™.

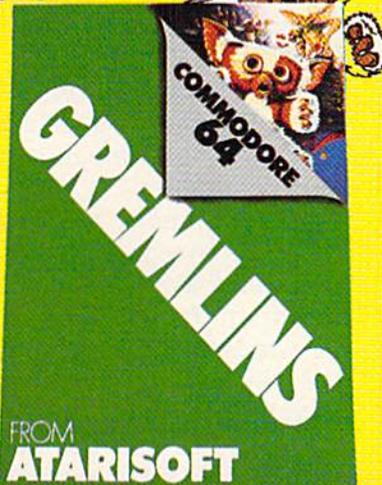
So, if you've been searching for ways to entertain your Commodore, Apple or IBM, treat it to one of the best shows in town, one of the hits from ATARI SOFT.

And don't forget the popcorn.

ATARI SOFT products are manufactured by Atari, Inc. for use with various computers and video game consoles. ATARI SOFT products are not made, licensed or approved by the manufacturer(s) of those computers and video game consoles.

*Titles available on IBM PC jr. are Ms. Pac-Man, Centipede, Donkey Kong, Moon Patrol™ and Typo Attack. Available on the VIC 20 is Typo Attack.

1. © 1984 Warner Brothers, Inc.; 2. Trademarks and © Nintendo, 1982, 1983; 3. Trademark of Konami Industry Co., Ltd., © 1983 of Konami; 4. Trademarks of Bally Mfg. Co. Sublicensed to Atari, Inc. by Namco-America, Inc.; 5. Trademark and © of Taito America Corporation 1982; 6. Engineered and designed by Namco Ltd., manufactured under license by Atari, Inc. Trademark and © Namco 1982; 7. Trademark and © Williams 1982, manufactured under license from Williams Electronics, Inc.



MARIO BROS.

ATARI SOFT
APPLE II

DONKEY KONG JR.

ATARI SOFT
IBM PC

TRACK & FIELD

ATARI SOFT
COMMODORE 64

CRYSTAL CASTLES

ATARI SOFT
APPLE II

TYPO ATTACK

ATARI SOFT
IBM PC

ATARI SOFT

SIX NEW HITS ARE
COMING SOON
TO A COMMODORE 64
SCREEN NEAR YOU.

and the 141 Color Monitor. Both are color coordinated (charcoal gray) to match the 16 and the Plus/4, but are also compatible with the VIC and 64.

Despite the variety of new hardware from Commodore and third-party companies, the mountain of new software drew the most attention at CES. Especially abundant are productivity software and new educational programs (see the accompanying article, "Learning, Learning Everywhere").

Commodore 64 owners can choose from a wide assortment of productivity packages—personal financial programs, data bases, word processors, spreadsheets, and more. Cardco introduced two packages, *File Now*, an easy-to-use data base, and *Graph Now/Paint Now*, a graphics package designed for generating line and bar graphs, and color art. Each is on disk and sells for \$39.95. They are fully integrated with Cardco's *Write Now!* word processor and round out their productivity series, which also includes *Mail Now* and *Spell Now*.

Creative Software announced an integrated productivity series which includes *Creative Writer*, *Creative Filer*, *Creative Calc*, and *Creative Finance*. Retail for each is \$49.95. The company also introduced *EasyDisk*, a menu-driven utility program for the 1541, which enhances and extends the drive's operating system. The price is \$29.95.

children's computer keyboard, Muppet Learning Keys, at CES.

The keyboard attracted much attention at the show, and is available for the Commodore 64 and Apple II family of computers. Preschoolers can learn basic letter, number, shape, and color skills by using the keyboard which plugs into the joystick port on the 64.

Popular Muppet figures such as Miss Piggy, Gonzo, and Kermit the Frog help to attract the child to learning. Each section of the school desk-like keyboard—ruler, water color set, penmanship slate, compass, eraser, and arithmetic exercise book—can be activated by the touch of a child's finger. (Koala Technologies Corp., 3100 Patrick Henry Drive, Santa Clara, CA 95052-8100.)

The Learning Company—One of the most respected names in quality educational software is the Texas-based firm, The Learning Company, most of whose titles have been for Apple computers.

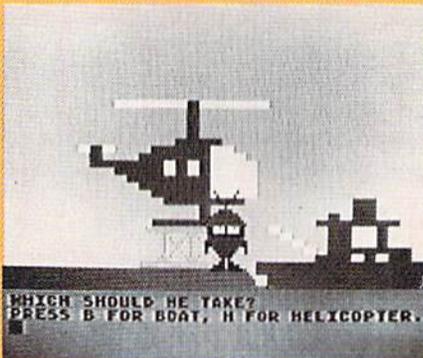
The company has now converted several titles for the 64. There are two programs in The Learning Company's Reading Series now available for the 64: *Juggles Rainbow*, in which children from three to six play with dancing rainbows and whirling windmills to learn reading and math readiness skills; and *Word Spinner*, in which youngsters from six to ten learn the basic building blocks of reading.

Also available for the 64 is *Addition Magician*, a game that teaches children from six to ten the basic concepts of addition and doubles as a number strategy game for older children; and *Moptown Parade*, an electronic logic and discrimination game. (The Learning Company, 545 Middlefield Road, Menlo Park, CA 94025.)

MECC (Minnesota Educational Computing Consortium)—One of the leading publishers of educational software for schools, MECC has more than two dozen educational titles for the 64 and several more coming out this fall. Among the courseware products to be released this fall for the 64 are *Adventures With Fractions*; *Earth Science*; *Pre-Reading*; *The Glass Computer*, which reveals and demonstrates how computers and the BASIC programming language work; *Outdoor Biology*, and *Electronic Money*.

MECC's products include both curriculum-based classroom software and a Home Software Library. (MECC, 3490 Lexington Avenue, St. Paul, MN 55112.)

Mindscape, Inc.—Mindscape is an electronic publishing subsidiary of SFN Companies, one of the nation's leaders in elementary and high school textbook publishing.



Tink's Adventure, part of *Mindscape's Sprout* line of software for children, incorporates five multilevel learning games as it teaches the alphabet and the computer keyboard.

OUR STORIES LACK IMAGINATION.



Because Infocom's interactive fiction is designed to run on *your* imagination.

That's precisely why there's nothing more interesting, challenging or interactive than an Infocom disk—but only after you've put it in your computer.

Once it's in, you experience something akin to waking up inside a novel. You find yourself at the center of an exciting plot that continually challenges you with surprising twists,



unique characters (many of whom possess extraor-

dinarily developed personalities) and original, logical, often hilarious puzzles. Communication is carried on in the same way as it is in a novel—in prose. And interaction is easy—you type in full English sentences.

But there is this key difference between our tales and conventional novels: Infocom's interactive fiction is active, never passive. The course of events is shaped by what you choose to do. And you enjoy enormous freedom in your choice of actions—you have hundreds, even thousands of alternatives at every step. In fact, an Infocom



interactive story is roughly the length of a short novel in content, but because you're actively engaged in the plot, your adventure can last for weeks and months.

Find out what it's like to get inside a story. Get one from Infocom. Because with Infocom's interactive fiction, there's room for you on every disk.

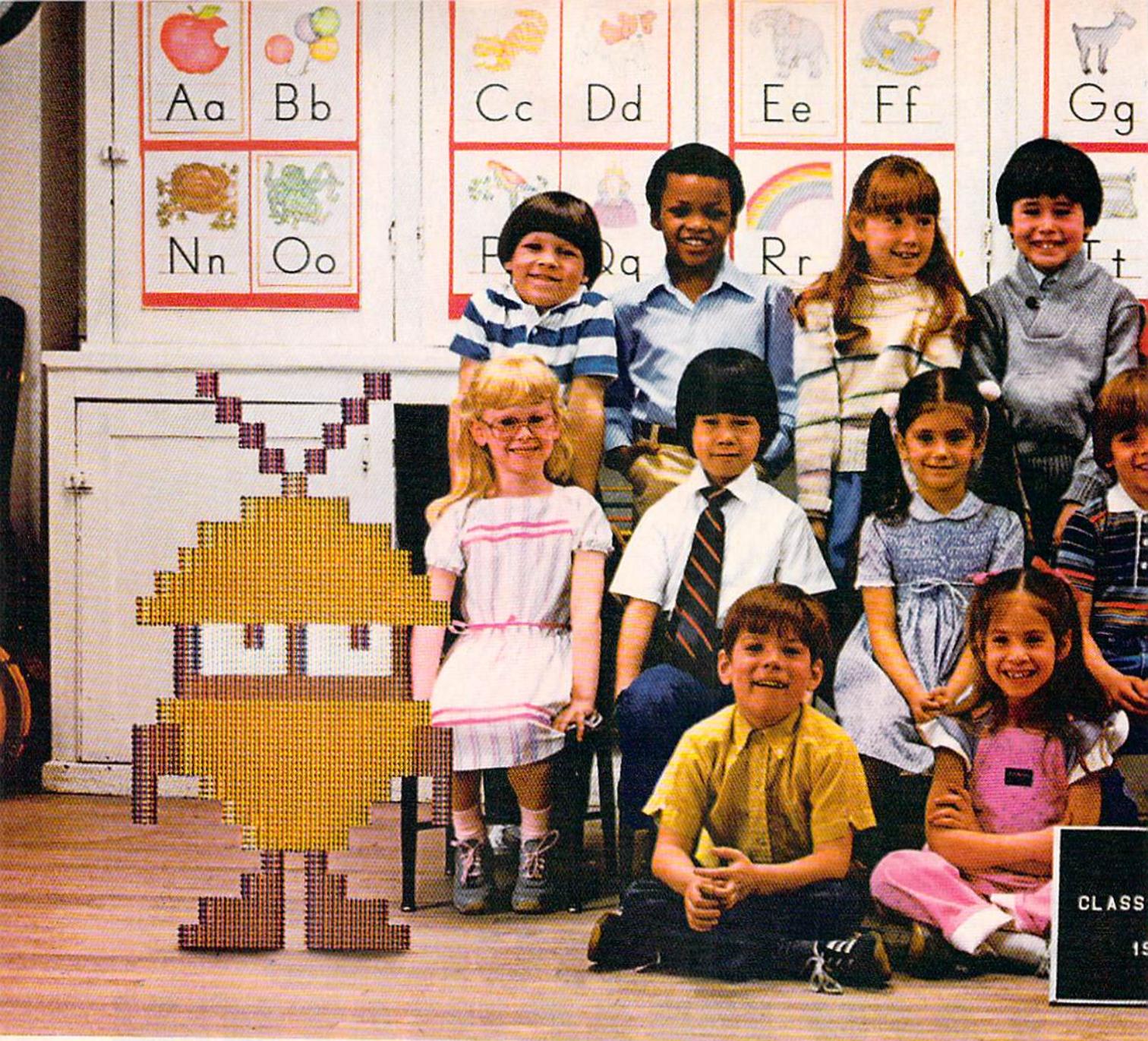


INFOCOM™

For your: Apple II, Macintosh, Atari, Commodore 64, CP/M 87, DECmate, DEC Rainbow, DEC RT-11, HP 150 & 110, IBM PC* & PCjr*, KAYPRO II, MS-DOS 2.0*, NEC APC, NEC PC-8000, Osborne, TI Professional, TI 99/4A, Tandy 2000, TRS-80 Color Computer, TRS-80 Models I & III.

*Use the IBM PC version for your Compaq and the MS-DOS 2.0 version for your Wang, Mindset, Data General System 10, GRiD and many others.

www.commodore.ca



Modern times have create

We've cleverly disguised them as funny creatures from a computer game. But underneath the funny exterior is one of the most serious approaches to home education you've ever heard of.

INTRODUCING SPROUT™ SOFTWARE. GAMES THAT TEACH.

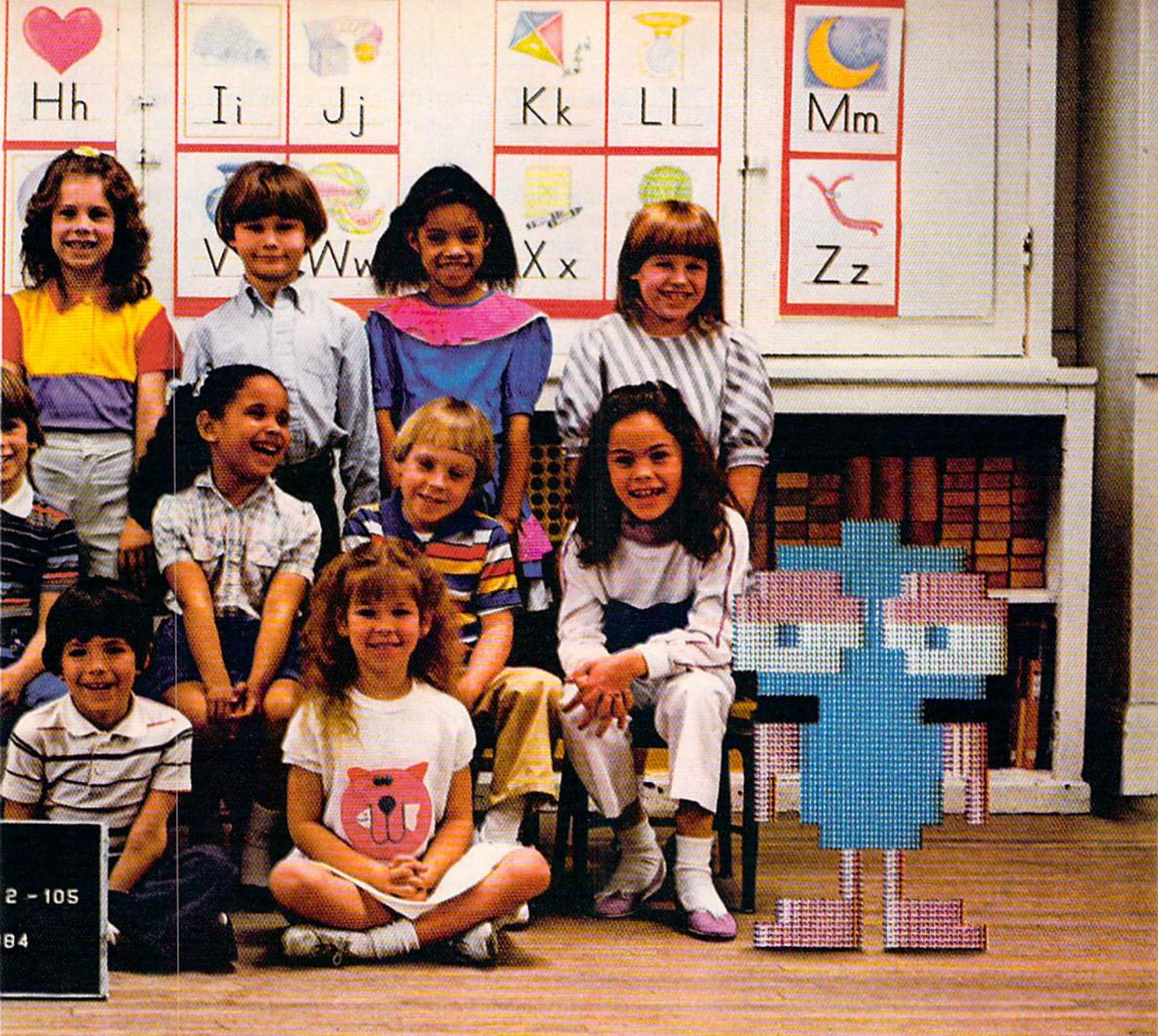
Your kid's new teachers are called Tink and Tonk. They come from Sprout. Software for kids 4 to 8.

The beauty of Sprout software is how

entertainment is balanced with a healthy dose of education.

While kids are having fun at home, they're actually reinforcing what they've learned at school. Things like the alphabet, spelling, vocabulary, counting, adding, and pattern recognition.

You'll also like how Sprout prevents boredom. Our games grow up, instead of wear out. As kids get older, the game adjusts and gets harder. Because there are many



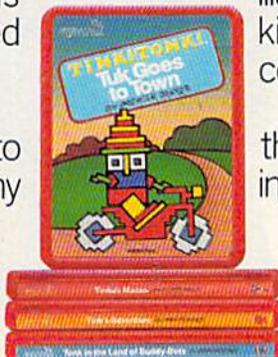
d a new breed of teachers.

variations and many decisions to make.

Knowing how to do all this isn't something Sprout learned overnight.

You see, we've got a hundred years of experience to lean on. (Our parent company is SFN, the country's #1 textbook publisher for elementary and high schools.)

We've also got the expe-



rience of Mercer Mayer, who has written or illustrated 80 children's books. He dazzles kids with ideas and pictures that keep them coming back for more.

With TINK!TONK!™ software, kids see that learning can be more fun than destroying space creatures.

sprout

Games that grow up. Instead of wear out.

Compatible with Atari®, Commodore®, Apple®, and IBM.*

www.commodore.ca

HomePak, a three-in-one utility program from Batteries Included, offers *HomeText*, a word processor, *HomeFind*, a data base, and *HomeTerm*, a terminal program also designed for use with the major information networks. *HomePak* comes on a single disk and sells for \$49.95. Also new from Batteries Included is *Stress Manager*, a bio-feedback monitoring system, which includes software, an interface between the user and the computer, and an audio cassette. The software analyzes fluctuations in the skin's electrical conductivity and displays graphs which can then be interpreted by the user. It sells for \$79.95.

Another new three-in-one integrated package is *TRIO* from Softsync. This disk-based program includes a word processor, data base, and spreadsheet, and sells for \$69.95.

Professional Software launched their Soft Fleet series designed just for the 64. It includes *Fleet Writer*, *Fleet Speller*, and *Fleet Filer*. Prices will be announced.

An interesting product from HesWare is *Graphics Basic*, a utility which extends BASIC with 48 commands. It can be used to design business graphs or games, and includes the capability for split screens and windows. The price is \$29.95.

Continental Software's new Get Rich! Series is a set of five programs—*Strategies*, *Real Estate Planning*, *Insurance Planning*, and *Retirement Planning*—each

In its educational software, Mindscape has three product lines: the Sprout series for children 4 to 8, the Pixelwerks series for children 8 to 12, and a teen-to-adult line of products as well.

The popular Tink!Tonk! series—with Tink and his friends Tinka and Tuk and his dog, Tinkypup—are a part of the Sprout line of software. They were written by award-winning author and illustrator Mercer Meyer and developed by Angelsoft, Inc., for Mindscape. (Mindscape, 3444 Dundee Road, Northbrook, IL 60062.)

Prentice-Hall (Arrakis Advantage)—The Canadian-based Arrakis Systems, Inc., has developed a line of high-quality educational curriculum-based home software which will be distributed by Prentice-Hall.

The first 18 modules in their line of Commodore 64 software include algebra, biology, chemistry, geometry, physics, and statistics. Eventually, a complete curriculum will be developed by Arrakis. (Prentice-Hall, Inc., Rt. 9W, Englewood Cliffs, NJ 07632.)

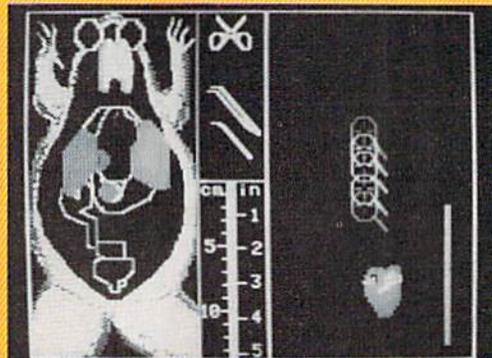
Scarborough Systems, Inc.—This well-known Tarrytown, NY-based company has concentrated on producing a limited line of high quality software, from which several programs are available for the Commodore 64.

Included are *Songwriter*, a music education program for ages five to adult; *Patternmaker*, an art construction set for ages six to adult (available in September); *MasterType*, a popular typing tutorial for ages six to adult; and *Laser Shapes*, a math game using laser beams, color, and sound, for ages 7 to 15 (available in September). (Scarborough Systems, Inc., Tarrytown, NY 10591.)

Scholastic Software—A division of Scholastic, Inc., a major educational publisher for over 65 years, Scholastic Software has developed a line of "fun-learning" game-oriented educational packages.

Among its new products at CES, Scholastic introduced *Operation: Frog*, an interactive computer simulation of a frog dissection, which was developed by Interactive Picture Systems. It will be available for the 64 later this fall.

Scholastic also announced at CES that its geography action game for children nine years and up, *Agent USA*, developed by educational software designer Tom Snyder, has been made available for the 64. And the reading adventures program, *Tales of Discovery* (for children 9 to 13), will be available for the 64 in early 1985. (Scholastic, Inc., 730 Broadway, New York, NY 10003.)



A computer simulation of a frog dissection is part of the focus of *Operation: Frog* by Scholastic Software, an entertaining introduction to biology.

"Now Your Commodore 64™ Can Print Like a Pro!"



Grappler CD™ Printer Interface

The Revolutionary Printer Interface for the Commodore 64™

A New Era in Commodore Printing Power.

Grappler CD offers the first complete answer to your printer interfacing requirements, with many powerful capabilities unique in the Commodore marketplace. Complete signal translation allows many popular name brand printers to operate perfectly with the Commodore 64, or to imitate Commodore's own printer. Even Commodore's graphic character set can be reproduced on Epson, Okidata, Star, ProWriter and other popular printers.

Exclusive Grappler CD features provide a variety of graphic screen dumps, text screen dumps and formatting. No other Commodore interface can offer this.

If you own a Commodore 64...

If you're serious about quality, trouble free printing... You need the Grappler CD.

Contact your nearest Commodore dealer or call Orange Micro for a dealer near you.

Commodore 64 and Commodore 1525 are trademarks of Commodore Electronics Limited. Epson is a registered trademark of Epson America, Inc.

A Uniquely Intelligent Interface:

- Prints Screen Graphics Without Software
- Graphics Screen Dump Routines Include Rotated, Inversed, Enhanced and Double Sized Graphics.
- Full Code Translation From Commodore's PET ASCII to Standard ASCII, the Language of Most Printers.
- Complete Emulation of the Commodore 1525 Printer for printing of Commodore's Special Characters.
- Dip Switch Printer Selection for Epson, Star, Okidata, ProWriter and other popular printers.
- Conversion Mode for Easy Reading of Special Commodore Codes.
- Text Screen Dump and Formatting Commands
- 22 Unique Text and Graphics Commands

 **Orange Micro**
inc.

1400 N. LAKEVIEW AVE., ANAHEIM, CA 92807 U.S.A.
(714) 779-2772 TELEX: 183511CSMA

© Orange Micro, Inc., 1983

www.commodore.ca

selling for \$49.95.

Cymbal, a Canadian software company new to the U.S., introduced two new series for the 64: the Productivity Series (*Tutor Plus*, a typing tutor which offers practice on 50 different business letters, *Data Plus*, a data base, *Calc Plus*, a spreadsheet, and *The Organizer*, a finance and scheduling program integrated with *Calc Plus*); and the Business Series (*General Ledger*, *Accounts Receivable*, *Accounts Payable*, *Inventory Control*, and *Invoice Writer*). Programs in the Productivity Series sell for \$39.95 each except for *Calc Plus* (\$49.95). Programs from the Business Series are \$49.95 each.

Commodore 1541 owners will be interested in *Kwik-Load!* from Datamost. It reprograms the Disk Operating System (DOS) for 300% faster loads and copies, and offers a variety of disk editing features. It retails for \$19.95.

There were enough new games announced at CES to cater to nearly every taste—so many, in fact, that space limits even a mention of all of them. Several companies introduced full lines of new arcade software for the 64. Parker Brothers and Sega introduced several translations of popular video arcade games. Brøderbund, Sierra, Epyx, Datasoft, Creative Software, Quicksilva, Datamost, Tri-Micro, and newcomer K-Tel introduced a variety of arcade-

Sunburst Communications, Inc.—"Bright ideas for learning" is the slogan of this New York State-based company which began 12 years ago as a filmstrip publisher and direct mail marketer.

Since entering the educational software field, Sunburst has won awards for its software, and several titles were announced for the 64 at CES. Included were *The Factory* (ages nine to adult), a problem-solving and planning game set in a factory; *The Pond* (ages seven to adult), an experimentation and pattern recognition game; *M-ss-ng L-nks* (ages nine to adult), a reading-writing-spelling game; and *Challenge Math* (ages seven to eleven), a program to help average and slow learners with math facts. (Sunburst Communications, Inc., Pleasantville, NY 10570.)

While space does not permit a listing of all the companies which featured educational software for the Commodore 64, the following companies all had significant products in this area. Many of these companies and their products will be featured in upcoming issues of the GAZETTE. Further information is available directly from the companies:

Alpha Software (Encino, CA), Batteries Included (Costa Mesa, CA), Brøderbund (San Rafael, CA), CBS Software (Greenwich, CT), Commodore Software (West Chester, PA), Creative Software (Sunnyvale, CA), Cymbal Software (Butler, NJ), DesignWare (San Francisco, CA), Discovery Educational Software (Buffalo, NY), First Star Software (New York, NY), Fisher-Price (Cambridge, MA), Futurehouse (Chapel Hill, NC).

Also, Human Engineered Software (Brisbane, CA), Joyce Hakansson Associates (Berkeley, CA), Krell Software Corporation (Stony Brook, NY), Microlab (Highland Park, IL), Random House Software (New York, NY), Screenplay (Chapel Hill, NC), Sierra (Coarsegold, CA), Simon & Schuster Electronic Publishing Group (New York, NY), Springboard Software (Minneapolis, MN), Timeworks (Deerfield, IL), Weekly Reader [Xerox] (Middletown, CT).

style and action/strategy games. Activision, another newcomer to the 64 market, launched six new titles.

Trivia buffs will be interested in several new games, each somewhat different from the others. Screenplay's *The Trivia Arcade* combines fast action, music, and trivia questions. It's for one to four players and sells for \$34.95. For \$29.95, you can purchase *Question Pack I* to add thousands of new questions. *Trivia Mania* from Professional Software is more straightforward and can accom-

modate up to eight players. The game also offers a handicapping feature so novices can play with experts. Price is \$39.95. Cymbal is offering a whole series—*World Facts*, *Sports*, *Entertainment*, *General*, and *Children's Trivia*—each for \$19.95; and for \$29.95, *Master Trivia*, which can be used alone or with the previously mentioned specialty games. If you'd rather have a little of each of these categories, there's *Entertainment Tonight* priced at \$32.95. Each of these games can be played by up to six players.

HEROES APPLY WITHIN.

QUICKSILVA

All Titles available from:

QUICKSILVA INC. 426 West Nakoma San Antonio Texas 78216. (512) 340 3684.

AQUAPLANE

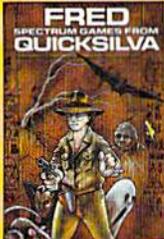
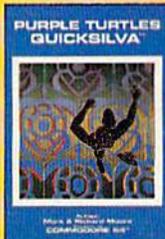
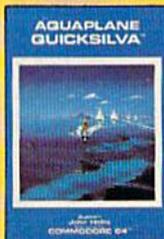
ULTISYNTH

PURPLE TURTLES

ANT ATTACK

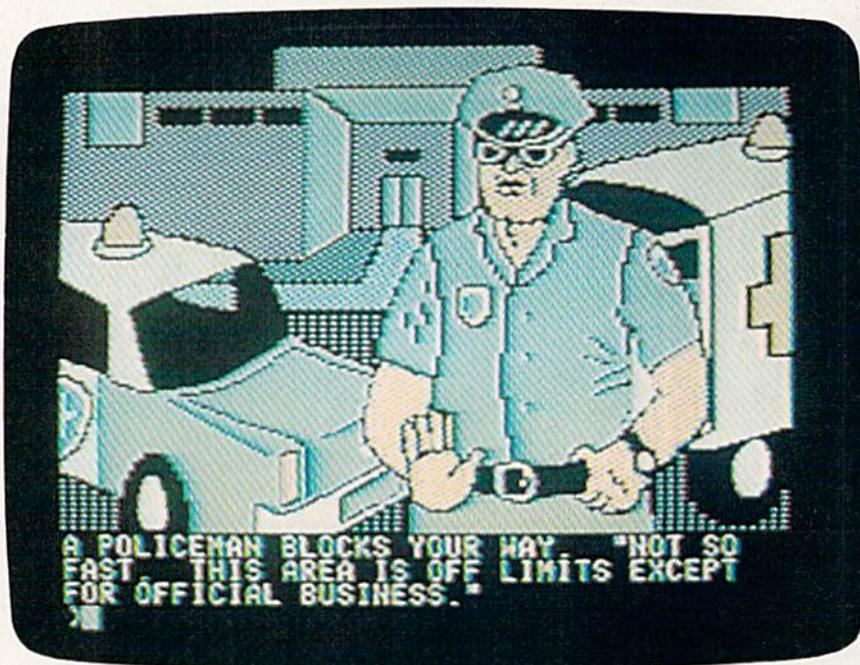
FRED

BUGABOO



Send for details of
TIMEX/SINCLAIR™, ATARI™,
VIC20™ and ACORN™
Software

Available on the COMMODORE 64™. Disc or Cassette. www.commodore.ca



Text and graphics combine with an exciting adventure scenario in Amazon from the new Trillium series.

The most innovative new "game" concept at CES belongs, perhaps, to Spinnaker's new software divisions, Trillium and Windham Classics. Both of these new product lines are billed as a series of interactive adventures. They're graphics/text adventures, but more than that. Trillium has worked closely with some of the most renowned science fiction authors (Arthur C. Clarke, Ray Bradbury, and Michael Crichton to name a few) to create software versions of their novels. The player enters the scenario of the novel as the protagonist and interacts with the characters and environment. Available titles are *Fahrenheit 451*, *Rendezvous With Rama*, *Dragonworld*, *Amazon*, and *Shadowkeep*. Each package costs \$39.95 and includes game background, a

WE'LL BACK YOU UP!

ATTENTION COMMODORE 64 OWNERS

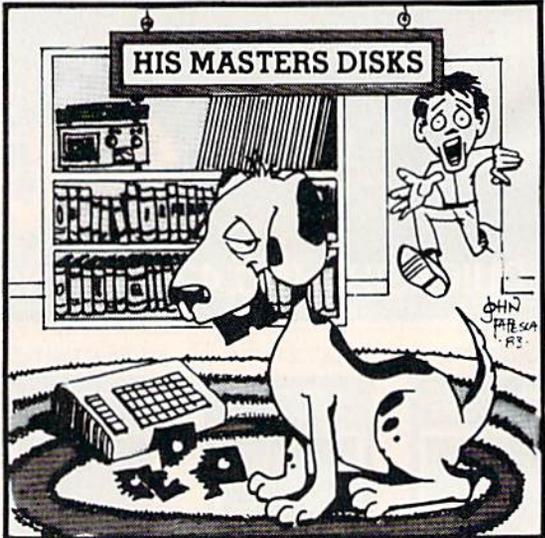
If you own a disk drive then you'll need "The Clone Machine". Take control of your 1541 drive. NEW IMPROVED WITH UNGUARD.*

Package includes:

- 1.) Complete and thorough users manual
- 2.) Copy with one or two drives
- 3.) Investigate and back-up many "PROTECTED" disks
- 4.) Copy all file types including relative types
- 5.) Edit and view track/block in Hex or ASCII
- 6.) Display full contents of directory and print
- 7.) Change program names, add delete files with single keystroke
- 8.) Easy disk initialization
- 9.) Supports up to four drives



\$49⁹⁵



"Should've made a back-up with the Clone Machine."

Dealers & Distributors
Inquiries Invited

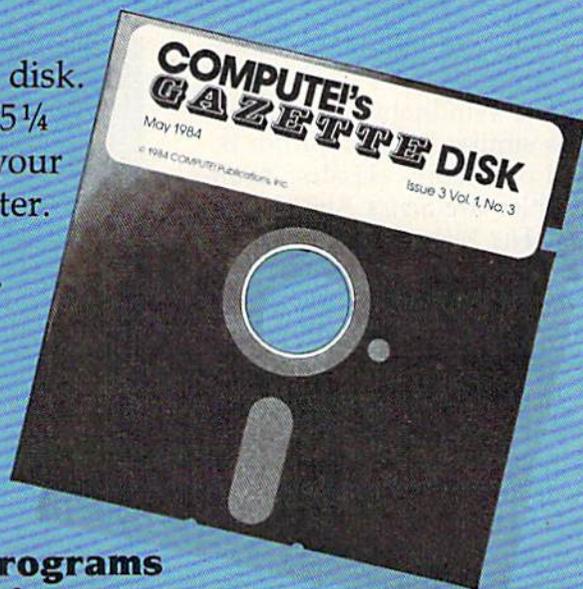
CALL (201) 838-9027



1342 B Rt. 23
Butler, N.J. 07405

COMPUTE!'s GAZETTE DISK

COMPUTE!'s GAZETTE is now available on disk. Each month you can receive a fully tested 5¼ inch floppy disk which will run on either your Commodore 64 or VIC-20 personal computer. Each issue of COMPUTE!'s GAZETTE DISK will contain all the programs which appear in the corresponding issue of COMPUTE!'s GAZETTE magazine. You'll save hours of typing time and gain hours of enjoyment with all the quality programs found each month in COMPUTE!'s GAZETTE.



Here are just a few of the quality programs which appeared in the August 1984 issue:

- *Campaign Manager*—A two-player national election simulation written entirely in machine language. Decisions on traveling, campaigning, fundraising, TV appearances, and more determine if your candidate makes it all the way to the White House. For the 64.
- *Disk Purge*—Get rid of unwanted files or recover deleted files with this utility for the VIC and 64.
- *Sprite Magic*—A feature-packed sprite editor for the 64 that takes the tedium out of sprite design.

Written in machine language.

- *Balloon Blitz*—A colorful action strategy game in which your anti-tank balloon is all that's left to protect your army's flank. For the VIC and 64.
- *Error Trapping*—With this short routine added to your BASIC programs, you can pinpoint error type and line number. For the VIC and 64.

All the programs included in each issue of COMPUTE!'s GAZETTE are available on disk. Order yours today.

Ordering Information

To Subscribe:

Return the attached postpaid card or call COMPUTE!'s GAZETTE TOLL FREE 800-334-0868 (in North Carolina 919-275-9809). All orders must be prepaid—send check or money order or charge to Visa, MasterCard, or American Express.

Individual Issues:

Individual issues of the GAZETTE DISK can be ordered for \$7.95 (in the US and Canada add \$1 per issue for shipping and handling. Outside the US and Canada add \$3 per issue). Individual issues can be ordered by calling TOLL FREE 800-334-0868 (in North Carolina call 919-275-9809), or by sending your prepaid order to GAZETTE DISK, P.O. Box 5406, Greensboro, NC 27403.

Subscription Rates:

One year (12 disks) subscription \$69.95 (add \$36 shipping and handling outside the US and Canada)

Two year (24 disks) subscription \$129.95 (add \$72 shipping and handling outside the US and Canada)

word list, and hint book. More titles are planned.

The Windham Classics Series is similar in concept but is based on literary classics. Available titles are *Swiss Family Robinson*, *The Wizard of Oz*, *Gulliver's Travels*, and *Treasure Island*. Designed for ages 10 to adult, each program will sell in the \$30 to \$40 range.

In the same vein is Infocom's new *Seastalker*, an interactive adventure in the tradition of Jules Verne's *20,000 Leagues Under The Sea*, designed for children 9 and up. But the complexity will appeal to adults, too. It's available for \$39.95.

Another interactive adventure series called Time Travelers was introduced by Imagic. *The Time Machine*, based on H.G. Wells' novel, and *Another Bow*, where the player assumes the role of Sherlock Holmes, are scheduled for release in the Fall. Price is not yet determined.

Archon fans will be delighted by the sequel, *Archon II: ADEPT*. Written for Electronic Arts by the Free Fall Associates, authors of the original best-seller, *ADEPT* picks up where *Archon* left off. It's priced at \$40.

Access Software's follow-up to *Beachhead* is *Raid Over Moscow*, a multi-scenario action/strategy game where the player must race against the clock to prevent a nuclear holocaust by flying into Russia and dismantling missile launch sites. It's \$39.95.

Three new titles from Avalon Hill are *Market Forces*, a world economics strategy game for one to four players (\$16 for tape, \$21 for disk), *Ripper!*, a



The full-color Okimate 10, a price breakthrough in printers.

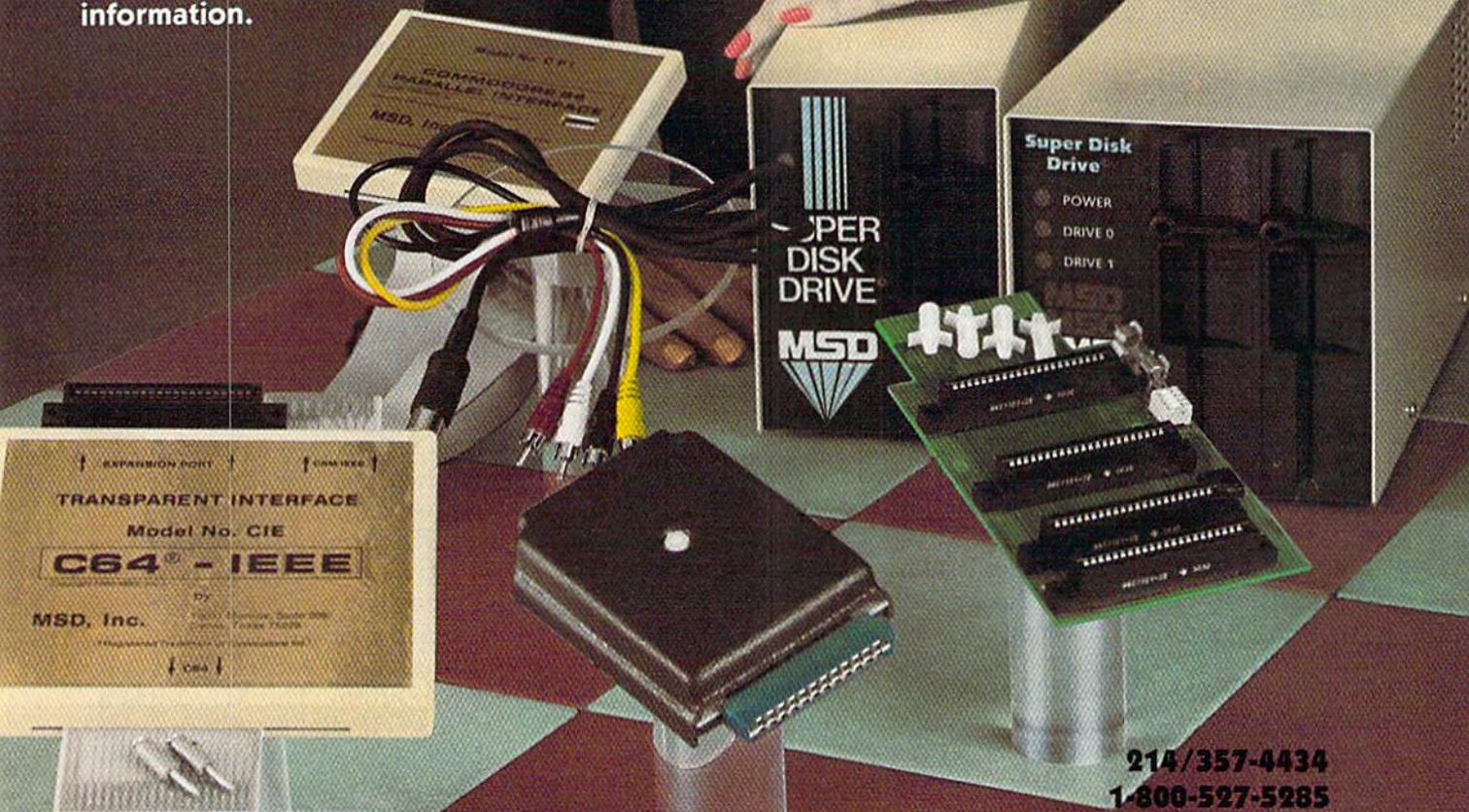
Move into serious computing with the Commodore you already own by simply expanding your computer's capability and speed with MSD products.

No need to move on to an expensive PC. No need to move on to a computer you will have to take precious time to learn.

Just increase your Commodore's speed, memory and productivity with MSD's highly reliable peripherals. Move into expanding your computer into a powerful business system ... and use the time and money you save for a more important investment.

Call or write today for this important product information.

*It's
your
move.*



214/357-4434
1-800-527-5285

MSD

SYSTEMS, INC.

10031 Monroe Dr., Suite 200 • Dallas, Texas 75229

www.commodore.ca



Bright colors and precise resolution are displayed in this printout from the Okimate 10.

mystery adventure based on Jack the Ripper (\$25, disk only), and *Panzers East!*, a historical simulation of the 1941 German invasion of Russia (\$25 for tape, \$30 for disk).

Two new keyboards for the 64 were introduced at CES, and both appear to be exceptional values for the price. The Incredible Musical Keyboard from Sight & Sound overlays the 64's keyboard and is controlled by menu-driven disk-based software. Musical note stickers for each of the keys are included for beginners, as well as a song book and chord book. The keyboard is priced at \$39.95. A variety of music software, which can be used with or without the keyboard, is available also. The most impressive of these is the Kawasaki Synthesizer, a double-disk program. This program combines music with beautiful animated graphics. The screen interacts with the music, which can be both enhancing and distracting. The Kawasaki Synthesizer offers 99 preset sounds and a lot of good music with

one-key commands. It's \$49.95.

The Melodian Keyboard (from Melodian) looks like a portable organ. The 18-inch, 37-key keyboard has a three-octave range. It plugs directly into the 64 and with the appropriate software produces sounds ranging from strings, brass, and woodwinds to synthesizers. Notes are displayed on the screen as they are played. Aimed at the home and school markets, Melodian supports the keyboard with three menu-based software packages, *MelodyMaster*, *RhythmMaster*, and *ConcertMaster*. The latter is included when you purchase the keyboard. The price is \$200.

The most exciting new hardware entry for the 64 at CES had to be Okidata's new dot-matrix color printer, the Okimate 10. It prints text or color graphics at 60 cps, has four character sizes, isn't fussy about the paper it prints on (thermal or plain), and has true lowercase descenders. The Okimate 10 uses a thermal transfer process in which the printhead (a silicon chip with a

small heating element embedded) moves across the page, comes in contact with the ribbon, and melts the ink coating off the ribbon onto the paper. It comes with a color and black ribbon cartridge, paper, a connector cable, a Plug 'n Print module (the interface), a manual, and software (designed primarily for those using a printer for the first time). What's even more eye-catching is the price: \$239.

Another price breakthrough is Cardco's new monitor tuner, which converts a composite monitor (such as Commodore's 1701/1702) into a TV. Cardco has two versions, the MT/1 and the MT/2, for \$199.95 and \$99.95, respectively. The MT/1 is a remote control, 60-channel cable ready tuner which features a digital readout for precise tuning and separate audio and video output. The MT/2 has a UHF/VHF dial on the front of the tuner and a cable/antenna input. Both tuners have computer/TV switches and can be used with color or monochrome monitors.

ADULT FUN!

COMPUTRivia™



COMPUTRIVIA WILL CHALLENGE THE FRIENDS YOU CARE TO ENTERTAIN

6 players or teams can play in a comfortable, party atmosphere. NO CROWDING THE KEYBOARD . . . sit back and enjoy!

QUESTIONS, HINTS AND ANSWERS FROM 8 GREAT CATEGORIES

Over 1300 contemporary non-repeating questions about interesting people, places and events. Time running out? Need a hint? No problem . . . Want your favorite category? Choose it . . . if you can.

A PERSONABLE GAME WITH PLENTY UP ITS SLEEVE

Computrivia knows your name, watches your score, provokes and jokes as you play. With spontaneity and wit, it tells you who's ahead and who to watch out for!! Bonus situations too!!

ALL AT THE PUSH OF A SINGLE BUTTON

For questions, hints, answers and scores. NO MORE KEYBOARD BLUES!

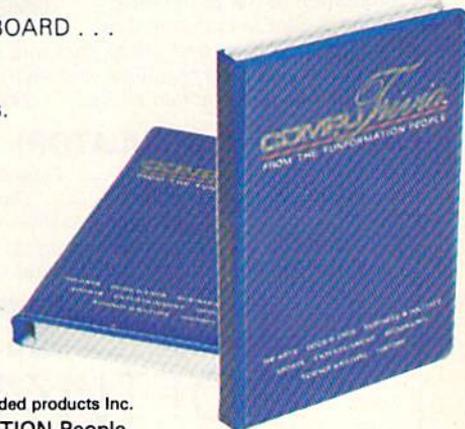
'FUNFORMATION'

Facts to discover. Fun you'll enjoy.

COMPUTRivia™

by

EXTEK computer aided products Inc.
The FUNFORMATION People
P.O. Box 305, Oakville, Ontario



For the Apple II & IIC, Commodore-64, IBM-PC, PCjr. and their respective compatibles, see your dealer or contact Extek computer aided products Inc.
Apple is a Registered Trademark of Apple Computer, Inc. Commodore-64 is a Registered Trademark of Commodore Electronics Ltd.
IBM is a Registered Trademark of International Business Machines Corp. COMPUTRIVIA is a Trademark of Extek Computer Aided Products Inc.

www.commodore.ca

We've Got People Talking

REVIEWERS SAY:

"This is the best typing tutor we have seen yet; ★★★★★"

INFO-64

"Computer aided instruction at its best." Commander

"This is an excellent program that makes typing practice an enjoyable pastime instead of boring drudgery."

DILITHIUM PRESS

Rated the BEST educational program for the VIC 20
Creative Computing

CUSTOMERS SAY:

"... delighted with my son's progress ... he is the only one in his second grade class who touch types at the computer."

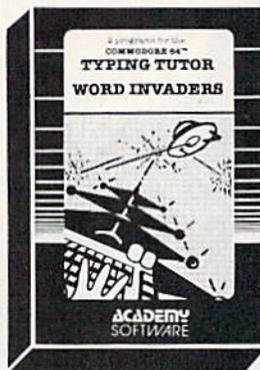
"Your Typing Tutor is an excellent program ... our 4 children literally wait in line to use it."

"Thoroughly satisfied, can't believe how fast I've learned to type. I've never typed before."

In daily use by schools across the USA.

TYPING TUTOR + WORD INVADERS

Commodore 64 Tape \$21.95
Commodore 64 Disk \$24.95
VIC 20 (unexpanded) Tape \$21.95



REALISTIC AIRCRAFT RESPONSE

"Has a quality of realism which sets it apart from others, even those I've tested in flight school."

Compute's Gazette

"Great program!" INFO-64

"It is tremendous fun."

Compute's Gazette

"Flight tested by an air traffic controller, two skilled pilots and an elementary school class. Highly recommended by all."

Midnite Gazette

"This is an unbelievably realistic simulation of the difficulties facing a pilot in instrument flying. I'm a 747 pilot and I think that this simulation could do a lot to improve the reactions and instrument scan habits of even very experienced pilots." 747 pilot



IFR (FLIGHT SIMULATOR)

Commodore 64 Tape or Disk \$29.95
VIC 20 (unexpanded) Cartridge \$39.95

JOYSTICK REQUIRED

Shipping and handling \$1.00 per order. CA residents add 6% tax.



ACADEMY SOFTWARE

P.O. Box 6277 San Rafael, CA 94903 (415) 499-0850

Programmers: Write to our New Program Manager concerning any exceptional Commodore 64 program you have developed.

With new products continuing to support the 64, it's hard to imagine a machine this popular becoming obsolete. Yet because the industry is so new and has gone through some drastic changes, it's easy to wonder about the future of the 64. Eventually, it will follow the VIC out the back door. A hint of what's to come was in the wind at CES.

Sinclair's new 16/32-bit computer, the QL, uses a 68008 microprocessor (virtually the same chip as found in Apple's Macintosh) and offers 128K RAM expandable to 640K. It comes with a built-in word processor, spreadsheet, data base manager, and graphics package, two built-in 100K "microdrives," (high speed endless-loop tape drives) and two RS-232C interfaces. Its 32K ROM operating system allows for multi-tasking—the ability to run several programs individually and simultaneously. The QL ("Quantum Leap") weighs three pounds and will be available this Fall for \$499, mail order only. The question of software support for this powerful, new machine from England remains, but it clearly demonstrates what kind of power the next generation of computers will offer at a reasonable price.

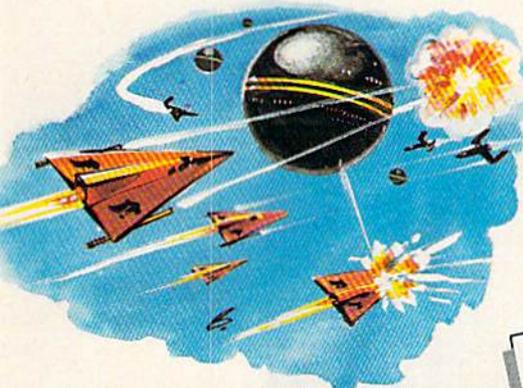
On the other side of the globe, in Japan, another kind of computer is gaining fast—those conforming to the MSX standard. MSX is an internal hardware architecture standard developed by Microsoft, and Japanese/ Korean computers adopting it will probably hit the U.S. market sometime in 1985. The potential marketing strength of the MSX, built around the eight-bit Z-80 processor, is that companies can license the architecture, house it in their own keyboard, and thus create a computer which is hardware- and software-compatible with any other MSX computer. Any software written for, say, a Panasonic MSX computer runs fine on a JVC or Spectra-video MSX machine. If Microsoft is successful in establishing the MSX as an industry standard, we could see a massive wave of change in the home computer market. But, for now, enjoy the feast. ☺

Get more out of your Commodore with

COMPUTE!'s GAZETTE

For Owners And Users Of Commodore VIC-20™ And 64™ Personal Computers

More fun



Martian Prisoner, The Viper, Skydiver, Snake Escape, Demon Star, Cyclon Zap and Oil Tycoon are just a few of the ready-to-run games you'll find exclusively in COMPUTE!'s Gazette each month. Just type in the programs and watch your screen explode with colorful new computer game excitement.

More programs

Programs to help you balance your checkbook, store your addresses, keep tax records, manage your personal business. You can create your own programs and games, improve your word-processing, spreadsheets and data base management, load and run faster with 64 Searcher, VIC/64 Program Life-saver, Quickfind, Word Hunt, Disk Menu, VIC Timepiece, Automatic Proofreader and more.



More buying guidance

You'll profit from comprehensive reviews of everything from data-quality cassette tapes to software to graphics plotters and modems. Virtually anything that's compatible with your Commodore is reported on in COMPUTE!'s Gazette. With this kind of expert help, every computer purchase you make can be the right one!

More challenge

Ready to tackle more advanced projects? In COMPUTE!'s Gazette you'll learn How to Use Tape and Disk Files. How to Program the Function Keys. Writing Transportable Basic. How to Make Custom Graphics Characters. New Ways to Enliven Programs with Sound. One Touch Commands for the 64. How to use Machine Language. Speeding up the VIC 20—and much more!

Children will learn and develop new skills with States & Capitals Tutor, Wordmatch, Munchmath, Wordspell, Connect the Dots, Aardvark Attack and Alfabug. *Computing for Kids*, a regular monthly feature, will uncover new ways to involve your children in computing.



More savings

You can save up to 40% off the newsstand price of COMPUTE!'s Gazette by subscribing now. All you do is mail the coupon below or the postpaid card bound into this issue. But don't delay! Subscribe now to start receiving every issue of COMPUTE!'s Gazette.

SAVE UP TO 40%
ON COMPUTE!'s
GAZETTE

Yes! Start my subscription to COMPUTE!'s Gazette at big savings off the newsstand price:

1 year \$24 — Save \$10
 2 years \$45 — Save \$24
 3 years \$65 — Save \$36

Name _____
Address _____
City _____
State _____ Zip _____

Payment enclosed Bill me

Charge my
 Visa MasterCard Am. Ex.

Account No. _____ Exp. Date _____

COMPUTE!'s GAZETTE CALL TOLL FREE 800-334-0868
P.O. Box 961, Farmingdale, N.Y. 11737

The Designers Behind *MovieMaker*

Kathy Yakal, Editorial Assistant



Guy Nouri and Eric Podeitz (second and third from left, second row back) and other staff members of Interactive Picture Systems.

Electronic construction sets—programs which allow non-programmers to design games or programs—are finding their niche in the software market. Bill Budge pioneered this new genre with *Pinball Construction Set*. Now there's *MovieMaker*, recently released by Reston Publishing for the Commodore 64, which turns your computer into an animation studio.



Coming in for a landing: these three frames are part of an animated sequence created with MovieMaker.

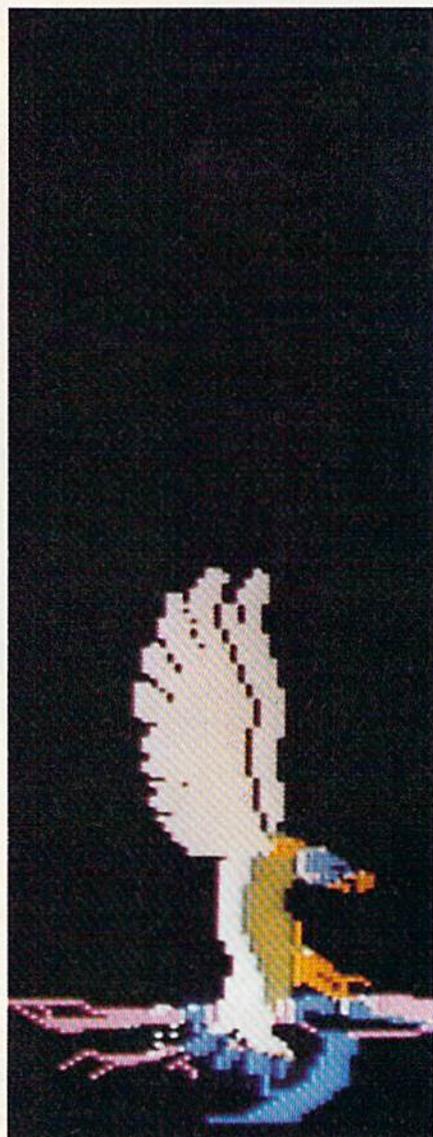
About the time that the early filmmakers were struggling to combine sound and moving pictures, a young man named Walt Disney—using techniques that had been discovered in the mid-nineteenth century—began producing animated cartoons. Free of the restrictions of reality that bound and frustrated motion picture makers, Disney sought to create his own imaginary characters and worlds.

Creating cartoons in those days was slow, painstaking work. It involved drawing many, many versions of a particular scene, each just a fraction of a second later in the action, then “flipping” them very rapidly to offer the illusion of motion.

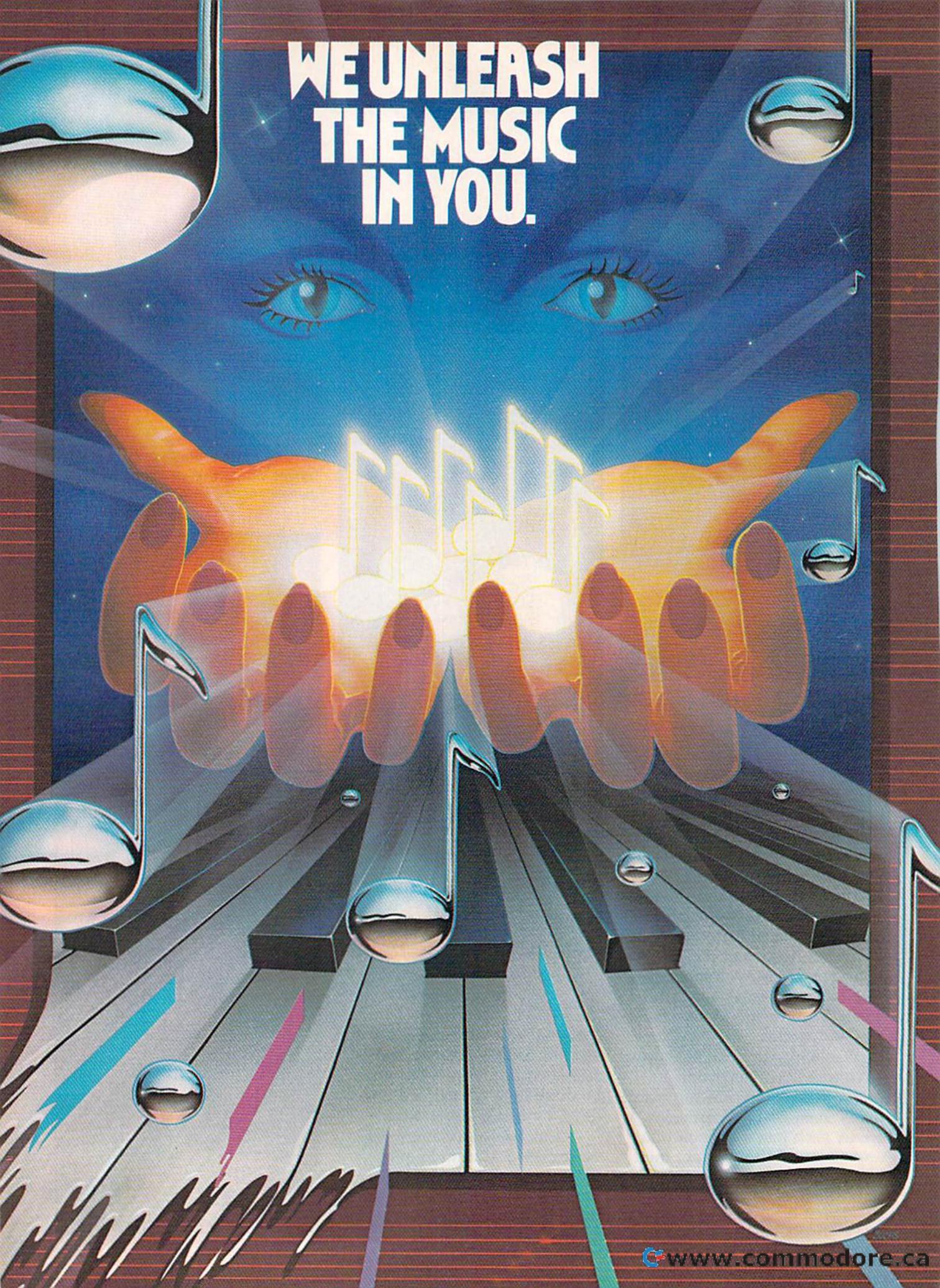
What used to take pro-

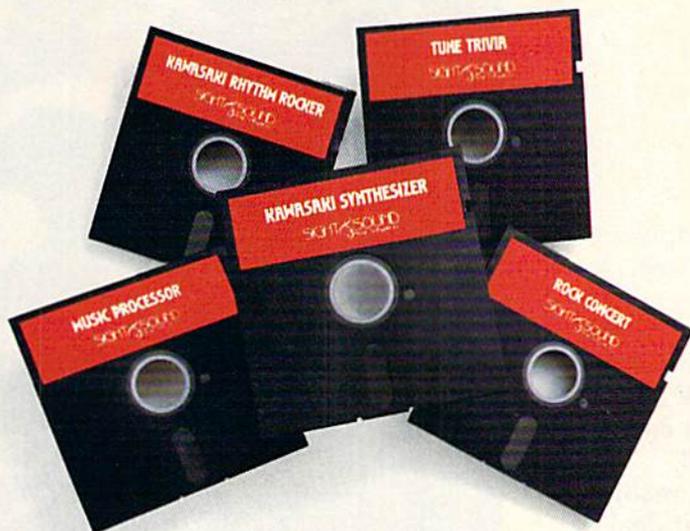
fessional animators weeks, even months to do—create a short, animated sequence—can now be done by a novice in a few days, by using *MovieMaker*.

This package cannot truly be regarded as a traditional videogame. Guy Nouri, president and co-founder of Interactive Picture Systems, says it was



**WE UNLEASH
THE MUSIC
IN YOU.**





Sight & Sound Music Software can do more than turn your Commodore 64 into a music synthesizer.

Deep within every Commodore 64 lurks the unexpected. A versatile music synthesizer. A music video machine. Even a three-track recorder. All waiting for you to control. All you need is Sight & Sound Music Software to make and record sounds that rival those of a real synthesizer. Including brass, strings, piano, guitar, electric bass, drums, funky clav, space wah and other sounds.

It's so easy that anyone can create and record music.

If you can press a few computer keys, you have all the skill it takes to create and play music. They're that music friendly. Our easy-to-follow, fully documented instructions guide you through every program.

And you can let your imagination soar. Creating and recording your own sounds. Your own songs. Your own music. Using the polyphonic keyboard. Playing across a full 8-octave range.

With one-finger, you can control wave form, vibrato, sweep and other special effects.

No one else offers our exciting animated graphics. Or the music of the famous recording artists we offer.

Every Sight & Sound Music Software program features eye popping graphics that explode across the screen.

And you can generate your own colorful graphics. Then, synchronize them to your own music...or to melodies made famous by Michael Jackson, Lionel Richie, Billy Joel and others.

A dozen different ways to have fun with computer music.

Sight & Sound Music Software offers music for everyone's musical interest. Like the Kawasaki Synthesizer that instantly puts a synthesizer's sound and flexibility at your fingertips.

Or, the Kawasaki Rhythm Rocker that creates space sounds and graphics to the pre-recorded rhythms of electronic sound.

Or, even our Music Processor that allows you to create, edit, record,

play and even compose your own musical arrangements.

From learning programs to the songs of your favorite artists...we've got it all.

A keyboard that makes easy-to-play even easier.

An easy way to get started making music is to begin with our Incredible Musical Keyboard. It fits over your computer keyboard and allows easy note-by-note play. Included with this optional keyboard is an introductory music software program and two music



books. One for the beginner, the other for the more advanced musician.

So, see your local computer software dealer for all the exciting Sight & Sound Music Software. And unleash the music in you.

SIGHT & SOUND
Music Software, Inc.

We unleash the music in you.

written for artists and animators, people who need to make graphics move.

At that, it's been successful. Local 841 of the Screen Cartoonists Union in New York City tested it for six months and gave it their seal of approval.

But it's also been recognized as having a great deal of appeal for the artistic community. It's been exhibited at a number of museums, including the Beaubourg in Paris, the Exploratorium in San Francisco, and the Corcoran Art Gallery in Washington, D.C. Several East Coast educational institutions have incorporated it into parts of curricula or special projects. Other software designers are using it to design superior animation in their programs.

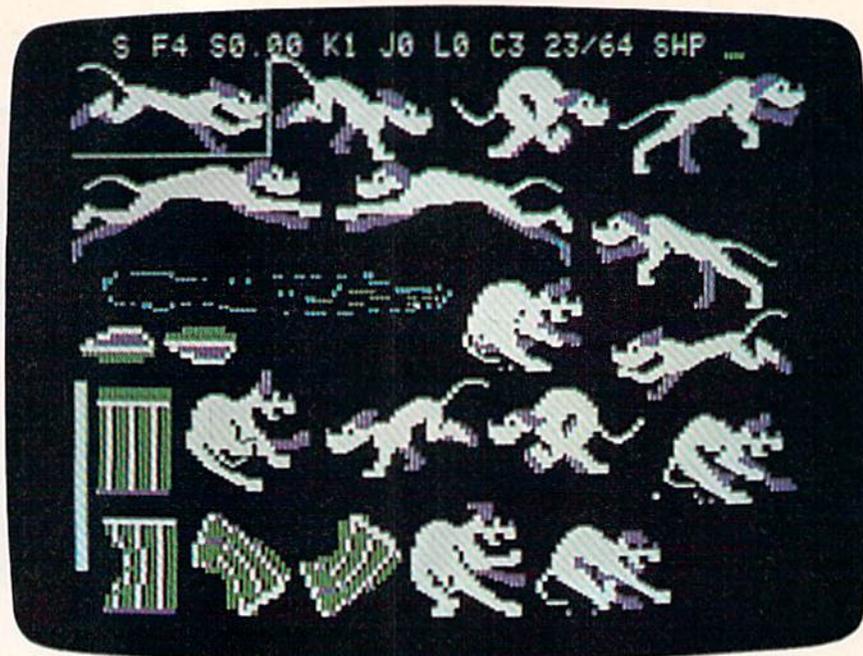
But perhaps most important to Nouri, it's for those "who want to create their own stories, their own computer movies."

Interested? You'll need to spend about a week with *MovieMaker* to grasp all of its capabilities, but you can get started in five minutes, and create a short animated sequence in less than a day.

You'll go through all the steps that a real filmmaker or animator would go through in creating a short film, only you make all the decisions yourself.

By communicating with the program through the joystick and keyboard, you'll create your cast (either by selecting pre-defined people and animals, or drawing your own), draw in scenery and add color, and arrange your shapes into the sequence that will be your story.

Next, add sound, titles, and



You can create your own shapes for animated sequences in MovieMaker, or choose from pre-defined shapes, like this page of dogs.

any other special effects you want. Record the whole sequence. Now go back and edit your movie. And play it.

How many times have you sat through all of the credits at the end of a movie? Probably not many. Most of us brush the popcorn off our laps and head out, not particularly caring who the gaffer and best boy were.

Making a major motion picture these days can take hundreds of crew members, millions of dollars, and many months, even years.

But in their early days, movies didn't require more than a few people. One of the very first films made was a few seconds long and consisted of a man sneezing. The crew was the cameraman and the guy who sneezed.

Movies have evolved, but the microcomputer industry is still in its infancy. And most videogames of the last decade have been written by one person, sometimes involving input by a few others. But production

of tomorrow's videogames will involve a level of complexity close to that of film production, Guy Nouri believes. Hence, his company, Interactive Picture Systems.

Guy Nouri was born in Alpine, New Jersey. He attended a number of different schools, including St. Paul's School and Princeton University, studying fine arts, art history, film, photography, and computer graphics.

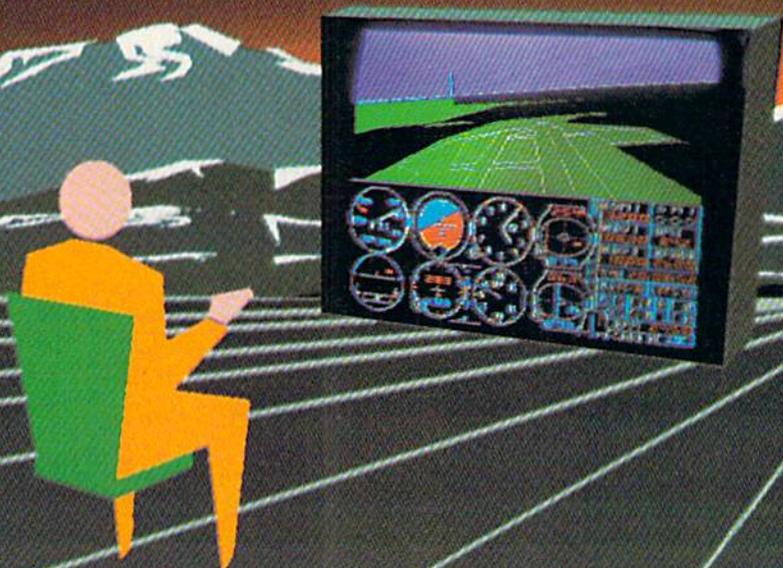
After two years at Princeton, Guy walked into his advisor's office for some class scheduling. He recalls: "My advisor looked at my records and said, 'You've already completed all your fine arts requirements, but you haven't taken any French or history or anything like that.'"

"That's right," Nouri replied. So he packed up and left.

Nouri spent the next few years on the West Coast, working as an electrician to support himself while he continued painting and sculpting. His interest in microcomputers, piqued partly by what he saw going on at Xerox PARC (Palo Alto

Flight Simulator II

For
the Commodore 64™



Put yourself in the pilot's seat of a Piper 181 Cherokee Archer for an awe-inspiring flight over realistic scenery from New York to Los Angeles. High speed color-filled 3D graphics will give you a beautiful panoramic view as you practice takeoffs, landings, and aerobatics. Complete documentation will get you airborne quickly even if you've never flown before. When you think you're ready, you can play the World War I Ace aerial battle game. Flight Simulator II features include ■ animated color 3D graphics ■ day, dusk, and night flying modes ■ over 80 airports in four scenery areas: New York, Chicago, Los Angeles, Seattle, with additional scenery areas available ■ user-variable weather, from clear blue skies to grey cloudy conditions ■ complete flight instrumentation ■ VOR, ILS, ADF, and DME radio equipped ■ navigation facilities and course plotting ■ World War I Ace aerial battle game ■ complete information manual and flight handbook.

See your dealer . . .

or write or call for more information. For direct orders please add \$1.50 for shipping and specify UPS or first class mail delivery. American Express, Diner's Club, MasterCard, and Visa accepted.

Order Line: 800/637-4983

subLOGIC
Corporation
713 Edgebrook Drive
Champaign IL 61820
(217) 359-8482 Telex: 206995

www.commodore.ca

Research Center) in the early 70s, led him to start a magazine, *Computer Pictures*, in 1980.

It was about that time that Nouri met Eric Podietz, who had been programming computers since he was a teenager at the University of Pennsylvania. Podietz had formed his own graphics software company and created a package called *Painter Power*.

The two joined forces on a graphics program called *Paint* (originally programmed on a mini-computer by Dick Shoup) for the Capitol Children's Museum in Washington, D.C. The program was a hit, and a partnership was born: Interactive Picture Systems incorporated in 1982, and Nouri and Podietz moved on to their next project.

"We had done *Paint*. The next step was to make it move, to animate it," says Nouri.

IPS approached a publisher with their idea, and were politely told that was impossible. "You could barely get a paint program," they were told.

"Trust us," they replied.

"OK, show us some samples," the publisher countered.

So Nouri and Podietz showed them three animated frames.

"Keep trying," said the publisher.

Two months later, IPS had a ten-frame animated sequence that would continue to loop without bombing.

And they had a contract.

MovieMaker took five people two years to complete. The original cost estimate was \$60,000, but the final expense went over \$200,000. "It was a labor of love," says Nouri.

The roles of a movie crew are pretty well defined, and familiar to anyone who watches movies. You've got actors, directors, producers, writers, editors, and a number of other technical and creative roles.

Software design groups are not yet so compartmentalized. At Interactive Picture Systems, though, roles are evolving.

There were basically five people involved in the design and production of *MovieMaker*: Guy Nouri, Eric Podietz, Jimmy Snyder, Mark Scott, and Bob Svihovec.

In creating *MovieMaker* Nouri and Podietz were responsible for the overall project, as well as many of the intricate details. Nouri describes Podietz as the partner that sees things on the inside, and himself as the one who sees them on the outside.

This means Podietz concerns himself more with the actual task of programming. "Eric builds the program from the inside out," says Nouri. "He decides what has to be done to set up the program, how the code has to be set up, where these newfangled data structures will go."

Nouri, on the other hand, must constantly assess what he calls the *psychological interface*. "I look at things like user experiences and the marketplace," he says. "That means looking at how someone feels as they approach the software, what their expectations are, what they want to do, how they want to feel while they're doing it. There's also a lot of care taken to the subject matter itself."

Nouri and Podietz commu-

nicate in a kind of "meta-language," one which can best be described as a way of talking about states. What state is the program in? What state is the user in? You have to link those up. "An awful lot of attention and time is given to getting the dialogue between the program and player right," says Nouri.

So how does this partnership work, with its varying areas of emphasis and its unique form of communication? "We argue all the way down the line," Nouri chuckles.

"Software engineers" Jimmy Snyder and Mark Scott were also key to the development of *MovieMaker*. "Jimmy is what we call a black box maker," says Nouri. "He can write these outrageous little algorithms, these routines that make things just zip across the screen."

Mark's imagination and programming skills were a major contributing factor to the user-friendliness of the program. And Bob Svihovec, now art director at IPS, did the animation.

Over the last two years, IPS has grown to a staff of 20 software engineers, graphic artists, and various support people. Their business office is a couple of rooms on Park Avenue in New York City, and their creative work is done in seven rooms on four floors of a brownstone in Philadelphia.

Nouri believes strongly in treating each of those 20 staff members as unique, creative individuals. The result, he says, is a commitment from those people unattainable in any other way.

That commitment has contributed to the development of a

prolific crew of software designers. Besides *Paint* and *MovieMaker* (published by Res-ton Publishing), IPS has done an aerobics simulation for Spin-naker Software, and *Operation Frog*, a simulation of a frog dissection for Scholastic. They've recently signed a contract with Electronic Arts for a game that is "...more fun than a comic book," according to Nouri.

"Publishers are starting to come to us and ask us what we want to do," which Nouri believes is the way it should be. "I think what we're going to see is a lot of banding together of artists over the next few years," he says.

Nouri likens the major software developers over the next few years to professional sports teams. "I think it's a lot more like that than book authors or rock and roll stars," he says.

"There may be a few stars. And there will probably be a kind of major league, a dozen or so famous teams of software designers," he says. "I also don't think there will be more than a dozen or so software publishing houses, probably grouped by personality of the software, like business or entertainment."

If Nouri wants to be the Babe Ruth of the software league, it's not obvious. He's humble. He's eager to listen to

the ideas of others. He continues to hone his own artistic skills, and broaden his understanding of how humans can effectively communicate with computers, and with other people through computers.

And he's quick to share the credit for IPS' success with all the other members of the team, and to praise the important contribution of sensitive publishers. "Publishers would do well not to treat software development like manufacturing, because it ain't," he says. "It involves talent, and it involves creative, temperamental, sensitive people. There's a real balance to maintain." @

"The Rabbit" for your VIC 20 or CBM 64

\$39.95

If you own a VIC 20 or a CBM 64 and have been concerned about the high cost of a disk to store your programs on... worry yourself no longer. Now there's the RABBIT. The RABBIT comes in a cartridge, and at a much, much lower price than the average disk. And speed... this is one fast RABBIT. With the RABBIT you can load and store on your CBM datasette an 8K program in almost 30 seconds, compared to the current 3 minutes of a VIC 20 or CBM 64, almost as fast as the 1541 disk drive.

The RABBIT is easy to install, allows one to Append Basic Programs, works with or without Expansion Memory, and provides two data file modes. The RABBIT is not only fast but reliable. (The Rabbit for the VIC 20 contains an expansion connector so you can simultaneously use your memory board, etc.)



MAE NOW THE BEST FOR LESS!

Please for your own protection consider the MAE first before you buy that other assembler. We've had numerous customers who

wasted their money on some cheaper off brand assembler tell us how much better the MAE is.

The most powerful Macro Assembler/Editor available for the Commodore 64 and other CBM/PET computers, and also for the ATARI 800/XL and Apple II/III.

MAE includes an Assembler, Editor, Word Processor, Relocating Loader, and more all for just \$59.95.

We could go on and describe the MAE but we thought you would like to read our customers' comments. The following are actual unedited comments from correspondence about the MAE:

"Excellent Development Package"

"Compares to DEC and INTEL"

"My Compliments to Carl Moser and EHS"

"It is a superb program."

TELSTAR 64 — "A Star is Born"

Sophisticated Terminal Communications Cartridge for the 64.

PFO 10D 00D CP D1 D2 BELL 12:30:00 10:14:36
(TELSTAR's Status Line)

Don't settle for less than the best!

- Upload/Download to/from disk or tape. Menu-driven.
- Automatic File Translation. Real Time Clock plus Alarm Clock.
- Communicates in Industry Standard ASCII.
- Line editing capability allows correcting and resending long command lines.
- 9 Quick Read functions.
- Similar to our famous STCP Terminal package.
- Works with Commodore Modems and supports auto-dialing.

The best feature is the price — only \$49.95 (Cartridge and Manual)

Machine Language Monitor Cartridge for the CBM 64

More than 20 commands allow you to access the CBM 64's Microprocessors Registers and Memory Contents. Commands include assemble, disassemble, registers, memory, transfer, compare, plus many more. Someday every CBM 64 owner will need a monitor such as this.

Cartridge and Manual — \$24.95

Eastern House

3239 Linda Dr.
Winston-Salem, N.C. 27106
(919) 748-8446
Send for free catalog!

VISA*

MasterCard

80 Columns For The 64

Gregg Peele, Assistant Programming Supervisor,
And Kevin Martin, Editorial Programmer

Did you ever wish for an 80-column screen? "Screen-80" transforms your 64 into an 80-column machine without affecting the normal screen editing keys. We've also included "Custom-80," which allows you to create your own 80-column character set with a joystick.

"Screen-80" offers a full 80-column screen and provides you the ability to use your 64 to write, edit, and even run BASIC programs (including some commercial software). You can also use all the cursor controls of the normal screen editor. It runs concurrently with the normal system, allowing a quick switch between 40- and 80-column modes.

Best of all, little memory is used by Screen-80. The program consists of approximately 3K of machine language which goes into RAM "underneath" ROM. There are also 43 bytes which are placed in a little used area of RAM (locations 710-753). Since the bulk of Screen-80 uses the same memory locations as the operating system, and the location of the 43 bytes used from RAM are normally unused anyway, Screen-80 works without any apparent loss of programming space.

Using 80 Columns

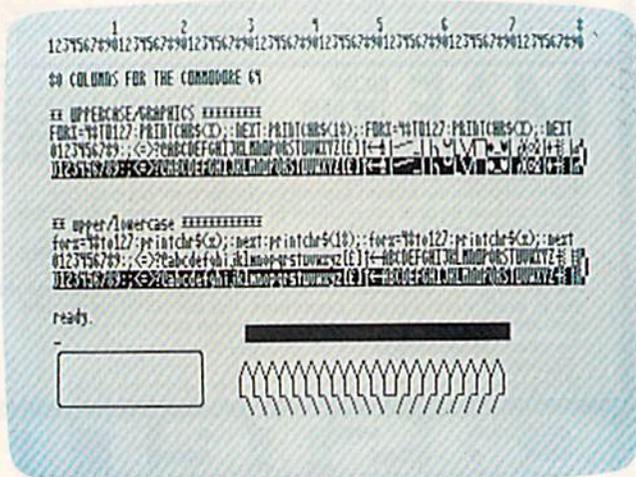
Once you enter 80-column mode, the first thing you're likely to notice is the smaller size characters. Since increasing the size of the screen is impossible, adding 40 more columns to the 64 makes it necessary to halve the size of each character. Some televisions may not produce a clear enough picture to make these smaller characters readable, so you may find it difficult to read text in 80 columns. We recommend using a video monitor with the color turned off. You may want to change the character set to suit your personal taste or needs. "Custom-80" (discussed later) is designed to let you do just that.

Screen-80 provides a different cursor than does the normal 40-column mode. Rather than a blinking block, it uses an underline character; but like the normal cursor, it can move anywhere on the screen. In fact, you can use all the cursor

control keys, just as you would normally, to insert or delete, home the cursor, clear the screen, or create BASIC program lines.

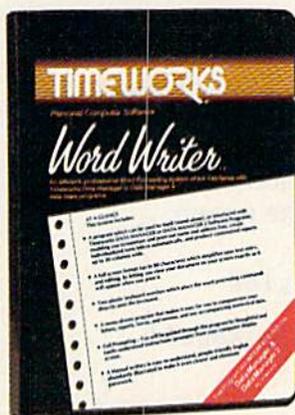
Both uppercase/graphics and lower/uppercase modes are supported in Screen-80, but you cannot toggle between these modes with the SHIFT-Commodore key combination. Instead, you can put the screen editor in lower-/uppercase mode by pressing the CTRL and N keys simultaneously, or by printing CHR\$(14). To return to uppercase/graphics mode, simply print CHR\$(142) to the screen. These methods affect only characters printed after these commands. Thus, you may have both sets (for example, graphics and lowercase) on the screen at the same time for increased programming flexibility.

You can change the color of the background, text, or border by simply POKEing the appropriate color number into location 53281 (for the background), location 646 (for text), or location 53280 (for the border). Changing text color changes the color of all text on the screen. If you want to change the background or text color during program mode, print a CHR\$(13) after POKEing the appropriate location. Since color memory is fixed on the 64, it's impossible to have true 80-column color. Therefore, Screen-80 does not recognize color codes in PRINT state-



Graphics, upper- and lowercase can be displayed simultaneously with Screen-80.

IF YOU CAN FIND A BETTER WORD PROCESSOR OR DATA BASE SYSTEM WE'LL BUY IT FOR YOU.



Word Writer

This menu-driven system includes:

A program which can be used by itself (stand-alone), or interfaced with Timeworks' Data Manager or Data Manager 2, enabling you to maintain and print out name and address lists, create individualized form letters automatically, and produce customized reports up to 20 columns wide, which can be incorporated into any text produced by the Word Writer.

Two plastic keyboard overlays which place the word processing commands directly onto the keyboard.

A full screen format (up to 80 characters) which simplifies your text entry and editing.

All the essential features—plus some exclusive Timeworks extras—making this system completely functional for most home & business requirements.

Data Manager 2

This system includes:

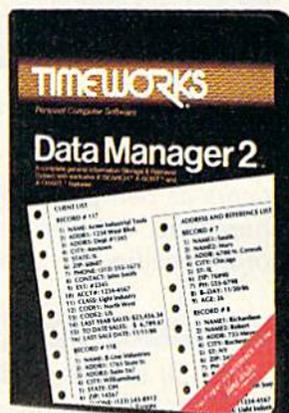
A menu-driven program that easily lets you store information on a wide variety of subjects—from general name and address lists, to research data. This program will also calculate and store any corresponding numerical data.

Quick access to important information. Items can be easily retrieved and printed by category, name, index code, date range, amount range, or any category of information stored in the system.

Outrageous offer? Not really. For your Commodore 64, we're putting our money where our mouth is, because the Timeworks Word Writer and Timeworks Data Manager 2 are so complete—so extremely easy to use, we think nothing beats them at any price. (Our suggested retail prices are: \$49.95 for Word Writer. \$49.95 for Data Manager 2.)

Timeworks exclusive X-Search™, X-Sort™ and X-Chart™ features allow you to easily cross-search any of the categories. Or arrange your stored items in increasing or decreasing order, alphabetically, numerically or by date. Break down statistical information by up to ten indexed categories of your choice—and graphically review your results.

Arithmetic calculation of your mathematical data is possible, allowing you to perform Payroll calculation, cost estimates and more. Data Manager 2 also produces the Sum, Average and Standard Deviation of statistical data entered into the system, along with Frequency Charts.



When interfaced together, these programs:

Generate customized data reports, which can be incorporated into any written text produced.

Individually address and print form letters automatically.

Print your name and address file onto standard mailing labels.

Transfer and print text information onto labels and tags.

Calculated numerical data from column to column, giving these programs spread-sheet capabilities.

So, if you can find anything better, simply send us your Word Writer or your Data Manager 2, your paid receipt, and the name of the word writer or data base system you want. If it's available, we'll buy it for you.**

Now at your favorite dealer. Or contact Timeworks, Inc., P.O. Box 321, Deerfield, IL 60015. Phone 312-948-9200.



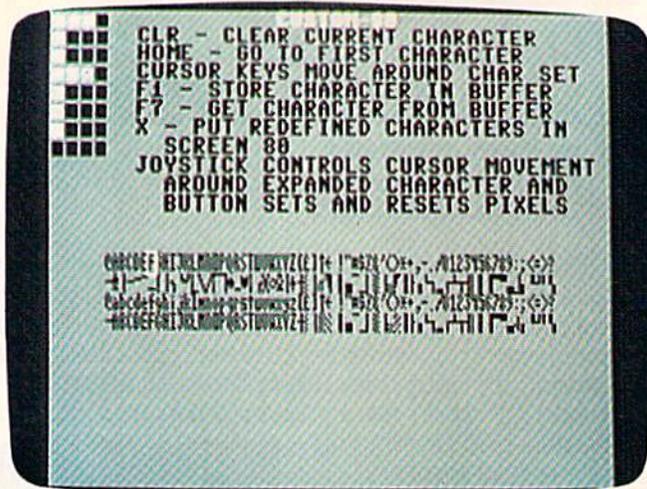
SOFTWARE WITH SUBSTANCE.



**Now for the small print. Offer applies to Commodore only, with maximum suggested retail prices of \$125.00 each for any exchanged program. Offer expires 45 days after date of your purchase.

*Registered Trademark of Commodore Computer Systems © 1983 Timeworks, Inc. All rights reserved.

www.commodore.ca



Redefining characters is easy with Custom-80.

ments as being any different from other graphics characters. All printing to the screen uses the color specified in location 646.

Graphics And Sound Routines

Screen-80 can be used with sprites, high-resolution graphics, and sound—just like the normal 64 screen. Since this program actually uses a hi-res screen, you can also use it for other graphics displays. You can even have text and hi-res graphics on the screen at the same time. (Check your *Programmer's Reference Guide* for more detailed information on how to plot points on the hi-res screen.)

To plot points (or do anything else) to the hi-res screen, it is important to know how to POKE and PEEK to the screen. The hi-res screen for Screen-80 is located at 57344 (\$E000). Since this screen memory shares addresses with ROM, you may POKE graphics safely to the screen, but attempting to PEEK from the screen will give you values from the ROMs. To PEEK these screen locations, you must first disable interrupts, then use location 1 to reconfigure the 64. Location 1 allows you to selectively replace ROM locations with RAM—making it possible to have a full 64K of RAM on the 64. Once you reconfigure the 64, you can PEEK locations on the screen. Since the operating system must access the ROMs to function properly, you must immediately restore the 64 to its normal configuration and re-enable interrupts. Here's an example of how to do it in BASIC:

```
10 POKE 56334,PEEK(56334)AND254:REM DISAB
LE INTERRUPTS
20 POKE 1,53:REM RECONFIGURE 64
30 PRINT PEEK(57344): REM PEEK THE FIRST
{SPACE}BYTE OF SCREEN RAM
40 POKE 1,55:REM RETURN 64 TO NORMAL
```

```
50 POKE 56334,PEEK(56334)OR1:REM REENABLE
INTERRUPTS
```

Using sprites in Screen-80 requires all sprite data to be kept within the same 16K block as the hi-res screen. Locations 49152 (\$C000) to 53247 (\$CFFF) are perfect places to put sprite data. The sprite pointers for Screen-80 are located at 53248+2040 to 53248+2047. To cause sprite 0 to get its data from 49152 (\$C000), put a zero into location 53248+2040. Since POKES to this area of memory are normally intercepted by the I/O chip, we must disable interrupts and I/O to put a value into these locations. Here's a program to put a sprite onto the screen:

```
10 V = 53248
20 POKE V,100:POKE V+1,100
30 POKE V+39,2
40 POKE 56334,PEEK(56334)AND254
50 POKE 1,PEEK(1)AND251
60 POKE 53248+2040,0
70 POKE 1,PEEK(1)OR4
80 POKE 56334,PEEK(56334)OR1
90 POKE V+21,1
```

Creating sound from within Screen-80 is done exactly the same way as from the normal screen. In fact, since you want to POKE the information to the SID chip (in the I/O area), you don't have to disable interrupts or do any bank switching, as was necessary for hi-res graphics or sprites. The normal POKES will do.

Using Other Programs With Screen-80

This program is designed to intercept any calls to the normal Kernal PRINT routine (\$FFD2). Software which bypasses this routine or POKES directly to the screen will not work correctly with Screen-80. An example of a program which bypasses the PRINT vector is the DOS wedge program (on the TEST/DEMO disk which comes with 1541 disk drives). Fortunately, this problem can easily be fixed by changing all PRINTs to pass through the standard vector. This program, when used in place of the normal DOS boot program ("C-64 Wedge"), changes these references.

```
10 IF A=0THENA=1:LOAD"DOS 5.1",8,1
20 FORI=1TO7 : READ A:POKEA,210: POKE A+1
,255:NEXT
30 DATA 52644,52650,52712,52726,52752,527
65,53075
40 SYS 52224
```

With these changes, the DOS support program will work with Screen-80.

One of the best applications of Screen-80 is with terminal software. We tested Screen-80 with the terminal software that comes with the VICmodem and the 1650 Automodem by Commodore. Since both programs use the standard

INTRODUCING

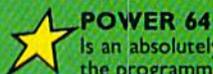


THE PRO-LINE TEAM



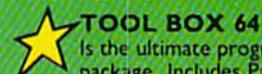
PAL 64

The fastest and easiest to use assembler for the Commodore 64. Pal 64 enables the user to perform assembly language programming using the standard MOS mnemonics. **\$49.95**



POWER 64

Is an absolutely indispensable aid to the programmer using Commodore 64 BASIC. Power 64 turbo-charges resident BASIC with dozens of new super useful commands like MERGE, UNDO, TEST and DSK as well as all the old standbys such as RENUM and SEARCH & REPLACE. Includes MorePower 64. **\$49.95**



TOOL BOX 64

Is the ultimate programmer's utility package. Includes Pal 64 assembler and Power 64 BASIC soup-up kit all together in one fully integrated and economical package. **\$89.95**



SPELLPRO 64

Is an easy to use spelling checker with a standard dictionary expandable to 25,000 words. SpellPro 64 quickly adapts itself to your personal vocabulary and business jargon allowing you to add and delete words to/from the dictionary, edit documents to correct unrecognized words and output lists of unrecognized words to printer or screen. SpellPro 64 was designed to work with the WordPro Series and other wordprocessing programs using the WordPro file format. **\$49.95**



WP64

This brand new offering from the originators of the WordPro Series* brings professional wordprocessing to the Commodore 64 for the first time. Two years under development, WP64 features 100% proportional printing capability as well as 40/80 column display, automatic word wrap, two column printing, alternate paging for headers & footers, four way scrolling, extra text area and a brand new 'OOPS' buffer that magically brings back text deleted in error. All you ever dreamed of in a wordprocessor program, WP64 sets a new high standard for the software industry to meet. **\$49.95**



MAILPRO 64

A new generation of data organizer and list manager, MailPro 64 is the easiest of all to learn and use. Handles up to 4,000 records on one disk, prints multiple labels across, does minor text editing i.e. setting up invoices. Best of all, MailPro 64 resides entirely within memory so you don't have to constantly juggle disks like you must with other data base managers for the Commodore 64. **\$49.95**

NOW SHIPPING!!!
TOLL FREE ORDER PHONE
1-800-387-3208



*Commodore 64 and Commodore are trademarks of Commodore Business Machines Inc.

*Presently marketed by Professional Software Inc.

Specifications subject to change without notice...



PRO-LINE SOFTWARE

(416) 273-6350

755 THE QUEENSWAY EAST, UNIT 8,
MISSISSAUGA, ONTARIO, CANADA L4Y 4G5

www.commodore.ca

PRINT vector, they work fine. Programs which depend on sprites should be avoided, as should programs which move screen memory or otherwise change the normal configuration of the 64.

SpeedScript does not use the PRINT vector at \$FFD2 to update the screen, which makes it incompatible with Screen-80.

How To Enter And Use Screen-80

Like most machine language programs in COMPUTE!'s GAZETTE, Screen-80 is listed in MLX format. That means you must first type in the MLX program and then use it to enter Screen-80. The newest version of MLX has a built-in numeric keypad to ease the burden of typing all those numbers (see the MLX article for details). Initially, Screen-80 resides in the same area as the beginning of BASIC. To protect MLX from being overwritten by Screen-80, we'll use a starting address of 49152 and an ending address of 52811. Once you've entered the program and saved it to tape or disk, turn your computer off and then on again.

Now LOAD the program from disk or tape using the normal format for LOADING BASIC programs:

```
LOAD "filename",8 (for disk)
LOAD "filename" (for tape)
```

Notice that we LOADED our program without the ,1 that generally accompanies ML programs. If the program loaded correctly, you can LIST it. You should see one line with a SYS command. Simply RUN the program and you'll have Screen-80. Pressing RUN/STOP-RESTORE will put you into 40-column mode, and typing SYS710 and pressing RETURN will bring back 80 columns. You can make a backup copy by simply saving it as you would a BASIC program:

```
SAVE "filename",8 (for disk)
SAVE "filename" (for tape)
```

At this point, type NEW to begin programming in 80 columns.

Custom-80: Creating Your Own Character Set

"Custom-80" (Program 2) allows you to create your own character set for use with Screen-80. It's easy to use and requires a joystick. Custom-80 "borrows" the character set from Screen-80 and then moves it to a safe location in memory for editing. After editing, you can return the custom characters to the Screen-80 program, or save your new character set to disk or tape. Like Screen-80, it's in MLX format. The starting address is 49152 and the ending address is

51240. To load Custom-80, type:

```
LOAD"CUSTOM-80",8,1 (for disk)
LOAD"CUSTOM-80",1,1 (for tape)
```

After loading it into memory, type NEW to reset the BASIC pointers. Next, LOAD Screen-80 into memory and SYS 49152. This puts you in Custom-80 and, at the same time, accesses the character set included with Screen-80.

The Screen-80 character set is displayed in the lower half of the screen, while the current character being edited is framed by a yellow cursor. In the upper-left corner of the screen the character is enlarged for editing, and brief instructions are provided to the right.

Customizing Characters

You can choose which character you want to edit by moving the cursor around the screen using the joystick or the cursor keys. The flashing blue square indicates the current pixel in the character you are editing. To set the pixel, press the fire button on the joystick. To reset the pixel, press the fire button again.

Press SHIFT and CLR/HOME to clear all the pixels in the character you're editing. (This will not affect the characters previously edited.) To home the cursor to the first character, press CLR/HOME without pressing SHIFT. To copy a character from one position to another, press f1 to store the current character into the buffer. Then move the cursor to the new position of the character and press f7 to retrieve it from the buffer.

Pressing S saves the character set to tape or disk as a short program file. It can then be loaded back into memory with the L command. When loading or saving, you will first be asked for the name of the file, then asked to press T for tape or D for Disk. If an error occurs during a

```
251 for j=0 to 27: poke $j,0: next: poke $j,27,15
252 for j=1 to 2500: next
260 if i=0 then 272
263 i=3: print "Your solution is correct!": gosub 1210
269 print "Player 'q' has cracked the case!": goto 262
272 i=2: print "Do!... That was a false arrest!": gosub 1210
275 gosub 1200: p2(35+q)=0: p2(50)=p2(50)+1: print "You're out of the game!"
278 if p2(50)=9 then 250
281 restore: gosub 1213: for j=1 to 500: next: gosub 1213
287 print "All players have given incorrect solutions to the crime!"
292 print "Nobody wins!"
282 print "Here is the correct solution!": print "The '$9(q2(32))'
289 print "killed the '$9(q2(33))' in the '$9(Cabs(p2(3D)))'."
291 print "using the '$9(q2(33)+10)'." : read
300 print "### XXXX DDDP ## ITEN XXXX": gosub 1200
303 if i=0 then print "You weren't carrying anything!": goto 250
306 print "You drop ": gosub 1200: print " ": goto 250
320 print "### XXXX ITEN XXXX": j=1: print "These items are available:"
323 for i=1 to 31: if p2(i)=0 then 325
325 print j: ";": gosub 1200: print " ": poke 900,j,i: j=j+1
326 next: if i then print "to items.": goto 250
332 print "Enter number to take an item, or": print "enter zero to take nothing."
break
ready.
```

Programming in BASIC with 80 columns.

SpeedScript Customizer

J. Blake Lambert, Assistant Editor

When "SpeedScript" was first published, we didn't imagine how popular it would become with GAZETTE readers. One of the most frequently asked questions is how to change the default settings and formatting commands to suit individual preferences. This short program is the solution. It modifies SpeedScript with values you choose, creating a new version which can be saved to tape or disk. For the VIC (with at least 8K expansion) and the 64.

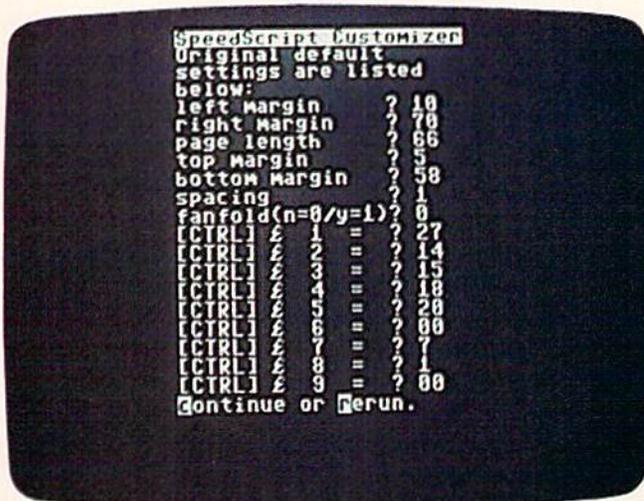
If you use either version of SpeedScript with a VIC or 64, tape or disk, this customizer program will be a real timesaver. It allows you to predefine background and character color, left, right, top, and bottom margins, page length, line spacing, and to select single sheet or fanfold (continuous pinfeed) paper. In addition, you can change or add values for the predefined formatting codes used for printing.

"SpeedScript Customizer" fixes the new page command in SpeedScript 1.0 (January) for the 64, and corrects an error in the predefined values of the version printed in *COMPUTE!'s Second Book of 64*.

In short, you can make your own personalized copies of SpeedScript with any values you choose. The Customizer doesn't improve SpeedScript; it lets you teach SpeedScript to do things your way (until it is otherwise notified). Once you've used SpeedScript enough to know what values you prefer, you're ready to use the Customizer.

For example, you may prefer to print documents single spaced with margins at 10 and 70, using single sheets of paper. You may also need to be able to send special codes to the printer to access all of its features, such as emphasized characters, underlining, special symbols, etc. SpeedScript allows you to assign formatting codes at the beginning of a document, but you have to define them every time you want to use them.

It's possible to set up format files and SAVE them if you like, but it's simpler to use the Customizer to SAVE your personalized version(s) of the program instead. The values can still be re-



SpeedScript Customizer allows you to set your own values for margins, spacing, paper style, and printer codes.

defined in the same way as before; we're just changing the default values, what SpeedScript thinks is "normal." It doesn't destroy the original, it just creates new, personalized copies. You could, for example, have one version of SpeedScript for writing business letters, one for personal letters, and another for writing reports.

How To Use SpeedScript Customizer

First type in Programs 1 and 2, and SAVE them. (Make sure to name Program 2 "CUST.SS" so that it will load properly.) Next, LOAD and RUN Program 1, the Customizer Boot. This automatically loads and runs Program 2. The Customizer will prompt you to insert the version of SpeedScript written for your computer, then ask for a filename. Enter the filename of the SpeedScript version on your tape or disk and press RETURN. Press d for disk or t for tape at the prompt, and as soon as it finishes loading, the Customizer will display which version it has found. (For example, VIC SpeedScript v1 means you're using a VIC and the SpeedScript published in the January 1984 issue.) This message is then followed by the color selection screen.

Not all monitors have perfect picture resolution, and many of us use a TV for a computer monitor. So, it's nice to be able to select the color



THANKS TO COMPU SERVE'S CB SIMULATOR, "DIGITAL FOX" ACCESSED "DATA HARI" AND PROCEEDED TO AN "ALTARED" STATE.

**The CB Simulator, where
CompuServe Subscribers can
Access Friends and Influence
People on 72 Different
Channels.**

Just pick your handle and get on line. From math to matrimony, there's always someone out there who speaks your language. Friends from all over the U.S. and Canada are at it 24 hours a day. Talking tech or just having fun. And if you've got a secret, just use the CB Scrambler.

That'll fool the "lurkers," those CB "see it alls" who get their kicks by watching. Or you can always use the private talk mode for guaranteed one-to-one conversation.

The CB Simulator is just one of CompuServe's many electronic communications options that include a National Bulletin Board, Professional Forums and Electronic Mail. Plus, there's a world of on-line information and entertainment all for the price of a local phone call plus connect time.

You can access CompuServe with almost any computer and modem, terminal or communicating word processor.

To receive your illustrated guide to the CompuServe Information Service and learn how to subscribe, call or contact:

CompuServe

Consumer Information Service, P.O. Box 20212
5000 Arlington Centre Blvd., Columbus, OH 43220

800-848-8199

In Ohio call 614-457-0802

An H&R  www.commodore.ca

of the background and characters, which SpeedScript allows with the CTRL-b and CTRL-l commands. But if you CLEAR ALL TEXT, the program returns to the default colors (the colors that were there when you first ran the program). The color selection screen in the Customizer allows you to flip through the background colors with the f1 key and through the character colors with the f3 key. Some people like to use a dark gray or black background with light green characters, to emulate a green screen monitor. When you find a combination that suits you, press RETURN.

Changing The Default Values

After you've set the letter and background colors, another menu appears. The program will ask you to enter a series of values for the default values. If you choose not to change a setting, simply press RETURN and the original default will remain unaltered. Here are a few tips on setting the values correctly:

- **Left margin:** Sets the default value for the [l] function (obtained by holding down the CTRL key and pressing the £ key, then pressing l) in SpeedScript. As on a typewriter, the left margin is the distance (number of spaces) from the left edge of the page before characters are printed. It should be at least 1. For a one inch margin with normal (pica, ten characters per inch) type, set this value to 10. With other print sizes, multiply the margin width you want (in inches) by the number of characters per inch.

- **Right margin:** Sets the default value for the [r] function. This is the preferred distance from the last character on a line to the right edge of the paper, subtracted from the number 80. You can also think of this as the left margin plus the number of characters per line you want to print. With 8½ inch wide paper and [l] set at 10, make [r] 70 for a one-inch right margin.

- **Page length:** This value has no corresponding function in SpeedScript. It is the number of lines that fit on a page, preset at 66, since standard paper is 11 inches long and most printers print six lines per inch. If you want to use personalized (nonstandard) stationery or legal-size paper, you would change the value accordingly (inches of length times six). Also, some printers or interfaces allow you to change the spacing between lines to print eight lines per inch on standard paper. Once you've set the printer into this mode (you may have to flip a switch on the interface or send a special code to the printer), change the page length value in SpeedScript to 88 (lines per inch times length of paper in inches). Remember to change the bottom margin, too.

- **Top margin:** Sets the default for [t]. This is the number of blank lines at the top of the page. Should be 5 or more.

- **Bottom margin:** Sets the [b] default. This is the page length minus the number of lines you would like at the bottom of the page. You can think of this as the top margin added to the number of lines you want to print. Should be 58 or less when using standard paper, and always at least 8 less than the page length.

- **Spacing:** SpeedScript's [s] function. Use a 1 for single spacing between lines of text, a 2 for double spacing, and so forth.

- **Paper style selection:** Works like the [w] command. Answer 0 and SpeedScript will wait for you to press RETURN after printing each page of text. Allows you to use single sheets of paper more easily. The default value, 1, signals continuous pinfeed paper, but you can still use the [w] command when you wish.

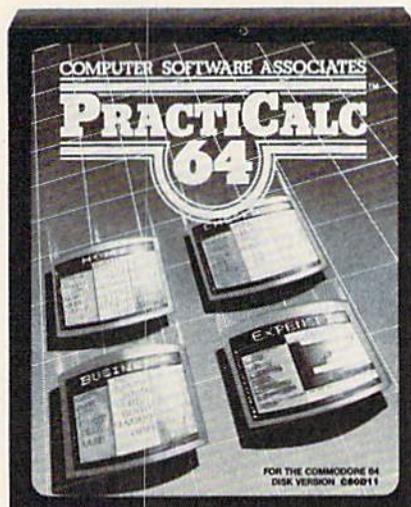
The user-definable reverse video numbers can also be preset in this section of the program. The first four of these probably should not be re-defined. If you often share files with friends, you should consider standardizing your use of pre-defined numbers. (See below for tips on setting the user-definable codes.)

After setting the values, the program will ask if you wish to continue or rerun. Check the values and press r if you find any errors (the program will start over from the beginning). Otherwise, press C to continue, then enter the filename you want to use for your new customized version of SpeedScript and press RETURN.

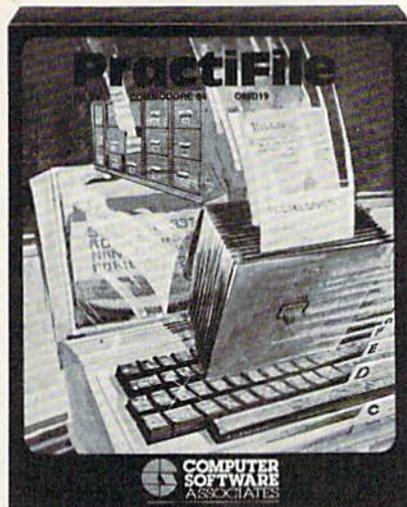
Make sure to give the new SpeedScript a unique name so that when you have several copies saved you'll know which one to load. (SpeedScript Customizer doesn't allow the SAVE with replace option, so you can't destroy the original SpeedScript while using the Customizer.) Remember that no matter what version you use, the default values can still be changed using the CTRL-£ commands in SpeedScript.

When the program finishes, it resets the BASIC pointers and saves your modified SpeedScript. If all goes well, the program will automatically RUN your new version. Disk users should check the error channel by pressing the up-arrow key while holding down CTRL, then pressing RETURN. Next, look at the directory using SpeedScript's CTRL-4 command. Tape users can recover from errors (for example, if RECORD was not down during the SAVE) by pressing RUN/STOP-RESTORE, then typing SAVE "new filename", 1 followed by RETURN. If the program does not execute properly, remember to turn the computer off, then on again

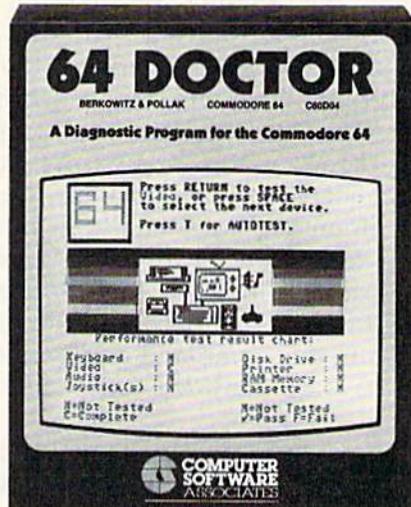
MAKE YOUR COMMODORE 64 WORK LIKE CRAZY, WHILE YOU KEEP IT FROM DRIVING YOU NUTS.



PractiCalc 64™ Only \$54.95*



PractiFile™ Only \$54.95*



64 Doctor™ Only \$29.95*

One way to make your Commodore work like crazy is to give it a shot in the arm with PractiCalc 64. It's the most potent electronic spreadsheet you can buy at the least cost. You can track expenses, inventories, investments. Make charts and graphs. Keep mailing lists. Project profits. Sort alphabetically or numerically, instantly and easily, of course. And at the price, it can pay for itself the first time you use it.

Another way to make your computer system work like crazy is to boost it with PractiFile. It's like having a library full of information you can call on for just about everything while you pay practically nothing. A fully professional data base for your Commodore, it can handle mailing list entries by the thousands. You can change records, numbers, methods

of filing, and do plenty more—all at the touch of a key and the blink of an eye. And all at a price to make your eyes light up. And, it integrates with PractiCalc.

The way to keep you from going crazy when something in your computer system goes haywire is to treat it with 64 Doctor. You know that maddening feeling you get when something's wrong but you don't know exactly what? Well, kiss it goodbye with this powerful medicine. It's an inexpensive and versatile diagnostic program that takes the guesswork out of troubleshooting your computer system. With simple, plain-English instructions. Use it to test your Commodore's RAM memory, RS-232 port, keyboard, video, audio, joystick, printer, data set and disk drive.

Think of it as low-cost health insurance for your computer.



PRACTICORP™
No-Nonsense Software

The Silk Mill, 44 Oak St., Newton Upper Falls, MA 02164 • (617) 965-9870

*Prices are suggested retail for disk versions of these programs. Actual prices can vary. Tape versions are slightly lower.
†Commodore 64 is a trademark of Commodore Business Machines Inc. © 1984 PractiCorp International, Inc.

www.commodore.ca

before doing other programming. This will reset the memory pointers to prevent problems and free up the memory space used by the Customizer.

How SpeedScript Customizer Works

The Customizer is an example of how to have two programs in memory at the same time, using one program to modify the other. This technique is described in *COMPUTE!'s Mapping the Commodore 64*.

Program 1 (line 8) determines whether the computer in use is a VIC or 64 by using the Kernal SCREEN routine. This checks the number of columns, 22 for a VIC, 40 for a 64. (This is how the "MENU" program on the GAZETTE DISK knows if you have a VIC or 64.) Based on which computer it finds, it adjusts the start of BASIC to a point above where SpeedScript normally resides in memory. The boot program prints the necessary commands on the screen, then fills the keyboard buffer (a small area of memory that temporarily stores character information) with a HOME character, two RETURNS, an exclamation point, and the code for LOAD and RUN (because of the exclamation point, the computer ignores the LOAD command and performs the RUN). This is how it boots (automatically loads and runs) Program 2.

The Customizer again checks which computer is in use and sets the values of several variables. Line 50 of Program 2 loads SpeedScript into its usual place in memory. That explains the extra ,1 at the end of the LOAD command. The computer ignores SpeedScript, though, since it is below the current start of BASIC.

Next, it tests to see which version of SpeedScript is currently in memory by PEEKing a designated memory location. It then tells you what it has found (lines 56-64). Lines 66-86 handle the default color selection, and INPUT statements allow you to change the normal values for print formatting (lines 88-122).

To make the program work with all versions of SpeedScript, Program 2 contains its own definition tables. Three of these tables are located in lines 128-132. Depending on what version of SpeedScript is in memory, one of these tables will be used to point to the location in SpeedScript that holds the background color (BL), letter color (LL), and the start of SpeedScript's definition table (DT). Line 134 POKEs these locations with the values you have assigned in Customizer.

If any future versions of SpeedScript become available, the pointers in the Customizer can be changed so that it will modify the new versions.

A simple machine language monitor, BASIC PEEKing loop, or even an MLX listing would be enough to find the definition table; just look for consecutive memory locations that hold 5, 75, 66, 5, 58, 2, 1, 27, 14, 15, 18, 0, 0, 0, 0 (the values that are predefined). The variable DT in the Customizer would need to be set equal to the memory location that holds the first value (5) in the list above. The locations referenced by the variables BL and LL might need to be readjusted, as well.

Line 150 of Program 2 determines which table to use for POKeing the BASIC pointers to the right values before saving the modified version of SpeedScript. When a SAVE is performed in BASIC, the start address of the block of memory to be saved is contained in locations 43 and 44 (in standard low-byte/high-byte form). The top of the block to be saved is one position below the value contained in locations 45 and 46 (called the start of BASIC variables, stored in the same format).

Lines 160-168 print the statements to perform the POKEs and to save and run the new SpeedScript; they also fill the keyboard buffer with a HOME character, three RETURNS, an exclamation point, and the code for LOAD and RUN. The Customizer vanishes from sight as it is replaced by SpeedScript. (Actually, it's still high in memory, but is now unavailable for use.)

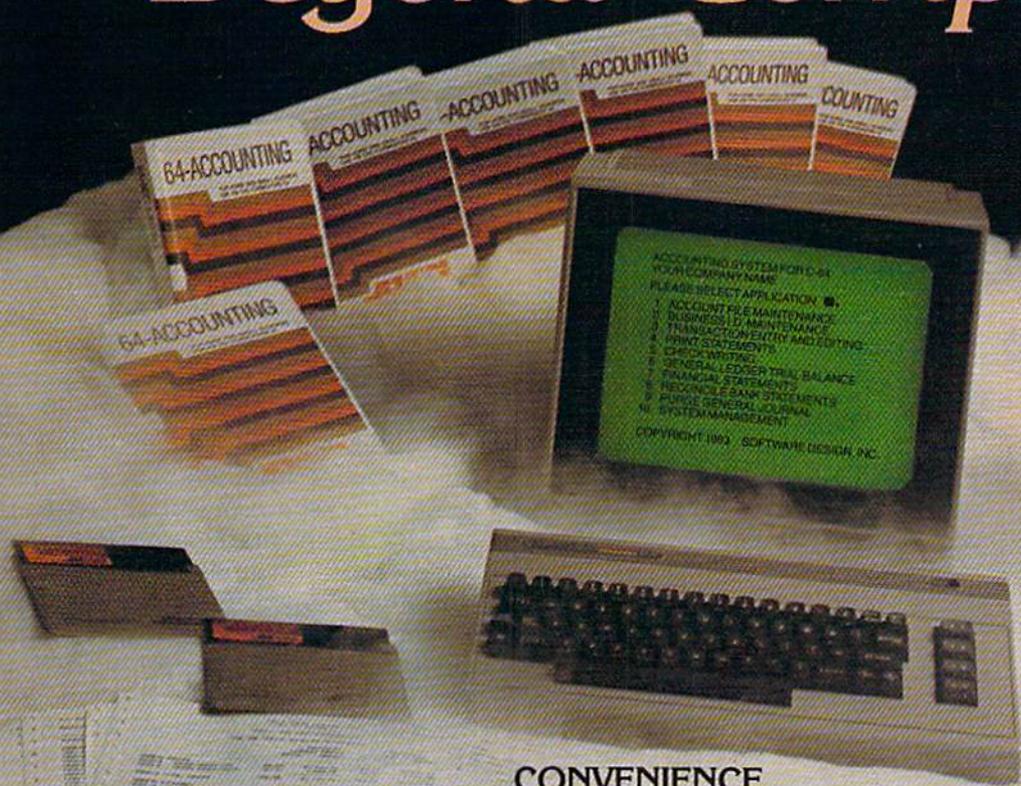
More On Sending Printer Codes

Most printer codes are easy to send, and are listed in the printer and interface manuals. Gemini Star and Epson (Grafrax) owners, for example, can send the ESCape code (CTRL-£ 1, represented in this article by [1]) followed by a 4 in the text of the SpeedScript file on the screen to cause the printer to print in italics. To turn the italics print off, send [1]5. Some interfaces, including the Tymac Connection, require sending the ESCape code twice when using emulation mode. (If you have problems, refer to your printer/interface manual or "SpeedScript Revisited" in the May GAZETTE.)

Some printer features require three codes to be sent, though. On the Gemini Star, for example, the code to trigger the continuous underlining mode is ESC-1. Sending this to SpeedScript as [1]-1 doesn't work though. To send the codes properly, you need only define a reverse video number to the value 1. Since [1] is already used by SpeedScript, we'll use [8]. From within SpeedScript, this would look like: [8]=1 (the Customizer allows you to set default values for the reverse video numbers, so they don't have to be defined on the screen). Then, simply insert [1]-[8] immediately before the text you wish to underline. That's fine, but now let's turn it off.

64 Software

Beyond Compare



Introducing The New 64-ACCOUNTING SYSTEM.

If you can't put your finger on your total financial picture, we've got the answer. Software Design, Inc. has a personal software accounting package designed for your Commodore 64®.

Even if you're all thumbs, we offer a support line and an easy-to-follow manual written in plain English. Created for home and small business demands, the 64-ACCOUNTING SYSTEM puts financial management at your fingertips.

FLEXIBILITY

Design your own financial statement with no rigid account number system, and with flexible subtotal possibilities. Take the guesswork out of checkbook balancing. Distribute checks and receipts to 20 separate accounts. Establish monthly, quarterly, or yearly accounting periods. 64-ACCOUNTING expands with your financial management needs.

For use with Commodore 64® and disk drive.
Copyright 1983 — Software Design, Inc.

Commodore 64 is a registered trademark of Commodore Business Machines, Inc.

CONVENIENCE

Organizing your tax return has never been easier. 64-ACCOUNTING offers up to 10 checking ledgers for those special home and business accounts. Teams with your printer to write checks, print statements, profit and loss and trial balance sheets. Even offers mini accounts receivable and accounts payable ledgers.

PRACTICAL BUDGETING

Control your expenses with the 64-ACCOUNTING SYSTEM'S budgeting ledgers. Monitor your past expenses against projected costs. It's so versatile you can select year-to-date totals or any span of months for comparison budgeting.

Plan your financial future around the 64-ACCOUNTING SYSTEM. There may never be a better time than now. **\$69.95.** To order call 1-800-553-0002. In Iowa call 1-800-772-5771.

Dealer and distributor inquiries welcome

**SD SOFTWARE
DESIGN, INC.**

P.O. Box 570, www.commodore.ca

The code sequence for turning off the continuous underline feature of the Gemini is ESC-0. Unless it is defined otherwise, the default value of [9] in SpeedScript is zero. So, we'll place the following group of characters on the screen after the word or phrase we want underlined: [1]-[9]. Any three-character code sequence can be sent in this manner to the printer, so the Gemini's foreign character sets can be accessed by SpeedScript. See the following table of printer codes for the Gemini, and if you have another printer, refer to your manual and see how many features you can access. We've used SpeedScript to operate letter quality printers as well, and it works fine if you redefine the codes to match those that the interface and printer will accept.

SpeedScript Format To Access Selected Gemini and Epson (Grafrax) Features

(This table uses these preset values in addition to the predefined default settings: [5]=20 [8]=1 [9]=0.)

[2]	enlarged (double-width) print (cleared when a carriage return character is sent)
[3]	condensed print (use [5] instead with some interfaces)**
[4]	pica print
[5]	cancel enlarged print (use [3] instead with some interfaces)**
[1]4	italics on*
[1]5	italics off*
[1]E	emphasized on*
[1]F	emphasized off*
[1]G	double-strike on*
[1]H	double-strike off*
[1]O	disable skip-over perforation
[1]S[8]	subscripts on
[1]S[9]	superscripts on
[1]T	sub/superscripts and unidirectional printing off
[1]U[8]	unidirectional printing on
[1]U[9]	unidirectional off
[1]W[8]	double-wide printing on (alternate method, not cleared by a carriage return character)
[1]W[9]	double-wide printing off (alternate method)
[1]Y[8]	enable buzzer
[1]Y[9]	disable buzzer
[1]-[8]	underline on
[1]-[9]	underline off

* indicates this command works for Epson Grafrax.

** Some interfaces, notably CARDCO and XETEC, swap these two codes, CHR\$(15) and CHR\$(20).

To access foreign character sets, send [1]7[7] after defining [7] to one of the following values:

- 0 = American
- 1 = British
- 2 = German
- 3 = Danish
- 4 = French
- 5 = Swedish
- 6 = Italian
- 7 = Spanish

Some printers use only DIP switches to invoke foreign character sets, so they won't take these codes; just flip the right switches and you'll have it. After selecting the character set you wish to use, some of the special characters may be obtained from the keyboard and some will require the use of the user-definable reverse video numbers in SpeedScript. Compare the printer manual and the Commodore ASCII chart in the *Programmer's Reference Guide* and experiment. A closed bracket (]) in the text on the screen in SpeedScript with the Spanish character set activated, for example, would cause an inverted question mark to be printed (if you're using a Gemini printer).

Even when using the normal character set, symbols on the screen obtained by pressing the Commodore logo key will cause the printer's (or the interface's) characters to be printed. You can access a good number of graphics and special characters (most of the printer's characters with ASCII codes from 161 to 191) from within SpeedScript this way. Just compare the ASCII charts in the printer and computer manuals.

Other features are available by defining the reverse video numbers. For example, to have the printer backspace one character (this allows you to print accent marks), just define a reverse video number to the value 8 (some printer/interface combinations will interpret this value as a graphics command, so consult your manual and define the number as you need it). Then, whenever SpeedScript finds the reverse video number in the text, it will backspace. To activate the printer's internal buzzer during a printout, you could define one of the reverse video numbers to the value 7 and place the defined number in the text where you wish, even in the footer.

If you get confused about all the codes, remember that the first place to go for answers is the manual. If things don't work right, keep trying. Keep track of where you've been and you'll know where to go in the future. Some printer functions will not work while others are in effect. For example, some printers will not print superscripts while printing in emphasized mode, but automatically double-strike the superscript data. If you can't get signals through the interface at first, try using SpeedScript's CTRL-P command and resetting the secondary address to the interface's *transparent* (no ASCII correction) mode. In most cases, once the printer is set it will stay in that mode until you send codes to change it (or until you turn the power off somewhere in the system).

One final note: Whenever you want to include a memo about a file you are SAVEing, use a SHIFT-SPACE to separate the filename from the memo. For example, if you want to SAVE a

note about City League Baseball with the name "clb" and have a note in the directory that says "spdsr" (to indicate it is a SpeedScript file), enter the filename as below:

SAVE:clb[SHIFT-SPACE]spdsr (in SpeedScript; a small dot will appear where the [SHIFT-SPACE] was entered), or

SAVE"CLB[SHIFT-SPACE]SPDSCR",8 from BASIC.

The file will LIST in the directory as follows (assuming it is 4 blocks long):

```
4 "CLB"SPDSCR PRG
```

You can then LOAD the file with the short name (CLB) or the long name (CLB[SHIFT-SPACE]SPDSCR).

See program listings on page 153. 

To receive additional information from advertisers in this issue, use the handy reader service cards in the back of the magazine.

LEARN MACHINE LANGUAGE

- Write Fast-action Arcade-style graphics
- Fully use the Music synthesizer
- Completely understand the Computer
- Develop your skills inventory

Learn with the Tutorial that comes complete with a Full set of professional quality development tools.

DEVELOP-64 4.0 IS NOW FAST!!!

Assembles 2500 lines of code in under 20 seconds!

- Full Macro and conditional assembly capacity • 2600 lines of code in memory, Expandable to 17,000 on disk
- Assemble direct to disk or memory • Co-resident full-screen editor (with search, replace, copy, move) and Debugger and Decoder • Decoder disassembles programs on disk or in memory • Built-in disk wedge • Program trace single step, execute • Set 10 breakpoints and/or go-points
- Full-screen memory display and modify

PLUS the Machine Language Programmer's Bible: "Inside the Commodore 64"

\$69⁹⁵

Plus \$3.00 postage and handling. (Minn residents add 6%)

French Silk

P.O. Box 7096 Minneapolis, MN 55407

Call Toll-Free 1-800-328-0145

or in Minnesota call: (612) 871-4505



SUPER FORTH 64[®]

TOTAL CONTROL OVER YOUR COMMODORE-64[™] USING ONLY WORDS
MAKING PROGRAMMING FAST, FUN AND EASY!

MORE THAN JUST A LANGUAGE...
A complete, fully-integrated program development system.

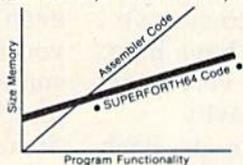
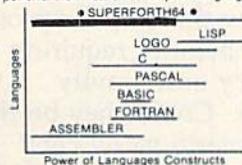
Home Use, Fast Games, Graphics, Data Acquisition, Business
Real Time Process Control, Communications, Robotics, Scientific, Artificial Intelligence

A Powerful Superset of MVFORTH/FORTH 79 + Ext. for the beginner or professional

- 20 to 600 x faster than Basic
- 1/4 x the programming time
- Easy full control of all sound, hi res. graphics, color, sprite, plotting line & circle
- Controllable SPLIT-SCREEN Display
- Includes interactive interpreter & compiler
- Forth virtual memory
- Full cursor Screen Editor
- Provision for application program distribution without licensing
- FORTH equivalent Kernel Routines
- Conditional Macro Assembler
- Meets all Forth 79 standards*
- Source screens provided
- Compatible with the book "Starting Forth" by Leo Brodie
- Access to all I/O ports RS232, IEEE, including memory & interrupts
- ROMABLE code generator
- MUSIC-EDITOR
- SPRITE-EDITOR
- Access all C-64 peripherals including 4040 drive
- Single disk drive backup utility
- Disk & Cassette based. Disk included
- Full disk usage—680 Sectors
- Supports all Commodore file types and Forth Virtual disk
- Access to 20K RAM underneath ROM areas
- Vectored kernel words
- TRACE facility
- DECOMPILER facility
- Full String Handling
- ASCII error messages
- FLOATING POINT MATH SIN/COS & SQRT
- Conversational user defined Commands
- Tutorial examples provided, in extensive manual
- INTERRUPT routines provide easy control of hardware timers, alarms and devices
- USER Support

SUPER FORTH 64[®] is more powerful than most other computer languages!

SUPER FORTH 64[®] compiled code becomes more compact than even assembly code!



A SUPERIOR PRODUCT in every way! At a low price of only

\$96

Call: (415) 651-3160
PARSEC RESEARCH

Drawer 1776, Fremont, CA 94538

© PARSEC RESEARCH (Established 1976)

Commodore 64 & VIC-20 TM of Commodore

Take this ad to your local dealer, or B. Dalton Book store. Phone orders also accepted. Immediate delivery! Dealer inquiries invited. CA residents must include tax.

When was that article?

Find it fast with PcDex[™] and PcDex Quarterly[™]!



Magazine resource guides for Commodore 64[™], VIC-20[™], and PET/CBM[®] computers

Computing magazines getting out of hand? Can't locate a needed software or hardware review? That valuable programming utility? Your magazines are a valuable source of programs, articles, columns, letters and reviews. PcDex provides fast, easy access to this valuable resource!

...at last!

THE COMPLETE MAGAZINE REFERENCE COMPANION

COMPREHENSIVE Indexes the 12 most popular Commodore and general microcomputer magazines. Over 6000 cross-referenced entries covering January 1982 thru March 1984 *Compute!*, *Compute's!*, *Gazette*, *Commander*, *Commodore*, *PowerPlay*, *Run*, *Creative Computing*, and more!

VERSATILE Six separate indexes: subject, title, programs, software reviews, hardware reviews, and table of contents. Includes updates and revisions.

VALUE Locate valuable "free" programs for a wide range of games and applications, or reviews that can prevent costly purchasing errors. No more time wasted searching stacks of back issues for that item you can't find. Go directly to it! All for \$14.95.

Want to stay up-to-date? Subscribe to PcDex Quarterly[™]! Receive 4 issues including an annual cumulation for only \$17.95

ALTACOM, INC. P.O. Box 19070, ALEXANDRIA, VA 22320

Please send me a copy of PcDex at \$14.95 plus \$2.00 shipping/handling*

Please enter my subscription to PcDex Quarterly (4 issues) for \$17.95*

Payment enclosed: \$ _____ (VA residents add 6% sales tax)

Charge my: VISA MasterCard

Card no. _____ Exp. _____

Mr./Ms. _____

Address _____

City _____ State/ZIP _____

*Outside the U.S. add \$5.00 Please send additional information

FOR FASTER SERVICE CALL 703-683-1442

COMMODORE TRADEMARKS ACKNOWLEDGED DEALER INQUIRIES INVITED

REVIEWS

Three Arcade Games For The VIC-20

Steve Hudson, Assistant Editor

There are a *lot* of arcade games for the VIC-20. Some are ho-hum; others are pretty good. But a few of them are really worth knowing about—and three of the best, *Moon Patrol*, *Jungle Hunt*, and *Pole Position*, have recently been released by Atari as part of the Atarisoft series.

Atarisoft games are conversions of popular Atari games for use on other computers. They may be just what you've been waiting for if you're an arcade fan. But even if you don't own a joystick, these games offer exciting and entertaining evidence of what the VIC can do. After seeing them in action, you may find you're more of an arcade fan than you thought.

Moon Patrol

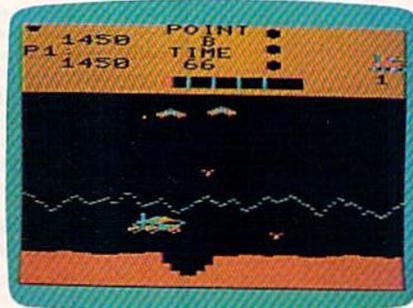
You had always wanted a job with the Luna City Police Department, so you were thrilled when they finally made the offer.

"You'll like it here," said the captain.

"Great place to work," said the sergeant.

"It's a perfect job," said your partner. "Unless you get assigned to *Sector Nine*."

Sector Nine. You'd heard rumors about it: a wasteland plagued with tanks, small rocks, large rocks, and mines, not to mention small craters, large craters, rolling rocks, flying saucers,



You must clear yawning craters in a single bound while watching out for attackers from above in Moon Patrol.

satellites, and even enemy patrol cars. It was a sector from which experienced officers rarely returned, let alone inexperienced rookies.

But that's where you ended up.

"It'll toughen you up," said the captain.

"It's a challenge," said the sergeant.

"It's a perfect job," said your partner. "Just be sure you've made out your will."

Unfortunately, the will was one of the things you never got around to. Just too busy packing up to move to Luna City. With a shrug, you climb into the patrol car.

You'll just have to survive. Fortunately, you have help.

That patrol car is the very latest, with a built-in antigravity jumper and laser cannons. Each is controlled by a single lever (which looks suspiciously like a joystick), and you only have to push the joystick—uh, lever—away from you to make the pa-

trol car jump. To increase the car's speed, push the stick to the right; the car slows down when you move it to the left. The laser cannons (which simultaneously shoot straight up and straight ahead) are controlled by the fire button.

The beat is divided into two patrol routes. One is designated the "beginner" route, for obvious reasons, while the other is known as the "champion" route. There aren't many champions left. A calibrated scale at the top of the screen shows how far you have gone (and how far there is to go), and you can select the route to patrol by pressing f5. Press f3 if you're on patrol by yourself; press it again if someone else is coming along.

Pressing the f1 key starts things rolling. Actually, "bumping" might be a better description of the ride. It's rough out on the lunar landscape, even with those big balloon tires to cushion the ride. The wheels follow the dips in the terrain as your car moves through the smoothly scrolling landscape, and they automatically retract whenever you make an antigravity jump to clear a crater or obstacle. Some barriers, like rocks, can be blasted with the laser. Others you'll have to jump. You hear that there are even a few that sneak up on you from behind, requiring some fancy anti-gravity jumpwork. Could they be the dreaded *enemy patrol cars*?

Whatever they are, they're worth 800 points apiece. You also get points for blasting rocks or flying saucers, for knocking down hostile satellites, for

REVIEWS

jumping obstacles, and for dodging rolling rocks.

Realizing the difficulty of your assignment, the Department has given you four patrol cars (one for starters and three in reserve). They've also given you an unlimited supply of laser bullets, as well as a pause control (the space bar) which stops your car in case you want to step outside for a breath of fresh vacuum.

Nice folks, those Luna City administrators.

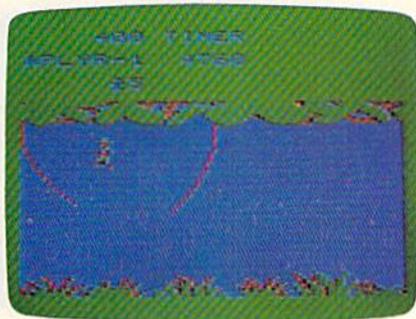
Jungle Hunt

Urban adventurers, here's your chance. Get ready to explore the jungle and be a hero. In *Jungle Hunt*, you must brave the perils of an uncharted wilderness to save your beloved from the cannibals—and though it may be just another rescue mission, it's not just another game.

When the adventure begins, you're at the edge of the jungle and out on a limb—literally—waiting for a swinging vine to come within reach. Closer... closer...you jump, grabbing for the vine before it flies out of reach. If you catch it, you'll be on your way. If not, you start over.

After ten successive vines, you reach the edge of the river. Its surface is broken by gentle waves; it looks quiet and peaceful. Confidently you let go of the vine and dive into the warm, tropical water.

Then you see the shapes, and they're much too big to be mere fish. Crocodiles! It's too late to turn back. Diving to meet the foe, you pull a dagger from your belt. Watch out for those



The intrepid jungle explorer swings into the great green unknown in *Jungle Hunt*.

air bubbles, too. If you get caught in one, you're helpless until you reach the surface. And crocodiles just love helpless heroes for lunch.

Finally, you reach the far bank. There, at the top of a long slope, is the cannibal village, where your beloved awaits your rescue. Up the slope you go, but the natives are rolling boulders down the hill to stop you. Fired by determination, you rush up the slope, jumping the boulders as they come. The cannibal village comes closer—but can you get past the natives in time?

With its constantly moving, smoothly scrolling graphics, *Jungle Hunt* really does put you in a subtropical jungle. Each part of the jungle offers a different challenge, from vine hopping and crocodile dodging to

No Foolin' Around

The Commodore 64 is your first "real" computer. So, it stands to reason that the software you use be real too. And, *useful*.

The INSTA series productivity software is just that — real and useful.

With our tutorial manuals and HELP SCREENS we actually *teach* you what word processing, spreadsheets and graphs are all about.

Games are fun...for foolin' around. INSTA is for real.



INSTA™

By Cimarron a division of MICRO SCI CORP.
2158 Hathaway Street
Santa Ana, CA. 92705
(714) 241-5600

μ-SCI
MICROSCI

Commodore 64 is a trademark of Commodore

boulder jumping and finally rescuing the damsel in distress. The graphics are appealing, and you'll find that the sound effects accentuate your enjoyment of the game.

The screen display shows your score, the remaining time, and the number of heroes you have in reserve. When you're crossing the river and have to dive, it also shows how much longer you can hold your breath. That's really all you need. Other information might just be distracting—and you'll need all your concentration to get through the jungle alive.

Game play is straightforward, relying solely on joystick control. Use the fire button to jump or to pull your dagger; the joystick lets you speed up or slow down (and, at the river, to dive or surface as well). Use the function keys to select the number of players (one or two) or to pick a level of difficulty (beginner, regular, or advanced). You win points for swinging from vine to vine, for eliminating crocodiles, for jumping boulders, and so on.

Start the game with the f1 key or the fire button. On higher levels you have fewer men—two instead of five—and you'll find that some situations are much more dangerous.

Pole Position

Most days, the drive to the corner store is not particularly exciting. Between bumpy roads, heavy traffic, and a car that does 0-to-60 in roughly four days, I'm in no danger of imitating an Indy 500 race car driver.



Pole Position offers long straightaways and challenging curves at a top speed of 244 miles per hour.

But now and then I imagine roaring along smoothly at 200 miles an hour, taking the turns with steady precision and handling the car with the practiced grace of a skilled pro.

Now VIC owners have a way to experience that thrill without ever leaving the driveway. It's *Pole Position*, a scaled down version of the popular arcade game.

You're the driver of a high performance racing car, and your car is a marvel of sophisticated engineering. Like those Luna City police cars, it's operated by a control lever that looks a lot like your joystick. Push the lever forward to accelerate; pull back to slow down. Move the stick left or right to steer. The car is also equipped with an advanced two-speed transmission that you shift by pushing the fire button, and it has a top speed (in high gear) of 224 miles per hour.

You race on a remarkably realistic field. The course itself is a smooth two-lane track, winding through a fertile green valley. The surrounding mountains sit on the horizon, and the view shifts as you navigate the

course—just as it would were you actually driving. There are long straightaways, and there are treacherous turns. Track boundaries are clearly marked in red and black, and though you can't run off the road, you will immediately lose speed if you stray from the pavement and run onto the shoulder.

Select from three skill levels (beginner, intermediate, or advanced) by pressing f5. Start at the beginner level to get a feel for the game and the response of the controls. Then, when you're comfortable with your skills, move up to intermediate and advanced levels.

Press f1 or the fire button to start the qualifying run. As soon as you do, a blimp will fly over the track, trailing a banner that reads "PREPARE TO START." You'll see your car sitting at the starting line. The starting light (on the left side of the screen) will flash red three times, then turn green, and the race is on.

Nothing happens at first, even though the timer is steadily counting down. You'll have to step on the gas (push the joystick forward) to start moving. Hold the stick forward to accelerate (and press the fire button to shift into high gear, for even greater speeds) and you'll soon begin to overtake the other competitors.

That's when you'll really need all of your skill. Steering with the joystick, weave in and out of the pack, running up a good qualifying time without running into other cars. If you collide with another racer, you'll crash with an appropriate burst

of flames and a cacophony of crunching metal. However, you've got an unlimited number of cars (within the allotted 90 seconds per race), so you will at least be able to start up again and run out the clock. It's challenging, to say the least. But the reward is the pole position in the upcoming race, a prize worth any racer's best effort.

Once you've qualified, the race begins. Again, the driver's-eye view is remarkably realistic; you can actually see other racers around you. How many you see depends on your starting position.

During the race, use the joystick to maneuver just as you did in the qualifying run. Again, you have an unlimited number of cars. At the end of the race, the display will indicate your total score, based on distance covered and other cars passed. You'll rack up more points if you shift into high gear to cover more distance and pass more cars. But you'll also run the risk of more frequent crashes and more lost time.

Racing is exciting business, and *Pole Position* captures many of the sights and sounds of the track. The graphics are outstanding; so are the sound effects. You can even press the space bar to temporarily halt the action, in case you need to make a pit stop or grab some milk and cookies.

But the highlight is the excitement of handling the racer itself. Like any vehicle, your VIC racer is harder to control at higher speeds. Though it takes some getting used to, you'll quickly learn to steer into curves

and weave in and out of the pack. And it won't be long until the coveted pole position is yours.

Entertaining Exertion

As you play these games, you'll find yourself getting more and more involved in the plots. Certainly they're entertaining. But they require quick reflexes and even a certain measure of strategy to win. Should you jump the moon crater now or wait another second and try for that tank? When should you let go of the

vine? Can you accelerate into the curve and still make it by those two cars? The list of decisions goes on and on, and after a session with any of these games you may actually find yourself breathing a little harder than when you began.

Moon Patrol
Jungle Hunt
Pole Position
Atari, Inc.
1312 Crossman
Sunnyvale, CA 94088
Cartridge for the VIC-20 (or 64),
\$44.95 each

No Lookin' Around

We know. You've been looking everywhere for 64 software, INSTA's interactive line of software is just a phone call away.

Imagine, specially designed software that "talks" to one another. Your home budget created with CALC instantly becomes a GRAPH. And your club membership list with addresses and monthly dues quickly becomes a form letter, printed over and over again, automatically, for each member.

So, no more lookin' around. INSTA is here now!



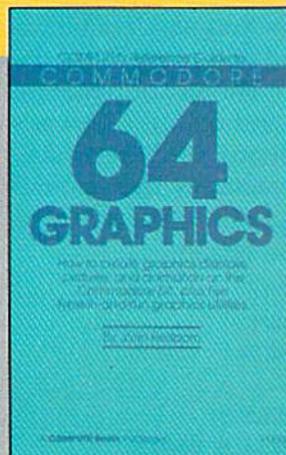
INSTA™

By Cimarron a division of MICRO SCI CORP.
2158 Hathaway Street
Santa Ana, CA. 92705
(714) 241-5600

μ-SCI
MICROSCI

Commodore 64 is a trademark of Commodore

COMPUTE! Books



COMPUTE!'s Reference Guide To Commodore 64 Graphics

A complete tutorial on Commodore 64 graphics. Noted Commodore author John Heilborn explains how to program sprites, multicolored screens, animation, custom characters, and more. Beginners will like the step-by-step instructions and clear example programs. Advanced programmers can build up

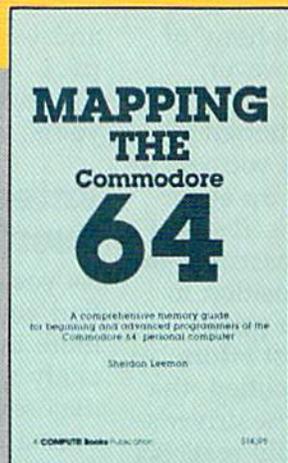
their tool kit with the character editors, sprite editors, screen design program, and other useful utilities.

218 pages, paperback.

Spiral bound for easy access to programs.

\$12.95

ISBN 0-942386-29-9



Mapping The Commodore 64

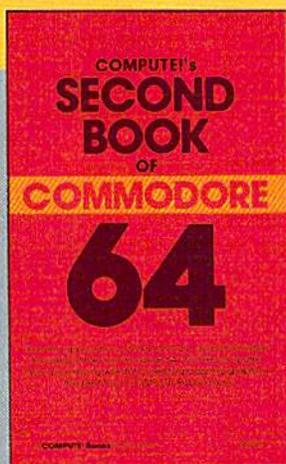
An invaluable memory map. Complete details on the functions of pointers, the stack, ROM and Kernal routines, and more. BASIC programmers will find easy-to-understand explanations of advanced programming techniques. Programmers using machine language will find a wealth of useful locations and ideas for programming. For intermediate to advanced programmers.

268 pages, paperback.

Spiral bound for easy access to programs.

\$14.95

ISBN 0-942386-23-X



COMPUTE!'s Second Book of Commodore 64

Continues in the tradition of the best-selling *First Book of Commodore 64* in presenting quality programs and articles, many revised or never before published. There's something for almost any 64 user: arcade and text adventure games, an impressive word processor, a program which adds 41 new BASIC commands, an

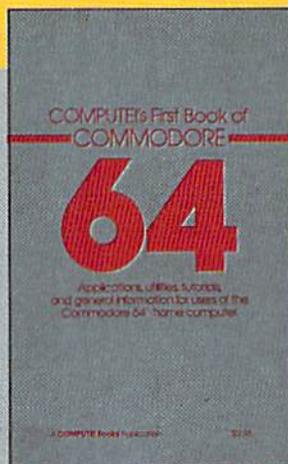
electronic spreadsheet, sound and graphics tutorials, and information on saving, copying, and retrieving files.

288 pages, paperback.

Spiral bound for easy access to programs.

\$12.95

ISBN 0-942386-44-2



COMPUTE!'s First Book Of Commodore 64

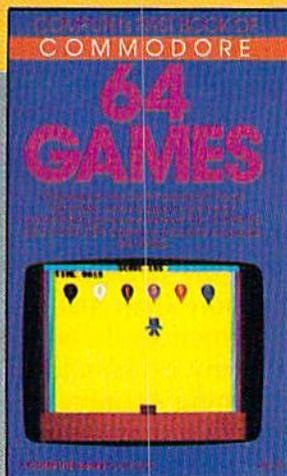
An excellent resource for users of the 64, with something for everyone: BASIC programming techniques, a memory map, a machine language monitor, and information about writing games and using peripherals. Many ready-to-type-in programs and games.

264 pages, paperback.

Spiral bound for easy access to programs

\$12.95

ISBN 0-942386-20-5



COMPUTE!'s First Book Of Commodore 64 Games

Packed full of games: "Snake Escape," "Oil Tycoon," "Laser Gunner," "Zuider Zee," and many more. Machine language games requiring fast hands and a good eye, as well as strategy games which will exercise your mind. Introductory chapters and annotated listings provide ideas and techniques for writing games. An excellent

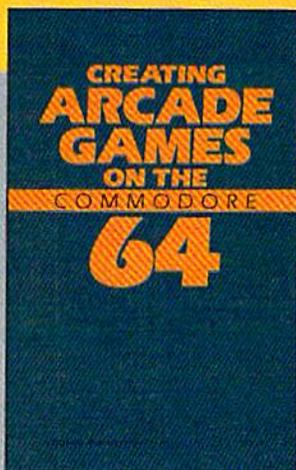
introduction for 64 owners who want to begin writing games.

217 pages, paperback.

Spiral bound for easy access to programs.

\$12.95

ISBN 0-942386-34-5



Creating Arcade Games On The Commodore 64

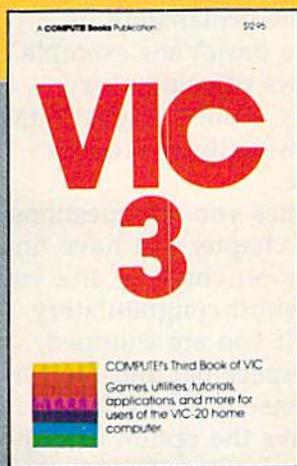
This book develops and explains the principles of game design; includes general programs for using the screen, custom characters, animation, sprites, sound and music, and other features of the 64. Also includes five games. Just the book for programmers who want to learn how to write fast, exciting arcade games.

357 pages, paperback.

Spiral bound for easy access to programs.

\$14.95

ISBN 0-942386-36-1



COMPUTE!'s Third Book Of VIC

A potpourri of games, applications, utilities, and programming techniques, some never before published. Tricks for saving memory, four games, budget planner, custom characters, PEEK and PRINT for the VIC, Graph Plotter, Music Composition, and Automatic Program Appending are just a few of the fine programs and chapters. Also, appendices

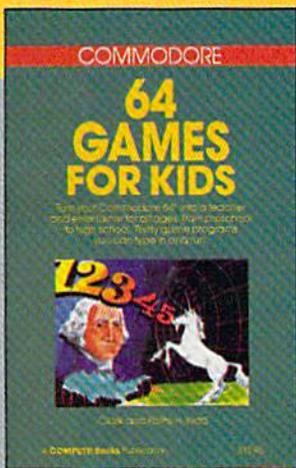
and reference tables. *Third Book of VIC* is a useful source of ideas for programmers of all levels.

360 pages, paperback.

Spiral bound for easy access to programs.

\$12.95

ISBN 0-942386-43-4



Commodore 64 Games For Kids

Dozens of games for kids of all ages. An instant library of educational software. "Stargazer" displays the constellations of the night sky. "Movers and Shakers" tests knowledge of historical figures. "Hidden Picture" lets children uncover a series of drawings. Also, games featuring music, spelling, and world geography. Appropriate grade levels are clearly identified.

267 pages, paperback.

Spiral bound for easy access to programs.

\$12.95

ISBN 0-942386-37-X

COMPUTE! Publications, Inc. 

One of the ABC Publishing Companies

Post Office Box 5406, Greensboro, North Carolina 27403

 www.commodore.ca

CodePro-64

Todd Heimarck, Assistant Editor

Learning a language is more than just memorizing a list of words or phrases. And BASIC is not that much different than, say, French. To become truly fluent requires practice and practice and more practice.

If you hopped on a jet to Paris tomorrow, bringing nothing more than a phrasebook and a translator's dictionary, it would be a chore to get across anything more than the simplest of ideas. You might mispronounce a word like "gare," asking directions to the war of the north, when you meant to ask the location of the train depot of the north.

A Step-By-Step Tutorial

CodePro-64 is a software package designed to teach BASIC to beginners. It is like a combination phrasebook/dictionary—it gives you the necessary vocabulary, the first step towards fluency.

If you buy all of your software and don't care to delve into the mysteries of IF-THEN and FOR-NEXT, you probably don't need *CodePro-64*. But for a newcomer to computing who wants to start using BASIC, this package from Systems Management Associates (SMA) can provide an excellent introduction.

It runs on a Commodore 64 and 1541 disk drive. The package includes two disks, a 100+ page manual in a three-ring binder,

and a warranty/registration card.

Before you can begin, you must follow the installation procedure, a few steps that write a serial number to the disk as a form of identification and copy-protection. You are also reminded to mail the postage-paid card, which registers your warranty and puts you on a mailing list to receive periodic updates and enhancements.

You then LOAD the main program and you're ready to start learning BASIC. The program is menu-driven; you see a list of choices, accessed by pressing the appropriate key.

It's quite easy to find your way around the menus. Function one (f1) always returns you to the main menu. Pressing f3 brings you back to the local menu. Pressing f7 advances one page, while f8 pages backwards. You don't have to remember all of this, the options appear at the bottom of the screen. At the top of the screen is a reference number which points the way to the appropriate page of the manual.

After making a choice from the menu, you may see a local menu, from which you choose the topic you want to study. To get anywhere in the program requires pressing no more than two keys. The two disks contain 18 programs. Depending on which topic you choose, you may have to wait a minute or two for the program to load, which gives you a chance to scan the relevant chapter in the manual.

Most of the program is text, something like a large electronic

book. To turn the page, press f7.

But it's more than just a disk full of sentences. In addition to the many explanations and programming examples, *CodePro-64* offers something called BasicView, which is best described as an animated mini-program. Rather than just reading about FOR-NEXT loops, you can see one in operation. Pressing the space bar moves you line by line through the program. Upon reaching the NEXT statement, an arrow grows from the BASIC line back to the FOR that initiated the loop. A ball travels along the arrow's path, back to the beginning of the loop. In the explanation of GOTO is a BasicView example with arrows pointing every which way, a subtle representation of unstructured programming style.

At times you see questions about the chapter you have finished. Answer correctly and you receive a short congratulatory message. If you are stumped, press the space bar and the correct response is printed. You always have the option of skipping the quizzes and going to the next page.

The manual complements the main program. Pictures of most of the screens are included, as well as additional elaboration on the finer points of programming.

CodePro-64 has four main sections. The first is an introduction, which explains how to use the function keys to move between menus. Also included is a brief introduction to the keyboard—how to switch from uppercase/graphics to upper/

Introducing the ON FIELD™ Sports Series.

For Sports Game Realism You can Feel!



ON COURT™ TENNIS

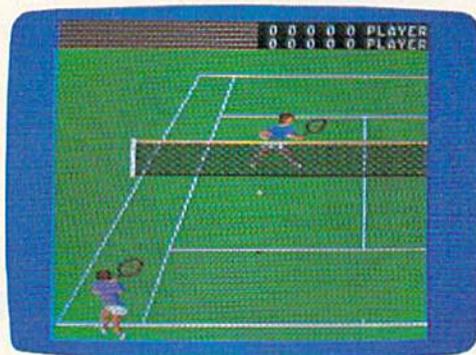
Actual Commodore 64™ screen—Other versions may vary

While the "other guys" have been trying to equal our award winning sports games, we've been busy creating the *next* generation. ON FIELD™ Sports by Gamestar.

We've set new standards in realistic sports play and strategy. With Player Perspective Graphics™ so realistic, you *feel* like you're on the field. With the kind of strategic *choices* you'd expect when playing for real . . . and then some. And with *thinking* computer opponents whose skills vary according to yours . . . whether you're a beginner or an expert.

Take center court in ON COURT™ TENNIS. Choose from (4) players patterned after real tennis superstars . . . their playing strengths, weaknesses and temperament. Choose your playing surface . . .

clay, grass or asphalt. Play solitaire against a world class computer player or human opponent. "Anticipation Control" lets you gain a step on your opponent—if you guess right! You even have racquet control over ground strokes, drop shots, serves and smashes—in-bounds and out-of-bounds. No wonder ON COURT™ TENNIS plays like real tennis, rather than some version of Pong™!



ON COURT™ TENNIS

Actual Commodore 64™ screen—Other versions may vary

Ask for the ON FIELD™ Sport Series at your local software dealer or write: GAMESTAR, Inc., 1302 State Street, Santa Barbara, CA 93101 or call 805-963-3487. Available for the Commodore 64™, and soon for Atari® and Apple® computers. Watch out for them—they play to win!



WE BRING SPORTS ALIVE

lowercase characters, the color keys, graphics, quote mode, and so on.

The programming tutorial takes up section two, which begins rather slowly with a detailed explanation of program flow (from low-numbered lines to higher lines), variables (floating point, integer, and string), constants, arrays, expressions, and operators (numeric, string, and logical). The pace quickens when BASIC keywords and commands are introduced, one-by-one, complete with BasicView examples and quizzes.

How to program music and sprites is covered in the third section, a fairly short tutorial about the various registers and necessary POKEs. A sprite-design utility is provided, as well as two musical composition programs. One turns your 64 into a piano-like keyboard, for testing different sounds—violin, tuba, drum, etc. The other allows you to write simple melodies which can be edited and played back.

The final section contains some sample programs and lets you look up the meanings of BASIC keywords (like a dictionary on disk).

New ideas are introduced in a logical order, beginning with elementary concepts like variables and building to more complex programming structures (sprites and music). It is not something that could be completed in an hour or two. There is a lot of information to be digested, which could be spread over a period of days, weeks, or even months.

A BASIC Phrasebook

After completing *CodePro-64*, will you be a programming genius? Frankly, no. You can't learn BASIC in a week; you need practice. But before you can practice, you need to understand the grammar and vocabulary. This is where *CodePro* comes in. It should give you a good headstart on gaining fluency. It's like one of those foreign phrasebooks that gives you stock sentences and a working vocabulary.

A chapter at the front of the manual develops the analogy of a foreign language, emphasizing that to become a good programmer, you must write hundreds of programs. It's not enough just to study about writing programs.

Primarily For Beginners

This package is designed for programming neophytes, new computer owners who don't know a thing about the ins and outs of BASIC. The less you know, the more you'll learn. If you have more than a year's experience, you may find some of the sections a bit simple.

As a general introduction to the Commodore 64, BASIC commands, sprites, and music, it is very good.

The explanations of BASIC commands are thorough. Considering the technical subject matter, it's written in a clear, easy-to-understand style. And it's well conceived and easy to use, due in part to its system of menus.

The self-paced format lets

you take as much time as you need to master each chapter, unlike a classroom where you are (inevitably) ahead of or behind the rest of the students.

The BASIC reference table is useful for refreshing your memory of how certain keywords work. It could be a good tool for tracing or flowcharting a BASIC program written by someone else (although disk access can be slow at times).

The sprite utility explains clearly the steps to create sprites and move them about the screen. The two music programs contain some good examples and give you a feel for the many capabilities of the SID chip.

There are some misconceptions and outright mistakes, however.

In the introduction, you are told BASIC program lines can have any number between 0 and 32767. Actually, the maximum line number is 63999 on the Commodore 64. In the same section, floating point numbers are introduced. It is explained that they can have up to nine significant digits—from +999,999,999 to -999,999,999. Scientific notation (which includes numbers such as 1.895E13) is not mentioned. Also, when arrays are introduced, the zero elements are ignored (although they are covered later, in the explanation of DIMension).

Some fairly important subjects are given short shrift: how to read the joystick, some of the POKEs and PEEKs available, the difference between Commodore ASCII and true ASCII, how to

REVIEWS

plan out a program and then debug it, various things you can do with tape and disk files. But if every aspect of BASIC were covered, there would probably be ten or twenty disks and a thousand pages of text.

The introduction does too much a bit too quickly. It makes sense to introduce variables and constants before BASIC commands, but a beginner does not need to know that 177 AND 157 equals 145 before learning to use PRINT or INPUT or FOR-NEXT loops. It might be best to skim through the introduction (and ignore the part about logical operators), go on to BASIC, and return to the introduction at some later point. The menu facilitates moving easily to later chapters.

The music and sprite programs do not compare favorably to good commercial software; they are somewhat slow and awkward to use. As programming utilities they are lacking, but as teaching tools they are effective.

CodePro-64 is a solid introduction to BASIC programming on the Commodore 64. Despite the minor flaws, it's a thorough and substantial tutorial.

CodePro-64

Systems Management Associates (SMA)

3700 Computer Drive

Raleigh, NC 27609

(919) 787-7703

\$59.59, two disks and manual

Software Discounters

of America



For Orders Only 1-800-225-SOFT
Inquiries and PA. 412-381-5291

ACCESS	Homeward (D)	\$43
Beach Head (T or D)	Oil's Well (D)	\$19
Neutral Zone (T or D)	Quest for Tires (D)	\$23
ARTWORX	Ultima II (D)	\$39
Bridge 40 (T or D)	Ulysses (D)	\$23
Monkeymath (T or D)	Wizard & Princess (D)	\$21
Strip Poker (D)	SPINNAKER	
Female or	Adventure Creator (R)	\$25
Male Data Disk	Aegean Voyage (R)	\$25
BATTERIES INCLUDED	Alphabet Zoo (R)	\$21
Paperclip with	Bubble Burst (R)	\$25
Spelling (D)	Jukebox (R)	\$21
Paperclip (D)	Ranch (R)	\$25
The Consultant (D)	Trains (D)	\$25
BRODERBUND	Up for Grabs (R)	\$25
Bank St. Writer (D)	SSI	
Chopflifer (R)	Battle Normandy (D)	\$25
Loderunner (D)	Combat Leader (D)	\$25
Mask of the Sun (D)	Computer Baseball	
Spare Change (D)	(D)	\$25
CBS	Eagles (D)	\$39
Add/Sub (T or D)	50 Mission Crush (D)	\$25
Decimals (T or D)	Germany 1985 (D)	\$39
Fractions (T or D)	Pro Tour Golf (D)	\$25
Multi/Div (T or D)	PDF 1985 (D)	\$23
Murder by Dozen (D)	Ringside Seat (D)	\$25
Peanut Butter Panic	SUBLOGIC	
(D)	Flight Simulator II (D)	\$35
The Word Game (D)	Night Mission Pinball	
DATASOFT	(D)	\$21
Bruce Lee (D)	SYNAPSE	
Dallas Quest (D)	Blue Max (T or D)	\$21
Pooyan (T/D)	Ft. Apocalypse	
DESIGNWARE	(T or D)	\$21
Creature Creator (D)	Necromancer (T or D)	\$21
Math Maze (D)	Pharaoh's Curse	
Spellcopter (D)	(T or D)	\$21
EPYX	Sentinel (T or D)	\$21
Dragonriders Pern (D)	Shamus (D)	\$21
FAX (D)	Slamball (T or D)	\$21
Gateway Apsal (R)	Zaxxon (T or D)	\$25
Jumpman (T or D)	Zeppelin (T or D)	\$21
Pitstop (R)	TIMEWORKS	
Puzzlepanic (D)	Business Systems:	
Summer Games (D)	Accounts Pay (D)	\$39
Temple of Apsal	Accounts Rec (D)	\$39
(T or D)	Cash Flow Mgmt (D)	\$39
World's Greatest	General Ledger (D)	\$39
Baseball (D)	Inventory (D)	\$39
HES	Payroll (D)	\$39
HES Modem I	Sales Analysis (D)	\$39
HES Modem II	Home Management:	
Multiplan (D)	Data Manager 2 (D)	\$33
Omni Writer/Speller	Word Writer (D)	\$33
(D)	TRONIX	
Paint Brush (R)	Chaterbee (D)	\$25
Synthesound (D)	Pokersam (D)	\$19
Time/Money Mgr (D)	S.A.M. (D)	\$39
INFOCOM	WAVEFORM	
Enchanter (D)	Musicalc 1 (D)	\$35
Infidel (D)	Musicalc 2 (D)	\$23
Planetfall (D)	Musicalc 3 (D)	\$23
Sea Stalker (D)	ACCESSORIES	
Sorcerer (D)	Alien Group Voice	
KOALA	Box	call
Touch Tablet	BASF SS.DD	\$17 Bx.
w/Printer (D)	Cardco Accessories	call
Touch Tablet	Commodore Dust	
w/Printer (R)	Covers	\$ 6
PARKER BROS.	Compuserve Starter	
Frogger (R)	Kit	\$25
Popeye (R)	Disk Drive Cleaner	\$ 9
Q-Bert (R)	Disk Case (Holds 50)	\$16
PRECISION SOFTWARE	Monitor Cable	\$ 7
Superbase 64 (D)	Sakata 13" Color	\$239
SCARBOROUGH	Surge Protector	
Mastertype (D or R)	w/6 outlets	\$39
Songwriter (D)	Wico Joysticks	call
SIERRA ON-LINE		
Championship Boxing		
(D)		

P.O. Box 278 — Dept. CG, Wildwood, PA 15091

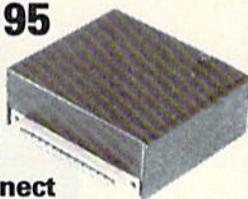
*Ordering and Terms: Orders with cashier check or money order shipped immediately. Personal/company checks, allow 3 weeks clearance. No. C.O.D.'s. VISA/MASTERCARD accepted with no additional charge for orders shipped to continental U.S.A. Shipping: Continental U.S.A. — Orders under \$100 add \$3; free shipping on orders over \$100. PA residents add 6% sales tax. AK, HI, FOP-APO — add \$5 on all orders. INTERNATIONAL — add \$10 or 15% of order whichever is greatest. Defective merchandise will be replaced with same merchandise — NO CREDITS! Return must have authorization number (412) 361-5291. Prices subject to change without notice.

VIC-20/C-64

MODEM

MFJ-1237

\$ 49⁹⁵



Tiny 2¼x2¼x1 in.

300 baud

Direct Connect

Originate/Answer • Full

Duplex • Carrier detect LED

World's lowest cost modem. High performance Texas Instrument single chip modem design.

Works for both VIC-20 and Commodore 64. Plugs into user's port. Use with single or multi-line phones. Plugs into telephone base.

300 baud. Direct connect. Originate/answer. Full duplex. Carrier detect LED. Crystal controlled.

Powered by computer. Aluminum enclosure.

Includes Basic listing of Terminal Program.

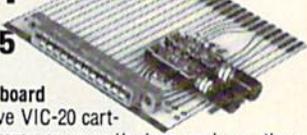
Terminal Program available on tape, \$4.95 and cartridge, \$19.95. Specify VIC-20 or C-64.

Save VIC-20

Cartridge Programs on tape

MFJ-1256

\$ 39⁹⁵



Adapter board

lets you save VIC-20 cartridge programs on cassette tape and run them using 8K RAM board. Provides cartridge backup, eliminates plugging and unplugging cartridges and turning VIC-20 on and off.

Includes adapter board that plugs into expansion port and software to save and run cartridge programs on cassette tape. Requires 8K RAM board (not included).

RS-232 Interface for VIC-20/C-64

MFJ-1238

\$ 39⁹⁵



Provides RS-232

voltage conversion for

VIC-20/C-64 serial port. Use

RS-232 printers, modems, speech synthesizers and other RS-232 peripherals. Switch reverses transmit/receive lines for DTE or DCE operation. Use as null modem. Standard 25 pin RS-232 connector. Plugs into user's port. Powered by computer. 2¼x2¼ inches.

VIC-20 Capacitance Meter

Measure 100 pf to 100 Mfd.

Includes calibration capacitor,

software on tape and hardware

interface.

MFJ-1258
\$ 29⁹⁵

Order from MFJ and try it. If not delighted, return within 30 days for refund (less shipping). One year unconditional guarantee.

Order yours today. Call toll free 800-647-1800. Charge VISA, MC. Or mail check, money order. Add \$4.00 each for shipping and handling.

CALL TOLL FREE ... 800-647-1800

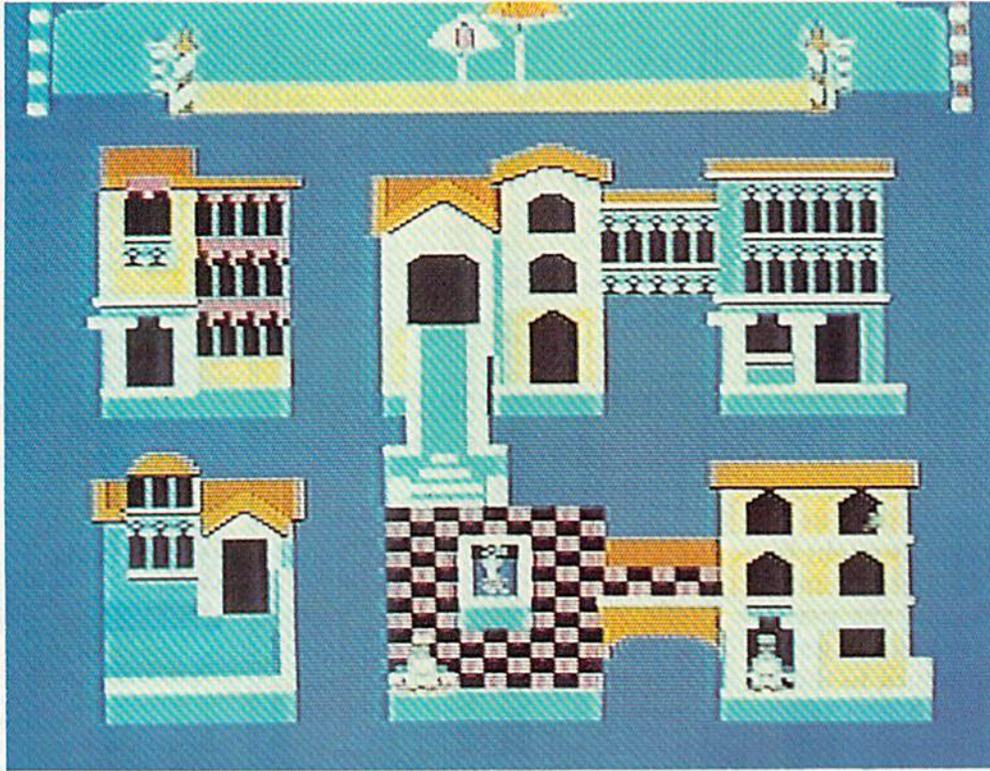
Call 601-323-5869 in MS, outside continental U.S.A.

MFJ ENTERPRISES INCORPORATED

921 Louisville Road, Starkville, MS 39759

www.commodore.ca

COMPUTING for families



Micro Worlds For Young Children

Fred D'Ignazio, Associate Editor

Good Robots Vs. Bad Robots

It's fascinating the way children can create a miniature world out of a couple of beat-up old boxes, or a sandbox full of sand, or a bathtub filled with bubbles.

For example, the other day my five-year-old son Eric borrowed a couple of new toy robots I had bought for my speeches and took them down into the basement. "Come here, Daddy!" he called, only five minutes later.

He made me close my eyes, and he led me down the stairs. As I followed Eric down into the cellar, I walked out of my world into a new world he had dreamed up. He had fashioned some cardboard boxes into a mountainous planet. On top of the boxes he had placed buckets and sections of packing styrofoam. A thin layer of playing cards covered the buckets and styrofoam, concealing treacherous traps and pits.



Just one more reason to buy Scholastic educational software for the Commodore 64.

We really don't want you to buy Wizware™ just for the price. Because too many educational programs come with a great price on the outside and nothing much on the inside.

You—and your kids—won't be disappointed by Wizware. We've put everything we've learned from five generations of kids into our software. And the result is programs that teach and stimulate young minds like no other educational software.

For example, Wizware uses a child's natural curiosity to teach the basics of computer programming and electronic filing systems in programs like **Poster**™, **Turtle Tracks**™, **Secret Filer**™ and **Square Pairs**™. Young kids especially find all four irresistible.

Double Feature Mystery™ and **Double Feature Adventure**™ stories let kids choose from alternate twists of

the plot. And actually make them want to learn how to read and write.

So we'd rather you buy Wizware because of what it does for your children. But, of course, it's always nice to know that Wizware is one of the most affordable families of educational software for the Commodore 64.†

Ask for Wizware wherever you buy your computer software. Or contact Scholastic Wizware, 730 Broadway,

New York, NY 10003, 212-505-3000 for the name of your nearest Wizware merchant.

 **Scholastic™
Software**

The most trusted name in learning.

*Turtle Tracks \$29.95.

†All programs also available in Apple versions. Turtle Tracks also available in Atari and IBM versions. Square Pairs also available in Atari version.



Poster, Secret Filer and Double Feature Mystery/Adventure designed and developed by Information Technology Design Associates. Turtle Tracks designed and developed by Thomas R. Smith. Square Pairs designed and developed by Glenn M. Kleiman, Teaching Tools: Software, Inc.

 www.commodore.ca

Eric had divided the robots into good guys and bad guys. The bad robots were chasing the good robots, but the good robots were tricky. They sidestepped the pits. The bad robots rolled out onto the cards and immediately crashed down into the pits.

Eric and I cheered. Then Eric turned to me and ordered me back up the stairs. "You go away, Daddy," he said. "I want to build a new planet."

The Computer Sandbox

In his book, *Mindstorms: Children, Computers, and Powerful Ideas*, Seymour Papert wrote about "micro worlds," miniature worlds inside the computer that children could create themselves. Children could actually step inside these worlds and become their heroes and heroines.

Computer micro worlds are, of course, made out of software—game programs and simulations that build models of the real world or worlds of fiction and fantasy. Until recently, most computer micro worlds have been very limited in scope and appeal. They have been suitable only for teenagers or adults. Many of the micro worlds have been sexist, violent, and destructive. And they have had repetitive, unimaginative themes: dungeons and dragons, battles in outer space, aerial dog fights, and so on. Most of the video games and arcade games in which the micro worlds appear have been too difficult (and too tall!) for younger children.

In the last twelve months, however, the situation has changed drastically. A new breed of software companies—like Children's Television Workshop, HesWare, The Learning Company, Sunburst, Spinnaker, and Joyce Hakansson Associates—have begun creating computer programs that feature imaginative micro worlds for pre-teens and younger children.

We recently received a number of these new programs to review, all published by CBS Software, all for the Commodore 64. Here is a sample of some of the computer micro worlds your kids can visit. And, before they head out, ask them if you can tag along. A child's adventure in a micro world can be greatly enhanced if they have Mom or Dad at their side.

Ducks Ahoy!

Ducks Ahoy! is a game for one child aged 3 to 6. The game costs \$29.95 on disk, \$34.95 on cartridge, and requires a joystick.

Joyce Hakansson Associates designed *Ducks Ahoy!* It is only the second game I've found where pictures on the computer screen were just as appealing as the colorful cartoons on the package. (The first was Joyce Hakansson's *Alf in the Color*

Caves, published by Spinnaker for the Commodore 64.)

This game is a delight. You and your child go on a journey to Venice, complete with canals, gondolas, a beach, a boardwalk, a boathouse, bridges, a tiled piazza, and lots of brightly colored Venetian buildings.

The buildings are full of silly, quacking ducks who wander around, then come out the front door and hop into the water. The animation and the sound effects are so good you are tempted to watch the ducks and forget about the game.

Your goal is to take a boat out of the boathouse and (with the joystick) maneuver the boat through the canals and under the bridges to the ducks' houses. You try to predict which duck is the closest to jumping, then you zoom over and place the boat directly in front of him. If you make it in time, the duck leaps into the air and lands, KER-PLOP!, in your boat, nearly capsizing it.

Now you have a choice. Either you can go get another duck, or you can pole your gondola to the beach and unload the duck.

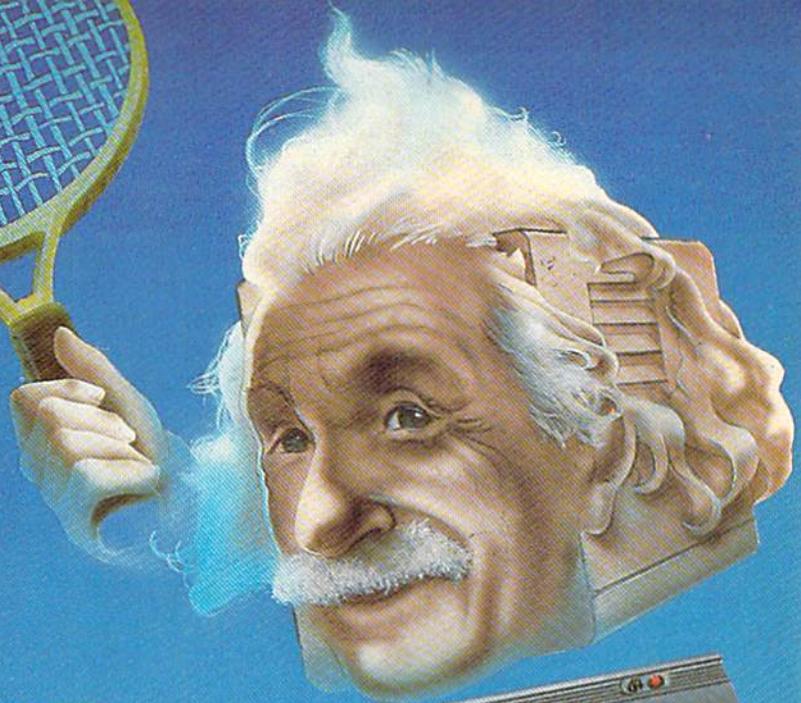
The object of the game is to carry ten ducks to the beach and to allow as few ducks as possible to leap into the water. This would be a fairly simple task if it weren't for a mischievous hippo who floats around the canals under the water. Whenever your boat gets too close to the hippo, he comes up beneath it and capsizes it. If any ducks are on board, they escape. Fortunately, you can keep an eye on the hippo by watching for bubbles in the water. On the other hand, you sometimes get to racing around the canals so fast you don't see the bubbles until it's too late.

Eric and I both enjoyed playing *Ducks Ahoy!* It helped him with his counting, eye-hand coordination, and prediction skills. It was also perfectly suited for his physical and emotional level of development. It was challenging and engaging, but it was not so difficult that he became frustrated.

I found several of the game's features especially attractive. First, Eric kept rescuing the ducks not because he wanted to win the game and get ten ducks to the beach, but because the game was so much fun. I think that's what makes this game so successful. What motivated Eric to keep playing the game was not the educational goal but the sheer thrill of playing.

Second, the graphics, the sound effects, and the music in the game are so good, you really feel like you have entered a micro world—a make-believe world inside the computer. The world has substance, detail, and variety, yet is not so complex that it's distracting or overwhelming for a young child.

IS YOUR 64™ STILL PLAYING GAMES WITH YOU?



If you've been having a hard time teaching your newly-adopted computer there's more to life than fun and games, you're not alone.

Now, you can introduce your Commodore 64™ to the Work Force: affordable, easy-to-use software and hardware that will unleash the power you always expected from your Commodore 64™, but thought you might never see.

PaperClip™

is simply the best word processing program of its kind—loaded with advanced features, yet so easy to use even a novice can get professional results. With **SpellPack™**, it even corrects your spelling! Once you've tried it, you'll never use a typewriter again.

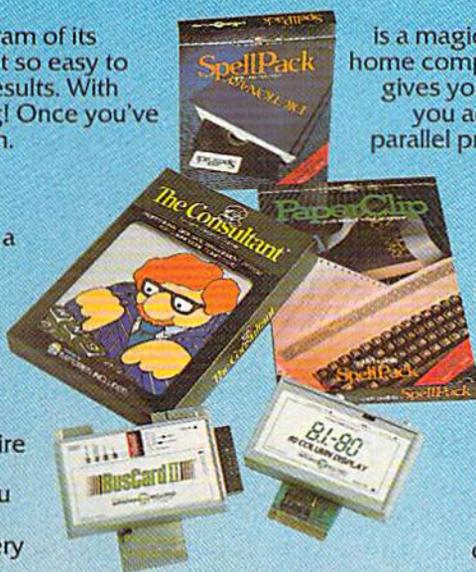
The Consultant™

(formerly Delphi's Oracle)

is like a computerized filing cabinet with a brain. Organize files for recipes, albums, or the membership of your service club. Then search, sort, arrange and analyze your information with speed and flexibility that's simply astounding.

SpellPack™

teaches your 64 to spell. It checks an entire document in 2 to 4 minutes against a dictionary of over 20,000 words. And you can add up to 5,000 of your own specialized terms. Type letter perfect every time!



BusCard II™

is a magic box that lets you transform your humble home computer into a powerful business machine. It gives you the added power of BASIC 4.0, and lets you add IEEE disk drives, hard disk, virtually any parallel printer, and other peripherals without extra interfaces. Completely software invisible.

B.I.-80™ Column Adaptor

gives you crystal clear 80 column display. Using the highest quality hardware, we've eliminated the problems of snow, fuzziness and interference. Basic 4.0 commands greatly simplify disk drive access. Switches easily from 40 to 80 column display.

Discover the true power of your Commodore 64™. Ask your dealer about the Commodore 64™ Work Force, from Batteries Included—the company that doesn't leave anything out when it comes to making things simple for you.

BATTERIES INCLUDED

"Excellence in Software"

These products have been developed specifically for Commodore computers by Batteries Included and are totally compatible with each other. For a full color brochure write to:

186 Queen Street West, Toronto, Canada M5V 1Z1 (416) 596-1405 / 3303 Harbor Blvd., Costa Mesa, CA 92626 (714) 979-0920

www.commodore.ca

64 AND COMMODORE 64 ARE REGISTERED TRADE MARKS OF COMMODORE BUSINESS MACHINES

Third, the game is *funny*. Too few computer games—especially educational games—are humorous. This game is, and that adds to its appeal.

Fourth, the game has *charm*. Unlike many educational games, it doesn't look garish or ugly when compared with activities on other media, such as television, books, or magazines. Instead it is aesthetically pleasing and attractive. Something at the gut level grabs you when you first turn it on.

A Realistic Game

My children and I really enjoyed the *Sea Horse* game. The scrolling animation, the bright, under-sea colors, and the music brought the micro world to life. In fact, almost too much life. When my five-year-old, Eric, played it, he burst into tears if his sea horse came too close to a lagoon fish.

Eric wasn't crying because he was going to be eaten. (If a lagoon fish caught his sea horse it would just chase it away, off the screen.) He was crying because of the tension the game creates. He knew that he had to make a move quickly, or those scary fish would come over and get him.

I played the game, and I was surprised at how involved I became. Swimming the sea horse past the mean fish was not a trivial task. For example, I kept ducking into coral caves, but, as often as not, I popped out of another cave right in front of the lagoon fish. I quickly learned that in order to escape I had to plan my moves. I couldn't just panic and dash off in any direction.

I'm proud to say that after being chased out of the lagoon several times, both Eric and I finally mastered sea horse navigation. We successfully maneuvered five tiny sea horses across the lagoon and were rewarded by the raising of a flag on a sunken ship.

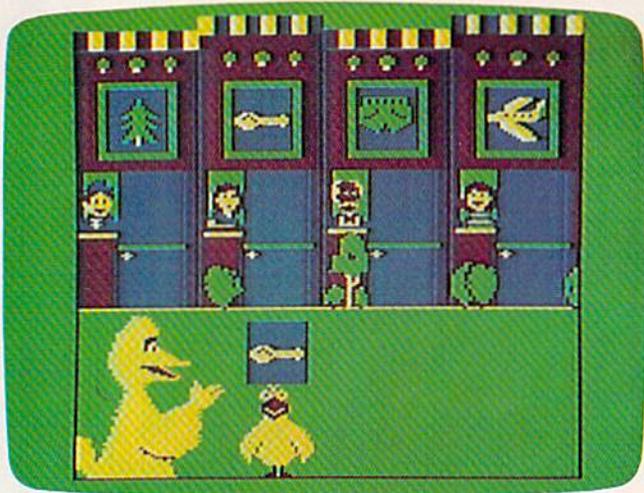
Then a sixth sea horse appeared, back at the beginning of the lagoon. This sea horse was twice the size of the other sea horses. It was too big to squeeze into certain caves, and it was impossible to sneak past a patrolling lagoon fish.

As I write this review, Eric wants me to tell you that *he* has gotten the sixth sea horse across the lagoon—several times, in fact. As for me, well, I haven't quite gotten the knack. But I'm still trying.

Big Bird's Special Delivery

This is a one-player game for children ages 3 to 6. You do not need joysticks; you can use the keyboard to play. The disk version of the game costs \$32.95, the cartridge version \$37.95.

The game was created for CBS Software by the Children's Television Workshop. It features Big Bird and Little Bird, two of the popular characters from CTW's popular "Sesame Street"



TV program.

When the child enters this "micro world," he or she is standing on a sidewalk in front of a row of city buildings. Big Bird appears carrying a special delivery package for Little Bird. Little Bird flaps his wings, flies up to Big Bird, and gets the package. Then it's up to your child to move Little Bird to the building where the package should be delivered.

There are two games and two skill levels for each game. In the first game, *The Same Game*, there are objects in the second-floor windows of each of the buildings. The child has to use the "<" and ">" buttons on the keyboard as left and right arrows to move Little Bird under the building that has a picture that matches the picture on Little Bird's package. Then the child presses RETURN to see if a correct match was made. If so, a person looking out the window nods his head, there is some happy music, and the package floats up to the window. If not, the person in the window shakes his head no, and Little Bird gets another chance.

In the second game, *Find the Right Kind*, everything is the same except this time the child must find a picture in the window that is the same *kind* of thing as the picture on his package. For example, a picture of a bowl appears in the window, and a picture of a spoon is on Little Bird's package. This is a match because the bowl and spoon are both used for eating. (The other three windows, by contrast, have pictures of a piece of fruit, a hand, and a needle and thread.)

Eric and I played this game a couple times, but Eric quickly lost interest. The game gets repetitive since all the child ever sees are the same buildings, with just the pictures in the upstairs windows changing.

Another problem is that the pictures and the words are not very clear. When I was playing the

Look at these Features

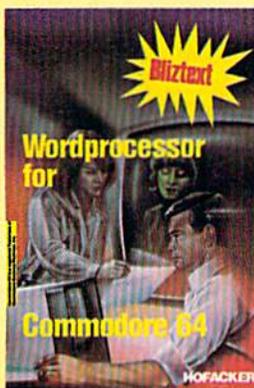
- Fully screen-oriented
- Horizontal and vertical scrolling
- Terminal mode — never seen before on a wordprocessor
- Supports Commodore disk and cassette handling
- Imbedded commands



BLIZTEXT is a trademark of ELCOMP PUBLISHING, INC.

BLIZTEXT WORDPROCESSOR FOR THE COMMODORE 64

Commodore-64 and VIC-20 are trademarks of Commodore Business Machines.



NEW
NEW
NEW
NEW
NEW
NEW
NEW
NEW
NEW
NEW



BLIZTEXT — SUPER WORDPROCESSOR for the Commodore-64 — ON SALE NOW! —

- Fully screen-oriented, up/down, left and right scrolling — Upper and lower case
- More than 70 commands
- Full I/O compatibility with Commodore peripherals Upper and lower case
- Works with practically every printer on the market, user definable printer control commands
- INCLUDE command allows handling large files on up to 4 diskettes or on cassette.
- Build in terminal software for electronic mail and networking. Telecommunications mode, upload and download, save on disk or cassette.
- Dynamic formatting, Imbedded commands
- Single keystroke for disk directory and error channel
- Program comes on disk or cassette
- Double line spacing, left and right margin justification, centering, page numbering, and practically everything one expects from a good wordprocessor.

AVAILABLE NOW!

Order # 4965 \$89.00
Manual only (62 pages) \$29.95

MACROFIRE — Editor/Assembler for the Commodore-64 ON SALE NOW AVAILABLE IMMEDIATELY

One outstanding tool, consisting of 3 powerful elements combined into one efficient program!

- 1.) Fully screen-oriented Editor (more than 70 commands)
- 2.) Very fast assembler with macro capability
- 3.) Machine Language Monitor

Assembly can be started from the editor. Translates in 3 passes. More than 1,000 labels, screen oriented/no line numbers, scrolling, includes disk files.

Practically everything the serious machine language programmer needs everyday!

Manual only \$19.95
Order # 4963 \$89.00

THE GREAT BOOK OF GAMES, VOL. I,

by Franz Ende
46 programs for the Commodore 64

Introduction to graphics and sound. How to program your own games. Walking pictures, animation, high resolution graphics, programming tips and tricks, hints and useful subroutines for the beginner and advanced programmer. This book is a MUST for every C-64 owner. Come and get it — It's yours for only

\$ 9.95
Order # 182 128 pages \$9.95
Programs from the book on disk.
Order # 4988 \$19.95

MORE ON THE SIXTYFOUR, by H.C. Wagner
How to get the most out of your powerful Commodore 64. Very important subroutines, tricks and hints in machine language for your C-64. How to modify DOS. How to connect a parallel and serial printer. How to design your own terminal program for communication and networking. Dig into I/O for cassette and disk.

Order # 183 \$9.95
Programs from the book on disk
Order # 4989 \$19.95

NEW PRODUCTS

Watch out for our new books, software and add-ons to come soon. ON SALE NOW! — ORDER TODAY!

How to program in 6502 Machine Language on your C-64, by S. Roberts (Introduction)
Order # 184 \$12.95

Commodore-64 Tune-up, Vol. 1, by S. Roberts
How to expand and customize your C-64.
Order # 185 \$12.95

Small Business Programs for the Commodore-64 by S. Roberts

How to make money using your C-64. Mailing list, invoice writing, inventory, simple wordprocessing and much more.

Order # 186 \$12.95

Dealer and Distributor inquiries are invited.

Hardware Add-Ons:

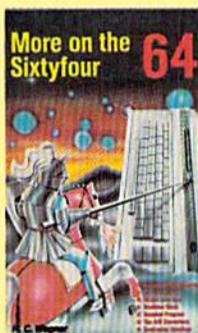
Parallel printer interface KIT Order # 4990 \$ 19.95
Universal Experimenter Board Order # 4970 \$ 9.95
Expansion Board, space for four experimenter boards (board only) Order # 4992 \$ 29.95
Tricks for VICs, No. 176 \$9.95
Universal Experimenter board for VIC \$9.95



Book No. 184 \$12.95



Book No. 182 \$9.95



Book No. 183 \$9.95

NEW Products for the C-64

SUPERMAILING (D)
Order No. 4962 \$49.-
Superinventory (D)
Order-No. 4961 \$ 49.-
BUSIPACK 1 (D)
Order-No. 4963 \$99.-
SixtyFORTH (D)
FigFORTH for C-64
Order-No. 4960 \$39.-

For your VIC-20
Tricks for VICs
Order-No. 176 \$9.95
Universal Experimenter board
Order-No. 4844 \$9.95

HOFACKER

PAYMENT: check, money order, VISA, MASTER CARD, Eurocheck, ACCESS, Interbank
Prepaid orders add \$3.50 for shipping (USA)
\$5.00 handling for C.O.D.
All orders outside USA: add 15 % shipping, California residents add 6.5 % sales tax.

ELCOMP PUBLISHING, INC
53 Redrock Lane
Pomona, CA 91766
Phone: (714) 623 8314

www.commodore.ca

Find the Right Kind game, for example, I thought the special-delivery package had a picture of a stalk of celery. I tried delivering the letter to the building that had a picture of another vegetable (a pumpkin or squash, I couldn't tell which). I was wrong, so I marched Little Bird and the package down the row of buildings, trying one at a time. I finally got the answer right when I reached the picture of what I thought was a hand.

At first I was puzzled. What did a stalk of celery have in common with a hand? Then I realized that the hand must be a glove, and the celery was really a shirt (or was it a coat?). They matched because they were both clothes.

Since the images are small and not especially clear, a young child might have difficulty recognizing the objects on the screen and become frustrated with this game. In that case, a good picture-matching book might be a better choice than the computer.

Sea Horse Hide 'N Seek

Sea Horse Hide 'N Seek is a micro world for children ages 3 to 6. It was designed by Joyce Hakansson Associates. The disk version costs \$29.95, the cartridge version \$34.95.

It can be played by one or two children, and requires joysticks. Included with the game is a Game Play Guide, an activity book, and a "Find the Sea Horse" poster that children can color themselves.

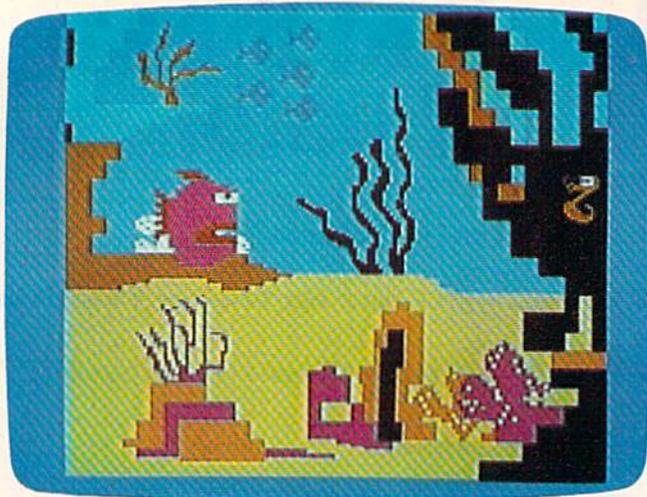
Sea Horse teaches important skills to young children, including matching colors, eye-to-hand coordination, memory skills, understanding of size relationships, and logical thinking. All of these skills are hidden inside an engaging game set in an undersea micro world that's appropriate for a young child.

In this game, children become little sea horses at the bottom of a coral sea. The children have to swim their sea horses past a line-up of funny but ferocious lagoon-fish who try to gobble them up.

When the sea horses begin swimming through the water, the computer plays friendly, happy music. But a few moments later, the music changes and becomes scary. This warns the little sea horse to watch out because a mean fish is coming her way. The sea horse is much smaller than the fish, so she can't hang around. She has to be clever and escape.

The lagoon fish are not very smart, so one way the sea horse can get away is to change colors (with the press of the joystick button) and camouflage herself as a piece of green or pink coral.

Another way to escape is to squeeze inside a coral cave. The caves always have two openings,



so the sea horse will pop out a moment later at the other end. But she has to watch out or she might pop out right in front of the mean lagoon fish. Also, sometimes a grumpy octopus sneaks inside of some of the caves and bounces the sea horse right back out of the cave.

If this happens, the sea horse has two final choices. She can try to swim by the lagoon fish, or she can turn tail and swim back the way she came. But if she does that, she'll still have to face the lagoon fish.

(Desperate sea horses have still another option: They can press the space bar and freeze the lagoon fish. But the space bar freezes sea horses, too, so it's just a temporary respite.)

Peanut Butter Panic

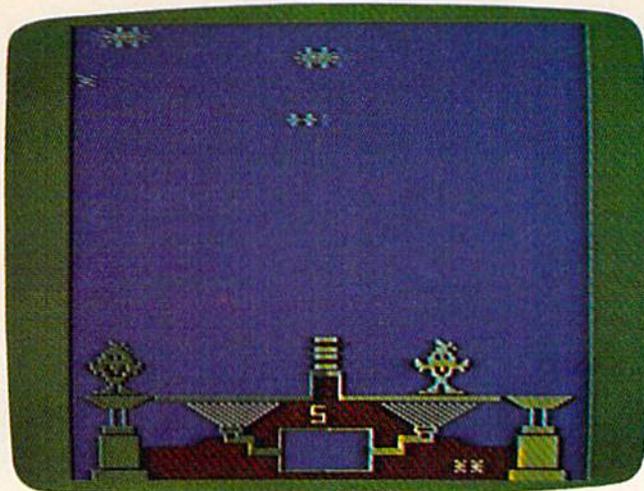
This is a great two-person game. Two children (or an adult and a child) have to work together, share, compromise, and cooperate in order to win.

Peanut Butter Panic was developed for CBS by the Children's Television Workshop. The disk version costs \$31.95; the cartridge version \$36.95. It requires two joysticks and is suitable for children aged seven and up—which means parents and teachers can enjoy it, too.

My eight-year-old daughter Catie and I played this game together. We each became Nutniks—little round creatures whose main goal in life is to make and eat peanut butter sandwiches.

When the game began, Catie and I were standing on opposite sides of a seesaw-like sandwich machine. As Nutniks, we both wanted to make more peanut butter sandwiches. But to make the machine go, we had to jump up high and snag some stars to power the machine.

When one of us ate a lot of sandwiches we



got fatter and heavier, and we could jump on one side of the seesaw and launch the other person even higher to grab the juiciest stars—the ones that made the best sandwiches. But if we kept jumping, we got skinnier, and we had to go back and eat some more sandwiches. Also, if we spent all our time jumping, a hungry Snarf creature would fly out of the sky and gobble up all our sandwiches. This taught us to time our jumps to keep the Snarf from robbing us.

Peanut Butter Panic is primarily an entertaining game. However, it is also a practical exercise in physics and human cooperation. (Catie and I did our best when we coordinated our body weights with our jumps, when we synchronized our jumps, and when we worked closely together.)

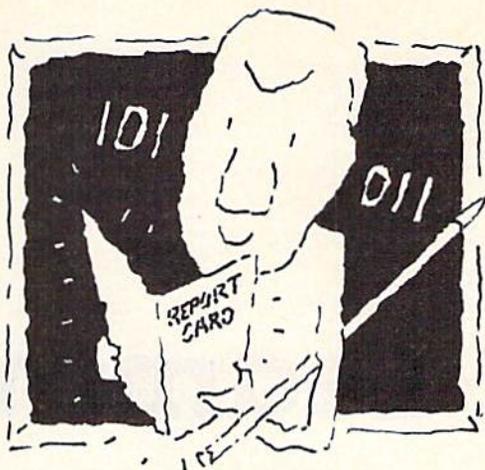
The game encourages communication and interaction between members of the family. And it makes an ideal game for parents to play with their children.

A Warranty, Too

In recent columns, I have called for software packages and materials that are more helpful to the consumer. CBS Software has many of these features, including accurate descriptions and screen shots of the software on the outside of the package; short, simple, easy-to-read user manuals; and activity books. They also have "Startup Cards" to help you begin using the game as soon as you open the package. And all their software has a limited 90-day warranty.

To learn more about these games, you can write or call:

CBS Software
One Fawcett Place
Greenwich, CT 06836
(203) 622-2500



The Visible Computer. The machine language teacher that gets good grades.

Users and experts alike are giving The Visible Computer straight A's for making machine language understandable.

InCider magazine: "TVC is excellent".
Learning Computing: "Best Educational Software of 1983." *Peelings* magazine: "AA rating . . . The explanations are truly excellent, being that rare combination: correct and intelligible." Basic Programmer, Rockford, Illinois: "Wow!"

With The Visible Computer's graphic 6502 simulator, thirty sample programs, and 160 page tutorial-style manual, you'll find that the only mystery about machine language is why no one ever taught it this way before.

The Visible Computer: 6502

Send me The Visible Computer: 6502 for Commodore 64 (requires disk drive). I've enclosed \$39.95 plus \$2.50 postage and handling.

Check or Money Order Visa Mastercard

Name _____

Address _____

City/State/Zip _____

Credit Card No. _____

Exp. _____



**Software
Masters™**

3330 Hillcroft, Suite BB
Houston, Texas 77057
(713) 266-5771

Learning To Count

William W. Braun

Designed for children in kindergarten through third grade, this colorful and fun program lets you tailor the learning level to your child's needs. For the VIC and 64.

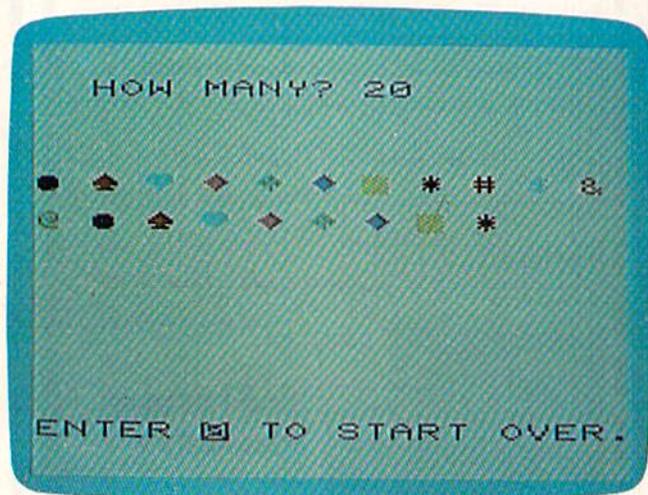
Educational programs are sometimes broad in scope and appropriate for only one learning level. "Learning To Count" teaches a specific concept and allows the parent or instructor to choose the learning level. Although the game is instructive, colorful graphics, sound, and positive rewards make it entertaining for the child.

Selecting A Range

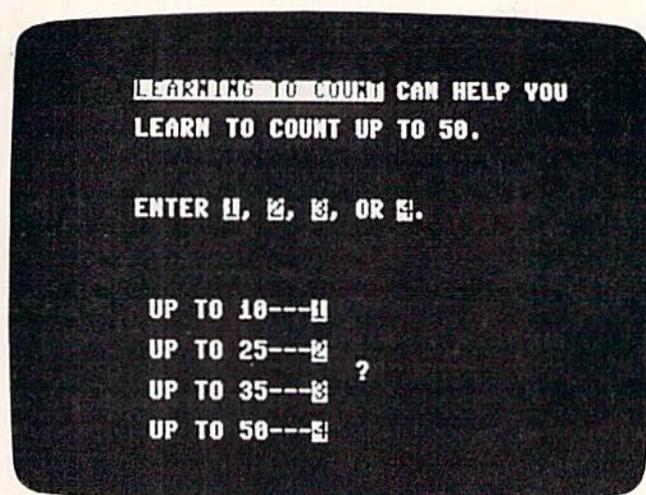
When you run the program, you are first asked to input a number from 1 to 4 to set the range of

objects to be counted. Choosing the lowest range displays a random number of objects from two to ten, while the highest level covers from two to fifty objects. The child is then asked to count the objects and type in the number. A correct answer is rewarded with a smiling face and short melody. A wrong answer elicits a "Sorry! Try Again" response. After three wrong responses, the correct answer is given.

The program continues until a zero is typed. This way, a parent or instructor can control the length of the program or move to a higher level. When a zero is typed, the screen displays the number of tries, the number right, and the number wrong. Then, after a short graphics display, you are asked if you want to continue and at what level.



A child counts colorful objects and is rewarded for a right answer (VIC version).



A parent or instructor chooses the range of objects to be counted (64 version).

VIC Program Structure

Lines

28 POKE 808,114 disables the RUN/STOP key so that small fingers will not accidentally stop the program. RUN/STOP-RESTORE will work, however.

50-60 Graphics and sound at the beginning of the program. A = character code. B = color code. C = tone code. S1 = voice location. Z = beginning of screen memory. COL+Z = color memory location.

70-90 Using INPUT D\$ and then D=VAL(D\$) selects the range of objects to be counted and causes the program to reject any input other than 1 to 4.

100 R = number of right answers. W = number of wrong answers. N = number of tries.

206 A = random number of characters to be POKEd to the screen.

207 Makes sure A is greater than 1.

210 N is incremented for each try, and SCR is the starting point for each line of characters displayed.

225 L = character code. M = color code. K = tone code.

232-236 Make sure each line of characters is separated by a blank line.

245 Allows input of zero to start game again.

260 Detects a correct answer.

270 Detects three consecutive wrong answers.

2000-2007 Create the smiling face and tune.

2500-2501 Give the correct answer display.

3000-3005 Print the score.

4000 Resets the data pointer so the same data for characters, colors, and tones can be used repeatedly.

9000-9001 Data for characters, colors, and tones.

The objects counted by the child are some of the special graphics characters on the VIC and 64, such as hearts and balls. They are displayed in various colors and accompanied by a short tone. The DATA statements at the end of the program contain the codes for the characters, col-

ors, and tones in groups of three.

"Learning To Count" can easily be modified or enhanced with custom characters or several subroutines of graphics and sound displays as rewards for correct answers.

See program listings on page 147. 

Let Your CBM-64 "SPEAK"

COMvoice IS AS EASY AS 1-2-3



- 1) PLUG COMvoice INTO YOUR CBM-64
- 2) TURN YOUR COMPUTER ON
- 3) TYPE SPEAK "HELLO, HOW ARE YOU"

AS EASY TO USE AS A PRINT STATEMENT

SPECIAL \$99.95

W/EXTERNAL SPEAKER \$139.95



DEALER INQUIRIES INVITED

ALSO ASK ABOUT OUR

HOME SECURITY AND ENERGY MANAGEMENT PRODUCTS

VIController

Wireless remote control system for the VIC-20 and CBM-64. Use with BSR and Leviton remote receiver modules. \$69.95

COMsense

Input device for the VIC-20 and CBM-64. Provides 4 open/close and 2 analog inputs. \$49.95

COMclock/AUTOboot

Clock/calendar cartridge for CBM-64 with battery backup and auto-start software in ROM. \$69.95



P.O. Box 1143 Bethlehem, PA 18018 (215) 861-0850

VIC-20 and CMB-64 are trademarks of Commodore Business Machines Inc.

www.commodore.ca

SIMPLE ANSWERS TO COMMON QUESTIONS

TOM R. HALFHILL
STAFF EDITOR

QA

Each month, COMPUTE!'s GAZETTE tackles some questions commonly asked by new VIC-20/Commodore 64 users and by people shopping for their first home computer.

Q. *I have a large collection of programs on cassette tape. Soon I'll be getting a disk drive. Is there any way I can transfer the programs from tape to disk?*

A. With BASIC programs, there's nothing to it. First switch on the computer and disk drive, then insert a formatted disk (see your manual). Next, LOAD the program from tape as usual. Now enter this command:

```
SAVE"0:filename",8 [press RETURN]
```

Look familiar? It's the same SAVE command you've been using to store programs on tape except for the numeral 0 and colon before the filename, and the comma and numeral 8 tacked onto the end. The numeral 8 is the disk drive's *device number*, and it tells the computer to route the data to the disk drive instead of the tape recorder. If you want, you can omit the 0:, but we recommend using it anyway for best results. (The 0: is a vestige from the days of the dual-slot 4040 drives for the Commodore PET computers.) The filename can be any title you wish for the program, up to 16 characters long, just like cassette filenames.

A similar variation of the LOAD command lets you retrieve programs from disk:

```
LOAD"filename",8
```

That takes care of BASIC programs. Unfortunately, transferring machine language programs from tape to disk isn't nearly so simple. Most commercial programs seize control of the computer and never let you leave the application to enter BASIC. Hence, you can't type in any SAVE commands. You'll have to be patient

and continue loading these programs from tape.

If the machine language program is one that you typed in from COMPUTE!'s GAZETTE using MLX, you're in luck. First, load your copy of MLX from tape as usual. When you run MLX, it asks for the starting and ending addresses of the program. To find these two numbers, refer back to the article which described the program. Next, press SHIFT-L to activate the MLX LOAD command. After loading the machine language program from tape, press SHIFT-S to activate the MLX SAVE command. Answer the prompt to save the program on disk. To be safe, save another copy on a backup disk.

Q. *Is there any company which makes a steering wheel controller for the Commodore 64, like Coleco's steering wheel for its Turbo racing game? How would I go about getting one if there isn't one on the market? It doesn't have to be sold with a game, but maybe just by itself, like a joystick, so you can write your own programs for it.*

A. Although we don't know of any steering wheel controllers for the Commodore 64 or VIC-20, it's easy enough to simulate one.

At the heart of steering wheel controllers is a potentiometer (variable resistor). The potentiometer continuously returns a number to the computer which corresponds to the wheel's position. This happens to be exactly how a paddle controller works.

A Commodore paddle returns a 0 when it's turned completely to the left, and 255 when it's rotated completely to the right. Any intermediate position returns a number between 0 and 255. There's no room in this column for a detailed explanation, but briefly, your program must read these numbers from the joystick port and act accordingly. For example, if you're writing a program similar to Atari's *Pole Position*, in which the

ONLY NRI GIVES YOU TOTAL COMPUTER SYSTEM TRAINING

Your hands-on training takes you inside your TRS-80 Model 4 computer to install integrated circuits and enlarge memory to 64K.

Built-in monitor displays up to 80 characters for easy word processing and spread sheet programs.

More practical experience as you install double-density floppy disk drive. Software includes TRSDOS®, DOSPLUS®, machine language monitor, and two game programs.

Electronics comes to life on your NRI Discovery Lab®.

Professional 3½ digit multimeter with Action Audio Cassette to talk you through operation and use.

Model 4 Technical Reference Manual enriches your training.

Bite-size lessons build knowledge and understanding step by step.

9 x 9 dot matrix printer completes your computer system.

COMPUTER • MONITOR • DISC DRIVE • PRINTER • AND SOFTWARE...

It's all included with NRI at-home training in Microcomputers and Microprocessors. And only with NRI training.

If you really want to learn how to work on computers, you have to learn how to work on computer systems. Only NRI includes a complete system with your training...total training that gives you hands-on experience with computers, peripherals, and software.

Get Inside the Famous TRS-80 Model 4 Computer

You'll work with one of the most popular computers ever designed. Learn programming techniques for trouble-shooting...go inside to expand its RAM from 16K to a powerful 64K...even install a double density floppy disc drive.

You'll become familiar with computer languages...run software that demonstrates computer operation...even become proficient at modifying programs to fit your business or family computing needs.

Add High Performance Peripheral Printer

Only NRI gives you total system training with the flexible Gemini 10X printer as part of your hands-on learning. Working with it, you'll get practical experience in adding peripherals, learn maintenance and servicing operations. And you'll use it for hard copies of important programs, business records, and word processing.

Understanding Built On Experience

You start with the basics, rapidly build

on the fundamentals of electronics with bite-size lessons to master advanced concepts like digital logic, microprocessors, and computer memories.

You'll use the exclusive NRI Discovery Lab® to see what makes transistors tick, build and test working electronic circuits that duplicate key computer circuitry, construct digital logic circuits that demonstrate computer performance. And, you'll probe into the very heart of your computer using the Discovery Lab and professional digital multimeter included in your training program.

Do It at Home in Your Spare Time

NRI trains you in your own home at your convenience. You learn at your own pace, backed at all times by your own NRI instructor and the entire NRI staff of educators and engineers. They're always ready to answer questions and help you over the rough spots to keep you moving toward your goal.

Free Catalog Tells Much More... Send Today

See all the interactive training equipment you get in this state-of-the-art course in today's technology. Look over the lesson outlines and descriptions of the exciting experiments you'll perform. And look at other high-tech career fields like Robotics, TV/Video/ Audio Servicing and Data Communications.

Mail the coupon today to see how NRI can give you the skills and confidence you need to start a good-paying career as a microcomputer technician.

NRI SCHOOLS
McGraw-Hill Continuing Education Center
 3939 Wisconsin Avenue, N.W., Washington, DC 20016
We'll give you tomorrow.



All Career courses approved under GI bill.
 Check for details

CHECK ONE FREE CATALOG ONLY

- Computer Electronics with Microcomputers
- Data Communications
- Robotics & Industrial Controls
- Color TV, Audio, and Video System Servicing
- Electronics Design Technology
- Digital Electronics

- Communications Electronics • Mobile • Aircraft • Marine
- CB & Cellular Radio
- Industrial Electronics
- Basic Electronics
- Small Engine Servicing

- Appliance Servicing
- Automotive Servicing
- Air Conditioning, Heating, Refrigeration, & Solar Technology
- Building Construction

Name (Please Print) _____

Age _____

Street _____

City/State/Zip _____

Accredited by the National Home Study Council

153-094

player steers a racing car along a road, your program could interpret 128 (the midpoint between 0 and 255) as the center position for the car. Any number less than 128 would steer the car to the left, and any number greater than 128 would move it to the right.

If you miss the feel of an actual steering wheel, it might be possible to somehow attach a toy wheel onto a paddle controller. But unless you're handy with tools, it would probably wind up looking pretty strange.

Another alternative is to find the steering wheel controller designed for the Atari 2600 VCS videogame machine. It has a standard Atari-type plug, so it should be compatible with a VIC or 64 joystick port. Since it returns values different from a Commodore paddle controller, you'll have to experiment with different routines to interpret the results properly for your computer. ☐

COMPUTE!'s Gazette

Toll Free Subscription Order Line

800-334-0868

In NC 919-275-9809

STOP PLAYING GAMES

NEW Disk
Commodore 64

- Calculate odds on HORSE RACES with ANY COMPUTER using BASIC.
- SCIENTIFICALLY DERIVED SYSTEM really works. TV Station WLKY of Louisville, Kentucky used this system to predict the odds of the 1980 Kentucky Derby. See *Popular Computing* (February, 1984) for a review of this program. This system was written and used by computer experts and is now being made available to home computer owners. This method is based on storing data from a large number of races on a high speed, large scale computer. 23 factors taken from the "Daily Racing Form" were then analyzed by the computer to see how they influenced race results. From these 23 facts, ten were found to be the most vital in determining winners. NUMERICAL PROBABILITIES of each of these 10 factors were then computed and this forms the basis of this REVOLUTIONARY NEW PROGRAM.
- SIMPLE TO USE: Obtain "Daily Racing Form" the day before the races and answer the 10 questions about each horse. Run the program and your computer will print out the odds for all horses in each race. COMPUTER POWER gives you the advantage!
- YOU GET
 - 1) Program on cassette or disk.
 - 2) Listing of BASIC programs for use with any computer.
 - 3) Instructions on how to get the needed data from the "Daily Racing Form."
 - 4) Tips on using the odds generated by the program.
 - 5) Sample form to simplify entering data for each race.

-----MAIL COUPON OR CALL TODAY-----

3G COMPANY, INC. DEPT. GA (503) 357-5607
RT. 3, BOX 28A, GASTON, OR 97119

Yes, I want to use my computer for FUN and PROFIT. Please send me "Play the Horses" for \$29.95. Circle the cassette you need: VIC-20, Color Computer, TRS-80, Sinclair Timex 1000, Atari, Commodore 64 (disk or cassette), Apple (disk), IBM (disk).

Enclosed is: check or money order MasterCard Visa

Card No. _____ Exp. date _____
NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

**START USING YOUR COMPUTER FOR
FUN and PROFIT!**

Computer Tutor™



VIDEO INSTRUCTION TAPES! STEP BY STEP INSTRUCTIONS

PICTURES ARE WORTH
THOUSANDS OF WORDS AND SAVE
HOURS OF FRUSTRATION

USE YOUR VCR SIDE BY SIDE WITH YOUR COMPUTER TO LEARN HOW TO PROGRAM, AND HOW TO USE PROGRAMS. YOUR VCR ALONG WITH YOUR COMPUTER SERVE AS YOUR PERSONAL TUTOR. PAUSE YOUR VCR TO REVIEW AND LEARN AT YOUR OWN PACE.

TAPES NOW AVAILABLE

CAT#	TOPIC	APPROX RUN TIME	
BP-3	LEARNING C-64 BASIC	2 HR	\$49.95
BP-4	LEARNING VIC-20 BASIC	2 HR	\$49.95
DIO-1	COMMODORE 64 DISK I/O	1 HR 45 MIN	\$49.95
DIO-2	VIC 20 DISK I/O	1 HR 45 MIN	\$49.95
EW-9	MULTIPLAN C-64	1 HR 50 MIN	\$39.95
EW-3	CALC-RESULT ADVANCED	1 HR 30 MIN	\$39.95
EW-4	CALC RESULT EAZY	1 HR 15 MIN	\$29.95
EW-5	PRACTICALC C-64	1 HR 15 MIN	\$29.95
EW-6	PRACTICALC VIC-20	1 HR 15 MIN	\$29.95
WP-5	SCRIPT-64	1 HR 30 MIN	\$39.95
UT-2	THE LAST ONE	1 HR 30 MIN	\$39.95

Electronic worksheets: EW-3-6. Detailed step by step instruction in the use of electronic spread/sheet software. Work along and set up a complete example worksheet.

Basic programming: BP-3 & 4. Teaches BASIC Language commands and programming techniques. Builds your knowledge from beginning in advanced levels.

Data File Programming: DIO-1 & 2 teaches BASIC Language data file programming using random, sequential, and relative access data files.

VHS or BETA FORMAT

Add \$3.00 per order for shipping and handling.
Add \$3.00 for C.O.D.

To Order
Phone or Write



LYNN COMPUTER SERVICE

6831 West 157th Street Tinley Park, Illinois 60477
(312) 429-1915

CALC-RESULT IS A TRADEMARK OF HANDIC SOFTWARE PRACTICALIS
A TRADEMARK OF COMPUTER SOFTWARE ASSOCIATES. MULTIPLAN
IS A TRADEMARK OF MICROSOFT.



COMPUTER TV!!



MTR

8401 Color TV Tuner



- To turn any composite monitor to TV.
- Both computer/TV Switchable
- UHF/VHF knob & more
- FCC approved. (TV antenna not included)

\$85.85

MTR

EV-2114 14" Composite Color Monitor



- Compatible with Commodore • Apple • Atari • T.I.
- NTSC Composite
- FCC Approved • UL STD.
- Front Mounted Controllers
- For Easy Adjustment
- Built-In Speaker
- Green Screen Switchable

~~\$229.95~~

\$215.85

MTR

PM-4401C Data Sette Recorder



- Compatible with VIC-20 & Commodore 64
- Auto Stop
- Tape Counter
- Save LED
- Pre-Set Playback Level

\$39.95

- Monitor Cable** — Plug 5 Pin Din to 4 RCA plugs includes 3.5 mm. adaptor. 3 ft. **\$7.95**
- 6 Cable** — Computer to Printer or Disk Drive connects Commodore VIC-20 or C64 to Commodore Printer or Disk Drive 6 Pin Din to 6 Pin Din. Ideal if your space requires a longer cable **\$9.95**
- Dust Cover** — Commodore 64 Computer cloth backed vinyl highly anti-static media protects unit from spills, scratches, dust & static **\$2.95**
- Disk Drive Dust Cover** — for 1540 or 1541 **\$2.95**

E MART, INC.
1401-2 Capital Ave., P.O. Box 1328
Plano, Tx 75074

ORDER CALL: outside Texas
1-800-631-1113
1-214-423-4199

in Texas Telex: 794789 offa plno
OFFICE: Mon-Fri: 9:00-12:00 PM/1:00-5:00 PM
Sat: 9:00-1:00 PM Central Time

DELIVERY: For fast delivery, cashier checks, money orders or direct bank wires. Personal and company checks allow 3 weeks to clear. VISA/AE credit card add 3%. All prices are FOB net our Plano warehouse and subject to change without notice. Texas residents add 6% sales tax. All products with maker's warranty. All returns must be accompanied by return authorization number. Call (214) 423-4199 before returning goods for replacement. Any goods returned for credit are subject to 10% restocking charge plus shipping cost.



WE'LL BEAT IT OR EAT IT!

In the unlikely event anybody has a lower price than our's on the software and peripherals advertised below, we'll beat it by at least one dollar or eat the product. It's much easier to beat their prices than eat a disk, so guess what we're going to do! *

Tussey Mt. Software—To order call: (814) 234-2236

- We accept Mastercard and Visa
- We accept COD orders on everything except printers and monitors
- Next day shipping on in-stock items
- \$2.00 Credit for phone call on phone orders over \$50.00
- Our hours are 12-8 mon-sat, 12-5 sun EST
- Write or call for a free catalog

SPECIALS	
Gemini 10X printer, 120 cps	\$267.00
BX-80 printer from BMC, 80 cps	\$245.00
Script 64 w/scratchpad	\$62.00
Commodore 1650 Automodem	\$84.00

PRINTERS	WORD PROCESSORS	DATABASES
Gemini 10X	WP64 by Proline(d)	The Consultant (formerly Delphi's Oracle)(d)
Gemini 15X	Script 64 w/scratchpad(d)	Mirage Database Manager(d)
Delta 10, 160 cps,	Wordpro 3+/64	Superbase 64(d)
8k buffer	w/Spellright(d)	Data Manager II(d)
Delta 15	Paperclip(d)	by Timeworks
Powertype, 18 cps,	Paperclip w/spellpack(d)	Practifile by MS(d)
letter quality	Cardco Write Now/64 (cart)	
BX 80, from BMC, RX-80	Mirage Professional W.P.(d)	
emulator	Omni Writer/Speller(d)	
Okidata 82	Word Writer(d)	
Okidata 83, 92, 93	by Timeworks	
MONITORS	SPREADSHEETS	MISCELLANEOUS
BMC 12" Amber	Calc Result Adv. (d, cart)	Koalapid w/painter(d)
BMC 12" Green	Calc Result Easy (cart)	Mailpro 64(d) by Proline
BMC 13" comp color	Hesware Multiplan(d)	Spellpro 64(d) by Proline
w/sound	P.S. (Prog. Spreadsheet)(d)	Complete Personal
Zenith 12" Amber	Practical64(d)	Accountant(d)
Zenith 12" Green	Practical64(t)	Verbatim Datalife ss/dd disks (10)
		1541 Express by RTC
CARDCO	MODEMS	
Printer int. w/graphics	Commodore 1600	
Printer interface /B	Commodore 1650 autoanswer,	
Light pen	autodial	
Numeric keypad	Hesmodem I	
5 slot exp. interface CB/5	Hesmodem II	
Mail Now/64		

***Terms of Offer** — Offer only valid against prices advertised in this magazine, this issue. We are not responsible for typographical errors, or manufacturer's price changes. Please have the following information available for our operators: (1) magazine name, (2) month of issue, (3) advertiser with lower price, (4) price to beat.

To Order By Mail — Send personal check, money order, or certified check to address at bottom. For fastest service send money order or certified check. Allow 2 weeks for personal checks to clear.

Shipping & Terms — Add \$7.50 per order for shipping software. Add \$6.00 per order for COD. Add \$10.00 to ship printers, \$8.00 to ship monitors. COD orders not accepted on printers and monitors. Foreign orders require additional amounts for shipping. We pay shipping on backorders. Orders shipped UPS unless noted otherwise. All prices reflect cash discount. Visa, Mastercard add 3%. Manufacturer's warranty honored with our invoice and original packaging. PA residents add 6% sales tax. Prices subject to change.

Tussey Mt. Software • Box 1006 • State College, PA 16804

Supercharge Your Programming

Add far greater speed and versatility to your C64® or VIC-20® with Micol Systems' extraordinary new macro assembler package - System M2000

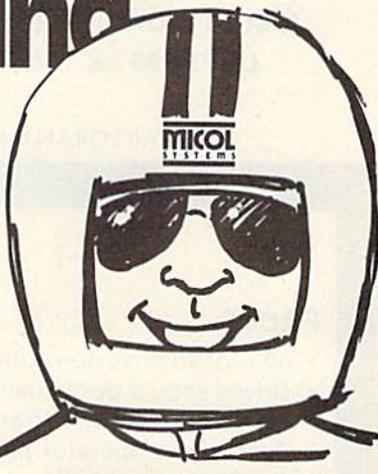
Since machine language programs usually run 40-60 times faster than their BASIC counterparts, this inexpensive package is like buying a more powerful computer at a fraction of the cost. A professional system that even the novice will find easy to use, it assembles kilobyte files in seconds and is one of the most powerful macro assemblers available.

But it's more than just an assembler. Your programming will be simplified with such well designed programming tools as an Editor which has all the handy features allowing you to create your programs easily and a machine language Monitor, a sophisticated debugging tool and complete man to machine language interface.

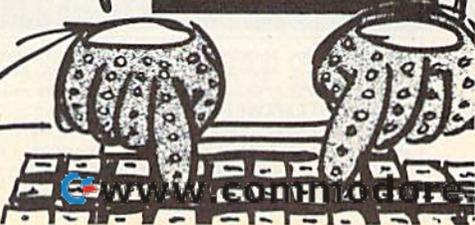
The package is 100% machine code and fully copyable for your convenience. Available on disk or cassette.

Available at finer computer outlets. For the dealer nearest you call Toll Free 1-800-225-2774 (Capri Int'l) in the U.S. and (416) 736-4402 (Access) or 1-800-387-9758 (Softcom) in Canada.

Micol Systems, 100 Graydon Hall Dr., Suite 2301, Don Mills, Ont. Canada M3A 3A9



MICOL SYSTEMS



FLOPPY DISKS SALE *\$1.19 ea.

Economy Model or Cadillac Quality

LORAN CERTIFIED PERSONAL
COMPUTER DISK

We have the lowest prices! LORAN CERTIFIED PERSONAL
COMPUTER DISK

*ECONOMY DISKS

Good quality 5 1/4" single sided single density with hub rings.

Bulk Pac	100 Qty.	\$1.19 ea.	Total Price	\$119.00
	10 Qty.	1.39 ea.	Total Price	13.90

CADILLAC QUALITY (double density)

- Each disk certified
- Free replacement lifetime warranty
- Automatic dust remover

For those who want cadillac quality we have the Loran Floppy Disk. Used by professionals because they can rely on Loran Disks to store important data and programs without fear of loss! Each Loran disk is 100% certified (an exclusive process) plus each disk carries an exclusive FREE REPLACEMENT LIFETIME WARRANTY. With Loran disks you can have the peace of mind without the frustration of program loss after hours spent in program development.

100% CERTIFICATION TEST

Some floppy disk manufacturers only sample test on a batch basis the disks they sell, and then claim they are certified. Each Loran disk is individually checked so you will never experience data or program loss during your lifetime!

FREE REPLACEMENT LIFETIME WARRANTY

We are so sure of Loran Disks that we give you a free replacement warranty against failure to perform due to faulty materials or workmanship for as long as you own your Loran disk.

AUTOMATIC DUST REMOVER

Just like a record needle, disk drive heads must travel hundreds of miles over disk surfaces. Unlike other floppy disks the Loran smooth surface finish saves disk drive head wear during the life of the disk. (A rough surface will grind your disk drive head like sandpaper). The lint free automatic CLEANING LINER makes sure the disk-killers (dust & dirt) are being constantly cleaned while the disk is being operated. PLUS the Loran Disk has the highest probability rate of any other disk in the industry for storing and retaining data without loss for the life of the disk.

Loran is definitely the Cadillac disk in the world

Just to prove it even further, we are offering these super LOW INTRODUCTORY PRICES

List \$4.99 ea. INTRODUCTORY SALE PRICE \$2.99 ea. (Box of 10 only) Total price \$29.90

\$3.33 ea. (3 quantity) Total price \$9.99

All LORAN disks come with hub rings and sleeves in an attractive package.

DISK DRIVE CLEANER \$19.95

Everyone needs a disk drive doctor

FACTS

- 60% of all drive downtime is directly related to poorly maintained drives.
- Drives should be cleaned each week regardless of use.
- Drives are sensitive to smoke, dust and all micro particles.
- Systematic operator performed maintenance is the best way of ensuring error free use of your computer system.

The Cheetah disk drive cleaner can be used with single or double sided 5 1/4" disk drives. The Cheetah is an easy to use fast method of maintaining efficient floppy diskette drive operation.

The Cheetah cleaner comes with 2 disks and is packed in a protective plastic folder to prevent contamination.

List \$29.95 / Sale \$19.95 * Coupon \$16.95

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO
ENTERPRIZES WE LOVE OUR CUSTOMERS!
BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

BIG FOUR

NEW 128K —MEGA BYTE DUAL DISK DRIVE—80 COLUMN

COMPUTER SYSTEM SALE!

HOME • BUSINESS • WORD PROCESSING



LOOK AT ALL YOU GET FOR ONLY \$895.

	LIST PRICE
• B128 COMMODORE 128K 80 COLUMN COMPUTER	\$ 995.00
• 8050 DUAL DISK DRIVE (over 1 million bytes)	1795.00
★ 4023 - 100 CPS - 80 COLUMN BIDIRECTIONAL PRINTER	499.00
• 12" HI RESOLUTION 80 COLUMN GREEN OR AMBER MONITOR	249.00
• BOX OF 10 LORAN LIFETIME GUARANTEED DISKS	49.95
• 1100 SHEETS FANFOLD PAPER	19.95
• ALL CABLES NEEDED FOR INTERFACING	102.05

TOTAL LIST PRICE **\$ 3717.95**



Printer replacement options (replace the 4023 with the following at these sale prices)

	LIST	SALE
★ Olympia Executive Letter Quality Serial Printer	\$ 699.00	\$ 399.00
★ Comstar Hi-Speed 160 CPS 15 1/2" Serial-Business Printer	\$ 779.00	\$ 499.00
★ Telecommunications Deluxe Modem Package	\$ 199.00	\$ 139.00

Plus You Can Order These Business Programs At Sale Prices

	LIST	SALE		LIST	SALE
Professional 80 Column Word Processor	\$149.95	\$99.00	Payroll	\$149.95	\$99.00
Professional Data Base	149.95	99.00	Inventory	149.95	99.00
Accounts Receivable	149.95	99.00	General Ledger	149.95	99.00
Accounts Payable	149.95	99.00	Financial Spread Sheet	149.95	99.00
			Program Generator	149.95	99.00

15 DAY FREE TRIAL We give you 15 days to try out this SUPER SYSTEM PACKAGE!! If it doesn't meet your expectations, just send it back to us prepaid and we will refund your purchase price!!
90 DAY IMMEDIATE REPLACEMENT WARRANTY If any of the SUPER SYSTEM PACKAGE equipment or programs fail due to faulty workmanship or material we will replace it IMMEDIATELY at no charge!!

Add \$50.00 for shipping and handling!!

\$100.00 for Canada, Puerto Rico, Hawaii orders.

WE DO NOT EXPORT TO OTHER COUNTRIES.

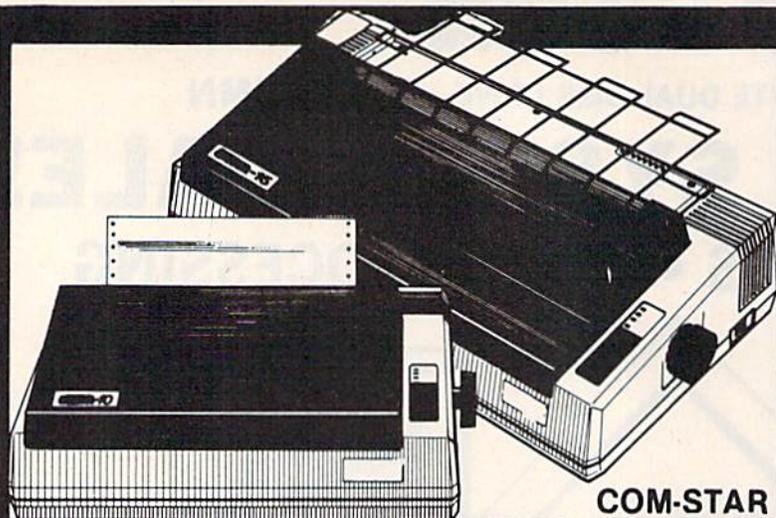
Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail! Canada orders must be in U.S. dollars. We accept Visa and MasterCard. We ship C.O.D. to U.S. addresses only.

PROTECTO ENTERPRISES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
 Phone 312/382-5244 to order

www.commodore.ca

80 COLUMN PRINTER SALE—\$149.00*



COM-STAR T/F

Tractor
Friction
Printer

only \$ **179****

• 15 Day Free Trial - 180 Day Immediate Replacement Warranty

• Lowest Priced, Best Quality, Tractor-Friction Printers in the U.S.A.

- Fast 80-120-160 Characters Per Second • 40, 46, 66, 80, 96, 132 Characters Per Line Spacing
- Word Processing • Print Labels, Letters, Graphs and Tables • List Your Programs
- Print Out Data from Modem Services • "The Most Important Accessory for Your Computer"

*STX-80 COLUMN PRINTER—\$149.00

Prints full 80 columns. Super silent operation, 60 CPS, prints Hi-resolution graphics and block graphics, expanded character set, exceptionally clear characters, fantastic print quality, uses inexpensive thermal paper! Best thermal printer in the U.S.A.! (Centronics Parallel Interface).

**DELUXE COMSTAR T/F 80 CPS PRINTER—\$179.00

The COMSTAR T/F (Tractor Friction) PRINTER is exceptionally versatile. It prints 8½" x 11" standard size single sheet stationary or continuous feed computer paper. Bi-directional, impact dot matrix, 80 CPS, 224 characters. (Centronics Parallel Interface).

Premium Quality—120 CPS COMSTAR T/F SUPER-10X PRINTER—\$289.00

COMSTAR T/F (Tractor Friction) SUPER-10X PRINTER gives you all the features of the COMSTAR T/F PRINTER plus a 10" carriage, 120 CPS, 9 x 9 dot matrix with double strike capability for 18 x 18 dot matrix (near letter quality), high resolution bit image (120 x 144 dot matrix), underlining, back spacing, left and right margin settings, true lower decenders with super and subscripts, prints standard, italic, block graphics

and special characters, plus 2K of user definable characters! The COMSTAR T/F SUPER-10X PRINTER was Rated No. 1 by "Popular Science Magazine." It gives you print quality and features found on printers costing twice as much!! (Centronics Parallel Interface) (Better than Epson FX 80).

Premium Quality—120 CPS COMSTAR T/F SUPER-15½" PRINTER—\$379.00

COMSTAR T/F SUPER 15½" PRINTER has all the features of the COMSTAR T/F SUPER-10X PRINTER plus a 15½" carriage and more powerful electronics components to handle large ledger business forms! (Better than Epson FX 100).

Superior Quality SUPER HIGH SPEED—160 CPS COMSTAR T/F 10" PRINTER—\$399.00

SUPER HIGH SPEED COMSTAR T/F (Tractor Friction) PRINTER has all the features of the COMSTAR SUPER-10X PRINTER plus SUPER HIGH SPEED PRINTING—160 CPS, 100% duty cycle, 8K buffer, diverse character fonts, special symbols and true decenders, vertical and horizontal tabs. RED HOT BUSINESS PRINTER at an unbelievable low price!! (Serial or Centronics Parallel Interface)

Superior Quality SUPER HIGH SPEED—160 CPS COMSTAR T/F 15½" PRINTER—\$529.00

SUPER HIGH SPEED COMSTAR T/F 15½" PRINTER has all the features of the SUPER HIGH SPEED COMSTAR T/F 10" PRINTER plus a 15½" carriage and more powerful electronics to handle larger ledger business forms! Exclusive bottom paper feed!!

PARALLEL INTERFACES For VIC-20 and COM-64—\$69.00 For Apple Computers—\$79.00

NOTE: Other printer interfaces are available at computer stores!

Double Immediate Replacement Warranty

We have doubled the normal 90 day warranty to 180 days. Therefore if your printer fails within "180 days" from the date of purchase you simply send your printer to us via United Parcel Service, prepaid. We will IMMEDIATELY send you a replacement printer at no charge, prepaid. This warranty, once again, proves that WE LOVE OUR CUSTOMERS!

Add \$17.50 for shipping, handling and insurance. WE DO NOT EXPORT TO OTHER COUNTRIES EXCEPT CANADA.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!! Canada orders must be in U.S. dollars. VISA — MASTER CARD ACCEPTED. We ship C.O.D.

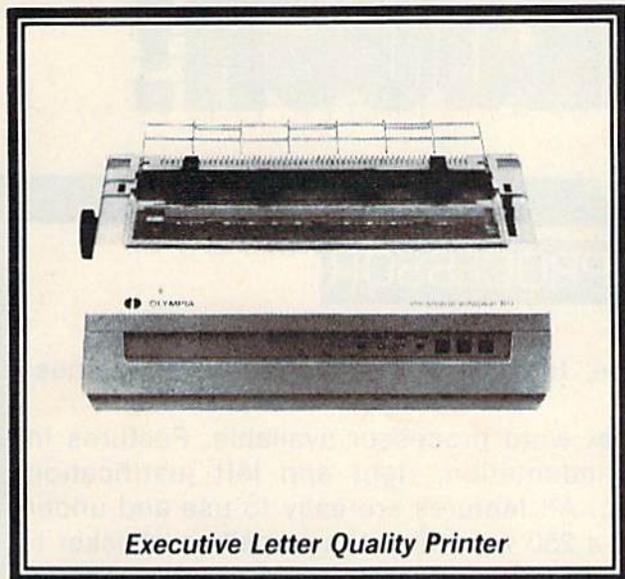
PROTECTO ENTERPRISES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

SUPER-10"

ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890
www.commodore.ca

Olympia EXECUTIVE LETTER QUALITY "DAISY WHEEL PRINTERS"



Executive Letter Quality Printer

World's Finest Computer Printer

List Price \$699

SALE \$399

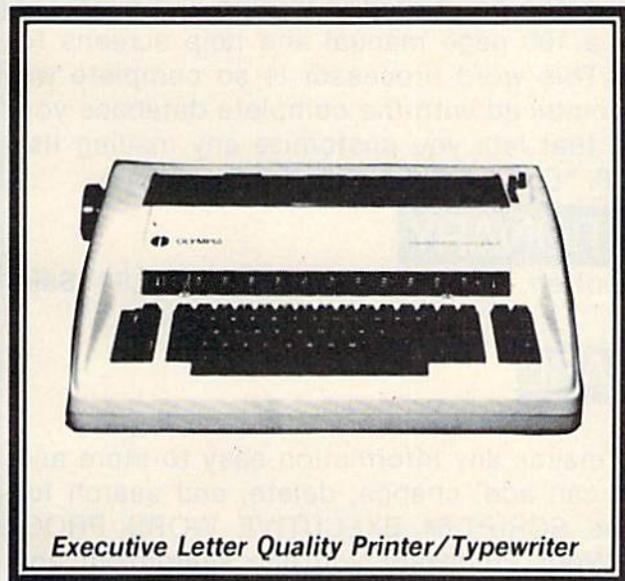
- Daisywheel printer, bidirectional with special print enhancements.
- Print speed up to 20 characters per second.
- 10, 12, and 15 characters per inch.
- 256 character print buffer.
- 14.4" forms width.
- Print line width: 115, 138, and 172 characters.
- Serial RS-232-C and parallel Centronics interface ports built-in.
- Built-in bidirectional forms tractor.
- Operating status control panel.

World's Finest

"Combination" Printer/Typewriter

List Price \$799

SALE \$489



Executive Letter Quality Printer/Typewriter

- Superb computer printer combined with world's finest electronic typewriter!
- Better than IBM selectric — used by world's largest corporations!
- Two machines in one — just a flick of the switch!
- Superb letter quality correspondence — home, office, word processing!
- Extra large carriage — allows 14-1/8" paper usage!
- Drop in cassette ribbon — express lift off correction or eraser up to 46 characters!
- Precision daisy wheel printing — many type styles!
- Pitch selector — 10, 12, 15 CPS, Automatic relocate key!
- Automatic margin control and setting! Key in buffer!
- Electronic reliability, built in diagnostic test!
- Centronics parallel interface built-in

15 Day Free Trial - 90 Day Immediate Replacement Warranty

Add \$17.50 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$35.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APA-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTERCARD — C.O.D.

No C.O.D. to Canada, APO-FPO

COM 64 — VIC-20 INTERFACE

\$59.00

APPLE INTERFACE

\$79.00

PROTECTO
ENTERPRISES (WE LOVE OUR CUSTOMERS)
BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

Commodore - 64

WORD PROCESSING BREAKTHROUGH!

SCRIPT-64 EXECUTIVE WORD PROCESSOR

(80 Columns in Color)

40 or 80 columns in color or black and white; turns your computer into a Business Machine!

Rated best by COMMODORE. This is the finest word processor available. Features include line and paragraph insertion/deletion, indentation, right and left justification, titles, page numbering, characters per inch, etc. All features are easy to use and understand. With tabs, etc. SCRIPT-64 even includes a 250 word dictionary/spelling checker to make sure your spelling is correct. The dictionary is user customizable to any technical words you may use. Furthermore, all paragraphs can be printed in writing and everyday letters are a snap. To top things off, there is a 100 page manual and help screens to make learning how to use SCRIPT-64 a snap. This word processor is so complete we can't think of anything it doesn't have. When combined with the complete database you have a powerful mailmerge and label program that lets you customize any mailing list with personalized letters. List \$99.95. **Sale \$59.00.** *Coupon Price \$49.00. (Disk only.)

SCRIPT-64 20,000 WORD DICTIONARY

Allows you to check spelling on 20,000 most often misspelled words! List \$29.95. **Sale \$19.95.** *Coupon Price \$12.50 (Disk only.)

SCRIPT-64 COMPLETE DATABASE

(Plus Mail Merge and Labels)

This powerful DATABASE is user friendly and makes any information easy to store and retrieve. The user defines the fields and then can add, change, delete, and search for any category wanted! Must be used with the SCRIPT-64 EXECUTIVE WORD PROCESSOR. When combined with the Executive Word Processor you can search out any category (zip codes, even hair color, etc.) and print super personalized letters! 600 names can be sorted and formulated on each disk in any order or category! Will handle any size mailing list by changing or adding disks! List \$69.00. **Sale \$39.00.** *Coupon Price \$29.00.

• LOWEST PRICES • 15 DAY FREE TRIAL • 90 DAY FREE REPLACEMENT WARRANTY
• BEST SERVICE IN U.S.A. • ONE DAY EXPRESS MAIL • OVER 500 PROGRAMS • FREE CATALOGS

WE SHIP C.O.D. HONOR VISA AND MASTER CHARGE
ADD \$3.00 SHIPPING FOR C.O.D. ADD \$2.00 MORE
SPECIAL SERVICES:
One Day — Express Mail add \$10.00

PROTECTO
ENTERPRIZES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/362-5244 To Order www.commodore.ca



SANYO MONITOR SALE!!



9" Data Monitor

- 80 Columns x 24 lines
- Green text display
- Easy to read - no eye strain
- Up front brightness control
- High resolution graphics
- Quick start - no preheating
- Regulated power supply
- Attractive metal cabinet
- UL and FCC approved

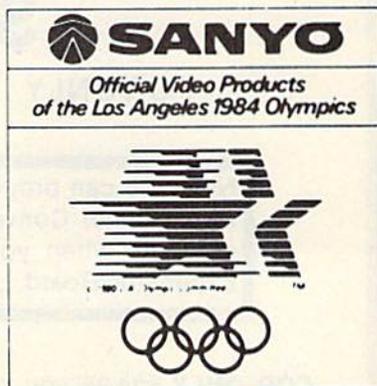
• 15 Day Free Trial - 90 Day Immediate Replacement Warranty

9" Screen - Green Text Display	\$ 69.00
12" Screen - Green Text Display (anti-reflective screen)	\$ 99.00
12" Screen - Amber Text Display (anti-reflective screen)	\$ 99.00
12" Screen-Super 1000 Line Amber Text Display	\$119.00
14" Screen - Color Monitor (High Resolution)	\$239.00

Display Monitors From Sanyo

With the need for computing power growing every day, Sanyo has stepped in to meet the demand with a whole new line of low cost, high quality data monitors. Designed for commercial and personal computer use. All models come with an array of features, including up-front brightness and contrast controls. The capacity 5 x 7 dot characters as the input is 24 lines of characters with up to 80 characters per line.

Equally important, all are built with Sanyo's commitment to technological excellence. In the world of Audio/Video, Sanyo is synonymous with reliability and performance. And Sanyo quality is reflected in our reputation. Unlike some suppliers, Sanyo designs, manufactures and tests virtually all the parts that go into our products, from cameras to stereos. That's an assurance not everybody can give you!



• LOWEST PRICES • 15 DAY FREE TRIAL • 90 DAY FREE REPLACEMENT WARRANTY
• BEST SERVICE IN U.S.A. • ONE DAY EXPRESS MAIL • OVER 500 PROGRAMS • FREE CATALOGS

Add \$10.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$20.00 for CANADA, PUERTO RICO, HAWAII orders. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail! Canada orders must be in U.S. dollars. Visa - MasterCard - C.O.D.

PROTECTO
ENTERPRIZES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/380-5244 www.commodore.ca

COMMODORE-64 or VIC-20

VOICE SYNTHESIZER



MAKE YOUR COMPUTER TALK

VOTRAX BASED
HARDWARE



ONLY

\$59⁰⁰

You can program any words or sentences • Adjust volume and pitch • Make adventure games that talk • Real sound action games • Make customized talkies • (Demo disk or tape included) • Requires Speaker

You can add **TEXT TO SPEECH SOFTWARE** that allows you to simply type what you want to hear!! Also allows you to add sound and voice to **SCOTT ADAMS AARD-VARK** and **"ZORK" ADVENTURE GAMES** List \$29.95 Sale \$19.95 (Disk or Tape).

• LOWEST PRICES • 15 DAY FREE TRIAL • 90 DAY FREE REPLACEMENT WARRANTY
• BEST SERVICE IN U.S.A. • ONE DAY EXPRESS MAIL • OVER 500 PROGRAMS • FREE CATALOGS

COMMODORE 64 80 COLUMN BOARD



FOR ONLY **\$99⁰⁰**

Now you can program 80 columns on the screen at one time! Converts your Commodore 64 to 80 columns when you plug in the PROTECTO 80 Expansion Board. List \$199.00. Sale \$99.00.



FOR ONLY \$24.95 you can get an 80 Column Board "WORD PROCESSOR" with mail merge and terminal emulator PLUS! AN ELECTRONIC SPREAD SHEET (like Visicalc) List \$59.00. Sale \$39.90.
*If purchased with board only \$24.95. (Tape or Disk.)

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

WE LOVE OUR CUSTOMERS

PROTECTO ENTERPRIZES

(WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

Sale
\$39.95

List \$69.00

Program Your Commodore 64 In Plain English

(No need to know Basic)

New
Program
Generators!!

CodeWriter

Information can be a wonderful thing. Having enough of it when it's needed can save time and money and give you that very nice "together" feeling. **FileWriter** lets you control information so you can enter it, find it and change it — just the way you'd like. Whether it's information about bills, taxes, recipes, club membership, stamp collections, or your new home business, **FileWriter** puts things in order. Simply "draw" any kind of screen you want — just like making up a paper form to hold information. Only there's no paper to slow things down. Once you have your form, add some real computer power: calculate automatically, hold grand totals, test for bad information — for one form or hundreds. There's no need to "program". Just use plain English!! Most of the instructions you'll need are right on the screen for you. Like all CodeWriter programs, your **FileWriter** system gives you your own program on your own disk — in minutes the first time you try. Your new program will search for information any way you'd like, update old information, make new calculations, all at computer speed.

Program Generators!!

Report Writer — Lets you create output formats and calculations in any fashion you please. Requires **FileWriter**. List \$59.00. **Sale \$39.95.** (Disk).

FileWriter — Lets you create the input screens and calculations in any fashion you please. List \$59.00. **Sale \$39.95.** (Disk).

SALE
39.95



SALE
39.95

Adventure Writer — Now you can create your own Adventure game without knowing how to program! Create heroes, villains, magicians and monsters, castles and coffin, even dragons. All in plain English. When your creation is done Adventure Writer will write the program for you on your own disk. Fantastic Adventure tool! List \$59.00. **Sale \$39.95.** (Disk).

Elf — The visible worksheet is here! Now you can create applications screen by screen that calculates and prints out reports. Buy vs. lease, amortization, comparisons, and summations are just a few of the freeform spreadsheet functions you can do with Elf. List \$59.00. **Sale \$39.00.** (Disk).

Dialog — Now you can make quizzes and problems for your kids and friends. Make trivia games and other question and answer games for all. You pick the rewards and the punishments. Fantastic teaching aid for kids and party game maker for adults. List \$59.00. **Sale \$39.95.** (Disk).

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO
ENTERPRIZES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

The Most Practical Software

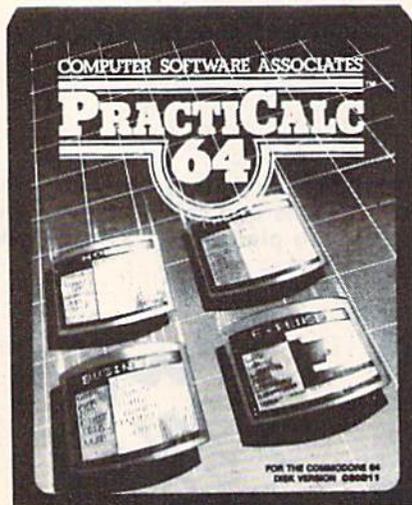
For Your Commodore-64



- Track Expenses, inventories, investments • Make Charts and Graphs • Project Profits

- Keep Mailing Lists • Change Records, numbers, methods of filing • Information Retrieval

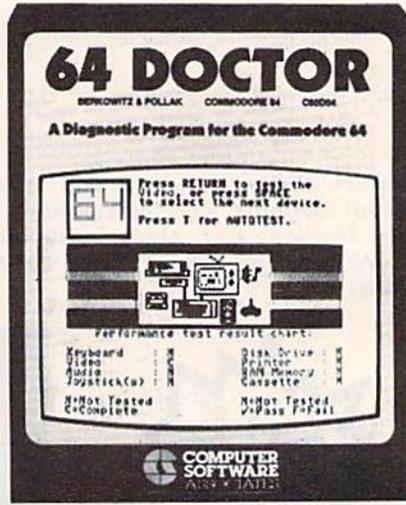
- Test RAM Memory • RS-232 Port • Keyboard • Video • Audio • Joystick • And More!



Practicalc 64: A consistent best seller, Practicalc 64 has become a reference standard among Commodore 64 spreadsheets. With features like alphabetic and numeric sorting and searching, variable column widths, graphing and 23 math functions, this program is an exceptional value. Practicalc 64 also interacts with Practifile, forming the perfect small business bundle. List \$59.95. **Sale \$46.95.** Disk. (\$39.95 Tape.)



Practifile: Flexibility and large capacity make Practifile the ideal data-base manager for the Commodore 64. Files written with the program are compatible with Practicalc 64 and popular word processing programs such as EasyScript, Word Pro, PageMate and PaperClip. Finally, a full-featured data-base at an affordable price! List \$59.95. **Sale \$46.95.** Disk. (\$39.95 Tape.)



64 Doctor: A special diagnostic program for the Commodore 64, 64 Doctor takes the guesswork out of isolating troublesome hardware problems. The program tests each piece of hardware to pinpoint defects and help prevent costly and time-consuming service calls. An essential program for all Commodore 64 users! List \$34.95. **Sale \$24.95.** (\$19.95 Disk.)

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail!

VISA — MASTER-CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO ENTERPRISES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

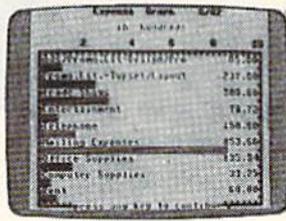
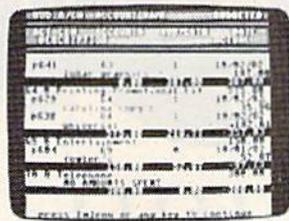
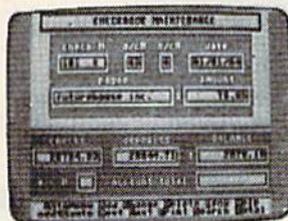
FUTUREHOUSE

Introductory Offer!

Complete Personal Accountant
"Three Programs for the Price of One"

CHECKBOOK - BUDGET MANAGER - BILL PAYER

This program has become the most popular Commodore-64 program for money management in the home and in small businesses. Much more than a record keeper the complete personal accountant helps you plan, budget, monitor, and record your finances and your time. Chart of Accounts; Detail and Summary Budget Analysis; and Appointments/Payments Calendar are yours for one low price. List \$79.00. **Sale \$49.00.** Introductory Offer



Organize and monitor your finances with a flexible Chart of Accounts, and an option-packed Checkbook Maintenance program. Only the CPA offers on-screen editing for quick and easy corrections, check search capabilities in each field, and the capacity to print personalized checks.

With Detail and Summary Budget Analysis, and Net Worth/Income/Expense Statements, you can easily determine where your money is, where it's going, and where it's coming from. Finance 2 will automatically generate professional reports that are indispensable tools in making financial decisions.

With the Appointments and Payments Calendar you can schedule and then monitor your time and your money ... or graphically display your finances with the Color Graph program. Extra features let you organize names and addresses with our powerful Mailing List that features a global search capability.

Fantastic Educational Programs

Little Red Riding Hood — TALKS!! — This famous bedtime story comes alive with graphics, sound, text and SPEECH! Now you and your kids can relive the story of Little Red Riding Hood and improve your reading skills at the same time. Excellent for all ages!! List \$34.95. **Sale \$24.95** (Disk).



Peripheral Vision — At last a fantastic artists program for your light pen. Draw, erase and save in 14 colors. Zoom in and out, draw or fill circles, squares, triangles, or rectangles with the touch of a pen. Fantastic graphics tool. List \$39.95. **Sale \$27.95** (Requires light pen).

Animal Crackers — This program helps develop letter and word recognition skills by creating a screen full of animated objects, each representing a letter of the alphabet. Your child selects a letter with the joystick or light pen and suddenly an animal or object will appear with the correct spelling. List \$34.95. **Sale \$24.95** (Light pen or joystick required) (Disk).



Alphabet Construction Set — This is the most Advanced Alphabet Construction Set on record. The computer voice (it speaks) guides your child through every step as he/she draws the letter on the screen with a light pen. The computer analyzes the letters your child draws, points out mistakes and then suggests the necessary corrections! Fantastic Educational Value. List \$34.95. **Sale \$24.95.** (Light pen required) (Disk).

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail!

VISA — MASTER CARD — C O D

No C. O. D. to Canada, APO-FPO

PROTECTO ENTERPRISES

(WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

Commodore 64 No. 1 Educational Software At Its Best

The

Learning

TM

Company SALE!

• BETTER THAN SPINAKEE!!



Bumble Games — Ages 4-10. An absolutely outerspace way to teach basic math to children. Flying spaceships and the magic of Bumble help children learn to plot numbers and create computer graphics.

List \$44.95. Sale \$29.95. Coupon \$24.95

Moptown Hotel — Ages 8-13. To learn how to solve problems, check into this hotel. Children learn advanced problem-solving skills. Colorful Moppet characters open the door to learning.

List \$44.95. Sale \$29.95. Coupon \$24.95



Addition Magician — Ages 6-10. An absent-minded magician makes a game out of learning addition. Magical walls and secret prizes encourage flexible thinking about adding. Children become addition magicians!

List \$39.95. Sale \$29.95. Coupon \$24.95

Moptown Parade — Ages 6-10. To learn strategy, this is the parade to join. Playful Moppet characters help children develop strategic thinking. Children will never want this parade to pass them by.

List \$44.95. Sale \$29.95. Coupon \$24.95



Word Spinner — Ages 6-10. Reading becomes like a ride in an amusement park as children spin through the alphabet and learn to read. With brilliant colors and a whirling word spinner the building blocks of reading are made easy. List \$39.95. Sale \$29.95.

Coupon \$24.95

Juggles' Rainbow — Ages 3-6. Little ones play over and over again with dancing rainbows, whirling windmills and fluttering butterflies. Children learn the spatial concepts of above and below, left and right — and other critical reading and math readiness skills.

List \$34.95. Sale \$29.95. Coupon \$24.95



Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO ENTERPRIZES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010

Phone 312/392-5244 to order

www.commodore.ca

Turn Your Commodore-64 Into Musicalc™ A Sophisticated Musical Instrument

"The Program That Gives You A Reason To Buy A Commodore-64."

New York Times.

MusiCalc™

Synthesizer & Sequencer

Synthesizer & Sequencer

This 1st step turn your Commodore-64 into a sophisticated musical instrument — a three voice synthesizer and fully interactive step sequencer play along with pre-recorded songs or develop your own and record the music you create.

List \$59.95. Sale \$39.95.



MusiCalc
ScoreWriter

ScoreWriter

Combine with Musicalc 1 and a graphics printer (Super-10) to produce sheet music from your original composition. List \$39.95. Sale \$29.95. Coupon \$24.95.

With Musicalc anyone can • Make and record sophisticated music • Print out sheet music from your creations • Turn your computer into a keyboard • **No experience necessary!**

MusiCalc
Keyboard Maker

Keyboard Maker

Turns your Commodore-64 into a musical keyboard. Comes with over 30 pre-set keyboard scales from Classical to Rock. Requires Musicalc 1. List \$39.95. Sale \$29.95. Coupon \$24.95.

You will sound great with Musicalc. To prove it we will send you **FREE** a record with sounds created with a Commodore-64 and Musicalc by people without instrument or musical experience. To get your Free Record write or call 312/382-5244.

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

**PROTECTO
ENTERPRIZES** (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

COMMODORE-64

CHALK BOARD COLOR TOUCH TABLET

Chalk Board Touch-Tablet is a revolutionary new 12" x 12" touch sensitive surface that lets you bypass your COMMODORE-64 Computer keyboard. Just touch the pad and watch your ideas appear on your t.v. screen in living color! Power Pad is drawing pad, color graphics, color canvas and piano keyboard, jigsaw puzzle, game board for any age. A fantastic, entertaining, learning experience! • **Free \$29.95 Paint Brush Program!**



List Price \$129.90

Sale \$49.00

LEARNING PAD SALE!!!

- **Bigger — Better — Lower Price Than Koalapad!** • Fantastic Learning Tool • First Graders To Senior Citizens • Learn By Touching Tablet • Color Graphics • Drawing Pad • Game Board • Jigsaw Puzzle • Piano Key Board • Music • Visual Arts • Math • Science • Apple (MacIntosh) Mouse Capability

LEO'S 'LECTRIC PAINT BRUSH. When you use Leo's 'Lectric Paintbrush software, you are ready for magical, multi-colored electronic finger painting. Make your own pictures. Color them. Change them. Save them. List \$29.95. **Sale (Free with purchase of CHALKBOARD LEARNING PAD for \$49.00).** (Cart)

LEARNING PAD PROGRAMMING KIT. Once you're familiar with the COMMODORE-64 Computer keyboard and you understand beginning BASIC, the LEARNING PAD programming kit sets you free to develop games and programs! List \$29.95. **Sale \$19.95.** (Disk)

LOGICMASTER. With over 180,000 different game designs ... and over 200 million secret codes ... LogicMaster is the most fun you've ever had with your powers of reasoning. Solve the codes all by yourself or work together with family or friends. List \$39.95. **Sale \$29.95.** (Cart)

BEARJAM. As children play this game and feed the friendly animated bear, they sharpen the visual skills so essential for success in learning. BearJam is a great reading-readiness game. List \$39.95. **Sale \$29.95.** (Cart)

PIANO MAESTRO. Chalk Board's MicroMaestro software turns your PowerPad into a piano keyboard. Touch the keys. You hear the music and see your composition right on the screen. It is the fun way to learn music. List \$29.95. **Sale \$24.95** (Cart)

LEO'S GOLF LINKS. This golf game for one or more players lets you design each hole, including fairways, roughs, traps and greens. Then using woods, irons and putters, you play the course. List \$39.95. **Sale \$29.95.** (Cart)

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

**PROTECTO
ENTERPRIZES** (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

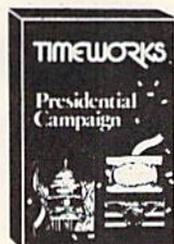
www.commodore.ca

Free Program Offer* TIMEWORKS

Home Management
Educational Software

Presidential Campaign

Start with \$2,500,000 and a Presidential Nomination. Spend your money wisely to conduct a nationwide campaign to win the confidence of the American Public. At the end of the campaign the American Public will decide on the final decision. Fantastically Realistic. List \$29.95. **Sale \$19.95.**



*** Buy the Fantastic Presidential Campaign and choose any other Timeworks Program on this page FREE!!**

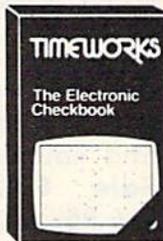
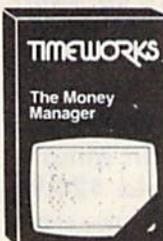
Tape or Disk
Expires 10/1/84

Money Manager

16 categories can be input on a monthly basis for a 12 month period. Full analysis including budget and actual comparisons plus detail by individual items. Colorful bar charts show where you're spending too much or too little. Record all information to tape or disk. List \$24.95. **Sale \$19.95.**

The Electronic Checkbook

Check recording, sorting and balancing system. Organize and record checkbook transactions for easy recall and sorting by category. A must for tax time. Also produce the sum and average for transaction amounts by indexed categories. Interface with the MONEY MANAGER for graphic detail and actual-budget comparison. List \$24.95. **Sale \$19.95.**



Your Choice
\$19.95

Learn Basic Programming from the ground up. This first step takes you through the actual design of Lunar Lander, using moving graphics.

Programming Kit I



Shows in detail how basic programming works and what should go into a good game. List \$24.95. **Sale \$19.95.**

Your Choice
\$19.95

Programming Kits

Programming Kit II

Intermediate game design and Sprite Builder. Design Slot Machine and study intermediate programming including arrays, subroutines, sound, special function keys, and random function. Plus Sprites are covered in detail and a Sprite Editor is included. List \$24.95. **Sale \$19.95.**



Manuals are written in plain, easy to follow English. The 8 step approach to program design is fully explained and can easily be applied to your future programming adventures.



Programming Kit III

Intermediate Data Base design. Instead of games you may want to go the business route. Use this program to develop a Data Base Manager to allow quick storage and retrieval of any information. Learn disk/tape storage, sorting, menus, plus multi dimensioned arrays, plus a whole lot more. List \$24.95. **Sale \$19.95.**

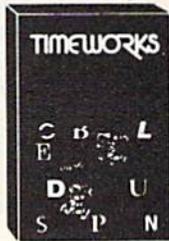
Dungeons Of The Algebra Dragons

At last a good educational game. You must wander through 3-D mazes until you encounter dragons, then you must answer the algebra problems they give you. A right answer gets you a free ride, a wrong answer gets you eaten. Fantastic educational value. (Tape or Disk.) List \$29.95. **Sale \$24.95.**



Spellbound

The screen is sprinkled with the letters from one of 20 words of your choice along with a few extra random ones. Use your Joystick to sting the letters in the right order but don't sting the wrong ones or cross your path or you explode. Fantastic educational value. Fun for all ages. List \$24.95. **Sale \$17.95.**



Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA. APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail!

VISA — MASTER CARD — C O D

No C.O.D. to Canada, APO-FPO

PROTECTO ENTERPRISES

(WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

Commodore 64

screenplay

Superior Computer Games

Pogo Joe

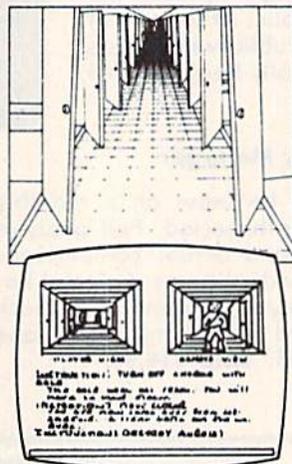
Better than Qbert. Guide Pogo Joe across 32 screens of cylinders. As many as 8 nasties at a time are out to kill you. Fantastic graphics and sound. List \$29.95. **Sale \$19.95.** Coupon \$16.95. (Tape or Disk)



• GAME OF THE YEAR!

Asylum

One of the best graphic adventures we've seen. Get yourself out of the Asylum past guards and secret doors. Stunning, 3D graphics will make you feel like an inmate. List \$34.95. **Sale \$24.95.** Coupon \$22.00. (Tape or Disk)



Dunzhin

A good sword, little magic, and lots of cunning takes you against Evil Wyverns, Saber Toothed Tigers, and the Undead. If you reach the bottom of the dungeon your halfway home. Great and 30 graphics. List \$34.95. **Sale \$24.95.** Coupon \$22.00. (Tape or Disk)



Wyldie

Be a Hobbit! Make your way through the magic mountains to the treasure of the mountain king. Fight Trolls, Orks and other nasties along the way. Fantastic realism. List \$34.95. **Sale \$24.95.** Coupon \$22.00. (Disk)



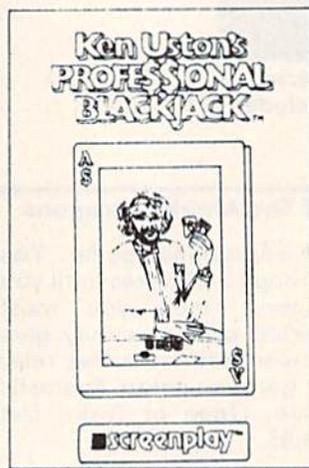
Playful Professor

Make your way to the treasure by correctly answering math problems. If you guess wrong and the professor shows you how step by step. Addition, subtraction, multiplication, and division basics are all covered. Fantastic educational value. List \$34.95. **Sale \$24.95.** Coupon \$22.00. (Tape or Disk)



Ken Uston's Professional Blackjack

The ultimate Blackjack tutor made famous by Ken Uston, \$5,000,000 winner. All different casino Blackjacks are discussed as well as a free \$29.95 value Blackjack Book are yours. Fantastic tutor. List \$79.95. **Sale \$49.95.** (Disk)



Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO ENTERPRISES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

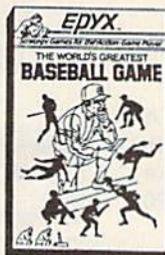
*Buy 1 (at Sale Price!) Get One

FREE

Commodore 64

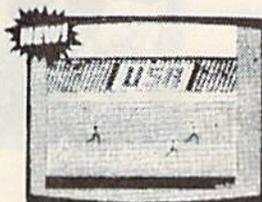
(Expires 10/1/84)

Award Winning Games



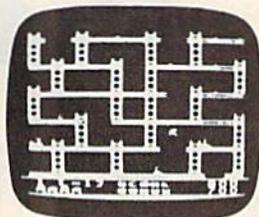
World's Greatest Baseball — Finally a great sports game. Realistic right down to the playing field. Control all the actions—even the outfielders. Play realistic baseball all year round. (Fantastic graphics, action, and sound!) (Disk) List \$34.95 Sale \$24.95.

Fax — Stop wasting quarters! Now you can play Exidy's Fax at home. Play against the computer or an opponent to get the answer first, over 3,700 questions dealing with sports, television, movies, histories, and many more subjects will keep you playing for hours (a must for trivia buffs). List \$34.95. Sale \$24.95. (disk only).



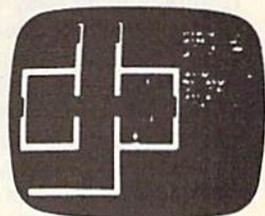
Summer Games — Now you can compete in the Olympics right along with the real competitors. Compete in track, swimming, diving, cycling, archery, weight lifting, rowing and more. This Olympic game is so realistic it even includes a beautiful opening ceremony and an awards presentation after each event. (Highly recommended, by far the best Olympics game we've seen). List \$39.95. Sale \$28.00. (disk only).

Dragon Riders of Pern — Based on the best selling book series by Anne McCaffey (over 10 million sold). This program forces you to make an alliance with the Lord holders, then mount your dragon (stunning graphics) and battle the dreaded thread. (Super fast action with a great theme). List \$39.95. Sale \$24.00. (tape/disk).



Jumpman — If you like Donkey Kong, you'll love Jumpman. Over 30 different screens with 8 speeds and 5 skill levels make this the fastest action game in the country. You must leap girders, climb ropes, and scale ladders to reach and diffuse bombs while avoiding robots, birds, bullets, explosives, crumbling walls, vanishing escape routes, and many other obstacles. (Truly a fantastic game!) List \$39.95. Sale \$24.95 (Disk/Tape.)

Temple of Apschai — (*computer game of the year*). This is the standard by which other adventure games are judged. Full color graphics portray the temple and all its contents — magic, monsters, doomed cities and damsels in distress. Do battle in real time with over 20 monsters, expansion modules will keep your adventure alive in the future. List \$39.95. Sale \$24.95. (tape/disk).
(Also Available For VIC-20)



Add \$3.00 for postage. Add \$6.00 for CANADA, PUERTO RICO, HAWAII orders. WE DO NOT EXPORT TO OTHER COUNTRIES.
Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail!
Canada orders must be in U.S. dollars. We accept Visa and MasterCard. We ship C.O.D.

PROTECTO
ENTERPRIZES (WE LOVE OUR CUSTOMERS!)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5242

www.commodore.ca

SUPER

Fantastic Sale!

HES Special Programs For VIC-20 Computer

While They Last!!

Call Today!!

First Come Basis!!

SYNTHESOUND Sale \$9.95

• Fantastic Sound & Music • Piano Keyboard

Now your VIC-20 can be used as a state-of-the-art music synthesizer and special effects generator! A very user friendly manual guides you through sessions of learning and development of your synthesizer "style"! You can program Synthesound to sound like many different instruments like bagpipes, organ, bass and many others. Synthesound brings technical musical abilities to any VIC-20 user. Prepare to step into the exciting world of the futuristic computer musician.

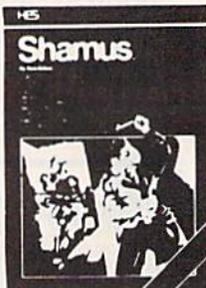
- VIC keyboard used as a 2 octave fast attack keyboard.
- 3 voices with 4 1/2 octave range.
- 4 low frequency oscillators.
- 4 envelope shaping controls (Attack, Decay, Sustain, Release).
- 4 voice/20 note sequencer for repeating melodies or rhythms.
- High resolution piano keyboard display.



List \$39.95
Sale \$9.95

SHAMUS (No. 1 Joy Stick Action Game!) Sale \$9.95

Fight against the Roboroids and Snap Jumpers as you wind your way through the Shadows lair. Dangerous obstacles may mean your doom if you're not fast with your joy stick action! Excellent high resolution graphics and fantastic sound! VERY ADDICTIVE!



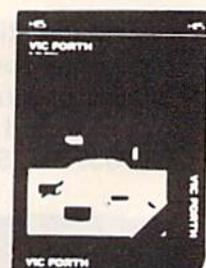
List \$39.95
Sale \$9.95

VIC FORTH LANGUAGE Sale \$19.95

Faster than BASIC — easier than Assembly language — Language of Robots.

VIC FORTH is an exciting new cartridge for your VIC-20 computer. You now have a language that is more powerful than BASIC and easier to program than assembler! VIC FORTH is a nearly complete implementation of the "FORTH INTEREST GROUP" (fig.) version of FORTH. The VIC FORTH editor follows closely the standard FORTH editor described in the book, "Starting FORTH", plus it has many, many additional features.

- Full screen editor which has 16 lines of 64 characters each (standard FORTH Screen) through use of a horizontal scrolling window.
- User definable words; this means a function not already supported can be created by you and added to VIC FORTH for future use.
- Full VIC sound and color capabilities.
- Runs in standard 5k VIC.
- Output to printers and disks and tape machines.
- Up to 24k additional memory can be added.
- 31 characters for variable names.



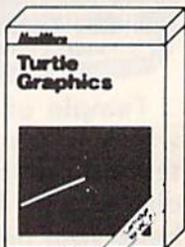
List \$59.95
Sale \$19.95

TURTLE GRAPHICS Sale \$19.95

• Create colorful pictures and graphics • Learn how computers compute.

Turtle Graphics is an exciting and fun way to discover computer programming concepts. Turtle Graphics is an easy-to-learn computer language. It enables the beginning programmer to master the computer in just a few minutes. By telling an imaginary turtle how to roam about on the VIC's screen, the Turtle Graphics programmer can create colorful and artistic pictures. As one becomes more and more adept at teaching the turtle to paint using the VIC's rich graphics and color palette he or she is painlessly learning all of the basics of computer programming. This not only develops computer awareness, but enriches one's math, logic, communication and artistic skills as well.

- Turtle Graphics has over 30 different commands.
- Programs may be listed on a printer and saved on or loaded from tape or disk.
- Turtle Graphics is menu driven for ease of use.
- Trace mode to help the beginning programmer follow the logic of his program one step at a time.
- Well written, easy-to-follow manual with many examples included.



List \$49.95
Sale \$19.95

We Have All HES Products At Super Sale Prices!!

PROTECTO ENTERPRISES

(WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone (708) 241-1111 www.commodore.ca

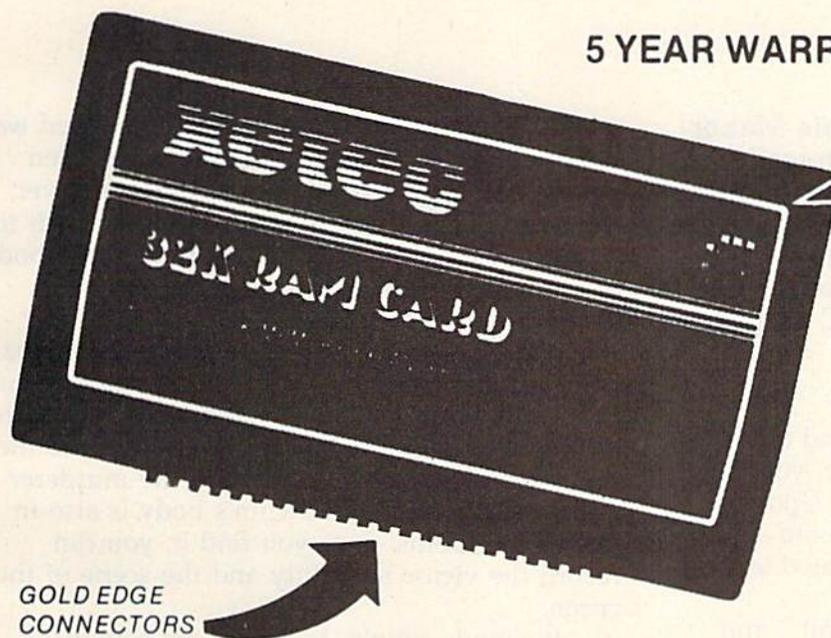
EXPAND YOUR VIC-20 TO COMMODORE-64 POWER!

FOR ONLY **\$79⁰⁰**

(PLUS A FREE \$29.95 CARTRIDGE GAME)

LIST PRICE \$159.95

Just plug in the **32K RAM MEMORY EXPANDER** and you have as much usable programming memory as the Commodore-64 computer!!! This **32K RAM EXPANDER CARTRIDGE** gives your VIC-20 computer **9 TIMES MORE PROGRAMMING POWER!!**



5 YEAR WARRANTY

MASTER
CONTROL
SWITCHES

FEATURES

- Allows Full 32K Memory Expansion
- Separate Enable Switch for each 8K Block
- Gold Plated Contacts
- Premium Grade Components
- Fully Tested and Burned In
- 5 Year Warranty
- Complete Documentation

1/2 PRICE EXPANSION SALE!!

	LIST	SALE
3K Ram Expander	\$ 39.95	\$19.95
8K Ram Expander (2½ times more power)	\$ 69.95	\$34.95
16K Ram Expander (4 times more power)	\$ 99.95	\$49.00
32K Ram Expander (9 times more power) (PLUS \$29.95 FREE GAME CARTRIDGE)	\$149.95	\$79.00
3 Slot Expander Board — Switch Selectable	\$ 49.95	\$24.95

WE LOVE OUR CUSTOMERS!

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

**PROTECTO
ENTERPRIZES** (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

www.commodore.ca

Mystery At Marple Manor

John R. Prager

You've been summoned to Marple Manor on a dark and stormy night to investigate the unexpected demise of one of the dinner guests. Clues are everywhere, but can you discover who did it, to whom, how, and where? A mystery text-adventure for one to six players. Versions for the VIC and 64.

Searching through the study, you find a duelling pistol hidden under a cushion. Later, you discover the cook cowering in a closet. Upon unlocking the greenhouse door, you are aghast to find the body of the Duchess concealed among the potted ferns.

Your job is to find out "whodunit," and how, before the other detectives crack the case. They are a shifty lot, who might hide vital clues or steal pieces of evidence you are carrying, just to throw you off the track. There are over 15,000 possible solutions, but only one correct answer, chosen anew each time the program is run. It's a race against your fellow sleuths to find that unique answer.

"Mystery At Marple Manor" may be a departure from the computer games you're used to playing. Patient strategy, rather than quick reflexes, is of paramount importance to the successful detective. In many ways, the game resembles computer text-adventure games as well as familiar board games of logic and deduction.

For Sleuths Only

In order to solve the case, you must correctly identify the murderer, the victim, the weapon

used, and the room where the heinous deed was done. Before you arrived, the manor held ten people and twelve possible weapons; however, the murderer has fled to parts unknown with the weapon he or she used, leaving behind the body of the victim, eight living suspects, and only eleven weapons.

As you travel through the mansion, use paper and pencil to keep a careful record of all suspects and weapons you see. When you've located all the objects that remain in the house, use the process of elimination to identify the murderer and weapon used. The victim's body is also in one of the rooms; once you find it, you can record the victim's identity and the scene of the crime.

It sounds simple, but there are complications. At the outset, many of the suspects and weapons will be hidden in the various nooks and crannies of the manor. Players may have to search each room thoroughly, possibly several times, before all the concealed items are discovered. The detectives can even pick up and move items from room to room in the course of play. Suspects and the body of the victim cannot be moved, but, in the 64 version (Program 1), they can be hidden by detectives in the same room.

Marple Manor is a house of 14 rooms. To better assist you while maneuvering through the manor, refer to the floorplan with this article. Up to six people can play, and all players begin the game in the entry foyer at the southern end of the house. They alternate turns until either one player correctly solves the mystery, or until all players have made incorrect guesses and, consequently, have been eliminated from the game.

80 Column Smart Terminal For Your C64 Without Any Hardware Change!

VIP TERMINAL™

VIP Terminal ready
Dear Pepper.

11:15:28

You're right. This VIP Terminal is the only terminal for the C64 worth owning. That freebie software that came with my modem just didn't work, especially with my new smartmodem. The 80 column display alone was well worth the \$49.95 — much less the 40, 64 and 106 character displays — and it doesn't need any hardware changes. Imagine 106 characters on 25 lines. Heck, there's more text on my screen than on my uncle's Apple or my dad's IBM-PC!

I put auto-dial to work right away. I auto-dialed CompuServe, but couldn't get through, so I had VIP Terminal redial 'til it got through — it dialed five minutes straight! Then I auto-logged on with one of my 20 programmed keys, and downloaded some graphics screens, and stock quotes for dad. I printed it and saved it to disk as it came on the screen. Wow! And now I can send you my programs automatically. I got yours and they worked right off.

Those icons — you know, like the Apple Lisa — are a lot of fun. I also like the menus, function keys, highlights, help tables — great for a newcomer like me. And with the many options there isn't a computer I can't talk to.

What's really neat is that Softlaw has a whole VIP Library of interactive programs, including a word processor, spreadsheet and database, which will be out soon. Sis promised me the whole set for my birthday.

I see by the built-in "old clock" on the screen that long-distance rates are down. Got to call that L.A. BBS. Yep, there goes the alarm. Later.

- Lone

They're right! To start with the best you've got to have the **VIP Terminal!**

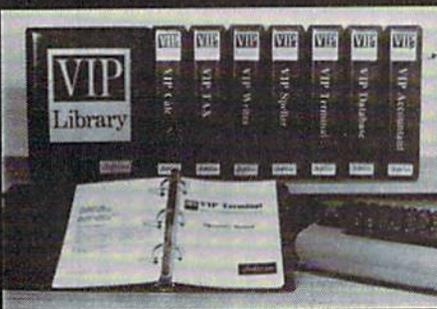
- Built-in 40, 64, 80 and 106 columns
- Talk to any computer
- Flawless 1200 baud operation
- Use any modem and printer
- Written in fast machine code
- 16 entry phone book/20 message keys
- Word wrap for a formatted display
- Auto dial, redial, up/download, log-on & answer with your 1650 or Hayes
- Protocol: CBM-Punter, ASCII, Xon/Xoff, G4 Graphics & VT52
- Full screen editor
- Simultaneous on line printing and saving of files to disk
- Use and save files as big as your disk!
- E Mail & E-COM Compatible

Get yours NOW! **\$49.95**

Introducing The VIP Library

The Library Concept

The **VIP Terminal** is only the first in a whole series of elegant software for your Commodore 64 called the **VIP Library**. This complete collection of easy-to-use, serious, high quality, totally interactive productivity software includes **VIP Writer**, **VIP Speller**, **VIP Calc**, **VIP Database**, **VIP Disk-ZAP**, **VIP Accountant** and **VIP Tax**. All are equal in quality to much more expensive software for the IBM PC, and all are very affordable!



Virtual Memory

VIP Library programs are not limited by the size of your computer's memory. All programs use virtual memory techniques to allow creation and use of files larger than your computer's available work area. You're only limited by the space on your disk!

©1983 by Softlaw Corporation

Icons Make Learning Easy

Hi-res technology and sprites allow **VIP Library** programs to bring you task icons, made famously by the Apple Lisa™ and the Xerox Star™. With these advanced sprite representations of the task options open to the user, even the total novice can, at a glance, perform every task with ease. Just look at the icon and press a key! No programs are easier or more fun to learn and use!

Total Compatibility

All **VIP Library** programs are compatible with each other and other computers for easy file transfer. Each uses ASCII, the universal language of computer communications so that files can be sent to and received from other computers without modification! The Library also gives you the benefit of a consistent icon and command structure. Once you have learned one program, the others will come easily.

For Orders ONLY
— Call Toll Free —

1-800-328-2737

Order Status and Software Questions
call (612) 881-2777

Available at Dealers everywhere. If your
Dealer is out of stock **ORDER DIRECT!**

MAIL ORDERS: \$3.00 U.S. Shipping (\$5.00
CANADA; \$10.00 OVERSEAS. Personal
checks allow 3 weeks.

Professional Displays

The 40-characters-per-line display of the Commodore 64 is inadequate for serious computing. An 80-column display is the industry standard. **VIP Library** programs bring this standard to your Commodore 64 with state-of-the-art graphics, without need for costly hardware modifications. With **VIP Library** programs you can freely choose from four displays: the standard 40 column display, plus a 64, 80 and even a 106 column by 25 line display. With these programs you can have more text on your screen than on an IBM PC or an Apple IIe with an 80-column board! Welcome to the professional world!

Who Is Softlaw?

Softlaw Corporation has years of software experience in micros. We currently offer the full-line **VIP Library** for other micros in the U.S. and in Europe. Now we are bringing this experience to the Commodore 64 so you get ultra-high quality software at very affordable prices.

SoftLaw

9072 Lyndale Avenue South
Minneapolis, Minnesota 55420

Although each player takes a separate turn, the game works just as well if the players form teams of equal size. This allows two or three teammates to travel through the house independently, yet share their discoveries and arrive at a solution together.

Passwords And Locked Doors

In the 64 version, the game begins with a title screen and a thunderclap. This gives contestants time to assign player numbers, organize teams (if desired), and ready their notepads. Type a number from 1 to 6 to enter the number of players, and the game begins.

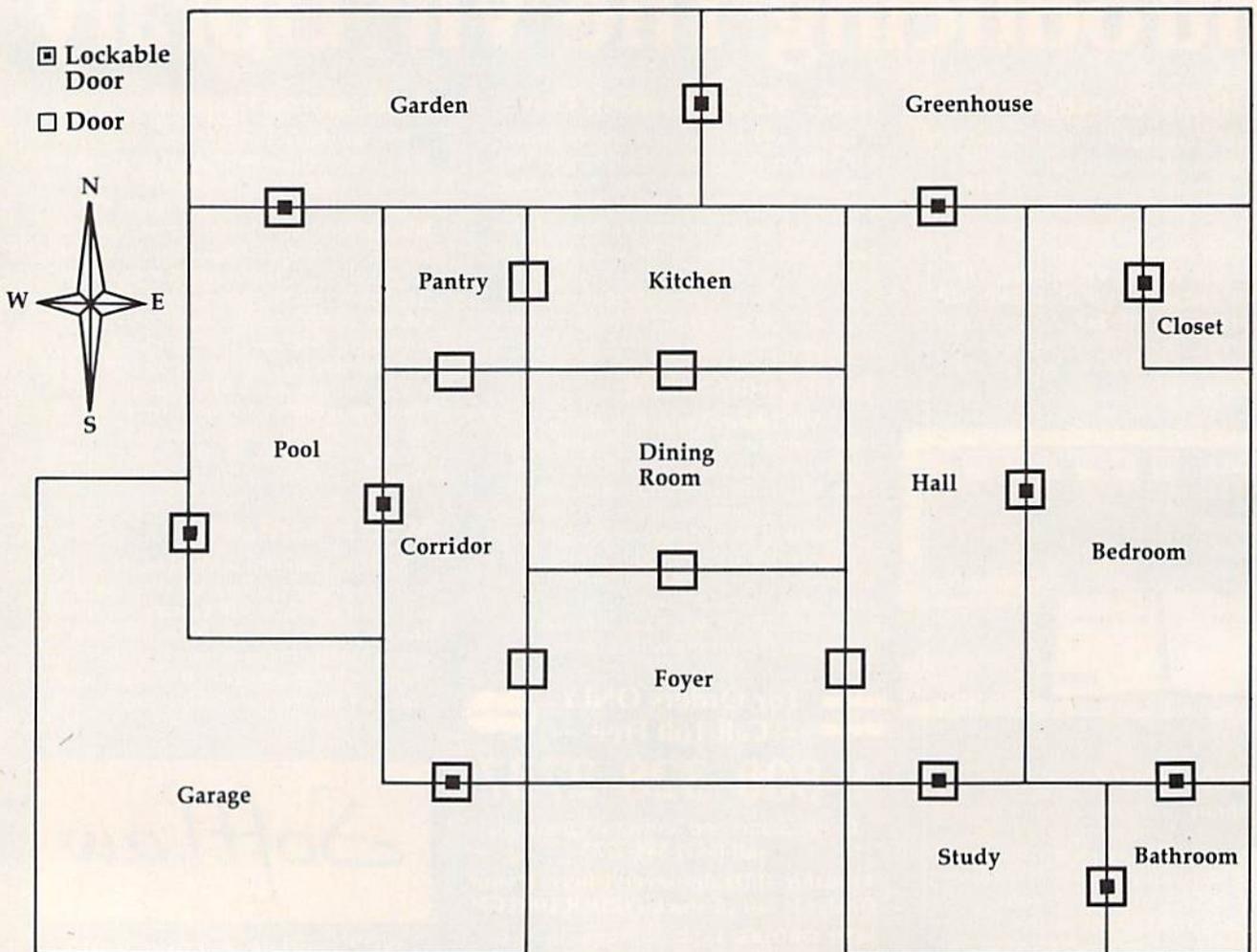
At this point, all players except the first should position themselves so they can't see the screen. After all, each player will be acquiring information in the course of the game that he or she wishes to keep secret from the others for as long as possible. To help preserve secrecy, you will be asked to enter a secret code on your first turn. This password can be any two characters

from the keyboard—numerals, letters, spaces, special symbols, or even function keys. Be sure to choose a code that you can recall easily, and bear in mind that the computer will recognize shifted keys and unshifted keys as different entries. On later turns, you must enter your secret code before going on. This prevents other players from illegally using your turn to gather information for themselves.

After you type in your code, the computer reminds you of your current location and asks if you wish to move. If you answer yes, the computer lists all possible exits available to you. Type in the appropriate compass direction to move to a new room: N, S, E, or W. If you type in a direction that does not have a matching door—for example, if you try to move south from the foyer—your move will be blocked.

Your move may also be blocked if you attempt to move through a locked door. Eleven doors in Marple Manor can be fastened shut, and, at the start of the game, most of these doors

Floorplan Of Marple Manor



are locked. (See the floorplan diagram.) To move through a locked door, you must possess a key which matches the lock; for example, the bedroom key will open any door that adjoins the bedroom. All of these keys are initially placed in the pantry. One special key, the skeleton key, can open any locked door but is powerless to lock doors; its starting location will vary from game to game.

Whether or not you move to a new room, the computer describes your surroundings. It tells you the room you are in; notes what item you carry, if any; lists all suspects, weapons, and keys in view; and names all the other players in the room.

Searching For Clues

Following the description, you are presented with a list of choices. Select from these options by pressing the appropriate key. One option is to take no action; this allows you to end your turn and readies the computer for the next player.

Searching is the most popular option. At the start of play, many suspects and items are hidden in various rooms. Additionally, players may use the *Hide* option to stow away even more clues. Searching is the only way to find these hidden objects. Each time a player searches in a given room, there is a 50% chance of finding each item hidden in that area. For this reason, a room may be searched several times before all the objects it contains are revealed. A searching player does not automatically take any item he finds.

The *Hide* option is the logical counterpart to the *Search*. You may choose to hide any one object in the room you occupy. This object may be a weapon, a suspect, a key, or the corpse. You may even hide the object you carry, if any. But you can't hide yourself or another player. Hiding items makes it more difficult for your opponents to locate the clues they need in order to win. Don't forget, of course, to record each clue in your notes before you hide it. Hidden objects may be discovered subsequently by any player searching in the room.

The *Take* option allows you to pick up a weapon or key in the room you occupy. You may only carry one item at any time. If you choose the *Take* option while holding an object, you automatically drop the article currently held in favor of the new one. Alternatively, the *Drop* option allows you to discard an item without taking another. The usefulness of the *Take* option cannot be overstated: Carrying keys allows you to pass through locked doors, while weapons in your possession cannot be discovered by players who search. However, the *Pilfer* option allows a player to steal from another player in the same

room. The pilfering player drops any item carried, and receives the object the other player had held.

When you are certain you have the solution to the case, select the *Accuse* option. You will be asked to identify the murderer, the victim, the weapon, and the scene of the crime from lists of the possibilities. An incorrect guess eliminates you from further play. Give the correct solution, though, and you win the game.

VIC Version Notes

Gameplay for the VIC-20 version (Program 2) varies somewhat from the preceding description. Sound effects have been deleted from the game, and the introductory title and prompts throughout the game have been streamlined. Secret codes are not used. There are no keys or lockable doors; investigators may pass freely from one room to another in the manor. Finally, the *Hide* option has been removed, and the effectiveness of searching is increased to 60%. Even with these extensive modifications, less than 100 bytes of free memory remain when the program is running, so be sure not to add any spaces as you type in the program.

The net effect of these changes is to increase player interaction. It still retains the flavor and excitement of the larger version. Since players cannot hide objects in this version, and since there is no need to carry keys, players use the *Take* option to acquire weapons. Consequently, pilfering is more frequent in this version of the game, and more often useful to the player choosing that option.

If you wish to avoid typing in the entire listing, I'll make a copy of either version for you. Send \$3 and a blank disk, (sorry, no tapes) in a stamped, self-addressed disk mailer to:

John R. Prager
417 S. Johnson
Bay City, MI 48706

Be sure to specify whether you want the 64 or VIC version.

See program listings on page 154. ☐

COMPUTE!'s
Gazette
TOLL FREE
Subscription
Order Line

800-334-0868
In NC 919-275-9809

A Beginner's Guide To Typing In Programs

What Is A Program?

A computer cannot perform any task by itself. Like a car without gas, a computer has *potential*, but without a program, it isn't going anywhere. Most of the programs published in COMPUTE!'s GAZETTE for Commodore are written in a computer language called BASIC. BASIC is easy to learn and is built into all VIC-20s and Commodore 64s.

BASIC Programs

Each month, COMPUTE!'s GAZETTE for Commodore publishes programs for both the VIC and 64. To start out, type in only programs written for your machine, e.g., "VIC Version" if you have a VIC-20. Later, when you gain experience with your computer's BASIC, you can try typing in and converting certain programs from another computer to yours.

Computers can be picky. Unlike the English language, which is full of ambiguities, BASIC usually has only one "right way" of stating something. Every letter, character, or number is significant. A common mistake is substituting a letter such as O for the numeral 0, a lowercase l for the numeral 1, or an uppercase B for the numeral 8. Also, you must enter all punctuation such as colons and commas just as they appear in the magazine. Spacing can be important. To be safe, type in the listings *exactly* as they appear.

Braces And Special Characters

The exception to this typing rule is when you see the braces, such as "{DOWN}". Anything within a set of braces is a special character or characters that cannot easily be listed on a printer. When you come across such a special statement, refer to "How To Type In COMPUTE!'s GAZETTE Programs."

About DATA Statements

Some programs contain a section or sections of DATA statements. These lines provide information needed by the program. Some DATA statements contain actual programs (called machine language); others contain graphics codes. These lines are especially sensitive to errors.

If a single number in any one DATA statement is mistyped, your machine could "lock up," or "crash." The keyboard and STOP key may seem "dead," and the screen may go blank. Don't panic — no damage is done. To regain control, you have

to turn off your computer, then turn it back on. This will erase whatever program was in memory, so *always SAVE a copy of your program before you RUN it*. If your computer crashes, you can LOAD the program and look for your mistake.

Sometimes a mistyped DATA statement will cause an error message when the program is RUN. The error message may refer to the program line that READS the data. *The error is still in the DATA statements, though.*

Get To Know Your Machine

You should familiarize yourself with your computer before attempting to type in a program. Learn the statements you use to store and retrieve programs from tape or disk. You'll want to save a copy of your program, so that you won't have to type it in every time you want to use it. Learn to use your machine's editing functions. How do you change a line if you made a mistake? You can always retype the line, but you at least need to know how to backspace. Do you know how to enter inverse video, lowercase, and control characters? It's all explained in your computer's manuals.

A Quick Review

1. Type in the program a line at a time, in order. Press RETURN at the end of each line. Use backspace or the back arrow to correct mistakes.
2. Check the line you've typed against the line in the magazine. You can check the entire program again if you get an error when you RUN the program.
3. Make sure you've entered statements in braces as the appropriate control key (see "How To Type COMPUTE!'s GAZETTE Programs" elsewhere in the magazine).

We regret that we are not able to respond to individual inquiries about programs, products, or services appearing in COMPUTE!'s GAZETTE for Commodore due to increasing publication activity. On those infrequent occasions when a published program contains a typo, the correction will appear in the magazine, usually within eight weeks. If you have specific questions about items or programs which you've seen in COMPUTE!'s GAZETTE for Commodore, please send them to Gazette Feedback, P.O. Box 5406, Greensboro, NC 27403.

How To Type In COMPUTE!'s GAZETTE Programs

Many of the programs which are listed in COMPUTE!'s GAZETTE contain special control characters (cursor control, color keys, inverse video, etc.). To make it easy to know exactly what to type when entering one of these programs into your computer, we have established the following listing conventions.

Generally, any VIC-20 or Commodore 64 program listings will contain words within braces which spell out any special characters: {DOWN} would mean to press the cursor down key. {5 SPACES} would mean to press the space bar five times.

To indicate that a key should be *shifted* (hold down the SHIFT key while pressing the other key), the key would be underlined in our listings. For example, S would mean to type the S key while holding the shift key. This would appear on your screen as a 'heart' symbol. If you find an underlined key enclosed in braces (e.g., {10 N}), you should type the key as many times as indicated (in our example, you would enter ten shifted N's).

If a key is enclosed in special brackets, { }, you should hold down the Commodore key while pressing the key inside the special brackets. (The Commodore key is the key in the lower left corner of the keyboard.) Again, if the key is preceded by a number, you should press the key as many times as necessary.

Rarely, you'll see a solitary letter of the alphabet enclosed in braces. These characters can be entered on the Commodore 64 by holding down

the CTRL key while typing the letter in the braces. For example, {A} would indicate that you should press CTRL-A. You should never have to enter such a character on the VIC-20, but if you do, you would have to leave the quote mode (press RETURN and cursor back up to the position where the control character should go), press CTRL-9 (RVS ON), the letter in braces, and then CTRL-0 (RVS OFF).

About the *quote mode*: You know that you can move the cursor around the screen with the CRSR keys. Sometimes a programmer will want to move the cursor under program control. That's why you see all the {LEFT}'s, {HOME}'s, and {BLU}'s in our programs. The only way the computer can tell the difference between direct and programmed cursor control is the quote mode.

Once you press the quote (the double quote, SHIFT-2), you are in the quote mode. If you type something and then try to change it by moving the cursor left, you'll only get a bunch of reverse-video lines. These are the symbols for cursor left. The only editing key that isn't programmable is the DEL key; you can still use DEL to back up and edit the line. Once you type another quote, you are out of quote mode.

You also go into quote mode when you IN-SerT spaces into a line. In any case, the easiest way to get out of quote mode is to just press RETURN. You'll then be out of quote mode and you can cursor up to the mistyped line and fix it.

Use the following table when entering cursor and color control keys:

When You Read:	Press:	See:	When You Read:	Press:	See:	When You Read:	Press:	See:
{CLR}	SHIFT CLR/HOME		{CYN}	CTRL 4		{7}	CTRL 7	
{HOME}	CLR/HOME		{PUR}	CTRL 5		{8}	CTRL 8	
{UP}	SHIFT CRSR ↑		{GRN}	CTRL 6		{F1}		
{DOWN}	CRSR ↓		{BLU}	CTRL 7		{F2}	SHIFT F2	
{LEFT}	SHIFT CRSR ←		{YEL}	CTRL 8		{F3}		
{RIGHT}	CRSR →		{1}	CTRL 1		{F4}	SHIFT F4	
{RVS}	CTRL 9		{2}	CTRL 2		{F5}		
{OFF}	CTRL 0		{3}	CTRL 3		{F6}	SHIFT F6	
{BLK}	CTRL 1		{4}	CTRL 4		{F7}		
{WHT}	CTRL 2		{5}	CTRL 5		{F8}	SHIFT F8	
{RED}	CTRL 3		{6}	CTRL 6				

Treasure Hunt

Calvin Overhulser

"Treasure Hunt" is a joystick-controlled action game originally written for the VIC-20 with at least 3K of expanded memory. An easy technique is also included to RUN the program with an 8K or larger expander. We've added a version for the 64.

Your goal in "Treasure Hunt" is to collect lost pirate treasure on a secluded island while avoiding a variety of obstacles. The treasure includes gold coins, gold bars, and a treasure chest. The obstacles are rum kegs, quicksand bogs, and spirits of ancient pirates (which appear as skulls), any of which can spell disaster for a treasure hunter. When most of the gold coins and gold bars are collected (you are allowed to leave one gold coin and/or one gold bar), you get a new screen.

You don't have to pick up the treasure chest but you earn more points if you do; just remember to hold the fire button down while attempting to cross the bog. The round number and the current score are displayed as the game progresses.

There are five skill levels. The level you choose determines the number of fixed and moving obstacles. The skill level also determines the points earned for each treasure collected.

VIC Program Construction

The main loop is in lines 65-90. The subroutines at lines 91-98 are used to update the location of both the treasure hunter and the moving obstacles (skulls). In line 70 for the treasure hunter and in line 610 for the active skull, ON-GOSUB allows the new location for either to be calculated using the same subroutines.

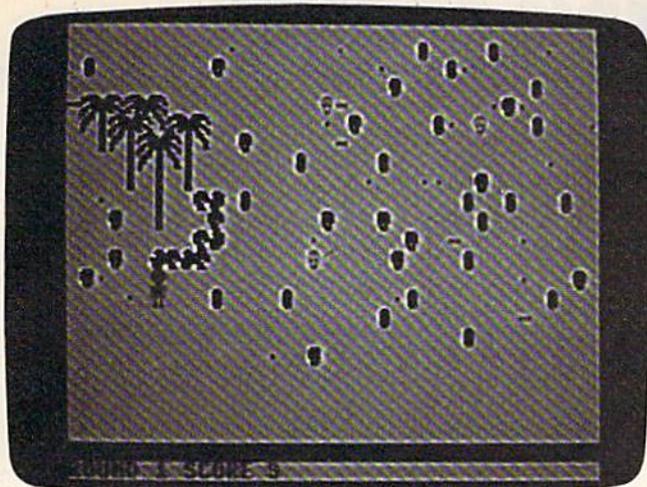
The machine language joystick routine is contained in the DATA statements in lines 6035-6055. The routine is READ and POKEd into the cassette buffer by line 35. The SYS in line 65 calls the machine language routine which puts the joystick condition in address 830 and the fire button condition in address 831.

Line 605 randomly selects which of the skulls will move. Only one can move for each move of the treasure hunter; if all were moved, the game would slow down considerably.

Line 30 moves part of the VIC character set (screen codes 0-63) into RAM addresses 7168-7679. The custom character information is contained in the DATA statements in lines 6060-6090, and is READ and POKEd into the place of some of the VIC's relocated characters by lines 40 and 41. This table shows which characters are replaced with custom characters.

Custom Characters In Treasure Hunt

Screen Code	Original Character	Custom Character
35	#	border and tree trunk
36	\$	palm leaves
37	%	palm leaves
38	&	palm leaves
39	'	palm leaves
40	(palm leaves
41)	palm leaves
42	*	skull
43	+	bog
44	,	bog
45	-	rum keg
46	.	top of treasure hunter
47	/	bottom of treasure hunter
58	:	treasure chest, left
59	;	treasure chest, right
60	<	gold coin
61	=	gold bar



The treasure hunter has collected most of the gold from the bottom of the screen (64 version).



Grab the treasure chest and you score 200 points (VIC version).

VIC Program Variables

Program Variables

A	variable in READ statements
B	variable for screen code for gold coins and gold bars
D	random numbers
I	miscellaneous counters in FOR/NEXT loops and random numbers
N	counter in FOR/NEXT loops
P	constant = 1
Q	constant = 22
V	volume (36878)
X	counter in FOR/NEXT loops and random numbers
Z	current location to be updated in subroutines 91-98
AA	skill level
AS	string for GET statements
CL	current location for treasure hunter's head
CM	difference between color memory and screen memory
CH-CI-CJ	address of screen locations for treasure chest
DF	dead flag
FG	flag for treasure chest already picked up
FL	flag for repeat stagger
GB	gold bars remaining
GC	gold coins remaining
RN	number of current round
SC	current score
SH	sound high (36876)
SL	sound low (36875)
SK	location of current active skull
S1-S5	locations of moving skulls
TB	random tab value for placing palm grove
TL	temporary storage for CL during update
TS	temporary storage for SK during update

A Change For Expanders

If you have a VIC, you must use a memory expander. The program was designed to run with any size memory expander, but to LOAD and RUN it on a VIC with an 8K or greater expander, a single-line keyboard entry must be made before LOADING the program. If you are using a 64 or a VIC with the 3K expander, you can skip

over this part since the program will LOAD and RUN without special intervention.

When you add 8K or more to the VIC, screen and color memory and start of BASIC are moved to new memory locations. The idea is to put them back to their default locations before LOADING the program. Start of BASIC must be changed to address 8192, to prevent interference with screen memory. To set your VIC to run Treasure Hunt with the 8K expander in place, type the following line and press RETURN:

```
POKE648,30:SYS58648:POKE642,32:SYS58232
```

Your VIC will now load and run many programs written for the unexpanded or 3K-expanded VIC.

Typing In Treasure Hunt

The VIC version is about 6000 bytes long. *Don't add any spaces*; there are only 47 bytes free at some points during program execution.

If you do run out of memory, try deleting some of the instructions in lines 800-880. Make sure you SAVE the program before you run it. With such a long program, I usually save my work every half hour. If you don't want to type it in, I will make copies of the VIC version *only*. Send a tape, a self-addressed stamped mailer, and \$3 to:

Calvin Overhulser
P.O. Box 494
Westford, MA 01886

See program listings on page 166. ●

COMPUTE!'s Gazette
Toll Free Subscription Order Line
800-334-0868
In NC 919-275-9809

C. Regena

A Simplified Inventory

If you asked ten different programmers to write an inventory program, you'd probably get ten different approaches. There are many ways to accomplish such a task, depending on how much information you need to keep track of. This month, we'll take a simplified approach using DATA statements, and then we'll see how to customize the program.

This inventory program simply prints a list of items with a little information about each one, including its cost. After printing the list, the costs are added up. You can print the whole list, or you can print just a certain category. The amount of information you can store will depend on the capacity of your computer because all the information is stored right in the program in DATA statements.

The READ-DATA Connection

First let's review DATA statements, which are always associated with a READ statement. The READ statement picks up a number or string from the DATA statement and assigns it to a variable name. I like to think of the DATA-READ system as an alternative to the LET or direct definition system. One way of assigning values to variables is:

```
100 A=10
110 B=7
120 C=3
130 D=5
140 E=13
150 F=25
```

Another way is:

```
100 READ A,B,C,D,E,F
110 DATA 10,7,3,5,13,25
```

This second method may be harder to understand and harder to debug if there's a problem, but it usually saves memory and often simplifies programming.

In the second method, line 100 first says to read a number for A from the first DATA state-

ment you come to. The value is 10, so A will equal 10. Next a value for B is read and assigned; B=7. The process continues. You need to make sure your numbers are in the right order in the DATA statement and that you have enough numbers to satisfy the READ statement. Your DATA statement may be as long as the longest line the computer allows (88 characters for the VIC, 80 for the 64). The READ statement reads only the numbers it needs and ignores the rest. If the computer encounters another READ statement later, the computer starts with the very next data item that hasn't been used.

Quite often you will see a READ statement in a loop:

```
100 FOR I=1 TO 4
110 READ NAME$,AGE
120 PRINT NAME$,AGE
130 NEXT I
140 DATA MARCIE,18,JEFFREY,16,BRIAN,11
150 DATA MIKE,13
```

The elements in the DATA statements need to be in the right order so the data is read correctly and in the right order, but the DATA statement lines can be placed anywhere in the program. Lines 140 and 150 above could be lines 90 and 95, for example. As the computer goes through the program, it ignores the DATA statements until it hits a READ statement. A pointer helps the computer keep track of where it is in the DATA statements, so it knows which is the next item to be read. In the sample above, the first time through the loop, line 110 will assign MARCIE to NAME\$ and 18 to AGE. The next time through the loop, JEFFREY and 16 will be read, and so on. By the way, you have to be very careful typing the DATA statements so the values will match up with the READ statements. For example, if you skipped "16" in line 140 and just typed

```
140 DATA MARCIE,18,JEFFREY,BRIAN,11
```

the computer will stop with an error message be-

1541 DISK DRIVE ALIGNMENT PROGRAM

Finally, a complete disk drive alignment program! **No special equipment needed!** A two disk (program and calibration) program allows anyone with average mechanical skills to properly align the 1541 disk drive. Complete instruction manual.

\$39.95 plus \$2.50 shipping (U.S.)

PROGRAM PROTECTION MANUAL FOR THE C - 64 2ND EDITION

This is the book you've been waiting for! All the latest tips and secrets. A complete reference guide to software protection on the C - 64. Covers the disk drive, bad tracks and sectors, modified directories, cartridges to disk and much, much more. A complete and up to date guide to program protection of all types. Covers both basic and machine language protection schemes. **A complete memory map** and a disk with many helpful programs is included. Over 100 pages of valuable information. **\$29.95 plus \$2.50 shipping (U.S.)**

PROGRAM PROTECTION NEWSLETTER

A monthly newsletter covering the latest advances in program protection. Each issue will examine 3 to 5 specific programs and their protection schemes. This will be a complete **'HOW' and 'WHY'** approach to individual program protection schemes. A full explanation of each protection scheme will be included.

\$35.00 per year post paid in the U.S.

C. S. M. SOFTWARE

P.O. Box 563
Crown Point, IN 46307
(219) 663-4335

VISA AND MASTER CARDS ACCEPTED
DEALER INQUIRIES INVITED

PC GALLERY

P.O. Box 3354 Cherry Hill, N.J. 08034

Toll FREE (800) 992-3300

For Information Call (609)596-1944

Call us for reliable service, experience and affordable prices!



*Call

CMD
SX64

CMD 64 *Call



1541 \$Call

1520 Color Plotter \$109
MPS 801 Printer \$205
1530 Datasette \$64
1650 Auto Modem \$86
1702 Monitor *CALL
Int'l Soccer \$21
1011 RS 232
Terminal Interface \$42
1211 Super Expander \$39
EZ Back up \$25
Magic Voice Speech \$49.95

Repeat of a Sellout

1526 PRINTER \$269

Special of the Month
ELEPHANT DISK

SS/SD *16.00 SS/DD *17.00

WORD PROCESSING

Bank Street Writer \$45
Paper Clip \$69
Easy Script \$45
Word Pro 64 \$58
EZ Spell \$19
PROGRAMMING SERIES
Assembler 64 \$36
Logo \$52
Pilot \$39
Simon Basic \$44
Screen Editor \$19
Nevada Fortran \$39
Nevada Cobol \$39

ACCOUNTING

Home Accountant \$45
Tax Advantage \$45
General Ledger \$35
A/R, A/P, Payroll \$35

DATA BASES

Code Writer \$64
Mirage Database Mgr. \$79
Super Base 64 \$77

Special of the Month

The Consultant

Formerly
Delphi Oracle \$65.00

Special of
the Month

Gemini
10X
\$266



PRINTERS

EPSON \$ CALL
OKIDATA \$CALL
Silver Reed *Call
STAR
Gemini 10X \$266
Gemini 15X \$366
Powertype \$395
SURGE PROTECTOR
4 Outlet \$37.95

MSD DISK DRIVE

SD1 Disk Drive \$335
SD2 Dual Disk Drive *Call
CARDCO

*G Printer Interface \$64
Numeric Keypad \$29.50
Light Pen \$31
5 Slot Expansion \$49
Datasette \$47
TYMAC Connection \$79

SPREAD SHEET

Multiplan \$68
Calc Results \$34
Practicalc \$38
Koala Pad \$65

Special of the Month
SUBLOGIC

Flight Simulator
\$34.95

ELECTRONIC ARTS

One on One \$29.95
Mule \$29.95

ATARI SOFT

Donkey Kong \$29
Pole Position \$35

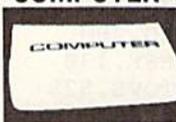
INFOCOM

Zork I, II, III \$29 ea.
Suspended \$29
Starcross \$29
Deadline \$29

Introductory Price

Zaxxon \$29.95

COMPUTER COVERS



Features
heavy duty
canvas
with vinyl
interior -
waterproof

Reg. \$15⁹⁵ CMD 64 \$6.99
VIC 20 \$6.99
Disk Drive \$6.99
Epson MX 80 \$7.99
Epson MX 80 FT \$7.99
Okidata 92 \$7.99

\$6.99

Ordering & Payment Policy

Prices reflect a cash discount. For C.O.D., Visa, and MasterCard add 3% Immediate delivery with certified check or wired funds. N.J. resident add 6%. Prices subject to change.

Shipping

For shipping and handling add 3%. (\$3 minimum) Larger shipments require additional charge.

Catalog

We sell a large selection of hardware and software. Send \$1 for catalog, refundable with order.

www.commodore.ca

C-64 SOFTWARE AT LOW PRICES

POWER PLUS

A utility program that adds over 40 commands to your C-64. Doesn't use any BASIC memory. 100% machine language.

FEATURES:

- Un-new—get back BASIC programs after reset
- Screen Dump—to printer
- Easy, abbreviated Disk Commands
- Machine Language Monitor with
 - Assembler/Disassembler
 - Transfer, Fill, Hunt, etc.
- Adds BASIC commands
 - Find
 - Change
 - Renumber
 - Delete
 - Auto line numbers
- Excellent manual

\$19.99

Indicate tape or disk. Send check or m.o. (include \$2.00 p/h) to: **Educomp**
2139 Newcast Ave. • Cardiff, CA 92007
(619) 942-3838

SATISFACTION GUARANTEED

QUICKWRITER II

A full-featured word processor at a fraction of the cost. More powerful than all w/p under \$50.00. Has features even \$100.00 w/p don't have.

FEATURES

- 100% machine code, the fastest w/p we've seen
- Works with all printers/interfaces
- Semi-automatic hyphenation
- Justification
- Form letters automatically
- Block Transfer, Delete, Insert, Append,
- Auto page numbers, headers and footers
- Send disk commands
- PRE-VIEW—see left or right side of page before printing
- Full-screen editing with rapid scroll
- Easily send special printer commands
- Excellent manual

\$19.99

VIC & 64

BE A COPY C.A.D. (CASSETTE AIDED DUPLICATOR) NOW YOU CAN MAKE **BACKUP COPIES** OF ALL THE COSTLY, NON-SAVEABLE CASSETTE PROGRAMS YOU BOUGHT.

OUR **BACKUP V1.0** UTILITY PROGRAM WILL LET YOU MAKE **DUPLICATES THAT RUN.**

BACKUP V1.0 WILL WORK WITH A STANDARD 5K UNEXPANDED VIC. MEMORY EXPANSION IS REQUIRED TO COPY PROGRAMS LONGER THAN 3K BYTES.

\$24.95

PLUS \$2.00

SHIPPING &
HANDLING

SOFTWARE PLUS

6201 SUITE C
GREENBACK LANE
CITRUS HEIGHTS, CA 95610

916-726-8793

VISA, MASTERCARD, AND MONEY ORDERS
CA RESIDENTS ADD 6% SALES TAX.
VIC IS A TRADEMARK OF COMMODORE

cause it will try to read a numeric variable (AGE) in the second loop and get a string (BRIAN) instead.

You may divide up the DATA statements in any way that is convenient for you to type. Lines 140 and 150 above could be combined into one statement. Or you could end line 140 with BRIAN and start line 150 with 11. The main thing to remember is to keep the data items in order. If you have a full program, you can save some memory by typing as much as you can in each DATA statement, although it may be harder to understand.

Inventing An Inventory Program

In the previous example we printed names and ages. An inventory program can be very similar. Let's say we want to print a house inventory and list furniture and appliances and their costs. The READ statement reads ITEM\$ and C for cost (you cannot use COST because that name contains the BASIC word COS for cosine). After you READ the information from data, you PRINT ITEM\$,C and there is a list. The DATA statements would look like this:

```
320 DATA BED,200
330 DATA DESK,130
340 DATA STOVE,525
```

With the general idea of reading items from data and printing them, you can write a simplified inventory program. In the previous name and age sample, we used a loop and read four names and ages. In our inventory program we may not know how many items we have—or we may want to update our program periodically and not always have to figure out a new value for the FOR-NEXT loop. The solution is to have our last data item be a "dummy" item to signal the end.

```
100 READ ITEM$,C
110 IF ITEM$="ZZZ" THEN 500
120 PRINT ITEM$,C
130 GOTO 100
320 DATA BED,200
330 DATA DESK,130
340 DATA STOVE,525
350 DATA ZZZ,0
500 END
```

If you want to calculate a total cost as you are printing the list, initialize a total before line 100, say T, to be zero, then add line 125 $T=T+C$, and then at line 500 print the total cost T.

Add a title and make an attractive format, and you have an inventory program. You may want to add a few more columns in the program for other information, such as the date purchased

and replacement value.

The "Household Inventory" program included here adds a code item—a room number or category—so that you can print out one room at a time or the whole list. First I numbered the rooms—I just used an example; you will need to adapt the list of rooms for your own house. Lines 20-50 READ from DATA the names of the rooms and assign the numbers. R\$(1) will be the living room, R\$(2) will be the kitchen, R\$(3) will be bedrooms, and so forth for nine categories.

In each DATA statement I first put the room code, then the item, then the cost. For example, line 350 has room code 8, the item is a computer, and the cost is \$300. The DATA statement is:

```
350 DATA 8,COMPUTER,300
```

Lines 470 and 480 list televisions: One is in the computer room (8) and the other is in the family room (6).

You can arrange the DATA statements the way you want. I considered how the list would look if I printed all the items, and I arranged the items alphabetically. You may prefer to list the items by room and perhaps by physical position in the room.

Lines 60-100 print a title screen and offer a choice of rooms or zero to print the complete list. Line 110 gets the user's choice. If the user presses 0, the whole list will be printed, but if a room number is chosen, only the items referenced by that code number will be printed. The logic for this selection is in lines 180-200. Line 170 READs the room code, the item, and the cost. The user's choice is A and is compared to the room code for printing. TT keeps track of the total cost. C\$ and TAB (20 - LEN(C\$)) are used to line up the numbers in the cost column.

An option to print a different list is presented in lines 270-300. When we print a list, the computer starts at the top of the DATA list and goes all the way through the list, so if we choose the option to print another list, we need to RESTORE the data. RESTORE says to start the data pointer back with the very first DATA statement. Remember that in this program we first read in the names of nine rooms using DATA statements, so to get down to the data for the inventory items, line 160 simply reads those first nine items. Line 170 will then read the next data from line 320.

I've included a few items so you can see how the DATA system works for an inventory list and how you can choose categories or room numbers. The very last data item is 10,ZZZ,0. Line 170 READs the room, item, and cost, so you have to have three things in each of your DATA statements. Line 180 says if ROOM=10 then branch to line 250. I'm using 10 as the end-of-

data code. As you update your program, simply add DATA statements wherever you want among the existing statements. If you want to keep the list in alphabetical order, find where the item belongs and use a line number in-between. Just make sure that the last DATA statement is 10,ZZZ,0.

Modifications

If you understand how to use DATA statements for this simple inventory, let's explore them further. The "Computer Inventory" program lists a sample of computer equipment. In addition to the item and the cost, I wanted to include the serial number and the date of purchase. This time you can select two codes. Instead of room numbers, the first code represents the kind of computer: 1 for Commodore, 2 for Radio Shack, and 3 for Texas Instruments.

Within each brand of computer are some more categories: 1 for computers, 2 for peripherals, and 3 for software. Instead of just the 3 for software you may want to have different categories for games, programming languages, educational programs, utilities, etc.

You may also want to print a list of all your Commodore computers. You could press 1 for Commodore and 1 for computers. Only those data items starting with 1,1 will be printed. If you want a list of all the Radio Shack equipment and software, first press 2 for Radio Shack then 0 for everything. For the complete list, the selections would be 0 for everything (all kinds of computers) and 0 for everything of the second choice.

The DATA statements contain the following information in order: type of computer: 1, 2, or 3; type of item: 1, 2, or 3; item name; serial number; date of purchase; and original cost. An example is:

```
390 DATA 1,2,DATASSETTE,282754,1982,70
```

This item comes under Commodore equipment, it is a peripheral called a DATASSETTE, the serial number is 282754, it was purchased in 1982, and it cost \$70.

Notice that some of the data items do not have a serial number. You still need to list a data item in the DATA statement, but in this case simply type a comma following a comma. For example:

```
400 DATA 1,3,VICMON,,1982,60
```

We still have to have the right number of items in each DATA statement.

The very last DATA statement is 10,0,,,0; again, it has to have the right number of items. We'll be checking for 10 and the code to indicate the end of data. It really doesn't matter what the

rest of the DATA statement contains because we won't be using it, but we must include the right number of items to read.

The structure of this program is similar to Household Inventory. Lines 20-40 define the different categories and are used to print the titles of the lists selected. The selection process is done in two steps. First, lines 70-110 allow the user to select the kind of computer. Next, lines 120-160 allow the user to select the type of item. Line 190 prints the title of the list.

Line 200 RESTOREs the data so that each time a list is printed the computer starts at the top of the list of data items. Line 210 READs the two code numbers, then the item, serial number, date, and cost. Lines 220-260 determine if that is the last data item or if the item has the right code numbers for the category to be printed. Line 280 prints the item with its serial number, date, and cost. Lines 380-530 contain the sample data items.

Notice that this time the data items are not listed alphabetically by item. The list is arranged by computer, then within each type of computer category the computers are first, then the peripherals, then the software in alphabetical order. You may want to arrange your list differently—perhaps by date purchased, or perhaps in descending order of cost.

Customizing The Program

Again, you can adapt the DATA statements to your own needs. You may want to keep track of the date by month and year (such as 7/83) rather than just the year. You might want to list both the purchase price and a replacement cost. Or you might want to keep track of model numbers or catalog numbers. Perhaps you would also like to remember where the item was purchased.

If you have a printer, you might print out the information. (For a discussion on printouts, see last month's column.) Near the beginning of the program, use an OPEN statement to tell the computer to prepare for a printer. A statement such as OPEN 4,4 will open file 4 for the printer, which is device 4. Later in the program, use the regular PRINT statement to print something on the screen; but when you want to print on the printer use PRINT#4. Near the end of the program, when you're finished printing, you need to close the file. This can be done with PRINT#4:CLOSE4.

If you have a long list of items, you may want to add a section of code to prevent the list from scrolling off the top so you can't read it. There are several ways to do this. One is to use a line counter and increment the line counter each time a line is printed. When you have printed 20

or so lines, put in a delay loop or a routine to wait until the user presses a key before printing continues. Another method would be to use GET after each PRINT statement. If a key is pressed you temporarily stop the program until another key is pressed.

I didn't include any titles to the columns. For more readability, you should add column headings. You may need to adjust the printing—40 columns for the 64 and 22 columns for the VIC.

This DATA statement idea can be used for other types of lists as well. For example, you can keep a name and address file with this method. You can have several code columns—those who have a computer and those who don't; those who have children and those who don't; those who sent you Christmas greetings the previous year and those who didn't; business associates, neighbors, social friends, and relatives; and so forth. By the way, you don't have to use numbers for the codes. You could read C\$ for code and read in B for business, N for neighbor, F for friend, and R for relative, for example.

Your DATA statement can contain several codes, then the name, address, phone, birthday, or whatever information you want to keep. You can arrange the list alphabetically by name, geo-

graphically, or however you wish. This DATA system is really quite versatile. Once you have your main program working properly it is fairly easy to update by simply adding DATA statements.

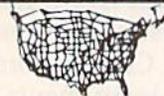
One thing you have to remember is to SAVE your work each time you update the DATA statements. If you don't, all of the changes you made will be lost when the computer is turned off.

You probably have your own ideas now about how you can use DATA statements to organize information.

See program listings on page 151. 

COMPUTER ROAD ATLAS

TAKE TRIPS WITH COMPUTER LISTINGS SHOWING THE BEST ROUTE



ROADSEARCH MAP

Enter the departing city and the destination city. ROADSEARCH computes the shortest route. Prints miles, time, fuel and more.

ROADSEARCH contains a roadmap of 406 cities/road junctions and 70,000 road miles. ROADSEARCH-PLUS (extra cost) also contains a ROADMAP DEVELOPMENT SYSTEM which lets you customize your roadmap with up to 50 towns/road junctions anywhere in North America.

EASY TO USE. Back-up copies allowed. Specify Commodore 64/disk or Apple II/IIIe. All Columbia Software carries a 15 DAY MONEYBACK GUARANTEE.

ROADSEARCH-PLUS is \$74.95 and ROADSEARCH is only \$34.95. Add \$1.50 shipping and handling. MD residents add 5% state tax. Ask your dealer or:

Columbia Software
Box 2235C, Columbia, MD 21045
(301) 997-3100

BIG BYTES

1309 BOARDMAN-POLAND ROAD, POLAND, OHIO 44514

INFORMATION
& IN OHIO
ORDER
LINE

1 (216) 758-0009

1 (800) 638-2617

WORD PROCESSING:

WORD PRO 3+ with speller	\$ 65.00
PAPER CLIP	59.00
with speller	79.00
MIRAGE CONCEPTS	79.00
EASY SCRIPT	35.00
EASY SPELL	17.00

SPREADSHEETS:

CALC RESULT ADV	\$ 69.00
CALC RESULT EASY	35.00
MULTIPLAN	69.00

DATA BASE MANAGERS:

DELPHI'S ORACLE	\$ 89.00
SUPER BASE 64	79.00
THE MANAGER	35.00
CODEWRITER	65.00
MIRAGE CONCEPTS	79.00

PRINTERS:

GEMINI 10X Cardco Interface	\$319.00
GEMINI 15X	389.00
OKIDATA	CALL

MODEMS:

HES MODEM	\$ 47.00
AUTOMODEM by Westridge	79.00
COMMODORE 1600	59.00
COMMODORE 1650	89.00
COMPUSERVE Starter Kit 5 Free hrs	25.00

MONITORS:

SAKATA SC 100	\$229
AMDEK COLOR 1+	269
BMC 12" Green (new)	85
TAXAN Green/Amber	109-119
COMMODORE 1702	CALL

PRINTERS:

GEMINI 10X/	
CARDCO INTERFACE	\$319
GEMINI 15X	389
POWERTYPE	
DAISYWHEEL 18 cps	369
OKIDATA all models	CALL
RITEMAN	269
COMMODORE 1526	289
MPS-801	208
CARDCO + G	69
TYMAC CONNECTION	85

DISK DRIVES:

COMMODORE 1541	CALL
MSD SUPER DRIVE	CALL
CONCORDE	CALL

DATASETTES:

COMMODORE 1530	\$ 63
MAXTRON	49

ACCESSORIES:

COMCOOL (disk drive fan)	49
COMCOOL PLUS (with surge protector)	69
COVERS, C-64	5
1541-1525-1526-MPS/801	6
GEM 10-X	7
1702 MONITOR	8

SPECIALS

While Supply Lasts

CHALKBOARD, \$ 39
with purchase of one software selection at \$15

(Leo's Links, Music Maestro, Leo's Paint Brush, Bear Jam, Logic Master, Science Programming Kit).

INFOCOM:

ENCHANTER	\$ 28
INFIDEL	28
PLANETFALL	28

SEGA:

BUCK ROGERS	\$ 19
CONGO BONGO	19
STAR TREK	19

SIERRA-ON-LINE:

HOMEWORK	\$ 39
----------	-------

STORAGE:

FLIP 'N FILE 25	\$ 14
DATA DEFENDER 70	17

ELEPHANT DISKS:

SS/SD	\$ 17
SS/DD	19

HOURS: MON.-FRI., 10 A.M. to 10 P.M.

• SAT., 10 A.M. to 5 P.M.

MOST ORDERS SHIPPED WITHIN 48 HOURS! All prices include cash discount. VISA/MC orders accepted — add 3.5%. NO C.O.D. ORDERS! For quickest delivery send bank check or money order. Personal or Company checks delay order 21 days. All sales are final — defective merchandise exchanged for same product only. Shipping add 3% (\$2.50 minimum). Call for shipping on monitors. Ohio customers add 5.5% sales tax. Prices & availability subject to change. SEND FOR OUR CATALOG!

CHECK OUR LOW PRICES
BECAUSE OF CONSTANTLY CHANGING PRICES
PLEASE CALL & CHECK OUR CURRENT PRICING