PUBLISHED BY SCHOLASTIC INC.

**DECEMBER 1985** 

VOLUME 3 NUMBER 12

\$2.50

Best Hardware of '85, Gifts from \$6 to \$600, and Special Software Buys Games for Groups Tips for Hands On Computer Repair Choose a College With Your Computer How to Pick a Personal Finance Program

24 At-A-Glance Software Reviews INSIDE: ORIGINAL PROGRAMS FOR ADAM, APPLE, ATARI, COMMODORE, IBM PC AND COMPATIBLES, MACINTOSH, TANDY COCO AND MODEL III. BONUS HOLIDAY PROGRAM: CHRISTMAS TREE CONSTRUCTION SET

420950 MLL 0001M091 1420 NOV85

MORCESTER

a y

in de la

90910 HU

150EH

## PUBLISHED BY SCHOLASTIC INC.

### DECEMBER 1985

# VOLUME 3 NUMBER 12

## FEATURES

### 27 (ANNUAL SHOPPING CUIDE) 2ND ANNUAL BEST-**EVER SHOPPING GUIDE** FOR COMPUTER LOVERS

### 28 (ANKUAL SHOPPING GUIDE) **SOMETHING FOR** EVERYONE

by Roxane

Farmanfarmaian A compendium of the best, most ingenious, and most useful computer gifts from \$6 to \$600.

### 32 (AMNUAL SHOPPING GUIDE) **BEST HARDWARE PICKS**

## OF '85

by Nick Sullivan Catch up on trend-setting hardware with picks of the year's best computers, disk drives, monitors, and printers.

### 42 **HANDS ON: CLEAN** YOUR COMPUTER AND LOOK AROUND INSIDE

by Henry Beechhold How to clean out the dust, grime, and grit inside your computer. Second in a sixpart series.

PLUS: A SHORT COURSE IN METERING

## PROGRAMMING

### 47 THE PROGRAMMER

## 48

**TIPS TO THE TYPIST** 

## K-POWER

### 75 The Queen of King's Quest II

Roberta Williams of Sierra tells what it takes to design ground-breaking arcade/adventure games.

## 76

### Special Ks' Buyer's **Guide to Controllers**

Find out which is the joystick for you in this year-end review of the best on the market.

### 78 **Dr. Kursor's Klinic**

Exploring cartridges, and

## DEPARTMENTS

## EDITOR'S NOTE

## LETTERS

### 12 HOME-SCHOOL CONNECTION

by Larry Krengel Your computer can help pair you up with the perfect college. PLUS: A SAMPLER OF SAT SOFTWARE

### 14 HOME/MONEY MANAGEMENT

by Matthew Stern How to choose the best finance program for your family's needs.

### 36 ANNUAL SHOPPING GUIDE SEASONAL SPECIALS

by Karen Kane Special offers, prizes, and free software from over a dozen manufacturers.

### 37 **GROUP** GAMES FOR THE HOLIDAYS

by James Delson Gather 'round the warm light of the monitor with games everyone in the family will enjoy.

### 40 TECHNOLOGY WITH **A HEART**

by Linda Williams In this story of one couple, 15 children, and five computers, miracles do happen.



### 50 **BEGINNER PROGRAM**

Get into the holiday spirit with Jingle Bells. For ADAM, Apple, Atari, Commodore, IBM PC & compatibles, Macintosh, Tandy CoCo & Models III & 4, TI-99/4A, and VIC-20. PLUS: HOW TO WRITE MUSIC PROGRAMS

### 60 **PROGRAMMING P.S.**

### 61 PRODUCTIVITY PROGRAM

Find out whether you've written too much or too little with Wordcount, a utility for ADAM, Apple, Atari, Commodore, IBM PC & compatibles, Macintosh, and Tandy CoCo & Models III & 4.

### 66 HOLIDAY PROGRAM

Trim your Yuletide tree onscreen with Christmas Tree Construction Set. For Atari, Commodore, and

the difference between dotmatrix and letter-quality printers.

### 80 **Game Strategies**

Tips, tricks, and hints for playing your favorite games.

### 84 Microtones

A new beat for "Rudolph the Red-Nosed . . ."

### 88 Compucopia

It's Jugger-Naut, a fastaction game for the new year.

### 88 Contest

Have a great idea for a contest? Enter the Contest Idea Contest for a chance to see it in K-POWER in '86.

## WHAT'S IN STORE

### 90 **SOFTWARE GUIDE** AND REVIEWS

Twenty-four new and noteworthy programs.

### 19 TELECOMPUTING

by Nick Sullivan Electronic mail lets you send documents over the phone lines to clients and family across the country. PLUS: A ROUNDUP OF ELECTRONIC MAIL SERVICES

## 25 **COMPUTING CLINIC** 106 CLASSIFIED 108 **ADVERTISERS' INDEX**

FAMILY COMPUTING (ISSN 0738-6079) is published monthly by Scholastic Inc., 730 Broadway, New York, NY 10003. Subscriptions: in the U.S. and possessions. 12 issues for \$19.97; outside the U.S. add \$6 (surface mail) or \$25.97 (airmail). Office of publication: 351 Garver Rd., P.O. Box 2700, Monroe, OH 45050-2700, Secondclass postage paid at Monroe. OH 45050-9998 and additional offices. POSTMASTER: Send address changes and notice of undelivered copies to FAMILY COMPUTING, P.O. Box 2511, Boulder, CO 80302. Printed in U.S.A. Copyright © 1985 by Scholastic Inc. All rights reserved.

### **COMING IN JANUARY:** 1986 Computing Family of the Year Contest Announce-





### ment. Watch for rules and prizes.

COVER PHOTOGRAPH BY RICK BARRICK

## BEGINNER PROGRAM

## **JINGLE BELLS**

(With Tutorial, "How to Write Music Programs")

## **BY JOHN JAINSCHIGG AND PAUL DIXON**

Jingling bells is one way to make beautiful music. It's as easy as grabbing the right bell at the right time and then ringing it for the correct length of time. Unfortunately, most people don't have a set of musical bells around the house. However, if you're reading this, chances are you do have a computer. More than likely, it can play music---if you can tell it what notes to play, when to play them, and for how long. Our Beginner Program this month is a short music program that will surely put you and your computer into the holiday swing of things. Type the program in. SAVE it to disk or cassette, then RUN it. Be especially careful when typing in the DATA statements. If all goes well, in a few moments you'll hear *Jingle* Bells jingling through the house. And if you want to understand how it works or make the program play a different song—read on!



computer to another. Some computers have a SOUND command that lets you produce tones and, in some cases, control a sound's duration, volume, and sometimes even its quality (whether the tone sounds pure or distorted; like a flute, or like a piano). The table below shows SOUND commands for various systems as we have used them in *Jingle Bells*.

Not all computers have SOUND commands. Commodore 64 sound is controlled by placing numbers in certain memory locations, using POKE statements. A special machine-language routine, also controlled by POKES, makes sound on the Apple, and the ADAM's sound chip must be controlled by a combination of machine code and POKES as well. However, all simple SOUND commands and "POKE-and-play" soundmaking schemes have one thing in common. They all use numbers to represent the pitch and other characteristics of a note, though the range of numbers used varies widely from computer to computer. To turn a melody into a program, you start by converting each of its pitches into a number, according to a table of equivalents found in the BASIC manuals that come with most computers. ADAM and Ap-

ple owners will have more difficulty than others in doing this. Procedures for controlling ADAM sound are quite complex, and are not explained in Coleco's documentation. Interested readers should consult ADAM's Companion, by Ramsey Benson (Avon Books, 1984, \$9.95). Numbers used to specify pitches on the Apple change, depending on what machine-language routine is used to generate the sound. A partial table of numeric values for the machine-language routine we used in Jingle Bells is shown below.

	G		162
	Α	<b>=</b>	144
	В	=	128
Middle	С		121
	D	=	1ø8
	E	<u> </u>	96
	F	<u></u>	91

HOW TO WRITE MUSIC PROGRAMS

Playing a note in BASIC differs from one brand of

G = 81

To play a note using the machine-language routine shown in the Apple version, you start by READing the machine code from DATA statements and POKEing it into addresses 768– 796 in memory (see lines 30-60 and DATA in lines 1000-1020). POKE a duration number (from 2 to 255) into location 6 and a pitch number into location 8; then play the note by CALLing the routine using the statement CALL 768 (see lines 120. 130. and 140).

Computer	SOUND command format	Description	- <i>unes</i> 120, 130, <i>unu</i> 140).
Atari	SOUND CH,P,T.V	Sound continuous tone through channel CH at pitch P, using tone quality T, at volume V.	DURATION AND TEMPO Playing a musical note on your computer takes three steps: 1. start play- ing the note; 2. wait for a
IBM PC & compatibles	SOUND P,D	Sound pitch P for duration D. Additional, optional pa- rameters allow control of channel and volume.	<ul> <li>specific length of time; and</li> <li>3. stop playing the note. If</li> <li>your computer's sound-</li> <li>producing scheme lets you</li> <li>specify a note's duration at</li> </ul>
Macintosh (Microsoft BASIC 2.0)	SOUND P.D	As above.	the same time you specify its pitch (Apple, IBM, Mac-

TI-99/4A	CALL SOUND (D,P,V)	Sound pitch P for duration D at volume V. Additional, optional parameters allow added voices to be played with the same command.	this way), you won't have to do any programming t handle steps two and three. Just supply the computer with a number for the note's duration—
Tandy CoCo	SOUND P,D	Sound pitch P for duration D.	

## **BEGINNER PROGRAM**

note, which is half as long as a half note, and so on. Keeping this in mind, you can calculate the relative durations of the notes in your melody by finding the notes with the shortest durations, giving these notes an arbitrary value of 1, then expressing the durations of all other notes as multiples of this value. For example, one phrase of *Jingle Bells* is coded like this:

Oh, what fun it is to ride in a... 2 2 3 1 2 2 2 1 1

As you can see, here eighth notes get the value 1: quarter notes, which sound for twice as long as eighth notes, get the value 2: dotted quarter notes, the value 3.

Once you've got a table of relative durations pulled together, you can then look at your computer manual (or do some trial-and-error testing) to determine what notes in *Jingle Bells*; the number of notes in your tune will probably differ. Count them and change the size of the storage arrays (DIMensioned in lines 10 or 20) to match. Change the upper limit of the FOR/NEXT loops that READ data into the arrays to match this number also, and that of the FOR/NEXT loop that plays the tune as well. Remove the statements that duplicate parts of the *Jingle* Bells melody-your program won't need them (the **REM statements will show** you which these are). If all goes well, your tune will play when you type RUN. If the speed isn't right, you can alter the value of the constant TEMPO until you hear something you like better. That's all there is to it!

If you come up with an enhancement of one of our Beginner Programs that you're especially proud of, we'd like to see it, and maybe mention it in a fu

210 POKE 28006,159 220 CALL 28000 230 NEXT i 240 END 999 REM --MACHINE CODE TO SEND SOUND DATA TO CHIP--1000 DATA 58,102,109,211,255,201 1999 REM --SONG DATA--2000 DATA 138,10,2,138,10,2,138,10,4,138,10,2,138,10,2 2010 DATA 138,10,4,138,10,2,143,8,2,134,13,3,143,11,1 2020 DATA 138,10,8,128,10,2,128,10,2,128,10,3,128,10,1 2030 DATA 128,10,2,138,10,2,138,10,3,138,10,1 2040 DATA 138,10,2,143,11,2,143,11,2,138,10,2,143,11,4 2050 DATA 143,8,4,138,10,2,138,10,2,138,10,4,138,10,2 2060 DATA 138,10,2,138,10,4,138,10,2,143,8,2,134,13,3 2070 DATA 143,11,1,138,10,8,128,10,2,128,10,2,128,10,3 2080 DATA 128,10,1,128,10,2,138,10,2,138,10,3 2090 DATA 138,10,1,143,8,2,143,8,2,128,10,2,143,11,2 2100 DATA 134,13,8,142,17,2,138,10,2,143,11,2,134,13,2 2110 DATA 142,17,7,142,17,1,142,17,2,138,10,2 2120 DATA 143,11,2,134,13,2,143,15,8,143,15,2,128,10,2 2130 DATA 138,10,2,143,11,2,131,14,8,143,8,2,143,8,2 2140 DATA 128,10,2,143,11,2,138,10,8,142,17,2,138,10,2 2150 DATA 143,11,2,134,13,2,142,17,7,143,17,1,143,17,2 2160 DATA 138, 10, 2, 143, 11, 2, 134, 13, 2, 143, 15, 8 2170 DATA 143,15,2,128,10,2,138,10,2,143,11,2,143,8,2 2180 DATA 143,8,2,143,8,3,143,8,1,143,7,2,143,8,2 2190 DATA 128,10,2,143,11,2,134,13,4,143,8,4

### **Apple II series**/*Jingle Bells*

10 DIM P(144),D(144) 20 TEMPO = 24 29 REM --READ IN MACHINE CODE FOR MAKING SOUNDS--30 FOR I = 0 TO 28

```
maybe mention it in a fu-
     testing) to determine what
                                                                   40 READ A
                                    ture issue. Send a printout
     should be the duration val-
                                                                   50 POKE 768+1,A
     ue for your shortest note.
                                    (no tapes or disks, please) to
                                                                   60 NEXT I
     The computer can multiply
                                                                   69 REM --READ IN SONG DATA (PITCH, DURATION)--
                                    Beginner Programs
     each of the relative dura-
                                                                   70 \text{ FOR I} = 1 \text{ TO } 95
                                    FAMILY COMPUTING
     tion values by this "tempo
                                                                   80 READ P(I),D(I)
                                    730 Broadway
     constant" to derive the ac-
                                                                   89 REM --NEXT LINE DUPLICATES ONE PART OF SONG--
                                    New York, NY 10003
    Stual duration value for
                                                                   90 IF I' < 50 THEN P(I+95) = P(I):D(I+95) = D(I)
                                                            —J.J.
•
      52 FAMILY COMPUTING
```

### **BEGINNER PROGRAM**

	5Ø IF I<5Ø THEN P(I+95)=P(I):D(I+95)=D(I)	TI-99/4A/Jingle Bells
	60 NEXT I	10 DIM P(144), D(144)
	69 REMPLAY SONG	20 TEMP0=100
	70 FOR I=1 TO 144	29 REMREAD IN SONG DATA (PITCH, DURATION)
ł	79 REMPLAY A NOTE	30 FOR I=1 TO 95
	80 SOUND P(I),D(I)*TEMPO	40 READ P(I),D(I)
	89 REM TURN OFF NOTE TO PREVENT LEGATO	49 REMNEXT 3 LINES DUPLICATE ONE PART OF SONG
	90 SOUND 32767,1	50 IF I>49 THEN 80
	100 NEXT I	60 P(I+95)=P(I)
	110 END	70 D(I+95)=D(I)
	999 REMSONG DATA 14444 DATA 450 2 450 2 450 4 450 2 450 2	80 NEXT I
	1000 DATA 659,2,659,2,659,4,659,2,659,2 1010 DATA 659 / 659 2 79/ 2 523 3 597 1	89 REMPLAY SONG
	1010 DATA 659,4,659,2,784,2,523,3,587,1 1020 DATA 659,8,698,2,698,2,698,3,698,1	90 FOR I=1 TO 144
	1030 DATA 698,2,659,2,659,3,659,1	99 REMPLAY A NOTE 144 CALL COUND(D(T)+TEMPO D(T) 2)
	1040 DATA 659,2,587,2,587,2,659,2,587,4	100 CALL SOUND(D(I)*TEMPO,P(I),2) 110 NEXT I
1	1050 DATA 784,4,659,2,659,2,659,4,659,2	120 END
	1060 DATA 659,2,659,4,659,2,784,2,523,3	999 REMSONG DATA
	1070 DATA 587,1,659,8,698,2,698,2,698,3	1000 DATA 659,2,659,2,659,4,659,2,659,2
	1080 DATA 698,1,698,2,659,2,659,3	1010 DATA 659,4,659,2,784,2,523,3,587,1
	1090 DATA 659,1,784,2,784,2,698,2,587,2	1020 DATA 659,8,698,2,698,2,698,3,698,1
	1100 DATA 523,8,392,2,659,2,587,2,523,2	1030 DATA 698,2,659,2,659,3,659,1
	1110 DATA 392,7,392,1,392,2,659,2	1040 DATA 659,2,587,2,587,2,659,2,587,4
	1120 DATA 587,2,523,2,440,8,440,2,698,2	1050 DATA 784,4,659,2,659,2,659,4,659,2
	1130 DATA 659,2,587,2,494,8,784,2,784,2	1060 DATA 659,2,659,4,659,2,784,2,523,3
	1140 DATA 698,2,587,2,659,8,392,2,659,2	1070 DATA 587,1,659,8,698,2,698,2,698,3
	1150 DATA 587,2,523,2,392,7,392,1,392,2	1080 DATA 698,1,698,2,659,2,659,3
	1160 DATA 659,2,587,2,523,2,440,8	1090 DATA 659,1,784,2,784,2,698,2,587,2
-	1170 DATA 440,2,698,2,659,2,587,2,784,2 1180 DATA 784,2,784,3,784,1,880,2,784,2	1100 DATA 523,8,392,2,659,2,587,2,523,2
	1190 DATA 698,2,587,2,523,4,784,4	1110 DATA 392,7,392,1,392,2,659,2
		1120 DATA 587,2,523,2,440,8,440,2,698,2
	*This program has been tested and found to work on the following computers and hardware configurations, using the BASICs shown: IBM PC w/Disk BASIC D2.00 or	1130 DATA 659,2,587,2,494,8,784,2,784,2   1140 DATA 608 2 587 2 659 8 302 2 659 2
	Advanced BASIC A2.00. IBM PCjr w/Cassette BASIC C1.20 or Cartridge BASIC J1.00.	1140 DATA 698,2,587,2,659,8,392,2,659,2   1150 DATA 587 2 523 2 302 7 302 1 302 2
	Tandy 1000 w/GW-BASIC 2.02 version 00.05.00.	1150 DATA 587,2,523,2,392,7,392,1,392,2   1160 DATA 659,2,587,2,523,2,440,8
		1170 DATA 440,2,698,2,659,2,587,2,784,2
ļ		1180 DATA 784,2,784,3,784,1,880,2,784,2
		1190 DATA 698,2,587,2,523,4,784,4
	Masimbook w/Missook DACIC 9.0/ Simula Dalla	
	Macintosh w/Microsoft BASIC 2.0/Jingle Bells	
i	DIM P(144),D(144)	Tandy Color Computer/ <i>Jingle Bells</i>
i	TEMPO=2 REMREAD IN SONG DATA (PITCH, DURATION)	10 DIM P(144),D(144)
	FOR $I=1$ TO 95	2Ø TEMPO=2
	READ P(I),D(I)	29 REMREAD IN SONG DATA (PITCH, DURATION)
	REMNEXT LINE DUPLICATES ONE PART OF SONG	30 FOR I=1 TO 95
	IF I<50 THEN P(I+95)=P(I):D(I+95)=D(I)	40 READ P(I),D(I)
	NEXT 1	49 REMNEXT LINE DUPLICATES ONE PART OF SONG 50 IF I <s0 p(i+95)="P(I):D(I+95)=D(I)&lt;/th" then=""></s0>
	REMPLAY SONG	60 NEXT I
ļ	FOR I=1 TO 144	69 REMPLAY SONG
	REMPLAY A NOTE	70 FOR I=1 TO 144
	SOUND P(I),D(I)*TEMPO	79 REMPLAY A NOTE
į	NEXT I	80 SOUND P(I),D(I)*TEMPO
	END DEMSONG DATA	90 NEXT I
	REMSONG DATA DATA 659,2,659,2,659,4,659,2,659,2,659,4,659,2	100 END
	DATA 639,2,639,2,639,4,639,2,639,2,639,2,639,4,639,2 DATA 784,2,523,3,587,1,659,8,698,2,698,2,698,3	999 REMSONG DATA
	DATA 698,1,698,2,659,2,659,3,659,1,659,2,587,2	1000 DATA 193,2,193,2,193,4,193,2,193,2
	DATA 587,2,659,2,587,4,784,4,659,2,659,2,659,4	1010 DATA 193,4,193,2,204,2,176,3,185,1
	DATA 659,2,659,2,659,4,659,2,784,2,523,3,587,1	1020 DATA 193,8,197,2,197,2,197,3,197,1
	DATA 659,8,698,2,698,2,698,3,698,1,698,2,659,2	1030 DATA 197,2,193,2,193,3,193,1
	DATA 659,3,659,1,784,2,784,2,698,2,587,2,523,8	1040 DATA 193,2,185,2,185,2,193,2,185,4
	DATA 392,2,659,2,587,2,523,2,392,7,392,1,392,2	1050 DATA 204,4,193,2,193,2,193,4,193,2
	DATA 659,2,587,2,523,2,440,8,440,2,698,2,659,2	1060 DATA 193,2,193,4,193,2,204,2,176,3
	DATA 587,2,494,8,784,2,784,2,698,2,587,2,659,8	1070 DATA 185,1,193,8,197,2,197,2,197,3 1080 DATA 197,1,197,2,193,2,193,3
	DATA 392,2,659,2,587,2,523,2,392,7,392,1,392,2	1080 DATA 197,1,197,2,193,2,193,3 1090 DATA 193,1,204,2,204,2,197,2,185,2

:



# **Sensational Prices!** . On Our Most Popular Items!

## from micro al ... THE 79¢ DISKETTE

Are you paying too much for diskettes? Try our first quality, prime, 51/4" diskettes (no rejects, no seconds) at these fantastic sale prices and save, save, SAVE! Disks are packaged in boxes of 50; each box contains 5 shrink-wrapped 10-packs that include diskettes in sleeves, labels, and writeprotect tabs.

Each diskette is certified to be 100% error free and comes with a lifetime warranty (if you have a problem, we'll replace the diskette). All diskettes include hub reinforcement rings and write-protect notch.

All diskettes are double density and work in either single or double density drives.

SS, DD Diskettes, Box of 50 \$39.50-79¢ ea.! 32391 DS, DD Diskettes, Box of 50 \$49.50-99¢ ea.! 32403

## LOWEST PRICES ON POPULAR HARDWARE!

Legend 80 35030 .	8. Quality print at 100 cps. Near Letter Quality and compressed print. Tractor and friction feed. ONLY \$169.00
Star Microi	nics SG-10. Full graphics, near letter quality mode, 2K buffer, 120 CPS. OUR BEST SELLER!
33251	SG-10 Parallel (for most computers).
34440	SG-10 with built-in Commodore Interface. \$Cal
33265	SG-15, 15", 120 CPS W/NLQ
33284	SD-10. 160 CPS w/NLQ
Epson LX-8	30. 100 CPS w/NLQ. Our most popular Epson! Call for other models.
33871	\$269.00
	odore Only.
	Cardco G-Wiz Printer Interface
33443	Indus GT Disk Drive - Includes word processor, spread sheet and data base \$229.00
33565	Graphics Printer Interface - PPI from DSI
	544.95

## **TI 99/4A CORNER**

Hardy	ware	
15292	TI 99/4A Computer	\$79.95
31031	Half height TEAC disk drive, OS, DD.	\$139.00
20164		\$59.95
30235	Axiom Parallel Printer Interface	\$79.95
29802	Corcomp 9900 Expansion System	\$329.00
29784	Corcomp RS-232 Standalone	\$127.00
1330 <b>0</b>		\$79.95
32986	Myare RS-232 Card	\$79.95



13315 34324	Myarc DS, DD Disk Controller Card Corcomp 32K Memory Card Myarc 128K Card	\$169.95 \$109.95 \$199.00
	Extended BASIC (Now with FREE word processor and database software!)	\$69.95
32597	Data 8ase 99	\$34.95

BUFF \*\*

U<sup>(IL)FP</sup>

THE ORIGINAL DEVICES D

UNIVERSAL BUFFER

## WHAT DO YOU GET A COMPUTER ENTHUSIAST FOR CHRISTMAS?

## A Gift Certificate from **TENEX Computer Express!!** <u>\_\_\_</u>

Give a gift you know will be appreciated . . . a gift certificate and a copy of our catalog filled with computer software, hardware and accessories!

Gift certificates are available for \$25, \$50, \$75, \$100, etc. (in multiples of \$25). Please specify Commodore catalog, or TI 99/4A catalog. Let us know if you would like the certificate and catalog sent to you, or directly to the gift recipient.

34981

812 Å.

÷44

\*Wyrigh

×.,

S84 - .

84 S C

1998 (\* 1

ØN: X

844 v.

**Christmas Gift Certificate** 

## **CARTRIDGE EXPANDER** Plus \$22.95 FAST LOAD **OFFER!** Stop wearing out your computer by endless cartridge swapping! Plus, all

cartridge expanders let you reset your computer independently of power switch.

For TI 99/4A: Famous three slot design lets you keep your most commonly used cartridges plugged in and ready for instant selection! Now Only \$29.95 Sug. Retail \$39.95 13329 For C-64: Three slot design lets you select a cartridge or "off" position for no cartridge! Slots are vertical for easy access - no blind fumbling behind the computer! ONLY \$22.95! 33227 3-slot Cartridge Expander for C-64.

The C-64 cartridge expander is a great companion for the Epyx Fast Load cartridge --- you can keep it permanently installed, select it, select another cartridge, or turn it off. 34216 Fast Load for C-64 \$29.95 Sug. Retail \$34.95

#### IYON INDEDE VAIL 313.30 32582 Draw N Plot 29770 Corcomp DS, DD Disk Controller Card \$169.95 21467 Dow 4 Gazelle. Flight Simulator We have been serving TI 99/4A customers in 50 states and worldwide since 1982! Request our free "Everything Book for the TI Home Computer," or take advantage of our \$2.95 Dust Cover and Catalog special! 34465 TI Dust Cover and Catalog Special (No shipping and handling charge)

TIED UP BY **PRINT TIME?** 

Imagine printing a lengthy document in seconds instead of minutes freeing your computer for other tasks! We were thoroughly impressed with the U Buff 64K printer buffer from Digital Devices. Just connect it

between your parallel interface and your printer and it's ready for work! Its speed and versatility make it a valuable accessory for anyone with heavy printing needs.

U Buff receives print data at rates up to 4800 cps and then sends it to the printer at the printer's own print rate. With 64K of usable RAM, the butter has enough memory to hold approximately 32 pages of data. Think of the increase in personal productivity—while the printer is still working. on one document, the next one can be loaded and edited! Because the U Buff has its own power supply, it will continue to hold data even if the computer or printer is turned off, or is off line. U Buff comes complete with cables, power supply and comprehensive instruction manual. A one year limited warranty and full customer support are also included.

### 34888 U Buff 64K Printer Buffer

## **DUST COVER and** "EVERYTHING BOOK" SPECIAL OFFER

Get to know us by ordering this great dust cover. for your Commodore 64/VIC 20 or TI 99/4A and our comprehensive catalog, "The Everything Book" for your computer, for only \$2.95 (no extra shipping and handling charges). Cover is antistatic, translucent. 8 gauge vinyl sewn to our exacting standards with reinforced seams. Discover the savings and easy shipping available from TENEX Computer Express!

# \$**2**\_**9**5

31627 C64/VIC 20 Dust Cover and Commodore Catalog 34465 TI 99/4A Oust Cover and TI Catalog

## **USE SINGLE SHEETS IN YOUR TRACTOR FEED PRINTER WITH**

## **PAPER TRACTOR™**

Paper Tractor carries ordinary sheet paper through your tractor-feed printer! Simply place your letterhead, checks, invoices, forms, even legal-size sheets into the durable flexible plastic carrier and feed into your adjustable tractordrive printer.\*

<sup>\$11.95</sup>

**ONLY \$99.95** 

\$34.95

\$25.95

\$2.95

Fast Load Only \$22.95 with purchase of cartridge expander!

Will not work with some Commodore brand printers. Check with Customer Service.

22084

A Maste Card We gladly accept SHIPPING CHARGES **NO EXTRA FEE FOR CHARGES** From Your Friends At ORDER AMOUNT CHARGE mail orders! computer × TENEX less than \$20.00 WE VERIFY CHARGE CARD \$3.75 Ad P.O. Box 6578 \$20.00-\$39.99 ADDRESSES. 4.75 FC5 241242 241274 press South Bend, IN 46660 \$40.00-\$74.99 5.75 **ORDER TOLL FREE** \$75.00-\$149.99 6.75 **Questions? Call** 1-800-348-2778 \$150.00-\$299.99 7.75 VISA 219/259-7051 \$300 & up 8.75

**CIRCLE READER SERVICE 52** 

## The Special Ks' Buyer's Guide to Controllers

K-POWER'S Special Ks (David Langendoen, Damon Osgood, and Alex Shakar) have logged hours of intense game play on all sorts of joysticks. Their finding: It's not always the price tag that makes for a hotshot controller. What they suggest is to look for sturdy construction, wellplaced fire button(s), and a stick that has just the right amount of give. Their thoughts on some of the most popular controllers follow. Compatibility and prices are specified within parentheses.

### APPLE

APPLE JOYSTICK (Apple IIe/IIc; \$59.95). Comfort and durability are this joystick's strong points. The stick is fairly loose (maybe too loose) for some games), and the fire buttons make rapid fire easy. Both buttons are located on top of the base,



ticularly accurate. The fire button is good (when it doesn't pop off), and the stick is fairly comfortable.

### SUNCOM

TAC 2 (Atari, C 64, VIC-20; \$12.95). The casing is hard plastic, and the stick is metal with a plastic ball on top. It fits snugly in your hand, feels solid, and provides accurate control. The only drawback is the stiff fire button, which cuts down on speed.

STARFIGHTER (Apple II series [\$5.95] adapter needed with II/II plus], Atari, C 64; \$10.95-\$24.95). The Apple version offers two unique features: a throw selector, which lets you adjust how far you want to move the joystick, and a high/low sensitivity switch. The fire buttons are slightly stiff. and the alternate button on the Apple may give righties some difficulty since they have to reach past the cord to press it.

so it's sometimes difficult to use both at once.

### ATARI

CX43 SPACE AGE (Atari, C 64; \$9.95). Built for comfort above all, this joystick is pistol-shaped, with a triggertype fire button and the stick on top. The trigger is very sensitive, but the stick isn't always accurate.

### **CH PRODUCTS**

MACH II/III (Apple II plus/IIe/IIc, IBM PC/PCjr, Tandy CoCo; \$44.95– \$54.95). An exceptionally comfortable and accurate joystick, the Mach II has a sturdy base and a metal stick for extra durability. The stick itself is a little too loose for some games, and the fire buttons are fast. A special feature lets you perfectly center the joystick by turning a couple of knobs. The Mach III has an added button on top of the stick. This is a good feature, but makes the stick somewhat top-heavy and can slow down play.

### **COIN CONTROLS**

Apple games requiring two buttons are difficult to play because the buttons are spaced far apart.

### KRAFT

KRAFT PREMIUM (Apple II series, IBM) PC; \$32.95) and KRAFT QUICKSTICK (Apple IIc/Macintosh; \$69.95-\$79.95). A superior joystick in every respect, the Premium is extremely accurate and comfortable to use. The fire buttons are responsive, and placed so you can use both without moving your hand. An added feature: The user can switch between a self-centering and a free-floating stick. Quickstick has a mouse option.

SWITCH-HITTER (Atari, C 64; \$11.95). Although this joystick feels and looks fragile, the fire button works well, and the stick is responsive and easy to control. There is also a switch that lets you alternate

### T.G. PRODUCTS

J-2000 JOYSTICK (Apple II series, IBM PC/PCjr; \$49.95). Good for long periods of game play, this joystick consists of a big, sturdy base, a small stick on the right, and two large buttons on the left. The user can choose between self-centering and free-floating stick modes. The two fire buttons are good for fast firing, but might break after too much use.

### WICO

THE BOSS (Atari, C 64; \$17.95). The Boss is one of the best sticks on the market. It features a square base with rounded edges, a "grip" handle that offers comfort with little slipping, and a fire button on top that is built for speed and comfort. There is no button on the base. This can be a drawback if you don't like topof-stick firing. It can become very tiring on the hand if used for prolonged periods.

COMMAND CONTROL (Atari, C 64, TI-99/4A, VIC-20; \$26.95, \$32.95 for combination model). The Command Control's base is slightly larger and has a fire button in the left-hand corner, as well as on the stick. To the rear of the stick is a switch that lets you select operating buttons. The Command Control comes with a "bat" handle, or with three interchange able handles: bat, ball, and grip.

COMPETITION PRO 5000 (Apple IIe/IIc, Atari, C 64, TI-99/4A with \$7.95 adapter; \$17.95-\$29.95). One of the best joysticks we tested, the model 5000 is accurate, durable, and good for extended play. There are two large fire buttons on the base that are helpful for rapid fire.

between four- and eight-way directional control.



THE DELUXE JOYSTICK (Tandy CoCo; \$19.95 a pair). This joystick is hard to use in some game situations because it is free-floating and not par-

## LODE RUNNER



Broderbund. Arcade/strategy. Your mission: to climb your way through the 150 different screens and collect all the gold you can lay your hands on. (Levels created on Apple.)



Bored, bored, bored—You've solved every screen with the monitor turned off and one hand tied behind your back. Here are three original boards to alleviate those doldrums.



Just copy the above screens onto your disk and you're ready to go. — DAVID LANGENDOEN, 17, Brooklyn, New York

		•							
Η	1	N	Т	Н	Ο	T	L	N	Ε

**SWASHBUCKLER**, Datamost (Apple). Areade/strategy. Your mission: to fight off a horde of evil pirates, brigands, and their nasty pets (rats, spiders, et al) using your rapier and Errol Flynn-like fighting prowess.

RETURN again. The game will load, but now you will have the specified number of men. This hint can be used with the first hint. —JOHN LUNA and JUSTIN MAYER, 14, Woodland Hills, California; JOHN A. BASE, 14, Burke, Virginia another key, which you can use to relock the door (although you can still walk through it). Repeat this and you can continue unlocking and locking it, meanwhile building a large score. —CURT HEPNER, 16, Vallejo, California

When fighting a barbarian (bald head and club) past the first level, push him to the edge of the screen and keep lunging. He will eventually drop his guard, and you can skewer him.

Once you kill one of your opponents, force the second to the edge of the screen and strike him. Then, before he stands, lunge again, and he'll come up into your blade and die without a fight. —STEVEN KONECNY. Carson City, Nevada; CHRIS BOLEN, 14, Chico, California

**MINER 2049er**, Micro Fun (Apple only). Arcade/skill. Your mission: Claim all the mine sections while avoiding radioactive mutants.

When you're asked for the number of players, press SHIFT-3. You can now play any level you want by just pressing the corresponding number key.

To get extra men, wait for the message PLAYER 1 PREPARE TO EN-

## FLIGHT SIMULATOR II, subLO-

GIC (Apple, Commodore 64). Simulation. Your mission: to learn how to take off in, fly, and land a small plane.

If you're low on fuel and there is no airport nearby (or you just aren't very good at landings), go into the editor mode, and then go back to flight mode. When you return, your fuel tanks will be full. —TROY HANSON, 11, Buffalo, Minnesota; J. F., 11, Salem, Virginia

**AQUATRON**, Sierra On-Line (Apple). Arcade/skill. Your mission: to destroy the invaders of your water-covered world.

Holding down the CONTROL and SHIFT keys and pressing 2 on the Apple IIe and IIc. or P on the II plus, will advance you one level. If you do this to jump past a Suicide Level, you'll get a free base. —ROBERT VOLDEMAR ZEMMEIS, 14, Tacoma, Washington **SUMMER GAMES**, Epyx (Apple, Atari, Commodore 64). Sports simulation/arcade/strategy. Your mission: to outperform computer or human opponents in eight events modeled after the Olympic contests.

In the Pole Vaulting event, try this when you get to heights of 5.5 meters and over: choose low pole grip, and as soon as you plant your pole, push up. Then press the button just before your pole knocks the bar down. If done correctly, you'll fly under the bar but get a successful jump nonetheless. —RYAN PHILLIPS, 16, Montpelier, Vermont; BILLY CAR-TER, 14, Spartanburg, South Carolina

We're looking for a few good hints! Help R-POWER readers be all that they can be by sending us hints for your favorite games. We have all the *Zork* and *Pac-Man* hints we can handle, but we'll be glad to publish and pay \$10 for hints we've not heard of. Send them to Hint Hotline, c/o K-POWER, 730 Broadway, New York, NY 10003. Hints will not be considered for publication unless accompanied by full name, address, telephone number, and date of birth. {Note: the computer systems listed in brackets indicate the computer version the hints work for.}

TER LEVEL 1, then press CONTROL-RESET. You now should see a prompt and cursor at the bottom of the screen (if the computer reboots, try again). Type CALL-151, press RE-TURN, then type 816: (any number of men from one to 27) and press RE-TURN. Finally, type 980G and press

**CONAN**, Datasoft (Apple). Arcade/ adventure. Your mission: to seek out and destroy the evil Volta. Conan's archenemy.

On the fourth level, after you unlock the door, go back to where you got the key. You'll then receive

	S S	STO EARCHIN	Hor Conorat
DIRECT DIRECT	NEW! PFS: First Success Bundle Includes: Write, File, Plan, More The Print Shop NEW! Print Shop Companion with "Screen Grabber" Software GATO - Submarine Simulation Flight Simulator II Music Construction Set by E.A. NEW! Adventure Construction Set	X     X     X       \$239     \$169     N/       33     33     3       N/A     29     N/       26     26     N/       35     35     3       34     30     2	6 Types of Charts an Indices User Fields Notes, Footnotes and No Limits Adapts to Your Har Comprehensive Easy to Use
To Place Your Ad in DIRECT ACCESS Call (212) 505-3636 FAMILY COMPUTING 730 Broadway New York, N.Y. 10003	Pinball Construction Set Apple IIe, IIc Half Height Direct- Drive Disk Drive w/Cable While They Last! PCJR Booster by Microsoft Adds 128K, Mouse, & more! Math Blaster! by Davidson Word Attack! by Davidson Agent USA by Scholastic Rocky's Boots by Learning Co. FREE CATA SEE READER SERVI Software Central (2: 4037 Hills & Dales, Canter VISA - MASTERCARD - All We Rebate \$1. On Pt CIRCLE READER SERVI	30       30       2         N/A       139       N/A         220       N/A       N/A         33       33       3         33       33       3         33       33       3         33       33       3         33       33       3         33       33       3         35       34       2         ALOG	and sample printouts. ware a
3M Diskettes Lifetime Warranty TIRED OF WAITING FOR SERVICE AND PRICE?	<u>ADAH OUTH</u> Data Pack(Adam) 1/\$3 Disks (blank SS,DD) Ribbon Cart. (Adam)1/ Daisy Wheel-Italic,Sc Covers (3) Key,CPU,Pr Labels T/F-F/F (Addre PRINTER STAND - Front	.95 - 10/\$37.50 10/\$17.95 /\$5.50 3/\$15.00 cript-Adam\$5.50 rinter " \$18.95 ess) 1000/\$5.00	EBU - add commands to BASIC to handle CO HEX-CONVERSION & MUSIC. Auto-loading. DIABLO - strategy and joystick contro graphics, sprites and sound. Auto-loading.

That Works nerations

harts and Sheets dices Fields tes and Sources Limits our Hardware rehenšive to Use

### , Much More

Other genealogy software also available.



Trademarks for Apple Computer, Inc., International Basi We Mechanes, CBM, Inc., e Digital Research

SEPT, INC. MA 02173 / (617) 641-2930

ER SERVICE 39

C to handle COLOR, RE-NUMBER, Auto-loading. ystick control of machine level sto-loading. IC programs by Martin Consulting



## **MAXEL DISKS** LIFETIME WARRANTY

TIRED OF WAITING FOR SERVICE AND PRICE? 9 out of 10 SURVEYED DISK BUYERS PREFERRED

### NORTH HILLS #1 IN SERVICE AND PRICE 1-800-328-3472

Formatted and hard sectored disks in stock-Dealer inquiries invited. COD, VISA, MASTERCARD All orders shipped within 24 hrs.



NORTH HILLS CORP. INTERNATIONAL 3564 Rolling View Dr. White Bear Lake, MN. 55110 MN. call collect—612-770-0485

Hunt and Peck is fine for chickens but **ETYPE** is the fun and easy way to



## ATTENTION T.I. 99/4A OWNERS!

## **CHRISTMAS SPECIALS**



- Diskettes 59¢ each! Your choice SS or DD
- 512K Now Available for the 99/4A!
- 99/8 Level 4 Computer Upgrade Now Available
- Over 1500 Hardware and Software Accessories at Similar Savings

## THE WORLD'S LARGEST COMPUTER ASSISTANCE GROUP

Now serving over 35,000 members worldwide with the best in technical assistance, service, and products for the Texas Instrument 99/4A Computer.

To become a member and receive newsletters, catalog, technical assistance and membership package, send \$10.00 for a ONE Year Membership to:

99/4A National Assistance Group National Headquarters P.O. Box 290812 Ft. Lauderdale, Florida 33329 Attention Membership Division

For Further Information Call 24 Hours - (305) 583-0467

CIRCLE READER SERVICE 1





### learn touch typing on: IBM PC

### TANDY 1000 TRS-80 MODEL III/4

"The program is well written and functions well without problems. ...the typing instructions have been done by someone who knows their way around the teaching profession. ...if you want to learn to type, increase your typing ability or cure a lifetime of bad habits, FasType is an excellent way to go." Lon Andrews, Computer Shopper, July '85

### Educators: Special Network Version Available! \$39.95/disk plus \$1.50 shipping. AZ residents add 5%. Specify computer.



Press A Software Box 364 F Jerome, AZ 86331 (602) 634-2688

### **CIRCLE READER SERVICE 36**

## ASTRONOMY FOR ADAM

- Track 8 planets, 15 comets including Halley's Comet, for any date.
- Planet coordinates, phase magnitude, distance from earth and constellation position.
- **2.** Pinpoint Halley's Comet.
- Display 42 constellations and coordinates and data on 150 major stars, 100 galaxies and nebula.
- **4.** Calculate distances (km., mi., lt.)

### PRINTER INTERFACE

#### COLOR GRAPHICS PRINTING •

 Print HGR or HGR2 screens • 8 different colors • Produce pictures with commercial software or your own programs • Artwork, graphs, signs, bar charts, anything you can create!

FAST PRINTING •

 Smartbasic<sup>™</sup> or Smartwriter<sup>™</sup> files 

 Most dot matrix printers are much faster than ADAM's roughly 10 characters per second

• QUIET PRINTING •

### WALK-AWAY PRINTING

 Pin in hole paper feeds built in to most printers will reliably advance folded computer paper
 No more babysitting the printer!

### BLACK AND WHITE GRAPHICS PRINTING

 Similar to color printing, but works with Commodore-64 compatible printers

The C-interface is a single circuit board that fits entirely within ADAM in expansion slot one. It adds a Commodore 64 serial bus to ADAM! A single hole drilled in ADAM's removable cover is the only modification needed. And it comes with a one year parts and labor warranty. Software on data pack is included for color graphic screen dumps to the Okimate 10 Printer, for black and white screen dumps on Commodore 64 compatible printers (Okimate 10, Okidata 120, Comrex CR220, and others), and for text output on Commodore 64 compatible printers and most printers with a Centronics interface. Centronics interface printers require the optional Centronics port; the few special features used in Smartwriter (subscript, superscript, underline) are sent out this port as Epson printer codes.

### C-INTERFACE AND OKIMATE 10 PRINTER

Thermal transfer at 60 characters per second 
 Color or 88W graphics
 Includes paper, color ribbon, black ribbon, and printer cable
 Pin in hole paper feed
 \$269.95 + \$8.00 shpg&hndlg

- C-INTERFACE AND OKIDATA 120 PRINTER
- Dot matrix at 120 characters per second 

   Pin in hole paper feed
   B&W graphics
   Includes ribbon and cable
   \$299.95 + \$8.00 shpg&hndlg
- C-INTERFACE AND COMREX CR220 PRINTER

Dot matrix at 50 characters per second + Pin in hole paper feed =
 B&W graphics = includes ribbon and cable = Major manufacturer =
 \$174.95 + \$8.00 shpg&hndlg

### • C-INTERFACE AND CENTRONICS PORT

Adds standard Centronics port to C-interface 
 Includes both cables
 Inside small box between the two cables
 \$119.95 + \$4.00
 shpg&hndig

C-INTERFACE ONLY
 \$69.95 + \$3.50 shipping and handling

• This is made of genuine leather for protection of magnetic media. Available to hold 8 Mini  $(5\frac{1}{4}'')$  diskettes, Or 10 Micro  $(3\frac{1}{2}'')$  diskettes.

• Your color choice of Black, Brown and Burgundy.

For Mini (5¼") Measures 9½" x 7½" x 1¾"
 For Micro (3½") Measures 5½" x 9" x ½"

Send \$24.95 plus \$2.50 (Shipping).
 Specify diskette type and color choice.
 15 day money- back guarantee. Dealer inquiries invited.

### Manufacturer of Leather Goods K. S. Universal Co. TEL: (213) 631-1938 292 S. Sonoca Cir. Anahoim, CA. 92805

**CIRCLE READER SERVICE 27** 

## SAVE YOUR FAMILY COMPUTING

### Library Binders and Slipcovers Hold 12 Issues

Bound in forest green simulated leather with the gold FAMILY COMPUTING logo on the spine, these durable and attractive Library Binders and Slipcases protect and organize your magazines.

### SATISFACTION GUARANTEED OR YOUR MONEY BACK

Enclosed is my check or money order in the amount of \_\_\_\_\_ (Orders will not be shipped

yrs.) for any 2 objects.

12 programs printout all data! \$36 for disk and \$39 for data base. (Check or Money Order, No C.O.D.s) Will Rush Delivery!

### HANANIA ENTERPRISES LTD. PO Box 356, Tinley Park, IL 60477

CIRCLE READER SERVICE 23

MO residents add 5.725% tax.

Send money order\_(for faster service) or check to:

CAPITAL SOFTWARE P.O. BOX 370 ST LOUIS, MO 63032

TM-ADAM, Smartbasic, Smartwriter, Trademark Coleco Industries, Inc. Commodore, Commodore 64 Trademark Commodore Electronics, Ltd.

CIRCLE READER SERVICE 8

🗆 3	ERS @ for \$21.75 □ € ASES (	5 for \$42.
	3 for \$17. □ 6	
ADDRESS		APT. NO
CITY	STATE	ZIP
P.O. BOX 5120/	DEPT. F-COM / PHIL	SE JONES INDUSTRIES ADELPHIA, PA. 19141 Iadian orders add \$2.50 per un

DECEMBER 1985 105

### CLASSIFIED RATES:

Cost per line per issue: \$18.95 In 1 issue: \$15.95 In 3 consecutive issues: \$14.50 In 6 consecutive issues: \$13.60 In 12 consecutive issues: 34 characters per line, including spaces and punctuation 25 characters per line, including spaces and punctuation, in all caps or boldface \$15 additional for all/any boldface or italic lettering 25% additional for toned background \*Announcements: 2 line minimum, \$13.60 per line

### **TO PLACE YOUR AD:**

• Print or type your copy

- Determine number of lines
- Decide frequency
- Send ad with check or M.O. to FAMILY COMPUTING 730 Broadway New York, NY 10003 Attn: Classified Or call us at (212) 505-3587 and we will help you write an ad

## ANNOUNCEMENTS

**CME** thanks & welcomes its new members Edward McKnight DVM, Donald Hays, Mike Cristiano, Rizal Minon, James Nussman, William Petry, Juanita Burke, John Gibson, Ellen Steele, Carl Cummings, Janice Cavallini, James Minges, Jono Smith, CAUG.

## HARDWARE

**CLASSIFIED** 

Discount Hard/Software TI-99/4A Sundisk Software, Bx. 1690, Warren, MI 48090 TIBBS: (313) 751-1119 ADAM Discount hardware & software. Send stamped, addressed envelope for FREE flyer. DATA BACKUP Box 335, Iona, ID 83427 AppleWorks \$199! Kaypro, Panasonic Sr. Partner, Imagewriter w/IIe or

IIc kit, \$489. DCA, 445 N. Pine, Reedsburg, WI 53959; (608) 524-2429

ATTENTION ADAM OWNERS! We sell HW/SW at unbeatable prices. Now in stock: modems and disk drives. Cat. 25¢ Visa/MC THE ADAM DEPOT, 419 Ridgway Ave., Johnsonburg, PA 15845; (814) 965-2487

SUPER DISCOUNT CATALOG Hardware, software, accessories, & much more! Send \$1 to Universal Computer, Box 26623, Indianapolis, IN 46226

WE HAVE THE COMMODORE 128! We also sell most software at \$3 over cost! HOME VIDEO, Box 4068, Bloomington, IL 61701; (309) 827-7567

### **DISCOUNT HARDWARE & SOFTWARE** Apple, Commodore, TI-99, Atari, IBM PC

30% below retail. TI ext.-BASIC-\$59, Gemini SG10-\$229, Panasonic 1090-\$189. Printer interface; TI-\$55, Atari-\$45. Indus disk drive; Atari-\$209; C 64-\$239. Add 3% s/h. Over 1,000 software titles. Send \$1 for cat. Specify computer. MULTI VIDEO SERVICES, Box 246, E. Amherst, NY 14051; (716) 688-0469

### **BUY DIRECT AND SAVE**

We are the answer to any of your computer needs. Superior Quality 100% error free, 5¼ disks Box of 10 SS/DD \$17, DS/DD \$21. We offer Lifetime Warranties on our diskettes. Diskette Doubler \$13. Apple compt. Side-x-side drives \$199. We have ribbons/monitors/printers & much more! **MEMORY PLUS, Inc.** Box 5008, Irvine, CA 92716-5008 Shipping included on all orders (714) 786-3617

COLOR PRINTER RIBBONS Brown, Blue, Red, Green, Purple APPLE (dot matrix) - COLECO (ADAM) COMMODORE (4022), IBM (graphics) - EPSON (MX70/80), (MX80), (FX80), (RX80). ONLY \$8.50 EACH. MINIMUM ORDER 2 RIBBONS OF ANY COLOR. SEND CHECK OR MONEY ORDER, plus \$2.00 s/h PRINCETON OFFICE SUPPLY 43-15 QUAIL RIDGE DRIVE, PLAINSBORO, NJ 08536

"DISKETTES!" **\$\$/DD** DISKS, \$8.50/10 pack. **DS/DD** DISKS, \$9.50/10 pack. Add \$2 shipping & handling. Becked 100% by J/D LIMITED, P.O. Box 223, Skokie, IL 60076; (312) 677-2525 . . . CHK/MO/VISA/MC

### **DUST COVERS Dust covers of soft-lined vinyl.** Specify color choice: Blk/Brw/Beige/

FUN CHILDREN'S SOFTWARE Over 120 low-cost programs for kids. TI-99/4A and C 64. Free brochure.

KIDware Box 9762, Dept. F. Moscow, ID 83843

Adam Owners-Now your Adam can read & convert other CP/M disk formats. Contact: Sage Enterprises, Rte.2, Box 211, Russellville, MO 65074

**TI-99/4A** Software/Hardware bargains. Hard-to-find items. Huge selection. Fast service. Free catalog. **DYNENT** Box 690, Hicksville, NY 11801

US \$8-up! Over 1,000 pcs. Famous programs, Apple/IBM PC business/games/ed., etc. Catalogue: US \$1. RELIANT, P.O. Box 33610, Sheung Wan, Hong Kong

FREE CATALOG of TESTED EDUCATIONAL SOFTWARE for Apple/ Atari/C 64/TRS80CoCo/TI-99/VIC-20 Moses, Bx. 11038, Huntsville, AL 35805

IBM PC & *jr* Software. Free list! Paradise Computer Works, R.D. 1, Box 273A, Newark Valley, NY 13811

COPY CLONE XL for C 64. Duplicate protected disks, 99% effective, +30 utility. \$24.95+\$2 s/h EDUCOMP, 2139 Newcastle Ave., Cardiff, CA 92007; (619) 942-3838

C 64 and IBM-PC SOFTWARE CHEAP!!! Send for your catalog of game, home management, business, utility, and educational software available. and you will also receive a diskutility program listing free, along with details on how to make money at home with your personal computer.

## **BOOKS/MANUALS**

The Hacker's Guide to ADAM, \$17.95 PPD with DDP or disk. P. Hinkle, 117 Northview Rd., Ithaca, NY 14850

EXPANDABLE COMPUTER NEWS 1st ADAM-only publication. \$12.00/ 6 issues. Sage Enterprises, Rt. 2. Box 211, Russellville, MO 65074

**\*ADAM-RESOURCE-DIRECTORY**\* (75 + pgs) \$13.95 or SASE for info. P.O. Box 90, Seelyville, IN 47878

Put your PC in "The Print Shop" or other software to work making banners for profit. Fully detailed booklet includes how to get started, pricing, supply sources, marketing strategies. \$10 post paid. 3430 Somerset, Crete, IL 60417

### BUSINESS **OPPORTUNITIES**

\$100.000 OR MORE FROM YOUR COMPUTER ! ! Details \$1. PAC WEST MARKETING, 1556 Halford Ave., Suite 255,

Santa Clara, CA 95051

\$10-\$360 WEEKLY AND UP MAILING CIRCULARS! NO Quotas Sincerely Interested, rush stamped envelope to: NATIONAL DIVISION, Box 20728-FC12, San Diego, CA 92120

## CONVENTIONS

### COMPUTER SWAP MEET

Jan. 11, San Mateo Fairgrounds; Jan. 25, LA Fairgrounds, Pomona 10 am - 5 pm. 800-525-7927.

HOME CONTROL AND ENERGY MANAGEMENT WITH C 64/VIC Create daily/weekly schedules with included software to control up to 256 lights and appliances. Works with all BSR-type receiver modules. \$71.95. Prescott, 800 E. NW Hwy, #230, Palatine, IL 60067; (312) 359-5981

ADAM compatible 64K memory expansion card \$49.95. US UNIVERSAL INTERFACE SYSTEMS, Suite 133-20465 Douglas Cr., Langley, British Columbia V3A 4B6

ADAM Lowcost Voice Synthesizer! Send SASE for fast details to: AAL, P.O. Box 8006, Laguna Hills, CA 92654. Specify kit or manual.

### MISCELLANEOUS

Printer ribbons for any printer DELTA MICRONICS

Box 10933, Erie, PA 16514 (814) 455-5667, 9-3 p.m. EST

AML has the SUPPLIES for you! Are you spending too much for diskettes, ribbons, and paper? \* WE WILL BEAT ANY PRICE \* on KODAK, DYSAN, MAXELL, SCOTCH VERBATIM. & LIBERTY DISKS C 64 Software \* C.O.D.s Welcomed. Win a MILLION, NYS LOTTO \$15.00 AML 71-38 Myrtle Ave., Queens, NY 11385 (718) 326-1110 MCI#113-5312 \* CALL COLLECT OR WRITE TODAY! \*

ADAM BEST Quality dust covers, 3/set Blk/Br Members: \$13 Nonmembers: \$15 Dick covers, Bik/Br .

Tan/White. ADAM 3-piece set, \$16. ADAM disk, \$6. Atori 600XL/800XL/ 1050 disk drive, \$7.50. Apple IIe/ **TI/99-4A** recorder or printer, \$7.50. IBM PC 2-piece set, \$14. IBM PC/r 2-piece set, \$12.50. We also carry covers for C 64. Epson, & many more! We make custom covers to fit your needs. Add \$2s/h: SASE for more info. J CHECK SOFTWARE, Box 345, Millry, AL 36558; (205) 846-2360 VISA/MC

## SOFTWARE

### Super-Priced C 64 Software

Pro-Writer, Data base, Education, Music Games, Lotto, Finance & much more! All on 1 disk for only \$14.95 + \$2s/h. SOFTWORKS INC., P.O. Box 03950, Highland Park, MI 49203 TI-99/4A FREE catalog of fantastic

gamesoftware. NOT-POLYOPTICS, 13721 Lynn St. #15. Woodbridge, VA 22191.

Let over 400,000 families see your ANNOUNCEMENT in this section of FAMILY COMPUTING classified! Call (212) 505-3587 now!!!

**CP/M Software** for **ADAM**. **SCNCHOP** stops sideways scroll, \$15. Plus \$2 s&h. CP/M public-domain catalog lists 375 disks, \$7.50. P/P. **Elliam Associates,** 24000 Bessemer St., #F. Woodland Hills, CA 91367. 818-348-4278 M/C & Visa

### **EDUCATIONAL SOFTWARE** 158-p, catalog, color screen pictures narrative age/grade levels, 66 publishers from Addison to Xerox, 900 + programs for Apple, Atari, COM, IBM. Send \$2 Visa/MC/MO/ personal check to: Interstate Software, P.O. Box 8952, Boise, ID

PACEWARE, INC, Box 64-A, Pompano Beach, FL 33074

### ADAM SOFTWARE

VIDEOTUNES---Compose and play music AUTOAID-improves basic Fourth-language interpreter/compiler FUTUREVISION. P.O. Box 34-FC, N. Billerica, MA 01862. Visa/MC 617-663-8591 FREE ADAM CATALOG **TI-99/4A** Word Processor & Print Pgm. Mail List-DC SOFTWARE WRITERS Box 335651, Northglenn, CO 80233 (E.B.req.) CK/MO/MC/Visa. (303) 428-7127

You read about

### KITCHEN PLANNER

in Nov. 84 FAMILY COMPUTING Cover Story:

Now. YOU too can save 5-6 hrs a month by creating your 1 to 14 day BALANCED MENU and SHOPPING LIST in less than 5 minutes! Easy to use. Compact, store-sized printout. Send \$29.95 + \$1.50 handling. In CA add 6.5%. All Apple IIs. Sav-Soft Products, POB 24898, San Jose, CA 95154, VISA/MC call: (408) 978-1048

ADAM SOFTWARE. New for business: (Accts. payable/Accts. recd./Payroll.) Also complex home finance, recipe, educ., games. SASE for catalog. STEVE JACOBY, Box 2498, Clearwater, FL 33517

Commodore 64 \* Timex/Sinclair Free catalog—specify computer. WMJ DATA SYSTEMS, 4 Butterfly Drive, Hauppauge, NY 11788

CoCoNut Software for TRS-80 Color Computer, Send \$1 to: Site 9, Box 1 R. R. 2, Tofield, Alberta TOB 4JO

SAVE 38% on Software !!! Davidson's Math Blaster Retail-\$49.95. Our price-\$30.97. Free price list. Specify Apple, IBM, C 64. CREATIVE COMPUTER RESOURCES Box 728, Grand Haven, MI 49417 **ADAM SOFTWARE PRINTSHOP** instantly prints signs. greeting cards, announcements, etc. **CME** offers continual support with Money-Back Guarantee. 89.95+\$2 s/h

SASE for info to CALL,

P.O. Box 339, Eastlake, CO 80614

FOR FREE/TO SWAP	Members: \$5 Nonmembers: \$6	
FREE TI-99/4A SOFTWARE Write for details: Alpha Company, 162 Chapel Dr., Churchville, PA 18966	Disk library storage cases, R/B1 - holds 10 - 2 cases for: Members: \$7.50 Nonmembers: \$9.50 10 Protective colored disk sieeves	
* ATTENTION RS COCO OWNERS * FREE 24-page CoCo catalog!!! CoCoNuts, Box 21272, Woodhaven, NY 11421	Members: \$6.50 Nonmembers: \$9.00 SASE for info <b>CME</b> P.O. Box 399, Eastlake, CO 80614	
FI-99/4A Huge Inventory of Hardware, Software, & Accessories. Free catalog. Competition Computer, 2629 W. National,	(303) 451-8987 ATTENTION 99/4A OWNERS SEE OUR AD IN DIRECT ACCESS AREA	
Milwaukee, WI 53204; (800) 662-9253	99/4A NATIONAL ASSISTANCE GROUP	

83707; (208) 342-3347. UTRITIONAL SOFTWARE **UTRICALC:** the interactive ledge base of over 2,400 foods, **JSDA nutritional factors. You** identify recipe ingredients sily: it tells you what you're ating. adjusts serving sizes. racks calories, cholesterol, It. etc. IBM-PC/compatibles. .95, Visa/MC. Call Interactive Books Inc., (512) 690-0074.

ADAM SOFTWARE & HARDWARE Copy Utility, Home Budget, Games, etc. GREAT PRICES. Send 22¢ stamp for catalog to: E & T SOFTWARE, Box 821242, Dallas, TX 75382-1242

MIDIA MGRS FOR THE ADAM CopyCart + copies mltpl cart pgms to a T/D. Created media will allow pgm selection by #. Easy for kids. BACKUP + makes image and sgl/mltpl file copies. Auto-fix basic for disk. Both ML pgms are fast, self-booting, and support any Tape/Disk drive. BU+ \$37/D \$40/T, CC + \$15 D/T SASE for info; MMSG, P.O. Box 1112, Broomfield, CO 80020-8112

UNCLE ERNIE'S TOOLKIT will **BACK UP** your ADAM software on disk or tape, **SCAN, DUMP** & **MODIFY**. 30-page User's Manual, \$23 disk/\$25dp + \$2s/h. Info: SASE to **Uncle Ernie's Toolkit**, P.O. Box 6382, Akron, OH 44312

FREE APPLE SOFTWARE

Over 1,000 public-domain programs on 50 diskettes. \$5 each, plus \$1 shipping per order. Send \$1 for catalog, refundable with order.

C & H ENTERPRISES Box 29243, Memphis. TN 38127

FEELING ABANDONED? Jr./PC/XT/AT 55 PROGRAMS \$39.95 TI-99/4A 125 Programs \$39.95. SASE to XMAS, Box 2418, Woonsocket, RI 02895

Back up your protected IBM disks with CopyII PC. Available for Apple & C 64. \$35 ea. + \$3 s/h. RSD, Box 272, Bronxville, NY 10708 (SASE for info) ADAM SOFTWARE. MULTICART BACKUP 5 carts to disk, 8 to DP. \$10.95. BASIC SPACE MGR. Loads fast, reads dir. to display programs neatly on screen. Arrows to select pgm.F-keys to undel. cat, del, lock, rtun—pgms Change colors, plus much more. Conv. Basic pgm. to load/run fast, & pgm. to init. Basic & data media. \$29.95. Ck/MO for dp/disk. SASE/Info.: PRACTICAL PROGRAMS P.O. Box 244, Kalamazoo, MI 49005

**LIST-N-LABEL** Disk, \$12. Holds 250 names and addresses for Apple, IBM, C64. Alphabetize, ZIP, sort, categorize and print labels. NAVIC SW, Box 14727. Juno, FL 33408

COLOR FOR PRINT SHOP NEA Teacher certified software. TEXAS SOFTWARE, (409) 866-9765, 10165 Phelan Blvd., Beaumont TX 77706

ATTENTION 99/4A OWNERS SEL OUR AD IN DIRECT ACCESS AREA 99/4A NATIONAL ASSISTANCE GROUP

X-Mas songs for C-64. Plays like album. Specify disk or tape, \$10.95. S. Stager Co., P.O. Box 230455, Tigard, OR 97223. Shipped next day.

### FREE jr SOFTWARE CATALOG jrware 1986 catalog BOX 31427; DAYTON, OH 45431

FREE PROGRAMS C 64/16/+4/VIC-20/TI-99 CoCo/III/4/Pc3/Timex. Send stamps! Ezra, Box 5222CT, San Diego, CA 92105

ADAM or APPLE: GRAPHICS II \$39 B-DESK: client file, mail printer; M-DESK: calculate, checkbook, budget; F-DESK: idea organizer, file maker; \$20 each, or all 3 on 1, only \$39. ADAM: Graph Pack-file, stats, 24x, \$29; ShapeM: make rockets, animate, \$29. ADAM/APPLE catalog for .44 stamps. NICKELODEON GRAPHICS, 5640 W. Brown, Glendale, AZ 85302 ATARI SOFTWARE CLOSE-OUT of a major company. Each package of 2 disks has up to 10 programs worth almost \$100. Now \$9 per pack: Arcade Game Pack #1 or #2: Kids Games #1 or #2: Educational; Data Base; Programming Tools #1 or #2. Word Processor \$15. Graphics Design Pack \$19, Game Designers Pack \$19. + \$2s/h/.Visa/MC/check. Send \$1 Catalog COMPUTERS MADE SIMPLE 438 129th Pl. N.E., Bellevue, WA 98005

#### LOTTO PICKER

Improve your chances for Million-Dollar Jackpots! Picks LOTTO, Win-4 & Daily Numbers. All USA & Can. games included. Expandable! IBM/C64/TI-99 \$35. Order Toll-Free 1-800-341-1950 Ext. 77. By Mail: RIDGE 170 Broadway. #201-FC, NYC, NY 10038. Write for free catalog.

Pick Lotto numbers with your C 64. Send \$8.00 check or money order for disk to NUMERICS, P.O. Box 892, Bayonne, NJ 07002-0892

FREE IBM Public-Domain Software with purchase of blank disks. For details & listing of programs send SASE to WINDWARD PUBLIC SOFTWARE, P.O. Box 4630, Kaneohe, HI 96744

#### **FIRST AID GAME**

Challenging & Educational. Learn fast, accurate responses to many first aid situations. Four game levels: learning to time challenge Modes. Exciting for the whole family. Satisfaction guaranteed or refund. Disk \$39.95 each. Specify C 64 or Apple II when ordering.

### TELECOMPUTING

NATIONWIDE BULLETIN BOARD Phone #s. Send \$3.95, Gary S. West, P.O. Box 55506, Washington, D.C. 20011

### USED COMPUTERS/ SOFTWARE

Now you can RENT SW for your IBM. Send \$1 for list to: RSD, Box 272, Bronxville, N.Y. 10708.

BUYING OR SELLING A COMPUTER? New or used! Let us do it for you! COMPUTER INTERCHANGE "A NATIONWIDE LISTING SERVICE." JUST CALL MON-SUN 8 a.m.-8 p.m. EST 1-(800) 631-5488 (Nationwide) 1-(800) 352-4951 (in N.J.) Specify—Buyer or Seller P.O. Box 695, Springfield, NJ 07081

WANTED: YOUR COMPUTER International Computer Resales Interested in selling or buying a preowned computer? We are the nation's largest & oldest clearing house. 1-800-447-0030. In Florida 1-800-345-0030.

### **USER'S GROUPS**

AMIGA USERS' GROUP Send \$18 for Charter membership. Box 3761, Cherry Hill, NJ 08034 (609)667-2526\*VISA/MASTER—ADD\$1

PC/r Owner's FREE CATALOG 2nd drive at a Super price! Quadram, Racore, Legacy.

TI-99/4A Software/Best selections. \*\*Free catalog\*\* MICRO-BIZ HAWAII P.O. Box 1108, Pearl City, HI 96782

WIZZARDZ & WAR LORDZ At Last—A new challenge! Lead your party of 6 adventurers thru the depths of a 15-level dungeon in 3D graphics! IF YOU DARE .... \$49.95 + \$2s/h IN5% tax, IBM w/128K, DOS Dealers inquire, SASE. RAM-TEK CO., 6752 F Covington Crk. Trl. Fort Wayne, IN 46804; (219) 432-2455

ADAM owners: Unleash the POWER ! ! Info & GIFT: SASE to: DATA DOCTOR, P.O. Box 776, Oak Hill WVa 25901

Brand Name Software-Great Savings! Catalog \$1; refund w/first order. FALCO SYSTEMS, Box 571, WAPPINGERS, NY 12590

### NEW for your COLECO ADAM "SACRIFICE TO THE SPIDER QUELN"

A computer text adventure game. You assume the role of the galant adventurer thrown into the caverns to battle the Spider Queen and her foul, evil minions.

Will you end as most—a meal for her—or will you defeat her and find your way to freedom? You . control your own destiny in this full-length text adventure.

To order, send a check or money order for \$24.95 plus \$2.50 for handling to: AVIMAR, INC., DEPT. FC. P.O. BOX 475, Voorhees, NJ 08043

APPLE If SERIES (DOS 3.3) Educational sw: **SPELLER ZADE** spelling games, \$24.95; ARITHMETIC practice +, -,  $\times$ ,  $\div$ , whole or decimal, \$19.95; **EQUATIONS** practice equations, \$17.95; and GRAPHICS TIPS DISK guided tour, \$24.95. Sh. chge. \$2. NC res.—tax 4<sup>1</sup>/<sub>2</sub>%; MC & Visa. FREE BROCHURE-LOCUS SYSTEMS, Rt. 5, Box 250, N. Wilkesboro, NC 28659 GUARANTEED BEST ELEMENTARY MATH program for 64K Apple or money back. Missing No. Game (+, - facts) ages 4-9, Highly effective & motivational \$29.95. 30-day trial: Renaissance, 1-(800)-821-2779 701 Hamilton Pkwy, Syracuse NY 13214

#### ADAM SOFTWARE & HARDWARE

Personal Accountant by Softsync.... \$24 SmartSPELLER-Electronic dictionary locates & checks mispelled words, etc. \$39 DataCALC-Electronic spreadsheet ... \$24 FastFILER-File management system .. \$24 TRACTOR-FEED ASSEMBLY .... \$79.95 Adam Ribbons ...... \$5.50 Datapacks Pre-formatted ... \$3.50 10/\$31 PACKCOPY—Makes backup copies of ADAM software. Data Pack or Disk ...... \$29 POWERPRINT—Printing enhancement ... \$24 NASHUA 51/4 SS/DD disks 10-pack ... \$15 Shipping \$1.50 USA,\$3.50 Canada. FREE Catalog—Everything for ADAM. **ALPHA-ONE LTD** 

1671 East 16th St., Suite 146, Dept. FC, Brooklyn, NY 11229

Fix car problems w/IBM-PC Don't pay a mechanic unnecessary \$, Troubleshooter-One/Miser Mechanic a user-friendly answer to car problems. Fault tracing by symptom, system; repair and maintenance instructions. Act now pay only \$29.95. 30-day money back guarantee. Send checks to: Expert/Ware, Inc., Suite 2LN, 16 W. 16th St., New York, NY 10011

TI-99/4A5 arcade games, full graphics on cassette. Send \$5 to MICROTECH Rt 2, Box 200, Gallipolis, OH 45631

NEW MACINTOSH SOFTWARE! Business/ Personal. Free catalog. Write DLS Software, POB 829, Clifton, NJ 07015 **TI-99/4A NEW SOFTWARE** STATES AND CAPITALS GAME Hi-res map of USA, 1 or 2 players. Send \$12 for cassette, or \$1 for more info., to: **TRINITY SYSTEMS,** 1022 Grandview Ave., PGH, PA 15237 IMPROVE YOUR CHILD'S MATH SKILLS. 42 LEVELS. K-8. ADD/SUB/MUL/DIV/TEST LEARNING MODES/HELP ERASE ANSWERS. MENU-DRIVEN. C 64/IBM. TAPE/DISK DEMO. 85 APPLIED TO \$19.95 PROG. T. MOORE, BOX 194, REDONDO BEACH, CA 90277

SHADOWSOFT 6966 Harvest Rd., Boulder, CO 80301

## COMMODORE 64 & C 128

HOMEMATE, a powerful graphic data base, has address card file, home inventory, memo pad w/screen display mode. Format disk, scan directory, search common fields & more! Plue 3 graphic games: Savage Hunt, Attack Polar 7, 3 Card Molly. SEARCHER SOFTWARS, Disk \$39.95, Box 49011, Chicago, IL 60649-0011; (312) 978-2055

IBM PC Graphics for engineering, science, biz. \$35 + FREE finance & games pgms. DMC-FC, Box 1547, Kent, WA 98032

\*\*\* FREE SOFTWARE \*\*\* IBM, COMMODORE, and Cp/M computers. For info send stamped envelope to: PUBLIC DOMAIN USERS GROUP, Box 1442-FC, Orange Park, FL 32067

TI-99/4A buy one program, get two others free! Discounts on repeat orders. Adult Games! Business, Kids Games and more! Free Catalog. MORGAN SOFTWARE, Box 3452, Ann Arbor, MI 48106

### PARENTS & TEACHERS

Math/Flash Cards. 720 skill levels. Print worksheets. Apple/C 64, \$29.95. **DL SW,** Box 2433, Midland, MI 48641

ADAM SOFTWARE! \$25 each: KopyKat, SmartTYPE, or Library. Send a SASE for info & AUG list. **REEDY SOFTWARE,** 10085 60th St., Alto, MI 49302

ATARI 800/XL/XE: complete business program. All accounting. mail, point-of-sale, word processing, etc. 8000+ records/disk. Demo disk \$3. MICROMISER, 1635-A Holden Ave., Orlando, Fl 32809. **4 RIG REASONS TO BUY** Software From Soft Source-R **1.** Top Apple, IBM Programs 2. Games, educational, small business (20-40% off) **3.** 3rd year of personalized service 4. FREE shipping/brochure!! Soft Source-R, Dept. D, Box 2931, Joliet, IL 60434 FREE C 64 SOFTWARE CATALOG PANTHER SOFTWARE, 6608-4 Wisteria Dr., Charlotte, NC 28210

Join the PCjr GROUP for best product selection & support Call the PCjr GROUP today! (800) 233-2203. in TX (806) 799-0327 HILLING ADAM OWNERS:::::::::::: Get 2 FREE detepacks plus

our newsletter for only \$16.95. Send to: ADAM-X-CHANGE, 12863 Washburn, Wolcott. NY 14590 NEW 24-hr. BBS # (315) 594-9372

ADAM COMPUTER OWNERS You are invited to join Portland ADAM Users' Group. Meet other users, share computer skills & experiences. Contact: Craig Frerichs, 1928 W. Burnside, #309 Portland, OR 97209, or on wknds: (503) 241-8173

### COLECO ADAM OWNERS Do you need . . .

Access to a complete line? (over 75 products in stock) hardware/software?
 Technical information/instruction & objective reviews of products via a MONTHLY newsletter?
 Free public domain software?
 Join the NIAD ADAM users' group & DISCOUNT buying service now! (formed November 1984)
 New available (RS232 interface, 80 column video, tractor-feed)
 SASE for Free info & catalog.

NIAD, Box 1114, Lisle, IL 60532

#### EVERY COMMODORE 64 FAMILY AND EVERY APPLE FAMILY

should belong to this club. Why? For free information write:

DISK-A-MONTH CLUB

Box 936, Ocean Springs, MS 39564

### ATTENTION 99/4A OWNERS SEE OUR AD IN DIRECT ACCESS AREA 99/4A NATIONAL ASSISTANCE GROUP

Join the leading ADAM users' group #1 ADAM USERS' GROUP Receive "SPRITE CHASER" newsletter. Advanced updating, evaluations on programs, hardware, technical information direct from Coleco. Problem-solving—program exchange discount buying service—etc. Send \$15 for charter membership to: #1 ADAM USERS' GROUP Box 3761—Attn: Jay Forman Cherry Hill, NJ 08034 (609)667-2526\*VISA/MASTER—ADD\$1

DECEMBER 1985 107