

Memory Expansion!

GEORAM

\$124⁹⁵



Believe it or not, GEORAM's disk transfer rate is actually 35 times faster than the 1541, 1571, or 1581 disk drive! This means that screens redraw in a flash, and that your Commodore doesn't waste time spinning disks looking for data. GEORAM makes the GEOS family of programs faster and more powerful than ever. NOTE: GEORAM is designed for use ONLY in the GEOS environment—it cannot be used with non-GEOS software.

GEORAM (requires GEOS)

88604 \$124.95

1750 Clone

\$199⁹⁵



The 1750 Clone offers 512K, and works with all software that is 1750 compatible (e.g., GEOS, Paperclip III, and Maverick). Furthermore, you can use it to create a RAM disk to store files or programs for lightning-fast access. (Unlike GEORAM, the 1750 Clone works with non-GEOS software. Some computers may require power supply.)

1750 Clone 89517 \$199.95

Super Mouse Bargain!

\$38⁹⁵

Includes GEOS 1.5 Plus Graphic & Utility Software!



M3 MOUSE. Proportional mode, joystick mode and paddle mode—three modes in one mouse. Features Hi-Res graphic design software with predefined graphics, sprite and icon designers, and mouse controller, plus, handy disk utilities such as windows, pull-down menus, file, and notepad. Also includes GEOS 1.5. From Contriver Technology, Inc. One-year warranty. Sug. Retail \$49.95/\$39.95

M3 Mouse 82704 \$38.95
M4 Mouse for AMIGA 88171 \$34.95

\$129⁹⁵



Commodore 64C

The complete computer for home, school and small business. Supported by high-quality peripherals and over 10,000 software programs. Full typewriter-style keyboard, 64K RAM, eight sprites, three voices.

64C Computer 54574 \$129.95

Commodore Hardware

1670 Modem, 1200 Baud	36952	\$69.95
1351 Mouse C64/C128	37885	\$32.95
1084S RGB Composite Monitor	74095	\$319.95
1541 II Disk Drive	54586	\$CALL
1764 RAM Expansion C64	72513	\$114.95

The Best Prices & Service

Now For Amiga, Too!

2400 Baud C64/C128

\$79⁹⁵



Both the Minimodem-C and C24 are completely Hayes compatible (not just partially compatible like the 1670 and some Avatec models) and 1670 compatible. This means they'll work with ALL communications software for the 64, 64C, and 128. Key features include seven status indicators, Busy Detect, DTR signal support, High Speed Detect Line, and Auto Answer/Auto Dial. Includes Multiterm 64 and 128 software so you can start communicating right away, plus a free trial hour on CompuServe! Full-year warranty.

1200 Baud C64/C128

\$59⁹⁵

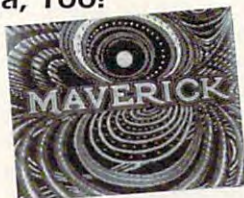
The Amiga versions of the Minimodems are equipped with a female connector to plug directly into the Amiga 500 or 2000. They need no external wall plug for power, and they use the Amiga's audio output for maximum fidelity.

Minimodem-C24 (2400 Baud for C64/C128) 88148 \$79.95
Minimodem-C (1200 Baud for C64/C128) 81576 \$59.95
Minimodem-AM24 (2400 Baud for Amiga) 88150 \$79.95

Back Up Protected Software

\$32⁹⁵

Now For Amiga, Too!



New Features Include:

- Fast autobooting with 1541, 1571, and 1581 drives
- Single drive 1571 Double-sided copier
- Directory recovery: Recover blown 1541, 1571, and 1581 disks

MAVERICK VERSION 5.0. The best weapon ever created to let you defend yourself in the copy protection wars. It comes with over 400 parameters and updates are available to registered owners three times a year. For archival backup only. Formerly called Renegade. Sug. Retail \$39.95

C64/C128, Disk 78919 \$32.95
AMIGA, Disk 89601 \$32.95

Disk Drive Includes FREE Software!

\$149⁹⁵



FSD-2 Excelsior+

- Completely Commodore Compatible
- Faster, quieter, and more reliable
- Separate power supply eliminates overheating
- Full one-year warranty
- FREE software

FSD-2 Excelsior+ 66166 \$149.95
Sug. Retail \$179.95

Includes FREE Software

Only TENEX offers you this great choice of software included with our FSD-2 Excelsior+ disk drive. You have your choice of:

BETTERWORKING WORD PUBLISHER—a GEOS-compatible word processor/publishing package that includes a 100,000 word spell checker, geoPaint/geoFont compatibility, WYSIWYG preview mode, and much more. REQUIRES GEOS. From Spinnaker. Orig. Retail Value \$39.95

—OR—

ASSAULT ON EGRETH CASTLE and CRYSTAL OF DOOM—Two great interactive comic books from the Zorkquest series. From Infocom. Orig. Retail Value \$24.00

Quantities are limited, so order early! Just order Item No. 89198 (Word Publisher) or Item Nos. 80742 and 80758 (Two Zorkquest Comics) and we'll include the software at no extra charge.



Call for Lowest Printer Prices!



FREE 60-Page Catalog

Thousands of products for your COMMODORE 64, 128 and AMIGA computers.

CALL TODAY to receive your FREE copy!

We gladly accept mail orders!



TENEX Computer Express
P.O. Box 6578
South Bend, IN 46660

(219) 259-7051 — FAX (219) 255-1778

No Extra Fee For Charges!



We Verify Charge Card Addresses

*Shipping, Handling, Insurance

Order Amount	Charge
less than \$19.99	\$3.75
\$20.00-\$39.99	4.75
\$40.00-\$74.99	5.75
\$75.00-\$149.99	6.75
\$150.00-\$299.99	7.75
\$300.00 & up	SCALL

ORDER TODAY CALL 1-800-PROMPT-1

COMMODORE 64 and COMMODORE 128 are registered trademarks of Commodore Electronics, Ltd. AMIGA is a registered trademark of Commodore Amiga Inc.. NOTE: Due to publishing lead-times, product prices and specifications are subject to change without notice. * APO, FPO, AK, HI, CN, VI, GU, and foreign orders are subject to additional shipping charges.

Circle Reader Service Number 118

www.commodore.ca



FEEDBACK

Q U E S T I O N S F R O M O U R R E A D E R S

Wait and See

I was dismayed yesterday when I called the circulation department of your magazine to find out why I had not received my July issue. I was informed that *Gazette* magazine was being combined with the parent magazine. The primary reason I subscribed to *Gazette* was that I wanted a magazine dedicated to the Commodore 8-bit computers and this was the best one on the market. Now I fear that if Commodore machines will have to compete for magazine space with other computers, there will be fewer articles and programs for mine. I have a 128. I will wait and see, but if it is not the quality I have enjoyed and grown accustomed to, I will sadly not renew my subscription.

TIMOTHY GROSSER
COPPERAS COVE, TX

As a *Gazette* reader and subscriber since December 1984 (still have 'em all), it should make little difference as to your choices in format, paper, binding, and so on. *Gazette* is *Gazette* is *Gazette*. Whatever it takes to move ahead into the nineties is OK. Content, not format is what is important to me.

M. R. PLECHATY
SARATOGA, CA

Autobooting

I was at a friend's house (who has an IBM), and when he turned on his computer all the programs booted automatically with something called a CONFIG.SYS file. Is there something for the 64 that can do this?

NICK D'ALONZO
COATESVILLE, PA

Your friend's IBM probably has a file called AUTOEXEC.BAT in the directory of its default startup disk. DOS automatically executes whatever commands are in this file whenever the computer is switched on. This command is often used to load and run a commonly used program. The 128 has a similar autoboot feature for 128 programs, but it's unavailable for the 64 or for use

with 64 programs. We did run a program for the 128 called Fast Boot (May 1987) that lets you insert a disk in the drive, turn on the computer, and have a 64 program appear on the screen.

A Jiffy Proofreader Tip

I am a contented user of a 128D and JiffyDOS, and I like to type in some of the interesting programs you publish in your excellent magazine. In order to use *The Automatic Proofreader* with JiffyDOS, however, I find it necessary to make two small changes to the program since JiffyDOS alters the vector found at 772 and the *Proofreader* checks this vector twice to identify which machine is being used. In lines 30 and 90, change IF VE = 17165 to IF VE = 61137. Earlier versions of the *Proofreader* have a different line number but the same PEEK. I hope this may save one or two readers who have the same setup a few minutes of head scratching.

JOHN SPIRA
AUSTINMER, N.S.W.
AUSTRALIA

Thanks for the tip and the kind words, John. The JiffyDOS speed enhancement system from Creative Micro Designs does indeed alter the vector you mentioned and could interfere with the Proofreader. Those of you using JiffyDOS installed on a 64 might want to make a similar change in your version of the Proofreader. Change the value of VE in line 20 from 42364 to 60004. Also, check out the review of JiffyDOS 6.0 elsewhere in this issue.

Tree Tracing Revisted

In the June "Letters" column of Gazette, we asked readers to help Roy N. Kelley of Hamilton, Ohio, locate genealogy programs for his 64/128. Dozens of people wrote, and here are some of their suggestions.

Byteware, 906 West 6th Avenue,

Monmouth, Illinois 61462, has shareware, *FGS and PED C*, \$21.95, that produces family group sheets and pedigree sheets. I have been using the original for two years, and I like it very much. An improved version is also available.

J. M. KINABREW JR.
NEW ORLEANS, LA

The following companies provide 64 and 128 genealogy software of various degrees of sophistication and pricing: *Traces*, P.O. Box 168, Center, Missouri 63436; *PFA*, 8600 Old Spanish Trail #79, Tucson, Arizona 85710; and *Quinsept*, P.O. Box 216, Lexington, Massachusetts 02173.

I have used *Traces'* program for recording census data, and it generally works well. I use *Jenny II, the Genealogist*, from Basic Fundamentals, 3366 South 2300 East, Salt Lake City, Utah 84109, \$19.95, regularly to update my family files.

JAMES H. HOOD
SALT LAKE CITY, UT

COMPUTE!'s Third Book of Commodore 64 provided a program titled *Family Tree* on pages 82-92. It provided for disk and printer output.

HARRY L. ADAIR
LAS VEGAS, NV

Try Remsoft, P.O. Box 2249, Camarillo, California 93011-2249. You get a lifetime membership, a disk full of software, and a catalog for \$7.98. It's all worth it. Disk number 5066 has a program called *Family Tree* for \$4.00 and \$2.00 for postage.

PAUL DUBHEY
ATHOL, MA

Here are several outlets for genealogy programs: *Family Roots* (64 and 128 versions), Quinsept, P.O. Box 216, Lexington, Massachusetts 02173, \$185.00; *Your Ancestors*, Ken Barber, 5785 Brickyard Road, Tillamock, Oregon 97141, \$10.00; *Family/64*, Petrocci Freelance, 651 Houghton Road, Tucson, Arizona 85748, \$29.95; *Gleaner*, Kudzu Software, P.O. Box 993, Morrow, Georgia 30260, \$19.95; *Your Family Tree*, Hurdware, P.O.

FEEDBACK

Box 241746, Memphis, Tennessee
38124, \$44.95.

ROBERT D. YATES
VIRGINIA BEACH, VA

QuantumLink's Your Family Tree has several genealogy programs available for downloading. Also try the Roots board on CompuServe and the Genealogy board on GEnie.

M. R. PLECHATY
SARATOGA, CA

I have been using a program for several years now on my 128 in 128 mode. It is *Family Tree* and can be obtained from Briwall, P.O. Box 129/58 Noble Street, Kutztown, Pennsylvania 19530.

R. A. CARTER
NORTH BAY, ONT., CANADA

Sandy and Don Ritzinger of Software Solutions, 7378 Zurawski Court, Custer, Wisconsin 54423, have created *Arbor-Aid*, which is easy to use and can be adapted to virtually any family recordkeeping system.

BILL HARROP
TAMPA, FL

Software Support International has *Family Tree 128/64 Version II*. It sells for \$36.97, and its catalog number is C00523. The address is 2700 NE Andersen Road, Suite A-10, Vancouver, Washington 98661.

MARK VAVRA
MILLIGAN, NE

The only ones I have found are from QS! Alliance, 5846 Highway 111 South, New Albany, Indiana 47150. Its disk number X007 contains programs for both the 128 and 64. Disk number B018 contains one for the 64.

WILLIAM EVANS
GOWER, MO

Powerful Utilities

Most of the time machine language programs conflict with each other in memory, but I use three great ones simultaneously. First I load *Quick!* (December 1988), relocated to block 202. Next, *Function Key Magician* (February 1988) goes in, giving me 16 tailor-made function keys. One of these loads my all-time favorite utility, *Triple 64* (April 1985). I can now load and edit three separate 25-block BASIC programs quickly and efficiently. That's a lot of muscle for a 64! Thanks and keep encouraging authors.

LUIS MORENO
WINDSOR, NY

You're right, Luis. Those utilities do pack a lot of power. Gazette is always looking for handy utilities and productivity tools to make the 64 even more useful. So, if you're a programmer, we want to see your best efforts. Send them on disk to our Submissions Reviewer at the

address listed below.

If you have a question, comment, or problem, we want to hear from you, too. Send your letters to Gazette Feedback, COMPUTE Publications, 324 West Wendover Avenue, Greensboro, North Carolina 27408.

Best Bits and Bytes For Commodore®

Introducing the Paradise Software line of Shareware and Public Domain Software for Commodore 64/128 Personal Computers.

BUSINESS

- (6012) 3.3 MULTIFINDER - Create labels and customize with this all purpose database.
(6094) BUSINESS PROGRAMS - Accounting, bar graphs, word processor, label maker, mortgage, etc.
(6201) BUSINESS PROGRAMS / 2 - Programs include invoice, inventory, payroll, payday & more.
(6210) BUSINESS PROGRAMS / 3 - This is a budgeting system that will keep track of money.
(6052) C-128 APPLICATIONS / 1 - Put your C-128 to work around the office with Calendar, etc.
(6002) DO-IT-YOURSELF BUSINESS PAPER - Customize /print invoices, purchase orders, memos & more. Req: Printer.
(6105) PRODUCTIVITY PROGRAMS - Contains Recipes, Alarm, Clock, Bartender, Mortgage and more.
(6028) THE DATA BASE FOR C-128 - Database that can be customized, tutorial & help on disk.

COMMUNICATIONS

- (6055) C-128 TELECOMM / 1 - Two of the best PD communications software, 80 column mode.
(6050) C-128 TELECOMM / 2 - Four of the best terminal programs for the 128, 80 column.

GAMES

- (6049) C-128 GAMES / 1 - 40 column Galactic, Castle & Damsels; 80 column Star Trek.
(6054) C-128 GAMES / 2 - 80 column Norad, Wargames, not Lunar Land. Print Spock&Kirk.
(6088) C-64 GAMES / 1 - Action games like Robbers, Whirly Bird, Blue Thunder & more.
(6089) C-64 GAMES / 2 - Defcon, Attack Force, Star Trek, Joust, Derby, Lotto & more.
(6097) IN THE MALL / 1 - Contains 14 arcade games. Try your skill on these gems.
(6099) IN THE MALL / 2 - Contains 14 arcade games. Includes Moondog, Skiing, & more.
(6100) IN THE PITS / 1 - Contains 7 car games. Includes Dragster, Dodge Cars & more.
(6101) LADY LUCK / 1 - Contains 9 casino games. Roulette, Craps, BJ, Poker & more.
(6098) ON THE BOARDS / 1 - Contains 11 board games. Includes Yahtzee, Battleship & more.
(6118) PUB/BOARD GAMES - Darts, Bowling, Pool, Checkers, Backgammon, Chess, and more.
(6103) SCHOOL HOUSE / 1 - Contains 21 educational games. Includes math, election & more.
(6104) THE SPORTING LIFE - Contains Golf, Miniature Golf, Baseball 64, Boxing and Trap.

GRAPHICS

- (6034) AMERICAN ITEMS - 110 Print Shop graphics, side A for non Commodore printers.
(6043) ANIMALS/LETTERS/ETC - 110 Print Shop graphics, side A for non Commodore printers.
(6045) ANIMALS/VEHICLES/ETC - 100 Print Shop graphics, side B for Commodore printers.
(6035) CARTOONS - 110 Print Shop graphics, side A for non Commodore printers.
(6032) COMPUTER SYMBOLS - 130 Print Shop side A graphics for non Commodore printers.

- (6036) MILITARY & SCOUTING - 120 Print Shop graphics, side A for non Commodore printers.
(6037) SCHOOL ICONS - 110 Print Shop graphics, side A for non Commodore printers.
(6033) SCIENCE FICTION/TECHNOLOGY - 110 Print Shop graphics, side A for non Commodore printers.
(6048) SCOUTS/ANIMALS/ETC - 100 Print Shop graphics, side B for Commodore printers.
(6039) SIDE A FONTS & BORDERS - Print Shop fonts and borders for non Commodore printers.
(6040) SIDE B FONTS & BORDERS - Print Shop fonts and borders for Commodore printers.
(6038) SPORTS - 120 Print Shop side A graphics for non Commodore printers.
(6044) STATES/SPORTS/ETC - 110 Print Shop side B graphics for Commodore printers.
(6041) TRAINS/SIGNS/MUSIC - 70 Print Shop side B graphics for Commodore printers.

MUSIC

- (6009) BEATLES MUSIC - Beatle tunes for your enjoyment.
(6010) CHRISTMAS MUSIC - 15 Christmas tunes with sing-along SID player.
(6024) CLASSICAL MUSIC / PLAYER - Music player with classical tunes.
(6007) POPULAR SID MUSIC / 1 - Music Box, Leroy Brown, Longest Time, Thriller and more.
(6008) POPULAR SID MUSIC / 2 - Bandstand, Stripper, Material Girl & more. Plus words/pics.
(6011) SID PIC PLAYER V3.4 - SID player that plays tunes and displays graphics with songs.
(6005) STEREO SID PLAYER VERSION 10.0 - 6 music files, with SID player that prints lyrics to screen.
(6019) THEME MUSIC SID - Collection of themes and SID player: MacGyver, M*A*S*H & more.
(6017) THEME MUSIC/PLAYER - Player with 14 TV and movie themes.

PROGRAMMING

- (6092) C-64 PROGRAMMING / 1 - Introduction to Basic, C-64 memory map & assorted utilities.
(6090) C-64 PROGRAMMING / 2 - Contains a programming tutorial of 6510 OP Codes.

RECIPES

- (6249) RECIPES / 1 - This disk contains 50 miscellaneous recipes.
(6250) RECIPES / 2 - This disk contains 51 misc. recipes.

UTILITIES

- (6056) C-128 DISK MANAGING UTILITIES - 40 & 80 column utilities to manage disks, copy, format, etc.
(6087) C-64 UTILITIES / 1 - Has change & check disk, color & printer test, directory, etc.
(6004) COPY DISK - Copy programs and disk utilities with Uncopy and others.
(6003) MENU MAKERS - A collection of menu making programs with 3-D Menu & others.
(6018) PS GRAPHICS LABEL MAKER - Collection of menu-driven label makers, Print Shop graphics.

Discount Prices Expire
01-30-91

**SPECIAL
DISCOUNT
PRICES
Per Disk**

QTY	PRICE
1-4	\$3.49
5-9	\$2.99
10-19	\$2.49
20+	\$1.99

OrderForm

Please circle disk numbers or write on separate sheet.

Number of Disks @ \$ _____ = _____

CA Residents add 6.75% Sales Tax/FL Residents add 6%
Shipping and Handling \$4.00

Foreign orders include \$15.00 for Shipping and Handling
Total _____

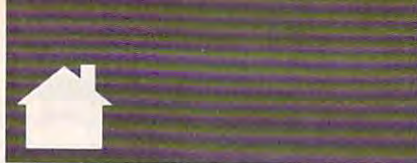
MINIMUM CREDIT CARD ORDER -- \$20.00

Name _____
Address _____
City/State/Zip _____
Card Number _____ Exp Date _____
Signature _____



**ORDER NOW
CALL TOLL FREE
(800) 233-2451**
Please mail order to:
BEST BITS & BYTES
P.O. Box 8225-CC
Van Nuys, CA 91409

Circle Reader Service Number 262



D'IVERSIONS

F R E D D ' I G N A Z I O

It's 5:00 a.m. It's dark. My daughter, Catie, and I have just finished doing "her" paper route. It's a Tuesday morning, and the routine never varies. Deliver the papers. Feed Mowie the cat. Take the trash out to the curb. Brew a fresh pot of coffee. Now, steaming cup of coffee in hand, I trudge up the stairs to my study, where I spend many long minutes staring with bleary eyes into an empty computer screen.

Suddenly my fingers start to itch. I feel a subliminal, submuscular trembling begin to wriggle up my nerve fibers. In anticipation, I place my fingers on the keyboard. Miraculously the fingers begin tapping, and words appear magically on the computer screen. The cursor flies across the screen like a kite, sweeping across the blue sky, uncovering clouds shaped like letters, words, entire sentences.

I push away from the keyboard and gaze fondly at the screen. Now that's real writing, I think admiringly. I grab my empty coffee cup. Coffee break time!

As I sit watching the steam rise from my fresh cup of coffee, it occurs to me how strange it is that we interact with our computers by using a keyboard. Think about it. Dancing fingers. Ballerina fingertips that tap and skip across the keys. Is this normal? Have we as a species spent millions of years evolving just for this moment—so we could poke a few keys and communicate with a computer?

Isn't there a better way?

We all know that computers require input through a keyboard because that's the way they evolved. Once upon a time (approximately 40 years ago), they were highly specialized beasts that required communication through special symbols—originally numerical, later alphanumeric. First cables were used, later switches on the computer's front panel. For a while computer punch cards were in vogue. Finally it occurred to someone that perhaps the simplest solution was to just attach a QWERTY,

typewriterlike keyboard to the machines and have at it.

But it's no longer the 1940s and 1950s. It's 1990, and maybe it's time to look beyond keyboards. After all, how many *regular* human beings actually feel cozy around a keyboard anyway?

One of the most advanced computers to grace the movie screen in recent years was Johnny Five, the hero of the two *Short Circuit* movies. Johnny loved input. But did you ever see him getting it through a keyboard? Never. Instead he used his powerful optical sensors (his eyes), auditory sensors (his ears), and tactile sensors (his fingers and hands) to gain his prodigious knowledge of the real world.



In addition, Johnny looked distinctly uncomputerlike. Instead of sitting on someone's desk meekly and quietly waiting for the gentle tap of little keys, he was rolling around cities and forests, combing the countryside for more input. "Input! Input!" he cried. "More input!"

Johnny Five is a good example of a computer that doesn't look like a computer. There are many more examples in everyday life. Take your car or your wristwatch. Take your telephone, your microwave, your video camera, your CD, or your Walkman. Or how about fax machines and phone mail at offices? All these are computers. Some still have keys, control panels, or buttons, but they accept other forms of input as well—images,

voices, light waves, and so on.

As computer chips keep getting smaller and more powerful, the pressure will grow to transform desktop computers into something totally new. Already, incredibly powerful computers can fit in a briefcase, on your lap, or even in your pocket. A new computer from Sony lets you write on the computer screen with a plastic stylus. A new touchscreen from IBM lets you point at the screen and abandon the keyboard entirely!

If computers keep shrinking, it will soon get impractical to try to attach a full QWERTY keyboard. For many years experts have been predicting that computers of the future will be built right into our clothing—our eyeglasses, our credit cards, our shirts, even our underwear and socks.

In his award-winning book *Neuromancer*, William Gibson speculates that in the future computers will become so small that they'll be able to dangle from necklaces, hang from our ears like earrings, or nestle inside of fillings in our teeth. Gibson imagines that human-computer interfaces will evolve into small "terminals" implanted in our skulls directly behind our ears. We'll carry small cartons of *microsofts*—intelligent cosmetic jewelry that contains huge databases, new skills libraries (like juggling or speaking French), and antennae (cellular phones the size of a sugar crystal).

Whenever we need to communicate with our computer, we'll just pop open the case, pull out a *microsoft*, and plug it into our head. Rich people will have real diamonds, emeralds, and pearls aboard their *microsofts*. The rest of us will settle for inexpensive, synthesized replicas.

So, what do you think? Write me and tell me your gut reaction to this question: How do you feel about your computer keyboard? Could you give it up if something better came along? What kinds of new computer interfaces can you imagine? Send your ideas to Fred D'Ignazio, COMPUTE's Gazette, 324 West Wendover Avenue, Greensboro, NC 27408. □

APROTEK MINIMODEMS™

Reach Out and Touch Everyone!

There is an entire electronic world out there at the other end of your phone line. It's a world you should find out about, because it's going to experience explosive growth in the 1990's. It's the world of Electronic Information.

Right now, there exist huge databases filled with information of every imaginable type. Electronic newspapers publish accurate accounts of events only minutes after they've occurred! People send and receive E-Mail (electronic mail) messages to and from each other, regardless of their physical location on the planet! People are buying and selling things, paying bills, getting college educations, and even working (called "Telecommuting") from their own homes. And this doesn't even scratch the surface of what's coming.

Why wait any longer to join the Information Revolution? Especially when Aprotek has just made it so easy for you to buy today! How? By giving you easy to use high-speed modems at breakthrough prices! A modem is just a device that allows your computer to talk to other computers over ordinary phone lines. Modems come in different speeds. Right now, 2400 baud is the fastest speed that's practical for the dial-up phone system.

For the more experienced among you, the Aprotek Minimodems are completely Hayes "AT" command set and are 2400 baud "ampersand command" compatible, auto-dial, auto-answer devices that auto-switch between 300, 1200, and 2400 baud for maximum communications flexibility and service compatibility. Minimodems carry built-in sound capabilities (internal speaker on the RS-232 & C64/128 versions, monitor speaker on the Amiga version) and a full array of status indicator lights.

If you're new to telecommunications, don't let the terms above throw you - it's just a technical way of saying that Minimodems will give you every feature you could ever need in modem.

The C64/128 Minimodem plugs directly into the user port on the back of your computer. The Amiga version plugs right into the serial port and comes with a built in extension cable so you'll be able to use it with an Amiga 500 or 2000 series and still be able to see the status indicator lights. The Commodore version works on ALL 64's or 128's ever made, while the Amiga version works on the 500 or the 2000/2500 series of computers. A separate RS-232 and Amiga 1000 version is also available (please call for details).

The most exciting aspect of the Minimodems is the remarkable prices! We've NEVER been able to offer this kind of sophisticated power at prices so low before! Now there's no good reason not to get involved in the Information Revolution today — and begin exploring the world of tomorrow.



Built with pride in the USA and fully guaranteed for 1 year.

Order #	Item	Price	Shipping	Total
6412	MINIMODEM-C24™ (2400B Commodore)	99.95	_____	_____
6414	MINIMODEM-H24™ (2400B RS-232 w/male DB-25)	99.95	_____	_____
6216	MINIMODEM-AM24™ (AMIGA 500/2000 SELF-PWD)	99.95	_____	_____
6212	MINIMODEM-C™ (1200B Commodore)	64.95	_____	_____
6214	MINIMODEM-H™ (1200B RS-232, specify M/F)	74.95	_____	_____

Modem shipping—Cont. US \$6.00; UPS Blue, CAN, AK, HI, APO \$10.00

CONVERT-A-COM™

Convert your Commodore direct-connect modem for use on another computer.

Do you have or do you plan to get an Amiga, a PC or other computer? CONVERT-A-COM will allow you to use your Minimodem-C or C-24 or Commodore 16xx series modem with it. CONVERT-A-COM comes ready to use with a 25 pin "D" style female connector that will connect to the RS-232 serial port of virtually any computer. 9 pin "D" adapters, order #3009, and gender changers, order #3025/M, are also readily available through us for \$5.95 each or through your local computer store.

CONVERT-A-COM will convert your Aprotek Minimodem-C or C-24 into a 100% Hayes compatible modem to use with your other computer. It will also work with Commodore 16xx series and Lynker types, but with their reduced Hayes command set. This unit is not usable with an Anchor 6480 type modem because of software inavailability.

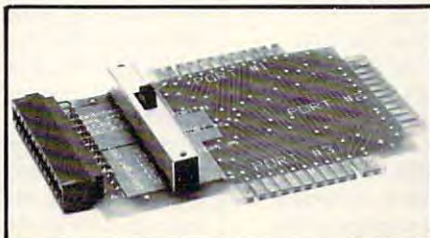


ORDER #5707 Only \$35.⁹⁵ + \$4.⁰⁰ S&H

USER-SWITCH™

Finally, for all you C-64 & 128 owners who have more than one device that plugs into your user port, (and especially you ham operators), we have your solution. USER SWITCH is a device which will allow you to attach everything (up to 3) and simply select the one you want to use. We've designed USER SWITCH so that pins B, C, D, E, F, H, J, K, L, M, 2 & 3 are switched. This gives you maximum compatibility because virtually all user port devices use only some or all of these (All others are connected straight through.)

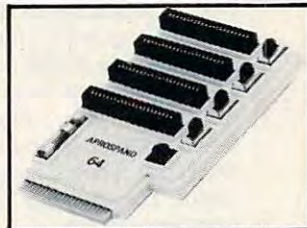
In most cases you can put any device on any of the 3 port outputs. A few devices may be too bulky to plug into port #3, so #1 or #2 can be used for a bulky user port device.



ORDER #5503 Only \$34.⁹⁵ + \$6.⁰⁰ S&H

The Original Aprospand-64™

Gives your Commodore 64 or 128 full expandability! This superbly designed expansion module plugs into the expansion port and gives you four switchable expansion connectors—plus fuse protection—plus a reset button! Before you buy an expander, be sure that it has a fuse to protect your computer.



ORDER #5064 ONLY \$29.95 + \$4.00 S&H

UNIVERSAL RS-232 INTERFACE



Connect and communicate with any of the popular RS-232 peripherals using your Commodore USER Port. You can now connect to printers, modems and any other RS-232 device. Comes complete with sample driver program listings. Compatible with all Commodore home computers with a USER port. 1-year warranty.

ORDER #5232 \$39.95 + \$4.00 S&H

"COM-MODEM" ADAPTER — Plug directly into USER port and connect to any RS-232 modem. Order #5100 \$19.95 + \$4.00 S&H

"USER EXTENDER" — 10" Ribbon cable extender for your Commodore USER port. Order #5250.....\$21.95 + \$4.00 S&H

SEE YOUR COMMODORE DEALER OR ORDER DIRECT. DIRECT ORDER INFORMATION. All prices are cash prices—VISA and MC add 3% to total. We ship the next business day on money orders, cashier's checks, and charge cards. 14-day clearing period for checks. Prices and availability subject to change—CALL. Dealer inquiries invited. 1 year warranty plus a 2 week satisfaction or your money back trial period on all products.

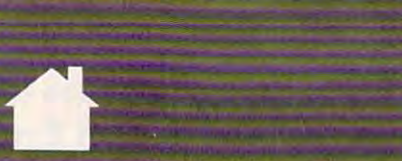
See Your Dealer or Call: 503/582-2120 (8-5 PST)

Or send order to:



APROTEK

Dept. CG
9323 W. Evans Creek Rd.
Rogue River, OR 97537



PROGRAMMER'S PAGE

R A N D Y T H O M P S O N

Feel like giving your 64 a frontal lobotomy? Try this: POKE 1,PEEK(1) AND 253. You've just removed your computer's intelligence. Hit RUN/STOP-RESTORE to return your 64 to a more productive state.

Experienced programmers will recognize the above command as the one that switches out the computer's ROM (Read Only Memory). Every time your computer prints READY, flashes the cursor, or complains about your syntax, it's because the instructions located in ROM told it to do so. Without its ROM, your computer is functionally brain dead.

Two ROMs. The 64 has two types of ROM: 8K of BASIC ROM, which is responsible for interpreting and executing BASIC instructions, and 8K of Kernal ROM, which handles the computer's more specialized functions, such as reading characters from the keyboard and moving the cursor. Together they form the 64's operating system.

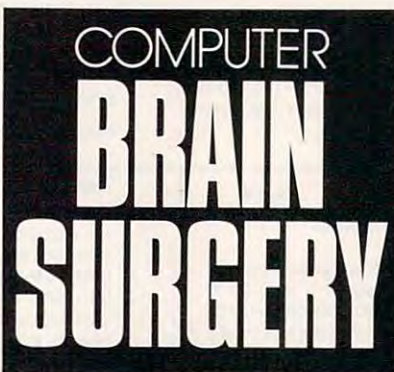
BASIC ROM is located at 40960-49151 (\$A000-\$BFFF), and Kernal ROM is located at the top of the 64's memory map at 57344-65535 (\$E000-\$FFFF). As you might expect, reading one of these locations returns the value that's stored in ROM. After all, that's what the computer sees here. However, when you switch out ROM as we did above, RAM takes its place. At this point, reading one of these locations returns the value that's stored in RAM. Interestingly, values written to these locations are *always* stored in the RAM that resides here, no matter what the in-out status of the ROM is.

The reason your computer hangs when you switch out ROM from BASIC is because the underlying RAM doesn't contain any coherent machine language routines for the computer to execute. That is, not unless you put them there.

Customizing ROM. Because the underlying RAM can be written to at any time, it's easy to move the contents of ROM to the corresponding

RAM addresses. Once that's accomplished, switching out ROM has no ill effects. Best of all, you can now modify the ROM code to your liking, thus changing the way the computer behaves.

To copy ROM to RAM and then switch out ROM, type in and run the following program. Be patient; this takes more than a minute to run.



```
10 FOR I=40960 TO 49151:POKE
  I,PEEK(I):NEXT
20 FOR I=7344 TO 65535:POKE I,
  PEEK(I):NEXT
30 POKE 1,PEEK(1) AND 253
```

Line 10 copies BASIC ROM, and line 20 copies Kernal ROM. Line 30 switches out ROM by clearing bit 1 of memory location 1 (the computer's R6510 register). Bit 0 of this register controls BASIC ROM, while bit 1 controls Kernal ROM. You should note that we simply clear bit 1 in line 30 because BASIC ROM is automatically switched out whenever Kernal ROM is. Only BASIC ROM can be switched independently.

READY? Now that the dirty work is done and ROM has been moved into RAM, it's time to have some fun. To begin with, let's change the READY prompt. Enter **POKE 41849,65:POKE 41850,78** after running the program above. A familiar name should appear in place of the computer's normal greeting. If you

like, you can add these POKES to the end of the program above.

On the more practical side, disk drive owners can force their computers to default to loading from and saving to device 8, the disk drive, instead of device 1, the datasette. Enter **POKE 57818,8** and you won't have to type a ,8 after every load and save command.

In an old issue of *COMPUTE!* magazine, Jim Butterfield lists a POKE that stops BASIC from shouting ILLEGAL QUANTITY ERROR every time you try to get the ASCII value of a null string. Enter **POKE 46991,5** and the computer will return a value of 0 when you PRINT ASC(" ").

Sheldon Leemon mentions changing INPUT's prompt character from a question mark to a colon in his book *Mapping the Commodore 64*. Enter **POKE 53846,58** to make this change. Actually, you could POKE the ASCII value of any character here, such as a 32 for a space.

Enter **POKE 61765,252** and BASIC's GET statement will wait until it receives a valid keypress before continuing on (no more GET K\$:IF K\$="" THEN... commands).

Adventuresome machine language programmers might go even further and replace the 64's ROM code entirely. BASIC could be replaced with a Pascal interpreter, or the whole computer could be converted into a dedicated word processor or database system.

Of course, switching out ROM does make your computer more vulnerable to stray POKE commands. If you accidentally destroy a sensitive ROM location, your computer could easily lock up. You can switch back to the normal ROM by entering **POKE 1,PEEK(1) OR 3** (assuming the computer is still responding to your commands), hitting RUN/STOP-RESTORE, or turning your computer off and on. Any mistakes (or improvements) that you make while modifying your 64's ROM code are quickly forgotten when the power goes out. ☐

The Gazette PowerPak

Harness the productivity power of your 64 or 128!

Turn your Commodore into a powerful workhorse, keep track of finances, generate reports in a snap, manage your money in minutes—all with the new 1991 Gazette PowerPak! Look at all your 64/128 PowerPak disk contains.

GemCalc 64 & 128—

A complete, powerful, user-friendly spreadsheet with all the features you'd expect in an expensive commercial package (separate 64 and 128 versions are included). Most commands can be performed with a *single* keypress!

Memo Card—Unleashes the power of a full-blown database without the fuss! **Nothing's easier**—it's a truly simple computerized address file. Just type in your data on any one of the index cards. Need to edit? Just use the standard Commodore editing keys. Finished? Just save the data to floppy. What could be easier?

Financial Planner—Answers all of those questions concerning interest, investments, and money management that financial analysts charge big bucks for! You can plan for your children's education and know exactly how much it will cost and how much you need to save every month to reach your goal. Or, decide whether to buy or lease a new car. Use the compound interest and savings function to arrive at accurate estimates of how your money will work for you. **Compute the answer at the click of a key!**



**ORDER YOUR
1991 GAZETTE
POWERPAK
TODAY!**

(MasterCard and Visa accepted on orders with subtotal over \$20).

YES! Please send me ___ PowerPak disk(s) (\$11.95 each*).

___ Subtotal

___ Sales Tax (Residents of NC and NY please add appropriate sales tax for your area.)

___ Shipping and Handling (\$2.00 U.S. and Canada, \$3.00 surface mail, \$5.00 airmail per disk.)

___ Total Enclosed

___ Check or money order ___ MasterCard ___ VISA

Credit Card No. _____

Signature _____

Daytime Telephone No. _____

Name _____

Address _____

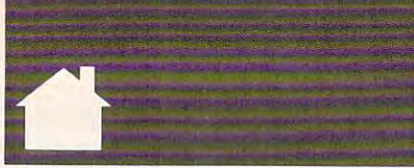
City _____

State/Province _____ ZIP/Postal Code _____

*Price valid until November 15, 1990. Regular price, \$14.95.

Send your order to Gazette 1991 PowerPak, 324 W. Wendover Ave., Suite 200, Greensboro, NC 27408.

**DON'T MISS OUT ON THIS
POWERFUL WORKHORSE!**



BEGINNER BASIC

L A R R Y C O T T O N

Last month, we began a program that moves a musical sprite with a joystick. Let's continue from the point where we placed a green quarter note on a musical treble clef staff.

We'll be able to play 41 notes, from two octaves below middle C to the fourth A above middle C. *The 64's Programmer's Reference Guide* provides the frequency values; from them we calculate POKEable values. First we must dimension the arrays.

200 DIMFU(41),FL(41),C(41)

FU() and FL() are the upper- and lower-frequency arrays that will hold the values to be POKEd into voice 1's frequency control registers. C() is the array for the colors that correspond to the musical notes.

Let's read the 41 decimal values and colors and calculate two POKEable values for each.

```
210 K=256:FORJ=41TOSTEP-1:
  READD,C(J):FU(J)=INT(D/K):
  FL(J)=D-FU(J)*K:NEXT
220 DATA1072,5,1204,2,1351,3,1432,
  4,1607,12,1804,6,2025,7,2145,5,
  2408,2,2703,3
225 DATA2864,4,3215,12,3608,6,4050,
  7,4291,5,4817,2,5407,3,5728,4,
  6430,12,7216,6
235 DATA8101,7,8583,5,9634,2,10814,
  3,11457,4,12860,12,14435,6,16203,
  7,17167,5
240 DATA19269,2,21629,3,22915,4,
  25721,12,28871,6,32407,7,34334,
  5,38539,2
250 DATA43258,3,45830,4,51443,12,
  57743,6
```

Now we define JS, the memory register for joystick port 2.

300 JS=56320

Lines 310-390 form an infinite loop; the only way to break out is to press the Run/Stop key or to turn off the computer. First, PEEK at the joystick port to see what value is there (JD means Joystick Direction).

310 JD=PEEK(JS)

We need to check only for certain values that correspond to particular directions. To detect if the stick is pushed up, enter

320 IFJD=126THENN=N-4:IFN<49THENN=49

The note should move up when the stick is pressed up. N is the vertical position of the sprite on the screen (see lines 110 and 180). N must be decremented by four pixels for the sprite to move up a note.

We limit the value of N to keep the note on the screen. In this case, the top line's position has the value N=49. Now look to detect a downward press.

PROGRAMMING WITH A MUSICAL SPRITE

330 IFJD=125THENN=N+4:IFN>209THENN=209

In this case N is incremented by 4 and the bottom line of the staff corresponds to a value of 209 for N.

We haven't moved the sprite yet; we've only assigned it a new vertical position. Let's look at the port again to detect a press of the fire button, which will sound a note.

340 IFJD=111THENGOSUB400

Press the fire button and port 2

contains the value 111. We also want to detect if the joystick is pushed up or down with the button pressed. This sounds notes as it moves, with gliding arpeggios. GOSUB400 to play the note, assign a new vertical position to the sprite, and check vertical limits.

```
350 IFJD=110THENGOSUB400:
  N=N-4:IFN<49THENN=49
360 IFJD=109THENGOSUB400:
  N=N+4:IFN>209THENN=209
```

Here's where we actually move the sprite to the new position N:

370 POKEV+1,N:Q=INT(N/4-11)

V+1 is sprite 1's vertical position. Q is a calculated index to the color array. (Remember reading the color numbers in line 210?). The colors cycle through seven changes, then repeat.

Thus all Cs are green, all Ds are red, and so on. Now POKE the color number into sprite 1's color memory register.

380 POKEV+39,C(Q)

End the main loop by returning to its beginning:

390 GOTO 310

To sound the note, POKE voice 1's frequency registers with the figures calculated in 210:

400 POKES,FL(Q):POKES+1,FU(Q)

S and S+1 are the first two registers of the sound chip; they control voice 1's frequency. We now turn on the note in a rather strange way: by turning it off first. This, combined with our envelope (defined in line 20), ensures that our notes can sound either one at a time or as an arpeggio.

410 POKES+4,64:POKES+4,65 420 RETURN

When you run the program, try playing a tune with the joystick. □

GAZETTE D/ISK L\BRARY

VALUE-PACKED SOFTWARE AT AFFORDABLE PRICES

All Gazette disks are menu-driven for ease of use—and they feature complete documentation. Just load and you're ready to go!

SpeedScript

\$11.95

COMPUTE Publications' most popular program ever. Powerful word processing package includes *SpeedScript* for the 64, *SpeedScript 128*, spelling checkers for both 64 and 128 versions, plus an additional dozen support programs, including mail-merge and word-count utilities.

Gazette Index

\$7.95

Every article and department from *Gazette*—July 1983 through December 1989 issues—is indexed: features, games, reviews, programming, "Bug-Swatter," "Feedback," and the other columns. Disk features pull-down menus, help screens, superfast searching/sorting capabilities, and much more.

Best Gazette Games

\$9.95

Best dozen arcade and strategy games ever published in *Gazette* all on one disk. All games for Commodore 64. Titles: *Crossroads II: Pandemonium*, *Basketball Sam & Ed*, *Delta War*, *Heat Seeker*, *Omicron*, *Powerball*, *Q-Bird*, *Trap*, *Arcade Volleyball*, *Mosaic*, *Power Poker*, and *Scorpion II*.

Gazette's Power Tools

\$9.95

Fourteen of the most important utilities for the 64 ever published in *Gazette*. For serious users. Titles: *MetaBASIC*, *Disk Rapid Transit*, *Mob Maker*, *Ultrafont+*, *Quick!*, *Disk Editor*, *Basically Music*, *PrintScreen*, *1526 PrintScreen*, *Fast Assembler*, *Smart Disassembler*, *Comparator*, *Sprint II*, and *Turbo Format*.

The GEOS Collection

\$11.95

Gazette's best 13 programs for GEOS and GEOS 128 users. Selection includes utilities, applications, and games. Titles: *Super Printer Driver*, *Skeet*, *File Saver*, *Help Pad*, *Word Count*, *Directory Printer*, *Quick Clock*, *SlideShow*, *File Retriever*, *Screen Dumper*, *Font Grabber*, *GeoPuzzle*, and *GeoConverter*.

128 Classics

\$11.95

Thirteen of *Gazette's* best 128 programs, including utilities, games, and applications. Titles: *MetaBASIC 128*, *RAMDisk 128*, *80-Column Disk Sector Editor*, *MultiSort*, *Block Out*, *Miami Ice*, *The Animals' Show*, *Cribbage*, *XPressCard*, *Sound Designer*, *Video Slide Show*, *Math Graphics*, and *3-D BarGrapher*.

SPECIAL OFFER!

All 6 DISKS FOR ONLY \$49.95!

A \$13.00 SAVINGS!

All prices include shipping & handling.

SpeedScript	<input type="checkbox"/>	\$11.95
Gazette Index	<input type="checkbox"/>	\$ 7.95
Best Gazette Games	<input type="checkbox"/>	\$ 9.95
Gazette's Power Tools	<input type="checkbox"/>	\$ 9.95
The GEOS Collection	<input type="checkbox"/>	\$11.95
128 Classics	<input type="checkbox"/>	\$11.95
Special 6-Disk Offer	<input type="checkbox"/>	\$49.95

Subtotal _____

State Sales Tax* _____

Outside U.S. or Canada** _____

Total _____

Name _____

Address _____

City _____ State _____ ZIP _____

Amount enclosed \$ _____ Method of payment Check or Money Order

VISA or MasterCard

Mail to Gazette Disks
324 W. Wendover Ave.
Greensboro, NC 27408

Credit card no. _____ Exp. date _____

Signature (required) _____

Daytime phone number _____

* Residents of North Carolina and New York add appropriate sales tax.

** For delivery outside the U.S. or Canada, add \$1 for surface mail or \$3 for airmail. All orders must be in U.S. funds drawn on a U.S. bank.



MACHINE LANGUAGE

J I M B U T T E R F I E L D

This month, we'll show how the BIT command may be used to perform certain tests. Here's our project: Given a 6502-based opcode, we want to find out how long the instruction might be.

A pattern in the opcodes allows us to guess the length: If an instruction (in hexadecimal) ends with D, it's a length-3 opcode. But some patterns are not that simple. Opcode \$20 (JSR) has length 3, code \$30 (BMI) has length 2, and code \$40 (RTI) has length 1. The test will need to be constructed carefully.

Standard disassemblers use a lookup table to determine an instruction's length.

The code that follows is more compact, and it shows a new way to use the BIT instruction.

Normally, a programmer would examine specific bits by masking them with AND and then performing a comparison. To continue testing, the original value would need to be loaded again so that a new mask could be applied. The BIT instruction has a built-in AND test that doesn't disturb the values being tested. It's more efficient.

The following program runs on all Commodore 8-bit computers. Assume that the opcode to be analyzed is in the A register. It won't be disturbed during our analysis program; it will still be there when we've finished, and the length value will be in the X register.

First, test specifically for the one instruction that defies the pattern—JSR, opcode \$20, with a length of 3.

```
2045 LDX #S03 ;may be length 3
2047 CMP #S20 ;test for $20
2049 BEQ $2069 ;yes, so we're done
```

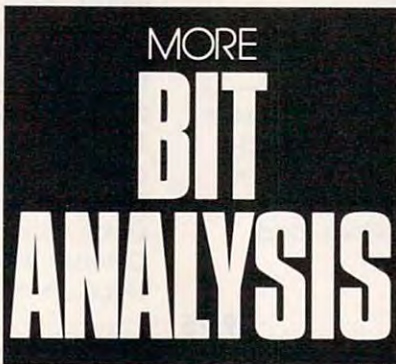
Address \$2069 represents the end of our analysis. As you can see above, we've preloaded X with 3—the right value—so we can branch directly to our completion address. Preloading X makes for smooth coding.

Next, we test the opcode in A

against a fixed mask of \$9F stored at address \$2081. (Wouldn't it be nice to have immediate-mode addressing available for the BIT instruction?)

If none of the bits match, the Z flag will be set. Mask \$9F has six bits set. The only instructions that will set the Z flag are opcodes \$00 (BRK), \$40 (RTI), and \$60 (RTS). Value \$20 would also match, but we've already handled it. When any of the length-1 codes are detected, the program goes to \$2069.

```
204B LDX #S01 ;may be length 1
204D BIT $2081 ;test against $9F
2050 BEQ $2069 ;exit if it is
```



Now we test against a mask of \$08 stored at \$2082. Only a single bit is set in this number. Which opcodes will it extract? If you wrote the opcode in hexadecimal, you'd see that this coding will identify all instructions whose last digit (in hex) is less than 8. Opcodes like \$A2 (LDX), \$30 (BMI), \$85 (STA), and dozens of others will take this exit with length 2.

```
2052 LDX #S02 ;may be length 2
2054 BIT $2082 ;test against $08
2057 BEQ $2069 ;exit if it is
```

About half of the possible opcodes now have been identified. Next, we extract the codes whose hex representation ends in 8 or A. We accomplish this by using a mask of \$05, which is stored at \$2083.

```
2059 LDX #S01 ;may be length 1
```

```
205B BIT $2083 ;test against $05
205E BEQ $2069 ;exit if it is
```

All that's left are opcodes ending in (hex) 9, B, C, D, E, and F. Those ending in B and F are not legitimate instructions. The remaining opcodes are length 3, with one important exception. An even first digit (in hex) followed by 9 will be a length-2 instruction. For example, LDA immediate is coded as \$A9. We can test for this combination with a mask of \$16.

```
2060 LDX #S02 ;may be length 2
2062 BIT $2084 ;test against $16
2065 BEQ $2069 ;exit if it is
2067 LDX #S03 ;else set length 3
2069 (analysis is complete)
```

The BIT instruction came through with stunning elegance and efficiency. It takes time and care to get the masks correct and in their most efficient order.

In the accompanying BASIC program, I've added a hex input routine to precede the above code and a brief output routine to follow it.

```
QR 100 DATA 160,0,185,133,32,3
2,210,255,200,201
MJ 110 DATA 32,208,245,32,228,
255,201,71,176,249,201
RF 120 DATA 48,144,245,32,210,
255,56,233,48,201,10
GJ 130 DATA 144,2,233,7,10,10,
10,10,141,0,37
EK 140 DATA 32,228,255,201,71,
176,249,201,48,144,245
JR 150 DATA 32,210,255,56,233,
48,201,10,144,2,233,7
PB 160 DATA 13,0,37,162,3,201,
32,240,30,162,1
GP 170 DATA 44,129,32,240,23,1
62,2,44,130,32,240,16
BX 180 DATA 162,1,44,131,32,24
0,9,162,2,44,132,32
JF 190 DATA 240,2,162,3,160,0,
185,138,32,32,210,255
KP 200 DATA 200,201,58,208,245
,138,9,48
PS 210 DATA 32,210,255,169,13,
76,210,255
XG 220 DATA 159,8,5,22,72,69,8
8,63,32
HD 230 DATA 61,76,69,78,58
PP 300 FOR J=8192 TO 8334
DS 310 READ X:T=X
SA 320 POKE J,X:NEXT J
KX 330 IF T<>16245 THEN STOP
BH 340 SYS 8192
```



VIDEO BYTE II the only FULL COLOR! video digitizer for the C-64, C-128

Introducing the world's first FULL COLOR! video digitizer for the Commodore C-64, 64-C, C-128 & 128-D computer. VIDEO BYTE can give you digitized video from you V.C.R., LASER DISK, B/W or COLOR CAMERA or OFF THE AIR or CABLE VIDEO (thanks to a fast! 2.2 sec. scan time). New version 3.0 software features full RE-DISPLAY with MULTI CAPTURE MODE, MENU SELECT PRINTING, EXPANDED COLORIZING FEATURES, SAVE to DISK feature and much more!

FULL COLORIZING! Is possible, due to a unique SELECT and INSERT color process, where you can select one of 15 COLORS and insert that color into one of 4 GRAY SCALES. This process will give you over 32,000 different color combinations to use in your video pictures. **SAVES as KOALAS!** Video Byte II allows you to save all your pictures to disk as FULL COLOR KOALAS. After which (using Koala or suitable program) you can go in and redraw or color your V.B. pic's. **LOAD and RE-DISPLAY!** Video Byte II allows you to load and re-display all Video Byte pictures from inside Video Byte's menu. **MENU DRIVEN!** Video Byte II comes with easy to use menu driven UTILITY DISK with V3.0 digitizer program. (64 MODE ONLY). **COMPACT!** Video Byte II's hardware is compact! In fact no bigger than your average cartridge! Video Byte comes with it's own cable. **INTEGRATED!** Video Byte II is designed to be used with or without EXPLODE! V5.0 color cartridge. Explode! V5.0's menu will return you to VIDEO BYTE II's menu. **EXPLODE! V5** is the **PERFECT COMPANION!** Video Byte II users are automatically sent **FREE SOFTWARE** updates along with new documentation, when it becomes available. **PRINT!** Video Byte II will printout pictures in BLACK and WHITE GRAY SCALE to most printers. However when used with Explode! V5.0 your printout's can be done IN FULL COLOR 8 by 11's SIDEWAYS on the RAINBOW NX-1000, RAINBOW NX-1000C, JX-80, Seikosha 3000 AI.

(OKIDATA 10/20's (print larger 6" by 9") USER SLIDE SHOW program w/auto or manual display is standard with VIDEO BYTE program. And can be backed up!)

Why DRAW a car, airplane, person or for that matter anything when you can BYTE it... VIDEO BYTE II instead!

ONLY
\$79⁹⁵

ONLY
\$44⁹⁵

Circle Reader Service Number 215

All units come w/90 day WARRANTY. All orders add \$3 for UPS BLUE LABEL S/H. UPS BLUE available only in 48 states. FOREIGN ORDERS are US FUNDS +\$6.35 S/H. ORDER BOTH EXPLODE! V5 & VIDEO BYTE II together and receive FREE! UPS S/H. **Note all SALES are FINAL, 90 DAY WARRANTY covers PARTS & LABOR ONLY. All SOFT GROUP UTILITY DISKS COME w/built-in CATALOG of PRODUCTS.

WORKS WITH P.A.L. ALSO ☆ IN 64 MODE ONLY

TO ORDER CALL 1-708-851-6667

IL RESIDENTS ADD 6% SALES TAX

PLUS \$3.00 S/H. NO C.O.D.'S. FOREIGN ORDERS U.S. FUNDS ONLY \$6.35 S/H. Personal Checks 10 Days to Clear



THE SOFT GROUP, P.O. BOX 111, MONTGOMERY, IL 60538

FACTORY AUTHORIZED

COMMODORE REPAIR CENTER

1-800-772-7289

(708) 879-2888 IN ILLINOIS

C64 Repair (PCB ONLY)	42.95	C128D Repair	CALL
C-128 Repair (PCB ONLY)	64.95	Amiga Repair	CALL
1541 Permanent Alignment	29.95	Printers	CALL
1541 Repair	79.95	Monitors	CALL
1571 Repair	79.95	Other Equipment	CALL

CALL BEFORE SHIPPING FOR AUTHORIZATION NUMBER

(Have Serial and Card Numbers ready)

PARTS AND LABOR INCLUDED

FREE RETURN SHIPPING

(APO, FPO, AIR ADD \$10.00)

24-48 HR. TURNAROUND

(Subject to Parts Availability)

30 DAY WARRANTY ON ALL REPAIRS

COMMODORE PARTS

CALL (708) 879-2350

C-64 Power Supply	34.95*
C128 Power Supply	59.95*
Other Parts	CALL

*[Plus \$3.00 Shipping/Handling]

TEKTONICS PLUS, INC.

150 HOUSTON STREET
BATAVIA, IL 60510



Circle Reader Service Number 205

NEW! SUPER CARTRIDGE by The Soft Group EXPLODE! V.5

The **MOST POWERFUL, DISK DRIVE and PRINTER CARTRIDGE** ever produced for the COMMODORE USER. Super USER FRIENDLY with all the features most asked for. New FEATURES... (a) Faster non-blanking FASTLOAD. (b) MIRROR imaging of all HI-RES screens. (c) 4 Way color selection with insert, for all HI-RES screens. (d) Infinite FILE COPY for all SEQ. & PRG. files, copy your file only once, then write that file to as many disks as you like... great for single file copying by small user groups. (e) **FULL COLOR PRINTING of ALL COLOR HI-RES & MULTI-COLOR SCREENS to ALL COLOR DOT MATRIX PRINTERS** (not for INK JET printers). (f) Direct ONE KEY access back to VIDEO BYTE software thru EXPLODE! V5.0's 2nd MENU. (g) Supports all popular printer interfaces. (h) FREE upgraded utility disk.

SUPER FASTLOAD and SAVE (50K-9 SEC'S) works with ALL C-64 or C-128's NO MATTER WHAT VINTAGE or disk drives EXCEPT the 1581, M.S.D. 1 or 2. **SUPER FAST FORMAT (8 SEC'S)** - plus FULL D.O.S. WEDGE w/standard format! **SUPER SCREEN CAPTURE**. Capture and Convert ANY SCREEN to KOALA/DOODLE. **SUPER PRINTER FEATURE** allows ANY DOT MATRIX PRINTER even 1526/802 to print HI-RES SCREENS in FULL COLOR (using 16 shade GRAY SCALE). ANY PRINTER or INTERFACE COMBINATION can be used with SUPER EXPLODE! V5.0. NEW and IMPROVED CONVERT feature allows anybody to convert (even TEXT) SCREENS into DOODLE or KOALA TYPE PICTURES w/FULL COLOR! **SUPER FAST SAVE** of EXPLODE! SCREENS as KOALA or DOODLE FILES w/COLOR. **SUPER FAST LOADING** with COLOR RE-DISPLAY of DOODLE or KOALA files. **SUPER FAST LOAD or SAVE** can be turned OFF or ON without AFFECTING the REST of SUPER EXPLODE'S FEATURES. The rest of Explode! V5.0 is still active. **SUPER EASY LOADING and RUNNING** of ALL PROGRAMS from the DIRECTORY. **SUPER BUILT-IN TWO WAY SEQ. or PRG. file READER** using the DIRECTORY. NEVER TYPE a FILE NAME AGAIN when you use SUPER EXPLODE'S unique LOADERS.

CAPTURE 40 COLUMN C or D-128 SCREENS! (with optional DISABLE SWITCH).

All the above features, and much more!

PLUS A FREE UTILITY DISK w/SUPER EXPLODE!

MAKE YOUR C-64, 64-C or C-128*, D-128* SUPER FAST and EASY to use. THE BEST THING OF ALL... IS THE PRICE!!! still only \$44.95 or w/disable \$49.95.

*Note UP GRADES for V5.0 are offered to V4.1 owners only. \$20.00, w/ds add \$5.

**Note V4.1 owners w/disable will be sent V5.0 w/disable for only \$20.00

• IMPORTANT NOTICE •

OUR REPAIRABLE POWER SUPPLY (FOR THE C-64) MAY BE THE LAST POWER SOURCE YOU WILL EVER PURCHASE FOR YOUR COMMODORE.

• FINALLY •

A Repairable C-64 Power Supply with outstanding features and benefits:

- 1 year warranty (an extra \$5.00 on purchase buys 2 more years of coverage)
- External Fuse
- Schematic Included
- Highest Amperage Output (1.8 amps)
- Does Not Operate "Hot"
- Lost Cost—No One Comes Even Close
- Sold Worldwide in Various Overseas Voltages
- European Craftmanship Throughout
- UL Approved (VGE Approved)
- Spare Parts Kit Available
- Utilizes Large Transformer
- Special Prices for Schools/Dealers

\$24.95

Over 52% of C-64 Failures Were Due to Power Supply Malfunctions

- Save Money in Repairs and Replace Your Power Supply Today •
- Introductory Price of \$24.95 plus UPS

• CATALOG ANNOUNCEMENT •

Call for your NEW FREE 27-page catalog of specialty items for Amiga, Commodore, and IBM. The catalog contains low cost replacement chips, parts, upgrades, 34 diagnostic products, tutorial VHS tapes, interfaces, complete power supply line and other worldwide products YOU WON'T find anywhere else.



THE GRAPEVINE GROUP, INC.

3 Chestnut St.
Suffern, NY 10901



914-357-2424

We Ship Worldwide

1-800-292-7445

FAX 914-357-6243

Prices Subject to Change

Circle Reader Service Number 165

www.commodore.ca

GET MORE FEATURES FOR
BIBLE STUDY

LANDMARK The Computer Reference Bible offers:

- Complete Old and New Testaments in King James Version or New International Version. Individual verse (marginal) references, words of Christ in color, complete NIV footnotes and a Concordance.
- Searching for up to 12 partial words, wildcard characters, words or phrases at once. Search not only the Bible, but also your own files, or even the results of a search, to narrow your search down further.
- Creating of your own files, using the built in text editor to copy Scripture, text or search results into your file. You can also convert your files for use with most wordprocessors, like Paperclip and GEOS to add graphics or different type styles.
- Compiling your own Personal Bible containing all your notes, comments, outlining of text in color and keep it organized. Make new references, add to the existing references, or reference your own files!
- Compatibility with all disk drives for the C64/128 including 1541, 1571, 1581, SFD1001, and hard disk drives. Also will take advantage of cartridge or hardware speedup products like FAST LOAD or Jiffy DOS to improve performance of the program. Entire Bible with references fits onto eight 1581 disks. C64 v1.2 and C128 v2.0 on same program disk!


KIV \$89.95 NIV \$99.95 /Both \$155.00
plus \$4.00/\$6.50 shipping in cont. USA

CALL OR WRITE FOR FREE BROCHURE
P.A.V.Y. Software P.O. Box 1584
Ballwin, MO 63022 (314) 527-4505
MC/VISA accepted. Foreign orders write for shipping

Circle Reader Service Number 257

THE AMERICAN HEART
ASSOCIATION
MEMORIAL PROGRAM



 American Heart Association

This space provided as a public service.

WARRIORS
OF
AXILIS

Test your skill against the latest fantasy role-playing creation by Axilis Software. 21 dungeon levels to explore. Hundreds of different weapons and armor. Find amulets and cast spells to help you on your way. Waiting at the bottom is the birth place of all the evil that poisons the land above, and your mission is to destroy it! After winning, the game will display instructions on how to create your own dungeon complete with secret rooms, traps, monsters, and any items you wish. For a C-64 disk send \$16.50 + \$2 P/H to:
Axilis Software
P.O. Box 7834
Madison, WI 53707

Circle Reader Service Number 120



GAZETTE GALLERY



Natalie, by Wayne Schmidt of New York City, is this month's winning entry. Enjoy it and the rest of the fine pictures found only on the *Gazette Disk*.

Welcome to "Gazette Gallery." Each month the *Gazette Disk* features a collection of the best 64/128 artwork submitted by our readers. We pay \$50 for each piece of art we accept and an extra \$50 for the one selected Picture of the Month.

Send your 64/128 art in Doodle, Koala, or other popular format. (No more than five entries per disk per month, please.) Rejected submissions are returned only to artists who enclose a self-addressed, stamped disk envelope. □

Gazette Gallery
COMPUTE Publications
324 W. Wendover Ave.
Greensboro, NC 27408



BUG-SWATTER

• Some of our readers have had trouble with *Think Tank*, from the April 1990 issue of *Gazette*. A crucial character in line 1080 was inadvertently dropped from our program listing.

Here's the corrected line:

```
1080 RETURN:DATA0,0,16,0,0,0,0,
      0,0,0,16,0,66,0,136,0,0,40,8,0,3,
      32,32,32
```

• The *Disk Editor* program (February 1990) does not function as written for plotting the current file sector chain in BAM mode (Ctrl-P). To make the corrections, load and run *MLX*. Enter 8000 as the starting address and 8F97 as the ending address; then load your copy of *Disk Editor*.

A LOAD ERROR message will appear because this new ending ad-

dress exceeds the ending address of the original program. This is not a problem. Choose the ENTER DATA option to modify the following lines.

```
8AA0 84 8F AE 40 80 E8 E8 AC DB
```

```
8298 54 53 20 43 55 52 53 4F BE
82A0 52 20 43 48 41 49 4E 20 AF
```

```
8F80 8F 4C 5A 8F AE 95 80 E8 74
8F88 8E 3F 80 AE 96 80 8E 40 CD
8F90 80 4C 2B 8B 00 00 00 00 21
```

Note: Watch your line numbers and make sure you enter them correctly; they aren't all consecutive. For example, hit Return after entering the first line to return to the *MLX* menu. Select Enter Data again and start at 8298 for the next two lines. Then, save the program with a new name. □

BIG BLUE READER

Reads & Writes IBM MS-DOS Disks

Big Blue Reader transfers word processing, text, ASCII, and binary files between Commodore and IBM MS-DOS diskettes.

1571 or 1581 Disk Drive is required. Does not work with 1541.

Fast, easy to use, menu driven program for novices and experts. Transfers MS-DOS files on 360K 5.25" & 720K 3.5" disks.

Big Blue Reader 128 V3.1 supports: C128 CP/M files, 17xx REU, 40/80 column, reading MS-DOS sub-directories, and much more.

Big Blue Reader 64 V2 available separately only \$29.95

BBR 128 V3.1 upgrade available. Send original BBR disk and \$18

BIG BLUE READER 128/64 only \$44.95

BIBLE SEARCH V3.1

Fastest Complete Bible on 7 Disks!

A fast, easy-to-use tool for general Bible study and in-depth Bible research. Finds any word or verse in seconds! Complete Old and New Testament text and Concordance on seven 1541/71 disks. Includes C64 & C128 programs; printer and disk output; versatile search options; and more. Satisfaction, Money Back Guaranteed!

Please specify 1541, 1571 or 1581 disks.

Whole Bible Version KJV \$69, NIV \$79. (Both only \$125)

New Testament Version KJV \$25, NIV \$29.

NEW, Bible Search Gospel Demo for C64/128 or Amiga only \$3

"an enormously quick and responsive program", Gazette Aug '89 "try it with any drive—you'll be amazed", Twin Cities #25

SOGWAP Software - Ph:(219)724-3900

115 Belmont Road; Decatur IN 46733

Order by check, money order, or COD. US Funds only.

Free shipping in US and Canada. No credit card orders.

Foreign orders add \$5 (\$12 for whole Bible).

DYNAMICALLY MODIFIABLE BULLETIN BOARD SYSTEM

The Bulletin Board Of The 90's

- Full Commodore™ color graphics & ASCII
- Fully compatible with CMD's HD series & Xetec's Lt. Kemal hard drives.
- Fully supports JiffyDos operating environment & various other burst ROM's
- 300-2400 baud, Supports 1650, 1660, 1670, Avatex & ALL Hayes compatibles!
- C64, 64C, SX64, C128, C128D (64 mode), 1700 series RAM expanders, ALL 1541's & compatibles, 1571, 1581, SFD 1001
- Menu driven, user-friendly BBS
- On-line game modules available
- NOT Copy Protected, make as many back-ups as you need.
- 2-24 hour BBS main support numbers
- 1 Voice support number
- Various info lines throughout North America
- INCLUDED: CLEAR AND CONCISE MANUAL IN A SLEEK BINDER

D.M.B.B.S. Series V

\$69⁹⁵

Includes BASIC Source Code.

update from Version 4.0 \$39.95

Add \$5. s/h \$8. outside U.S.
MD Res. add 5% sales tax


20% Discount on D.M.B.B.S. In
Exchange for any PAID FOR & Reg.
C= 64/128 BBS prog.

**30 Day Money Back
Guarantee!!!**

*Dealer Pricing
Available*

Mail Check or
Money Order to: ARTISOFT,
P.O. Box 96, Glen Burnie, MD 21060


Or Call (Orders Only)
(301) 553-0301



A division of Dynamic Technologies, Inc.

Inquiries: (301) 553-0201
24 Hr. BBS: (301) 553-0001

Your best source for computer equipment & access.



Circle Reader Service Number 204

**"She had big
brown eyes,
the
cutest laugh-
and
leukemia."**

"Andrea was in preschool with my son.

"One day they rushed her to the hospital with leukemia. She needed blood urgently, so I went and gave... She's in remission now, but every couple of months I go and give blood.

"Because I know someone else's Andrea may need it."

When was the last time you gave blood?

Blood. Give a little, so someone can live.

National Blood Resource Education Program.

National Heart, Lung, and Blood Institute, National Institutes of Health, Public Health Service,
U.S. Department of Health and Human Services

COMMODORE COMBO

MINDSCAPE POWERPLAYER
JOYSTICK
AND
SEGA SPACE HARRIER GAME



Super Special!

\$ 9.95 PKG.

Postage paid in the continental U.S.A.

Quantity pricing available.

ELECTRONIC MATERIALS R. INC.

3108 W. THOMAS #1206

PHOENIX, AZ. 85017

(602)-272-3200



All prices are cash discounted. Add 5% for credit card orders.
Allow 3 weeks for personal check clearance. Quantities are limited. All authorized return items must be freight prepaid.

SOFTWARE CLOSEOUTS

For Commodore 64 & 128:

Adventure Creator, by Spinnaker (C)	\$ 9.50
America's Cup, by Electronic Arts	\$12.50
Argos Expedition, by CBS	\$ 9.50
Artist, by Valueware	\$ 5.00
Assembler, by Commodore	\$ 5.00
Beyond Castle Wolfenstein, by Muse	\$ 7.50
Border Zone, by Infocom	\$ 9.50
Boston Computer Diet, by Scarborough	\$12.50
Bumper Sticker Maker, by Intracorp	\$19.50
Button & Badge Maker, by Intracorp	\$19.50
Castle Wolfenstein, by Muse	\$ 7.50
Congo Bongo, by Sega (C)	\$ 7.50
Deadline, by Infocom	\$ 5.00
Death Sword, by EPYX	\$14.50
Educator, by Valueware	\$ 3.75
Electronic Address Book, by Batt. Inc.	\$ 7.50
Entertainer, by Valueware	\$ 3.75
Go, by Hayden	\$ 5.00
Home Cataloger, by Continental/Arrays	\$ 9.50
Home Manager, by Valueware	\$ 6.50
Kickman, by Commodore (C)	\$ 2.50
Logic Levels, by Fisher-Price (C)	\$ 9.50
Math IV, by Commodore	\$ 4.50
Musician, by Valueware	\$ 4.50
One Man & His Droid, by Mastertronic	\$ 7.50
Partner 128, by Timeworks (C/128)	\$17.50
Pet Emulator, by Commodore	\$ 9.50
Phantasie III, by SSI	\$12.50
Practicalc 64, by CSA	\$ 7.50
Practicalc + file, by Practicorp	\$17.50
President Elect, by SSI	\$ 9.50
Printed Word, by Valueware	\$ 2.75
Pro-Golf, by Mastertronic	\$ 7.50
Programming Kit 3, by Timeworks	\$ 9.50
Questron II, by SSI	\$14.50
Roadwar 2000, by SSI	\$14.50
Shiloh: Grant's Trail, by SSI	\$14.50
Skill Builders, by Real Software	\$ 5.00
Sons of Liberty, by SSI	\$12.50
Spider Eater, by Koala	\$ 3.00
Starcross, by Infocom	\$ 5.00
Story Machine, by Spinnaker (C)	\$ 7.50
Suspended, by Infocom	\$ 5.00
The Tool, by Homeware	\$ 2.75
Toy Bizzare, by Activision	\$ 5.00
Wargame Construction Set, by SSI	\$12.50
Warship, by SSI	\$12.50
Zenji, by Activision	\$ 5.00
3 for All Games, by BCI	\$ 3.75
Memorex Diskettes, box of 10, SSDD	\$ 2.50

IMPORTANT NOTE: (C) indicates that the item is on Cartridge format. All other items are distributed on 5.25" diskette. All products are the original factory packages, no seconds or damaged goods. Name brands only!!
NOT Public Domain!!

TO ORDER, SEND CHECK OR MONEY ORDER TO:

COMPSULT

P.O. BOX 5160, SAN LUIS OBISPO, CA 93403-5160
Include \$4.00 for Shipping Charges to U.S. Addresses,
\$6.00 for Canada, and \$8.00 for International.

CA Orders must add 6.25% Sales Tax.

CREDIT CARD ORDERS CALL TOLL FREE

1-800-676-6616

ORDERS ONLY, PLEASE!!

All other information, including requests for our FREE CATALOG, which includes 100's of additional closeout products. Call (805) 544-6616, or write to the above address.

Circle Reader Service Number 128

DON'T MISS THIS INTRODUCTORY OFFER

Screen-Pro is a complete graphic screen and animation production system for the C-64/128!

Create FAST menus, displays, intros, windows, instructions, game backgrounds, cartoons, video titles, slide shows, and

easily use them in your OWN PROGRAMS!

SCREEN-PRO
Up to 34 screen animations!
Full color & mode support!
Powerful cut, paste, copy!
Draw in any direction fast!
Load and save screens to disk. No need to program!
DOS & directory support!
Plus much, much more!

Satisfaction Guaranteed!

Whether you're a beginner or an expert, whether this is your first program or your last, we're so sure that you'll agree Screen-Pro is the best program of its kind we'll give you a FREE action game just to try it!

2 Disk Set & Full Documentation only \$24.95 postage paid

Send check or money order payable to:

AccuTone Productions 36 Myers Ct. Medford, OR 97501

Circle Reader Service Number 149

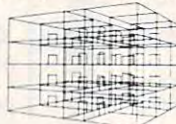
SOFTWARE SALE! 3/\$25 or \$9 ea.
VIC-20—Star trek—Cosmic crunch—Tutankhamen
Raid on ft. Knox—Sky is falling—Demon attack—
Omega race—Mole attack—Buck Rogers—Swarm—
Gorf—Serpentine—Terraguard—Atlantis—& MORE
COM 64—Pro golf tour—Entrepreneur—& MORE
Add \$3 Frt to: HACKER CAT— 8301 SE Division
Portland, Or 97266 — 1-503-774-4402

Circle Reader Service Number 146

3-D GRAPHICS DESIGN

* Voted Best Graphics Program
—Run Magazine 1988

For Commodore 64/128 in 64 mode
View Designs in Multiple Perspectives



Professional-Educational-Home Applications
Architects, Engineers, Designers,
Programmers, Students

CAD-3D! enter me into the fastest growing field in graphic technology. At a special introductory price \$39.95. Add \$4.00 for shipping and handling, for C.O.D. add an additional \$1.00. (California residents please include 6% sales tax.)

ih Software

2269 CHESTNUT STREET
SUITE 162
SAN FRANCISCO, CA 94123

ORDER LINE • (415) 923-1081

FAX • (415) 923-1084

Dealers/Distributors inquiries welcomed.

Circle Reader Service Number 192

C* BASE BBS SYSTEMS

If you are looking for the fastest, most efficient BBS with the most features for the C64, your wait is NOW OVER! And now CBASE has a C128 version as well. C*BASE supports nearly all hardware additions including SFDs, popularly advertised harddrives, 1581s (Supports partitioning), and ram expanders! Both systems come with BASIC source code, extensive documentation, and free modules such as Empire and Murder Motel! An extensive network of support lines allows easy access to updates and more modules also! To order send check or m.o. & your Name, Alias, Address, Voice#, BBS#, BBS name, and Equip. List.

For More Information Contact **\$50.00 64 CBASE** (301) 761-9773 VOICE
Gunther Birznieks **\$70.00 128CBASE** (301) 761-0306 64 BBS
6390 Apt. B Smyth Square (703) 751-2729 128BBS
Glen Burnie, MD 21061 (703) 620-8897 128BBS

Circle Reader Service Number 253

ONLY ON DISK

There's something new on the *Gazette Disk*. In addition to the type-in programs found in every issue of the magazine, we're putting more features and programs on the *Gazette Disk* each month. Often, these programs would be too large for readers to type in. Check out the original 64 and 128 artwork on display in "Gazette Gallery," and look for our bonus programs as well. These programs and their instructions appear only on disk. Here are descriptions of this month's bonus programs.

Bastion

Steve Harter

This challenging one- or two-player game is based on the popular arcade hit *Star Castle*. *Bastion* is written entirely in machine language and features beautiful vectored graphics. The object is to destroy an enemy spacecraft protected by a multilayered force field.

Eyecatcher

Michael Lalonde

Eyecatcher is perfect for posting notices at user group meetings, school functions, or parties. Messages scroll across the top and bottom of the screen in huge letters while a large clock displays the time in the center.



PROGRAMS

G A B R I E L R I V E R A

Knowing the multiplication tables is intrinsic to all multiplication and division operations. Multiplication is one of the major components in the study of mathematics. Therefore, memorizing the multiplication tables is a necessary ingredient in understanding mathematics.

Memorizing the multiplication tables takes time, effort, and plenty of practice. This educational program is designed to help students learn those tables in a colorful and friendly environment.

Getting Started

Times Table Tutor is written in BASIC. Enter the program by using *The Automatic Proofreader*; see "Typing Aids" elsewhere in this section. When you've finished typing in *Times Table Tutor*, be sure to save a copy to disk.

Using the Program

Times Table Tutor begins with a menu. Students have the choice of practicing an entire set of multiplication tables, a single set, or quitting the program.

Practicing an entire set drills students with random multiplication problems, with numbers ranging from 0 to 9. The program provides correct answers whenever a user gives an incorrect answer. Students can correct mistakes before they press Return by using the Delete key. The drilling continues until the user presses the back-arrow key.

Practicing a single set drills students with a specific set of problems. *Times Table Tutor* asks which set to drill. Students may choose any set from 0 to 9. If the user enters 5, for example, the program presents $5 \times 2 =$, $5 \times 3 =$, $5 \times 9 =$, and so on. This continues until the user has correctly answered all of the problems in the set. At this point, the program asks whether or not the student wants to repeat the set. Entering *No* returns the student to the main menu.

Times Table Tutor uses large and colorful digits that help make learning

pleasant. Sound effects after correct or incorrect answers also add to the learning environment. While nothing can make memorizing the multiplication tables easy, *Times Table Tutor* makes it more exciting than doing repetitive drills with pencil and paper. Some might even think it's fun.

TIMES TABLE TUTOR

LEARNING THE MULTIPLICATION TABLES IS NEVER EASY, BUT THIS HANDY TUTOR FOR THE 64 AT LEAST MAKES IT PLEASANT

TIMES TABLE TUTOR

```
FD 10 REM COPYRIGHT 1990 COMPUTE PUBLICATIONS, INTL -
      {SPACE}ALL RIGHTS RESERVED
MX 100 COS="{4}{8}{2}{1}{BLU}
      {7}{RED}{3}{RED}"
QM 110 POKE53280,0:POKE53281,0
      :PRINT"{H}"
GS 120 GOSUB10000
BJ 1000 PRINT"{CLR}{N}"SPC(14)
      "{PUR}{A}*****{S}"
      "
```

```
QB 1010 FORX=0TO6:PRINTSPC(14)
      "_{10 SPACES}-":NEXT
PA 1020 PRINTSPC(14)"{Z}*****
      *****{X}"
QQ 1030 PRINT"HOME"SPC(15)"
      {DOWN}{8}";
EH 1040 FORX=0TO2:PRINT"{A}{R}
      {S}{DOWN}{2 LEFT}
      {DOWN}{LEFT}{E}";NEXT
CG 1050 PRINT"{5 UP}{4 LEFT}IM
      ES{2 DOWN}{2 LEFT}ABLE
      {2 DOWN}{2 LEFT}UTOR"
DH 1060 PRINTTAB(13)"{YEL}
      {3 DOWN}COPYRIGHT 1990
      "
PD 1061 PRINTTAB(7)"COMPUTE PU
      BICATIONS, INTL"
RD 1062 PRINTTAB(11)"ALL RIGHT
      S RESERVED"
KM 1100 PRINTTAB(14)"{2 DOWN}C
      HOOSE ONE:"
FC 1110 PS="F1-ENTIRE SET":GOS
      UB40000:PS="F3-SINGLE
      {SPACE}SET":GOSUB40000
FE 1120 PS="F5-QUIT":GOSUB4000
      0
GD 1150 GETXS:IFXS<"{F1}"ORXS>
      "{F5}"THEN1150
KK 1160 GOSUB16000
BF 1170 IFXS="{F5}"THEN6000
SC 1180 IFXS="{F1}"THEN2000
GP 1190 GOTO3000
RB 2000 GOSUB5000
CE 2010 FORX=0TO1:N(X)=INT(RND
      (1)*10):NEXT:GOSUB40000
QP 2020 IFETHENE=0:GOTO1000
SQ 2030 GOTO2010
HH 3000 PRINT"{CLR}":PS="SINGL
      E SET":GOSUB40000ADY.
FG 3010 GOSUB30000:PRINT"
      {DOWN}WHICH SET?(0-9)
      ";
GS 3020 GETXS:T=VAL(XS):IFXS<>
      "0"ANDT=0THEN3020
BD 3030 PRINT"{CLR}CHR$(142):
      GOSUB30000:PRINT"
      {2 DOWN}THE {HOME}
      {4 RIGHT}"NS(T)"{HOME}
      {7 RIGHT}{3 DOWN}
      {3 RIGHT}{OFF}SET!"
EJ 3040 FORX=0TO800:NEXT:GOSUB
      5000
FC 3050 N(0)=T:FORX=0TO9:D(X)=
      0:NEXT:R=0
DR 3060 X=INT(RND(1)*10):IFD(X)
      )THEN3060
QH 3070 N(1)=X:GOSUB40000:IFETH
      ENE=0:GOTO1000
HF 3080 IFW=0THENR=R+1:D(N(1))
      =1:IFR=10THEN3100
AF 3090 GOTO3060
GB 3100 PRINT"{CLR}":PS="YOU'V
      E COMPLETED THE"+STR$(
      T)+" SET!":GOSUB40000
RR 3110 GOSUB30000:PRINT"
```




PROGRAMS

<pre> {DOWN}PRACTICE" T"SET A GAIN? (Y/N)" AR 3120 GETXS:IFXS<>"Y"ANDXS<> "N"THEN3120 AA 3130 IFXS="N"THEN1000 EM 3140 GOSUB5000:GOTO3050 PR 4000 PRINT" {HOME} {9 DOWN}"; AH 4010 FORX=0TO6:PRINT" {RIGHT}{38 SPACES} {RIGHT}";:NEXT CK 4020 PRINT" {HOME} {9 DOWN} {2 RIGHT}"; GX 4030 GOSUB30000:PRINTNS(N(0)); RP 4040 GOSUB30000:PRINT" {4 UP}{RIGHT}{OFF}"MS; PH 4050 GOSUB30000:PRINT" {5 UP}{RIGHT}{OFF}"NS(N(1)); KJ 4060 GOSUB30000:PRINT" {4 UP}{RIGHT}{OFF}"ES" {4 UP}{RIGHT}{OFF}";:A S=" FP 4070 GETXS:IFXS=" "THEN4070 BJ 4080 IFXS="<"THENE=1:RETURN PR 4090 IFXS="0"ORVAL(XS)>0THE NIFLEN(AS)<2THEN4130 EF 4100 IFXS=CHR\$(20)ANDLEN(AS)THEN4140 PQ 4110 IFXS=CHR\$(13)ANDLEN(AS)THEN4160 EH 4120 GOTO4070 JP 4130 GOSUB30000:PRINTNS(VAL (XS))" {6 UP}{RIGHT} {OFF}";:AS=AS+XS:GOTO4 070 PF 4140 AS=LEFT\$(AS,LEN(AS)-1) :PRINT" {6 LEFT}{UP}"; SD 4150 FORX=0TO6:PRINT" {DOWN} {5 SPACES}{5 LEFT}";:N EXT:PRINT" {6 UP}{OFF}"; :C=C-1:GOTO4070 EX 4160 A=N(0)*N(1):PRINT" {8 DOWN}";:IFVAL(AS)=AT HEN4190 GE 4170 W=1:P\$="SORRY!":GOSUB4 0000:PRINT" {DOWN} {8} {8 SPACES}THE CORRECT {SPACE}ANSWER IS {WHT}" A" {8} {LEFT}. " SP 4180 GOSUB15000:FORX=0TO250 0:NEXT:GOTO4200 DF 4190 W=0:P\$="CORRECT!":GOSU B40000:GOSUB16000 RS 4200 FORX=0TO500:NEXT:PRINT " {HOME} {17 DOWN}" XM 4210 FORX=0TO4:PRINT" {33 SPACES}":NEXT:RETU RN FA 4999 PRINT:RETURN AR 5000 PRINT" {CLR}"CHR\$(142)" {8}{12 P}":PRINT" {5} {RVS} {4} EXITS. " SA 5010 PRINT" {4}{12 Y} {5 DOWN}" JA 5020 PRINT" {WHT}U";:FORX=0T O37:PRINT" *";:NEXT HS 5030 PRINT" I";:FORX=0TO6:PR INT" {DOWN} {LEFT} _";:NE XT EJ 5040 PRINT" {DOWN} {LEFT} K";: FORX=0TO38:PRINT" {2 LEFT} *";:NEXT JF 5050 PRINT" {LEFT} J";:FORX=0 </pre>	<pre> TO6:PRINT" {LEFT} {UP} _" :NEXT:RETURN GJ 6000 PRINT" {CLR}":P\$="QUIT" :GOSUB40000 SK 6010 PRINT" {DOWN} {YEL} ARE Y OU SURE? (Y/N)" HE 6020 GETXS:IFXS<>"Y"ANDXS<> "N"THEN6020 GR 6030 IFXS="N"THEN1000 QG 6040 PRINT" {CLR} {YEL} {I} "CH R\$(142);:END PA 10000 NS(0)=" {RVS} {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {3 RIGHT} {DOWN}" DQ 10005 NS(0)=NS(0)+" {5 LEFT} {OFF} {*}{RVS} {3 Y} {OFF} E" EQ 10010 NS(1)=" {RIGHT} {RVS} E {DOWN} {3 LEFT} E {OFF} E {RVS} {DOWN} {3 LEFT} {OFF} E {RIGHT} {RVS} {DOWN} {LEFT} {DOWN} {LEFT} {DOWN} {LEFT} {DOWN} {3 LEFT} {2 Y} {2 Y}" RB 10020 NS(2)=" {RVS} E {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {2 LEFT} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {DOWN} {2 LEFT} {RVS} {4 Y}" BG 10030 NS(3)=" {RVS} E {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {2 LEFT} E {OFF} E {DOWN} {3 LEFT} {RVS} {2 SPACES} {DOWN} {LEFT} {OFF} {*}{RVS} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {OFF} {*}{RVS} {3 Y} {OFF} E" CX 10040 NS(4)=" {3 RIGHT} {RVS} E {DOWN} {3 LEFT} E {OFF} E {RVS} {DOWN} {4 LEFT} E {OFF} E {RIGHT} {RVS} {DOWN} {5 LEFT} E {2 Y} {DOWN} {LEFT} {DOWN} {LEFT} {DOWN} {LEFT} " AF 10050 NS(5)=" {RVS} {4 P} {DOWN} {5 LEFT} {DOWN} {LEFT} {DOWN} {LEFT} {4 P} {*}{DOWN} {LEFT} {SPACE} {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {OFF} {*}{RVS} {3 Y} {OFF} E" PD 10060 NS(6)=" {RVS} E {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {DOWN} {LEFT} {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} </pre>	<pre> {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT}" BJ 10065 NS(6)=NS(6)+" {OFF} {*} {RVS} {3 Y} {OFF} E" RK 10070 NS(7)=" {RVS} {4 P} {DOWN} {LEFT} {DOWN} {LEFT} {DOWN} {2 LEFT} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {DOWN} {3 LEFT} {RVS} E {OFF} E {3 RIGHT}" JR 10080 NS(8)=" {RVS} E {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {OFF} {*}{3 O} E {DOWN} {5 LEFT} {RVS} E {OFF} {3 U} {RVS} {*} {DOWN} {5 LEFT} {3 RIGHT} {5 LEFT} {3 RIGHT} {DOWN}" BC 10085 NS(8)=NS(8)+" {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {OFF} {*}{RVS} {3 Y} {OFF} E" EH 10090 NS(9)=" {RVS} E {3 P} {*}{DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {3 RIGHT} {DOWN} {5 LEFT} {OFF} {*}{RVS} {3 Y} {DOWN} {LEFT} {DOWN} {LEFT} {DOWN} {LEFT} " AG 10100 MS=" {*}{RVS} {*} E {OFF} E {DOWN} {5 LEFT} {*}{RVS} {2 SPACES} {OFF} E {DOWN} {4 LEFT} {RVS} E {2 SPACES} {*} {DOWN} {5 LEFT} E {OFF} E {*}{RVS} {*}" AD 10110 ES=" {RVS} {5 SPACES} {2 DOWN} {5 LEFT} {5 SPACES}" DQ 10120 S=54272:FORX=0TO24:PO KES+X,0:NEXT PR 10130 POKES+24,15:POKES+5,1 7:POKES+12,17:POKES+6 ,234:POKES+13,234 MR 10140 POKES+1,16:POKES+8,24 :RETURN DA 15000 POKES+4,17:FORX=16TO4 STEP-1:POKES+1,X:FORY =0TO30:NEXT:NEXT MF 15010 POKES+4,16:RETURN MQ 16000 POKES+11,17:POKES+11, 16:RETURN HC 30000 C=C+1:IFC=10THENC=1 HK 30010 CS=RIGHT\$(LEFT\$(COS,C),1):PRINTCS;:RETURN GF 40000 P\$=" "+P\$+" ":Z=LEN(P S) AS 40010 X=20-(Z/2) PF 40020 PRINTSPC(X);:GOSUB300 00:PRINT" {D}";:FORY=1 TOZ-1:PRINT" {I}";:NEX T:PRINT" {F} {DOWN} {LEFT} {V} {UP}" BH 40030 PRINTSPC(X);:GOSUB300 00:PRINT" {RVS}"P\$:RET URN </pre>
---	---	---



PROGRAMS

F R E D K A R G

After months of backbreaking labor, digging at the base of Pharaoh's Pyramid, you've finally uncovered the doors to eight crypts that may lead to a fabulous treasure. You check each crypt, but there's no treasure to be found. Has the Pharaoh outwitted you?

You're not about to give up before you've solved the Pharaoh's riddle. You're sure the entrance to the pyramid is here, if only you can unravel its key. You deduce that if opening no single door provides access to the pyramid and its hidden treasure, then perhaps all of the doors must be open before the secret entrance reveals itself.

As you set out to test your theory, you're surprised to find that the doors are linked mechanically. Opening and closing one door triggers a mechanism in one or more of the others. There seems to be a consistent pattern as to how the doors are linked, but you realize that you'll need luck, persistence, and intelligence to open all doors.

Getting Started

Pharaoh's Revenge is written entirely in BASIC. Type it in using *The Automatic Proofreader*; see "Typing Aids" elsewhere in this section. Be sure to save a copy after you've finished typing it in. When you're ready to take on the Pharaoh, simply load and run the program.

Playing the Game

Three challenging levels of play have been included in the game. At the easy level, all doors are connected in pairs. Open one door and a second one opens. If that second door is already open, then it closes. At the difficult level, each door may be linked to one, two, or three others. Finally, the level for superbrains requires you to pass successfully through three tiers before you can gain entrance. To open a specific door, just type the number that appears above it. Depending on their previous states, other doors associated with it will either open or close.

The game keeps track of how

many moves it takes in your attempt to gain access to the treasure. If you get frustrated, you can close all the doors at any time by pressing the A key. If the Pharaoh's curse proves to be too much, press S to see the solution. The numbers of the key doors will be highlighted in green. Enter these numbers to solve the puzzle. If you choose to look at the solution, the treasure will, of course, elude you, and the Pharaoh will have his revenge on yet another treasure seeker.

PHARAOH'S REVENGE

IT TAKES BRAIN POWER TO SOLVE THIS PUZZLER FOR THE 64 AND GAIN ACCESS TO THE PHARAOH'S TREASURE

PHARAOH'S REVENGE

```
GM 1 REM COPYRIGHT, 1990, COMPUTE PUBLICATIONS, INTL, LTD
    TD{2 SPACES}ALL RIGHTS RESERVED
QK 10 V=53248:Y=222:DIMB%(3,8,3),DE%(3,8),S%(3,5):S1=1
    0:POKEV+21,0:C=255
RF 20 BLS="{40 SPACES}":POKE53281,5:POKE53280,13
CX 30 PRINT"{CLR}{7 DOWN}":PRINTSPC(11);"{WHT}{RVS}{19 SPACES}"
HP 35 PRINTSPC(11);"{WHT}{RVS} PHARAOH'S REVENGE {BLK}"
GA 40 PRINTSPC(11);"{WHT}{RVS}
```

```
{19 SPACES}{BLK} "
QE 45 PRINTSPC(11);"{WHT}{RVS}{9 SPACES}BY{8 SPACES}{BLK} "
RA 50 PRINTSPC(11);"{WHT}{RVS}{19 SPACES}{BLK} "
XS 55 PRINTSPC(11);"{WHT}{RVS}{5 SPACES}FRED KARG {5 SPACES}{BLK} "
SG 60 PRINTSPC(11);"{WHT}{RVS}{19 SPACES}{BLK}":PRINTSPC(13);"{BLK}{RVS}{18 SPACES}"
AR 70 PRINT"{6 DOWN}{12 RIGHT}{8}COPYRIGHT 1990"
RR 71 PRINT"{4 RIGHT}{8}COMPUTE PUBLICATIONS, INTL, LTD"
GH 75 FORN=16128TO16383:READD:POKEN,D:NEXT
MS 80 PRINT"{CLR}{5 DOWN}":POKE53281,2:POKE53280,10:SC=0:SS=0
XX 90 PRINT"{CLR}{5 DOWN}":POKE53281,2:POKE53280,10:SC=0:SS=0
QK 95 PRINTSPC(S1);"{WHT}{RVS}{22 SPACES}"
GG 100 PRINTSPC(S1);"{WHT}{RVS}{5 SPACES}DIFFICULTY{7 SPACES}{BLK}{2 SPACES}"
BF 105 PRINTSPC(S1);"{WHT}{RVS}{5 SPACES}{10 Y}{7 SPACES}{BLK}{2 SPACES}"
FQ 110 PRINTSPC(S1);"{WHT}{RVS} 1. EASY {14 SPACES}{BLK}{2 SPACES}"
JM 115 PRINTSPC(S1);"{WHT}{RVS}{22 SPACES}{BLK}{2 SPACES}"
CM 120 PRINTSPC(S1);"{WHT}{RVS} 2. DIFFICULT {9 SPACES}{BLK}{2 SPACES}"
EP 125 PRINTSPC(S1);"{WHT}{RVS}{22 SPACES}{BLK}{2 SPACES}"
CX 130 PRINTSPC(S1);"{WHT}{RVS} 3. SUPERBRAINS ONLY{2 SPACES}{BLK}{2 SPACES}"
AJ 135 PRINTSPC(S1);"{WHT}{RVS}{22 SPACES}{BLK}{2 SPACES}"
GD 140 PRINTSPC(S1);"{2 SPACES}{BLK}{RVS}{22 SPACES}"
CC 145 PRINTSPC(S1);"{2 SPACES}{BLK}{RVS}{22 SPACES}"
KM 150 PRINT"{3 DOWN}{8 RIGHT}PLEASE CHOOSE FROM 1 TO 3 {P}{LEFT}";
```




PROGRAMS

RM 160	GETK\$:IFK\$=""THEN160			QA 660	GETK\$:IFK\$=""THEN660
CG 170	K=ASC(K\$):IFK>32ANDK<90			EA 670	GOTO80
MK 180	THENPRINTK\$"{LEFT}";	SG 470	T=DE%(M,R1):DE%(M,R1)=D	AE 680	POKE53280,0:POKE53281,0
QB 190	IFK>51ORK<49THEN160		E%(M,R2):DE%(M,R2)=T:NE		:KI=0:PRINT"{CLR}";:PRI
	K=K-48:PRINT:PRINT"	DD 480	XT:NEXT:RETURN		NTSPC(19)"{RVS}{6}{5}E
	{2 DOWN}{15 SPACES}		J=0:FORN=0TO6STEP2:J=J+	DC 685	FORN=18TO0STEP-1
	{RVS}PLEASE WAIT...":IF	JG 490	1:S%(P,J)=DE%(0,N)+1:NE	RG 690	PRINTSPC(N)"{RVS}{5}E"
RX 200	K=1THENP=0:CL=1		XT:S%(P,5)=-1		;:FORJ=0TOKI/2:PRINT"
AP 210	IFK=2THENP=0:CL=1		(0,I,0)=DE%(0,I+1)		{RVS}{T}";:NEXT:FORM=0T
ES 220	IFK=3THENP=2:CL=8	AQ 500	RI=INT(RND(0)*8):IFR1=D		OKI/2:PRINT"{RVS}{4}{T}
AQ 225	GOSUB450		E%(0,I+1)ORR1=DE%(0,I)T		";:NEXT:PRINT"{RVS}{*}"
	ONKOSUB480,520,530:GOS	DC 510	HEN500	MP 695	:KI=KI+2:NEXT:RETURN
	UB680:X=32:FORN=0TO7:PO		B%(0,DE%(0,I+1),0)=R1:N		FORM=0TOKI/2:PRINT"
	KE2040+N,255:POKEV+39+N	HQ 520	EXT:FORI=0TO7:B%(0,DE%({RVS}{4}{T}";:NEXT:PRIN
FF 230	,2		0,I,1)=-1:NEXT:RETURN		T"{RVS}{*}":KI=KI+2:NEX
	POKEV+2*N,X:POKEV+1+2*N	FS 530	E%(0,I+1)ORR1=DE%(0,I)T	SC 700	T:RETURN
	,Y:X=X+40:IFX>255THENX=		HEN500		FORN=1TO4:POKE(56093+S%
	X-255	GC 535	B%(0,DE%(0,I+1),0)=R1:N	BE 710	(P+1,N)*5),7:IFS%(P+1,N
RA 240	NEXT:POKEV+27,255:POKEV	RH 540	EXT:FORI=0TO7:FOR	CR 720	+1)=-1THENN=4
	+23,0:POKEV+28,255:POKE		J=0TO2		NEXT:SO=0:RETURN
	V+29,0	XA 550	FORM=0TO2:FORI=0TO7:FOR		FORN=1TO4:POKE(56093+S%
RD 250	POKEV+16,192:POKEV+27,0		J=0TO2	CA 730	(P,N)*5),5:IFS%(P,N+1)=
	:POKEV+21,255:POKEV+37,	CM 560	RI=INT(RND(0)*8):IFR1=D		-1THENN=4
	7:POKEV+38,CL		E%(M,I)GOTO550	KS 740	NEXT:SO=1:SS=1:RETURN:D
HE 260	PRINT"{UP}{YEL}{RVS}	HX 570	(M,I)GOTO550		ATA000,084,000,000,168,
	{2 SPACES}1{4 SPACES}2		B%(M,DE%(M,0),J)=DE%(M,		000,001,169
	{4 SPACES}3{4 SPACES}4	EH 580	J+1):B%(M,DE%(M,4),J)=D	AE 750	DATA000,000,168,000,005
	{4 SPACES}5{4 SPACES}6		E%(M,J+5):NEXT:NEXT:RET		,069,064,008,000,000,02
	{4 SPACES}7{4 SPACES}8	FD 590	URN		1,069,080,010,170,128
	{2 SPACES}";		POKE781,14:POKE782,30:P	EB 760	DATA021,085,080,010,170
GS 270	PRINTSPC(10)"{WHT}		OKE783,0:SYS65520:PRINT		,128,005,085,064,002,17
	{7 UP} OPEN CRYPT NUMBE	PH 580	K\$"{LEFT}";:RETURN		0,000,005,085,064,002
	R "		FORN=0TO7:POKE2040+N,C:	EB 760	DATA170,000,001,085,000
DQ 280	PRINT"{HOME}{WHT}{RVS}	FD 590	NEXT:RETURN		,000,168,000,001,085,00
	{SPACE}{RED} MOVES	KF 600	1,0:PRINT"{5 DOWN}{GRN}	PR 770	DATA000,000,168,000,000
	{WHT} ":PRINT"		{RVS}";		,084,000,012,000,042,00
	{3 SPACES}"SC;K\$="?:G	HJ 605	IFSS=1THENPRINT"{RVS}	JG 780	0,002,170,160,010,170
EE 290	OSUB580:POKE204,0		{9 SPACES}BETTER LUCK N		DATA168,010,170,168,042
	GETK\$:POKE207,0:IFK\$=""		EXT TIME!{10 SPACES}";:	DG 790	,130,170,042,128,170,17
	THEN290		GOTO650		0,160,170,154,096,170
JM 300	K1=ASC(K\$)-49:IFK1>34OR	QE 620	PRINT:PRINT"{3 DOWN}		DATA170,160,170,170,160
	K1<0THEN290		{5}{RVS}E{5 SPACES}		,170,176,226,168,048,20
AA 310	POKE204,1:IFK\$="A"THENG		{YEL}{5 SPACES}{5}	CQ 800	2,168,010,042,160,000
	OSUB590		{8 SPACES}{4}{8 SPACES}		DATA170,168,010,170,170
SE 320	IFK\$="Q"THENGOTO420		{5 SPACES}{*}{OFF}		,042,162,170,170,138,04
AS 330	IFK\$="S"THENGOSUB590:GO	MC 630	PRINT"{5}{RVS}E	FP 810	2,162,168,168,168,162
	SUB720		{6 SPACES}{YEL}		DATA168,170,042,160,042
QP 340	IFK1>7THEN290		{5 SPACES}{5}{8 SPACES}		,170,128,000,002,170,00
MS 350	SC=SC+1:PRINTK\$"{LEFT}"		{4}{8 SPACES}{YEL}	BP 820	0,010,170,128,043,171
	;:I=0:IFPEEK(2040+K1)=C		{5 SPACES}{4}{6 SPACES}		DATA160,058,238,176,186
	THENPOKE2040+K1,C-1-P:G	XS 635	{*}{OFF}"		,186,184,187,087,184,18
	OTO370		POKEV+21,0:PRINT"{RVS}	SJ 830	7,087,184,185,085,184
PP 360	POKE2040+K1,C		{UP}{BLK}"BLS"UP";		DATA184,016,184,185,153
CS 370	IFB%(P,K1,I)<>-1THENGOS	DR 640	PRINTSPC(10)"{GRN}		,184,185,085,184,185,08
	UB430:I=I+1:GOTO370		{2 SPACES}CONGRATULATIO	BG 840	5,184,185,069,184,184
MR 380	WI=1:FORN=0TO7:IFPEEK(2		NS{2 SPACES}"		DATA084,184,184,220,184
	040+N)<>254-PTHENWI=0	MX 645	PRINT"YOU GAINED THE T		,176,152,056,176,236,05
RS 390	NEXT:IFWI=1THENP=P-1:CL		REASURE IN "SC-1"MOVES	FG 850	6,176,184,056,128,236
	=CL-1:IFP=-1THEN600		{SPACE}"		DATA008,128,184,008,000
MC 400	IFWI=1THENGOSUB590:POKE	JG 650	PRINT"{WHT}{RVS}		,236,000,231,000,255,00
	V+38,CL:IFSO=1THENGOSUB		{7 SPACES}PRESS ANY KEY	CS 860	0,015,255,240,255,255
	700		TO CONTINUE{8 SPACES}		DATA255,000,000,000,048
SX 410	GOTO280				,000,012,048,000,012,04
JX 420	END			SA 870	8,000,012,048,000,012
QF 430	IFPEEK(2040+B%(P,K1,I))				,012,048,000,012,048,00
	=CTHENPOKE2040+B%(P,K1,			PK 880	0,012,048,000,012,048
	I),C-1-P:RETURN				DATA000,012,048,000,012
RS 440	POKE2040+B%(P,K1,I),C:R				,048,000,012,048,000,01
	ETURN			PG 890	2,048,000,012,048,000
HM 450	SO=0:FORM=0TO2:FORN=0TO				DATA012,000,000,000,252
	7:DE%(M,N)=N:NEXT:NEXT				,000,063,231
AA 455	FORM=0TO2:FORN=0TO7:DE%				
	(M,N)=N:NEXT:NEXT				
XB 460	FORM=0TO3:FORN=1TO20:R1				



PROGRAMS

DAVID BRAY

Programmers often use commands and routines repeatedly in their source code. Since Commodore's BASIC editor and the majority of assembly language editors don't have a cut-and-paste option, you have to retype a lot of code. Well, not anymore. With *Ditto*, you can grab sections of code, partial lines, or blocks of text and then copy them elsewhere in your program.

Experiment with *Ditto*. You'll find dozens of useful applications for this versatile little program.

Getting Started

Ditto is written entirely in BASIC. Type it in using *The Automatic Proofreader*. See "Typing Aids" elsewhere in this section. Be sure to save a copy to disk when you've finished typing. When you're ready to use *Ditto*, simply load and run the program.

First, you're asked if you want to create a disk file. This option is used for customizing *Ditto*. For the time being, answer *No*, as we'll discuss customizing later. You'll then see a message that says *Editor Activated*. Now you can load and edit a program or begin to write one. *Ditto* is especially useful when writing assembly language programs. When using *Ditto*, you have the following commands at your fingertips.

- f1 Begin block define.
- f3 End block define.
- f5 Clear defined block.
- f7 Copy defined block.

When you want to copy something, move your cursor to the beginning of the block and press f1. Move your cursor to the end of the block and press f3. This defined block is then highlighted. Move the cursor to the place you want to copy the block and press f7.

Customizing the Program

To customize *Ditto*, first load the BASIC program and list the first few lines. The default highlight color is determined by the COLR variable in

line 3. The default color is black, but you can change it to any of the 64's 16 colors by supplying a new value, ranging from 0 to 15. Once you've entered a new highlight color, run the program.

You are then asked if you want to create a disk file. Answer *Yes*, and the program saves a machine language (ML) version of itself to disk with the filename you specify. The new ML version of *Ditto* can be loaded by typing LOAD "filename",8,1 and activated by typing SYS49152.

DITTO

THIS UTILITY FOR
THE 64 LETS
PROGRAMMERS
COPY PORTIONS OF
CODE QUICKLY AND
EASILY FROM ONE
PART OF A
PROGRAM TO
ANOTHER

How It Works

As *Ditto* runs, it constantly checks for keyboard input at vector 788 and 789. When the f1 and f3 keys are detected, *Ditto* memorizes the entire screen to keep the data intact.

When f7 is pressed, the block is stored in the keyboard buffer one character at a time to simulate the user actually retyping the information. This allows the Commodore editor to do the work of inserting lines when necessary. For example, if you add something to a line that contains approximately 35 characters, an extra

line is inserted to hold the additional data so it doesn't overwrite the following line.

Ditto is designed to let a programmer copy segments from one line to another. Although it will let you copy large sections of text, the outcome may not be as you had desired because when the copy takes place, the Commodore editor is unable to determine where the line boundaries are, causing some lines to wrap together. This can be avoided by copying only segments from one line to another. Since the 64's screen editor lets you move to certain lines and change the line number, there is no real purpose in copying whole lines of text to another section of a program.

When you want to deactivate *Ditto*, press Run/Stop-Restore. It stays in memory, so if you want to reactivate it, simply type SYS49152.

DITTO

```

BS 1 REM COPYRIGHT 1990 COMPUT
  E PUBLICATIONS, INTL., LT
  D. - ALL RIGHTS RESERVED
HM 2 PRINT "{CLR}{2 DOWN}READIN
  G DATA...{DOWN}"
HH 3 COLR=0:T=0
BB 10 FOR A=0TO491:READB:T=T+B
  :POKE49152+A,B:NEXT:POKE
  49544,COLR
MP 20 IF T<>70387 THEN PRINT"E
  RROR IN DATA":END
ES 30 PRINT"CREATE A DISK FILE
  [Y/N] ?"
KD 40 POKE198,0:WAIT198,1:GETA
  $
HA 50 IF A$<>"Y" THEN 101
MM 60 INPUT "{DOWN}FILENAME";A
  $
DE 70 OPEN2,8,2,"0:"+A$+"",P,W"
AQ 80 PRINT#2,CHR$(0)CHR$(192)
  ;
DJ 90 FORT=49152TO49643:PRINT#
  2,CHR$(PEEK(T));:NEXT
MB 100 CLOSE2
GM 101 SYS49152
QB 49152 DATA 120,169,51,141,2
  0,3,169,192
ME 49160 DATA 141,21,3,169,0,1
  41,230,193
MM 49168 DATA 141,233,193,141,
  234,193,88,169
XJ 49176 DATA 31,160,192,32,30
  ,171,96,17
ER 49184 DATA 69,68,73,84,79,8
  2,32,65
KB 49192 DATA 67,84,73,86,65,8

```




PROGRAMS

EX 49200	DATA 46,17,0,173,230,193,240,3	DF 49352	DATA 173,232,193,133	FE 49504	DATA 65,254,197,252
BS 49208	DATA 76,237,192,165,197,205,235,193	FQ 49360	DATA 254,169,1,141,234,193,173,233	KF 49512	DATA 144,110,208,6,165,253,197,251
KC 49216	DATA 240,19,141,235,193,201,3,240	RB 49368	DATA 193,240,3,32,92,193,76,49	PX 49520	DATA 144,102,160,0,185,0,4,153
FE 49224	DATA 45,201,4,240,76,201,5,240	JH 49376	DATA 234,173,233,193,240,14,173,234	KC 49528	DATA 0,194,185,0,5,153,0,195
AR 49232	DATA 104,201,6,240,3,76,49,234	PK 49384	DATA 193,240,9,173,134,2,141,229	FF 49536	DATA 185,0,6,153,0,196,185,0
XC 49240	DATA 173,134,2,141,229,193,173,233	XG 49392	DATA 193,32,140,193,96,160,0,177	XS 49544	DATA 7,153,0,197,200,208,229,169
PR 49248	DATA 193,240,8,173,234,193,240,3	XB 49400	DATA 251,32,49,193,141,119,2,169	QK 49552	DATA 0,141,229,193,165,253,56,229
JP 49256	DATA 32,140,193,169,0,141,233,193	FA 49408	DATA 1,133,198,165,251,197,253,208	XC 49560	DATA 251,141,227,193,165,254,229,252
AR 49264	DATA 141,234,193,76,49,234,173,233	QP 49416	DATA 11,165,252,197,254,208,5,169	MS 49568	DATA 141,228,193,165,251,183,2,165
GF 49272	DATA 193,240,27,173,234,193,240,22	EX 49424	DATA 0,141,230,193,230,251,208,2	RE 49576	DATA 252,24,105,22,133,3,238,227
CB 49280	DATA 173,134,2,141,229,193,32,140	CE 49432	DATA 230,252,76,49,234,165,209,141	KP 49584	DATA 193,208,3,238,228,193,160,0
DE 49288	DATA 193,169,1,141,230,193,169,0	DF 49440	DATA 231,193,165,210,141,232,193,173	RK 49592	DATA 173,229,193,145,2,173,227,193
EB 49296	DATA 141,233,193,141,234,193,76,49	AD 49448	DATA 231,193,24,101,211,141,231,193	BJ 49600	DATA 208,3,206,228,193,206,227,193
RG 49304	DATA 234,32,217,192,32,21,193,173	KE 49456	DATA 173,232,193,105,190,141,232,193	EF 49608	DATA 200,208,2,230,3,173,227,193
QX 49312	DATA 231,193,133,251,173,232,193,133	GE 49464	DATA 96,162,0,134,199,72,41,128	CE 49616	DATA 208,230,173,228,193,208,225,96
QS 49320	DATA 252,169,1,141,233,193,173,234	CH 49472	DATA 240,4,169,1,133,199,104,41	DJ 49624	DATA 166,251,164,252,165,253,133,251
RR 49328	DATA 193,240,3,32,92,193,76,49	XD 49480	DATA 127,201,32,176,6,24,105,64	EX 49632	DATA 165,254,133,252,134,253,132,254
HB 49336	DATA 234,32,217,192,32,21,193,173	QQ 49488	DATA 76,91,193,201,64,144,12,201	BH 49640	DATA 76,106,193,0,0,0,0,0
BG 49344	DATA 231,193,133,253,173,232,193,133	FK 49496	DATA 127,176,6,24,105,128,76,91		

R O B E R T B . C O O K

Sometimes 80 columns just aren't enough. You may want to print a spreadsheet or other document, but it won't fit on an 80-column printer. It's too wide. You could print it smaller if your printer supports condensed type, but that's not always the best answer. For times like this, you need *Right/Side*.

Right/Side is a sideways file printer for sequential files. It's designed primarily to be used with *SpeedScript* for printing word processor files and charts that are up to 255 columns wide. It's also handy for printing addresses on large manila envelopes that have to be fed vertically into narrow-carriage printers. *Right/Side* should work with all odd-numbered Commodore and compatible dot-matrix printers such as the Okidata 120 and the Star Gemini II.

Typing It In

Right/Side consists of two programs. The first program is written in BASIC. To ensure accurate entry, use *The Automatic Proofreader*. See "Typing

RIGHT/SIDE

GOT A FILE THAT'S TOO WIDE FOR YOUR 80-COLUMN PRINTER? PRINT IT SIDEWAYS WITH THIS HANDY PROGRAM FOR THE 64.

Aids" elsewhere in this section. When you've finished, be sure to save a copy to disk.

The second program is written in machine language. To enter it, you'll need to use *MLX*, our machine language entry program (see "Typing Aids"). The *MLX* prompts, and the values you should enter, are as follows:

Starting address: C000

Ending address: C157

When you've finished typing, be sure to save a copy of the program with the filename *RIGHT/SIDE.ML* before you leave *MLX*. When you're ready to use *Right/Side*, simply load and run it as you would any BASIC program.

Using the Program

When creating a sequential file for *Right/Side*, the margin for the right side of the text will be printed at what's normally the top of the paper. In *SpeedScript*, set the right margin to



PROGRAMS

your choice of widths up to 255. If you choose a number that is more than the length of the longest line, the printer will space down that number of lines. The maximum number of lines *Right/Side* will print is 80, the normal printer width. The left margin should be set to 0.

Before you can use *Right/Side*, you must first convert your original file or document to a sequential file. To do that from *SpeedScript*, press Shift-Ctrl-P, then press D to print your document to disk as a sequential file. Next, load and run *Right/Side*.

When the *Right/Side* menu appears, you must first select fl, Create *Right/Side* File, to convert the sequential file into a *Right/Side* file. Enter the name of your sequential file and then the name of the file you'll be creating. The letters *R/S* are added automatically as a prefix to indicate to the program that this is a *Right/Side* document. Press Return on a blank line to return to the main menu.

To print your file sideways, simply choose f2, Print *Right/Side* Files, and enter the name of the newly created *Right/Side* file. You don't have to include the *R/S* prefix—it's added automatically. Next, choose between normal density (draft mode) and high density (NLQ mode); then press any key to start printing. To stop printing, press and hold the space bar.

RIGHT/SIDE

```
DS 0 REM COPYRIGHT 1990 COMPUT
E PUBLICATIONS, INTL., LT
D. - ALL RIGHTS RESERVED
RP 100 GOSUB302:REM INITIALIZE
AH 102 GOSUB264:REM MAIN SCREE
N
DH 104 POKE198,0:WAIT198,1:GET
GS:G=ASC(G$)-132:IFG<10
RG>4THEN104
FK 106 ONGGOSUB114,158,206,108
:GOTO102
MR 108 POKES3280,14:POKE53281,
6:POKE53272,(PEEK(53272
)AND240)OR4
FM 110 PRINT"{7}{CLR}":END
MM 112 REM{2 SPACES}CREATE FIL
E
FB 114 PS=1:GOSUB266:PS=0
AK 116 PRINTTAB(7)"{2 DOWN}
{RVS}{RED}"#####
#####"
FF 118 PRINTTAB(7)"{RVS}'{OFF}
{GRN}CREATE {RVS}{BLK}
R{OFF}IGHT/{RVS}S{OFF}I
DE {GRN}FILE {RVS}{RED}
{BLK} "
CR 120 PRINTTAB(7)"{RVS}{RED}'
$$$$$$$$$$$$$$$$$$$$
${BLK} "
```

```
FK 122 PRINTTAB(9)"{RVS}{BLK}
{24 SPACES}"
RJ 124 POKE214,10:PRINT"{DOWN}
{2 SPACES}{RVS}{BLU}F
{OFF}ILE TO BE READ?
{GRN}"BF$;
FS 126 LN=16:GOSUB218:F1$=IN$:
IFF1$=""THENRETURN
AC 128 DE=63:GOSUB232:IFEN<>63
THEN124
EF 130 DE=0:GOSUB234:IFEN>19TH
EN124
BE 132 POKE214,13:PRINT"{DOWN}
{2 SPACES}{RVS}{BLU}F
{OFF}ILE TO BE CREATED?
{GRN}R/S."MID$(BF$,5,2
4);
GF 134 LN=12:GOSUB218:IN$="R/S
."+IN$:F2$=IN$:IFF2$="R
/S."THENRETURN
RG 136 DE=62:GOSUB232:IFF2$=F1
$THEN132
MP 138 IFDE=ENTHEN146
AH 140 PRINT"{UP}{2 SPACES}
{RVS}{RED}O{OFF}VERWRIT
E FILE? [{GRN}Y/N{RED}]
{GRN} ";:IN=1:GOSUB218
GB 142 IFIN$<>"Y"THENPRINT"
{UP}"BL$:GOTO132
DB 144 OPEN15,8,15,"S0:"+F2$:C
LOSE15
MS 146 POKE214,19:PRINTTAB(7)"
{DOWN}{PUR}{5 Q} CREATI
NG{2 SPACES}FILE {5 Q}
{HOME}"
PB 148 SA=49152:FORL=1TO2
RJ 150 OPEN8,8,8,F1$+"S,R":SY
S SA:SA=49194:CLOSE8:NE
XT:REM READ & CONVERT
JR 152 OPEN8,8,8,F2$+"S,W":SY
S49285:CLOSE8:REM WRITE
TO DISK
FA 154 RETURN
CF 156 REM PRINT FILE
JK 158 PS=1:GOSUB266:PS=0:NP=0
AH 160 PRINTTAB(7)"{2 DOWN}
{RVS}{RED}"#####
#####"
MQ 162 PRINTTAB(7)"{RVS}'{OFF}
{GRN}PRINT {RVS}{BLK}R
{OFF}IGHT/{RVS}S{OFF}ID
E {GRN}FILE {RVS}{RED}
{BLK} "
CM 164 PRINTTAB(7)"{RVS}{RED}'
$$$$$$$$$$$$$$$$$$$$
${BLK} "
SJ 166 PRINTTAB(9)"{RVS}{BLK}
{23 SPACES}"
EB 168 POKE214,10:PRINT"{DOWN}
{2 SPACES}{RVS}{BLU}F
{OFF}ILE TO BE PRINTED?
{GRN}R/S."MID$(BF$,5,2
4);
GJ 170 LN=12:GOSUB218:IN$="R/S
."+IN$:F1$=IN$:IFF1$="R
/S."THENRETURN
JF 172 DE=63:GOSUB232:IFEN<>63
THEN168
BC 174 DE=0:GOSUB234:IFEN>19TH
EN168
KF 176 POKE214,13:PRINT"{DOWN}
{2 SPACES}{RVS}{BLU}N
{OFF}ORMAL OR HIGH DENS
ITY? [{GRN}N/H{BLU}]
{GRN} ";
EH 178 IN=1:LN=1:GOSUB218:GM=8
0:IFIN$="H"THENGGM=81
JP 180 IFIN$=""THENRETURN
```

```
FG 182 OPEN15,4,15:CLOSE15:ON-
(ST=0)GOTO188:IFNP=1THE
NRETURN
GE 184 POKE214,16:PRINT"{DOWN}
{2 SPACES}{RVS}{RED}C
{OFF}ONNECT PRINTER THE
N PRESS A KEY":GOSUB258
:NP=1
BG 186 POKE198,0:WAIT198,1:GET
Q$:GOTO182
QX 188 POKE214,16:PRINT"{DOWN}
{2 SPACES}{RVS}{PUR}P
{OFF}RESS ANY KEY TO BE
GIN PRINTING ":GOSUB252
XX 190 POKE198,0:WAIT198,1
QH 192 POKE214,19:PRINT"{DOWN}
{PUR}{2 SPACES}{5 Q} PR
ESS {RVS}{RED}SPACE
{RIGHT}BAR{OFF}{PUR}TO
ABORT {5 Q}{HOME}"
XE 194 OPEN 4,4,7:PRINT#4,CHR$(
27)CHR$(GM)
RC 196 PRINT#4,CHR$(8):REM GRA
PHICS MODE
EA 198 OPEN 8,8,8,F1$+"S,R":S
YS49356:CLOSE8:CLOSE4
FA 200 OPEN 4,4,7:PRINT#4,CHR$(
15):CLOSE 4
CC 202 RETURN
QJ 204 REM DIRECTORY
QJ 206 PRINT"{CLR}{RVS}{GRN}D
{OFF}IRECTORY{BLU}"
JC 208 SYS57812"$",8:POKE43,1:
POKE44,48:POKE768,174:P
OKE769,167:SYS47003,1
MJ 210 POKE782,48:SYS65493:SYS
42291:LIST:POKE44,8:POK
E768,139:POKE769,227
DF 212 PRINT:PRINT" {RVS}{GRN}
PRESS ANY KEY TO RETUR
N {HOME}"
PP 214 POKE198,0:WAIT198,1:RET
URN
SP 216 REM INPUT
BC 218 CP=0:IN$="" :GOSUB252
GF 220 POKE204,0:POKE198,0:WAI
T198,1:GETQ$
JQ 222 IFQ$=CHR$(20)ANDCP=0THE
NCP=CP-1:IN$=LEFT$(IN$,
CP):PRINTQ$;
KF 224 IFQ$>" "ANDQ$<="Z"ANDC
P<LNTHENCP=CP+1:IN$=IN$
+Q$:PRINTQ$;
KC 226 POKE212,0:IFQ$<>CHR$(13
)THEN220
CE 228 POKE204,1:PRINT"{OFF} "
:RETURN
KG 230 REM DISK CHECK
PF 232 OPEN15,8,15,"R0:"+IN$+
=" "+IN$:CLOSE15:GOTO236
HJ 234 OPEN8,8,8,IN$+"S,R":CL
OSE8
KA 236 OPEN15,8,15:INPUT#15,EN
,EM$:CLOSE15
PA 238 IFDE=ENOREN<20THENRETUR
N
XF 240 PRINT"{2 DOWN}
{2 SPACES}{RVS}{1}D
{OFF}ISK ERROR: {BLK}"E
N;EM$:GOSUB258:POKE198,
0
BR 242 FORL=0TO1500:GETQ$:IFQ$
=" "THENNEXT
GM 244 PRINT"{UP}"BLS
CG 246 RETURN
HC 248 REM SOUNDS
XD 250 REM BING
JH 252 POKEAT,10:POKESR,73:POK
```




PROGRAMS

EWV,17:POKEHF,50:POKELL	Y"	C028:77 C0 A2 08 20 C6 FF A9 30
SJ 254 FORI=1TO333:NEXT:POKEWV	XM 294 PRINTTAB(7)"{2 DOWN}	C030:00 85 F7 A9 30 85 F8 A2 D8
,16:RETURN	{BLU}F 7{2 SPACES}{RVS}	C038:00 A0 00 84 FD 20 B7 FF 0A
AQ 256 REM BUZZ	{GRN}Q{OFF}UIT PROGRAM"	C040:D0 35 E8 20 CF FF C9 0D B5
AE 258 POKEHF,5:POKEAT,0:POKES	KX 296 FORL=1TO4:POKE214,6+L*3	C048:D0 1A E4 FC F0 09 A9 20 44
R,240:POKEWV,33	:PRINTTAB(6)"{DOWN}{5}	C050:20 6F C0 E8 4C 4A C0 A2 14
CA 260 FORI=1TO500:NEXT:POKEWV	{Z}{3 S}{P}{5 LEFT}	C058:00 E6 FD A5 FD C9 50 90 F5
,32:RETURN	{DOWN}{A}{3 RIGHT}{E}	C060:DC 4C 77 C0 20 6F C0 20 BE
SC 262 REM SCREEN	{5 LEFT}{DOWN}{R}{3 W}	C068:E1 FF D0 D1 4C 77 C0 91 65
PF 264 POKE53280,3:POKE53281,1	{H}{HOME}":NEXT	C070:F7 C8 D0 02 E6 F8 60 20 56
:POKE53272,(PEEK(53272)	SP 298 RETURN	C078:CC FF A9 08 20 C3 FF A9 CF
AND240)ORL0	RJ 300 REM INITIALIZE	C080:04 20 C3 FF 60 A2 08 20 42
AA 266 PRINT"{CYN}{CLR}{I}{T}	BF 302 IFPEEK(10240)+PEEK(4915	C088:C9 FF 20 B7 FF D0 E8 C6 4A
{I}{T}{I}{T}{I}{T}{I}	2)=222THEN322	C090:FC A5 FC 85 FE 18 A9 FF 9D
{T}{I}{T}{I}{T}{I}{T}	PH 304 IFA=0THENA=1:LOAD"RIGHT	C098:65 FC 85 F7 A9 2F 69 00 19
{I}{T}{I}{T}{I}{T}{I}	/SIDE.ML",8,1	C0A0:85 F8 A6 FD A0 00 B1 F7 38
{T}{I}{T}{I}{T}{I}{T}	JK 306 PRINT"{CLR}{2 DOWN}READ	C0A8:20 D2 FF 18 A5 F7 65 FE 47
{I}{T}{I}{T}{I}{T}{I}	ING DATA..."	C0B0:85 F7 A5 F8 69 00 85 F8 86
{T}{I}{T}{I}{T}{I}{T}	HB 308 POKE56334,0:POKE1,51	C0B8:CA D0 EB A9 D0 20 D2 FF 7A
{I}{T}{I}{T}{I}{T}{I}	HX 310 POKE781,9:POKE782,1:POK	C0C0:C6 FC F0 B3 20 E1 FF D0 97
{T}{I}{T}{I}{T}{I}{T}	E88,0:POKE89,48:POKE90,	C0C8:CC 4C 77 C0 A9 00 85 FB 13
SS 268 PRINT"{8}-----	0:POKE91,224	C0D0:85 02 A2 08 20 C6 FF 20 A6
-----	MB 312 SYS41964:POKE1,55:POKE5	C0D8:EA FF AA 20 B7 FF D0 0E 91
EE 270 POKE214,22:PRINT"{DOWN}	6334,1	C0E0:8A C9 0D F0 D0 A4 D0 99 57
{8}{40 0}";	FA 314 FORL=0TO255:POKE11776+L	C0E8:00 30 E6 FB D0 E9 A9 02 96
GS 272 PRINT"{CYN}	,PEEK(10752+L):NEXT	C0F0:85 02 A0 00 8D D0 D0 6D
{SHIFT-SPACE}{K}	QP 316 FORL=0TO255:POKE10752+L	C0F8:CC FF 88 D0 FD A2 04 20 A1
{SHIFT-SPACE}{K}	,PEEK(10240+L):NEXT	C100:C9 FF A9 00 85 FC A2 08 0B
{SHIFT-SPACE}{K}	FC 318 FORL=0TO247:POKE11528+L	C108:A4 FC B9 00 30 85 FD A9 91
{SHIFT-SPACE}{K}	,PEEK(11016+L):NEXT	C110:00 85 F7 A9 28 85 F8 18 EF
{SHIFT-SPACE}{K}	AX 320 FORL=11008TO11175:READK	C118:A5 F7 65 FD 85 F7 A5 F8 49
{SHIFT-SPACE}{K}	:POKEL,K:NEXT	C120:69 00 85 F8 CA D0 F0 A0 B4
{SHIFT-SPACE}{K}	DP 322 LF=54272:HF=54273:WV=54	C128:00 B1 F7 30 03 18 69 00 E5
{SHIFT-SPACE}{K}	276:AT=54277:SR=54278:V	C130:20 D2 FF C8 C0 08 D0 F1 BE
{SHIFT-SPACE}{K}	L=54296:POKEVL,15	C138:E6 FC A5 FC C5 FB D0 C6 79
{SHIFT-SPACE}{K}	RX 324 BL\$="{38 SPACES}"	C140:A9 0D 20 D2 FF 20 CC FF 27
{SHIFT-SPACE}{K}	XP 326 BF\$="{16 SPACES}	C148:A5 02 D0 09 A5 C5 C9 3C DD
{SHIFT-SPACE}{K}	{16 LEFT}"	C150:F0 03 4C CC C0 4C 77 C0 4A
{SHIFT-SPACE}{K}	XQ 328 RETURN	
{SHIFT-SPACE}{K}	HB 330 REM CUSTOM CHARACTERS	
{SHIFT-SPACE}{K}	SX 332 DATA 3,7,7,7,3,0,0,0,19	
{SHIFT-SPACE}{K}	2,224,224,224,192,0,0,0	
{SHIFT-SPACE}{K}	CJ 334 DATA 0,0,0,3,7,7,7,3,0,	
{SHIFT-SPACE}{K}	0,0,192,224,224,224,192	
{SHIFT-SPACE}{K}	PS 336 DATA 0,0,0,0,126,0,0,0,	
{SHIFT-SPACE}{HOME}":PO	170,170,170,170,170,170,	
KE2023,97	170,170	
QE 274 IFPSTHENRETURN	FQ 338 DATA 85,85,85,85,85,85,	
JH 276 PRINTTAB(12)"{DOWN}{3}	85,85,255,128,191,160,1	
{M}{14 E}E"	75,168,171,170	
AF 278 PRINTTAB(12)"{G}	SB 340 DATA 255,0,255,0,255,0,	
{14 SPACES}{RED}{+}	255,0,255,1,253,5,245,2	
{RVS}{BLK} "	1,213,85	
KC 280 PRINTTAB(12)"{3}{G}	CR 342 DATA 170,171,168,175,16	
{2 SPACES}{RVS}{BLK}R	0,191,128,255,0,255,0,2	
{OFF}IGHT/{RVS}S{OFF}ID	55,0,255,0,255	
E{2 SPACES}{RED}{+}	FH 344 DATA 85,213,21,245,5,25	
{RVS}{BLK} "	3,1,255,0,0,0,15,24,20,	
KE 282 PRINTTAB(12)"{3}{G}	19,19	
{14 SPACES}{RED}{+}	EE 346 DATA 0,0,0,255,0,0,255,	
{RVS}{BLK} "	0,0,0,0,240,24,56,248,2	
AQ 284 PRINTTAB(12)"{RED}{N}	48	
{14 Q}{D}{RVS}{BLK} "	AP 348 DATA 18,18,18,18,18,18,	
ED 286 PRINTTAB(13)"{RVS}	18,18,120,120,120,120,1	
{16 SPACES}"	20,120,120,120	
XQ 288 PRINTTAB(7)"{2 DOWN}	AX 350 DATA 19,19,23,31,15,0,0,	
{BLU}F 1{2 SPACES}{RVS}	0,0,0,255,255,255,255,0,	
{GRN}C{OFF}REATE {RVS}	0,0	
{BLK}R{OFF}IGHT/{RVS}S	XS 352 DATA 248,184,216,248,24	
{OFF}IDE {GRN}FILE"	0,0,0,0	
JF 290 PRINTTAB(7)"{2 DOWN}		
{BLU}F 3{2 SPACES}{RVS}		
{GRN}P{OFF}RINT {RVS}		
{BLK}R{OFF}IGHT/{RVS}S		
{OFF}IDE {GRN}FILE"		
QM 292 PRINTTAB(7)"{2 DOWN}		
{BLU}F 5{2 SPACES}{RVS}		
{GRN}D{OFF}ISK DIRECTOR		

TYPING AIDS

MLX, the machine language entry program for the 64 and 128, and *The Automatic Proofreader* are utilities that help you type in Gazette programs without making mistakes. These labor-saving utilities are on each *Gazette Disk* and printed in issues of *Gazette* through June 1990.

If you don't have access to a back issue or to one of our disks, write and we'll send you free copies of both of these handy utilities. We'll also include instructions on how to type in Gazette programs. Please enclose a self-addressed, stamped envelope.

Write to Typing Aids, COMPUTE!'s Gazette, 324 West Wendover Avenue, Greensboro, North Carolina 27408.

RIGHT/SIDE.ML

C000:A2 00 A0 00 84 FC A2 08 4C
C008:20 C6 FF 20 B7 FF D0 67 14
C010:C8 20 CF FF C9 0D D0 0A 26
C018:C4 FC 90 02 84 FC A0 00 C6
C020:A2 00 20 E1 FF D0 E4 4C 6E



PROGRAMS

M I K E S E D O R E

You live in the savage world of 2 million B.C. The earth is dominated by dinosaurs, all roaming the planet each day in search of food. Surprisingly, these huge reptiles crave one of the smallest and weakest creatures on the planet: the Neanderthal. Neanderthals are neither man nor ape, but a tasty breed of evolution caught in the middle.

You belong to a caveman tribe that dwells on a mountainside. Your people live in constant fear of being devoured by the huge carnivores. So, you've been appointed as cave sentry. You must patrol the mountain ledges and use your trusty club to knock off any dinosaurs posing a threat to your people. Green tyrannosaurs and red pterodactyls are your chief concerns.

Typing It In

Caveman is written entirely in machine language, so you must use *MLX* to type it in. After you've loaded and run *MLX*, respond to the prompts with the values below.

Starting address: \$0801

Ending address: \$1951

When you've finished typing, be sure to save the program to disk. To play, plug a joystick in port 2 and then load and run the program. At the right side of the screen, the high score, current score, lives remaining, and level number are displayed.

Playing the Game

Caveman is set on a mountainside that's divided into 28 levels, each one subdivided into eight ledges. Once you've conquered a level, you move on to a higher, more difficult one with faster dinosaurs. If you survive through the 28th level, you return to the 1st level.

Move the joystick up or down to change the level. When you're ready to begin, press the fire button. The caveman will appear in the center of a ledge. Initially, he appears in a protected state and will remain safe until you press the fire button.

The caveman is quite agile and moves around by jumping or walking off the ledges. Push the joystick forward to jump straight up. While airborne, push the stick left or right to move onto a higher ledge. Pull back on the stick to leap across small gaps. Be careful though—falling off the bottom ledge spells doom for one of the caveman's five lives.

CAVEMAN

SAVE YOUR
PREHISTORIC BUDDIES
FROM MAN-EATING
DINOSAURS IN THIS
DELIGHTFUL ARCADE
GAME FOR THE 64.
JOYSTICK REQUIRED.

To clear a level, you must knock the green tyrannosaurs from the ledge while avoiding the red pterodactyls. When you're lined up with a dinosaur, press the fire button to throw the club. If you hit him, he falls from the ledge and you score 100 points.

You must avoid the pterodactyls because they cannot be knocked down. You can use your club to momentarily stun them, or you can leap over them when they're close. You receive ten points each time you hit a pterodactyl even though you can't knock one down. When all dinosaurs have been eliminated, the caveman moves on to the next level.

Caveman

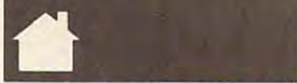
0801:1A 08 00 00 9E 32 30 37 75
0809:36 20 20 42 59 20 4D 49 93
0811:4B 45 20 53 45 44 B0 45 33
0819:00 00 00 20 26 19 4C 87 E0

0821:18 00 00 00 00 00 00 00 3D
0829:20 EC 15 4C 35 09 A9 13 20
0831:20 D2 FF A9 0D 20 05 09 9C
0839:A9 01 4C EA 08 A2 00 BD 1F
0841:71 08 2D 34 03 CD 34 03 AF
0849:D0 06 20 7B 08 4C 54 08 21
0851:20 CF 08 E8 E0 09 D0 E7 A9
0859:A9 0D 20 D2 FF 20 F5 08 27
0861:20 F5 08 0E 34 03 AD 34 1E
0869:03 C9 00 D0 7F 60 00 00 F7
0871:B2 6F DF 55 98 55 DF 6F 51
0879:B2 00 A9 11 20 D2 FF A9 1F
0881:12 20 D2 FF A9 98 20 D2 BF
0889:FF AD 35 03 C9 01 D0 08 D7
0891:A9 2F 20 D2 FF 4C 9E 08 B9
0899:A9 A9 20 D2 FF A9 91 20 04
08A1:D2 FF A0 00 B9 B3 08 20 FB
08A9:D2 FF C8 C0 1B D0 F5 4C 9C
08B1:E2 08 92 9B A4 A4 A4 11 53
08B9:9D 9D 9D 12 98 2F 2F 92 47
08C1:A9 11 9D 9D 9D 9D 9B B8 CB
08C9:B8 B8 91 91 00 00 A9 1D 20
08D1:20 D2 FF 20 D2 FF 20 D2 52
08D9:FF A9 00 8D 35 03 60 00 A3
08E1:00 A9 01 8D 35 03 60 00 CB
08E9:00 8D 34 03 A9 00 8D 35 B1
08F1:03 4C 3E 08 AD 34 03 C9 EC
08F9:80 F0 05 A9 0D 20 05 09 BD
0901:60 00 00 00 20 D2 FF A9 39
0909:1D 4C D2 FF AE AF 2F AE 58
0911:2E 31 AA 2D 05 05 05 05 F9
0919:05 02 09 09 00 00 00 00 DF
0921:00 00 00 00 00 00 00 00 33
0929:82 00 00 00 34 4C 64 7C 94
0931:94 AC C4 DC A9 06 A2 20 E9
0939:A0 5C 20 85 09 A9 0A A2 B4
0941:20 A0 66 20 85 09 A9 0E 0C
0949:A2 20 A0 70 20 85 09 A9 A2
0951:14 A2 20 A0 7A 20 85 09 8C
0959:4C 08 0A 53 43 4F 52 45 4B
0961:30 30 30 30 30 30 48 49 53 29
0969:43 52 30 30 30 30 4C A9
0971:45 56 45 4C 20 30 30 31 7C
0979:20 4C 49 56 45 53 20 20 15
0981:35 20 20 00 86 D3 85 D6 9F
0989:8C 9F 09 20 10 E5 A2 00 4A
0991:BD C8 09 20 D2 FF E8 0E 21
0999:13 D0 F5 A0 00 B9 7A 09 17
09A1:20 D2 FF C8 C0 05 D0 F5 B6
09A9:AD 9F 09 8D BB 09 BD C8 BA
09B1:09 20 D2 FF E8 E0 1F D0 8A
09B9:F5 B9 7A 09 20 D2 FF C8 2A
09C1:C0 0A D0 F5 4C FA 09 9A 2B
09C9:92 B0 60 60 60 60 60 AE 57
09D1:11 9D 9D 9D 9D 9D 9D 9D 9D
09D9:62 9F 9A 62 11 9D 9D 9D 56
09E1:9D 9D 9D 9D 62 05 9A 62 76
09E9:11 9D 9D 9D 9D 9D 9D 9D B5
09F1:ED 60 60 60 60 60 BD 00 25
09F9:00 BD C8 09 20 D2 FF E8 5A
0A01:E0 30 D0 F5 60 00 00 EA F8
0A09:20 39 15 85 D6 A9 20 85 99
0A11:D3 20 4D 0A A2 00 B9 2C 16
0A19:0A 20 D2 FF E8 C8 E0 08 C8
0A21:D0 F4 E6 D6 C0 20 90 E5 B2
0A29:4C 58 0A B0 B2 B2 B2 B2 3E
0A31:B2 AE 05 43 41 56 45 1F 2C
0A39:7B 7B B3 AB 7B 7B 7B 05 E0
0A41:4D 41 4E 1F AD B1 B1 B1 51
0A49:B1 B1 FD A3 84 02 20 10 19
0A51:E5 A4 02 60 00 00 00 A2 6A



PROGRAMS

0A59:00	BD 80 0A 9D 80 2A BD 8E	0CD9:AD FC 91 91 FB 88 10 C0 36	0F59:F8 07 AD 1B D4 29 01 F0 5B
0A61:80	0B 9D 80 2B E8 E0 00 F2	0CE1:AD FD 00 C9 01 F0 01 60 1B	0F61:09 B9 F8 07 18 69 80 99 03
0A69:D0	EF 4C 42 0D 00 00 00 F7	0CE9:A0 3E B1 FB 8D FB 91 A9 01	0F69:F8 07 4C 39 0F 84 FE A4 10
0A71:00	00 00 00 00 00 00 00 85	0CF1:00 8D FD 91 A9 01 8D 00 B2	0F71:FD A9 01 C0 00 F0 06 18 0D
0A79:00	00 00 00 00 00 00 00 8D	0CF9:00 A9 02 8D 08 0D A9 00 E3	0F79:0A 88 4C 74 0F A4 FE 39 D1
0A81:00	00 00 00 00 00 A0 00 D6	0D01:2D FB 91 8D FC 91 A9 00 3D	0F81:71 08 D0 03 4C 1D 0F 86 20
0A89:02	A8 00 02 90 00 28 94 52	0D09:2D FB 91 4A EA EA 0D 75	0F89:02 18 46 02 C0 00 D0 0A 49
0A91:00	AA A8 00 AA AA 00 2A 8F	0D11:FD 91 8D FD 91 AD FC 91 EE	0F91:A9 2F A4 02 99 F8 07 4C 10
0A99:AA	00 0A A4 00 02 69 00 69	0D19:0A EA EA EA 0D FD 91 8D 10	0F99:39 0F C0 08 D0 AD A9 AF F0
0AA1:02	5A 00 02 5A 80 02 5A A0	0D21:FD 91 0E 00 0D 0E 00 0E	0FA1:A4 02 99 F8 07 4C 39 0F 40
0AA9:A0	02 9A 20 02 AA 00 02 A0	0D29:0E 08 0D 0E 08 0D AD 08 A6	0FA9:FE 50 03 BD 50 03 C9 10 C9
0AB1:9A	00 02 52 00 00 50 00 19	0D31:0D C9 00 D0 C9 AD FD 91 E3	0FB1:D0 0D B9 F8 07 49 01 99 3B
0AB9:00	50 00 00 54 00 7B 00 7B	0D39:91 FB 88 10 AD A0 00 00 1C	0FB9:F8 07 A9 00 9D 50 03 60 DF
0ACL:00	00 00 00 00 00 A0 00 17	0D41:00 A9 2A 85 FC 69 80 85 78	0FC1:4C 65 11 EE 60 03 AD 60 3B
0AC9:02	A8 00 02 90 00 28 94 92	0D49:FB A2 00 A9 01 85 FD E0 9F	0FC9:03 C9 05 D0 0F A9 00 8D 36
0AD1:00	AA A8 00 AA AA 00 2A CF	0D51:04 F0 04 E0 05 D0 02 C6 6E	0FD1:60 03 EE 61 03 AD 61 03 69
0AD9:AA	00 0A A4 00 02 69 00 A9	0D59:FD 20 80 0C A5 FB 18 69 02	0FD9:C9 C0 F0 03 4C 15 18 A9 BE
0AE1:01	5A 00 01 6A 80 01 AA 1F	0D61:40 85 FB A5 FC 69 00 85 E9	0FE1:00 4C B9 18 A2 08 BD E2 5F
0AE9:A0	02 AA 20 02 AA 00 02 E2	0D69:FC E8 E0 08 D0 2D 75 8C	0FE9:0E CD C0 D0 F0 06 CA 10 56
0AF1:AA	00 02 69 00 01 45 00 C0	0D71:0D 4C B1 0D A2 07 BD 0D E5	0FF1:F5 4C 27 10 86 FD A2 07 7C
0AF9:01	41 40 01 51 50 2E 00 1F	0D79:09 9D F8 07 BD 15 09 9D 01	0FF9:BD 2D 09 CD 0D D0 F0 06 D3
0B01:00	00 00 00 00 00 A0 00 58	0D81:27 0D CA 10 F1 A2 0F BD B3	1001:CA 10 F5 4C 27 10 A9 01 DB
0B09:02	A8 00 02 90 00 02 94 87	0D89:1D 09 9D 00 D0 CA 10 F7 F1	1009:EA 00 F0 06 18 0A CA 4C E2
0B11:00	00 A8 00 02 AA 00 02 F8	0D91:A9 E0 8D 1C D0 A9 00 8D E6	1011:09 10 A6 FD 20 B0 18 D0 33
0B19:AA	00 02 A9 40 02 56 10 26	0D99:1D D0 8D 17 D0 8D 10 D0 47	1019:08 A9 03 8D 70 03 4C 27 30
0B21:02	55 40 02 A5 50 02 AA D2	0DA1:8D 1B D0 A9 08 8D 25 D0 8F	1021:10 EA EA 20 C5 10 20 C9 DB
0B29:00	02 AA 00 02 AA 00 02 D1	0DA9:A9 00 8D 26 D0 4C D4 15 23	1029:11 C9 03 D0 93 EE 0D D0 F4
0B31:9A	00 02 52 00 00 50 00 9A	0DB1:A9 FF 8D 15 D0 4C 2B 0E BF	1031:4C DD 0F AD 65 03 29 0F 44
0B39:00	50 00 00 54 00 7B 00 FC	0DB9:78 A9 DA 8D 14 03 A9 0D BB	1039:49 0F 29 0C C9 04 D0 08 AF
0B41:00	00 00 00 00 00 00 00 57	0DC1:8D 15 03 A9 64 8D 12 D0 31	1041:A9 01 20 75 10 4C 52 10 38
0B49:00	00 00 00 00 00 00 00 5F	0DC9:AD 11 D0 29 7F 8D 11 D0 D0	1049:C9 08 D0 05 A9 02 20 83 D3
0B51:00	00 02 A0 00 AA A8 0A B7	0DD1:A9 81 8D 1A D0 58 60 00 1D	1051:10 AD 70 03 C9 01 D0 06 1D
0B59:AA	A8 00 AA A8 00 02 A0 83	0DD9:00 AD 19 D0 8D 19 D0 29 2B	1059:CE 00 D0 4C DD 0F C9 02 83
0B61:00	00 00 00 00 00 00 00 77	0DE1:01 D0 07 AD 0D DC 58 4C 45	1061:D0 03 EE 0C D0 4C DD 0F CB
0B69:00	00 00 00 00 00 00 00 7F	0DE9:BC FE AD C5 0D 18 69 18 E7	1069:C9 02 F0 04 8D 70 03 60 E1
0B71:00	00 00 0F F0 0F FF FC 39	0DF1:C9 F4 D0 07 A9 00 8D 37 58	1071:4C BB 11 00 8D 70 03 AD AA
0B79:00	03 F0 00 00 00 65 00 39	0DF9:03 A9 34 8D C5 0D 8D 0B E7	1079:FE 07 29 2B A9 80 8D FE 19
0B81:00	00 00 00 00 00 00 00 97	0E01:D0 20 B9 0D AE 37 03 EE DC	1081:07 60 8D 70 03 AD 8E 07 C9
0B89:00	00 00 18 00 00 1C 00 59	0E09:37 03 BD 1A 0E 8D 0A D0 66	1089:29 2B 8D FE 07 60 AD 70 30
0B91:F8	3C 01 CF 78 01 FF F8 11	0E11:BD 22 0E 8D FD 07 4C BC 90	1091:03 C9 01 F0 04 C9 02 D0 F0
0B99:07	FF F8 0F F0 FC 3F C0 FD	0E19:FE 99 D1 81 33 6E CE 43 A1	1099:17 4C 4E 15 AD 62 03 C9 3A
0BAL:7F	FF FA 7F FF 80 3F F7 07	0E21:8D B1 B0 B1 31 30 B0 05	10A1:08 D0 D0 A9 00 8D 62 03 34
0BA9:00	0F FA 00 07 FC 00 03 12	0E29:31 00 20 B9 0D 4C D8 17 DF	10A9:20 09 19 49 01 8D FE 07 17
0BB1:7C	00 01 B8 00 01 DE 00 73	0E31:EE 38 03 AD 38 03 C9 0D 7C	10B1:AD 70 03 60 00 00 8D B8
0BB9:00	00 00 00 00 00 F5 00 BB	0E39:F0 03 4C 4D 0E A9 00 8D 91	10B9:61 03 AD 00 DC 8D 65 03 EB
0BC1:00	00 00 00 00 00 00 00 D7	0E41:38 03 EE 39 03 AD 39 03 EF	10C1:4C B3 12 00 18 4A 85 FB 28
0BC9:00	00 00 00 00 00 F0 00 C1	0E49:C9 0A F0 03 4C 9E 0E A9 BD	10C9:AD 65 03 29 0F 49 0F 29 F1
0BD1:F8	78 01 CF 3C 01 FF 3C C1	0E51:00 8D 39 03 42 07 BD 22 F6	10D1:03 C9 01 D0 27 A5 FB C9 A4
0BD9:07	F0 7C 0F FF 7E 3F C0 69	0E59:0E 29 8D D0 06 FE 1A 0E 52	10D9:00 F0 0F A6 FD 3C 71 08 52
0BE1:7F	FF F0 3F FF 9C 1F FF 7A	0E61:4C 67 0E DE 1A 0E BD 1A CB	10E1:D0 08 A9 05 8D 70 03 4C 72
0BE9:00	07 DC 00 00 07 EE 00 03 54	0E69:0E C9 18 F0 04 C9 FD D0 1B	10E9:F0 10 A9 04 8D 70 03 A9 D9
0BF1:EE	00 01 CC 00 01 F7 00 60	0E71:08 BD 22 0E 49 80 9D 22 CF	10F1:00 8D 72 03 8D 73 03 60 94
0BF9:00	00 00 00 00 00 F5 00 FB	0E79:0E AD 3A 03 C9 00 D0 08 77	10F9:00 00 00 00 4C 69 10 EE 31
0C01:00	00 00 00 00 0A 00 00 41	0E81:BD 22 0E 49 01 9D 22 0E 2C	1101:72 03 AE 72 03 E0 20 D0 C6
0C09:0A	88 00 02 A2 00 02 A2 24	0E89:CA 10 CB EE 3A 03 AD 3A EA	1109:08 A9 00 20 1C 12 EA EA 85
0C11:80	00 AA 20 2A AA 95 AA 92	0E91:03 C9 10 D0 05 A9 00 8D 0D	1111:EA E0 11 90 06 EE 0D D0 E2
0C19:AA	90 A0 AA 05 28 00 00 32	0E99:3A 03 4C 4D 0E EE 3B 03 97	1119:4C DD 0F 20 0D 12 4C DD E3
0C21:08	00 00 20 00 00 28 00 8F	0EA1:AD 3B 03 C9 11 D0 0F A9 F3	1121:0F C9 04 F0 DA 4C 34 10 4D
0C29:00	00 00 00 00 00 00 00 41	0EA9:00 8D 3B 03 EE 3C 03 AD DC	1129:8A 29 01 F0 F1 4C 12 11 FF
0C31:FC	00 3F FF FC FF FF FF 97	0EB1:3C 03 C9 06 F0 03 4C 2E A0	1131:EE 73 03 AE 73 03 0E 31 8D
0C39:C0	3F 00 00 00 00 67 00 50	0EB9:0E A9 00 8D 3C 03 A2 08 5B	1139:D0 08 A9 00 20 1C 12 4C DC
0C41:00	00 00 00 00 00 00 00 69	0EC1:BD 01 D0 C9 02 B0 10 4C F2	1141:DD 0F 0E 19 D0 0E AD 00 DD
0C49:00	02 00 0A A2 80 02 AA 48	0EC9:06 18 29 0F C9 09 B0 4F 28	1149:DC 29 0F 49 0F 29 0C F0 C0
0C51:20	28 AA 94 AA 2A 95 AA F5	0ED1:A8 B9 E2 0E 9D 00 D0 4C C8	1151:03 4C D5 18 E0 19 90 06 D6
0C59:AA	00 A0 A8 00 20 00 00 EF	0ED9:44 14 CA CA 10 E2 4C B7 7F	1159:EE 0D D0 4C DD 0F 20 D0 8D
0C61:08	00 00 28 00 00 00 00 F5	0EE1:0E 22 3A 52 6A 82 9A B2 3F	1161:12 4C DD 0F C9 05 F0 C8 59
0C69:00	00 00 00 00 00 00 00 81	0EE9:CA E2 A9 FF 8D 0F D4 A9 55	1169:4C 22 11 00 00 00 00 AD 0A
0C71:00	00 3F FF F0 FF FF FF F8	0EF1:80 ED 12 D4 4C 29 D8 EE 47	1171:70 03 C9 05 90 08 A9 00 0E
0C79:30	00 00 00 00 00 00 A0 4A	0EF9:3D 03 AD 3D 03 C9 20 F0 6F	1179:8D 61 03 4C 03 12 A9 00 93
0C81:3E	B1 FB 99 00 C0 88 10 62	0F01:03 4C DB 0E A9 00 8D 3D B5	1181:4C B8 10 85 02 A9 60 8D 57
0C89:F8	A0 3E B9 00 C0 88 88 46	0F09:03 AD 1B D4 4C CB 0E A0 13	1189:13 10 20 E5 0F 85 FC A9 CD
0C91:91	FB B9 00 C0 C8 C8 91 F4	0F11:07 BD 01 D0 D9 2D 09 F0 D5	1191:A6 8D 13 10 A6 FD 15 02 48
0C99:FB	88 88 88 10 ED A0 3E 23	0F19:09 88 10 F8 4C EE 12 4C FD	1199:C9 04 D0 04 CA 4C A2 11 D9
0CAL:81	FB 8D FB 91 A9 00 8D C3	0F21:15 18 84 FD A0 08 BD 00 20	11A1:E8 A5 FC 3D 71 08 F0 0D AF
0CA9:FC	91 A9 80 8D B9 0C 8D DA	0F29:D0 D9 E2 0E F0 3F 88 10 09	11A9:E0 FF F0 09 0E 08 05 FC
0CB1:BE	0C A9 01 8D C2 0C A9 AD	0F31:F8 86 02 18 46 02 A4 02 B4	11B1:A5 02 4C 3D 10 A2 19 4C 0E
0CB9:00	2D FB 91 C9 00 D0 08 AD	0F39:B9 F8 07 29 80 F0 06 DE 98	11B9:55 11 A9 06 8D 70 03 A9 3E
0CC1:A9	00 0D FC 91 8D FC 91 6E	0F41:00 D0 4C 49 0F FE 00 D0 F6	11C1:FF 8D 68 03 60 00 00 87
0CC9:4E	B9 0C 4E BE 0C 0E C2 E2	0F49:4C A9 0F 86 02 18 46 02 41	11C9:AD 70 03 C9 06 F0 03 4C 22
0CD1:0C	AD C2 0C C9 00 D0 DF 44	0F51:A4 02 B9 F8 07 29 2F 99 DD	11D1:8F 10 EE 68 03 AE 68 03 CA



PROGRAMS

11D9:E0 30 D0 06 A9 00 20 1C 9C
11E1:12 60 E0 18 B0 06 20 28 C8
11E9:12 4C F0 11 20 2D 12 AD DE
11F1:FE 07 29 80 D0 06 EE 0C 0B
11F9:D0 4C 00 12 CE 00 06 4C 4D
1201:DD 0F AD 70 03 C9 06 F0 D0
1209:BF 4C A0 13 CE 0D D0 AD 5F
1211:FE 07 29 AA 18 69 01 8D 3C
1219:FE 07 60 8D 70 03 AD FE 4D
1221:07 29 AA 8D FE 07 60 E0 F6
1229:13 90 E1 60 E0 1D 90 03 DC
1231:EE 0D D0 60 EE 80 03 AD 5D
1239:80 03 C9 03 D0 0F A9 00 DD
1241:8D 80 03 EE 81 03 AD 81 90
1249:03 C9 07 F0 03 4C 31 0E 0B
1251:A9 00 8D 81 03 20 CA 13 55
1259:C9 00 D0 29 AD 70 03 C9 0E
1261:03 B0 EA AD 00 DC 4C D3 4B
1269:12 EA A9 AD 8D 0F 07 20 FB
1271:C8 12 29 80 D0 03 20 99 18
1279:12 AD 0D D0 8D 0F D0 AD B8
1281:0C 80 8D 0E D0 AD FF 07 B6
1289:29 80 D0 06 EE 0E D0 4C 7A
1291:EB 18 CE 0E D0 4C EB 18 14
1299:AD FF 07 49 80 8D FF 07 4B
12A1:60 00 AD FE 07 85 02 29 17
12A9:AA 18 69 02 8D FE 07 A5 92
12B1:02 60 29 0F 49 0F C9 00 1F
12B9:F0 0A AD FE 07 29 03 D0 32
12C1:03 CE FE 07 4C E5 0F AD 31
12C9:FE 07 29 03 D0 D4 AD FE B8
12D1:07 60 29 10 D0 0F AD 6A 40
12D9:03 C9 00 D0 0D A9 01 8D 9D
12E1:6A 03 4C 6B 12 A9 00 8D 01
12E9:6A 03 4C 4E 12 FE 01 D0 D1
12F1:FE 01 D0 60 00 00 00 A0 96
12F9:07 98 AA E8 E0 08 D0 02 76
1301:A2 00 AD 0F D0 D9 2D 09 70
1309:D0 40 BD 1A 0E ED 08 0E 16
1311:C9 02 B0 36 20 48 18 C9 32
1319:2D D0 0C BD 1A 0E 18 69 0A
1321:05 9D 1A 0E 4C 31 13 BD 60
1329:1A 0E 38 E9 05 9D 1A 0E 66
1331:A9 00 8D 0E D0 BD 1A 0E 7E
1339:C9 F6 90 05 A9 F7 9D 1A E6
1341:0E C9 1A B0 05 A9 19 9D CD
1349:1A 0E 88 10 AC AD 0E D0 1B
1351:6A 0C 43 15 A0 07 98 AA 71
1359:E8 E0 08 D0 02 A2 00 B9 8E
1361:2D 09 38 ED 0D D0 18 69 8B
1369:02 C9 06 B0 11 BD 1A 0E 90
1371:38 ED 0C D0 18 69 08 C9 FD
1379:10 B0 03 20 BD 13 88 10 91
1381:D5 4C F8 12 A9 00 A2 CB 44
1389:9D 34 03 CA E0 FF D0 F8 3A
1391:A9 A6 8D 13 10 4C EB 0E B0
1399:A9 07 8D 70 03 60 00 C9 72
13A1:07 F0 03 4C 31 11 EE 0D 65
13A9:D0 EE 0D D0 4C DD 0F AD 48
13B1:0D D0 C9 FD B0 03 4C 70 46
13B9:11 4C E8 13 EE 6D 03 D0 CD
13C1:FB FE 6E 03 D0 F6 4C 99 34
13C9:13 AD 70 03 C9 07 D0 81 B0
13D1:4C 82 13 AD 0C D0 C9 FA 2E
13D9:B0 07 C9 0B 90 03 4C B0 DD
13E1:13 20 99 13 4C 80 13 AD F6
13E9:93 07 C9 30 D0 03 4C BB BE
13F1:17 CE 93 07 20 D3 14 AD 60
13F9:5D 03 8D 00 C0 A9 00 A2 90
1401:BB 9D 34 03 CA E0 FF D0 CF
1409:F8 AD 00 C0 8D 5D 03 4C 59
1411:31 0E 8D 61 03 AD 5F 03 AD
1419:C9 00 D0 24 AD 2D D0 49 8F
1421:05 8D 2D D0 20 2D 99 13 AD 1D
1429:00 DC 29 10 D0 0F A9 09 CD
1431:8D 2D D0 A9 01 8D 5F 03 20
1439:A9 00 20 5E 15 4C 0F C4
1441:4C D4 13 BD F0 03 C9 01 2B
1449:D0 4A 20 FC 18 4C DB 0E F7
1451:BD 01 D0 38 ED 0F D0 18 9B

1459:69 02 C9 05 B0 16 BD 00 99
1461:D0 38 ED 0E D0 18 69 08 60
1469:C9 11 B0 08 A9 01 9D F0 CE
1471:03 4C 3C 18 20 F4 18 4C 88
1479:C4 14 A9 00 9D F0 03 4C 41
1481:F8 0E BD 01 D0 18 69 02 2D
1489:9D 01 D0 60 A9 00 8D 0E 57
1491:D0 4C 4B 14 AD 0E D0 C9 F0
1499:00 F0 D9 4C 51 14 BD 00 54
14A1:D0 38 ED 0C D0 18 69 08 80
14A9:C9 11 B0 0E BD 01 D0 38 BD
14B1:ED 0D D0 18 69 03 C9 08 A2
14B9:90 03 4C 4E 14 20 BD 13 09
14C1:4C 4E 14 AD 5F 03 F0 85 6F
14C9:AD 70 03 C9 07 D0 CF 4C 49
14D1:4E 14 A9 82 8D 0C D0 EA AC
14D9:E0 20 D4 15 A9 AA 8D FE 7D
14E1:07 60 00 00 EE FF 03 4C 6F
14E9:8D 14 BD F0 03 D0 03 4C 52
14F1:7B 14 BD F1 03 D0 1A AD F0
14F9:FF 03 C9 09 90 F1 A9 01 4D
1501:9D F1 03 A0 08 B9 F1 03 EE
1509:F0 07 88 88 10 F7 4C E0 E0
1511:18 4C DB 0E AD 1B D4 4C 86
1519:CB 0E EE 7D 03 D0 FB EE A4
1521:7E 03 D0 F6 A9 00 A2 0F 76
1529:9D F0 03 CA 10 FA 20 A1 B9
1531:15 4C F5 13 60 00 00 00 EB
1539:A9 06 8D 86 02 A0 00 A9 10
1541:02 60 AD 5F 03 F0 03 4C 5E
1549:55 13 4C F8 12 AD FE 07 48
1551:29 04 D0 06 EE 62 03 4C DE
1559:9D 10 4C B1 10 8D 70 03 95
1561:A9 01 8D 6A 03 6D 20 7E 51
1569:18 18 0A 18 0A 18 0A 18 45
1571:6D 5D 03 8D 7A 15 A2 08 58
1579:BD 00 16 9D 71 08 CA 10 70
1581:F7 A9 13 20 D2 FF A0 17 65
1589:A9 D0 D2 D2 FF A9 20 A2 86
1591:1F 20 D2 FF CA 10 FA 88 C2
1599:10 EE 20 2F 08 4C 78 18 F8
15A1:EE 5D 03 AD 5D 03 C9 1C 7C
15A9:D0 12 A9 00 8D 5D 03 A9 87
15B1:30 8D A3 06 A9 31 8D A4 FD
15B9:06 4C CF 15 EE A4 06 AD 09
15C1:A4 06 C9 3A D0 08 A9 30 C6
15C9:8D A4 06 EE A3 06 20 67 70
15D1:15 60 00 A9 02 A0 01 AA 78
15D9:2D 75 08 D0 07 8A 18 0A A2
15E1:C8 4C D8 15 B9 2D 09 8D 12
15E9:0D D0 60 20 67 15 A9 00 BF
15F1:8D 15 D0 60 00 00 00 00 48
15F9:00 00 00 00 00 00 00 B2 D6
1601:6F DF 55 98 55 DF 0F B2 CC
1609:5D FA D5 AB 76 AB D5 FA 21
1611:5D B1 FE 5E AC A0 AC 5E 5D
1619:FB B1 55 AA 55 AA 55 AA AF
1621:55 AA 55 18 34 66 C3 89 1B
1629:C3 66 34 18 F1 E2 C5 8B 0B
1631:17 AF CA D5 6A 05 8B 57 61
1639:AF DE FC F8 70 20 58 9A 73
1641:B5 AB 54 AB B5 9A 58 DF 21
1649:BA 60 75 98 4D 46 43 81 AE
1651:AA 55 55 66 55 99 55 55 4A
1659:AA D8 FA B2 69 D4 B2 00 DE
1661:B0 D0 A4 00 55 AA 02 AA 73
1669:55 00 AA D3 BA 2D FB 55 AA
1671:FB 2D BA D3 10 28 54 AA EF
1679:55 AA 54 28 10 AA 55 AA 88
1681:88 22 88 AA 55 AA 44 AD C1
1689:1B 52 60 A5 16 81 E8 11 D7
1691:BB FF EE 44 EE FF BB 11 BD
1699:54 AF 4A F0 E0 07 4A AF FC
16A1:54 9D 2A 70 DA 80 DA 70 AA
16A9:2A 9D B4 4A E4 0A F3 0A CE
16B1:E4 4A B4 17 42 AB 1D 54 3A
16B9:1D AB 42 17 AA FF 55 00 19
16C1:AA 00 55 FF AA B9 DD BD A3
16C9:6A D3 94 EE 7E 6A AA BF 54
16D1:7F D5 88 D5 7F BF AA FF F1

16D9:E7 DB BD 76 BD DB E7 FF 3D
16E1:3C 42 BD D7 EB D7 BD 42 6E
16E9:3C A0 D0 EA F5 18 AF 57 EB
16F1:0B 05 46 B5 B9 E6 18 E6 89
16F9:B9 B5 46 00 00 00 00 A9 E2
1701:99 85 FD A9 05 85 FE A2 96
1709:0A E6 FD A9 20 A0 00 91 65
1711:FD A0 50 91 FD A0 28 BD 0A
1719:23 17 20 43 17 10 EA 4C F1
1721:30 17 20 12 05 16 0F 20 11
1729:05 D0 01 07 20 00 00 A9 58
1731:01 8D 5B 03 60 00 00 8D 6F
1739:61 03 AD 5B 03 D0 13 4C 12
1741:13 14 91 FD A9 D9 85 FE CE
1749:A9 01 91 FD A9 05 85 FE 0A
1751:CA 60 AD 00 DC 29 10 D0 2F
1759:15 20 67 15 A9 35 8D 93 29
1761:07 A9 30 A2 04 9D 61 05 0C
1769:CA 10 FA 4C CB 17 AD 00 3B
1771:DC 29 0F 49 0F C9 01 D0 41
1779:09 20 A1 15 20 00 17 4C 35
1781:DD 0F C9 02 D0 F9 CE 5D 25
1789:03 AD 50 03 C9 FF D0 15 85
1791:A9 32 8D A3 06 A9 38 8D E1
1799:A4 06 A9 1B 8D 5D 03 20 8A
17A1:67 15 4C 7D 17 CE A4 06 6D
17A9:AD A4 06 C9 2F D0 F0 A9 7D
17B1:39 8D A4 06 CE A3 06 4C 32
17B9:A0 17 20 00 17 A2 0F A9 0D
17C1:00 9D F0 03 CA 10 FA 4C 7E
17C9:C4 0F A2 09 A9 00 9D 00 8B
17D1:D0 CA 10 FA 4C F5 13 AD DA
17D9:00 70 C9 01 D0 03 4C 5D
17E1:0F A9 01 8D 00 70 A9 00 10
17E9:8D 0D D0 4C 7D 17 A9 00 9C
17F1:8D 00 70 4C 85 13 86 02 41
17F9:18 46 02 A4 02 A9 00 99 BA
1801:27 D0 4C E5 14 86 02 18 B7
1809:46 02 A4 02 A9 05 99 27 4D
1811:D0 4C EB 14 CE 53 03 10 55
1819:FB AD 5D 03 49 1F 18 4A CF
1821:8D 53 03 4C 35 12 FE 61 63
1829:05 BD 61 05 C9 3A D0 08 A8
1831:A9 30 9D 61 05 CA 10 EE 6E
1839:4C 55 18 86 04 A2 02 20 1F
1841:27 18 A6 04 4C F7 17 86 17
1849:04 A2 03 20 27 18 A6 04 71
1851:AD FF 07 60 A2 08 3B BD 82
1859:01 06 FD 61 05 30 09 E9 46
1861:01 10 13 E8 E0 05 D0 EE B2
1869:A2 04 BD 61 05 9D 01 06 60
1871:9D 6B 09 CA 10 F4 60 A9 D7
1879:FF 8D 15 D0 60 A9 00 8D F3
1881:15 D0 AD 5D 03 60 A2 18 E2
1889:BD 95 18 9D 00 D4 CA 10 D3
1891:F7 4C EF 17 00 00 00 00 40
1899:11 00 E1 00 00 00 00 81 10
18A1:00 E1 00 00 00 00 00 0A F2
18A9:00 00 00 00 0F 00 00 A0 F2
18B1:00 8C 01 D4 3D 71 08 60 92
18B9:AD 5F 03 F0 12 AD 70 03 33
18C1:C9 03 90 0B 20 1D 19 49 4B
18C9:FF 18 4A EA 8D 01 D4 A9 BB
18D1:00 4C 38 17 A0 00 8C 01 AC
18D9:D4 8C 01 D4 4C 84 11 A9 45
18E1:00 8D 01 D4 8D 08 D4 4C 65
18E9:1B 15 AD 0E D0 8D 08 D4 25
18F1:4C 4E 12 A0 00 8D 08 D4 43
18F9:4C 10 0F AC 0E D0 C0 00 36
1901:D0 03 8C 08 D4 4C 83 14 61
1909:A9 81 8D 04 D4 AD 4E 03 5F
1911:49 02 8D 4E 03 8D 01 D4 24
1919:AD FE 07 60 A9 11 8D 04 79
1921:D4 AD 0D 60 A9 00 8D 0F
1929:20 D0 8D 21 D0 A9 93 20 D7
1931:D2 FF A9 08 20 D2 FF A9 78
1939:8E 20 D2 0F 08 A9 48 8D 18 B6
1941:03 A9 19 8D 19 03 60 A2 93
1949:00 8E 18 D4 9A 4C 1C 08 B5



PROGRAMS

HUBERT CROSS AND LIGIA LATINO

Tank Shootout begins with two hostile armies lined up like pieces on a chess board. Instead of an open space between these opposing forces, the field is filled with numerous obstacles that block the armies' field of fire. Across the bottom of the screen, a row of missiles waits.

You command one army, and your opponent controls the other. The object of the game is to maneuver your forces around the obstacles and capture the enemy command post.

Each player starts with a force of ten tanks, 11 soldiers, five rockets, and a command post that resembles a castle. Once you start a soldier or tank moving, it will continue until it strikes an obstacle. If an enemy piece is within range, your soldier or tank will automatically fire at it.

Getting Started

Tank Shootout is written entirely in machine language. Enter the program with *MLX*, our machine language entry program. See "Typing Aids" elsewhere in this section. When *MLX* prompts you, respond with the values given below.

Starting address: 0801

Ending address: 1A80

When you've finished typing in the data, be sure to save a copy to disk before exiting *MLX*.

Although it's written in machine language, *Tank Shootout* loads and runs like a BASIC program. When you and a friend are ready to play, plug a joystick into each port; then load the program and type RUN.

Into Battle

Before starting the game, the two players should agree on whether to play until one of the command posts is destroyed or until one of the players loses all of his or her pieces.

To play, use the joystick to move your flickering rectangle until it covers the piece you want to move. Press the fire button and hold it down while you move the stick in the direction

you want the piece to move. Hold it in that direction and then release the fire button. The piece will move on its own until it strikes an obstacle or reaches an edge of the screen. To halt a piece, put the rectangle on it and press and release the fire button.

Please note that pieces will shoot automatically when they meet an enemy. (If a piece does not shoot when you think it should, look closer; you will find that the enemy piece is out-

TANK SHOOTOUT

ORDER SOLDIERS,
TANKS, AND MISSILES
INTO BATTLE IN THIS
TWO-PLAYER GAME
FOR THE 64.
JOYSTICKS REQUIRED.

side your piece's field of fire.)

The tanks can move and shoot in all four directions. The soldiers can move in all four directions but can shoot only left and right. (Soldiers are still dangerous because they fire much faster than the tanks.)

The rockets work in a different manner. Once you've ordered them to move with the joystick, they will only move up. Once launched, they will destroy any piece in their path, friend or foe. They continue until they hit a wall and explode or until they hit the top of the screen. Be extra careful with the two missiles that are located beneath your army. Generally, you should use those two as a defensive

measure and only as a last resort.

Soldiers will take 5 hits before dying. Tanks will take 15, and rockets, 25. The command post is the weakest piece. It will explode with the first hit. If you are playing to destroy command posts, plan carefully how to defend yours. You can start a fresh game at any time by tapping the Restore key. ☐

Tank Shootout

```
0801:0A 08 00 00 9E 32 30 36 6C
0809:31 00 00 00 A9 17 8D 18 8E
0811:03 A9 08 8D 19 03 78 A2 4F
0819:F0 9A A9 31 8D 14 03 A9 FC
0821:EA 8D 15 03 AD 0D DC 58 90
0829:20 4E 13 A9 0A 85 F9 A9 DD
0831:0F 8D 18 D4 A9 01 8D 25 0E
0839:D0 A2 08 A9 07 9D 26 D0 C1
0841:CA 10 FA A2 35 8A 9D 7A CD
0849:1A CA 10 F9 A2 1F A9 00 9F
0851:9D 00 78 CA 10 FA A2 00 9D
0859:BD 00 19 9D B0 1A BD 00 AE
0861:1A 9D B0 1B E8 D0 F1 20 3C
0869:44 E5 20 80 11 A2 35 20 BE
0871:25 0C CA 10 FA A9 DF 8D 3D
0879:F8 07 8D F9 07 A9 03 8D 8B
0881:15 D0 A2 01 BD D8 0D 9D BD
0889:C3 02 A9 17 9D C5 02 20 CA
0891:FA 0B CA 10 EF A9 03 8D F5
0899:15 D0 A0 0F B9 C7 08 99 04
08A1:F0 3B 88 10 F7 A9 7E 8D FB
08A9:00 3D 8D 07 3D A9 AA 8D 9E
08B1:CB 02 A9 28 8D CC 02 78 FB
08B9:A9 D7 8D 14 03 A9 08 8D E3
08C1:15 03 58 4C C4 08 00 00 33
08C9:00 00 FF FF 00 00 3C 3C 8E
08D1:3C 3C 3C 3C 3C 3C CE BE 89
08D9:02 D0 17 A9 04 8D BE 02 72
08E1:A0 01 B9 CB 02 BE 3E 3F 3D
08E9:99 3E 3F 8A 99 CB 02 88 6F
08F1:10 F0 A2 02 DE E2 02 D0 12
08F9:17 BD DA 02 9D E2 02 DE DB
0901:EA 02 D0 09 AD 15 D0 3D 54
0909:E2 D0 8D 15 D0 FE F8 07 4E
0911:E8 E0 08 D0 DF EE BD 02 16
0919:AD BD 02 4A B0 5A A2 1F A9
0921:BD 00 78 F0 50 BD 20 78 62
0929:8D 59 09 8D 52 09 18 7D B6
0931:60 78 9D 20 78 8D 74 09 33
0939:8D 61 09 BD 40 78 8D 5A C0
0941:09 8D 53 09 7D 80 78 9D B2
0949:40 78 8D 75 09 8D 62 09 EE
0951:2C FF FF 30 05 A9 20 8D 19
0959:FF FF DE 00 78 F0 16 2C 27
0961:FF FF 10 0B A9 00 9D 00 AE
0969:78 20 5A 10 4C 76 09 BD 18
0971:A0 78 8D FF FF CA 10 A8 97
0979:A2 00 A0 00 2C A0 1B B9 C4
0981:F4 1B F0 1B B9 7A 1A 38 C8
0989:E9 01 99 7A 1A 10 10 B9 96
0991:CA 18 F0 03 A9 0A 2C A9 D4
0999:18 99 7A 1A 20 30 0E C8 B5
09A1:C0 30 F0 07 C0 15 D0 D7 82
09A9:E8 D0 D2 C6 F9 F0 03 4C 11
```




PROGRAMS

09B1:3D	0A A9 0A 85 F9 A2 35 49	0C19:90	03 1D DA 0D 8D 10 D0 1B	0E81:6D	C9 02 9D 20 78 B9 41 78
09B9:BD	F4 1B F0 79 BD 88 1B 49	0C21:60	A9 80 2C A9 00 8D BC CB	0E89:10	69 00 9D 40 78 AC D6 F5
09C1:30	74 85 05 BD CA 18 0A 5D	0C29:02	86 06 BD B0 1A 85 02 7B	0E91:02	BD 20 78 18 79 91 0F 82
09C9:0A	65 05 A8 BD E6 1A 85 A8	0C31:BD	E6 1A 85 03 BD CA 18 3A	0E99:9D	20 78 8D C9 0E 8D CA DA
09D1:F8	BD 1C 1B 18 79 EA 00 8E	0C39:F0	15 C9 01 F0 08 C9 02 95	0EA1:0E	BD 40 78 79 95 0F 9D A1
09D9:9D	1C 1B BD B0 1A 79 F6 D8	0C41:F0	1C A9 00 F0 21 BD BE 54	0EA9:40	78 8D CA 0E 8D C5 0E A2
09E1:0D	85 F7 DD B0 1A D0 17 5F	0C49:1B	D0 1C A9 01 D0 18 BD 7A	0EB1:B9	99 0F 9D 60 78 B9 9D C2
09E9:BD	52 1B 18 79 02 0E 9D E1	0C51:88	1B 4A A9 03 90 02 69 20	0EB9:0F	9D 80 78 B9 A1 0F 9D 6C
09F1:52	1B BD E6 1A 79 0E 0E FA	0C59:03	7D BE 1B D0 09 A0 0B D2	0EC1:A0	78 2C FF FF 30 03 8D 26
09F9:85	F8 DD E6 1A F0 37 A5 DF	0C61:BD	88 1B 30 01 C8 98 85 C2	0EC9:FF	FF 98 F0 0F 88 F0 15 99
0A01:F7	C9 26 B0 31 A5 F8 C9 2F	0C69:04	A6 03 BD F0 EC 18 65 3A	0ED1:88	F0 18 A9 17 38 ED CA 4C
0A09:18	90 16 BD CA 18 C9 02 38	0C71:02	85 FB 85 FD BD 41 10 3D	0ED9:02	4C EF 0E A9 25 38 ED 29
0A11:D0	24 A9 00 9D F4 1B 8E 51	0C79:69	00 85 FC 69 D4 85 FE 6F	0EE1:C9	02 4C EF 0E AD CA 02 AA
0A19:1F	0A 20 42 12 A2 00 F0 73	0C81:A6	06 A9 02 E0 1B 90 02 5A	0EE9:4C	0F 0E AD C9 02 9D 00 56
0A21:15	20 C9 0C D0 10 20 22 EA	0C89:A9	05 A6 04 1D CB 0D 8D 8C	0EF1:78	A4 A5 BE CA 18 BD 8F D5
0A29:0C	A5 F7 9D B0 1A A5 F8 B7	0C91:B2	0C 8A 0A 85 05 0A 65 B1	0EF9:0F	20 1A 0E 8A 0A 0A 6D C7
0A31:9D	E6 1A 20 25 0C CA 30 32	0C99:05	AA A0 00 2C A0 28 BD E4	0F01:D6	02 A8 20 61 0F 0B 53 1E
0A39:03	4C B9 09 A2 01 BD 27 65	0CA1:7D	0D 2C BC 02 30 05 C9 B1	0F09:B9	6F 0F 9D F8 07 A4 A5 6E
0A41:D0	29 0E D0 04 BD 2D 0E 56	0CA9:20	F0 10 2C A9 20 91 FB BF	0F11:B9	CA 18 F0 03 A9 03 2C C1
0A49:2C	A9 01 9D 27 D0 BD 00 CF	0CB1:A9	00 2C BC 02 10 02 A9 ED	0F19:A9	0A 9D DA 02 9D E2 02 3E
0A51:DC	29 10 F0 03 4C E9 0A 56	0CB9:01	91 FD E8 C8 C0 03 F0 45	0F21:A9	01 9D EA 02 A9 02 00 8D
0A59:BC	E5 0B B9 F4 1B F0 10 48	0CC1:DC	C0 2B D0 DA A6 06 60 C8	0F29:77	0F A9 01 20 7A 0F A9 BE
0A61:B9	B0 1A DD C3 02 D0 08 6F	0CC9:BD	CA 18 C9 02 F0 3E BC 20	0F31:00	20 7D 0F 8A 0A A8 47 3
0A69:B9	E6 1A DD C5 02 F0 09 56	0CD1:E6	1A B9 F0 EC 38 E9 29 6F	0F39:CA	02 0A 0A 0A 69 2E 99 0B
0A71:C8	98 DD E6 0B D0 E4 F0 90	0CD9:85	FB B9 41 10 E9 00 85 AC	0F41:01	D0 AD C9 02 0A 0A 69 1C
0A79:7E	8E C2 0A 8C 8C 0A 20 34	0CE1:FC	A5 FB 18 7D B0 1A 85 4B	0F49:06	0A 99 D0 A0 10 20 69
0A81:E9	0B B9 CB 0A 9D F8 07 01	0CE9:F6	90 02 E6 FC BD 88 1B DD	0F51:80	0F AD 15 D0 1D DA 0D 38
0A89:84	05 A2 00 BD CA 18 0A C8	0CF1:0A	0A A8 B9 6D 0D 85 05 F1	0F59:8D	15 D0 A6 A4 A4 A5 60 6B
0A91:0A	7D CA 18 65 05 A8 B9 2F	0CF9:C8	B9 6D 0D 8C 08 0D A8 AA	0F61:A2	07 AD 15 D0 0A 90 05 6E
0A99:D5	0A 0A 08 A4 05 B9 D0 5A	0D01:B1	FB C9 20 D0 06 A0 00 0E	0F69:CA	0E 01 D0 F8 60 D3 D4 18
0AA1:0A	28 B0 1C 85 05 BD CA 23	0D09:C6	05 D0 EC 60 8E 5B 0D B1	0F71:D5	D6 D1 00 D2 00 A0 1C 5E
0AA9:18	C9 02 08 A5 05 28 00 5F	0D11:BD	B0 1A 8D CD 02 BD E6 2B	0F79:2C	A0 1D 2C A0 17 4A B9 EB
0AB1:0C	DD 88 1B F0 07 48 A9 E3	0D19:1A	8D CE 02 CE CE 02 A9 FC	0F81:00	D0 3D E2 D0 90 03 1D 77
0AB9:04	20 1A 0E 68 9D 88 1B E1	0D21:03	8D CF 02 AE CE 02 AC 9B	0F89:DA	0D 99 00 D0 60 05 02 9F
0AC1:A2	00 A9 8D 9D BF 02 4C A0	0D29:CD	02 2F 10 B1 FB C9 AA	0F91:03	D9 FF 51 00 FF FF 00 BC
0AC9:DB	0B DE DD DC DB DA 80 D4	0D31:20	F0 1D 10 23 B1 FD 29 41	0F99:01	D8 FF 28 00 FF FF 00 F0
0AD1:01	03 02 00 40 00 00 00 69	0D39:07	C9 01 F0 20 8E D5 02 61	0FA1:7E	7F 7E 7F 98 DD E5 0B B9
0AD9:00	40 40 40 00 00 80 40 4B	0D41:8C	D4 02 20 09 12 30 08 12	0FA9:90	08 DD E6 0B 00 03 A9 07
0AE1:80	80 80 80 80 80 80 80 85	0D49:A9	00 9D F4 1B 20 42 12 2B	0FB1:80	60 B9 CA 18 60 AC C9 71
0AE9:1E	BF 02 90 0A A9 DF 9D 9A	0D51:EE	CD 02 CE CF 02 D0 CC 78	0FB9:02	C8 AE CA 02 CA 30 10 39
0AF1:F8	07 A9 14 9D C1 02 BD 70	0D59:08	A2 00 28 60 AE 5B 0D 24	0FC1:20	2F 10 B1 FB 10 F6 B1 9E
0AF9:C1	02 F0 05 DE C1 02 D0 B0	0D61:A9	00 9D F4 1B 20 42 12 43	0FC9:FD	29 07 CD 07 02 F0 4E E5
0B01:C6	20 E9 0B F0 C1 A9 05 57	0D69:AE	5B D0 60 02 2C 54 00 C2	0FD1:AE	CA 02 E8 E8 E0 19 B0 76
0B09:9D	C1 02 88 F0 6A 88 F0 5A	0D71:03	01 02 03 02 28 50 00 0F	0FD9:4E	20 2F 10 B1 FB 10 F4 A0
0B11:2B	88 F0 2B A9 80 8D C7 E1	0D79:03	79 7A 7B FA FE FB FF 46	0FE1:B1	FD 29 07 CD 07 02 F0 B0 B0
0B19:02	BC E5 0B B9 F4 1B F0 95	0D81:FD	FC E3 E1 F8 E2 E0 DF 69	0FE9:3B	D0 3C AE CA 02 20 2F 1A
0B21:12	B9 B0 1A DD C3 02 90 F8	0D89:F8	DD FB DE DC DA 20 E4 78	0FF1:10	AC C9 02 88 30 0D B1 6D
0B29:0A	F0 08 CD C7 02 BD 03 09	0D91:F8	F7 F6 F5 20 F9 20 F7 85	0FF9:FB	10 F9 B1 FD 29 07 CD E4
0B31:8D	C7 02 C8 98 DD E6 0B E1	0D99:F6	F5 F8 E4 20 F7 F6 F5 DE	1001:DF	02 F0 1D AC C9 02 C8 D6
0B39:D0	E2 F0 32 4C AA 0B A9 7E	0DA1:20	EF 20 F7 F4 F5 20 E4 EF	1009:C8	C8 C0 26 B0 19 B1 FB 83
0B41:00	8D C7 F0 02 C8 02 BC 24	0DA9:F8	F3 F1 F2 20 F9 20 F3 C7	1011:10	F7 B1 FD 29 07 CD 07 26
0B49:E5	0B B9 F4 1B F0 13 B9 18	0DB1:F1	F2 F8 E4 20 F3 F1 F2 96	1019:02	F0 0C A9 00 2C A9 01 8F
0B51:B0	1A DD C3 02 B0 0B CD F4	0DB9:20	EF 20 F3 F0 F2 20 EE A5	1021:2C	A9 02 2C A9 03 2C A9 20
0B59:C7	02 90 06 8D C7 02 6E 44	0DC1:20	EB ED EC EA E8 E6 E9 26	1029:80	A8 8D D6 02 60 BD F0 D0
0B61:C8	02 C8 98 DD E6 0B D0 70	0DC9:E7	E5 08 00 00 00 00 00 52	1031:EC	85 F8 85 FD BD 41 10 7A
0B69:E1	2C C8 02 10 6C AD C7 0A	0DD1:00	00 00 00 00 08 08 01 1D	1039:85	FC 18 69 D4 85 FE 60 10
0B71:02	30 67 9D C3 02 10 5F 01	0DD9:24	01 02 04 08 10 20 40 C7	1041:04	04 04 04 04 04 04 05 62
0B79:A9	00 8D C7 02 8D C8 02 6C	0DE1:80	FE FD FB F7 EF DF BF 7A	1049:05	05 05 05 05 06 06 06 70
0B81:BC	E5 0B B9 F4 1B F0 13 75	0DE9:7F	30 00 D0 00 20 00 E0 3E	1051:06	06 06 06 07 07 07 07 80
0B89:B9	E6 1A DD C5 02 B0 0B F9	0DF1:00	00 00 00 00 00 00 FF 0C	1059:07	86 A4 A2 18 AD 61 09 A0
0B91:CD	C7 02 90 06 8D C7 02 C1	0DF9:00	00 00 FF 00 00 00 00 14	1061:DD	F0 EC AD 62 09 FD 41 99
0B99:6E	C8 02 C8 98 DD E6 0B FA	0E01:00	00 D0 00 30 00 E0 00 7A	1069:10	B0 06 CA 10 EF A6 A4 5D
0BA1:D0	E1 2C C8 02 10 33 30 91	0E09:20	00 00 00 00 00 FF 00 35	1071:60	8E D5 02 AD 61 09 38 7D
0BA9:26	A9 80 8D C7 02 BC E5 CB	0E11:00	00 FF 00 00 00 FF 00 2D	1079:FD	F0 EC 8D D4 02 20 09 43
0BB1:0B	B9 F4 1B F0 12 B9 E6 36	0E19:00	8D 34 03 AD 1B 0E 18 5D	1081:12	30 57 DE F4 1B F0 55 DA
0BB9:1A	DD C5 02 90 0A F0 08 C3	0E21:69	07 C9 49 D0 02 A9 34 97	1089:20	61 0F B0 8D A9 07 9D 35
0BC1:CD	C7 02 B0 03 8D C7 02 DB	0E29:8D	1B E9 60 02 05 02 86 49	1091:F8	07 A9 06 9D DA 02 9D 7F
0BC9:C8	98 DD E6 0B D0 E2 AD A3	0E31:A4	84 A5 B9 B0 1A 8D C9 E3	1099:E2	02 A9 01 9D EA 02 A9 37
0BD1:C7	02 30 06 9D C5 02 20 DA	0E39:02	B9 E6 1A 8D CA 02 BD 9C	10A1:01	20 77 0F A9 00 20 7A 32
0BD9:FA	0B CA 10 03 4C A3 12 2D	0E41:2E	0E 8D D7 02 B9 CA 18 CB	10A9:0F	A9 00 20 7D 0F 8A 0A 05
0BE1:4C	3F 0A 1B 00 1B 36 1B D4	0E49:C9	01 F0 07 B0 26 20 B7 2F	10B1:A8	AD D5 02 0A 0A 0A 69 62
0BE9:BD	00 DC 0A 0A 0A 0A A0 48	0E51:0F	10 05 20 EC 0F 30 1C BB	10B9:2E	99 01 D0 AD D4 02 0A 53
0BF1:04	0A 90 03 88 D0 FA 98 E4	0E59:A4	A5 D9 BE 1B 99 BE 1B 30	10C1:0A	69 07 0A 99 D0 0A 00 D1
0BF9:60	8A 0A A8 BD C5 02 BA C1	0E61:F0	08 A6 A5 20 22 0C 20 E8	10C9:10	20 80 0F AD 15 D0 1D 7B
0C01:0A	0A 69 32 99 01 D0 BD 21	0E69:25	0C A2 20 BD 00 78 F0 41	10D1:DA	0D 8D 15 D0 A9 01 20 F4
0C09:C3	02 0A 0A 69 0C 0A 99 8E	0E71:08	CA 10 F8 A6 A4 A4 A5 8C	10D9:1A	0E 4C E1 10 20 42 12 C9
0C11:00	D0 AD 10 D0 3D E2 0D 62	0E79:60	AC CA 02 B9 F0 EC 18 ED	10E1:A6	A4 60 00 0C 18 24 30 C3



PROGRAMS

GAZETTE COMMODORE 64/128

10E9:3C	48	54	60	6C	78	84	00	19	1351:5E	13	A9	34	8D	61	13	A0	9C	15B9:00	00	00	00	00	00	00	00	00	00	E3
10F1:00	00	00	01	00	00	00	00	22	1359:04	A2	00	BD	0A	15	9D	40	26	15C1:00	00	00	00	00	00	00	00	00	00	EB
10F9:00	00	00	00	00	00	00	00	1B	1361:34	E8	D0	F7	EE	5E	13	EE	7B	15C9:00	00	18	00	00	3C	00	00	00	E7	
1101:00	00	00	00	00	00	00	00	24	1369:61	13	88	D0	EE	78	A9	33	03	15D1:7E	00	00	7E	00	00	66	00	00	EF	
1109:00	00	00	00	00	00	00	00	2C	1371:85	01	A9	D0	8D	83	13	A9	27	15D9:00	24	00	00	00	00	00	00	00	0D	
1111:00	00	00	01	00	00	00	00	43	1379:38	8D	86	13	A0	08	A2	00	8B	15E1:00	00	00	00	00	00	00	00	00	0C	
1119:00	00	00	01	00	00	00	00	4B	1381:BD	00	D0	9D	00	38	E8	D0	FD	15E9:00	00	00	00	00	00	00	00	00	14	
1121:00	00	00	01	00	00	00	00	53	1389:F7	EE	83	13	EE	86	13	88	49	15F1:00	00	00	00	00	00	00	00	00	1C	
1129:00	00	00	00	00	00	00	00	4B	1391:D0	EE	A9	37	85	01	58	BD	23	15F9:00	00	00	00	00	00	00	00	00	24	
1131:00	00	00	01	00	00	00	00	64	1399:D2	13	9D	C8	3E	BD	D2	14	D0	1601:00	00	00	00	00	00	00	00	00	2D	
1139:00	00	00	00	00	00	00	00	5C	13A1:9D	C8	3F	E8	D0	F1	A9	D8	B9	1609:00	00	00	00	00	00	00	00	00	35	
1141:00	00	00	01	01	01	01	01	82	13A9:8D	16	D0	A9	01	8D	86	02	1E	1611:00	00	00	00	00	00	00	00	00	3D	
1149:00	00	00	00	00	00	00	00	6B	13B1:8D	20	D0	A9	00	8D	21	D0	A4	1619:00	00	00	00	00	00	38	00	B5		
1151:00	00	00	01	00	00	00	00	83	13B9:A9	01	8D	22	D0	A9	07	8D	91	1621:00	FC	00	00	FC	00	00	38	AC		
1159:00	00	00	00	00	00	00	00	7C	13C1:23	D0	A9	1D	8D	18	D0	A9	CC	1629:00	00	00	00	00	00	00	00	55		
1161:00	00	00	00	00	00	00	00	84	13C9:0E	20	16	E7	A9	08	4C	16	5C	1631:00	00	00	00	00	00	00	00	5D		
1169:00	00	00	00	00	00	00	00	8C	13D1:E7	FF	FF	FF	FF	AA	AA	AA	96	1639:00	00	00	00	00	00	00	00	65		
1171:01	01	01	01	00	00	00	00	84	13D9:28	40	C0	C0	80	C0	DC	FE	08	1641:00	00	00	00	00	00	00	00	6D		
1179:00	00	00	00	00	00	00	00	45	13E1:E7	00	80	80	80	80	FC	C0	46	1649:00	00	00	00	00	00	00	00	75		
1181:08	8D	FE	11	A9	04	8D	FF	74	13E9:80	77	1F	7F	FB	73	71	F1	8C	1651:00	00	00	00	00	00	00	00	7D		
1189:11	A2	00	A9	0C	85	05	BC	B4	13F1:F0	0F	1F	1F	0E	EF	FF	ED	48	1659:00	00	00	00	00	00	00	00	85		
1191:E4	10	B9	F0	10	20	F6	11	70	13F9:7F	00	00	00	00	00	00	00	DF	1661:00	00	00	00	00	00	00	00	8D		
1199:C8	C6	05	D0	F5	88	A9	0C	B0	1401:03	00	00	00	00	00	00	00	AA	1669:00	00	00	00	00	00	00	00	95		
11A1:85	05	B9	F0	10	20	F6	11	0E	1409:C0	EE	F8	FE	DF	CE	8E	8F	43	1671:00	00	00	00	00	00	00	3C	D9		
11A9:88	C6	05	D0	F5	AD	FE	11	E4	1411:0F	F0	F8	F8	70	F7	FF	B7	C6	1679:00	00	7E	00	00	7E	00	00	6F		
11B1:18	69	10	8D	FE	11	90	03	75	1419:FE	02	03	03	01	03	3B	7F	DB	1681:3C	00	3C	00	00	18	00	00	BF		
11B9:EE	FF	11	E8	E0	0C	D0	CB	A8	1421:E7	00	01	01	01	3F	3D	03	EF	1689:00	00	00	00	00	00	00	00	B5		
11C1:CA	A9	0C	85	05	BC	E4	10	82	1429:01	00	00	7E	FF	7E	7E	FF	B0	1691:00	00	00	00	00	00	00	00	BD		
11C9:B9	F0	10	20	F6	11	C8	C6	5D	1431:7E	50	50	50	50	00	00	00	3E	1699:00	00	00	00	CC	00	00	3F	6E		
11D1:05	D0	F5	88	A9	0C	85	05	7F	1439:00	00	00	00	00	00	00	40	A1	16A1:C0	00	F7	00	00	15	C0	00	03		
11D9:B9	F0	10	20	F6	11	88	C6	EC	1441:50	FF	FF	FF	FF	AA	AA	28	B9	16A9:D5	00	00	37	C0	00	FF	00	3A		
11E1:05	D0	F5	AD	FE	11	18	69	2A	1449:00	3C	FF	FF	FF	FF	FF	FF	80	16B1:00	CF	C0	00	0C	00	00	00	4A		
11E9:10	8D	FE	11	90	03	EE	FF	D6	1451:FF	05	05	05	05	00	00	00	D3	16B9:00	00	00	00	00	00	00	00	E5		
11F1:11	CA	10	CD	60	B9	F0	10	0A	1459:00	00	00	00	00	00	00	01	82	16C1:00	00	00	00	00	00	00	00	ED		
11F9:4A	6A	09	20	8D	FF	FF	EE	5A	1461:05	00	00	01	05	05	05	05	67	16C9:00	00	00	00	00	00	00	00	F5		
1201:FE	11	D0	03	EE	FF	11	60	2D	1469:05	00	00	40	50	50	50	50	CC	16D1:00	00	00	CC	00	03	30	30	67		
1209:AE	D5	02	CA	8E	3B	12	AE	1B	1471:50	FF	FF	FF	FF	FF	FF	FF	C1	16D9:0C	FF	C0	00	F7	7C	33	1F	5B		
1211:04	02	CA	8E	2B	12	CA	8E	28	1479:FF	00	00	00	00	3C	FF	FF	92	16E1:F0	00	F5	CC	03	D7	70	33	9D		
1219:2F	12	A2	35	BD	F4	1B	F0	E9	1481:FF	00	00	00	7E	DB	BD	FF	88	16E9:7D	CC	03	F7	70	0C	DF	30	8B		
1221:1C	BD	B0	1A	CD	D4	02	F0	31	1489:3C	BD	BD	BD	DB	E7	FF	81	D2	16F1:00	FF	C0	0C	04	30	00	3F	17		
1229:08	C9	00	F0	04	C9	00	D0	EA	1491:81	FF	FF	FF	FF	FF	FF	81	FB	16F9:10	03	00	C0	00	CC	00	00	2E		
1231:0C	BD	E6	1A	CD	D5	02	F0	04	1499:81	F0	F0	F0	F0	F0	F0	F0	3A	1701:00	00	00	00	00	00	00	00	2F		
1239:07	C9	00	F0	03	CA	10	DC	A2	14A1:90	0F	09	0F	09	0F	09	0F	8D	1709:00	00	00	00	0C	33	00	00	64		
1241:60	BD	B0	1A	8D	D4	02	BD	3E	14A9:09	BD	BD	BD	18	C3	C3	00	B0	1711:0C	C0	30	40	0C	03	0C	40	44		
1249:E6	1A	8D	D5	02	D0	22	C0	57	14B1:FF	FF	C7	BB	3B	86	C8	18	B3	1719:0C	33	30	C0	C4	0C	30	30	13		
1251:20	61	0F	B0	48	A9	D7	9D	01	14B9:F0	FF	FF	FF	3C	C3	C0	D2		1721:C1	04	CC	33	03	01	CC	30	E3		
1259:F8	07	A9	0A	9D	DA	02	9D	8B	14C1:FF	FF	E3	DD	DC	61	31	18	2B	1729:D3	03	03	30	C4	0C	00	30	EB		
1261:E2	02	A9	03	9D	EA	02	A9	23	14C9:0F	00	00	00	00	FF	FF	00	79	1731:30	C3	00	4C	1C	03	00	33	C8		
1269:01	20	77	0F	A9	01	20	7A	02	14D1:00	18	3C	3C	7E	FF	DB	E7	DE	1739:10	03	0C	CC	00	00	00	33	B1		
1271:0F	A9	01	20	7D	0F	8A	0A	F0	14D9:3E	00	00	0F	0F	0F	0F	00	E4	1741:0C	C0	00	40	30	00	30	00	8B		
1279:A8	AD	D5	02	0A	0A	0A	09	2E	14E1:00	00	00	00	00	00	00	00	0A	1749:00	00	00	00	00	00	00	00	77		
1281:25	99	01	D0	AD	D4	02	0A	9A	14E9:00	22	22	AA	A8	A8	A8	A8	6B	1751:00	00	00	00	00	00	00	00	7F		
1289:0A	69	05	0A	99	00	D0	A0	5D	14F1:A8	BE	BE	AA	AA	82	82	82	87	1759:00	06	00	00	07	80	07	FF	51		
1291:10	20	80	0F	AD	15	D0	1D	47	14F9:82	00	00	FC	FC	FC	FC	3C	45	1761:E0	07	FF	E0	00	07	80	00	EC		
1299:DA	00	8D	15	D0	A9	03	4C	F0	1501:3C	88	88	AA	2A	2A	2A	2A	9F	1769:06	00	00	00	00	00	00	00	9A		
12A1:1A	0E	A2	14	BD	46	03	9D	96	1509:2A	00	00	00	00	00	00	00	48	1771:00	00	00	00	00	00	00	00	9F		
12A9:00	D4	CA	10	F7	A2	0E	BC	80	1511:00	00	00	00	00	00	00	00	3B	1779:00	00	00	00	00	00	00	00	A7		
12B1:34	03	F0	3F	88	98	0A	0A	87	1519:00	00	02	00	00	05	18	00	C7	1781:00	00	00	00	00	00	00	00	AF		
12B9:0A	A8	A9	00	9D	34	03	9D	A3	1521:1A	16	00	3E	0E	00	3D	18	C4	1789:FF	00	00	00	00	00	00	00	B7		
12C1:05	D4	9D	06	D4	BD	4A	03	E6	1529:00	1E	00	00	05	00	00	02	05	1791:00	00	00	00	00	00	00	00	BF		



AUTO PROOFREADER

P H I L I P I . N E L S O N

```

1821:00 00 18 00 00 18 00 00 B4
1829:18 00 00 18 00 00 18 00 17
1831:00 18 00 00 00 00 00 00 67
1839:00 00 00 00 00 00 00 00 69
1841:00 00 00 00 00 00 00 00 71
1849:00 00 00 00 00 00 00 00 79
1851:00 00 00 00 00 00 00 00 81
1859:00 FF 00 00 FF 00 00 FF 89
1861:00 00 FF 00 00 FF 00 00 91
1869:FF 00 00 00 00 00 00 00 99
1871:00 00 00 00 00 00 00 00 A1
1879:00 00 00 00 00 00 00 00 A9
1881:00 00 00 00 00 00 00 00 B1
1889:FF FF FF FF C0 00 03 C0 86
1891:00 03 C0 00 03 C0 00 03 B8
1899:C0 00 03 C0 00 03 C0 00 24
18A1:03 C0 00 03 C0 00 03 C0 80
18A9:00 03 C0 00 03 C0 00 03 D0
18B1:C0 00 03 C0 00 03 FF FF BA
18B9:FF 00 00 00 00 00 00 00 E9
18C1:00 00 00 00 00 00 00 00 F1
18C9:FF 00 00 00 00 00 00 00 F9
18D1:00 00 00 01 01 01 01 01 21
18D9:01 01 01 01 01 01 02 02 0D
18E1:02 02 02 03 00 00 00 00 04
18E9:00 00 00 00 00 00 01 01 1D
18F1:01 01 01 01 01 01 01 01 22
18F9:01 02 02 02 02 02 03 00 A9
1901:00 00 00 00 00 00 00 00 33
1909:00 04 04 04 04 04 04 04 39
1911:04 04 04 04 01 05 09 0D 42
1919:11 00 25 25 25 25 25 25 F7
1921:25 25 25 25 21 21 21 21 17
1929:21 21 21 21 21 21 21 14 4E
1931:18 1C 20 24 25 00 02 04 ED
1939:06 08 0C 0E 10 12 14 00 C3
1941:02 04 06 08 0A 0C 0E 10 63
1949:12 14 17 17 17 17 17 0A 2B
1951:00 02 04 06 08 0C 0E 10 81
1959:12 14 00 02 04 06 08 0A 0C
1961:0C 0E 10 12 14 17 17 17 82
1969:17 17 0A 80 80 80 80 80 BD
1971:80 80 80 80 80 80 80 80 A3
1979:80 80 80 80 80 80 80 80 AB
1981:80 80 80 80 80 80 80 80 B3
1989:80 80 80 80 80 80 80 80 BB
1991:80 80 80 80 80 80 80 80 C3
1999:80 80 80 80 80 80 80 80 CB
19A1:80 80 80 80 80 80 80 80 D3
19A9:80 80 80 80 80 80 80 80 DB
19B1:80 80 80 80 80 80 80 80 E3
19B9:80 80 80 80 80 80 80 80 EB
19C1:80 80 80 80 80 80 80 80 F3
19C9:80 80 80 80 80 80 80 80 FB
19D1:80 80 80 80 80 80 80 80 04
19D9:80 80 80 80 80 80 80 80 0C
19E1:80 80 80 80 80 80 80 80 14
19E9:80 80 80 80 81 81 81 81 2B
19F1:81 80 82 82 82 82 82 82 23
19F9:82 82 82 82 82 82 82 82 2C
1A01:82 82 82 82 82 82 82 81 34
1A09:81 81 81 81 80 00 00 00 AA
1A11:00 00 00 00 00 00 00 00 45
1A19:00 00 00 00 00 00 00 00 4D
1A21:00 00 01 01 01 01 01 00 93
1A29:02 02 02 02 02 02 02 02 5D
1A31:02 02 02 02 02 02 02 02 65
1A39:02 02 02 02 02 01 01 01 66
1A41:01 01 00 0F 0F 0F 0F 0F 09
1A49:0F 0F 0F 0F 0F 05 05 05 37
1A51:05 05 05 05 05 05 05 05 85
1A59:19 19 19 19 19 0F 0F 0F 0F
1A61:0F 0F 0F 0F 0F 0F 0F 0F 95
1A69:05 05 05 05 05 05 05 05 9D
1A71:05 05 19 19 19 19 19 19 14
1A79:01 00 00 00 00 00 00 00 2E

```

The Automatic Proofreader helps you type in program listings for the 128 and 64 and prevents nearly every kind of typing mistake.

Type in the Proofreader exactly as listed. Because the program can't check itself, type carefully to avoid mistakes. Don't omit any lines, even if they contain unusual commands. After you've finished, save a copy before running it.

Next, type RUN and press Return. When the program displays the message *Proofreader Active*, you're ready to type in a BASIC program.

Every time you finish typing a line and press Return, the Proofreader displays a two-letter checksum in the upper left corner of the screen. Compare this result with the two-letter checksum printed to the left of the line in the program listing. If the letters match, it's almost certain the line was typed correctly. If not, check for your mistake and correct the line.

The Proofreader ignores spaces not enclosed in quotation marks, so you can omit or add spaces between keywords and still see a matching checksum. However, spaces inside quotes are significant, so the program pays attention to them.

The Proofreader does not accept keyword abbreviations (for example, ? instead of PRINT). If you use abbreviations, you can check the line later by LISTING it, moving the cursor back to the line, and pressing Return.

If you're using the Proofreader on the 128, do not perform any GRAPHIC commands while the Proofreader is active. When you perform a command like GRAPHIC 1, the computer moves everything at the start of BASIC program space—including the Proofreader—to another memory area, causing it to crash. The same thing happens if you run any program with a GRAPHIC command while the Proofreader is in memory.

Though the Proofreader doesn't interfere with other BASIC operations, it's a good idea to disable it before running another program. The simplest way to disable it is to turn the computer off then on. A gentler method is to SYS to the computer's built-in reset routine (65341 for the 128, 64738 for the 64). These reset routines erase any program in memory, so be

sure to save the program you're typing in before entering the SYS command.

When using the Proofreader with another utility, disable both programs before running a BASIC program.

The Automatic Proofreader

```

10 VE=PEEK(772)+256*PEEK(773):
LO=43:HI=44:PRINT"{CLR}
{WHT}AUTOMATIC PROOFREADER
{SPACE}FOR ";
20 IF VE=42364 THEN PRINT "64"
30 IF VE=17165 THEN LO=45:HI=4
6:GRAPHIC CLR:PRINT"128"
40 SA=(PEEK(LO)+256*PEEK(HI))+
6:FOR J=SA TO SA+166:READ B
:POKE J,B:CH=CH+B:NEXT
50 IF CH<>20570 THEN PRINT "*E
RROR* CHECK TYPING IN DATA
{SPACE}STATEMENTS":END
60 FOR J=1 TO 5:READ RF,LF,HF:
RS=SA+RF:HB=INT(RS/256):LB=
RS-(256*HB)
70 CH=CH+RF+LF+HF:POKE SA+LF,L
B:POKE SA+HF,HB:NEXT
80 IF CH<>22054 THEN PRINT "*E
RROR* RELOAD PROGRAM AND CH
ECK FINAL LINE":END
90 IF VE=17165 THEN POKE SA+14
,22:POKE SA+18,23:POKESA+29
,224:POKESA+139,224
100 POKE SA+149,PEEK(772):POKE
SA+150,PEEK(773):PRINT"
{CLR}PROOFREADER ACTIVE"
110 SYS SA:POKE HI,PEEK(HI)+1:
POKE (PEEK(LO)+256*PEEK(HI)
)-1,0:NEW
120 DATA120,169,73,141,4,3,169
,3,141,5,3,88,96,165,20,133
,167
130 DATA165,21,133,168,169,0,1
41,0,255,162,31,181,199,157
,227
140 DATA3,202,16,248,169,19,32
,210,255,169,18,32,210,255,
160
150 DATA0,132,180,132,176,136,
230,180,200,185,0,2,240,46,
201
160 DATA34,208,8,72,165,176,73
,255,133,176,104,72,201,32,
208
170 DATA7,165,176,208,3,104,20
8,226,104,166,180,24,165,16
7
180 DATA121,0,2,133,167,165,16
8,105,0,133,168,202,208,239
,240
190 DATA202,165,167,69,168,72,
41,15,168,185,211,3,32,210,
255
200 DATA104,74,74,74,74,168,18
5,211,3,32,210,255,162,31,1
89
210 DATA227,3,149,199,202,16,2
48,169,146,32,210,255,76,86
,137
220 DATA65,66,67,68,69,70,71,7
2,74,75,77,80,81,82,83,88
230 DATA 13,2,7,167,31,32,151,
116,117,151,128,129,167,136
,137

```




HOW TO TYPE IN

Each month, Gazette publishes programs for the Commodore 128 and 64. Each program is clearly marked by title and version. Be sure to type in the correct version for your machine. All 64 programs run on the 128 in 64 mode. Be sure to read the instructions in the corresponding article. This can save time and eliminate any questions which might arise after you begin typing.

We regularly publish two programs designed to make typing easier: *The Automatic Proofreader*, for BASIC programs, and *MLX*, for entering machine language programs.

When entering a BASIC program, be especially careful with DATA statements, as they are extremely sensitive to errors. A mistyped number in a DATA statement can cause your machine to "lock up" (you'll have no control over the computer). If this happens, the only recourse is to turn your computer off and then on, erasing what was in memory. This could cause you to lose valuable data, so be sure to *save a program before you run it*. If your computer crashes, you can always reload the program and look for the error.

Special Characters

Most of the programs listed in each issue contain special control characters. To facilitate typing in any programs from Gazette, use the following listing conventions.

The most common type of control characters in our listings appear as words within braces: {DOWN} means to press the cursor-down key; {5 Spaces} means to press the space bar five times.

To indicate that a key should be shifted (hold down the Shift key while pressing another key), the character is underlined. For example, A means hold down the Shift key and press A. You may see strange characters on your screen, but that's to be expected. If you find a number followed by an underlined key enclosed in braces (for example, {8 A}), type the key as many times as indicated (in our example, enter eight shifted A's).

If a key is enclosed in special brackets, [A], hold down the Commodore key (at the lower left corner of the keyboard) and press the indicated character.

Rarely, you'll see a single letter of the alphabet enclosed in braces. This

can be entered on the Commodore 64 by pressing the Ctrl key while typing the letter in braces. For example, {A} means to press Ctrl-A.

The Quote Mode

Although you can move the cursor around the screen with the Crsr keys, often a programmer will want to move the cursor under program control. This is seen in examples such as {LEFT} and {HOME} in the program listings. The only way the computer can tell the difference between direct and programmed cursor control is the *quote mode*.

Once you press the quote key, you're in quote mode. This mode can be confusing if you mistype a character and cursor left to change it. You'll see a graphics symbol for cursor left. In this case, you can use the Del key to back up and edit the line. Type another quotation mark and you're out of quote mode. If things really get confusing, you can exit quote mode simply by pressing Return. Then cursor up to the mistyped line and fix it. If the mistake involves cursor movement, however, you must press the quote key to reenter quote mode. □

When You Read:	Press:	See:
{CLR}	SHIFT CLR/HOME	
{HOME}	CLR/HOME	
{UP}	SHIFT ↑ CRSR ↓	
{DOWN}	↑ CRSR ↓	
{LEFT}	SHIFT ← CRSR →	
{RIGHT}	← CRSR →	
{RVS}	CTRL 9	
{OFF}	CTRL 0	
{BLK}	CTRL 1	
{WHT}	CTRL 2	
{RED}	CTRL 3	
{CYN}	CTRL 4	

When You Read:	Press:	See:
{PUR}	CTRL 5	
{GRN}	CTRL 6	
{BLU}	CTRL 7	
{YEL}	CTRL 8	
{F1}	f1	
{F2}	SHIFT f1	
{F3}	f3	
{F4}	SHIFT f3	
{F5}	f5	
{F6}	SHIFT f5	
{F7}	f7	
{F8}	SHIFT f7	

When You Read:	Press:	See:
←		
↑	SHIFT ↑	
For Commodore 64 Only		
[1]	COMMODORE 1	
[2]	COMMODORE 2	
[3]	COMMODORE 3	
[4]	COMMODORE 4	
[5]	COMMODORE 5	
[6]	COMMODORE 6	
[7]	COMMODORE 7	
[8]	COMMODORE 8	



REVIEWS

GET TOTAL CONTROL • RENDER IN 3-D •
CAST MAGIC SPELLS • KEEP YOUR APPOINTMENTS

TOTAL WORD

Sharp, professional-looking documents are every professional's goal. Clients expect it. You should deliver it. To meet these high expectations and achieve just the right shine, word processing manufacturers are including more desktop publishing features, such as multiple typefaces, the ability to integrate graphics with text, and support for laser printers. *Total Word*, from the makers of *Volkswriter*, blends word processing and desktop publishing into one impressive package.

Total Word has many of the features of the best word processors, including mail merge, a spelling checker, a thesaurus, word counting, math functions, automatic hyphenation, macros, and so on. Unlike other word processors, however, *Total Word* has graphics and formatting capabilities that may well win you over if you're really interested in a polished, professional look for your documents.

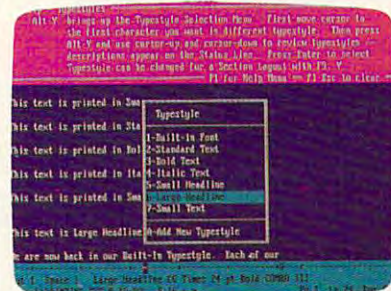
Powerful formatting features are available through *Total Word's* easy-to-use style sheets, which simplify document layout. You select a paragraph or a blank line and type F9. The section layouts menu lets you change line spacing, margins, tabs, columns, and other options. If you need a previously saved section layout, you select it from this menu also.

All of the different section layouts can be scrolled through and then used, edited, or copied. The program ties style sheets to the documents by filename extension so the same style sheet can be used with other documents. If, for example, you create a style sheet for a proposal in the file BILL.PRO, you can use the same style sheet when you write another proposal simply by using the same extension. Call your new proposal TOM.PRO, and you're in business.

Now you can concentrate on the content of this winning proposal rather than on its format.

Like macros in other word processors, *Total Word's* macros speed you right along. However, this program offers a distinct advantage: simplicity. Anyone can use its macros. Anyone can appreciate their power.

The only graphics *Total Word* can use in its documents are those captured from the screen with the *Snapshot* program provided in the package. Using the graphics menu, you can insert, reduce, enlarge, lighten, darken, or reverse images.



Choose from a variety of typefaces.

Before you print, you have the option to view the page with *Total Word's* preview function. The page is displayed on the screen as it would appear when printed. Although it's too rough a display to proof more than the general layout, it is useful for checking margins, headers, and columns. There's also a zoom feature to give you a closer look at the text and layout. You can move around the page in the zoom view, but no editing is possible. Since graphics are not displayed in the editing mode, the preview function is useful for the placement of graphics.

When you're ready to print your document, all of your printer's capabilities can be used. *Total Word* supports a large number of printers

including the HP LaserJet family and PostScript laser printers. If you have the standard Hewlett-Packard soft fonts or cartridge fonts, *Total Word* has the drivers to support them. Soft fonts from programs such as Bit-stream Fontware and Digi-Fonts or the standard PostScript fonts can also be used. The program uses only a limited range of point sizes even in PostScript, but it is an adequate number for most word processing needs.

Although *Total Word* is marketed as a word processor with desktop publishing power, its real strength is scientific and technical word processing. With an extremely large extended character set, you have the capability to use complex mathematical formulas and organic chemistry symbols. However, you do need a laser printer to print these characters.

Total Word offers nine alternate keyboard layouts that let you take advantage of the extended characters. Using simple keystroke combinations, you select an alternate keyboard from the menu that corresponds to the character set you wish to use. A display appears at the top of the screen with the alternate characters mapped to each key on the keyboard. You then type the necessary characters or switch to another alternate keyboard to insert an entirely different set of characters. Choose from keyboards with special symbols for business, the Greek alphabet, math symbols, and many others.

An impressive feature of *Total Word* is its manual. Written with the beginner in mind, the first section of the manual includes the basics of computer word processing. The second section uses specific sample files such as a business letter or a newsletter to explain advanced commands. The final section is for reference. Advanced users can locate information quickly since the manual is well indexed. After you've gleaned the basics from the manual, an onscreen tutorial

allows you to practice many of the major features of *Total Word*.

A major weakness of *Total Word* is the absence of mouse support. When it comes to editing text, moving blocks of text, or just moving the cursor to other parts of the document, a mouse is much faster than the keyboard. Even with its powerful capabilities, *Total Word* just doesn't feel quite right without mouse support in the rapidly growing world of graphical user interfaces and pull-down menus.

All in all, *Total Word* is a worthy competitor in the arena of high-powered word processing. If you have to write math equations or use scientific notation, *Total Word* may, in fact, be your best choice.

THOMAS J. MORRIS

Ease of Use	★★★
Documentation	★★★★★
Features	★★★★★
Innovation	★★★

IBM PC and compatibles; DOS 2.0 or higher (DOS 3.0 or higher recommended); 410K of RAM (after loading DOS) minimum; EGA, MCGA, VGA, or Hercules Graphics Plus with RamFont adapter; PostScript, LaserJet, or compatible printer (to print extended character set); one floppy drive and a hard disk with 2MB of available disk space—\$495
Upgrade for registered *Volkswriter* users—\$149

VOLKSWRITER
One Lower Ragsdale Dr.
Building 2, Suite 100
Monterey, CA 93940
(408) 373-4718

HEAT WAVE

The flag drops. Your engine comes to life. All 1300 horsepower of racing machine screams across the starting line, kicking up a monster rooster tail of water. This is the world of superboat racing.

In *Heat Wave*, you try to capture the crown of superboat racing, the title US-1. Race a season and see how your points stack up against the other racers of the circuit.

Six preset courses provide plenty of high-speed challenge, and you can create up to ten different custom courses.



Try to handle the power of a superboat.

Select your boat from one of four different types. I chose a catamaran because it performs best in calm water and reaches speeds of 100 mph.

As a rookie to the racing world, I had to register myself and my boat before I could race. And I made good use of the practice sessions, which are set up just like the real race but don't affect your season standing. After choosing a course, you race the other four computer-controlled competitors.

The graphics are superb, and you control the degree of detail. The greater the detail, the slower the game speed. Although I didn't find the game speed to be a problem, occasionally the game didn't respond to my keystrokes. This was quite irritating at the starting flag.

Qualifying isn't easy, either. Running full speed to the first buoy of the race and then turning 180 degrees to race full speed back to the starting line turns out to be quite a challenge.

At first it's hard enough just keeping track of where you are on the course and where you're going. But once you've developed a little proficiency in basic boat handling, you'll start to notice the impressive array of engine instruments and equipment on board. Pay attention to this equipment to avoid running aground, overheating, overrevving, or running out of fuel.

Winning in superboat racing is more than just being the first to cross the finish line. During the course of a race, you can accumulate time penalties, which are added to your finishing time. Missing a buoy or having to repair your boat during the race adds minutes to your time.

Heat Wave is a game of excitement and challenge that may give even Don Johnson a run for his mon-

ey. With some skill and a little luck, you might make it to the winner's circle.

THOMAS J. MORRIS

Playability	★★★★
Documentation	★★★★
Originality	★★★★
Graphics	★★★★★

IBM PC and compatibles with 384K; CGA, EGA, Hercules MGA, VGA, or Tandy 16-color; 3 1/2-inch disks available—\$39.95

ACCOLADE
550 S. Winchester Blvd.
Suite 200
San Jose, CA 95128
(408) 296-8400

PACKARD BELL 9500 DESKTOP LASER PRINTER

The PB9500 passed, with flying colors, a pretty stringent test: It performed beautifully for two editors whose printing needs are intense and ongoing. We threw everything at this printer: daily memos, article drafts, long proposals and reports (complete with charts), and even a book manuscript or two. The printer threw back, with the unflappable precision of a machine doing what it's designed to do, crisply reproduced pages with nary a smudge and only the rarest of paper jams.

The printer is well equipped for its price (which should be substantially below retail list in the stores through which Packard Bell markets its products). Resident fonts include four Courier styles as well as Portrait and Landscape line printer modes. Additional fonts can be added, although the add-on slots are optional. The printer's standard emulation is Hewlett-Packard Laserjet II; you can add other emulations by way of optional cartridges. The machine comes with 1.5 megabytes of memory, and you can upgrade to either 2.5 or 4.5 megabytes. Packard Bell has done a good job of assembling an attractive array of features at a competitive price.

continued on page 92

Just a handful of reasons to shop at The Software Labs

PRINTING

TYPESETTER PC (139) NEW! Great single-page desktop publishing program. Mix graphics, text, fonts. Requires 512K, 9-pin Epson/IBM compatible graphics printer.

MPM-PRINT (136) NEW! Print all IBM characters displayed on your screen. Requires Epson/compatible dot-matrix printer.

FORM DESIGNER (112) Easy, powerful program creates professional quality forms on any printer.

LETTERHEADS PLUS (132) Design/print custom letterheads, envelopes, labels to Epson/IBM compatible printers.

ON-SIDE (121) Print sideways with custom fonts. Menu-driven.

MR. LABEL (124) Most versatile & powerful label printing program.

IMAGEPRINT (128) Remarkable letter quality printing on 9- and 24-pin dot matrix printers. Now includes 25 terrific fonts.

BANNER MAKER (130) Create signs and banners with multiple fonts and styles.

WORD PROCESSING

RUBICON DESKTOP PUBLISHER (854,855,856) (3 disks) NEW! Shareware's first comprehensive desktop publishing program. Requires hard disk, LaserJet or Postscript printer, and a wordprocessor.

INTEXT (866) NEW! Word processing in 7 European languages. Call for other available languages. Requires 512K, CGA or Hercules card, dot matrix printer.

HYPER-WORD (876-879) (4 disks) NEW! Exciting hypertext word processor & free-form database with appointment calendar. Word processing of the future, TODAY! Requires 512K, hard disk.

PRO-CR (880) NEW! High-performance, trainable optical character recognition program at 200 words per minute. Requires EGA or VGA.

PC-WRITE 3.03 (809-811) (3 disks) Top rated with spell checker.

WORDPERFECT CLIPART (843,844) (2 disks) Over 180 great graphics.

WPVIEW (1692) NEW! Easily view WordPerfect 5.0 and 5.1 graphics. Includes WordPerfect clipart.

MISCELLANEOUS

HEADACHE-FREE (1840) NEW! Helps determine type and source of your headaches and offers cures.

LOTTO SPECTACULAR (2136) NEW! 3 great lotto programs to improve your chances.

SKYGLOBE (2613) NEW! Best feature-packed astronomy program yet! Entertains and educates. Requires a graphics card.

BY THE NUMBERS (2705) NEW! Complete Numerological personality analysis. Requires 340K, 2 floppy drives or hard disk.

ORACLE (2711) NEW! Tarot card & I-Ching readings. Requires 340K, 2 floppy drives or a hard disk.

ROOTS MASTER (2806) NEW! Powerful, full-featured, easy-to-use genealogy program. Requires 512K.

FONTEDE (4001,4002) NEW! (2 disks) Design custom screen fonts & download them to your printer. Requires Epson 24-pin compatible printer, EGA or VGA.

RESUME SHOP (8980) NEW! Automatically creates job-winning resumes. Fully menu-driven.

Limited Offer **3 FREE DISKS** **Limited Offer**

\$2.39 **Great Public Domain and Shareware Programs for IBM and Compatibles** **\$2.89**

PER DISK **Laboratory Certified Virus-free** **PER DISK**

10 or More **Less Than 10**

VISA **ALL NEW SELECTIONS** **MasterCard**

GRAPHICS

GRAPHIC WORKSHOP (1626) NEW! Menu-driven program converts between the most popular graphic file formats. Requires graphics card.

ORG! (1677) NEW! Quickly, easily produce professional quality organization charts.

PRINTMASTER GRAPHICS LIBRARY #4 (1688) NEW! 400 great graphics. Requires PrintMaster.

PRINT SHOP GRAPHICS LIBRARY #3 (1689) NEW! 300 quality graphics. Requires Print Shop.

PRINT SHOP GRAPHICS LIBRARY #4 (1690) NEW! 400 terrific graphics. Requires Print Shop.

PIXCAT (1691) NEW! Cataloging program prints up to 56 PrintMaster, NewsMaster, Print Shop, & New Print Shop graphics per page. Requires Epson/compatible printer.

EDUCATION

COMPUTER TUTOR (302) Complete interactive DOS and computer tutorial.

WORDPERFECT 5.1 LEARNING SYSTEM (373,374) (2 disks) NEW! Great step-by-step multi-featured tutorial. Requires 512K, graphics monitor.

TEMPLATES of DOOM (366) NEW! Learn to use spreadsheets via this challenging game.

EASY DOS (305) Two great programs make using DOS very easy.

AMERICAN STATES (338,339) (2 disks) Great U.S. States education.

BUSINESS & FINANCE

LEGAL GUIDE (1937) NEW! FANTASTIC! Generates 270 custom Do-It-Yourself legal forms. Requires 448K, hard disk.

MORTGAGE ADVISOR (8961) NEW! Great mortgage payment and amortization schedule calculator.

PONY EXPRESS (8970) NEW! Gives you all the information the Post Office window clerk knows - without standing in line.

ZIP CODE FINDER (1900) Computerized Zip Code book. Ultra fast search.

BUSINESS FORM LETTERS (1936) 100 common business letters. Fill in the blanks.

BUSINESS ACCOUNTING (1902) Complete GL/AP/AR/Payroll.

UTILITIES

VIRUSCAN (403) Best, easiest virus protection. Updated to catch new viruses.

READ MY DISK! (447) NEW! Amazing utility recovers data from any damaged hard or floppy disk. Requires 2 floppy disks or a hard drive.

BACK & FORTH (455) NEW! Load up to 20 programs at once and instantly switch between them without exiting. Features Cut-and-Paste. Requires a hard disk.

LZEXE (456) NEW! Fantastic utility compresses COM and EXE files and you run them directly. Saves loads of disk space.

EPSON FX POWER PRINT (459) NEW! Menu-driven printer setup program controls all functions of Epson-FX and compatible printers.

GAMES

WORDS*WORDS (200) NEW! Exciting word puzzle challenging enough for adults. More than 6,000 words!

CRIBBAGE (288) NEW! 2 great cribbage games feature auto-scoring, demo mode, scoring messages and more.

EGA COLORING BOOK (9223) NEW! Bring pictures to life with over 500 colors and patterns. Children 3 and up. Requires EGA or VGA.

MEAN 18 GOLF COURSE DISK #1 (9250) NEW! Great golf courses for Mean 18. Call for more courses. Requires Mean 18.

VGA SHOOTING GALLERY (9235) NEW! Recreates a carnival shooting gallery on your monitor. Challenging multiple rounds. Requires VGA and a mouse.

SPELL GAMES (9236) NEW! 2,000-word spelling battle in an Olympic Games setting. Requires CGA, EGA, or VGA.

XTETRIS (9237) NEW! Tetris with a twist. Shapes include single and double triangles and squares. Requires CGA, EGA, or VGA.

PYRO II (9239) NEW! You burn down buildings and must escape unharmed. Requires CGA, EGA, or VGA.

CHOPPER COMMANDO (9240) NEW! Exciting graphic arcade helicopter game features air-to-air combat and parachuting. Requires CGA, EGA, or VGA.

HUGO'S HOUSE OF HORRORS (9241) NEW! Best new game! Commercial quality adventure game with 3-dimensional animated graphics. Requires 360K, EGA or VGA, hard disk.

KING YAHTZEE (9242) NEW! Up to 4 players can play this classic.

GO (9249) NEW! Top quality! Popular strategy-board games is a national pastime in Japan.

CURSES! (9245) NEW! Humorous "insult generator" uses the words you input. Great fun! Requires 360K.

JUST FOR LAUGHS (284) 7 great practical joke programs to stun your friends' computers.

VGA ARCADE GAMES #1 (9211) 4 great arcade-action games. Requires VGA.

DOMINATE (282) Great strategic-war game for up to 10 players. CGA or EGA.

FORD SIMULATOR II (280,281) (2 disks) Exciting new driving simulator from Ford Motor Co. Lots of options.

LOST ADVENTURES of KROZ (9230) NEW! Best, biggest in the award-winning arcade-adventure-strategy KROZ series.

EGA/VGA PINBALL (9214) Best pinball game! Up to 13 simultaneous balls and many special features. Needs EGA or VGA.

PROGRAMMING

ASIC (1451) NEW! "Almost BASIC" programming language compiler with integrated full-screen editor. Edit, compile, execute your programs. Requires 400K, 2 floppy drives or hard disk.

A86 and D86 (1403,1404) (2 disks) Finest macro assembler & debugger. Fast!

SURPAS (1455) NEW! Fantastic, fully functional Turbo Pascal™ clone.

DATABASE

dBASE DATA MASTER (1000) NEW! Completely manipulate dBASE III/IV databases, delete duplicates, convert to Lotus, much more. Requires 640K and hard disk.

PC-FILE 5.0 (1026-1028) (3 disks) Jim Button's best. PC Mag Editors Choice. Requires DOS 3.0 or up, 512K, hard disk.

Call Toll Free for SAME DAY SHIPPING 800-359-9998
Orders Only & Free Catalog

CIRCLE DISK NOS. OR SEND ORDER ON SEPARATE SHEET OF PAPER
Select 3 FREE DISKS at no extra charge when you pay for 5 or more disks

Name _____

Address _____

City/State/Zip _____

VISA/MC# _____ Exp. date _____

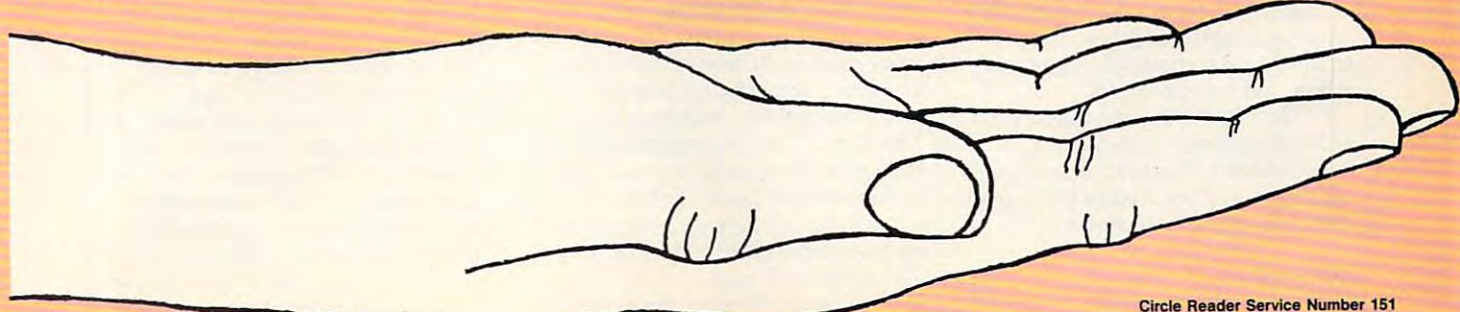
No. of disks _____ x \$2.89 ea. (Pay for ea. disk in multiple disk sets) = _____
(\$2.39 ea. for 10 or more)

Checks, Money Orders, 3.5" disks - add \$1 ea. - _____
VISA/MC Accepted CA residents add 6.75% tax - _____
(Add \$4 for COD) Shipping and handling - _____

Check disk size: 5.25" _____ 3.5" _____ Total = _____

THE SOFTWARE LABS CP11/90

3767 Overland Ave #112 Los Angeles, CA 90034 (213) 559-5456



MS-DOS

continued from page 90

This is also one of the quietest laser printers I've used. I especially appreciated the way the printer powers down its fan between uses. There's no constant low hum in the background as is customary with most lasers. The idle mode is a feature that other printer manufacturers would do well to incorporate.



The PB9500 laser printer offers crisply reproduced pages with nary a smudge and only the rarest of paper jams.

Although the printer's output is rated at six printed text pages per minute, I found the unit capable of exceeding that rate on all but the heaviest of jobs. Typical text output, with reasonable margins, can easily hit seven pages per minute.

While this is not a printer for ambitious desktop publishing applications, it did perform at an acceptable speed when printing documents involving simple graphs, charts, and logos.

Well-built, with a solid housing and equally solid catches and latches, the PB9500 should hold up well over time. Its small footprint lets you place it comfortably in the corner of a desk, although the paper tray adds to the space required. LCD controls are arranged along the front of the machine. Setup is simple and relatively fool-proof. The few paper jams we encountered were easily cleared.

The 150-sheet input paper tray included with the printer can handle letter- and legal-size pages. The printer can also accommodate envelopes, labels, and transparencies.

The PB9500 is a solid laser printer for text-intensive operations. Its combination of features, speed, quiet operation, and price make this a good choice for home or business.

KEITH FERRELL

Ease of Use/Installation . . . ★★★★★
Documentation ★★★★★
Features ★★★★★
Compatibility ★★★

Packard Bell PB9500—\$2,195.00
 Options: Output paper tray—\$29.95
 2MB memory upgrade—\$995.00
 4MB memory upgrade—\$1,950.00
 Emulation cartridges for IBM Pro, Diablo 630, and Epson FX—\$229.00 each

PACKARD BELL
 9425 Canoga Ave.
 Chatsworth, CA 91311
 (818) 773-4400

ULTRAScript PC PLUS

Recent technological developments have greatly enhanced the quality and capabilities of PC desktop publishing. One of them is *UltraScript PC Plus*, a PostScript language-compatible interpreter that offers PostScript compatibility on non-PostScript printers. With this software marvel, I now have the power of PostScript at a fraction of the cost.

Although it requires at least AT (80286) technology, *UltraScript* will run in as little as 640K of RAM. If you have at least 800K of extended memory, you can print without exiting your application. You'll need four megabytes of free disk space and DOS 3.1 or higher, but most AT-compatible computers can easily accommodate these requirements. Your laser printer will need at least a megabyte of memory to print a full page at 300 dpi.

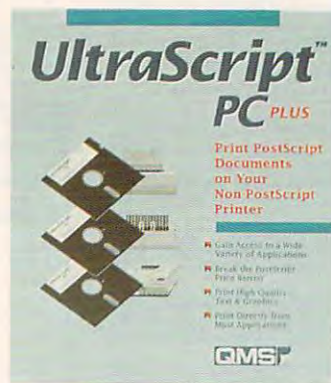
UltraScript supports an impressive list of printers, and even your dot-matrix printer can take advantage of PostScript capabilities. Change printers without resetting your computer simply by running the non-memory-resident version of *UltraScript* and selecting a different printer.

There are two ways to print with *UltraScript*. The first requires that you print your file to disk, exit your application, and then print the file with *UltraScript*. If you have a megabyte of memory or less, this is the only way *UltraScript* will work.

The second method is to load the memory-resident version of *UltraScript* and print from within your application. You select the PostScript driver for your application and print the file as usual except *UltraScript* redirects the output (with a program called PCAPTURE) to the PostScript interpreter; then it converts the file to a bitmap and sends it to the printer.

The memory-resident version of *UltraScript* uses 44K of regular memory; the rest of the program resides in extended memory. If necessary, the print file is written to the hard disk.

When I first tried to run *UltraScript*, I tried to print directly from within *Ventura Publisher* using the memory-resident mode. The file eventually printed, but *Ventura* would not leave its print menu, and I had to reset the computer. I managed to solve this apparent memory problem only after spending the good part of a day trying to get through to technical support and then working through a solution. If I'd had customers waiting, it could have cost me money.



UltraScript offers you PostScript compatibility on non-PostScript printers.

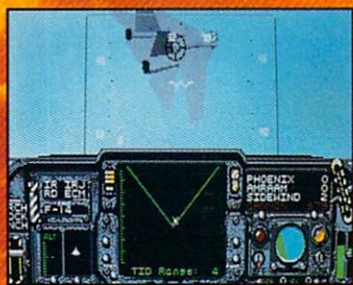
After I finally got *UltraScript* up and running, it was a breeze to use. Printing with the program takes a little longer, but the wait is worth it. PostScript spoiled me with its simplification of font selection. I didn't have to exit *Ventura* constantly to make slight adjustments in font size.

UltraScript comes with a good selection of fonts, and the *Plus* edition offers a total of 47 typefaces. There's also a version of this program called simply *UltraScript PC*, which offers 22 fewer typefaces (six families) but

continued on page 96



DOGFIGHT WITH DAREDEVILS



Rugged dogfighting action. Roast a MiG with your lock-on Sidewinder or Phoenix air-to-air missiles. When it's up close and personal, unload with TOMCAT's M61A1 Vulcan cannon.



Air combat realism. 256-color MCGA 3-D environments, cockpit view with authentic HUD, and digitized sound effects and explosions. Supports Ad Lib, Roland, Tandy, music, PS/1, Game Blaster, and Sound Blaster.

The F-14 TOMCAT.

It's the most famous fighter jet in modern military aviation. Massive but agile, heavily armed, deadly. Fighter pilots affectionately call this hulking warplane the "MiG Killer" for its dominance of the Soviet-built craft.

Now you can fly the F-14, on various carrier-based missions that pit you against 5 different MiGs and the Soviet-built Su-22, from the Mediterranean to the volatile Persian Gulf. You'll be engaged in hostile dogfighting action within minutes. Each mission is unique - plan to face a different style pilot every time you leave the flight deck.

Survive these Mach 2 challenges, and join 15 elite pilots in one-on-one tests of toughness and talent at the Naval Fighter Weapons School, "Top Gun," proving ground of the world's finest flyboys. Fly against the MiG-like F-4, as well as other swing-wing F-14's. Prove you're the best, and teach the rest.

F-14 TOMCAT. The only F-14 air combat simulation for MS-DOS® computers.



ACTIVISION

"Fighter Pilot for a Day" Sweepstakes

WIN a FREE Trip to
Air Combat USA in Fullerton, California
Learn Authentic Air Combat Techniques
Fly Your Own Dogfighting Mission

See Your Local Retailer for Contest Details
Call 1-800-227-6900 to Order

© 1990 ACTIVISION. Ad Lib is a reg. trademark of Ad Lib Inc. Game Blaster and Sound Blaster are trademarks of Creative Labs, Inc. MS-DOS is a reg. trademark of Microsoft Corp. PS/1 is a trademark of IBM. Roland is a reg. trademark of Roland Corp US. Tandy is a reg. trademark of Tandy Corp.

Circle Reader Service Number 244

www.activision.com

SIGHT...SOUND...SAVINGS!

INTRODUCING COMPUTE MAGAZINE'S ENTERTAINMENT SOFTWARE SHOWCASE

No more guesswork...No more disappointment. Now you can preview hundreds of dollars worth of the hottest new entertainment software products before you buy! *And you don't need a computer to do it!**



*VCR with VHS format required. Many programs previewed available in MS-DOS format; others available for multiple machines.

It's Easy! Just put Compute's Entertainment Software Showcase video into your VCR*, press "play" and you are on the way to sampling the sights and sounds of 24 of the latest products from today's top software publishers. All for only \$12.95 plus postage and handling! Order your video today by calling toll free or using the coupon below.

CREDIT CARD ORDERS ONLY CALL TOLL FREE: 1-800-535-3200

(Visa or MasterCard Accepted)

Some of the exciting previews you'll see are:

AD LIB

The AD LIB Music Synthesizer Sound Card

Your PC games will come alive with state-of-the-art sound power. Instruments and sound effects are generated using FM synthesis technology.

LUCASFILM LTD.

Secret Weapons Of The Luftwaffe

Fly classic American planes, or switch sides, to pilot experimental German aircraft in classic World War II aerial battles.

The Secret Of Monkey Island

High resolution graphics and challenging puzzles make this search for pirate gold on a mysterious Caribbean island a swashbuckler's delight.

Loom

Join young hero Bobbin in a fantasy adventure game of swirling magic spells and battles against the dark forces of evil. Includes an audio cassette that prepares players for the quest.

Indiana Jones and the Last Crusade—The Graphic Adventure

INDY is back, for more excitement and narrow escapes from trouble. Features lush graphics and some humorous plot twists.

Night Shift

Tired of the same old 9 to 5? Punch in for the NIGHT SHIFT at Industrial Might and Logic, and take control of the wackiest, wildest toy making machine imaginable.

ORIGIN

Wing Commander

Test your courage by piloting your Teran spacefighter in 3D galactic warfare against the vicious alien race the Kilrathi. Victories win promotion to swifter, more powerful spacefighters.

Savage Empire

Uncover the mysteries of lost civilizations, explore a spectacular underground city and meet the exotic princess Aiela on this perilous journey into a jungle kingdom.

Ultima VI

Sail from Britannia, land of magic and adventure, into the dark recesses of the Underworld, and emerge in the strange world of the Gargoyles.

Bad Blood

The pureblood humans have a new leader, and he wants to wipe out any 'tainted' races. You set out from your tribal village to find a way to stop his march of destruction.

SIERRA ON-LINE

King's Quest V

Brave King Graham returns in the long awaited Chapter 5 of Roberta Williams' popular computer adventure series. Features 'cinemagrophic' Hollywood animation, making it play like an interactive movie.

Space Quest IV

The hilarious adventures of Roger Wilco, who has a run-in with the Sequel Police, a crack team of intergalactic assassins. He enlists the help of the Latex Babes of Chronos, as well as the Time Rippers-rebel fighters from the future.

Fire Hawk: Thexder—The Second Encounter

Constant challenge and nonstop arcade action, as you don a battle suit that can transform from a giant robot to a super-jet, and battle bloodthirsty aliens.

Mixed-up Mother Goose

Mixed-up Mother Goose transports children to Mother Goose Land, where they help her sort out some of her most popular rhymes. Then, they spring to life in brilliant color.

A-10 Tank Killer

Take command of the ugliest, most indestructible, devastating plane ever built. Rip apart enemy tanks with your 30mm "tank killing" cannon, and laugh while sustaining damage that would cripple any other plane.

Rise of the Dragon

This futuristic private-eye drama combines interaction, puzzle-solving, cinematic storytelling techniques, no-typing "point and click" interface, and Dynamics VCR Interface for the feel of a 'graphic novel'.

Stellar 7

A stellar arcade game of tremendous scope, featuring twenty different enemies, each with their own distinctive intelligence, and stunningly beautiful, handpainted planetary backgrounds.

Red Baron

Players engage in World War I aerial combat. Experience close range dog-fights, battle Zeppelins, fly nighttime missions and face famous flying aces such as the Red Baron himself!

Heart of China

A 1930's action adventure game set in revolutionary China, that features complex character interaction, puzzle solving and full soundtrack.

SPECTRUM HOLOBYTE

Flight of the Intruder

Scream down the aircraft carrier runway at the throttle of an A-6 Intruder jet fighter and battle MIG 21's, SAM's and anti-aircraft flak.

Faces...Tris III

The newest challenge from the Soviet Union. Stack falling blocks of face segments in proper order to create complete famous and not so famous faces.

Stunt Driver

Slip behind the wheel of a classic '66 Shelby Mustang and buckle up for excitement. Zip through the loop-the-loop, twist through corkscrew jumps and fly over ramps.

Falcon 3.0

Fabulous F-16 fighter simulation that puts you right in the cockpit of one of the world's most advanced aircraft. Weapons, flight models and terrain are exactly like the real thing.

Avenger A-10

The tank killer of modern warfare, the A-10 carries the massive GAU-8/A Avenger gun in its nose. Can be linked by modem or direct cable to Falcon 3.0 for joint missions.

Yes! I want to preview hundreds of dollars of the latest entertainment software products from the best publishers. I've enclosed \$12.95 plus \$3.00 postage and handling.

Name _____
Address _____
City _____ State _____ Zip _____

MasterCard or Visa accepted
Credit Card # _____
Expiration date _____ Signature _____

_____ Amount
_____ Sales Tax*
_____ Add \$3.00 shipping and handling
for each cassette ordered
_____ Total

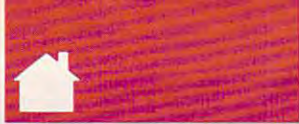
Check Money Order

Send your order to:
Compute Entertainment Software Showcase
P.O. Box 68666
Indianapolis, IN 46268

*Residents of New York, Connecticut and North Carolina add appropriate sales tax for your state. All orders must be paid in U.S. funds drawn on a U.S. bank MasterCard or Visa. Please allow 4-6 weeks for delivery. Offer expires April 30, 1991.

www.commodore.ca





REVIEWS

MS-DOS

continued from page 92
costs less and has the same system requirements.

UltraScript will work with other PostScript fonts, such as those produced with Bitstream Fontware, but the manual warns you that using other vendors' fonts could result in longer print times.

UltraScript PC Plus gives you the best of both worlds—the speed of an HP LaserJet or the power of PostScript—without doubling your costs.

THOMAS J. MORRIS

- Ease of Use ★★★★★
- Documentation ★★★★★
- Features ★★★★★
- Innovation ★★★★★

IBM PC AT, PS/2 Model 30-286 and higher, and compatibles; 640K of RAM minimum, 1.5MB needed to print from within an application (recommended); MS-DOS or PC-DOS, version 3.1 or higher; 1.2MB 5¼-inch or 1.44MB 3½-inch floppy disk drive; hard disk with 4MB of available memory

Regular edition—\$195

Plus edition—\$445

QMS

P.O. Box 58101
Santa Clara, CA 95052-8101
(408) 986-9400
(800) 635-3997

MEGATRAVELLER 1: THE ZHODANI CONSPIRACY

Are you ready to explore 28 star systems, trying to prevent a cataclysmic galactic war? Are you the stuff of heroes? You'll find out when you play *MegaTraveller 1: The Zhodani Conspiracy*, part 1 of an epic space adventure.

Those familiar with role-playing board games will recognize this as the computerized version of the popular award-winning Traveller game. Designer Marc Miller has broken new ground with this board-to-computer translation, adding many arcadelike features to *MegaTraveller*. Still, the game moves slower than a tax refund when it comes to character develop-



Explore richly diverse planets.

ment and routine tasks.

Amazingly detailed EGA graphics enhance your party's exploration of the richly diverse planets, each defined by numerous distinguishing characteristics. For instance, you might discover a huge water world with a poisonous atmosphere and a small population with a prestellar technology—but no starport where you might land. This degree of detail is evident throughout the game, from weapons variety to vehicle types to the colorful characters you're likely to meet during your travels.

You get a 144-page manual crammed with background story, charts, diagrams, and explanations of every aspect of gameplay. *MegaTraveller* allows you to create extremely complex playing characters to include in your party of five.

Characters can develop up to 54 vital skills, which determine how successfully they will perform tasks required during the game. It's advisable to make each party member a specialist in several unique areas rather than to develop a group of, say, fighters. During the game, characters can pay for training and education to add new skills or enhance existing abilities.

Your ship, the *Interloper*, must be greatly upgraded during the game to give it the capabilities needed for success.

The money for all this training and upgrading comes from trading. Saving the galaxy costs money, and an elaborate bartering system will let you earn credits through interplanetary trading.

MegaTraveller supports RealSound as well as digitized sounds by Covox, but you'll need 600K of free RAM to hear all the sounds. With less memory, you'll hear only partial

sound effects. But even without a sound card, you'll have great sound effects.

With all the obvious work that went into this game, I'd love to say I recommend it for everyone, but this game isn't for everyone. It requires a lot of methodical work, such as training characters, earning money for required supplies, and exploring vast regions. You'll need to set aside a fair chunk of time to really explore what *MegaTraveller* has to offer. Maybe if I were stranded on Gilligan's Island and the Professor built a 386-based PC using coconut shells, bamboo sticks, and the never-say-die batteries from the radio for power. . . .

SCOTT MILLER

- Playability ★★★★★
- Documentation ★★★★★
- Originality ★★★★★
- Graphics ★★★★★
- Sound ★★★★★

IBM PC and compatibles; 512K (600K for full sound effects); CGA, EGA, VGA (requires 640K); Tandy 16-color (requires 640K); mouse or joystick optional—\$59.95

PARAGON SOFTWARE
Distributed by
MicroProse
180 Lakefront Dr.
Hunt Valley, MD 21030
(301) 771-1174
(800) 876-1151

COMPUERVE INFORMATION MANAGER

Are you looking for an easy way to get around in CompuServe? CompuServe Information Manager (CIM) is a new interface for CompuServe that makes it easy—even fun—to navigate through this popular online service.

CIM uses CompuServe's new Host-Micro Interface (HMI) to make communications more reliable and efficient. The original command line interface transmits menus, prompts, and user replies in ASCII and reserves



FALCON 3.0 THE ONLY SIMULATION BETTER THAN THIS ONE IS STILL CLASSIFIED

The bogey came out of nowhere. You see him just off your tail. The adrenalin hits you like a fist. You call your wingman: "Viper One, I've got a bandit on my six. This is not good..."

The original Falcon™ F-16 Fighter Simulation was acclaimed for its realism. Now, Falcon 3.0™ takes this authenticity to the edge. The flight models are real. The terrain is real. The radar and weapons systems are real. And the threats are real. No phony weapons or magic bullets here... just the best civilian F-16 simulation available. You don't just play Falcon 3.0, you strap yourself in and get ready for battle.

You go to afterburner and your Falcon jumps, slamming you back in the seat. The MiG 29 has just reached missile range... There! He's fired, the deadly rocket screams toward you, seeing nothing but the heat of your exhaust. Without thinking, you drop a series of flares hoping to confuse it, and yank back on the stick... 50 degrees... 80... over the top... your Head Up display shows you're pulling 9g's...

With Falcon 3.0, you lead your own squadron of pilots. Your missions are straight from today's headlines: Panama, Iraq, or some other international hot spot. The mountains, valleys, and rivers you fly over conform precisely to military maps of the areas.

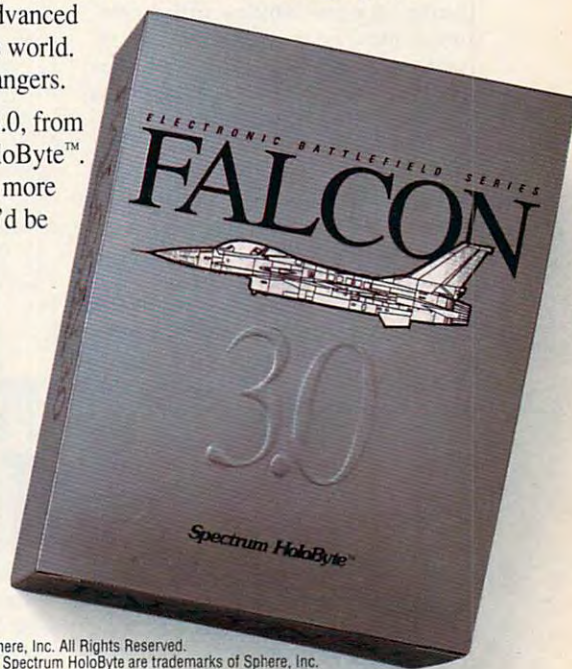
... Nearly blacked out, you ease forward on the stick. The g's drop, and you can see again. There he is! You're on HIS six now. This is going to be sweet. As you get tone you know he's yours.

True to the General Dynamics F-16 Falcon, Falcon 3.0 gives you all the exhilaration of flying one of the most advanced fighters in the world. And all the dangers.

Falcon 3.0, from Spectrum HoloByte™. If it were any more authentic, we'd be in trouble.



You and your wingman begin the attack, deep behind enemy lines.



Falcon 3.0 © 1990 Sphere, Inc. All Rights Reserved.
Falcon 3.0, Falcon and Spectrum HoloByte are trademarks of Sphere, Inc.
Available for IBM AT, PS/2 and compatibles

Spectrum HoloByte™
A Division of Sphere, Inc.
2061 Challenger Drive, Alameda, CA 94501, (415) 522-0107

MS-DOS



With *CIM*, navigation is easy and fun.

the error-correcting protocols for down- and uploading files. Because automated scripts and interface programs depend on accurate responses, it's common for them to lock up when the original interface's ASCII commands and prompts are garbled by line noise. This shouldn't be a problem with HMI, because if a command or prompt isn't received perfectly, HMI automatically sends it again.

With the command line interface, you might start at an opening menu and make a series of selections until you reach your destination. When you do this with *CIM*, each selection brings up a new window with a new menu list. The previous windows remain onscreen so you can select the appropriate window and easily move back and forth through the levels.

With both the original interface and *CIM*, you can type GO and a keyword to move directly to a specific location. *CIM* automates this process by letting you save these locations to a Favorite Places menu. You can also find areas of interest by selecting Find from the pull-down Service menu. Type in a keyword and you'll see a list of CompuServe services that are related to your chosen topic.

To search the forum libraries, you select your search parameters and click on the library section you want to search. A window with a menu of files will open with the entries that qualify. You can scroll forward and backward through the selections and click on a file. Another window will open, this time with the file's title (which usually functions as a short description) and five buttons: Next, Abstract or View, Retrieve, Mark, and Cancel.

While you can download GIF files or view them online (viewing is

no faster than downloading), you can't do both. If you decide you like a GIF file after you've viewed part of it, you'll have to start all over again to download it.

CIM automates a number of other CompuServe areas, including messages, mail, stock quotes, CB Simulator, and Weather. In addition, *CIM* comes with an excellent 300-page manual that also provides an introduction to CompuServe's many services.

CompuServe has said that the original interface will still be available for members who use automated scripting programs, but the days of the command line interface are numbered. HMI is a great leap forward for making CompuServe easy to use, and *CompuServe Information Manager* is an excellent—and attractively priced—way to use this powerful telecommunications service.

DAVID ENGLISH

Ease of Use ★★★★★
 Documentation ★★★★★
 Features ★★★★★
 Innovation ★★★★★

IBM PC and compatibles with 640K, graphics adapter for GIF viewing, hard drive, and modem
 For current subscribers (includes \$15.00 credit; type GO ORDER)—\$24.95
 For new subscribers (includes CompuServe sign-up and \$25.00 credit)—\$39.95

COMPUERVE
 5000 Arlington Centre Blvd.
 Columbus, OH 43220
 (800) 848-8199

PRACTIDISK

There's no such thing as enough money or enough disk space. No matter how much capacity you have, you'll always scream for more. Practidisk, a 2.88MB disk drive completely compatible with standard PC hardware and lower capacity disks, is one among a handful of products manufactured in response to that plea.

Developed and patented by Toshiba and manufactured by TEAC, the Practidisk drive is the size and shape of a standard 3½-inch disk drive, but it uses carefully arranged barium fer-

rite particles and perpendicular recording technology to squeeze twice as many bits onto the tracks.

Practidisk's extremely flexible 8-bit controller card works with almost any version of BIOS and any version of DOS 2.0 or higher to control any capacity 5¼- or 3½-inch floppy disk drive installed in almost any PC-, XT-, or AT-compatible computer.



Use 2.88MB, 1.44MB, and 720K disks.

The drive and controller worked flawlessly on the AT clone I tested, but not on a Commodore Colt XT-compatible, even with a replacement card the company sent. A company official assured me that this was a very rare situation, encountered so far only with Commodore PCs.

Thanks to Practidisk's own BIOS and driver program, you can treat your 2.88MB drive as if it were just another DOS device. The only difference is that, when you format a disk, you must use a special PFORMAT command specifying the density of the disk. Once everything is set up and running, you can use, for example, *PC Tools Deluxe* to perform a surface analysis and optimization of your extra-high-density disk.

You can insert the drive in one of your drive bays or—for about \$110 more—install an external unit, which comes with a cable with a 37-pin D connector on each end.

While doctoring regular disks for use in high-density drives is a popular way to save money, I don't recommend trying it with the Practidisk drive. The size of the tracks and the amount of power used to write data to the disk vary with capacity, and disks not designed for a given format may retain that format only temporarily, though initially they appear to perform flawlessly. ▸

FLY THE FUTURE. LHX.

STRAIGHT OFF THE DRAFTING BOARDS OF AMERICA'S TOP DEFENSE CONTRACTORS

Alone and nearly invisible in the night sky over Libya, you skim the dunes toward the Jifarah Air Base to strafe four grounded MiG-27 Floggers. Allied forces lost two Apaches on this mission before they called you: the first pilot qualified to fly the classified Light Helicopter Experimental on stealth combat missions. The muffled *thupt thupt* of your rotor blades echoes your heartbeat, and the vibrating cockpit makes your nose itch. Your enhanced night-vision reveals your glowing jets. The enemy is ignorant of your approach. You take a deep breath, and lock your AGM-114A Hellfires on target...



• FLY HUNDREDS OF DIFFERENT MISSIONS: STRAFE TRUCKS CONVOYS. ENGAGE SOVIET ATTACK CHOPPERS. RESCUE POWS. AND MORE!



• FAST, SMOOTH, VIVID 3D POLYGON GRAPHICS WITH UP TO 256 COLORS. ADLIB SOUND SUPPORT.

• 11 EXTERNAL VIEWS OF THE TECHNICALLY ADVANCED LHX GIVE YOU THE COMBAT ADVANTAGE.



LHX



OSPREY



APACHE



BLACK HAWK

ALSO INCLUDED:
• EXCLUSIVE REPORT OF THE LHX SECURITY BREACH
• 100+ PAGE TECHNICAL MANUAL
• 3 FULL COLOR TOUR MAPS

2 WAYS TO ORDER: 1) Visit your retailer. 2) Call 800-245-4825, with VISA/MC, USA or Canada, Mon-Fri 8am-5pm Pacific Time. For an LHX Attack Chopper demo disk, mail \$5 to: LHX Attack Chopper Demo Disk Offer, c/o Electronic Arts, PO Box 7539, San Mateo, CA 94403. IBM, Tandy and compatibles 5.25" version \$59.95 (3.5" available). Screen shots represent IBM version. IBM is a registered trademark of International Business Machines Corp. Tandy is a registered trademark of the Tandy Corporation.

www.electronicarts.com

ELECTRONIC ARTS
Circle Reader Service Number 242

BY BRENT IVERSON



REVIEWS

MS-DOS

AMIGA

continued from page 98

The principal anxiety involved in buying a technology that IBM has not annointed, like 2.88MB floppy disk drives, is that the standard may end up being incompatible with the hardware you have purchased. Therefore, people are interested in whether a new piece of technology has industry support. The manufacturers of *Back-It* support the 2.88MB format. Extra-high-density disks (virtually identical in appearance to high-capacity disks but marked with the letters *ED*) are available from 3M (I found them for \$32.50 apiece), Maxell (slated to list at \$162.85 for a 10-pack), and Toshiba. Practical Computer Technologies sells the extra-high-density disks for a bargain—\$7.00 each. If, at some point, these disks lose favor to some other extremely high-density disk standard, the Practidisk drive won't be obsolete because it will still be used with 720K and 1.44MB disks and any 2.88MB disks you have on hand.

ROBERT BIXBY

Ease of Setup/Installation ★★★★★
Documentation ★★★★★
Features ★★★★★
Compatibility ★★★★★

IBM PC and compatibles; DOS 2.0 or higher. Internally mounted—\$478; externally mounted—\$598

PRACTICAL COMPUTER TECHNOLOGIES
 3972 Walnut St.
 Fairfax, VA 22032
 (703) 385-0326

Amiga

3-D PROFESSIONAL

Creating 3-D graphics on the Amiga has fascinated me ever since I saw the Juggler demo at my Amiga dealer's in 1986. Creating objects on graph paper and typing in coordinates, or trying to draw the starship Enterprise using only triangles, however, did not intrigue me.

Now Cryogenic Software has developed *3-D Professional*, the modeling and animation program for "the rest of us." *3-D Pro* is extremely easy to use and has an intuitive user interface, but it's still very powerful.



Scenes like this are easy to render using *3-D Pro's* ray-trace module.

Objects in *3-D Pro* are built from simple shapes, called *primitives*. There are 13 predefined primitives, including a sphere, a cone, a cube, a cylinder, a line segment, and even a torus. It's amazing how many objects can be created from these primitives, but if your needs are more complex, *3-D Pro* also has lathe, conic, and profile tools that let you create more complex primitives. You can even create fractal trees and landscapes or convert Amiga fonts or IFF brushes into 3-D objects. You can also import *VideoScape 3-D*, *Sculpt 3-D*, *AutoCad*, *Forms in Flight*, *Turbo Silver*, *3-Demon*, and Atari *ST Cad 3-D* objects. Your *3-D Pro* objects can be saved in *VideoScape 3-D* format for editing with a third-party object editor.

The objects you create can have a wide variety of characteristics. You can choose an object's color, transparency, roughness, reflectiveness, glossiness, index of refraction, and amount of specular reflection. There are also a number of predefined surface properties, such as plastic, stone, aluminum, and glass. The most impressive effects can be created using the editable textures. With a single click, you wrap your objects with wood, marble, checkered patterns, bricks, or a host of other textures.

Once you've created your objects, *3-D Pro* makes it easy to arrange them into a scene. You can edit an object from one of six different views (left, right, top, bottom, front, and back). Only one view can be displayed at a

time while editing, but there's a Model view that lets you preview your scene from four different angles.

The camera view shows your scene as from the observer's viewpoint. This is very handy—most 3-D packages require you to render a test scene to see exactly how your objects will be displayed.

Instead of just displaying a wireframe view of your objects while you're editing them, *3-D Pro* shows you a solid, dithered, color representation of the scene. This makes it easy to remember which colors you've chosen for individual objects and gives you a basic idea of how objects will be shaded.

Once you've created your scene, it's time to shed some light on your subjects. You can have up to 99 different light sources in a scene. Lights can be points (like a light bulb or the sun), cylindrical (like a laser beam), or conical (like a spotlight). Light beams can have different colors, handy for creating effects like red laser beams or purple spotlights. You can also control the amount of ambient light and create haze effects.

Your lights are in place, the camera is ready, and now it's showtime. Options abound at rendering time, too. There are four different rendering options built in: pattern, solid, gourad, and phong. Pattern is similar to the shading used in the work modes; the shading of each polygon is achieved by dithering gray patterns with the polygons in each object to make varying shades of the polygon's color. Solid rendering uses more colors, but each face of the polygon is rendered in a single color. Gourad employs a smoothing algorithm to remove the faceted look of each object.

Pattern-, solid-, and gourad-rendering algorithms are good for first-draft pictures, but you'll want to use phong shading for final output. Phong rendering determines shading on a pixel-by-pixel basis, so it shows all textures and specular highlights, and it's much faster than ray-tracing. While phong-rendered objects often look as good as their ray-traced counterparts, they don't cast shadows, so phong-rendered pictures generally aren't as realistic as ray tracings. To get the most out of *3-D Pro*, you'll want to purchase the optional ray-tracing module. ▸

SOME OF HITLER'S DEADLIEST WEAPONS NEVER SAW ACTION. UNTIL NOW.



Imagine the shock of American B-17 pilots when the first German jet fighters whistled past. The lumbering bombers seemed to be standing still, sitting ducks for radical aircraft years ahead of their time.

The twin-jet Me 262 unleashed a volley of 24 air-to-air missiles in less than a tenth of a second. It's

resemblance to today's Stealth bomber. **Were the Allies saved by Hitler's blunder?**

As you'll read in the 224-page historical manual, Hitler's demand for a blitz bomber delayed deployment of the Me 262s as fighters.

In *Secret Weapons of the Luftwaffe*, you can reverse that decision. And pit these

revolutionary weapons with the more familiar German Bf 109 and FW 190 fighters against the Eighth Air Force B-17 Flying Fortresses, P-51 Mustangs, and P-47 Thunderbolts. All technically, historically, and graphically authentic.

Fly in the face of danger. Desperate to stop the massive daylight bombing raids of the Allies, the Germans rushed their experimental aircraft

into service in late 1944. You'll experience the nail-biting terror of piloting aircraft that were as dangerous to fly as they were to the enemy.

You'll rock with the impact of a direct hit. Struggle for visibility through oil smeared, bullet-shattered canopies. Watch in horror as your engine burns. And wrestle for control against G-forces and rough wind conditions. All with the vivid realism of bit-mapped 256-color VGA graphics and room-rattling sound effects.



In *Secret Weapons of the Luftwaffe*, you'll do more than relive the air combat over Germany from 1943 to 1945. You'll decide for yourself whether these exotic superweapons could have changed the outcome of the war.

LUCASFILM GAMES™

A DIVISION OF LUCASARTS ENTERTAINMENT COMPANY

just one of the little-known aircraft you'll encounter in *Secrets Weapons of the Luftwaffe*.™ You'll also blast off at 16,000 feet per minute in the incredible Me 163 Komet rocket fighter. And pilot the remarkable Gotha 229, which bore an uncanny

Secret Weapons of the Luftwaffe is available for IBM and 100% compatibles. Visit your retailer or order directly with Visa/MC by calling 1-800-STARWARS (in Canada 1-800-828-7927).™ and © 1990 LucasArts Entertainment Company. All rights reserved. IBM is a trademark of International Business Machines, Inc.

Circle Reader Service Number 106



www.commodore.ca



REVIEWS

AMIGA

continued from page 100

I examined an early beta version of the *3-D Professional Ray-Trace Custom Rendering Module*. This program can be run in conjunction with *3-D Pro* (select Custom Rendering and *3-D Pro* will send the file to the ray tracer), or as a stand-alone (the program loads a *3-D Pro* data file). The module gives you an incredible amount of control over the tracing process. You can select the number of rays to trace through each pixel and toggle features such as soft shadows, fuzzy reflections, and smoothing. *3-D Pro's* ray-tracing module is the first to support atmospheric distortion, so your pictures can even have a foggy or hazy appearance. The module should be available sometime late this fall.

You can display *3-D Pro* rendering on a wide variety of devices. Of course, *3-D Pro* will render directly to the Amiga monitor in lo res, hi res, or HAM. You can output 24-bit RAW RGB files, so you can modify your renderings with programs such as ASDG's *The Art Department*. The program also supports the 2024 and Moniterm 1008 X 800 monochrome monitors, the Mimetics Frame Buffer, and the MicroIllusions Transport Controller. You can even output to a PostScript or EPS file if you're planning on using your creation in a laser-printed document.

3-D Pro isn't limited to just creating pretty pictures, either. You can create animations using scripts or the menu interface. *ARexx* scripts can be used to set up each frame in the animation, or you can use the key-frame feature to set up starting and ending frames and let *3-D Pro* handle the movements necessary to get objects from Point A to Point B. You can tune up your animations using the included *Animation Station* software, a powerful frame-by-frame animation editor that's also available separately from PP & S.

The program comes in a huge box that's packed with documentation. There's a 310-page tutorial manual, a 450-page reference manual, and another 100-page manual covering the *Animation Station* software. There's even a two-hour tutorial videotape included in the package. The manuals are well written and logically organized.

I have only a few complaints

about *3-D Pro*. When you first start the program, you're faced with a requester asking how many objects, primitives, vertices, and other elements you'll need for your scene. While you can usually just accept the default values, the requester is an intimidating element in a program that's otherwise very friendly to novices. Also, the program is slow on 68000 machines. Using the sample scene file, it took the program 13 seconds to redraw the screen after I moved a single object. On a 25-MHz 3000 using the supplied 68020/68881 version, the same scene was redrawn in only 3.5 seconds. Finally, because of the \$499.95 retail price of *3-D Professional*, PP & S should charge only a nominal fee for the ray-tracing module, considering that it should have been included with the package in the first place.

DENNY ATKIN

Ease of Use	★★★★
Documentation	★★★★
Features	★★★★
Innovation	★★★★

Amiga with 1MB (1.5MB needed for tutorials), and two floppies or a hard drive—\$499.95

PROGRESSIVE PERIPHERALS & SOFTWARE
464 Kalamath St.
Denver, CO 80204
(303) 825-4144

BARNEY BEAR GOES TO THE FARM

Barney Bear is back. In *Barney Bear Goes to the Farm*, the second entry in this series for young children, Barney visits his grandparents' farm. This interactive tale includes short stories, games, and even a computerized coloring book.

Barney starts by performing his chores, such as milking cows and feeding chickens. Each chore is depicted in a still picture. Click on an object and you'll hear a sound or a voice telling you something about the object.

He then heads to the farmhouse,

where he sits by the fire, reading stories and playing games. There are ten different activities in the program. *Healthy Bears* teaches children about how to be health conscious. The *Seed* tells how a seed is planted and grows. In the *I Can Read* activity, the program displays pictures of ten farm animals. When the child clicks on each animal, the animal makes a sound, and the program uses the Amiga's voice synthesizer to tell a story about the animal.

In *The What Belongs to Me?* game, a child must match one of five objects to an appropriate animal. The most entertaining game is the *Silly Scarecrow Game*, where you initially see a scarecrow in a field. By clicking on various arrows, you can change the head, body, and legs to form different, and often silly-looking, scarecrows. Finally, the program contains a coloring book with 12 black-and-white pictures for children to paint.

While the program appears relatively simple and basic to an adult, children enjoy it immensely. The Amiga's internal voice synthesizer, ignored in most programs, is used extensively, and my play testers accepted the somewhat stilted voice surprisingly well.

While *Barney Bear Goes to the Farm* is geared for the three- to eight-year-old age group, children over six may find the program uninteresting. The graphics and sounds are good, and children can get through most of the activities without having to read. The only negative aspect is the lack of animated sequences, which would make the program more interesting and exciting to kids. The program is a success, though, according to my six-year-old, who thoroughly enjoys the program.

STEVE KING

Educational Value	★★★
Documentation	★★★★
Originality	★★★★
Graphics	★★★

Amiga with 1MB—\$34.95

FREE SPIRIT
P.O. Box 128, 58 Noble St.
Kutztown, PA 19530
(215) 683-5609

continued on page 104

ABSOLUTELY

FREE SOFTWARE

for the IBM and compatibles

44 GREAT PROGRAMS

give you the power and control you need

Take it from us!...We're betting that once you use our great programs, you'll want to make us your software source. So you receive these MUST HAVE programs AT NO CHARGE.

MANAGE MEMORY RESIDENT PROGRAMS

Release any program from memory — at any time — without rebooting your computer

MAKE YOUR PRINTER BEHAVE

Control every printer function from a simple menu — no more hassle

SCROLL and RECALL PAST SCREENS

Scroll your screen backwards — One by one review every screen that scrolled by

CUT and PASTE

Cut information out of any program — at any time — paste it into any other program

HARD DISK ENHANCERS

Navigate through hard disk subdirectories with ease

DRAMATIC DISK DRIVE SPEED UP

Turbo charge your floppy disk drives...Make all your programs run much faster

BATCH FILE BOOSTERS

Easily create interesting and powerful batch files

TURN YOUR MONITOR INTO A BOOK

Read and search text files on screen — with total page control

TASK SWITCHING

Run more than one program at the same time...Access DOS while running any program

PLUS 35 MORE POWERFUL PROGRAMS — and our FREE CATALOG

All programs are fully functional with complete instructions

RAVE REVIEWS!

"TSL sends you interesting - and occasionally invaluable - utilities that should provide almost everyone with something useful."

— Peter McWilliams, Nationally Syndicated Computer Column

"TSL will send you an outstanding disk for \$3.60 that contains 44 useful programs and utilities."

— Fred Blechman for Computer Shopper Magazine

"TSL offers an incredible disk for only \$3.60 shipping and handling."

— Michael W. Ecker, Recreational and Educational Computing

LIMITED OFFER

You pay the shipping — we pay the rest!

FOR IMMEDIATE DELIVERY MAIL \$3.60 (U.S. FUNDS ONLY) FOR SHIPPING AND HANDLING TO:

THE SOFTWARE LABS 3767 Overland Ave. #112, Los Angeles, CA 90034

Call Toll Free for
SAME DAY SHIPPING
800-359-9998
Orders Only & Free Catalog

Name _____
Address _____
City/State/Zip _____
VISA/MC # _____ EXP. DATE _____

CHECK HERE AND
ADD \$1.00 IF ORDERING
3 1/2" DISK SIZE
For more information
Call (213) 559-5456



CP11/90

ENCLOSED IS MY CHECK/MONEY ORDER FOR \$3.60 (FOREIGN SHIPPING OUTSIDE NO. AMERICA = \$10.00)

Circle Reader Service Number 152

www.commodore.ca



REVIEWS

AMIGA

continued from page 102

PROWRITE 3.1

Highly intuitive and designed specifically for the Amiga, *ProWrite* 3.1 is an extremely powerful yet deceptively simple-to-use graphic word processor. Using *ProWrite's* pull-down menus and keyboard shortcuts, it took my ten-year-old son only 15 minutes to learn to use the program.

Text editing is beautifully implemented and very fast. The four main commands are under the left hand: Amiga-V to paste, C to Copy, X to cut, and Z for the new Undo function, which has become one of my favorites. You can undo all editing and formatting commands, alignment changes, picture moves, ruler changes, and other actions. You can even change your mind and undo the Undo command. You can also edit headers and footers, include automatic dates and page numbering, and use subscripts and superscripts.

If you like a clean writing screen, you can toggle the ruler away. The screen isn't cluttered with gadgets, so you can see more of your text. You can have up to ten windows open at once, containing pictures and text, with multiple colors and fonts. The WYSIWYG display takes all the guesswork out of formatting and printing.

The 100,000-word spelling checker lets you check a range of text, look up a single word, check continuously, and add words to the user dictionary. The 300,000-word cross-reference thesaurus allows you to move back and forth through several hierarchies of words.

ProWrite 3.1 has many powerful new features including both newspaper-style and snaking columns, *ARexx* macros, and a special storyboarding feature. *ProWrite* will automatically open its screen in the same resolution as your Workbench screen, or you can force it to use almost any other screen mode, including the new ECS Productivity and SuperHires modes.

Version 3.1 includes an improved file requester that's still easy for novices to use but that now lets you type filenames and paths directly

Reader Service Number/Advertiser	Page	Reader Service Number/Advertiser	Page
224 Access	P-41	154 Migraph	A-19
240 Accolade	10, 11	Montgomery Grant	A-15
239 Accolade	12, 13	Montgomery Grant	G-3
107 Accolade	14, 15	121 Multi-Video, Inc.	A-32
149 AccuTone	G-24	130 MusicWare	117
139 Ad Lib	IBC	Northgate	37
164 Air Force	85	246 Northgate	38, 39
231 Aprotect	G-15	247 Northgate	40, 41
204 Artisoft	G-23	248 Northgate	42, 43
120 Axilis Software	G-22	249 Northgate	44, 45
261 Best Bits & Bytes	M-7	250 Northgate	46
262 Best Bits & Bytes	G-13	251 Northgate	54, 55
255 Blackjack Computer	116	252 Northgate	86, 87
Brantford	A-35	142 Octagon Technologies	9
238 Britannica	P-39	169 Origin	68, 69
232 California Dreams	71	138 Origin	P-3
260 California Shareware	M-5	235 Origin	20, 21
110 California Shareware	A-21	180 Parsons	63
253 C*Base	G-24	257 P.A.V.Y.	G-22
CheckFree	5	255 PC Enterprises	116
128 Compsult	G-4	194 Pro-Tronic Systems	A-37
102 CompuServe	P-19	221 Que	79
150 Compustore	P-25	104 Radio Shack	52, 53
114 Computer Direct	106, 107, 108, 109	119 Ramco	117
173 Computer Insurance Agency, The	117	103 Rent-A-Disk	A-32
201 Computer Productions	116	209 SaxMan Systems	A-35
129 Covox	112	160 SDI	P-23
157 Creative Micro	G-9	161 SDI	G-5
Damark	P-29	122 Sexy Software	117
229 Data East	83	228 Sierra-On-Line	P-37
258 Data East	P-15	227 Sierra-On-Line	BC
184 Davidson	77	109 Smart Luck Computer Systems	117
183 Davidson	P-35	215 Soft Group	G-21
185 DCS Industries	111	200 Software Excitement	A-5
133 Desk Top Advantage, The	A-14	151 Software Labs	91
105 Digital Wizards, Inc.	A-3	152 Software Labs	103
199 Direct Link	P-21	127 Software of the Month Club	117
143 E.G. Publishing	84	112 Software Support International	A-25
242 Electronic Arts	99	111 Software Support International	A-14
243 Electronic Arts	P-45	SOGWOP Software	G-23
158 Electronic Materials	G-23	225 Spectrum Holobyte	25, 27, 29, 31
European Artists	P-47	223 Spectrum Holobyte	97
254 Free Spirit	84	115 Star Micronics	IFC, 1
125 General Videotex	110	191 Taito	19
177 GENie	7	241 Taito	17
197 Gladstone Productions	A-33	205 Tektonics Plus	G-21
198 Gold Hill	P-27	118 Tenex	G-11
230 Gosselin	116	132 The Other Guys	A-4
166 Grapevine	A-37	148 Three-Sixty Pacific	P-16
165 Grapevine	G-21	220 Titus	P-5
181 Group M	A-31	113 UBI Soft	67
146 Hacker Cat	G-24	155 Utilities Unlimited of Oregon	A-37
182 Hilson Digital	A-32	259 Virgin Mastertronics	P-11
256 ICD	A-13	226 Wesson International	72
256 IHT Software	A-13	World of Amiga	A-16
108 Innerprise	A-9		
116 International Technologies	A-35		
187 Konami	61		
189 Lucas Film	3		
106 Lucas Film	101		
212 Lyco	48, 49		
Magalog Marketing	P-42, P-43		
153 Maxis	70		
244 Mediagenic	93		
237 Mediagenic	P-7		
206 Mibro Computer	113		
147 MiccaSoft	57		
222 Microace	68		

Amiga Disk Subscription	A-23, 27
Classified Ads	118-119
COMPUTE Books	P-13, 116, 119, A-11
COMPUTE Disk Subscribers	83
COMPUTE Magazine Entertainment Software	94, 95
COMPUTE's PC Reader Survey	P-31
COMPUTE's SharePak	33
Gazette Disk Library	G-19
Gazette PowerPak	G-17
Mean 18	A-23



REVIEWS

into a text box, move forward or backward between disk directories, and select a path from a list of disks and system assignments. It also adds an adjustable Speak command that will read a marked block of text back to you. The improved font requester shows you a sample of the font you've chosen and lets you install your favorite fonts in a quick-access submenu.

ProWrite has many user-definable parameters that can be changed by the user and saved as defaults. In fact, everything in your document setup that can be changed is now saved in your Prefs file. This welcome new feature makes starting writing sessions a breeze.

Print options abound, including smoothing and print reduction for high-quality output on a dot-matrix printer. You can also print back-to-front, odd-even, or collated. *ProWrite* will print using Amiga bitmap fonts or native printer fonts. You can even mix graphics with your printer's built-in letter-quality fonts. If you have a color printer, you'll be especially pleased with *ProWrite's* excellent dithered color graphic output.

The *ProWrite* manual is easy to use, with sections for quick reference and a good index. You probably won't need the manual much at all, but I recommend browsing through it to find all the nice little extra touches this program has, such as several editing shortcuts.

New Horizons deserves top marks for its Bug-Free Guarantee. If you find a bug in the program, the company will fix it free within 30 days or you can return the program. *ProWrite's* flexibility and speed, along with its great range of options, make it an excellent value.

PAMELA ROTHMAN

Ease of Use	★★★★★
Documentation	★★★★
Features	★★★★
Innovation	★★★★★

Amiga with 1MB—\$175
Contact company for upgrade information.

NEW HORIZONS
206 Wild Basin Rd.
Suite 109
Austin, TX 78746
(512) 328-6650

64/128

SECRET OF THE SILVER BLADES

SSI perfected its AD & D (Advanced Dungeons & Dragons) game system with the release of *Champions of Krynn*. The first two games in the series, *Pool of Radiance* and *Curse of the Azure Bonds*, were too difficult to play because of the combat system and vast numbers of monsters the games threw at you.

Champions of Krynn revamped the game system to make the adventure easier to play. The result was exactly what gamers were looking for. This game system has been transferred to *Secret of the Silver Blades*, the newest role-playing epic in SSI's AD & D line.

A long time ago, two brothers named Eldamar and Oswulf lived in the town of Verdigris. Eldamar succumbed to the dark side of human nature and practiced evil studies. Oswulf condemned his brother's practices and managed to overpower him and his minions. Oswulf refused to kill his brother; instead he encased Verdigris and the evil ones in a glacier. In recent days, however, the glacier receded and miners began reworking the mines. They've renamed the town New Verdigris and turned it into a thriving business.

Recently, evil members of the community, known as the Black Circle, suggested that the miners dig deeper for even greater riches. Unfortunately, the miners opened a passage that released the monsters from the glacier. The town was ravaged. The citizens took all of their wealth and threw it into the Well of Knowledge, hoping for a savior. Your party in *Secret* is charged with ridding New Verdigris of its evil threat.

The *Silver Blades* of the title was the name of Oswulf's group that defeated his brother. Your party must become like the *Silver Blades* of old. It isn't hard to ease into this role because of *Secret's* game system. Most commands are entered using menus and lists. Movement in exploration

and combat is controlled using the joystick. Together, the joystick and keyboard effectively control the game. You will be up and running with *Secret* in 15–20 minutes. Most commands are intuitive, and those that aren't are explained very well in the manual. The system adheres closely to the rules for the AD & D board game and is approved by TSR, creator of AD & D.

As with other AD & D games, the graphics are highly detailed and colorful. The fluidity of movement is reflected in the views from which you see the *Secret* game world. You see mazes, dungeons and such in 3-D, while general areas, outdoor travels, and combat are seen from an overhead perspective. The characters and monsters are depicted in great detail in all views. It's almost as much fun to watch *Secret* as it is to play it. The AD & D games from SSI are the type that you might record with a VCR and show as background video for parties and gatherings. Graphics are captivating and pull you into the story. Full-screen pictures and in-between scenes accentuate normal play. *Secret* boasts of having the largest 3-D terrain of any of the AD & D games. You'd better believe it!

Once again, SSI has proved why its game manuals are considered the finest in the industry. In addition to the data card that explains how to use *Secret* on your particular computer, SSI packages a rule book and an adventurer's journal. Both booklets are easy to read and include illustrations or screen shots where necessary. These manuals are organized very well and also act as copy protection. The game refers directly to entries made in the *Adventurer's Journal*, and these add to the atmosphere and mystery of *Secret*. I have always found this technique effective in keeping the game fresh and not requiring the gamer to stare at a screen for hours without an occasional diversion.

Although it isn't needed to finish the game, I strongly recommend buying the clue book for *Secret*. It offers all of the hints you need to finish the game: maps, monster weaknesses, and important game events. It was indispensable for my getting a good distance into the game to do this review; it was much quicker than relying on

continued on page 110

SAVE UP TO 70% EVERYDAY!

ON COMPUTERS, SOFTWARE & ACCESSORIES

AT \$299, WHAT ARE YOU WAITING FOR?
NEW! AMSTRAD® PC20

FULL IBM XT
COMPATIBILITY!



PACKAGE INCLUDES:

- 512K RAM memory • 3.5" 720K disk drive
- Monochrome graphics & CGA color graphics
- Parallel and serial ports for printer or modem
- PC joystick port • Microsoft DOS™ V.3.3
- Digital Research's GEM™ Desktop ("point & click")
- Digital Research's GEM™ Paint
- Microsoft compatible mouse

AT AN UNBELIEVABLE
\$299⁹⁵

Mfr. Sugg. Retail \$749.95 Monitor Optional

MAGNAVOX 13" RGB COLOR MONITOR



- Vertical/Horizontal Image Centering Controls
- 80 Column Display
- 640 x 240 Resolution
- Built-in Tilt/Swivel Stand
- RGB TTL & Composite Inputs

BRAND NAME SAVINGS
\$229⁹⁵

Model # 8764

Mfr. Sugg. Retail \$399.00

NEW! 10" 180 CPS PRINTER with Near Letter Quality - The NEW NLQ 180-III



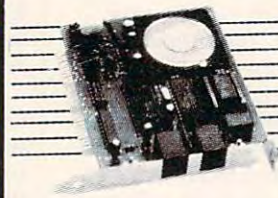
- AUTO LOAD PAPER PARKING
- LIFETIME WARRANTY ON PRINTHEAD
- 2 YEAR IMMEDIATE REPLACEMENT
- Dot Addressable Graphics
- Italics, Elite, Pica, Condensed
- 8K Buffer
- NLQ Selectable from Front Panel
- Pressure Sensitive Controls

REAR FEED - REDUCES PAPER DRAG!

\$149⁹⁵

Mfr. Sugg. Retail \$299.95

2400 BAUD INTERNAL MODEM Superior Hayes Compatibility



- Made in the USA!
- Full or Half Duplex
- Rockwell Modem Chip Set for Fast, Reliable Communications
- Non-volatile Memory
- Built to Work with the Fastest Computers!

GET A LOT FOR YOUR \$\$\$

\$74⁹⁵

Mfr. Sugg. Retail \$129.95

20 MEG ST225 HALF-HEIGHT DRIVE KIT

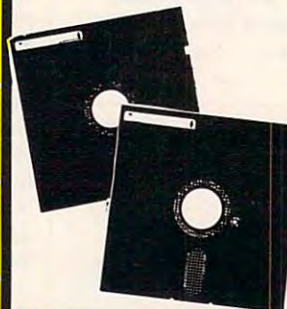
Features: 20 Megabyte storage, supports MS-DOS, auto boots when powered up, cables and hard disk controller included, half-height - takes half the room of full size drives. Fits IBM® PC, XT and Compatibles.

THE BEST!

\$218⁹⁵

Mfr. Sugg. Retail \$399.95

LOWEST PRICE IN THE COUNTRY!



5.25" DS/DD
Floppy Disks

19¢ each

100% Certified - Error Free
Lifetime Guarantee!
If Your Diskette Fails We
Will Replace it FREE!

Prices do not include shipping charges. Call to get your lowest delivered cost. We insure all shipments at no extra cost to you! All packages are normally shipped UPS Ground. 2nd day and overnight delivery are available at extra cost. We ship to all points in the US, Canada, Puerto Rico, Alaska, Hawaii, Virgin Islands and APO-FPO. Monitors only shipped in Continental US. Illinois residents add 6.5% sales tax. Prices and availability subject to change without notice. Not responsible for typographical errors or omissions. *Computer Direct will match any current (within 30 days) nationally advertised price on exact same items. Shipping and sales tax not included. Verification required.

FAX Ordering 708/382-7545 Outside Service Area, Please Call 708/382-5058

COMPUTER DIRECT, INC.

22292 N. Pepper Road
Barrington, IL 60010

"We Love Our Customers"

www.commodore.ca

SAVE UP TO 70% EVERYDAY! ON COMPUTERS, SOFTWARE & ACCESSORIES

Mice - Joysticks - Scanners

Logitech Finesse

Software.....\$99.95

Design beautiful pages easily with Finesse. You get layout tools, WYSIWYG display, templates, clip art, etc.

Mfg. Sugg. Retail \$179.95



Logitech C9 Serial Mouse.....\$79.95

Ergonomic design, Logi Menu software, Mouse 2-3 menu software for Lotus 1-2-3, Lifetime warranty. Minimum 256K memory, IBM PC, XT AT, PS/2 or compatibles

Mfg. Sugg. Retail \$109.95



EPYX 500XJ

Joystick.....\$12.95

The world's first high performance joystick. Trigger finger firing, fits in the palm of your hand. IBM PC & compat.

Mfg. Sugg. Retail \$39.95



Flywheel 4000

Control Yoke.\$39.95

For flying and driving games, 4 "fire" buttons, full X-Y control yoke, sturdy desktop adapter clamp, works like 2 separate joysticks. 15 pin connector. "Feel the Game!"

Mfg. Sugg. Retail \$99.95



Logitech Scanman

Plus.....\$169.95

The power of images instantly! 4.1" scanning window, adjust scanning resolution between 100 & 400 dpi. Adjustable contrast. Line art and 3 dither pattern settings. Includes Logitech's graphic editor. For IBM PC, XT, AT, PS/2 and compatibles.

Mfg. Sugg. Retail \$339.95



Catchword OCR

Software...\$149.95

Intelligent character recognition software. The perfect companion for Scanman Plus.

Mfg. Sugg. Retail \$249.95



Software - Software - Software

Personal /Productivity

by Melody Hall

Make Calendars & Stationery

Mfr. Sugg. Retail \$9.95.....\$7.95

Electronic Checkbook

Mfr. Sugg. Retail \$9.95.....\$6.95

Let's Make Greeting Cards

Mfr. Sugg. Retail \$9.95.....\$7.95

Money Manager

Mfr. Sugg. Retail \$9.95.....\$6.95

Let's Make Signs & Banners

Mfr. Sugg. Retail \$9.95.....\$7.95

Thesaurus with Spellchecker

Mfr. Sugg. Retail \$9.95.....\$6.95

Dollars & Sense by Monogram

Mfr. Sugg. Retail \$99.95.\$68.95



Personal /Productivity

Entrepreneur by Maverick

Mfr. Sugg. Retail \$29.95..\$21.95

Company Policy Manual

Mfr. Sugg. Retail \$49.95..\$32.95

Sales Enhancer Plus

Mfr. Sugg. Retail \$34.95..\$21.95

Family Reunion by Famware

Mfr. Sugg. Retail \$9.95.....\$49.95

Grandville Publications

Up Your Cash Flow

Mfr. Sugg. Retail \$9.95....\$97.95

Educational

Body Transparent by Designware

Mfr. Sugg. Retail \$9.95....\$29.95

States & Traits

Mfr. Sugg. Retail \$9.95....\$29.95

ENTREPRENEUR

COLLECTORS AND THEIR INTERESTS



Educational

Mavis Beacon Teaches

Typing by Electronic Arts

Mfr. Sugg. Retail \$29.95..\$37.95

Pro Tennis Tour

Mfr. Sugg. Retail \$49.95..\$31.95

Weather Brief

Mfr. Sugg. Retail \$9.95....\$37.95

World Atlas

Mfr. Sugg. Retail \$9.95....\$47.95

Entertainment

Trivial Pursuit by Electronic Arts

Mfr. Sugg. Retail \$34.95..\$34.95

Jeopardy 25th Anniv. by Gametek

Mfr. Sugg. Retail \$9.95.....\$9.95

Wheel of Fortune Golden

Mfr. Sugg. Retail \$9.95.....\$9.95



NOT JUST THE BEST PRICES! • TECHNICAL SUPPORT • 30 DAY HOME TRIAL

FREE CATALOGS • 90 DAY IMMEDIATE REPLACEMENT • WE WON'T BE UNDERSOLD

CALL 1-800-BUY-WISE EXT. 51 TODAY!

www.commodore.ca

SAVE ON THESE NEW PERSONAL COMPUTER SYSTEMS WITH STATE OF THE ART IDE TECHNOLOGY*

The Lowest Price Guaranteed!



VIP 12MHz 8086 Computer Systems

- Complete XT® Compatibility
- 640K RAM Expandable to 1 MEG
- Front Panel LED Display
- Parallel, Serial & Game Ports
- MGA & CGA Card
- 101 Key AT® Style Keyboard
- 360K Floppy Drive & Controller
- Clock/Calendar
- 150 Watt Power Supply
- NEC V-20 CPU

* XT® Based System do not include IDE Controller

Systems Include
MS-DOS 3.3

Base Price

\$399.95

Mfr. Sugg. Retail \$699.95 Monitor Optional

HARD DRIVE AND MONITOR OPTIONS - ADD TO BASE PRICE -

Hard Drive	Mono	RGB	EGA	VGA
No Drive	\$120	230	450	512
20MB	\$370	490	690	752
40MB	\$520	620	840	902
80MB	\$760	850	1100	1140

Call for Your FREE Catalog Today!

Lowest Priced 286 Computer Anywhere!



VIP 12MHz 286 Computer Systems

- Complete AT® Compatibility
- 512K RAM Expandable to 4 MEG
- 12 MHz 80286 Microprocessor with Phoenix BIOS
- Parallel, Serial & Game Card
- Choice of 1.2 or 1.44 MEG Floppy Drive
- 101 Key AT® Style Keyboard
- 200 Watt Power Supply

System Includes

HFDC-III IDE & Floppy Controller
Increases your data transfer rate up to 100%. Exclusively on our VIP specially equipped personal computer systems

Base Price

\$499.95

Mfr. Sugg. Retail \$799.95 Monitor Optional

HARD DRIVE AND MONITOR OPTIONS - ADD TO BASE PRICE -

Hard Drive	Mono	RGB	EGA	VGA
No Drive	\$190	340	430	540
20MB	\$430	580	670	780
48MB	\$500	650	740	850
71MB	\$610	760	850	960
111MB	\$900	1050	1140	1250

Fast 16MHz Processor Speed



VIP 16MHz 286 Computer Systems

- Complete AT® Compatibility
- 512K RAM Expandable to 8 MEG
- 16 MHz 80286 Microprocessor with Phoenix BIOS
- Choice of 1.2 or 1.44 MEG Floppy Drive
- 101 Key AT® Style Keyboard
- 200 Watt Power Supply

System Includes

HFDC-III Floppy Controller & IDE Bus Connector
Increases your data transfer rate up to 100%. Exclusively on our VIP specially equipped personal computer systems

Base Price

\$599.95

Mfr. Sugg. Retail \$899.95 Monitor Optional

HARD DRIVE AND MONITOR OPTIONS - ADD TO BASE PRICE -

Hard Drive	Mono	RGB	EGA	VGA
No Drive	\$190	340	430	540
20MB	\$430	580	670	780
48MB	\$500	650	740	850
71MB	\$610	760	850	960
111MB	\$900	1050	1140	1250

Prices do not include shipping charges. Call to get your lowest delivered cost. We insure all shipments at no extra cost to you! All packages are normally shipped UPS Ground. 2nd day and overnight delivery are available at extra cost. We ship to all points in the US, Canada, Puerto Rico, Alaska, Hawaii, Virgin Islands and APO-FPO. Monitors only shipped in Continental US. Illinois residents add 6.5% sales tax. Prices and availability subject to change without notice. Not responsible for typographical errors or omissions. *Computer Direct will match any current (within 30 days) nationally advertised price on exact same items. Shipping and sales tax not included. Verification required.

FAX Ordering 708/382-7545 Outside Service Area, Please Call 708/382-5058

COMPUTER DIRECT, INC.

22292 N. Pepper Road
Barrington, IL 60010

www.commodore.com
"We Love Our Customers"

INCREASE YOUR DATA TRANSFER RATE UP TO 100%! WITH OUR SPECIALLY EQUIPPED VIP COMPUTERS

**386 Performance
at a 286 Price!**



VIP 16MHz 386SX Computer Systems

- 16MHz 80386SX Microprocessor with Phoenix BIOS
- 512K RAM Expand. to 8 MEG
- Full Case/3 Open Drive Bays
- Parallel, Serial & Game Card
- Choice of 1.2 or 1.44 MEG Drive
- 101 Key AT® Style Keyboard
- Chips & Technology Chip Set
- 200 Watt Power Supply

System Includes

HFDC-III IDE & Floppy Controller
Increases your data transfer rate up to 100%. Exclusively on our VIP specially equipped personal computer systems

Base Price

\$799.95

Mfr. Sugg. Retail \$1299.95 Monitor Optional

HARD DRIVE AND MONITOR OPTIONS - ADD TO BASE PRICE -

	Mono	RGB	EGA	VGA
No Drive	\$190	340	430	540
20MB	\$430	580	670	780
48MB	\$500	650	740	850
71MB	\$610	760	850	960
111MB	\$900	1050	1140	1250

**The Most
Affordable 386!**



VIP 20MHz 386 Computer Systems

- 20MHz 80386 Microprocessor with Phoenix BIOS
- 1 MEG RAM Expand. to 8 MEG
- Parallel, Serial & Game Card
- Choice of 1.2 or 1.44 MEG Floppy Drive
- 101 Key AT® Style Keyboard
- Chips & Technology Chip Set
- 200 Watt Power Supply

System Includes

HFDC-III IDE & Floppy Controller
Increases your data transfer rate up to 100%. Exclusively on our VIP specially equipped personal computer systems

Base Price

\$999.95

Mfr. Sugg. Retail \$1424.80 Monitor Optional

HARD DRIVE AND MONITOR OPTIONS - ADD TO BASE PRICE -

	Mono	RGB	EGA	VGA
No Drive	\$190	340	430	540
20MB	\$430	580	670	780
48MB	\$500	650	740	850
71MB	\$610	760	850	960
111MB	\$900	1050	1140	1250

**Get the
"Tower of Power"
and Save Your
Desktop Space**



VIP 25MHz 386 Tower Case Computer

- 386 25MHz Tower Case Computer
- 1 MEG RAM Expand. to 8 MEG
- Phoenix BIOS Monitor Optional

System Includes

HFDC-III IDE & Floppy Controller
Increases your data transfer rate up to 100%. Exclusively on our VIP specially equipped personal computer systems

Base Price

\$1499.95

Then Add Your Custom Components

- **Seagate Hard Drives**
We Carry a Complete Line
- **Monitors**
Brand Names Like Magnavox, Leading Technology, etc.
- **Video Cards**
We Carry the Latest Video Technology Available
- **Modems, Printers, FAX, Power Protection . . .**
Too Many Options to List ...
**Thousands of Items
In Stock Call Today!**

**NOT JUST THE BEST PRICES! • TECHNICAL SUPPORT • 30 DAY HOME TRIAL
FREE CATALOGS • 90 DAY IMMEDIATE REPLACEMENT • WE WON'T BE UNDERSOLD
CALL 1-800-BUY-WISE EXT. 51 TODAY!**

A HARD DRIVE IS A TERRIBLE THING TO WASTE.

For only \$6 per hour, you can download onto your hard disk from DELPHI's library of over 10,000 programs. Join now for \$9.95 and your first hour is free. There is no surcharge for downloading at 2400 baud and no premium for dialing locally via Tymnet. If you really have a big disk, choose the 20/20 Plan and enjoy 20 hours for \$20.

With your computer and modem dial 1-800-365-4636. Press Return twice. At Username: type JOINDELPHI and at Password: type SOFTWARE.

DELPHI

POPULATING HARD DRIVES SINCE 1982

800-544-4005 • 617-491-3393

Circle Reader Service Number 125

continued from page 105

my wits alone. It adds the final touch to a complete game experience that will wrap you up for weeks on end.

Once again, SSI has proved why it is a consistent leader in the role-playing game genre. Instead of just offering the same rehashed AD & D gold-box game in a different environment, SSI has added new things to keep gamers happy. New monsters and spells and higher character classes are part of the refinement. The best new feature is the combat LEVEL command that allows you to make combat easier or harder. The down side of this feature is that experience points are scaled to reflect the difficulty. This feature should make *Secret* accessible to newer players as well as offering a stronger challenge to veterans.

Secret is the finest gold-box AD & D game from SSI to date. I think SSI should wait awhile before releasing another game in this series. *Champions of Krynn* was set in the Dragonlance world. Without changing the interface, SSI should come up with a game that has a lot of new features to make it more attractive to gamers who have already played one of the gold-box games.

Until then, pick up *Secret of the Silver Blades* if you're between games. I was considerably impressed and look forward to future products. Happy adventuring!

RUSS CECCOLA

Playability	★★★★
Documentation	★★★★★
Originality	★★★★★
Graphics	★★★★

Commodore 64 or 128, joystick—\$39.95

STRATEGIC SIMULATIONS
Distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171



REVIEWS

64/128

F-16 COMBAT PILOT

Let's imagine for a moment that you have been selected as one of the USAF's elite who will pilot a General Dynamics F-16 Falcon Fighter. This complex military aircraft is not likely to be entrusted to just anyone.

Players must log multiple joystick hours before they can effectively soar into the fray of battle in *F-16 Combat Pilot*, a fighter jet simulation by Digital Integration. This simulation covers the entire gamut of fighter combat.

Flying five different missions with the code names HAMMERBLOW, DEEPSTRIKE, WATCHTOWER, SCRAMBLE, and TANKBUSTERS, pilots put their F-16s through every conceivable combat scenario: air-to-air bogey interceptions, battlefield close-air support, reconnaissance missions, and the destruction of enemy supplies and military targets. Mastering these missions is mandatory and absolutely necessary to prepare a pilot for the sixth and most challenging multimission campaign: OPERATION CONQUEST.

Just as every aspiring pilot knows, complete study of the supplied manual and all related documentation is required to completely understand your airship and its capabilities. Even experienced pilots may find this a wise first step before sending the F-16 skyward. The creators of this simulation have spent nine man-years in research and development to make *F-16 Combat Pilot* as real as possible.

Outfitting the F-16's nine hardpoints with weapons is a decision you can oversee yourself, or you can depend on your ground crew to make the right choices for you. Care must be taken not to overload the aircraft.

Mastery of the F-16's seven weapons systems and two radar modes will ensure the pilot better odds in each of the five missions. Tactical Air Command (TAC) monitors your success and ranks you accordingly. A Pilot's Log (save disk) may be maintained since completion of all five missions is quite a lengthy process. Once TAC is satisfied with your accomplishments, you are promoted to Squadron Leader and allowed to plan and lead multiple aircraft against the enemy in OPERATION CONQUEST.

A word of caution to all hotdoggers. *F-16 Combat Pilot* is not an arcade style shoot-'em-up. It is a complex and very realistic simulation that requires study and dedication. It's tough. However, the satisfaction of directing such a highly technical piece of battle hardware, almost as an extension of one's self, is nothing short of magical.

STEVE HEDRICK

Playability	★★★★
Documentation	★★★★
Originality	★★★
Graphics	★★★★

Commodore 64 or 128, joystick—\$34.95

DIGITAL INTEGRATION
Distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171

Enhance your Tandy !!!

We also carry a full line of upgrades for your Panasonic FX series, IBM and compatibles.

EX / HX Hard Drive Systems

Complete, plug-n-play! 15 month warranty!

21 Megabyte389.00
 32 Megabyte439.00
 42 Megabyte489.00
 68 Megabyte589.00

EX/HX Memory Upgrades

Raise your systems memory the cost effective way with DCS memory upgrades. 1 yr warranty

Board 128K, adds 2 slots . . 149.00
 Board w/384k and 2 slots. . 189.00

Memory Upgrade Chip Sets

Use these chip sets to upgrade your system memory to 640K! At these prices you can't afford not to . . .

CS8150 for 1000SX, EX, HX59.00
 CS8260 for 1000SL 59.00
 CS8370 for 1000TX, TL 49.00
 CS8480 for 3000NL 59.00

EMS Boards

Upgrade to Expanded Memory on your Tandy or Panasonic FX series computer. MicroMainframe 5150 board. Holds up to 2 megabytes of memory.

Board 0K 159.00
 Board w/256K 199.00
 Board w/512K 249.00
 Board w/1 MEG 309.00
 Board w/2 MEG 389.00

Prices include 150ns chips, add \$20 for 120ns chips needed on some machines.

IDE Drives for TL/2

New technology at a reasonable price! Does not use a slot, plugs into the existing TL/2 IDE interface connection.

20 MEG289.00
 40 MEG339.00

HARD CARDS

Plug-n-Play, Tandy / IBM switchable and works on 1000,A,SX, TX, SL, TL, TL/2, SL/2, 3000, 1200. 15 month warranty! and 30 Day Money Back!

21 Megabyte279.00
 32 Megabyte299.00
 42 Megabyte389.00
 68 Megabyte589.00

Zucker Memory Boards

This board will increase the memory on a original Tandy 1000 or 1000A from 128K to 640K on one board using only one slot. Last Chance! Buy Now!

Tandy 1000,A279.00
 Tandy 1200, IBM XT199.00

VGA Combinations

Go for the gold in graphics with this VGA monitor and card combo! 640 x 480 resolution and 256 colors.

VGA COMBO489.00

Smart Mouse

This serial mouse comes complete with Dr. Halo III drawing software and a mouse pad. Incredible deal at

ALL Models49.00

Modems

All modems are Hayes command set compatible, auto answer, auto dial, and auto baud detect.

2400 B Internal . . . 79.00
 1200 B Internal . . . 59.00
 2400 B External . . 129.00
 1200 B External . . 89.00

DCS Super Controller

This revolutionary floppy disk controller can be used in a system which already has a floppy controller built in. This allows a user up to four floppy drives in one system. It will control 360K, 1.2M, 720K, 1.44M floppy drives. only!!

\$119.00

All external drives come complete with a external case with power supply, cables and all mounting hardware. And remember DCS Toll Free Tech Line.

DOS 4.01

The Latest for less, supports larger than 32 meg partitions, and comes with DOS SHELL

5.25" version . . .89.00
 3.5" version99.00

Speed Up Solutions

These products were designed to speed up your computer creating more raw computing power. Some involve clock speed changes.

V20 for 1000,A,SX,IBM . . .29.00
 V30 for 1000SL,FX,ATT . . .39.00
 PC Sprint75.00

The PC Sprint boards will give a normal XT user currently running at 4.77mhz a 100% increase in processing power.

EX / HX External Floppies

Add an external floppy drive to your EX or HX and move into the world of multi-disk systems.

360K, 5.25" drive complete . .129.00
 720K, 3.5" drive complete . . .129.00

The "How to" guide to upgrading your Tandy 1000 series computer.



This comprehensive guide is a must for any Tandy user who wants more from their 1000 series computer. Covers all models of the 1000 from the original to the EX / HX through the TL. Read about upgrades that you can make before you buy. What makes Tandy so different from the normal XT? There are sections for speed, video, memory, sound, and software as well as many more! Buy now and save . . .19.95 add \$3.50 shipping . . .

Floppy Drive Solutions!

DCS does what most said could not be done. We now offer a full line of floppy drive systems for the Tandy Computers.

	1000,A,SX,1200, IBM,Compatibles	SL,SL/2,TX, TL,TL/2
Internal Drives		
5.25" 360K	77.00	99.00
5.25" 1.2 Megabyte	159.00	159.00
3.5" 720K	99.00	109.00
3.5" 1.44 Megabyte	159.00	159.00
External Drives		
5.25" 360K	199.00	199.00
5.25" 1.2 Megabyte	249.00	249.00
3.5" 720K	199.00	199.00
3.5" 1.44 Megabyte	249.00	249.00

Circle Reader Service Number 185

DCS Industries, Inc.
 141 Columbus Rd.
 Athens, Ohio 45701



1-800-537-3539

LOCAL: 1-614-594-4180 FAX: 1-614-592-1527

TOLL FREE TECHNICAL SUPPORT!
 DEALER ORDERS WELCOME!
 NO SURCHARGE FOR VISA or MASTERCARD!

Tandy is a registered trademark of Tandy Corp.
 IBM is a registered trademark of International Business Machines
 Prices and availability are subject to change without notice!

www.commodore.ca



REVIEWS

TALK TO YOUR COMPUTER

WITH VOICE MASTER KEY® FOR PCs/COMPATIBLES
VOICE RECOGNITION WITH SPEECH RESPONSE

GIVE A NEW DIMENSION TO PERSONAL COMPUTING The amazing Voice Master Key System adds voice recognition to just about any program or application. Voice command up to 256 keyboard macros from within CAD, DTP, word processing, spread sheet, or game programs. Fully TSR and occupies less than 64K. Instant response time and high recognition accuracy. A real productivity enhancer!



SPEECH RECORDING SOFTWARE Digitally record your own speech, sound, or music to put into your own software programs. Software provides sampling rate variations, graphics-based editing, and data compression utilities. Create software sound files, voice memos, more. Send voice mail through LANs or modem. A superior speech/sound development tool.

INTERACTIVE SPEECH INPUT/OUTPUT Tag your own digitized speech files to voice recognition macros. Provides speech response to your spoken commands -- all from within your application software! Ideal for business, presentation, education, or entertainment programs you currently use.

Augment the system for wireless uses in robotics, factory process controls, home automation, new products, etc. Voice Master Key System does it all!

EVERYTHING INCLUDED Voice Master Key System consists of a plug-in card, durable lightweight microphone headset, software, and manual. Card fits any available slot. External ports consist of mic inputs and volume controlled output sockets. High quality throughout, easy and fun to use.

ONLY \$149.95 COMPLETE

ORDER HOTLINE: (503) 342-1271 Monday-Friday 8 AM to 5 PM Pacific Time. VISA/MasterCard phone or FAX orders accepted. No CODs. Personal checks subject to 3 week shipping delay. Specify computer type and disk format (3 1/2" or 5 1/4") when ordering. Add \$5 shipping charge for delivery in USA and Canada. Foreign inquiries contact Covox for C & F quotes.*

30 DAY MONEY BACK GUARANTEE IF NOT COMPLETELY SATISFIED.

CALL OR WRITE FOR FREE PRODUCT CATALOG.



COVOX INC.

675 CONGER ST.
EUGENE, OR 97402

TEL: (503) 342-1271
FAX: (503) 342-1283

Circle Reader Service Number 129

continued from page 110

Macintosh

ALARMING EVENTS

If your calendar could just nudge you a few minutes before an important meeting, you might get to more of your appointments on time. Coming to the rescue, CE Software has grafted a couple of elbows onto a new electronic calendar called *Alarming Events*.

Alarming Events stores the critical data from your appointments and uses that information to remind you of your appointments before you have a chance to be late.

To help keep you on time, the program's designers organized *Alarming Events* around three calendar views—monthly, weekly, and daily. The monthly and weekly calendars simply display information. The monthly calendar shows as many months at a time as you want. The program highlights dates on which you have appointments. Of course, this highlighting becomes almost meaningless when you have appointments every day. The weekly calendar shows five days at a time and lists your appointments for each day. Clicking on a date in the monthly calendar or an event in the weekly calendar brings up the daily calendar.

The daily calendar is the central feature of *Alarming Events*. On this screen, you enter your appointments, set up the kind of alarm you want, and choose a time to be re-

mindful of your meetings. You can also set up recurring events so a regular appointment will transfer from week to week, month to month, or even every other week on your calendar.

Although the daily calendar holds a lot of information, the screen is laid out clearly. When you first open a daily calendar, you start by typing a new event into the Event Subject field. Tab to the Event Notes field and add as many lines of detailed information as you'd like for each event.

At the top of the screen, you can click on the clock to set the time for your appointment. It refers to your system clock to tell when it should notify you of an appointment. To the right of the text fields, you'll find boxes in which you can enter the event's duration, when you want to be reminded of the event, and how often the event recurs. Each of these fields is easy to set: You type a number and then choose the unit of time from drop-down menus beside the field.

Alarming Events works well for simple scheduling, but you shouldn't limit this program to storing information about appointments and meetings. You can use *Alarming Events* to plan projects, too. For example, it will notify you on the day that you need to call your writers to remind them of their deadlines. It will remind you that tomorrow is the last day you can submit a bid to your newest client. If you list phone calls you need to make, you can include the phone number in the description of the event. Then, when the notification screen pops up, the phone number pops up, too.

In addition to its fine calendars, *Alarming Events* offers little touches that make the final package shine. Menu items let you customize the program, save event information in text files, and switch to other *Alarming Events* files. You can even import and export calendar files.

In spite of all its good features, *Alarming Events* still leaves room for improvement. For example, viewing the notes for an event is too troublesome. Once you've clicked on an event—even if it's just to review your notes—you can't click on OK or Cancel until you've made some change on the screen. This means you must do something trivial, like insert a space and then delete it, in order to move on to the next event you want to review.

None of the program's weaknesses should lead you away from *Alarming Events*, though. It's very useful for all kinds of scheduling tasks. CE Software's latest entry works just like a trusted assistant, nudging you in plenty of time to make that important appointment.

HEIDI E. H. AYCOCK

Ease of Use	★★★★
Documentation	★★★★
Features	★★★★★
Innovation	★★★★

Macintosh Plus, SE series, II series, or Portable—\$129.95

CE SOFTWARE
P.O. Box 65580
West Des Moines, IA 50265
(515) 224-1995

SERVING THE PUBLIC FOR 40 YEARS AND GROWING

MIBRO

company
inc. **YOUR** AUDIO. VIDEO. PHOTO. COMPUTER
DEPARTMENT STORE!!

VISIT OUR RETAIL LOCATION AT
64 WEST 36th STREET
NEW YORK CITY, NEW YORK 10018
FOR ORDERS ONLY CALL TOLL FREE
1-800-451-9780
N.Y. RESIDENTS (212) 695-7133

COMPUTER MADNESS



A. "STRICTLY FOR THE STARTERS" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •FLOPPY DRIVE •MONOCHROME MONITOR •DISKETTES •SOFTWARE BUNDLE

B. "COMPLETE ALL IN ONE" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •DUAL FLOPPY DRIVE (5 1/4" - 3 1/2") •MONOCHROME MONITOR •MOUSE •DISKETTES •SOFTWARE BUNDLE

C. "FOR THE SERIOUS NOVICE" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •FLOPPY DRIVE •20MB HARD DRIVE •MONOCHROME MONITOR •DISKETTES •SOFTWARE BUNDLE

D. "PACKAGE FOR THE PROFESSIONAL" COMPUTER OUTFIT

PACKAGE INCLUDES:
•COMPUTER •KEYBOARD •DUAL FLOPPY DRIVE (5 1/4" - 3 1/2") •40MB HARD DRIVE •VGA COLOR MONITOR •MOUSE •DISKETTES •SOFTWARE BUNDLE

IBM XT COMPATIBLE COMPUTERS

	A.	B.	C.	D.
COMMODORE S.E.	\$648	\$748	\$898	\$1498
EPSON EQUITY I+	\$498	\$598	\$748	\$1498
EPSON EQUITY Ie	\$598	\$698	\$898	\$1498
HEADSTART LX-CD	CALL	CALL	CALL	CALL
HYUNDAI 16TE	\$498	\$598	\$798	\$1498
HYUNDAI 16TX	\$498	\$598	\$798	\$1498
IBM XT	\$798	\$888	\$998	\$1498
IBM PS II-30	\$998	\$1198	\$1498	
LEADING EDGE Model D	\$498	\$598	\$898	\$1498
PREMIER 200	\$598	\$698	\$898	\$1498
PANASONIC FX-1650	\$498	\$598	\$898	\$1498

IBM AT (286) COMPATIBLE COMPUTERS

	A.	B.	C.	D.
AST BRAVO 286	\$798	\$898	\$1098	\$1598
COMMODORE S.E. (286)	CALL	CALL	CALL	\$1698
EPSON EQUITY II+	\$898	\$998	\$1198	\$1698
EPSON EQUITY Iie	\$998	\$1098	\$1298	\$1798
GOLDSTAR GS-230	\$898	\$998	\$1298	\$1898
HEADSTART 300		\$1198		\$1498
HEADSTART III	\$1498	\$1598	\$1798	\$1998
HYUNDAI 286X	\$798	\$898	\$1098	\$1598
HYUNDAI 286N	\$798	\$898	\$1098	\$1598
IBM AT	\$1098	\$1238	\$1398	\$1998
IBM PS II-30/286	\$1398	\$1498	\$1698	
IBM PS II-50Z	CALL	CALL	CALL	CALL
LEADING EDGE Model D2	\$898	\$998	\$1198	\$1698
MAXSTATION 286		CALL		CALL
NEC POWERMATE 286	\$998	\$1098	\$1398	\$1798
NEC POWERMATE 286 PLUS	\$1198	\$1298	\$1498	\$1898
PACKARD BELL F-1	\$898	\$998	\$1298	\$1798
PANASONIC FX-1850	\$898	\$998	\$1298	\$1698
SAMSUNG SD-630	\$798	\$898	\$1098	\$1598

IBM AT (386) COMPATIBLE COMPUTERS

	A.	B.	C.	D.
AST BRAVO 386-SX	\$1698	\$1798	\$1998	\$2298
EPSON EQUITY 386-SX	\$1398	\$1498	\$1648	\$1898
GOLDSTAR GS-320	\$1498	\$1598	\$1798	\$2498
HEADSTART 500		\$1598		\$1898
HYUNDAI 386-S	\$1048	\$1148	\$1348	\$1898
HYUNDAI 386-C	\$1398	\$1498	\$1698	\$1998
LEADING EDGE Model D3	\$1498	\$1598	\$1798	\$2198
MAXSTATION 386		\$1398		\$1698
NEC 386-SX	\$1498	\$1598	\$1798	\$1998
PACKARD BELL 386-SX	\$1298	\$1398	\$1698	\$1998
SAMSUNG SD-700	\$1198	\$1298	\$1498	\$1898

PRINTERS



PANASONIC

KXP-1180	\$169
KXP-1191	\$209
KXP-1124	\$279
KXP-1624	CALL
KXP-4450	CALL
KXP-4420	CALL

EPSON

LX-810	\$179
LQ-510	\$319
FX-850	\$339
FX-1050	\$449
LQ-850	\$519
LQ-950	\$539
LQ-2550	\$939
LQ-1010	CALL

STAR

NX-1000	\$159
NX-1000 color	\$209
NX-1500	\$309
NX-2410	\$299
NX-2415	\$389
XR-1500	\$439
XR-1000	\$329
XB-2410	\$439
XB-2415	\$579

HEWLETT PACKARD

Desk Jet	CALL
Desk Jet IIP	CALL
Laser Jet II	CALL
Laser Jet III	CALL

MODEMS

1200 Internal	\$59
2400 Internal	\$99
2400 External	\$129
9600 Int./Ext.	CALL

LAPTOPS



TOSHIBA

T-1000	\$598
T-1000S.E	\$1098
T-1000X.E	\$1698
T-1200X.E	\$2198
T-1200/20MB	\$1598
T-1600/20MB	\$2398
T-1600/40MB	\$2638
3100S.X./40MB	\$3798
3200S.X./40MB	CALL
5200/40MB	CALL
5200/100MB	CALL
301 Printer	CALL

SHARP

PC-4741	CALL
PC-5741	CALL
PC-6220	CALL
MZ-100	CALL
MZ-200	CALL
MZ-250	CALL

MITSUBISHI

286/20MB	\$1698
286/40MB	\$2098

PACKARD BELL

286/LP-40V.G.	\$2298
---------------	--------

LEADING EDGE

386-SX/40MB	\$2298
-------------	--------

TEXAS INSTRUMENT

LT-286-12	\$2098
TM-2000	\$2698

ATARI

Portfolio	CALL
Serial Port	CALL
Parallel Port	CALL

APPLE

Apple IIC+	\$498
Apple IIGS	\$848
MAC SE/1	\$1998
MAC SE/40	\$2598
MAC SE/30	\$2998
Image Writer II	\$498

FLOPPY DRIVES

TOSHIBA

360K (5 1/4")	\$69
1.2MB (5 1/4")	\$79
720K (3 1/2")	\$69
1.44MB (3 1/2")	\$79

PERIPHERALS

mono card	\$49
color card	\$49
EGA card	\$79
VGA card	\$99
multi-IO card	\$69
serial card	\$29
parallel card	\$29
game card	\$29
clock card	\$29
memory card	\$69

HARD DRIVES

SEAGATE

ST-225 (20MB)	\$199
ST-125 (20MB)	\$229
ST-238 (30MB)	\$209
ST-138 (30MB)	\$249
ST-251 (40MB)	\$249
ST-251-1 (40MB)	\$269
ST-151 (40MB)	\$319
ST-277 (65MB)	\$329
ST-4096 (80MB)	\$529
ST-4144 (120MB)	\$579

CO-PROCESSORS

INTEL

8087-5	\$89
8087-8	\$129
8087-10	\$169
80287-8	\$199
80287-10	\$229
80387-16	\$339
80387-20	\$389

Commodore

COMMODORE 64-C 25 PIECE STARTERS PACKAGE

Package Includes: Commodore 64-C •Commodore 1541 Disc Drive •Monochrome Monitor •Head Cleaner •10 Diskettes •Software Bundle

\$348

Commodore

COMMODORE 128-D 25 PIECE STARTERS PACKAGE

Package Includes: Commodore 128-D With Built-In 1571 Disc Drive •Monochrome Monitor •Head Cleaner •10 Diskettes •Software Bundle

\$398

AMIGA

AMIGA 500 25 PIECE STARTERS PACKAGE

Package Includes: Amiga 500 With Built-In Disc Drive •RGB Color Monitor •Mouse •10 Diskettes •Software Bundle

\$798

Commodore

COMMODORE 64-C 25 PIECE DREAM PACKAGE

Package Includes: Commodore 64-C •Commodore 1541 Disc Drive •Color Monitor •80 Column Printer •10 Diskettes •Software Bundle

NEW LOW PRICE!!

Commodore

COMMODORE 128-D 25 PIECE DREAM PACKAGE

Package Includes: Commodore 128-D With Built-In 1571 Disc Drive •RGB Color Monitor •80 Column Printer •10 Diskettes •Software Bundle

NEW LOW PRICE!!

AMIGA

AMIGA 500 25 PIECE DREAM PACKAGE

Package Includes: Amiga 500 With Built-In Disc Drive •RGB Color Monitor •Mouse •10 Diskettes •80 Column Printer

NEW LOW PRICE!!

CALL TOLL FREE 1-800-451-9780

NEW YORK STATE RESIDENTS CALL (212) 695-7133
CUSTOMER SERVICE CALL (212) 967-2353 FAX (212) 695-0982
MON.-SAT. 10:00AM-7:00PM SUNDAYS 10:30AM-6:00PM
ALL SYSTEMS AVAILABLE WITH: 20/30/40/60/80 HARD DRIVES
ALL SYSTEMS AVAILABLE WITH: MGA/CGA/VGA/MULTISCAN



Use M/C, Visa, AMEX, Discover, Diners or send money order, certified checks. All merchandise brand new factory fresh. Shipping charges non-refundable. Minimum shipping and handling \$4.95, maximum \$59.00. Shipping costs reflect individual packaging. Air shipping additional. For all orders please call before sending in money order. All prices subject to manufacturers increase/decrease. Refunds within 7 days only with original packaging & unopened guarantee card. Some products subject to restocking fee. No refunds without prior verbal authorization. Customer Service between 12pm - 6pm. Pictures are for illustration purposes only. Not responsible for typographical errors. Consumer Affairs License No. 800-253. Prices good for mail order only.

Amarillo Slim's Real Poker PC	As an enjoyable, well-apportioned introduction to the world of high-stakes poker, this game has everything you need to become a better bettor. You control the game with function keys, which are labeled on the screen. Features include an Odds display, a Stats screen that rates your strategy, and an online tutor. Playing three computer adversaries, you'll bet, call, raise, and bluff your way to the top of the stack without going broke. <i>Peter Scisco</i>	IBM and compatibles with CGA, EGA, or VGA graphics	Villa Crespo Software 1725 McGovern St. Highland Park, IL 60035 (800) 521-3963 \$49.95
Their Finest Hour: The Battle of Britain AMIGA	In this superb aerial combat simulation, you pilot a British Spitfire or Hurricane, a Luftwaffe Bf-109 or Me-110 fighter, or a Stuka, Ju-88, Do-17, or He-111 bomber. You must also man gunner positions and target bombs. The planes perform realistically but aren't hard to fly, and the excellent 3-D bitmap graphics and digitized sounds make you feel as if you're sitting in the cockpit. Fly single missions or a campaign in this must-have game. <i>Denny Atkin</i>	Amiga with 512K, 1MB recommended	Lucasfilm Games Distributed by Electronic Arts 1820 Gateway Dr. San Mateo, CA 94404 (415) 571-7171 \$59.95
Turbo Mouse ADB 3.0 MAC	Ten percent of Mac owners use a trackball. If you're one of the 90 percent who don't, take a look at Kensington's top-selling Turbo Mouse ADB. It offers 200 CPI precision, can be switched for left- and right-handed users, and automatically moves the cursor farther when you move the trackball faster. Because it has a second ADB port, you can still use your mouse for those programs that work better with a mouse. Highly recommended. <i>David English</i>	Mac SE series, Mac II series, or Apple IIGs (also available in a non-ADB model for Mac 512, Mac Plus, and Apple IIe)	Kensington Microware 251 Park Ave. S New York, NY 10010 (212) 475-5200 (800) 535-4242 \$169.95
House of Cards PC	This collection of popular card games will fill an idle afternoon. It features spades, cribbage, hearts, pinochle, bridge, and gin rummy, all in two-player format (you against the computer). Because of the twitchy mouse interface, the keyboard option is recommended. The graphics and sound are not spectacular, but in card games strategy is the important thing. Watch out for the computer—it sandbags. <i>Robert Bixby</i>	IBM, Tandy, or compatible PC; 256K; CGA, EGA, VGA, or Tandy 16-color graphics adapter	Virgin Mastertronic 18001 Cowan Irvine, CA 92714 (714) 833-8710 \$9.99 (5¼-inch disk); \$12.99 (3½-inch disk)
Redline PC	Redline's sole purpose is to turn the cursor into a solid highlight that stretches across the entire screen. Originally designed for spreadsheet users, it's less successful in the general marketplace because many packages bypass the hardware cursor and create their own, thus defeating Redline. It worked well with spreadsheets, but not with PC Tools or Microsoft Word. Make sure it will work with your favorite package. <i>Tom Campbell</i>	IBM, Tandy, or compatible PC; 256K; one floppy drive	DynaCorp 4828 Loop Central Dr. Suite 520 Houston, TX 77081 \$39.95
CompuServe Information Manager 1.02 MAC	CompuServe Information Manager makes it easy and even fun to use this popular online service. The Mac version uses more icons but otherwise has the same features as the PC version. These features include a favorite places menu, multiple-file uploading and downloading, and the ability to compose and read your mail offline. It's easily the best way to connect to CompuServe—and at this price, they're practically giving it away. <i>David English</i>	Mac Plus, SE series, II series, or Portable; System 4.1 or higher; hard drive; and modem (Hayes-compatible recommended)	CompuServe 5000 Arlington Centre Blvd. Columbus, OH 43220 (800) 848-8199 \$24.95 (includes free online time); \$39.95 for new subscribers
Imperium AMIGA	Defense, diplomacy, and economics play a major role in this game of intergalactic conquest. Using a 3-D windowed interface, you must build your planet's technology level, production capacity, and military might. Expand your empire through trade or conquest. Deal with four competing empires as you try to conquer over 100 different worlds. Superior artificial intelligence routines make for a challenging and lasting game. <i>Denny Atkin</i>	Amiga	Electronic Arts 1820 Gateway Dr. San Mateo, CA 94404 (415) 571-7171 \$39.95
John C. Dvorak's PC Crash Course and Survival Guide PC	First-time computer users can learn how to buy and use their PCs and compatibles with this book/software package. Numerous examples, pictures of screen displays, and hands-on exercises are used throughout the book, which offers a step-by-step approach. A disk full of programs is designed to give you confidence and practical experience in using DOS commands and other types of applications. <i>Jane Cross</i>	IBM PC and compatibles, 256K	Scandinavian PC Systems 51 Monroe St. Suite 1101 Rockville, MD 20850 \$34.95



MenuPro² Hard Disk Menu Program Version 1.01-B

PC

This slick and easy-to-use package thankfully keeps most DOS commands at arm's length. With very little effort, you can create an autoloading menu that contains all of your commonly used programs. These programs load at the touch of a button. The program also offers mouse support, DOS utilities, a calendar, an address book with reminders, a text editor, security, and network support.

Richard Sheffield

IBM PC or compatible, 256K, MS-DOS or PC-DOS 2.11 or higher, any size or type hard drive, CGA, EGA, MCGA, VGA, or Hercules, color or monochrome

BobCoPro
SR # 161-C
Edgartown, MA 02539-9606
(800) 447-6955
\$49.95

Damocles

AMIGA

Imagine an entire universe stuffed onto a single floppy. Pilot starships, aircraft, and ground vehicles on a number of planets and moons as you try to find a way to prevent the comet Damocles from colliding with the planet Eris. Explore bases and cities as you try to find useful objects and clues. Fast 3-D graphics, excellent sound, hundreds of locations, and a first-person viewpoint make this one of the most realistic space games out there. *Denny Atkin*

Amiga

Bethesda Softworks
15235 Shady Grove Rd.
Suite 100
Rockville, MD 20850
(301) 926-8300
\$44.95

MicroPhone II 3.0

MAC

Version 3.0 of this powerhouse communications program adds the ability to create a complete front end for any online service. You can invoke scripts using color icons, buttons, command keys, function keys, or menu commands. Compared with *White Knight*, *MicroPhone II* has an equally powerful script language and is easier to use—but it costs twice as much. You also get a 30-day unconditional money-back guarantee. *David English*

Mac 512KE, Plus, SE series, II series, or Portable; System 4.2 or higher; and modem

Software Ventures
2907 Claremont Ave.
Suite 220
Berkeley, CA 94705
(415) 644-3232
\$295

Flood

AMIGA

Populous-creator Bullfrog is back with this cute arcade game. You're Quiffy, a green Blobbie who climbs walls and dives under water to feed on the trash found in underground caverns. Evil characters such as the Bulbous Headed Vong, Psycho Teddy, and the ghost of your chastising aunt are out to make your life miserable and short. While not as deep as *Populous*, witty arcade action and 36 levels will keep you coming back. *Denny Atkin*

Amiga

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171
\$39.95

Altered Beast

PC

Lon Chaney's werewolf couldn't hold a candle to the scary were-creatures in Sega's graphically superior arcade adventure. The animated sequences depicting the metamorphosis from one creature to another entrance my 15-year-old son, and he keeps coming back for more. Once you get through the unfriendly installation process, you'll be ready to rescue Athena, the daughter of Zeus, from the clutches of Neff, the demon god. *Joyce Sides*

IBM, Tandy, or compatible PC; 512K; CGA, EGA, MCGA, VGA, or Tandy 16-color graphics adapter

Sega
Distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(800) 245-4525
\$39.95

AmTRAC

AMIGA

Mouse hidden under a pile of paper? Try the AmTRAC trackball. The large center ball is surrounded by two wrap-around buttons, making it a snap to hit the button from any hand position. A third button acts as a drag lock, letting you move icons or make menu choices without holding a button down. Not as comfortable as a mouse for Workbench use, the AmTRAC is great for games like *Falcon* and *Marble Madness*. *Denny Atkin*

Amiga

MicroSpeed
44000 Old Warm Springs Blvd.
Fremont, CA 94538
(415) 490-1403
\$99

SitBack 3.0

PC

Sitback is an automated backup program. After making a full backup, use *SitBack* to back up new and updated files to any DOS drive. *Sitback* works automatically while you use other programs or at preset times daily. You can exclude files (like *.exe) and create different backup specs for each directory. No program totally automates backups, but *Sitback* makes it relatively easy, safe, and thorough. *J. Blake Lambert*

IBM PC and compatibles, 14K free memory, DOS 3.0 or higher

SitBack Technologies
9290 Bond, Suite 210
Overland Park, KS 66214
(913) 894-0808
(800) 783-7482
\$99

Mutant Ninja Turtles

AMIGA

You see them everywhere. Now the heroes in a half-shell have hit your Amiga. They're kicking, punching, and somersaulting through the New York sewers, battling turtle tormenters like Mouser, Fire Freak, and Shredder, as they attempt to rescue their friend April. Graphics are average, and there's too much disk access, but six levels of fast-paced arcade action will keep both turtle fans and game lovers glued to their Amigas for hours. *Kim Horn*

Amiga

Ultra Games
900 Deerfield Pkwy.
Buffalo Grove, IL 60089-4510
(708) 215-5100
\$24.95

COMPUTE's Product Mart is a special advertising section designed to benefit you, the PC direct marketer, by letting you advertise directly to the readers that buy. We offer:

• Marketing Assistance

Each ad receives a complementary reader service number that generates a targeted sales lead mailing list.

• Guaranteed Audience

Our rate base is guaranteed at 275,000 per issue, with an actual monthly circulation of over 300,000.

• Qualified Readers

Our readers search the Product Mart for quality hardware, software, and peripheral products they can buy.

• Cost Effectiveness

Ad sizes range from 1/9 (2¼ x 3¼) to 1/2 page (vertical or horizontal), and you can request frequency rates of up to 12 times per year. Second color is available.

Space closing: First day of the second month preceeding issue date (for example, November issue closes Sept. 1). Space limited to a first-reserved, first-served basis.

For ad specifications or more information call

East Coast
Caroline Hanlon
(919) 275-9809

Midwest
Barbara Vagedes
(708) 393-1399

West Coast
Lucille Dennis
(415) 878-4905

Call now to reserve your space!

ATTENTION ROLE PLAYERS

- **CHARACTER EDITORS - \$19.95 each**
Might and Magic (1 or 2), Pool of Radiance, Bard's Tale (1 or 2), Wasteland, Dragon Wars, Wizardry (Edits 1-3), Wizardry 4, Wizardry 5, Ultima (3, 4, 5 or 6), Sentinel Worlds I, Knights of Legend, Secret of the Silver Blades, Curse of the Azure Bonds, Champions of Krynn, Keef the Thief, Escape from Hell and King's Bounty.
- **HINT BOOKS - \$9.95 each**
Might and Magic, Wizardry (1, 2, 3, 4 or 5), Curse of the Azure Bonds, Champions of Krynn, Magic Candle, Knights of Legend.

Apple and Commodore versions also available. Please add \$3.00 for shipping and handling

GOSSELIN COMPUTER CONSULTANTS

P.O. Box 1083
Brighton, MI 48116
(313) 229-2453



Circle Reader Service Number 230

Where Adults Come To Play!
ACCESS LA! BBS

- Local Numbers Covering 850 US Cities!
- CB-Style Group and Private Chat!
- 1000's Of Shareware Programs!
- Business and Personal Services!
- National Classified Ads!
- Giant Message Forums!
- Live Multiplayer Games!
- Matchmaker Dating Database!
- Designed For Adult Users!

FOR YOUR FREE DEMO AND A LOCAL NUMBER NEAR YOU CALL

818-358-6968

BY MODEM, 8/N/1-3/12/2400 BAUD

Circle Reader Service Number 201

Mastering Quattro Pro

by Lynn Frantz
ISBN 0-87455-222-2
\$24.95

Explore *Quattro Pro's* numerous features in this comprehensive guide that's perfect for both new and experienced users. In this interactive tutorial, you'll learn how to design, create, and get the most from your own spreadsheets. This reference and guidebook will help you master the power of Borland's *Quattro*. 544pp

Order your copy today.

Send \$24.95 plus \$2.00 shipping and handling (\$5.00 for orders outside the U.S. and Canada) and applicable sales tax (if you live in NC, NJ, or NY) to

COMPUTE Books
c/o CCC
2500 McClellan Ave.
Pennsauken, NJ 08109

Please include the ISBN number on your check or money order.

NOV90CP

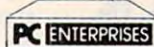
PCjr Owners!!

Everything You'll Ever Need Plus Much, Much More!!

- Memory Sidecars - Expand now to 1.2 MB!
- Second & Third Disk Drives which Snap-on-Top
- 3½" 720K Disk Drives for PS/2 Compatibility
- Speed-Up Boards-Increase Speed to 9.54 MHz
- 20, 30, 40, 60 & 80MB Hard Disk Drive Systems
- 101-Key Enhanced PCjr Keyboards
- Serial Port Compatibility Boards
- Modifications for Tandy Compatibility
- PCjr Compatible Software & Game Cartridges
- PCjr System Units with 128K or 256K
- Diagnostic Service Only \$25
- Replacement Parts and Repair Service

Remember—When you purchase all your PCjr products from PC Enterprises you'll never need to worry about compatibility. Our new full color catalog now features over 300 PCjr products on 56 pages. Call or write for your FREE copy today!!

(800) 922-PCjr (201) 280-0025



"The jr Products Group"
PO Box 292 Belmar, NJ 07719
"Dedicated to the Support of the PCjr Since 1984"

Circle Reader Service Number 255

BLACKJACK COMPUTER



The ultimate card-counting weapon, operated under complete concealment within the casinos. CPU, "magic" shoes, I/O switches, sensors, power supplies, extensive training and support provided. Win consistently with the latest generation of the technology every casino fears the most.

Contact
(714) 865-1191

Circle Reader Service Number 117

This Space Available 1/9 page Black and White Frequency Discount

Call today for details.

COMPUTER INSURANCE PLUS

- ✦ Replacement with no depreciation
- ✦ Covers computer hardware in home or office
- ✦ Easy to read policy
- ✦ Bonus 20% for software coverage
- ✦ Low \$50 deductible
- ✦ Covers theft, fire, power surges, accidents, natural disasters, even earthquakes and flood
- ✦ Policy backed by an A+ company

THE COMPUTER INSURANCE AGENCY, INC.

6150 Old Millersport Road, NE
Pleasantville, OH 43148
Hours: 10 a.m. to 6 p.m.

1-800-722-0385

Circle Reader Service Number 173

COLOR RIBBONS & PAPER

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Ribbons: price each	Black	Color	T-Shirt Ribbons
Brother 1109	\$4.95	\$5.95	\$ 7.00
Citizen 200/GSX 140	4.50	5.50	7.50
Citizen GSX 140, 4-Color		*	
Epson MXiFX/RX80/85	3.75	4.50	6.75
Okidata 182/192	5.50	7.50	6.00
Panasonic 1190/1124	5.75	7.75	
Commodore MPS	Call	For	Price
Star NX1000	3.75	4.75	6.75
Star NX1000, 4-Color		6.75	10.00

T-Shirt (Heat Transfer) Ribbons

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

COLOR PAPER

Color Paper	200 sheets assorted	
Bright Pack:	9 1/2 x 11	\$10.90/pk
Pastel Pack:	9 1/2 x 11	\$ 8.90/pk
Color Certificate Paper:	100 sheets	\$ 9.95/pk
Color Banner Paper:	45 ft./roll	\$ 8.95/pk

Min. orders \$25.00. Minimum S&H \$4.00. Call for other ribbons and supplies. Price and spec. are subject to change w/o notice.

RAMCO COMPUTER SUPPLIES

P.O. Box 475, Manteno, IL 60950 U.S.A.
(USA) 800-522-6922 or 815-468-8081
(Canada) 800-621-5444

Circle Reader Service Number 119

FREE -15 DISKS - FREE FULL OF SOLID GOLD HITS

TRY US!

Get our Winter 1991 edition of bestsellers. 15/5.25" or 6/3.5" disks for IBM®/compatibles. Games, Business, Graphics, Education,, Programmers' Utilities, Finance, Desktop publishing, more. **YOURS FREE!** **PAY ONLY \$5.00 FOR SHIPPING**

GUARANTEED VIRUS FREE

SMC SOFTWARE PUBLISHERS

ORDER TODAY - CALL

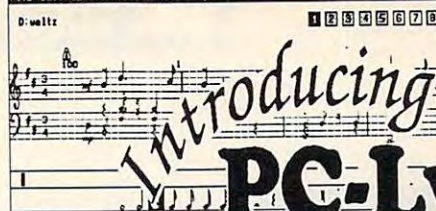
619 942-9998

since 1985



Circle Reader Service Number 127

File Edit Option Block MIDI Play



Introducing PC-Lyra

The perfect companion for your Sound Blaster or any MIDI synthesizer!
Makes playing and writing music a snap!
Fully graphical program with pulldown menus and icons is easy to use the first time you try!

Transcribing, arranging, or composing is a matter of just selecting the note and putting it on the staff! *Very* easy to edit music (has block copy, cut, and paste). Packed full of features: play up to 8 different sounds at the same time, change volumes, tempos, instruments anywhere in music. Handles 64th notes, triplets, ties.

Requires an IBM-PC compatible with graphics display. MPU-401, Sound Blaster card, or mouse are optional. Not copy protected. Comes with disk filled with ready to play music.

Price: \$49.95 Visa and Mastercard orders are welcome. Satisfaction guaranteed.

MusicWare Hamlet Route Box 1261,
Seaside, Oregon 97138. Phone: (503) 738-0119

Circle Reader Service Number 130

Reach more than **300,000** readers each month with an ad in **PRODUCT MART**



SeXXy Software

Must State Age Over 21

SeXXy Disk # 1 — An unbelievable visual erotic encounter — **MUST SEE !!**
SeXXy Disk # 2 — an erotic encounter game for friends and lovers guaranteed to shed both clothes and inhibitions.
SeXXy Disk # 3 — an anatomical arcade game with unusual ammunition.
SeXXy Disk # 4 — 2 more incredible visual erotic encounters — impress your friends.
SeXXy Disk # 5 — create your own erotic fantasies about friends and lovers.
SeXXy Disk # 6 — view, print, or edit ten gorgeous pinups.

\$7 each, any 3 for \$17, or all 6 for \$32 for IBM and compat.
CGA, EGA or VGA graphics reqd.
Add \$3 s/h - in OK add tax.
3.5" disks or foreign orders add \$2 per disk.

VISA/MC Orders Only
800-243-1515 Est. 600FB
Or check/MO to: SeXXy Software, 2880 Bergey Road
Dept. 600SB, Hatfield, PA 19440
THE BEST IN ADULT SOFTWARE FOR LESS!!

Circle Reader Service Number 122

BEAT THE LOTTERY

26 LOTTO JACKPOT WINNERS HAVE WON \$66 MILLION WITH GAIL HOWARD'S SYSTEMS!!

Gail Howard's *ALL NEW* Smart Luck software is easier to use, has many new features and more systems to help you WIN LOTTO!

SMART LUCK COMPUTER WHEEL™ \$39.50 + \$3 S/H
A MUST for ALL Lotto Players. 252 Lotto Systems.

SMART LUCK COMPUTER WHEEL FIVE™ \$37.50 + \$3 S/H - 220 Systems for FL, IL, OH, CN 5# Lottos

FULL WHEEL GENERATOR™ \$28.50 + \$3 S/H
For all Lottos. Guarantees a jackpot if you trap the winning numbers in your wheel group.

COMPUTER FIVE CARD LOTTO™ \$28.50 + \$3 S/H - 220 systems for NJ 5 Cd. Lotto & WA Quinto

ANY THREE PROGRAMS \$94.50 + \$3 S/H

ALL FOUR PROGRAMS \$129.50 + \$3 S/H

We ship IBM/comp. 5.25" disk. Add \$1 for EACH 3.5" disk

Smart Luck Software
Dept. C-1, P.O. Box 1519
White Plains, NY 10602

1-800-876-G-A-I-L (4245) or 914-761-2333

NEWSLETTERS

CompuTIPS

Tips - Tricks - Techniques

Wordprocessing, DOS, Databases
D.T.P., Spreadsheets, Q&A'S

First Newsletter FREE

Send \$2/s/h to Dyna-Comp Computer Services
1960 Kapiolani, Ste. 113-586, Honolulu, HI. 96826



SOFTWARE

SHAREWARE & FREE P.D. (IBM or C64 please Specify). FREE catalog or \$1 for Sample disk. (ASP Vendor) RVH Pub. 4291 Holland Rd. Suite 562-C, VA Beach, VA 23452.

Receive free catalogs of IBM Compatible shareware from many of our 15+ Indepnd. Shareware Distributors Assoc. members. ISDA, AD-CMP, P.O. Box 880, Cypress, TX 77429.

P.C. MODEM CLUB Correspond w/ Enthusiast or Business, hobbies or common interests LIND/UP with creative individuals, Free details. Box 4534, Waterbury, CT 06704.

THE HOTTEST AND LATEST EUROPEAN GAMES and much more at **SUPER LOW PRICES!** Send \$3 for a C64/128 or AMIGA on-disk catalog & sample. THE GAME SHOP2, Box 491, New York, NY 11375.



WIN LOTTO MILLIONS!

NEW DOS RELEASE!

YOUR LOTTERY IS BIASED! Unintentionally certain number patterns will be selected with a greater frequency than others. **LOTTO PICKER 3** will uncover & exploit these biases & tell you which numbers to play—no guesswork required! **GUARANTEED** to work for all lotteries worldwide or your **MONEY BACK!** **WHEELING** now included in DOS version! **BEAT THE LOTTERY TODAY!** \$39.95 (+2.55 s/h), 3.5" add \$5. Ver. 2.1 for Apple II & C64/128. NY add tax. **ORDER TODAY! 1-800-835-2246 x 121**
GE RIDGE SERVICES, INC., 170 Broadway, Suite 201-CP, New York, NY 10038
Info/Dealers 718-317-1961.



IBM - COMMODORE 64 & 128 - AMIGA. 1000's of PD/Shareware programs on 100's of disks. Free listing or \$1 for large descriptive catalog (specify computer). DISKS O'PLENTY INC., 7958 Pines Blvd., Suite 270B, Pembroke Pines, FL 33024

GREATER MIDWEST MICRO SOURCE—Your BEST SOURCE of IBM Comp Shareware & Supplies for FREE Catalog write to GMMS Dept. CPT, 2200 180th Ave NW, Andover, MN 55304.

TRY BEFORE YOU BUY: C64, 128, AMIGA. Games, utilities, educ'n'l, classics, new releases, 100's of titles. Free brochure. Specify computer. RENT-A-DISC, Frederick Bldg. #221, Hunt'n, WV 25701 (304) 529-3232

C64-128 PUBLIC DOMAIN SOFTWARE—FREE Catalog or send \$2 for sample disk. PEGASUS ENTERPRISES, 3275 W. Ashlan Suite #3349, Fresno, CA 93722

WIN—HANDICAP SPORTS WITH YOUR PC Send for free info. or \$3 for 5¼" IBM compatible demo disk to RUTECH SOFTWARE, 6010 W. Cheyenne #15-945, LV, NV 89108

SOFTSHOPPE, INC.

Selected Programs, Latest Versions, As Low as \$1.50, Same Day Shipping, and No Minimum Order. For FREE CATALOG for IBM PD/Shareware, CALL 800-829-BEST (2378) or FAX 313-761-7639.

TRIVIA MASTER/Over 1,000 Questions in 5 Categories: Science, Literature, History, and More! Specify C64 or IBM (Requires). (GW/BASIC) Send check for \$21.95 to: LOM Software, Box 160, Bland, VA 24315.

METAPHYSICAL SOFTWARE FOR THE C64/128! Pro-designed. No PD here. The Wisdom of the I Ching, computer oracle, \$39.95. Metaphysical Colors, personality analyzer, \$29.95. Tarot C64, your personal reader, \$19.95. Please enclose \$3.00 P/H. Metatools, POB 8027, Santurce, PR 00910.

FREE! IBM PD & SHAREWARE DISK CATALOG

Specify 5¼ or 3½. Low prices since 1988! ASP APPROVED VENDOR, Finto Software, Dept M, RT 2, Rosebud, TX 76570.

IF YOU DON'T PROTECT YOUR FILES, who will?

PolyCrypt for the C-64 encrypts and decrypts your files using a code you enter. Simple operation. \$7.50 (Texans add 7¼% tax). Free info. Drachma Software, P.O. Box 8148, Wichita Falls, TX 76307.

Free PD C64-128 Software 1000+ European-Domestic Best Sellers (New Sample & Catalog \$3) (Send SASE for Catalog) WESTCOMP LIBRARY P.O. Box 60818, Reno, NV 89506.

FREE GAMING SOFTWARE when you buy book

"Keys to Winning Blackjack". To order send \$9.95 to Coach's Clipboard Box 205 Fairview, PA 16415 or call 814-833-5168.

SOFTWARE YOU CAN AFFORD & USE, Software, Ribbons, Labels, Books, ETC. send \$1 for P&H of Catalog to DCT & Assc. Dept. A P.O. Box 2188, Jasper, AL 35502-2188.

EDUCATIONAL SOFTWARE FOR AGES 3-18

Provide the assistance your child needs with school. Also games designed to teach. For a 200 page catalog send \$2 to DAVMAR 17939 Chatsworth #418X; GH CA 91344.

FREE CATALOG FOR COMMERCIAL SOFTWARE

Apple, Amiga, Comm. IBM, Mac, ST. Disk-Count Software, P.O. Box 3, Carteret, NJ 07008. 1-800-448-6658. **SOUND BLASTER \$159. AD LIB \$95.00** **WORD PERFECT 5.1 \$329. ROLAND MIDI \$145.**

FREE PUBLIC DOMAIN SOFTWARE—Request

free catalog or send \$2 for sample disk and catalog (refundable). C64-128. CALOKE IND., Dept. JK, Box 18477, K.C., MO 64133

FREE SOFTWARE CATALOG. Programs are

direct from Mfr. Productivity, games & Edu. Byte Busters, 536 Woodward-Box 666 Dept. C Beecher, IL 60401 (312) 881-1811

BRAIN GAME FOR IBM ONLY \$9.95. FOUR FUN LEVELS.

Will challenge your mind & sharpen your reasoning skills. Send \$9.95 plus \$2.00 S/H to: Nice Ware, Box 577, Eatontown, NJ 07724.

RENT SPACE 64/128/AMIGA SPACE SOFTWARE! Commercial and PD. Lowest prices. No deposit. Free catalog, specify computer. Centsible Software, P.O. Box 930, St. Joseph, MI 49085.

A MUST FOR DIET CONSCIOUS PEOPLE! Diet-wise/energy wise diet analysis and fitness IBM software. \$49-\$120. Nutritional Data (800) NDR-DIET (216) 951-6593 OH.

TEST unreleased software for \$\$\$\$\$. Send \$5.00 for information & application kit to Silicon Mountain Services, Box 62339, Colo. Springs, CO 80962-2339.

ADULT VGA SOFTWARE for IBM & COMP

Visualize the full potential of VGA/SVGA with these stunning, hi-res, 256 color images.
Vol.1 SEXY (6 disks) \$13.95
Vol.2 NUDE (6 disks) \$13.95
Vol.3 MORE NUDE (6 disks) \$13.95
Vol.4 ADULTS ONLY (6 disks) \$13.95
Vol.5 ADULT VGA MOVIES (6 disks) \$13.95
Specify disk type. Include \$3 S&H. State 21. Check/MO accepted. Send \$5 ppd for 2 sample disks. CJCware, POB 2299, Champaign, IL 61825.

HARDWARE

DISK DRIVE LOCK for 3.5" disk drive units

Blocks all access to PC operating system. Low cost, safe & very easy to use device \$19.95 + 2.00 S&H to: Discovery Products 5128 Prentis Drive, Troy, MI 48098-3482.

PC STEREO ADAPTER - Connect any IBM or

compatible to stereo or boombox for great sound from all games music, etc. Easy, complete. Satisfaction Guaranteed or your money back! Send \$7.95+\$2 S&H to DPC, 804 Red Oaks Dr., Murray, UT 84123.

BUSINESS OPPORTUNITIES

HOW TO MAKE THOUSANDS OF \$\$\$\$ with your own part-time HOME COMPUTER BUSINESS.

Will teach & help you setup. Send \$1 for INFO, Box 1442-A1, Orange Park, FL 32067

EARN \$4000/MONTH FROM YOUR HOME WITH A COMPUTER

Start part-time with potential earnings of \$10,000 or more per month. You do not need to own or know how to run a computer—we will provide free training. If you purchase our software we will give you a computer and printer. Complete financing available. To receive a FREE 2-hour Casette and Color Literature. CALL:
Computer Business Services
1-800-343-8014 X303 317-758-4151

GET PAID for mailing letters!

\$200.0 daily. Write:

PAASE - WC7, 161 Lincolnway,
North Aurora, IL 60542

Let the government finance your new or existing small business. Grants/loans to: \$500,000. Free recorded message: 707-449-8600. (KS7)



CLASSIFIEDS

COMPUTER REPAIR

AUTHORIZED COMMODORE REPAIR CENTER.
C64, 128, Amiga & PC, 1541. Drive alignments \$39.95. 48-hr. turnaround, free UPS. Software City, 901-C N. Wendover Rd., Charlotte, NC 28211 (704) 362-2154.

Auth. Comm. repairs C64/128, 1541/1571, SX64, 128D, & Amiga. Selling DTK-IBM comp. comtrs. Quick Serv. 30 dy wrnty. MOM & POP's Compter Shop, 114 N. 16th, Bethany, MO 64424.

24 hr. Computer Repair.
Commodore-Amiga, IBM, Apple.
A & M Computer Repair
20 Guernsey Dr.
New Windsor, NY 12553
914-562-7271 - 1-800-344-4102

EDUCATION

B.S. & M.S. in COMPUTER SCIENCE

The American Institute for Computer Sciences offers an in-depth correspondence program to earn your Bachelor of Science and Master of Science degrees in Computer Science at home. BS subjects covered are: MS/DOS, BASIC, PASCAL, C, Data File Processing, Data Structures & Operating systems. MS program includes subjects in Software Engineering and Artificial Intelligence, and other topics.

AMERICAN INST. for COMPUTER SCIENCES

2101 CC Magnolia Ave. South, Suite 200
Birmingham, AL 35205

800-767-2427

CALL (205) 933-0339

MISCELLANEOUS

CARD PRO! Baseball Card Collectors inventory and evaluate your collection. Sort by all categories—All data prints. IBM, Apple, C64. \$24.95. ORDER TODAY! 800-366-1372. MC/VISA. PFA, 8600 Old Spanish Tr. #79, Tucson, AZ 85710.

BLANK KEYBOARD TEMPLATES if you have games that came with pre-printed templates, you know how much help they can be. Fill in the blanks on my overlays and forget going back to the manual for every keystroke. Works for utility programs. Keyboard type, \$9.95 for pkg. of 3 + 1.50 for S&H to Whitney, R.R.#1, Box 55 Newark, IL 60541 Visa-MC-800-468-4627.

BOOKS

DISCOUNT COMPUTER BOOKS. Thousands of titles available. Please call or write for your free catalog today. BOOKWARE, 344 Watertown Rd., Thomaston, CT 06787 (203) 283-6973 (800) 288-5662

TANDY 1000-SUBSCRIBE TO "ONE THOUSAND"—the magazine for your Tandy 1000. Send \$2 for sample or \$24 for one year (12 issues plus free software disk) to One Thousand, Box 1688A, Maryland Heights, MO 63043-0688.

TONER CARTRIDGES

Toner Cartridges—user refillable, last five times longer. For laser printers and Canon PC copiers. Free Brochure. (800) 326-9309

HELP WANTED

Must be able to design, develop and implement complex software and protocols for IBM 386 PC to support real-time, multi-programming, distributed bulk and script file processing and management systems, network processes, image processing and pattern recognitions, extended memory and VGA programming, Intel 386 hardware interface, API, various debugging tools, and MS-DOS using advance C and 386 assembly. Must have a Master's degree in Computer Science with a 4.0/5.0 GPA and one year R&D experience in the job offered. Must have experience or graduate education in network, telecommunications, sync, async and x.25 protocols, multi-user and multi-tasking PC OS, digital electronics and microprocessors, and shell/script programming. Must be familiar with UNIX, QNX, MS-DOS, data scopes, and image frame boards. Full-time, \$598.50 a week. Need to demonstrate above abilities and send resume and two letters of recommendation to: Jimmie Gaston, Employment Security, 505 Washington Avenue, St. Louis, MO 63101, Refer to J.O.N.: 407118.

2 Books 10 Bucks

APPLE II

- ___ C0017 The Apple IIc: Your First Computer
- ___ C0025 Apple Machine Language For Beginners
- ___ C0084 Second Book of Apple
- ___ C084X The Complete Apple
- ___ C0963 Guide to Sound & Graphics on the Apple IIs
- ___ C0971 Apple IIs Machine Language for Beginners
- ___ C120X Mastering the Apple IIs Toolbox
- ___ C1307 Adv. Prog. Techniques for the Apple IIs Toolbox

COMMODORE 64 and 128

- ___ C0092 Telecomputing on the C-64
- ___ C0610 Machine Language Games for the C-64
- ___ C0823 Mapping the C-64, Revised
- ___ C0947 More Machine Language Games for the C-64
- ___ D0346 First Book of C-64
- ___ D0361 Creating Arcade Games on the C-64
- ___ D037X C-64 Games for Kids
- ___ D040X All About the C-64 Volume 1
- ___ D054X Beginners Guide to C-64 Sound
- ___ D0701 Commodore Collection Volume 2
- ___ D0728 Third Book of C-64
- ___ D0116 Machine Language for Beginners
- ___ D0531 Second Book of Machine Language
- ___ C0327 Kids and the C-128
- ___ C0335 C-128 Machine Language for Beginners

GENERAL

- ___ C022X 40 Great Flight Simulator Adventures
- ___ C0920 Jet Fighter School
- ___ C117X Electronic Battlefield
- ___ C1277 SubCommander
- ___ C1781 COMPUTE!'s Computer Viruses
- ___ C1889 COMPUTE!'s Computer Security

Total Number of Books _____
(2 book minimum)

× \$5 each equals _____

Sales Tax (NC, NJ, NY residents add sales tax) _____

Shipping and handling \$1 per book _____

Total Enclosed _____

(Check or money order, in US funds only, made payable to Compute Publications)

Please print

Name _____

Street Address _____

City _____

State _____ ZIP _____

Mail this entire coupon to:
Compute Books
c/o CCC
2500 McClellan Ave.
Pennsauken, NJ 08109

Offer expires March 31, 1991
Offer good only while supplies last.
Please allow four to six weeks for delivery.

NOV90CD

COMPUTE Classified is a low-cost way to tell over 275,000 microcomputer owners about your product or service.

Additional Information. Please read carefully.

Rates: \$38 per line, minimum of four lines. Any or all of the first line set in capital letters at no charge. Add \$15 per line for boldface words, or \$50 for the entire ad set in boldface (any number of lines.)

Terms: Prepayment is required.

Form: Ads are subject to publisher's approval and must be either typed or legibly printed. One line equals 40 letters and spaces between words. Please underline words to be set in boldface.

General Information: Advertisers using post office box number in their ads must supply permanent address and telephone number.

Orders will not be acknowledged. Ad will appear in next available issue after receipt.

Closing: First of the second month preceding cover date (e.g. October issue closes August 1.)

CLASSIFIED DISPLAY RATES

Classified display ads measure 2 1/4" wide and are priced according to height. 1" = \$275; 1 1/2" = \$400; 2" = \$525. Preferred supplied material is Velox or PMT.

HOW TO ORDER

To place an ad, send order and payment to Barbara Vagedes, Classified Manager, COMPUTE, 29W382 Candlewood Lane, Warrenville, IL 60555, or call Barbara Vagedes 708-393-1399, FAX 708-393-1489.



HOTWARE

SOFTWARE BESTSELLERS FROM AROUND THE COUNTRY

HOME PRODUCTIVITY

1. Quicken

Manage your finances.
Intuit
IBM, Macintosh

2. Tax Cut

Get started early on your 1990 tax return.
MECA
IBM

3. Family Tree Maker

Explore your ancestry.
Banner Blue
IBM

4. The New Print Shop

Make signs, cards, banners, and more.
Brøderbund
Apple II, Apple IIcs, Commodore 64/128, IBM, Macintosh

5. Calendar Creator Plus

Create many different calendars.
Power Up
IBM, Macintosh

6. Hyatt Legal Services Home Lawyer

Prepare your legal documents at home.
MECA
IBM

7. MacInTax

Start preparing for April 15 now.
SoftView
Macintosh

8. SoftType

Create fonts for *Windows* 3.0.
ZSoft
IBM

9. Managing Your Money

Allocate your income.
MECA
Apple II, IBM, Macintosh

10. Address Book Plus

Keep track of your addresses.
Power Up
IBM, Macintosh

HOME ENTERTAINMENT

1. SimCity

Run the world's first simulated city.
Maxis
Amiga, Commodore 64/128, IBM, Macintosh

2. Tetris

Deceptively addicting falling-block game.
Spectrum HoloByte
Amiga, Apple IIcs, Commodore 64/128, Macintosh

3. Flight Simulator

Head for the wild blue yonder.
Microsoft
IBM, Macintosh

4. ChessMaster 2100

Board strategy that isn't boring.
Electronic Arts
Apple II, Apple IIcs, Commodore 64/128, IBM

5. Falcon

Air combat at its best.
Spectrum HoloByte
Amiga, IBM, Macintosh

6. Teenage Mutant Ninja Turtles

The heros in a half-shell are back.
Konami
Amiga, Commodore 64/128, IBM

7. The Duel: Test Drive II

Hit the road again.
Accolade
Amiga, Apple IIcs, Commodore 64/128, IBM, Macintosh

8. Life and Death

Your chance to play doctor.
Software Toolworks
Apple IIcs, IBM, Macintosh

9. BattleChess

Animated chess-board action
Mediagenic
Amiga, Apple IIcs, Commodore 64/128, IBM

10. Ultima VI

Continue the role-playing adventure
Origin
IBM

HOME LEARNING

1. Mavis Beacon Teaches Typing

Learn to touch-type.
Electronic Arts
Apple II, Apple IIcs, Commodore 64/128, IBM, Macintosh

2. The Playroom

Kids explore and learn on their own.
Brøderbund
IBM

3. Where in the World Is Carmen Sandiego?

Chase Carmen around the world.
Brøderbund
Amiga, Apple II, Commodore 64/128, IBM, Macintosh

4. Where in the USA Is Carmen Sandiego?

The chase moves to the USA.
Brøderbund
Amiga, Apple II, Commodore 64/128, IBM, Macintosh

5. Math Blaster Plus!

Teaches basic math concepts.
Davidson & Associates
Apple II, Apple IIcs, IBM

6. Reader Rabbit

Helps children learn to read.
The Learning Company
Apple II, Commodore 64/128, IBM, Macintosh

7. Where in Time Is Carmen Sandiego?

Can you find Carmen in time?
Brøderbund
IBM

8. Outnumbered!

Super Solvers is back.
The Learning Company
IBM

9. Math Rabbit

Build early math skills.
The Learning Company
Apple II, Commodore 64/128, IBM, Macintosh

10. Math Blaster Mystery

Tackle word and logic problems.
Davidson & Associates
Apple II, IBM, Macintosh



COMPUTE's Hotware lists were prepared by Egghead Discount Software and are based on retail sales of Apple II, Macintosh, and IBM software from June 24 through July 21, 1990, at 189 Egghead stores in the United States and Canada.



Now Just **\$149.⁹⁵**
Suggested Retail Price.

The Ad Lib Music Card: Open your ears and blow your mind.



Asteroids are hurtling by. Enemy photons are destroying the rear deflectors. Engines strain as they reach critical mass. Suddenly you hit the retros, loop around, and fire with everything you've got.

And what kind of awesome, breath-taking music is your computer playing? "Bleep, bop, beep." Pretty weak, eh?

Well listen up. Because now there's the Ad Lib Music Card. It's the digital music synthesizer that's conquering the final frontier of truly realistic game playing—totally ear-blasting sound.

Confront the dark overlord, and Ad Lib's 11-piece orchestra will back you up with gutsy, heart-swelling music. And if you meet

an untimely death, rest assured that Ad Lib's funeral dirge will bring tears to the eyes of your loved ones.

In fact, the Ad Lib sound is so hot, major game developers are now designing dozens of new adventures with special soundtracks just for the Ad Lib Music Card.

Call us at 1-800-463-2686 for the name of your nearest dealer, for more information, and for the ever-growing list of major game titles with spectacular Ad Lib soundtracks.

Add the missing dimension to your games with the Ad Lib Music Card. From a solo to a symphony, Ad Lib's music makes the adventure come alive.



AdLib®

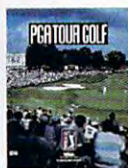
Ad Lib Inc., 50 Staniford Street, Suite 800, Boston, MA 02114. 1-800-463-2686 in U.S. or Canada. 1-418-529-9676 International. Fax: 1-418-529-1159.

New Compatible Games.

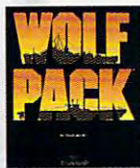
Here are just some of the hottest new computer games designed for use with the Ad Lib Music Card:



Davidson's
NEW Math Blaster Plus



Electronic Arts'
PGA TOUR® Golf



Bröderbund's
WolfPack



The Learning Company's
Super Solvers
Treasure Mountain!



Titus'
Wild Streets



MicroProse's
Silent Service II

System requirements: IBM PC, XT, AT, or compatible with 256K RAM, DOS 2.0 or higher, CGA, EGA, or monochrome graphics adaptor, and headset or external speaker.

© 1990 Ad Lib. Ad Lib is a registered trademark of Ad Lib Inc. IBM is a registered trademark of International Business Machines Corporation.

Circle Reader Service Number 139

www.commodore.ca

"I can't say how much it hit me to be sitting up there, a couple of miles high, looking down on the battlefield, in fact, on four or five battlefields, and sweeping them all in one glorious bird's-eye view."

World War I Pilot

Red Baron™

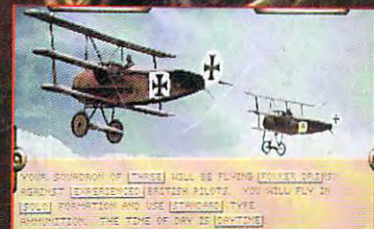
It goes without saying that a good flight simulator recreates, in perfect detail, the elements that make an aircraft what it is — elements such as flight characteristics, weaponry, and the ability to sustain damage. To do less would be an affront to simulation purists everywhere.

Red Baron takes the experience one step further by recreating not only the obvious details, but the *flavor* of the time. The humanity, the romance, the emotion that once filled the hearts of "those daring young men in their flying machines." It takes you backward in time to an age when aviation was in its infancy, and young pilots such as Eddie Rickenbaecker, Billy Bishop and Manfred von Richthofen took to the air and invented the skills that would keep them alive. A time when fighter pilots of all nations formed a brotherhood that transcended allegiance. These men were the last true heroes — the legendary Aces.

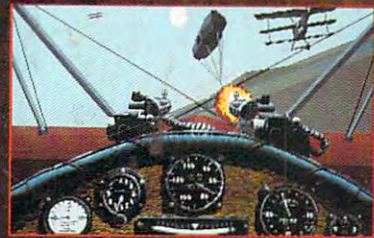
Red Baron is more than a good flight simulator. It's an opportunity for you to discover what it was *really* like to be a fighting Ace in the war that launched aerial combat — World War I.

Dynamix®
PART OF THE SIERRA FAMILY
© is a registered trademark of Dynamix © 1990 Sierra On-Line, Inc.

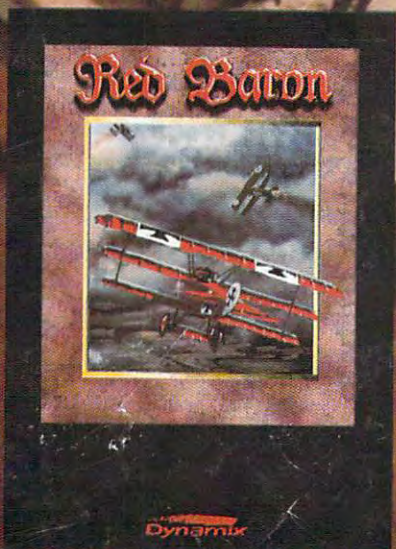
Circle Reader Service Number 227



28 different aircraft, intelligently modeled after historical Aces, randomly generated missions, and digitized artwork.



Fly on either side of the war. Save, replay and change your games with the Mission Recorder.



Order *Red Baron* From Your Local Software Dealer, Or Call The Sierra Sales Department Toll Free At (800) 326-6654. Outside The U.S., Call (209) 683-4466. www.commodore.ca