

Washington Apple Pi \$2



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Number 11

Highlights

GUTENBERG AND GUTENBERG JR.
FALL DISK ROUNDUP

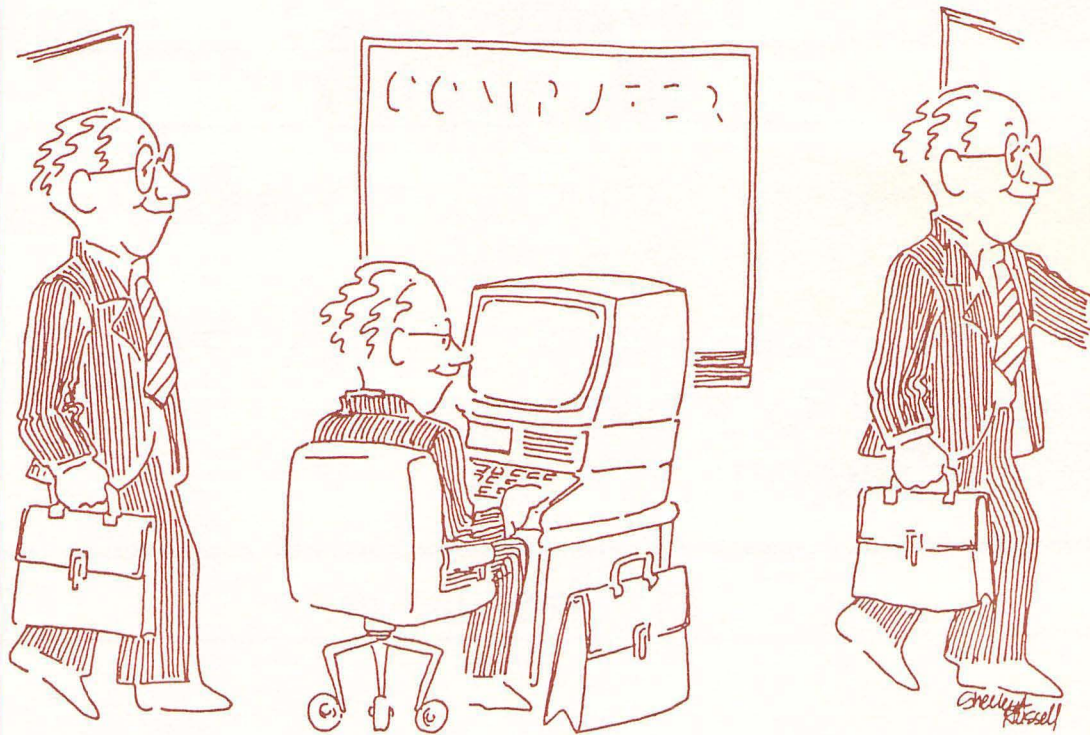
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ENROLL IN FAST CLASS.



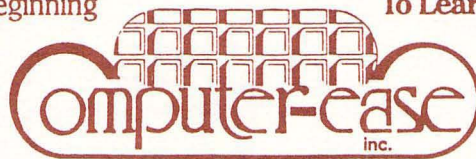
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Insights. Some are happy, some are not. Let me share a happy one with you. For many years now I have been advising others - professional and novice alike - that a computer should not be considered an end unto itself unless one considers oneself an irreconcilable, inveterate hacker. "A computer", I have said, "should be considered a tool." First, choose the applications to which you will apply this tool, look for (or in desperation develop) software packages which do best what you perceive to be your applications, and then choose the computer on the basis of the software. All well and good, right?

Recently, I carried this one step further. The computer and software do not guarantee improved performance and success. A computer and word processor do not a writer make. It helps, of course, but you must improve your thought process to improve your writing. The insight, I submit, is: the computer, software and application together provide you with better tools, but it is up to you, not the computer, to hone your specialty. Practice your profession, improve your skills and relegate the computer and related paraphernalia to their proper status. What do you say? Some may even be surprised to find that there is no real need for a computer. Years ago, systems analysts worth their salt would say that most of the benefits of automation would accrue while preparing for automation. These benefits would persist whether or not one automated. This insight is a variant of their observations. ☺

EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month at the Uniformed Services University of the Health Sciences (USUHS), Building B, 4301 Jones Bridge Road, Bethesda, MD, on the campus of the National Naval Medical Center. Library transactions, journal pickup, memberships, etc. are from 8:45 - 10:00 AM. From 9:00 to 10:00 AM there is an informal "Help" session in the auditorium. The main meeting starts promptly at 10:00, at which time all sales and services close so that volunteers can attend the meeting. A sign interpreter and reserved seating are provided for the hearing impaired.

Following are dates and topics for upcoming months:

November 26 - Uses of Personal Computers by Disabled

December 17 - Garage Sale

The DISABLEDSIG is interested in trying something new at the November 26 meeting. They would like to videotape parts of the proceedings, edit, voiceover, etc. in order to produce a promotional tape for the Pi. Anyone with a portable VCR, camera, lighting, and the willingness to assist, please contact Jay Thal at (202) 244-3649.

The Executive Board of Washington Apple Pi meets on the second Wednesday of each month at 7:30 PM at the office. All members are welcome to attend. ☺

PRESIDENT'S CORNER

by David Morganstein

SECOND COMPUTER. We have added a second computer to our office. This machine will be used for several purposes. First, you can use it to experiment with commercial software that we are collecting. Second, it will be available for use by SIGs that meet at the office. In addition, it can be used by the instructor of a tutorial.

TUTORIALS. Speaking of tutorials, our fall series has proven quite popular. You can select from four evenings (or attend all four in any order). Our instructors have received very good reviews from the attendees. One frequent comment is the possibility of expanding the amount of time available for some of the topics. We will explore this with these and other instructors. The objective for the course was to be very introductory and, hopefully, get you started.

A reminder that our four tutorial series will continue in November and January. If you wish to attend, please preregister so that we can maintain control of the group size. If you need to cancel, just let us know a few days in advance. We can always rearrange your attendance for another session. If you can not plan ahead, call the office on the day of the session you are interested in and we can tell you if there are any seats available.

We are looking for a tutorials coordinator to help organize the regular tutorials, as well as arrange longer, one shot tutorials on subjects of your choice. You could accomplish this in one to four hours per month. Please call me or the office if you want to help. This is ideal for someone with no knowledge of the Apple. You need only be willing to make a few phone calls each month.

COMM CENTER DONATION. Mike Teller recently arranged an all day seminar on VisiCalc, held at the Comm Center. As a part of the program, Mike asked for and received VC models on every subject imaginable. He and the Comm Center have graciously put these in the public domain and asked the WAP to help distribute them. Bob Platt and Walt Francis (our Visi-Columnist) will be organizing them, after which you can expect to see them on our library list.

LIBRARY DISKS BY MAIL. We have lowered the price of disks purchased by mail to reflect the actual cost, as suggested by several members who have moved from the area. We have done this to encourage mail orders since we now have the paid staff needed to meet a large scale mailing effort for them.

HELP NEEDED. We can use volunteers in a few areas.

1. **DISK LIBRARY.** Bob Platt can use an indexer. This person would take the recently developed disk documentation and index it for inclusion in a revision of the new member manual. Please contact Bob.
2. **SPECIAL PUBLICATIONS.** We need someone to work with Betsy Harriman on a compendium of the Question and Answer columns. Several months ago we published the work of one of our members who indexed the questions from all the columns. We would like to assemble all of the questions and answers in one reference document.

MEMBERSHIP PROCESSING. Our Vice-President, Dana Schwartz, has just about finished setting up our 3000+

member file on the Vista "semi-hard" disk drive. Dana has benefitted from many hours of help given by Paul Malachowski of Brillig Systems. We chose Paul's General Manager data base package to implement our mailing list requirements and he has spent a lot of time helping us get the most from it. Thanks, Paul.

SHARING RESOURCES. We have been discussing office space needs with other microcomputer user groups. The Capital PC group has indicated they see some benefits from sharing resources. We will continue these discussions in the hope of joining forces at some level and introducing some economies in our activities.

WHAT'S UP, MAC? A source of mine at Drexel confirms that the university is still expecting to receive 4,000 "Macintosh-like" personal computers this January. As you may know, a number of colleges and universities have added the cost of a micro to their tuition and give one to all incoming freshmen. It appears that Apple still plans on meeting a January schedule for release of at least one version of the "Mac".

PROGRAM PREVIEW

by Cara Cira

October 22 - Data Bases

You asked for it, and here it is! As indicated in the survey (taken at WAP board election time) data bases scored high in interest as a program. We will be following a panel discussion format, with each program representative giving a brief description of his/her data base, followed by a questionnaire of common interest for all data bases, and a Q & A session with the audience. Data bases and panelists are:

General Manager - Loftus Becker
DB Master - Dave Einhorn
Data Perfect - Leon Raesly
Personal Filing System - Jim Cumber
Data Factory - Hal Weinstock
D BASE II - Paul Bublitz
List Handler - Jon Vaupel
Directories (Used with Echo II Synthesizer), Computer Aids Technology for Print Handicapped - Al Carter

Thank you, data base representatives for your support. For any additional information call me (Cara Cira) on 468-6118. Thanks go to Lee Raesly and Tom Warrick for their data base questionnaire input.

November 26 - Use of Personal Computers for Disabled

Jay Thal, a member of our DISABLEDSIG, will be orchestrating a program devoted to the uses of personal computers by disabled individuals, featuring new educational techniques. Watch Jay's DISABLEDSIG NEWS for more details. If you have input, please call him on 244-3649.

December 17 - Garage Sale

Have any software you're bored with? Any hardware you've outgrown? Want to do a little trading or buying? We are running another garage sale, so gather your extras, tired-withs, and bring your coins to splurge during this pre-holiday sale.

MINUTES

SEPTEMBER BOARD MEETING

The Executive Board of WAP, Ltd. met on September 14, 1983 at 7:30 PM at the WAP office. The Board discussed the beginners' tutorials, SIGs, the office copy machine, large screen projector, an amendment to the Bylaws concerning SIGs, and group purchase of McIntosh computers. Group purchase, membership, commercial software library, ABBS, programs, disk library and Pascal SIG were also discussed. The Board voted to amend the Bylaws to require formal elections within SIGs to occur in the month of October under the supervision of the Board and to require publication of SIG activities in the newsletter. The Board approved the purchase of an Apple //e starter system, CP/M system and an 80-column/64K card for the commercial software library and proposed an approximate expenditure of \$3000 for ABBS expansion.

SEPTEMBER GENERAL MEETING

WAP, LTD. met at USUHS on September 17, 1983 at 10:00 AM. Vice President Dana Schwartz presided. The members voted to spend approximately \$3,000 to expand the ABBS. Those interested in the beginners' tutorials on Tuesday evenings at the office were encouraged to pre-register and to cancel 48 hours in advance if unable to attend. Bob Smith volunteered to be the panelist for Data Factory at the next meeting on data base management software. Volunteer parents are needed to supervise Appleseeds SIG. A volunteer is needed to lead a special NEWSIG meeting at the office on Thursday evenings. Bob Platt announced the new procedures for SIG elections as provided in the amendment to the Bylaws. Hosts and experts are needed for Apple Teas. Group purchase of software is planned. Health and Human Services requested volunteers to assist in their Tools for Independence technical fair to occur October 3-6.

CLASSIFIEDS

WANTED TO BUY: Used Apple Logo. Call Alice Gregal, 686-1226.

WANTED: Apple II or //e, preferably with 48K and disk drive, but will consider other configurations that can be brought to this level. Contact John R. Lewis, (301) 831-7324.

DONATIONS SOUGHT: Anyone interested in donating Apple equipment, software or publications to Bethesda Chevy Chase High School and receiving an acknowledgement for income tax purposes, contact Dr. Betty Manchak at 654-5264 (work) or 935-5940 (home).

DONATIONS SOUGHT: For an excellent tax deduction, donate your outgrown Apple II or II+ to the Maryland College of Art & Design, a small, independent, tax-exempt two year college specializing in the visual arts. Write me at MCAD, 10500 Georgia Avenue, Silver Spring, MD 20902 or call 649-4454. Peggy Pratt, Librarian.

FOR SALE: Gemini 10 printer with Grappler Interface. Excellent condition. Both for \$275. Call William Gangloff Sr. at 949-6089.

FOR SALE: Apple II+ with 16K card, \$765. Apple disk drives (\$225 with controller card, \$185 without); Apple III monitor, \$115; (all Apple products under AppleCare extended warranty until next June); Amdek Color I monitor, \$275; System Saver, \$60. Call Karen Rosenbaum, 241-5542.

NOTES FROM THE OFFICE

The many visitors and phone callers to the office generate a lot of useful information. We will use this column to pass some of this on to you. Also appearing here will be notices and information of a general nature and notes on the use of the office.

We have many requests from individuals and organizations who need services, generally of a short-term nature. Typical requests include printer rental or use, programming jobs, and tutors. We would like to be able to answer these inquiries with specific referrals. If you would like to have your name and service included in our referral file, please call or write the office.

John Kapke passes this bit of information along: the October issue of SOFTALK has the first of a series of articles on the Epson and the Apple. He highly recommends it for all you Epson owners.

We have been working on organizing the reading library, particularly sorting out donations of back issues of magazines, and binding our exchange newsletters with other Apple user groups (many members confirm that these exchange newsletters are an excellent source of information). We have identified those magazines that are duplicates, and members can now check these out. Our reading library is growing and is becoming quite impressive. Thanks for all your contributions and suggestions. Stop by and browse.

We have back issues of the WAP Journal for all of 1983 except April, most of 1982 and selected issues of prior years. Check the order form for exact details. New members may find these back issues helpful in getting better acquainted with WAP and the Apple.

Members are reminded that the WAP Hotline is run by volunteers. Please observe the guidelines and restrictions as listed in the Hotline column. Please note that if the Hotline volunteer has an answering machine and you leave a message for a return call, don't assume your call was not returned. Perhaps he/she tried to call you several times and you weren't home. It is the caller's responsibility to keep trying. We also need new volunteers for the Hotline. If you have an expertise, please let us know.

The WAP membership file has been transferred to a new data base system. Your mailing label now has a slightly changed format. Please check it for accuracy and report any errors to the office.

COMMERCIAL CLASSIFIEDS

FOR SALE: Apple //e, Disk II, Monitor II, Pro-Writer, and joystick. Condition good as new. Only two months old. Call 977-8200, between 9:00 AM and 5:00 PM.

FOR SALE: "Flippy" disk containing a trajectory target shooting game, a 3-D maze game, and Dots (the connect-the-dots to complete-the-box game), PLUS numerous programs demonstrating the use of hi-res graphics (including polar co-ordinates) and assembly-language sound production. BONUS: Flip the disk over and discover four exciting video pinball games! Only \$30 from: Data Now, PO Box 122, Dickerson, MD 20842.

WAP HOTLINE

Have a problem? The following club members have agreed to help. PLEASE, keep in mind that the people listed are VOLUNTEERS. Respect all telephone restrictions, where listed, and no calls after 10:00 PM except where indicated. Users of the Hotline are also reminded that calls regarding commercial software packages should be limited to those you have purchased. Please do not call about copied software for which you have no documentation. If the person called has an telephone answering machine, and your call is not returned, don't assume that he did not try to call you - perhaps you were not home. Try again.

General	Dave Harvey (703) 527-2704	Robert Martin (301) 498-6074	Languages contd.	
			A,I,M	Richard Untied (703) 241-8678
			P	Dottie Acton (301) 428-3605
APPLE SSC	Bernie Benson (202) 546-0076		LOGO-Apple	Ron Murray (eve.) (202) 328-3553
			-General	Dagobert Soergel (703) 823-2840
Apple TechNotes	Ed Schenker (301) 977-7349	Lance Bell (703) 550-9064	Multiplan	Terry Prudden (301) 933-3065
Basis 108	Loftus Becker (202) 338-5217		Operating Systems	
Communications Packages and Modems-Telecom.			APPLE DOS	Richard Untied (703) 241-8678
Anchor Sig. & BIZCOMP Modem	Jeremy Parker (301) 229-2578		CP/M	Robert Fretwell (703) 971-2621
Apple CAT II	Ben Acton (301) 428-3605		Paddles	Tom Riley (eve.) (301) 340-9432
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	Tom Nebiker (216) 867-7463		Anderson Jacobson	Bill Etue (703) 620-2103
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XTALK CP/M Comm.	Bernie Benson (202) 546-0076		Okidata	Scott Rullman (301) 779-5714
			Silentype	Bruce Field (301) 340-7038
Corvus Hard Disk	Tom Vier (1-6 PM) (703) 860-0083		Statistical Packages	Jim Carpenter (301) 371-5263
Expediter Compiler	Peter Rosden (301) 229-2288		Stock Market	Robert Wood (703) 893-9591
Data Bases			Tax Preparer-H.Soft	Leon Raesly * (301) 460-0754
dBase II	Loftus Becker (202) 338-5217		Time-Sharing	Dave Harvey (703) 527-2704
	John Staples (703) 759-3461		VisiCalc	Walt Francis (202) 966-5742
DB Master	Doug Daje (301) 868-5487			Leon Raesly * (301) 460-0754
	Dave Einhorn (301) 593-8420		Word Processors	Walt Francis (202) 966-5742
Data Perfect	Leon Raesly * (301) 460-0754		Apple Writer II	Doug Daje (301) 868-5487
Data Factory	Bob Schmidt (301) 736-4698			Dianne Lorenz (301) 530-7881
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	Ben Acton (301) 428-3605		Gutenberg	Tom Warrick (301) 656-4389
InfoMaster	Doug Daje (301) 868-5487		Letter Perfect	Neil Muncy (301) 251-9330
List Handler	John Vaupel (301) 977-3054			Cara Cira (301) 468-6118
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Graphics	Bill Schultheis (703) 538-4575		PIE Writer/Apple PIE	Jim Graham (703) 643-1848
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Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine			Supertext II	Doug Daje (301) 868-5487
A	Peter Combes (301) 871-1455		Word Handler	Peter Rosden (301) 229-2288
A,I	Jeff Dillon (301) 422-6458		WordStar	John Vaupel (301) 977-3054
A	Mark Pankin (703) 370-9219			David Inouye (301) 422-8926
A	Leon Raesly * (301) 460-0754			
A,I,P,M	Bill Schultheis (703) 538-4575			

*Calls up until midnight are ok.

GENERAL INFORMATION

Apple user groups may reprint without prior permission any portion of the contents herein, provided proper author, title and publication credits are given.

Membership dues for Washington Apple Pi are \$25.00 for the first year and 18.00 per year thereafter, beginning in the month joined. If you would like to join, please call the club office or write to the office address. A membership application will be mailed to you. Subscriptions to the Washington Apple Pi Journal are not available. The Journal is distributed as a benefit of membership.

Current Office hours are:

Mon, Wed, Thu, Fri - 10 AM to 2:30 PM
 Tue - 12:30 to 2:30 PM & 7 to 9:30 PM
 Sat - 12 to 4 PM (meeting Sat only)

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Membership in Call-A.P.P.L.E., a users group in Kent, Washington, is available at a discount to WAP members. The one-time application fee is \$5 instead of \$25, and the annual dues of \$20 remain the same, making a total of \$25 for the first year. Call the WAP office for further details and an application blank.

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SIGNEWS

APPLE /// SIG meets on the second Thursday of the month at 7:30 PM. The next meeting will be on October 13 at Universal Computers, 1710 Fern Street, Alexandria, VA.

APPLESEEDS is the special interest group for our younger members. They meet during the regular WAP meeting. Featured are presentations of topics of interest in graphics, programming techniques, etc., as well as question and answer sessions. Following are the topics for the next few months:

- October - Graphics, high resolution, light pen and an inexpensive graphics tablet
- November - Communications with modems
- December - Garage sale
- January - Game contest

ASMSIG meets immediately after the regular Washington Apple Pi meeting.

Business SIG meets just after the regular Washington Apple Pi meeting.

CESIG is the new special interest group of computer entrepreneurs. See Roy Rosfeld's column elsewhere in this issue.

EDSIG - the education special interest group - see the EDSIG Page elsewhere in this issue.

FORTHSIG is in the process of reorganizing. If you are interested in using Forth (either the WAP library version or commercial versions), please attend our organizational meetings to be held immediately after the main meeting on October 22 and November 26.

Home Control SIG will meet after the regular WAP meeting each month.

LAWSIG provides attorneys and those not versed in the law an opportunity to discuss various aspects of computer applications to the law. The LAWSIG usually meets in downtown Washington, D.C. at noon once a week. For information call Charles G. Field, Chairman, 265-4040, or Jim Burger, 822-1093.

LOGOSIG meets monthly at 12:45 after the regular WAP meeting at the Barrie School, 13500 Layhill Road, Silver Spring, MD. (See map in the LOGOSIG News.)

NEWSIG will meet just after the regular Washington Apple Pi meeting. We will answer questions and try to help new owners get their systems up and running. We will also explain how our club operates. The following members have agreed to answer questions over the phone when someone gets stuck and needs help between meetings:

Bob Chesley 560-0120	Paul Hoffman 831-7433
Sarah Lavilla 926-6355	Boris Levine 229-5730
Steve Sondag 281-5392	

PIG, the Pascal Interest Group, meets on the third Thursday of each month at 7:30 PM at the Club Office.

SIGAMES is the special interest group of computer hobbyists interested in using their APPLES for entertainment. They meet immediately following the monthly meeting of Washington Apple Pi.

STOCKSIG meetings are on the second Thursday at 8:00 PM and are currently held at the home of the chairman, Robert Wood, (703) 893-9591.

Telecomm SIG usually meets after the regular WAP meeting.

\$\$\$ DISCOUNT PRICES \$\$\$

Monitors

Amdak Color I	\$300	Synetix Disk Emulator 294 K	\$510
Amdak RGB Color II	\$605 ^{\$425}	Grappler Printer Card (Specify Printer)	\$135
NEC 1260 (Green)	\$120	Buffer Board (for Grappler) 16 K	\$130
NEC Color (Composite)	\$305	Micro Buffer II (32 K)	\$200 ^{\$190}
TSX Hi Res RGB	\$390	G.I.S. Uninterruptable Power Source	1050 ¹⁰⁵⁰
NEC 12" Amber	\$165	SAFT 200 VA Standby Power System	\$415

Modems

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D.C. Hayes Micromodem II with Terminal Program	\$300	Videx Videoterm	\$240
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D.C. Hayes 1200 Baud Smartmodem	\$500	E-Z Invoice (Highlands)	\$45
SSM Modem (300 Baud)	\$239	Stock Option Analysis Program (H & H Scientific)	\$250
		Stock Option Scanner (H & H Scientific)	\$350

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SCREENWRITER HOTLINE

by Peter Combes

Do you get an answering machine when you call a hot line? Those of us who run hot lines cannot man them 24 hours a day, and an answering machine seems a good solution. Generally, we manage a call back the same or the next day, but you would be surprised how many people, perhaps in the excitement of the moment, fail to leave their name or their telephone number, or leave them in some indecipherable form. It is a good idea to leave your name and number FIRST as some of the machines cut out after a fixed time interval. Mine does not, but an overenthusiastic explanation of a problem by one caller once ran the tape out completely, leaving following calls unrecorded. So if the hot line does not get back to you - call again!

How do you put text into ScreenWriter so that it is NOT printed? A caller wanted to put a paragraph into a paper he was writing, but wanted to be able to go on printing the paper without that paragraph until the information could be confirmed. This can be done with ScreenWriter with the rather unlikely embedded command ".IF (2)<(0)". The paragraph that follows should end with a carriage return, a "!", and another carriage return. This command comes from the form letter function - ".IF (#3)<(100)" would print out the following paragraph only if the information in field number three of the current record were less than 100. By putting an impossible condition - (2)<(0) - we ensure that the paragraph is never printed out. To reverse it, simply change it to "(2)>(0)" and delete the "!". This technique could be used for putting reminder notes in your text, in much the same way as you use REMS in BASIC.

We have now seen a review copy of the manual for the //e version of ScreenWriter. Another writer, Judith Wilton, of Sierra On-Line, has been added to the team, and she seems to have been working hard -- the new manual runs to 320 pages as against the 190 in the previous version. Presumably, this activity means that shipping the //e ScreenWriter is imminent. If you have a][or][+ you won't notice the difference with the new version - though it will run on an Integer only machine, as some of the current versions will not. If you have a //e with 80 column card you can enjoy using the features of ScreenWriter with the 80 column character set from the card. This works well, though I find the new inverse inequality sign a poor replacement for the old elegant carriage return symbol. If you have a //e without an 80 column card, you will have to recustomize the new version back into the old version to get 70 columns. The same is true if you want to use a custom character set.

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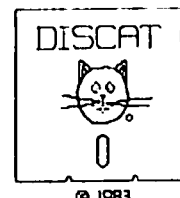
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Q & A

by Bruce F. Field

George Kinal has corrected me on one of my answers in last month's column. The question was on low-cost modem kits. The questioner wanted to know if you could use the game-I/O port to drive a modem. George says it is possible to use the game port for simultaneous send and receive at 300 baud. Bizcomp and MFJ sell software for their modems which does exactly that.

Also, XICOM (801 E. Ogden, Naperville, IL) sells a bare board communications card for \$18.

I have received some fan (?) mail on how to do super and subscript with Wordstar and the C.Itch printer from Albert Feldman and Arnold Rosenberg. I pass along their observations.

The first thing is to select the line feed printer choice in Wordstar's Install program. This selection would ordinarily cause the C.Itch printer to print double spaced. However, by installing a command for half-line feed in User Patch 3 and invoking that command at the beginning of the document, the superscript and subscript commands in Wordstar will work perfectly.

So, using the Install Program, then N for NO when you are asked, "Are the modifications now complete?" and type the following hex numbers exactly in the locations shown:

06D3 - 04
06D4 - 1B
06D5 - 54
06D6 - 31
06D7 - 32

This corresponds to ESC T12 which is the C.Itch printer command for setting the printer to half-line spacing (12/144").

Now, to return to regular spacing, type the following numbers in, which correspond to ESC A:

06D8 - 02
06D9 - 1B
06DA - 41

When using WordStar, type Ctrl PE at the beginning of your document to invoke the half-line spacing. Then, you may type regularly and get the superscripts and subscripts by using the Wordstar commands.

If you want to get back to regular spacing, which, of course, will be double spacing, type Ctrl PR.

Thanks, Albert and Arnold.

I have also received some mail on a question a few months ago regarding radiation from TVs or monitors upsetting nearby disk drives. The problem in that case was that disks initialized on his machine refused to boot on his machine; however, disks initialized on other machines would boot on his machine. Jeff (no last name) sent me the following.

I built a set of wood shelves to go over my Apple and hold my disk drive and TV on top. I had no problem until I bought a second disk drive. It seems that the new drive with short cable and shielding was more sensitive to external RF radiation than the old drive! I solved the problem by

simply placing a sheet of aluminum foil over the disk drive. No problems since. Some of my friends have had similar problems and since it is common practice to place a TV over the drives, this may happen frequently. Your readers may be interested in the simple solution.

Readers have pointed out that Heath/Zenith monitors in the plastic case seem to be some of the worst offenders, and problems have also been seen with some of the Amdek monitors. If you have problems with reading diskettes and the drive speed is okay and it occurs with several (more than one) diskettes you might try moving your disk drives away from your monitor and see if this helps.

Q. Creative Computing, Oct. 83 p. 283 mentions that the Apple II+ motherboard has undergone revisions through IFR Rev. D. Can you briefly inform me on what they accomplished?

A. I believe that basically these revisions were to make the motherboard somewhat cheaper or easier to manufacture. The original rev. 0 board only had 2 colors (green and violet, in addition to black and white). Rev. 1 and all subsequent boards could produce 4 colors (green, violet, blue, and orange). Early motherboards had RAM configuration blocks that could be strapped to allow use of 4K dynamic RAM chips or the "newer 16K RAM chips". When memory prices came down the configuration blocks were eliminated. (Imagine a 4K Apple!) Rev. 7 and later Apples use a 2716 compatible ROM for the video character generator. Thus, modifying rev. 7 Apples to display lower case involves replacing only one chip. Earlier Apples require a small plug-in circuit board. Later revisions were also made to reduce the amount of RF interference generated by the Apple.

Q. Apple Inc. is upgrading rev. A motherboards in the //e for 560x192 pixel resolution free of charge. Note that if value is inversely proportional to publicity, this must be a gold mine. Is there some procedure for upgrading?

A. First, 560x192 graphics resolution is only available if you have an 80-column extended memory card plugged into the auxiliary slot. This is the card that has an additional 64K of memory on it. As I understand it, Apple (through its dealers) will replace the rev. A motherboard for a rev. B IF you purchase or have purchased the 80-column extended memory card (presumably from Apple).

It is not possible to use this extra resolution directly from Applesoft; special machine language routines are needed. Software Development Inc. (2053 West 11th Street, Brooklyn, NY 11223, tel. no. (212) 449-6300) sells a program Doublestuff, \$39, for double lo-res and hi-res routines callable from Applesoft.

Q. I would like to put new volume numbers on my existing disks other than 254. I have used a disk zap utility to change track 17, sector 0, byte 6 as indicated in the DOS manual. However, upon rebooting, the same volume number 254 appears on the disk. How can I permanently change the volume

contd.

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&ERRMS	&P	&OFF	&SAVE	&SSQR	&FRE	&MEM	&MON
&FLEN	&BLEN	&"	&BEEP	&BOOT	&CEOL	&CEOP	&APEEK
&MAP	&W	&MPOKE	&CAT	&SUBSTR	&INPUT	&GOSUB	&GOTO
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number without re-initializing?

A. When DOS initializes a diskette it writes an address field and a data field on the diskette for each sector. The address field contains the volume number of the diskette, the track, the sector, and a checksum. Disk zap programs are set up only to read the data field, the address field cannot be modified. The volume number in the address field is the one that DOS uses so that even if you change the one in the Volume Table Of Contents (track 17, sector 0) you still get the old volume number. I suppose it is possible to rewrite just the address field; however, I don't know of any program to do this. The closest I can come is to use the program in Bag of Tricks (Quality Software, Reseda, CA) to reinitialize individual tracks.

A time consuming but effective method would be to use FID from your System Master diskette to copy all the files over to a newly initialized diskette. The wildcard character (=) may be used instead of typing all the file names. I don't necessarily recommend this because I would be afraid that an error might be introduced during the copy process. I may be paranoid but I avoid unnecessary copying. If you had a program that could compare both disks after copying, then maybe...

Q. Please explain the use of the ampersand to access subroutines. How would you program this in Applesoft?

A. The ampersand is a reserved word in Applesoft (i.e. a command) that allows you to run machine language programs from Applesoft. When Applesoft executes the ampersand it jumps to a special memory location that tells it where to find the machine language program to be run. In order to use the ampersand you must have first loaded in a machine language program and set the special memory locations (\$F5,\$F6) to point to the address of the machine language program.

All is not lost if programming in machine code is not one of your greatest joys in life. There are a number of commercially available programs that use the ampersand to perform special functions, usually formatted printing, inputting strings with commas, sorting, etc. A rather complete description of a number of ampersand utilities appeared in the March 1983 issue of Call-A.P.P.L.E.

Q. I've just noticed something about my Apple II+ with two disk drives (Apple Disk II and Micro Sci with an Apple controller). When I turn off my Apple, the "IN USE" lights on the front of the drives flicker on briefly. Does this imply impending disaster?

A. Not really. When the power is turned off to the Apple all the voltages in all parts of the circuit do not immediately go to zero. Capacitors in different parts of the circuit maintain some parts of the circuit on momentarily longer and peculiar things can happen. This is the case with your flickering LEDs, it does not mean that something is happening to the disks.

I don't know if Apple has ever published a comment on whether you should leave your diskettes in the drive when you turn the power off, but I think you should take them out first. There is no guarantee that when you turn the power off a stray signal to the read/write head won't destroy some data on the diskette. To prevent this possibility from happening I always open the disk drive doors and usually

remove the diskette before turning the power off.

In a way, the same concern applies when you turn the power on. Before the Apple really "gets going" strange things could happen. I don't think this is a major worry as thousands of Apple owners turn their computers on with disks in the drive without any problems. I have been told that users would have even fewer problems with booting disks if they let the drive start turning before closing the door on the diskette. This apparently helps in centering the diskette on the spindle.

Q. Where can I get my Apple II+ upgraded to a //e?

A. There is no policy for upgrading II+'s to //e's. If you went to your dealer he could replace the motherboard, keyboard, and case, probably for more than the cost of a new //e. The best solution is to sell your II+ and just buy a //e. If recent speculation holds, by January 1984 or so the price of the //e may be sharply down. A company (Computer Classified Bluebook, P.O. Box 3395, Reno, Nevada 89505) has compiled a Bluebook with the current selling prices of used computers, analogous to the Bluebook for used cars. At \$85 a year it may be a bit expensive for an individual, but maybe a club could swing it.

Q. If we buy a computer and TV set in this country and take it to another country where the power supply is 220 V and 50 Hz (cycles per second), will it work if we use a 220/110 V transformer? Even though we convert the voltage, what about the frequency, does it need to be converted?

A. The Apple is not frequency sensitive and will happily work on 110 V at 50 Hz. TVs and monitors may not be quite so forgiving. Most TVs are rated for 60 Hz but may work on 50 Hz although the picture may shrink in size or be wavy. However foreign TV signals are different than those used in the U.S. so the TV can't be used to receive foreign TV programs. You may be able to find a monitor in the U.S. that is rated for 50 or 60 Hz.

If you go to Europe or some other place where U.S. military troops are stationed you will find TV sets able to receive NTSC (U.S. type), PAL, or SEACAM signals. These sets should work with your Apple, be usable as a TV overseas, and still be useful when you return home.

Tom Riley points out that if you buy a 220/110 volt converter it should be a transformer type. Some of the cheaper converters use silicon controlled rectifiers (SCRs) and produce a non-sinusoidal waveform. The Apple will probably work with this but TVs or monitors may have problems. Transformer type voltage converters are readily available overseas. Make sure you get one with a large enough power rating to handle the Apple, monitor, and whatever else you are going to use. The power consumption of the Apple depends on what you have plugged into it, a maximum value is probably less than 100 watts. Newer monitors or small screen TVs use about 30 to 75 watts.



NOTES ON THE FOURTH DIMENSION DRIVE


by Richard A. Untied

After four years of working with a single drive system, I was primed and ready for a second drive. What cinched it was the dramatic drop in drive prices this last year. But what drive to buy? Was the quality up to Apple-snuff? Back in April, I packed up my disk test software and went to the dealers to find out. Turns out, most of the offerings are significantly better performers than the Apple drive! And most of them at half the price. I picked the Fourth Dimension FDS-40A as the best bang for my buck. It demonstrates very accurate head positioning and repeatability, and reliably steps track-to-track at twice the rate provided by DOS, while Apple drives have problems with a 25% speedup. Also, while it is rated at forty tracks, I find that I can actually access 43 on my drive.

This summer, while developing a routine to write 16 sectors in a single revolution, I found that it would work on the Apple drive, but not on the Fourth drive. Analysis uncovered that the Fourth drive took about 1.3 milliseconds before it could switch from write mode to read mode. This meant that after completing a sector write, the markers for the next sector would pass under the read head before the drive could detect them. The Apple drive "recovers" immediately. As DOS never sequentially accesses physically adjacent sectors except during INIT, this anomaly will not affect normal use, except that when initializing a new disk, DOS will form a larger than usual gap between the

first and last sectors of each track. The problem affected me, however, because my program now had to allow for two revolutions to write all sectors, and so cut into the speed efficiency I was trying to achieve. Again, no standard DOS, CPM or Pascal application, even the DOS speedups, would be affected.

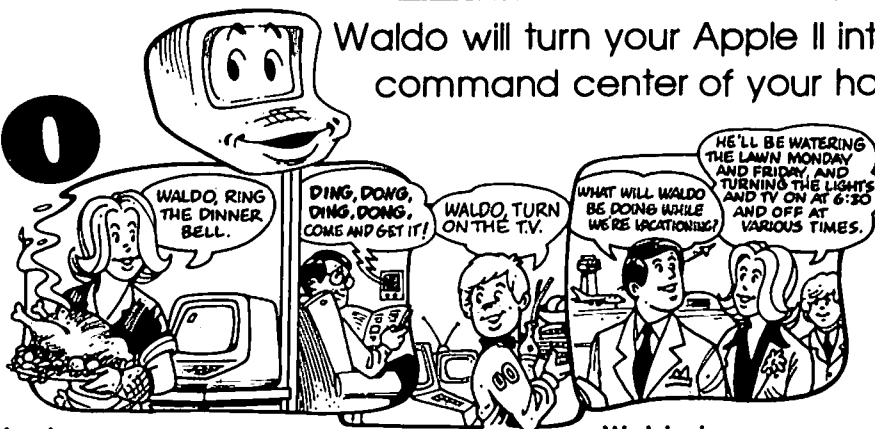
A letter and phone conversation with the manufacturer uncovered that they were aware of the "difference", but that I was the first to report it. They indicated that some protected Hayden and Sensible products would not work with the Fourth drive for this reason, and that they had switched to a new design analog board (inside the drive) for drives assembled after July 1, which does not have this delay. They provided a fix for the pre-July analog board: clip either lead of the 33nf capacitor C25 at the left rear of the board. Easier said than done... that bugger is snug against the board, and requires either a trace cut or desoldering to eliminate it. They also made an offer to swap out the analog board, which they said I could pass on to you. If you own a pre-July 83 Fourth FDS-40A, and wish to have it upgraded, send it back and the company will exchange it out. However keep in mind that even without this upgrade, the drive is fully compatible with DOS, CPM, Pascal formats, and almost all protected software.

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EDSIG NEWS

by Peter Combes

EDSIG Calendar

Tuesday, November 1st at 7.30 p.m.

"What's Good in Educational Software?" - Demonstrations of a wide range of early childhood through 12th grade programs recommended by WAP members. A discussion and demonstration session chaired by David Wyatt.

All WAP members interested in educational software -- for their children or students -- are warmly invited to this PARTICIPATORY session. If you want to come along just to see others demonstrate some good software, fine. However, if you would like to bring along commercial software that you can personally recommend, all the better! If you would like to do a brief demonstration of some software, please call David Wyatt (652-8468) in advance of the meeting to make scheduling easier.

Elections will be held at the meeting.

All EDSIG meetings are now mostly held in the Auditorium, Building B, of the Uniformed Services University of the Health Sciences, on the campus of the National Naval Medical Center, 4301 Jones Bridge Road, Bethesda, MD. Check with Security when you come in, in case the room has been changed.

Meeting Reports

Tuesday, October 11th at 7.30 p.m.

"Computer Camps 1983 - A Report" - Carolyn Adler

A recurrent theme in EDSIG's discussions of the use of computers in the classroom has been the small amount of time that children actually spend at the machines. The round table that Carolyn Adler gathered together had an opportunity to find out what happened when children were allowed on computers for extended periods at computer camps.

Carolyn had run a camp at Electronic Learning Facilitators - ELF - on "Computers and the Arts". The starting point of this camp had been the frequent observation that many more males than females attended computer classes. This has been said to be the result of the way computer studies are focused in schools. One aim of the camp was to see if a focus on art and music would change the relative populations of the students. The camp had an all-day schedule, swimming, tennis, and other sports being offered. Computers formed a two hour component each day. The camp curriculum was very structured and the computer work was integrated into the work in the arts. The children would have one hour of Art, one hour of Music, and two hours on the computers. For example, children might study repetition patterns in art and music (there was a room full of musical instruments) and move on to using similar patterns on the computers. The population included 6 to 14 year olds, but was predominantly 9, 10 and 11 year olds. Mostly they already had a background in the arts or had parents who wanted them to have one.

Students could use either BASIC or LOGO. The choice between BASIC and LOGO followed a question in the sign-on questionnaire that asked which languages were available at home. However, BASIC was not offered for

the 6-8 age group. Children were assigned two to a computer, with a 6:1 pupil:teacher ratio. Each session had 36 children. The first camp had a 1:1 ratio of girls to boys, but the second one had 60% males, and the third 70%.

A music utility - a modified version of Apple Mechanic - was used a great deal. By means of this utility, the children successfully produced the music they wanted.

The sessions in which 9-11 year olds used LOGO were "lots of fun". In fact, the only part of the LOGO sessions that were actually "taught" were the ones involving music. The current implementation of music in LOGO (obtained from LOGOSIG) is very cumbersome, and takes up a lot of memory, but the children seem to understand it. At the end of each session, the children would put together combinations of graphics and music. Carolyn's personal feeling is that LOGO is much more understandable to ten year olds than is BASIC. The BASIC curriculum was revised for each session.

Next year, the camp will certainly be repeated, and will keep its focus on Computers and the Arts. Some way will be sought to increase the children's computer time still further - as it was, the children would cut out their snack time in order to have more time on the computer.

Barrie School is no stranger to computers, having bought its first one 15 years ago. There is currently a commitment by the school to have one computer for every child within the decade. There is already a computer in every classroom, (Ataris and Apple clones) and soon assignments will require children to have an Apple at home - homework being handed in on disk. Tim Selwyn is the director of the school, and David Weaver is Director of Computers. They ran the Computer Camp as part of a much larger camp of 650 children.

Barrie is the largest Montessori school in the hemisphere, and a burning question is "What is the Montessori way to teach computers?" The camp "takes kids where they are", and works through a clear sequence. There were a maximum of 20 children in each classroom, and an adult in charge in each classroom. Ages ranged from 3rd grade to the beginning of high school. Older children wanted to work in BASIC, but those who were experienced in LOGO soon wished to return to it. In grades 3 through 6 there were equal numbers of girls and boys, but in grades 7, 8 and 9 the ratio was in favor of the boys. The classrooms were set up in science laboratories, with the computers set up in a circle so that the children could see what everybody else was doing. Peer learning turned out to be a strong influence. Children who arrived two weeks late "caught up" in two days.

St. Stephen's is an all male private school in Virginia. They bought 12 new Apples for their camp. With a lacrosse camp, a soccer camp, and the computer camp running together "we felt the plates were spinning all summer".

Doug Adams, Director of the computer camp, explained that originally, four courses were planned -- Introduction to LOGO, Introduction to BASIC, Advanced BASIC, and Pascal -- but it was found that no-one was interested in Advanced BASIC or Pascal, so these two

contd.

never got off the ground. Again, daily two hour sessions were scheduled. There was no age restriction. With a maximum enrollment of 24, both BASIC classes were full.

"Instant Freeze Dried Basic" by Gerald Brown was used as a textbook for BASIC, and was popular. In the camp "Nobody was bored, and there was nobody who had no fun." However, BASIC was found to be much more difficult than LOGO.

Enthusiasm for LOGO was evinced by all three camps, though it was remarked that it was difficult to get the younger children to write procedures -- they preferred to stay in immediate mode. Indeed, in 3rd - 4th grade some children seemed prepared to go on doing the same thing almost indefinitely, and had to be "pushed" to progress.

Other News

David Wyatt will be working with Gordon Stubbs on the educational component of the commercial software library. We already have some material from publishers and hope that the library will be a useful resource for educators who need to "browse through" large software packages before making a purchase decision.

David has also been working on a list of periodicals to be bought by the library. This list was approved at the EDSIG meeting on October 11, and was passed on for action at the Apple Pi Board Meeting on October 12.

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LOGOSIG NEWS

by Nancy C. Strange



TURTLE TRACKS

October Meeting:

Date: October 22, 1983
 Time: 12:45 PM
 Place: Barrie School
 (See Map Below)

The LOGOSIG Meeting today will include elections for LOGOSIG officers, a demonstration of the Commodore 64 LOGO and team projects. LOGOSIG has tried for some time to use separate activity or interest teams for part of each meeting. With our new facility which has multi-rooms we can now more effectively work in teams. Team leaders who volunteered for the next three months are:

- NEW USERS -- Ron Green (301-531-3981)
- LOGOKIDS -- Kathy Boyle (717-245-0030) & Becky
- BEGINNERS1 -- Dave Weaver (871-6200)
- ADVANCED1 -- Ron Murray (328-3553)

Multiple BEGINNER and ADVANCED groups will be formed as needed. In addition special ad hoc groups will be created, i.e. SPRITE BOARD LOGO, and possibly teams for LOGOS on different machines. (The site for LOGOSIG also has ATARIs and members of LOGOSIG are also using RADIO SHACK and COMMODORE 64 versions.)

Members are encouraged to come and share their Logo experiences. If you have written or found any useful Logo procedures, please contact me so you can be scheduled to present them informally to the group.

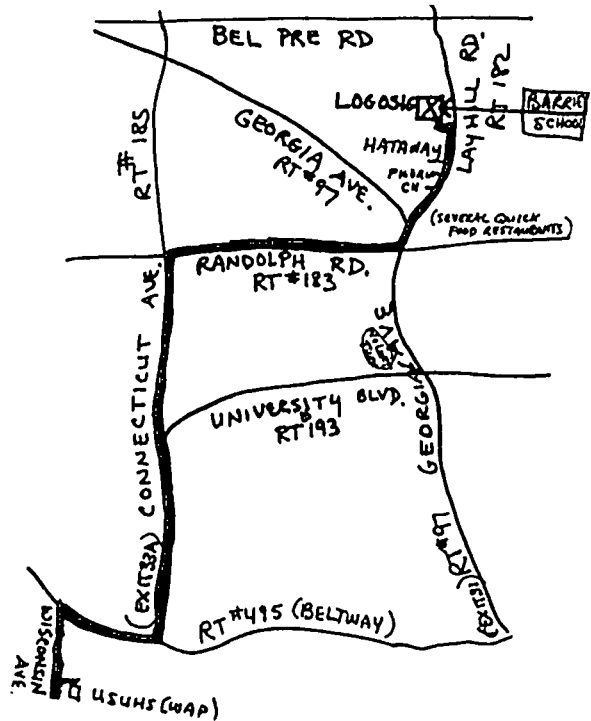
We are currently developing LOGOSIG disks for each of the versions, which will be released as a club disk when finished. If you have anything to contribute, please provide hardcopy versions of the procedure(s) with documentation as well as a copy on disk.

Next month's column will include reports of Logo activities, if you would like to share what you have been doing contact me by the 1st of November.

CHANGE IN LOGOSIG MEETING LOCATION.

LOGOSIG has a new location which has multi-computers and multi-rooms. We will be meeting at the Barrie School again for the October meeting. It is located approximately 10 miles from USUHS (WAP Meeting). Follow the map and join us there. Any questions, contact me at 691-1619. Directions to the new LOGOSIG location:

1. Take Rt#495 (Beltway) East to Connecticut Avenue (Exit 33a), Go North.
2. Take Left at "Y" staying on Connecticut Avenue (University Blvd goes off to Right)
3. Take Right onto Randolph Road.
4. Take Left onto Georgia Avenue.
5. Take Right onto Layhill Road.
6. LOGOSIG is at Barrie School on Left at: 13500 Layhill Road, Silver Spring, MD. Follow the long drive back to the buildings. LOGOSIG is in the building on the right.



IT'S HERE: TOOL KIT & SAMPLER FOR APPLE LOGO

The final version of the Apple Logo Tool Kit (utilities disk) and Sampler has been formally released by Apple. The original Apple Logo package comes with two copies of the Language disk and no utilities, so this Tool Kit and Sampler will provide Apple Logo users with many new capabilities. Logo Computer Systems, Inc. (LCSI) has previously made available to us the development versions of these disks. The final version on three disks is now available from me and I have permission to place it in the WAP disk library. For more information contact me or WATCH for its RELEASE NOTICE as WAP Disks. If you have Apple Logo these are a must. (Note: They will not work on MIT Logo).

LEARNING WITH LOGO - Review

As promised, I would like to share my review of Dan Watt's recent books Learning with Logo (for MIT Logo) and Learning with Apple Logo (if you can find it -- I haven't yet), published by Byte Books of McGraw-Hill. Dan Watt has been busy on these volumes for some time, and continues his work adapting the book to all the other upcoming Logos (Atari, IBM, Vic-64). Learning with Logo is designed to be used by a Logo facilitator (i.e., someone helping/guiding another experience Logo).

In addition to the book (at \$19.95), there is also available, a companion disk (at \$15.95) of procedures and tools used throughout the book. All of these procedures are provided in the appendix for the more contd.

Titan / SATURN
TELECOMMUNICATIONS SYSTEMS

NEC

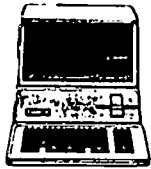
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Washington Apple Pi SUPER DISCOUNTS



APPLE COMPATIBLE PRODUCTS

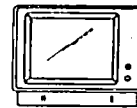
Keytronic KB5150 Keyboard with 10 function keys, full ASCII keyboard, and numeric keypad! Our Special price - \$239.00

Omega 128k Ram Card	Discount
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Apple //e 80 column board	\$650.00
Kensington System Saver -(Fan/Surge Protection)	\$100.00
Microsoft Premium System for Apple //e	\$ 69.00
TG Apple //e Joystick w/toggle	\$328.70
Videx Videoterm/Softswitch/Inverse Chip	\$ 42.00
	\$228.00



MODEMS

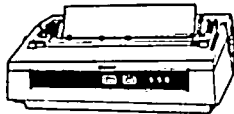
Hayes 300 Baud Smartmodem	\$203.50
Hayes 1200 Baud Smartmodem	\$525.00
Hayes Micromodem //e w/Smartcom	\$250.00
Rixon 1200 Baud RS-232	\$399.00
Rixon 1200 Baud IBM Modem Card	\$399.00



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AMDEK 300G	\$140.00
AMDEK Color II	\$435.00
TAXAN RGB III	\$500.50
Quadchrome	\$540.00

PRINTERS



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EPSON RX-80 F/T (100cps)	\$459.00
OKIDATA 92 (160cps)	\$449.95
OKIDATA 93 (160cps)	\$715.00

Brother HR-15 Parallel Letter Quality	\$490.00
Cut Sheet Bin for HR-15	\$165.00
Keyboard for HR-15	\$165.00
TOSHIBA P1350 Parallel High Speed	\$1,536.70

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Plus either an Epson RX-80 printer or Lotus 1-2-3...	F R E E

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LOTUS 1-2-3 (New Version!)	\$345.00
Friday Date Base	\$194.00
Benchmark Word Processor	\$350.00
Visicalc "E"	\$175.00
Visiword (IBM)	\$290.00
Easy Writer II (IBM)	\$175.00

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Microcomputer System Integration

Orange Micro MICROSOFT.
Washington Apple Pi

PRACTICAL
PERIPHERALS
November 1983

MICRO-CRAFT key tronic

brother. LOTUS ME

ORCHID TECHNOLOGY

Hayes Microcomputer Products Inc.

AMDEK CORP.

SANYO

OKIDATA

Videx

ALTO

ASHTON-TATE

KENSINGTON
MICROWARE

MicroPro

MicroPro

TeleVideo

NorthStar

advanced user. The author suggests that new users acquire the disk rather than attempt to type in the procedures, because he has designed the book for the users to utilize these procedures before they would have the expertise to understand and debug them. This is not just an effort to sell disks, for permission is given to the disk holder to duplicate the procedure disk for others who have the book.

The contents of Learning with Logo are:

- Before You Start Reading This Book
- Getting Started
- The World of the Turtle
- Special Turtle Activities: Shoot & Quickdraw
- Teaching the Computer
- Turtle Projects 1: Design
- Turtle Projects 2: Drawings
- Variables
- Poly and Its Relatives
- Conversations with the Computer:
 - Activities with Numbers, Words, & Lists
- SHOOT: An Interactive Turtle Game
 - (a Hit the Target game of estimating)
- QUICKDRAW: A Turtle Drawing Activity for Young Children
 - (a single-key proc)
- Animating the Turtle: Building a Racetrack Game
- Meet the Poet
- How The Special Tool Procedures Work

Appendices:

- Giving LWL Procedures for Terrapin/Krell, Apple Logo and TI Logo
- Explaining how to use this book with Apple Logo and TI Logo
- Initializing & Copying Logo Workdisks
- Summary of Logo Commands

Functional Index

The book is excellent for the new Logo users or those helping new Logo users (parents/teachers). It is what I would consider to be the best possible "curriculum" guide for those teachers who must have one. Logo, if done the way Papert proposes, would not follow a regimented curriculum, but I have discovered teachers need a basic structure to work from. LWL, if used properly, should not be followed step-by-step, but rather as Dan Watt suggests, should be used by kids and adults as they help each other discover.

Throughout the book the Logo user will find sections of powerful ideas, exploration, helper's hints and pitfalls complete with cartoon drawings. These are cleverly included to assist the helper with: understanding Logo, ideas to pursue, "teaching tips," and common mistakes and bugs to watch for. Each of these are extremely useful, but I would suggest that the author separate these sections from the main text, so that the user does not constantly trip over them. The functional index is outstanding for finding them, as well as all the other pertinent portions. The cartoons and frequent Logo examples add to the comprehension of its users, especially those that show the Logo Language executing. Beware, however, of the drawing on page 27 that represents the wrap mode of screen display. Looking at it, one might deduce that when one wraps from the right to the left of the screen, the turtle must travel not only the back side of the screen, but also along two sides in depth, which is erroneous. There is only 1 step from right edge to left edge.

In summary, I would recommend LWL for all Logo users. Preferably purchase the version for the Logo you are using, but do not wait for the exact version. This edition for MIT Logo is very usable by those with Apple Logo and TI Logo and most likely any other Logo, if the user is new to Logo. I appreciate the thorough

job Dan Watt has done, only wishing he went further into the application of the Logo Language. This and its counterparts are likely to become classic references for LOGO. Thanks Dan.

```
*****
*
*           WANTED LOGO ITEMS
*
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* magazines, newsletters, articles, & items.
*
* If you have something to share, contact me at
* 691-1619 and I will give you our new librarian's
* number.
*
*****
```

Here is a pumpkin created in LOGOSIG to play with. Make your own and share it with us.

```
PPROP "AIDS "BURY "TRUE      TO EYE
PPROP ".SYSTEM "BURY "TRUE   PD
                              RT 30
                              REPEAT 3 [FD 30 RT 120]
                              PU HOME
                              END

                              TO LTHEYE
                              PU FD 25 LT 90
                              FD 60 RT 90
                              EYE
                              END

                              TO MOUTH
                              PU LT 180 FD 35 LT 90
                              PD ARCL 80 60
                              PU HOME
                              LT 180 FD 75 LT 90
                              PD ARCL 71 105 PU
                              HOME
                              LT 180 FD 35 RT 90
                              PD ARCR 80 60
                              PU HOME
                              LT 180 FD 75 RT 90
                              PD ARCR 71 105 PU
                              HIDETURTLE
                              END

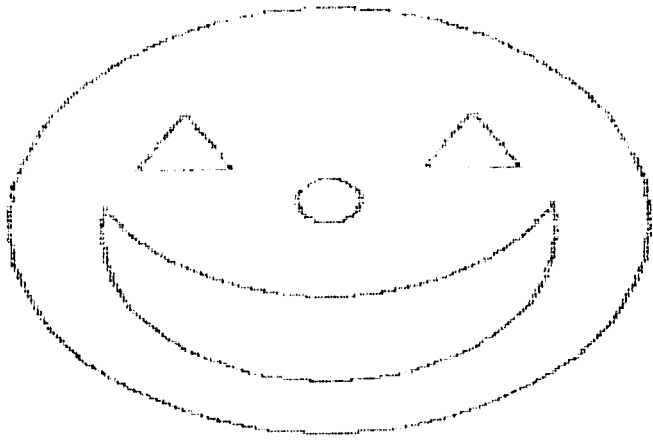
                              TO PUMPKIN
                              OUTLINE
                              NOSE
                              RTEYE
                              LTEYE
                              MOUTH
                              END

TO OUT
PU FD 100 RT 90
PD CIRCLER 100
END

TO RTEYE
PU FD 25 RT 90
FD 30 LT 90
EYE
PU
END

TO NOSE
PD
LT 90 CIRCLER 10
HOME
END

TO OUTLINE
PU FD 100 RT 90
PD CIRCLER 100
PU HOME
END
```



IMPACT OF APPLE VS FRANKLIN COURT DECISION

by Robert C. Platt

On August 30, a federal appellate court handed down a decision with far reaching impact upon the micro-processor industry. Apple Computer had sued Franklin for infringing its copyrights on 14 programs, including its Autostart ROM, disk control card ROMs, Apple-soft ROM, and programs on the DOS System Master Disk.

Last year, a trial court denied Apple's request to injoin the sale of Franklin Ace 100's pending a trial on its copyright claims. The judge found that Apple could withstand the harm created by Franklin sales during the lawsuit better than Franklin could withstand an injunction. Also the judge questioned whether making an EPROM copy of a copyrighted program was illegal. Further, the judge questioned whether operating systems, such as DOS or the Autostart ROM were entitled to copyright protection.

Needless to say, last year's district court holding caused great concern for software developers who rely on copyright law to protect their products.

The Third Circuit Court of Appeals reversed the judge and quieted doubts in these areas. The court reaffirmed that both source programs and their machine language object code versions are covered by the copyright laws.

Even though a human cannot read a machine language program stored on a ROM, fixing a copy of a program on a ROM does infringe the copyright in the source program.

The most controversial aspect of the case was the question of whether operating systems should be entitled to less copyright protection than application programs. Franklin argued that because the Autostart ROM had so many entry points, it was impossible to write a new, compatible version of the monitor without duplicating the one that Woz wrote. Hence, Apple was trying to use copyright law to protect a "utilitarian work" rather than a literary expression. For example, in previous cases, courts had held that copyright laws could not be used to protect accounting book formats, because copyright laws protect only an expression of an idea, not the idea itself.

The court rejected this claim noting that the 1976 Copyright Law covers all computer programs without making a distinction between application programs or operating systems.

As a result, software developers will be more likely to make the investment necessary to develop first rate, user-friendly systems, such as those found on the Lisa. However, software authors and users should be more sensitive when incorporating utility or operating system routines as a part of their packages. (Check out the licensing policy of any operating system before you write software for it.)

As for Franklin's fate, the Court remanded the case to the trial court who must soon decide whether to halt further sales of Franklin Ace 100 computers. Conceivably, a court order could extend to all Ace 100's ever sold.

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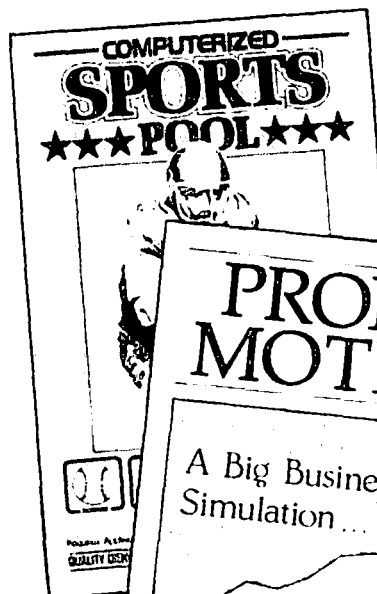
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THE GUTENBERG AND GUTENBERG JR. WORD AND PRINT PROCESSORS

by P. K. Wong

Most word processing programs for microcomputers on the market today are directed at the business or home user whose needs are relatively simple and straight forward. In short when a good word processing program is used in conjunction with the microcomputer and printer, one has a highly efficient replacement for the typewriter as a writing tool. Spelling programs and other related software will further enhance the capabilities of such a system, making it far superior to the way letters and documents were prepared even a few years ago. However, ordinary word processing programs simply will not do if you must use foreign languages and/or mathematical equations in your writing. Dedicated word processors on the other hand are often costly and inflexible. The situation is somewhat comparable to using typewriters with interchangeable elements; namely, one is limited to those symbols and characters available on the elements and one must pause to change elements each time a different character font is needed.

Enter the Gutenberg and Gutenberg Jr. word and print-processors. These two programs are suitable not only for everyday use, but more importantly, they offer features not readily found on any other word processing software when used in conjunction with one of the supported dot matrix printers. This article will highlight the major features of the Gutenberg and the newly released Gutenberg Jr. The Jr. is a scaled down and reworked version of the former with some features omitted. It has also been improved in several ways to make it easier to use. Only one printer driver is supplied with the program. At present only the driver for the Apple Dot Matrix Printer (DMP) is available. A version for the Epson MX100 and MX80 with Graftrax+ will be available shortly to be followed by one for the FX. On the other hand, several dot matrix and daisy wheel printers are supported by the Gutenberg.

Foreign Languages and Mathematics

The most significant feature of the Gutenberg and Gutenberg Jr. is the availability of user definable character fonts of up to 115 symbols each. That is, in addition to the normal printable ASCII characters both the Gutenberg and Gutenberg Jr. have an utility that will allow a user to create mathematical symbols or foreign language fonts using a dot matrix cell consisting of 12 rows of 7 dots each. Larger characters can be constructed using two or more of these character cells next to each other. Each of these user created fonts can be saved to disk and loaded into the computer's memory for use. The user can freely mix them with the normal ASCII characters in text entry and edit modes. These special symbols will appear on the screen because both Gutenbergs use the hi-res screen to display 14 lines of 40 characters each. However, if you have an Apple //e with the Apple extended memory card installed, then the Gutenberg Jr. will allow you to see 14 lines of 80 characters each with English and other characters intermixed! If you have the Apple 80 column card on the //e, then you will only be able to use the 80 column mode in lowres, i.e. only the ASCII characters but no special fonts..

Once the textfile has been created and supplied with appropriate print formatting commands, it can then be printed using one of the supported dot-matrix printers -- in proportional font and fully justified whenever such features are available. The paragraphs below are printed on an Apple DMP using a modified version of the default systems font of the Gutenberg Jr., which contains all necessary accent marks for French, German, Italian and Spanish in its alternate character font. Some Greek letters and math symbols were added for this sample.

Jusqu'à la saison nouvelle;
Je vous paierai, lui dit-elle,
Avant l'août, foi d'animal,
Intérêt et principal.

Meine Großmutter war allein im
Haus, als mein Großvater gestorben
war. Die Kinder schrieben sich Briefe
über das Problem, was mit ihr zu
geschehen hätte.

$$\int_{-\pi}^{\pi} f(z) \frac{\sin[(2n+1)z/2]}{\sin(z/2)} dz$$

$$\sum_{k=0}^{\infty} \frac{(-1)^k (z/2)^{(2k+n)}}{k! \Gamma(k+n+1)}$$

The Apple DMP also supports font downloading, and the Gutenberg is fully able to utilize this very powerful capability. A downloaded font for this printer is created with another utility called DOWNLOAD which permits the user to create characters using cells of 8 rows by up to 16 overlapping dots each. These fonts can be loaded from disk into the printer's RAM any time a document is being printed and the printer will maintain its normal print speed of up to 120 characters per second. Since the matrix cell has much higher horizontal density, much smoother characters can be created this way. Up to 21 such fonts can be called up within a textfile during the printing process. This offers the linguist an unusually powerful tool not readily available otherwise. For example a text paragraph may be printed in English, to be followed by ones in French, German, Greek, Swedish, and Russian, etc., all without stopping to change print thimbles or elements! Indeed one can even have several language fonts appearing in the same sentence. The Gutenberg Jr. does not support user created downloadable fonts but has built-in BOLD, italics and headline fonts ready for use.

Pictures & Graphs

A second powerful feature of the Gutenberg is its ability to produce graphics images and print them in specified location within a textfile without cut and paste operation. This utility, called PAINT, lets the

contd.

Operant Systems

*** HARDWARE ***

DISK DRIVES—	
MicroSci A2 drive (100% Apple-compatible Shugart 390) ..	239
Rana Systems Elite One drive (40 track, 163K)	265
Elite Two (40 track, double side, 326K) ..	423
Elite Three (80 track, double side, 652K) ..	549
TEAC Thinline drive (40 track, 100% Apple compatible) ..	259
Davong 5, 10, and 15-MEG Winchester drives	(call)
Corvus Winchester, Oninet, Mirror, Concept 68000 ..	(call)
CP/M SYSTEMS—	
Applicard (6 Mhz Z-80, 64K to 192K RAM, 70-col video) ..	260
Microsoft Softcard J1c (Z-80, 80 col & 64K on one card) ..	335
Softcard (includes CP/M 2.2 and MBASIC)	229
ALS CP/M Plus System (6 Mhz Z-80, 64K RAM, CP/M 3.0) ..	275
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user create drawings and graphics images and store them to disk to be used later. In fact if you already own a graphics utility that saves your masterpiece as a standard 34 sector binary file under DOS 3.3 then the PAINT utility can read this image and convert it to a Gutenberg picture file for later use.

In the paint mode you first decide whether the picture you are about to create will be horizontal or vertical. The largest horizontal picture you can draw with PAINT is two full screens wide, which will produce a printed picture about 7 inches wide by 2.6 inches high. Furthermore, you can write directly on the screen using any of the screen fonts. The four writing modes available are positive, negative, or, and exclusive or. It is even possible to write on a picture using optional large headline fonts to create letterheads and logos. After you have finished your masterpiece you can then crop it and test print it to see your handiwork. The horizontal density is adjustable from 40 dots per inch to 160 dots per inch (for the Apple DMP) but the vertical density is always 72 dots per inch. The PAINT utility is not available on the Gutenberg Jr.

Mail Merge

Suppose your organization wants to send the same letter to 300 persons but you'd like to have each one appear to be individually typed. With the Gutenberg you first create a special file, called a J-file, consisting of all the names and addresses and special greetings for each one on your mailing list. These names and individualized greetings can then be merged into the same form letter at print time using one of the supported daisy wheel printers. Tables and pictures can likewise be merged into a document using J-files. With the Gutenberg Jr. this feature is available but only on the particular dot matrix printer you are using.

Conversion and Communication

If you already have a number of files created with Wordstar, then the WSTOGB utility will convert Wordstar textfiles into Gutenberg files for you. On the other hand suppose you have some DOS 3.3 textfiles created by some other word processor then the GLOBAL utility will turn them into Gutenberg files for you. In fact GLOBAL is a two-way converter that will also take a Gutenberg textfile and convert it into a DOS 3.3 textfile. This means you can use a spelling program such as the Sensible Speller to check your spelling. The method is admittedly somewhat roundabout. A more powerful use of GLOBAL is this. Suppose you want to prepare your documents, say a monthly newsletter, with your word processor and transmit it directly to a typesetter without having it retyped again. Since each typesetting device has its own print and formatting commands, you must first create a translation file which contains all the relevant Gutenberg formatting and print commands and their corresponding commands for the particular typesetting device. Then GLOBAL will automatically substitute the correct typesetting command for the corresponding Gutenberg commands and the resulting DOS 3.3 textfile will be ready for transfer to the typesetter. This means you can enter, edit and even preview your layout with the Gutenberg and save time and expense of retyping as well.

Gutenberg has its own communications utility, called COMM, which permits the transfer of files using the Novation CAT. You can of course use whatever communications software of your own once the files have been created using GLOBAL. COMM, GLOBAL and WSTOGB are

found on the Gutenberg but not on the Jr. WSTOGB will be replaced by a CP/M equivalent of GLOBAL in the near future.

Disk Format & DOS

The Gutenberg and Gutenberg Jr. use a special DOS and the program disk is copy protected. When you buy Gutenberg you get a two-sided master, a backup together with a datadisk containing tutorials and sample formats on both sides. The necessary utilities to format data disks, copy and delete files, etc. are included. The 200 page manual comes in a three ring loose leaf notebook inside a slipcase and is itself printed with the Gutenberg and a NEC 8023A printer. If you buy the Gutenberg Jr. you get only one copy of the program and everything, including the manual, is contained on two sides of the diskette! A short tutorial explaining how you can use your own printer to produce a copy of the 100 page manual is also on the program disk. The Jr. costs only \$85 while the regular Gutenberg costs \$325.

Users of the IBM PC will be disappointed to learn that the Gutenberg will not boot on the Quadram Apple-Link so this very powerful software is still limited to Apple. However, an optional preboot utility will permit the Gutenberg to run on the Franklin.

Booting and Initialization

After the program is booted you will be asked to specify the printer interface and slot it's residing in. The Gutenberg does this with a screen menu listing all the interfaces it supports and you select the one you have by letter. The Jr. on the other hand will present you with the list in sequence so you must type an N for No until your interface appears. This initialization procedure must be repeated each time you boot so it is somewhat inconvenient. After this you will be able to load any special fonts from disk before going to other tasks.

Text Entry & Edit

With the program and fonts in memory the top center of the screen will show the word "READ:" with a flashing cursor in the form of underscore below the colon. This is the ready state or command mode and all tasks within Gutenberg and Jr. are initiated from this state. To open a textfile you simply press <RETURN> and enter the name you want to use. File names are limited to 12 characters long. Once you press the return key or reach the 12th character Gutenberg will automatically search through the currently active disk's directory for the file you have just named. If found, it will be loaded into memory for you. If not, a FILE NOT FOUND message will appear. Pressing the return key at this point will create a file under that name for you. Typing I (for Insert) will allow you to start entering text into that file. The word INSERT in inverse will be displayed on the upper left corner of the screen. This spot is the status display and it always shows the current status of the editor. Most cursor movement and editing commands require one or at most two easily remembered keystrokes. For example, K stands for kill and is used to kill one character at the cursor position while DW will delete a word and DL will delete a line. Cursor movement from top to bottom of screen is done with the spacebar, while typing 4 then <RETURN> will move the cursor down 4 lines. The Esc key is used to escape or terminate whatever you are currently doing so you can go on to do something else. Global search and replace as well as other editing commands found on better word-processors are also present.

contd.

A very handy feature in the text entry mode is keyboard macros. This means you can redefine any key in any one of three modes so that key will automatically generate an entire phrase for you. This is done with the CHG command which is activated by typing CTRL-C. Suppose the name Alexander Lyapunov appears repeatedly throughout your document; then you can redefine a key, say %, so that every time you strike % twice in a row Alexander Lyapunov will automatically be entered for you. The % key is still there for normal use as it is very unlikely that you'd need to use %% under normal circumstances. The change buffer holds 256 characters so several frequently used phrases or print format commands can be stored for use this way. There are some 44 cursor movement and editing commands available in Gutenberg.

The files created with Gutenberg can be up to disk capacity or about 120K long. However, I don't personally recommend anyone writing such long files. Gutenberg offers a split screen editing capability so two files can be accessed simultaneously. You can copy and transfer blocks of text across two files as long as they both reside on the same disk. Moreover, a NF (for next file) command is available to link one file to the next at print time, so working with shorter files is generally easier.

Screen Format vs. Page Format

With both versions of Gutenberg you will normally see only 40 characters per screen line. People who insist on seeing 80 characters per screen line will need the Gutenberg Jr. and an Apple //e with the Apple extended 80 column card. With this system you will not only see all the ASCII characters in 80 column mode but any special character fonts you have created as well. This is because the Gutenberg Jr. will utilize part of the upper 64K of memory to produce a hi-res page with 192 lines of 560 pixels each. This is the so-called double hi-res mode available only on the //e with extended 80 column card. If you have the //e with the standard 80 column card then you will see 80 screen columns only when your text is limited to the normal ASCII characters. In either case on-screen formatting is still not possible as the number of characters per printed line in proportion font actually varies from line to line, with the average near 96 and not 80. More importantly the Gutenberg was designed to permit you to create documents that closely approximate a printed page in the typographic sense rather than a typed page. The print formats can be stored separately as a FORMAT file so the same textfile can have a totally different appearance by simply calling up a different format at print time.

Each printer driver will make full use of all available features of the printer, including some that you didn't think was possible. For example the C-Itoh 8510A manual states that incremental word spacing is available only in proportional font but Gutenberg will justify text incrementally even when monospaced type font is selected! This also means no universal print driver is present as some word processors claim to have.

The variety of paragraph and page layouts you can create is really large, but formatting commands must be issued at the appropriate places throughout a textfile to do this. Mastering the print format command structure is by far the most difficult part of using Gutenberg. A number of examples on the datadisk will show you how letters, one and two column text, multi-column tabs, tables of contents, etc. are done. In practice you first start with these supplied formats and modify them as needed. In all some 112 print formatting commands are available for the Apple DMP so

don't expect to master all of them the first time you use Gutenberg.

The following simple example will illustrate how print macros are formed. Suppose you want headings always set apart by two blank lines, centered, and printed in bold and enhanced type. Let's call this macro H1. The definition of H1 would be as follows:

```
<SF,H1
<<DN2L;B0;PE;QC>>
```

Here SF stands for Save Format and H1 is the name assigned. DN2L tells the printer to move Down 2 Lines. B0 is B0ld and PE stands for Proportional Enhanced. Finally QC stands for Quad Centered. Suppose we save H1 along with other macros on another file for use. Then whenever we want a heading we simply issue an <H1> just prior to the actual heading within the text. Both the text and FORMAT files must be specified at print time; and the printer will automatically center and print in bold, proportional enhance type whenever it sees the <H1> command. If H1 is defined differently in a second format file then loading that other format file at print time will obviously produce a different result altogether.

Incidentally on-screen formatting is possible only if you are willing to settle for monospaced type in the single column mode such as an ordinary typed page in everything you do. No Apple or other micro-computer based word processing software will be able to show on-screen a two column newsletter layout fully justified and in proportional font! Such pagination systems are available but certainly not for home or small office use. I happen to believe the lack of on-screen formatting is a small price to pay for the power and flexibility of Gutenberg, but then as an ex-printer who never learned to use a typewriter properly, I am somewhat biased.

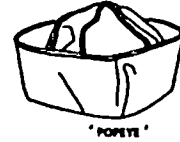
The Gutenberg Jr. does not permit the creation of your own formats. Instead a very comprehensive set of formats is supplied and the manual contains over 50 pages of examples showing how these can be used in various situations. They include samples for printing form letters, two column newsletters with headline fonts, vita, etc.

Summary

The Gutenberg Jr. is a simplified but still very powerful word processor that will meet the needs of many users. It requires 64K of RAM and offers 80 character per screen line in double hi-res if you have a //e with extended 80 column card. It also has an improved editor and direct access to the print program from the editor as the latter is loaded into the computer's memory along with the editor. Some commands have been changed slightly from the Gutenberg to provide greater protection against accidental erasure and a uniform exit from all modes via the ESC command. It will be 100% compatible with the to be released Gutenberg Sr. so files created with one can be read by the other. Owners of the current Gutenberg will be able to update their program disks so enhancements to the editor already present in the Jr. will be included. Additional utilities such as large headline fonts, chemical ring diagrams, translation tables for some typesetting devices, etc., may be offered. As higher density dot matrix printers (18 x 18 or better) become available Gutenberg will no doubt support one or more of them so the printed copy will be virtually indistinguishable from that produced by letter quality printers but still offer the power and versatility of user created fonts and graphics. 6

I AM WHAT I AM - AND WHAT I AM, I AM

by John A. Love,



Although I have been programming on the Apple for only one year, I have found myself "digging into" Apple machine language. The reason behind this new-found investigation is really three-times removed.

First, I was working with someone's intensely puzzling (?!*!L) data base, a data base I was convinced was SAVED with a name containing some imbedded control characters. Second, by virtue of the utility I was constructing, it was necessary to load into memory the name(s) of the file(s) on the diskette without doing a CATALOG. After all, CATALOGING a diskette will not show you the imbedded, non-printing control character that some sneaky so-and-so included in the name of his file. If I can automatically access the file name, say via use of the RWTS routine, I don't need to know its spelling. So, the search was on for such a subroutine.

As a direct result of this search, I was thrown into two very large, new worlds. The first was the Apple Disk Operating System (DOS) and the second was Apple machine language. The purpose of this article is to share with you a few of my discoveries in the world of machine language. Other discoveries, including those within DOS, will be treated another day.

For this article today, I have six sources:

1. Apple Machine Language by Don and Kurt Inman (Reston Publishing Company).
2. Jock Root's "Everyone's Guide to Assembly Language", a series currently being published in Softalk.
3. Roger Wagner's Assembly Lines- The Book, published by Softalk Books.
4. Nibble Magazine.
5. Apple II Reference Manual.
6. Conversations with Bruce Field (Apple Pi), Richard Untied (Apple Pi), Mr. Wagner (above) and Paul Coletta (Reston Publishing Company consultant).

All six are positively excellent. I personally feel that the Inmans's book, Wagner's book and Root's series serve as very effective complements, every detail worth absorbing. One very important caveat before I continue - any mistakes in this article are clearly mine, in total, and not those of any of the referenced sources. Thanks to these sources, I'm beginning to understand some of the code published in Nibble (I think?).

In Part I of Mr. Root's series I discover that there is a difference between machine language and Assembly language. In the micro, machine language consists of the arrangement of "on" and "off" pulses generated by the massive array of circuitry within the silicon chips assembled, for example inside the Apple. The logical corollary to machine language is Assembly language, or source code. The same rules and patterns logically apply to both; however, in Assembly language letters/numbers serve as operators and operands. The combined mnemonic tells the micro-processor what to do and what to do it to, thereby replacing the blinking pulses, "on" and "off", for the programmer. Mr. Root states that, "Assembly language

is simply a logical model, in human-type symbols, of the electronic processes that go on in the integrated circuits that make up the brain of the Apple." Mr. Wagner extends this thought by saying that "...Basic itself can be thought of as an extreme case of the assembler." No denying it . . . instructions like LOAD, SAVE and PRINT must be mnemonics.

The object of the operator's "affection" can be a memory address, a register or just a plain number. For example, the Assembly language mnemonic operator, Arithmetic Shift Left (ASL), is represented by the machine code operator \$0A - its object is the accumulator (not be be confused with "object" code, or machine language). By the way, one \$0A is equivalent to multiplication by 2 - \$0A on 0101 = 1010, or $2 \times 5 = 10$ - neat, huh! By, by the way, \$0A is the hexadecimal equivalent to decimal 10, which brings me to the following.

The Inmans state that, "When you communicate with the computer in Basic, you are talking through an interpreter." The 6502 microprocessor, or Central Processing Unit (CPU), only understands "on" and "off", equivalent to a binary "1" and a binary "0", respectively. How do my keyboard instructions get translated to this binary world of machine language (I never was very adept at Morse Code)? Or, do they at all?

What do we know so far? First, the keyboard accepts commands in Basic. Second, machine language is depicted in the form of hexadecimal operators and operands. Third, the 6502 CPU only accepts input in binary. On first glance it appears to be a floating shell game! And, this isn't all - we also know that the programmer can POKE machine language instructions into specific memory addresses; e.g., the address range 00768 - 01023 (decimal) can be utilized for short machine language instructions. As you can see, the memory address is in decimal; so, too, are the operators. For example, to multiply a number already stored in the accumulator by 2, the programmer could use POKE 788,10 to be subsequently executed by CALLing 788. This last approach to machine language programming using Basic is labelled the "BASIC Operating System" by the Inmans. Okay, who exactly has the elusive shell in this game???

If you think this is confusing, just listen to this gambit! One can directly enter machine language via the System Monitor by CALLing -151, thereby producing an "*" prompt on the screen. The System Monitor resides in the address range, decimal 64488 - 65535 or hex \$FBEB - \$FFFF, and controls all programs. Both the address and the two-part instruction are input in hexadecimal; for example, the above multiplication-by-2 example would appear on the screen as : *0314 : 0A (decimal 788 equals hex \$0314). This instruction would be executed by *0314G. Enough is enc h - let's untangle this web!!

This untangling is partially accomplished by the BASIC INTERPRETER, the INPUT/OUTPUT (I/O) BUFFER, and the KEYBOARD DECODER. The latter directly translates a keypress to its binary equivalent. Let's see - "Z" CHR\$(90), low byte, or CHR\$(218), high byte. According to the Apple II Reference Manual, "The keyboard sends seven bits of information which together form one character. These seven bits, along with another signal which indicates when a key has been

contd.

pressed, are available to most programs as the contents of a memory location. Programs can read the current state of the keyboard by reading the contents of this location. When you press a key on the keyboard, the value in this location becomes 128 or greater, and the particular value it assumes is the numeric code for the character that was typed."

So this is why "Z" is initially represented as CHR\$(218) rather than CHR\$(90). Anyway, decimal 218 is hex \$DA or a binary 11011010. But, this is eight bits, not the seven bits referenced above? The answer is that once the keypress has been accepted and understood by the INTERPRETER, the binary representation (stored in the I/O BUFFER) drops down to low byte (decimal 90 = hex \$5A = 01011010).

So far, the KEYBOARD ENCODER has translated your keypress to its high byte binary equivalent. The high byte result is stored in the I/O BUFFER. The BASIC INTERPRETER then steps in to "understand" the binary equivalent that is stored in this BUFFER. Once the stored value has been accepted by the INTERPRETER, the 6502 CPU "tells" the I/O BUFFER to release the high byte "Z" it is holding and to prepare to receive a new one. At this juncture, the BUFFER's content changes to low byte "Z".

In Applesoft, one can have one line containing up to 255 characters. Each character is stored in the I/O BUFFER. Each stored character is that accepted by the INTERPRETER and becomes, therefore, low byte. The 6502, which I've said controls all programs, calls the Monitor Character OUTPUT routine (COUT or \$FDED) and sends the character to either the screen or the printer as specified by the user. The ROM character generator actually displays the character. Once <cr> is pressed, the 255 or less characters in the I/O BUFFER are released to memory beginning at decimal location 02048, the beginning of the user area for Applesoft Basic programs and variables.

Mr. Wagner explains that "programs are executed by the 6502 scanning through memory. Addresses in memory are analogous to line numbers in Basic."

I'm going to make a giant leap at this point - I'm going to assume that I haven't made any large goofs in this article. Based on this assumption, it still remains that I have a seemingly-infinite amount to learn about Assembly language programming. I will continue to share with you in the future my trials and tribulations in the "sounds-Greek-to-me" world of the 6502 microprocessor.

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APPLE TRACKS

by Richard Langston II

In this column, with the editor's permission, I will feature the details on the Apple's DOS and Applesoft BASIC. If you have any thoughts or questions, feel free to call me at (301) 258-9865 or drop me a line. My address is:

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In this first column, I shall explore what happens when the RESET key is pressed. I shall assume you have an Apple with Autostart ROM and at least 48K of memory.

After RESET, program execution jumps to a routine in ROM. This routine switches on the primary text screen, sets the text window to full screen, and sets normal video mode. Then it selects the keyboard and Apple screen as the standard input and output (I/O) devices, turns off any expansion ROM (such as modem firmware), and beeps.

Next, the ROM examines two special bytes of memory to see if it has been RESET before, or if power up has just occurred. If the Apple has just been powered up (a "cold start"), it searches for a disk controller card. When it finds such a card, the ROM on it is executed.

If the Apple is not being powered up, however, a "warm start" is executed. Two bytes of memory contain an address that the computer jumps (JMP, like GOTO) to. Normally it is \$E003, Applesoft's warm entry point.

In the above discussion, three RAM addresses were used in the RESET process. These addresses are \$3F2, \$3F3, \$3F4 (1010-1012). \$3F2 and \$3F3 are called the "soft entry vector". They contain the address the computer jumps to in the final step of RESET (\$3F2 is the high byte, \$3F3 the low). Location \$3F4 is called the "power up byte". It contains the Exclusive-OR of the high byte of the soft entry vector and the constant 165 (\$A5). The Exclusive-OR of two numbers is impossible to figure out in BASIC, so a routine is provided in ROM to do it for us. The routine is located at 64367 (\$FB6F). It is used by CALLing 64367 in BASIC or JSR \$FB6F in assembly.

Using these memory locations, it is possible to make the RESET do almost anything. Just put the address of the routine to be executed in locations \$3F2 and \$3F3 and CALL 64367.

The easiest type of change is one to make the RESET key reboot the system. To do that, simply POKE almost any value into \$3F3 (1011). This makes the exclusive-OR in \$3F4 invalid and forces a cold start.

To make the RESET key RUN the BASIC program currently in memory, change \$3F2 to \$66 and \$3F3 to \$D5. In BASIC, POKE 1010,102 and POKE 1011,213. Then CALL 64367.

DOS is disconnected every time the RESET key is pressed and since we have jumped out of the normal RESET routine, it is never reconnected. The easiest way to reconnect DOS is to CALL 1002 from BASIC or JSR \$3EA in assembly. The first lines of the BASIC program should look like this:

```
10 POKE 1010,102: POKE 1011,213: CALL 64367: REM  
    CHANGE RESET VECTOR  
20 CALL 1002: REM RECONNECT DOS
```

It may be preferable to write an assembly routine to reconnect DOS and jump to a routine. Here is an example of such a routine:

```
300- 20 EA 03      JSR $3EA  
303- 4C 66 D5      JMP $D566
```

Bytes \$304 and \$305 can be changed to any address that you want to JMP to, so long as it is the start of an Assembly language routine.

One of the more advanced ways to deal with reset in a BASIC program is to write an assembly routine to assign RESET an error code. Then, when RESET is pressed, it will be treated just like any other error that can occur in a program. RESET will even have its own, unique error code. Here is an example:

```
300- 20 EA 03      JSR $3EA  
303- A2 64         LDX #$64  
305- 4C 12 D4      JMP $D412 (error handling  
                    routine)
```

```
10 POKE 1010,0: POKE 1011,3: CALL 64367  
20 ONERR GOTO 100  
30 REM MAIN PROGRAM HERE  
90 END  
100 IF PEEK (222)=100 THEN PRINT "RESET PRESSED": END  
110 PRINT "UNEXPECTED ERROR": END
```

This program will print "RESET PRESSED" and end the program if the RESET key is pressed during program execution. Any other error (such as CTRL-C) will end the program with a similar message.

When RESET is pressed, Applesoft will set the error code 100, which is normally unused, and will jump to \$D412, which is an error handling routine in the Applesoft ROM. If a program is interrupted by pressing RESET, it cannot be continued in the way it could be if CTRL-C is pressed, i.e., with CONT. This is because the stack (a data storage area in the 6502) is messed up by RESET. This causes the Apple to "forget" FOR...NEXT and GOSUB...RETURN loops. All variables, including strings and arrays, are still intact, however.

For a description of the ONERR GOTO statement, look in the APPLESOFT REFERENCE MANUAL. For more information on RESET, read pages 36-38 in the APPLE II REFERENCE MANUAL.



DEVELOPING MULTI-DRIVE SOFTWARE

by Daniel J. Blum

Writing programs to handle I/O to more than one disk drive can be tedious to the programmer - especially in the case of "quick" programs not originally intended for outside distribution. However, there are two good arguments to resist the temptation to take the easy way out and neglect to program in the multi-drive mode.

In the first place, the user of single-drive software is constrained by the programmer's laziness. Second, when the programmer, or perhaps a user modifying the program, decides to add a multi-drive capability, all of the original momentum built up during the first programming session has been dissipated. Thus, the effort to add multi-drive capability may consume more programming time as an enhancement than would have been required during the program's initial development phase.

The following subroutine "Get Slot and Drive" is intended to help banish single-drive Applesoft programs back to the Stone Age where they belong. With relatively little effort, Applesoft programmers can put this subroutine into their libraries and renumber/merge it into "quick" programs.

The basic idea of Get Slot and Drive is to input the filename, drive number, slot number, and volume number as a single string. This string is then parsed to produce the outputs variables (FX\$, FI\$, SL, DR and VL) described in the REM statement number 810. The string FX\$ can be passed directly to DOS and the other output variables are available for use by the host program. Lines 2-410 are demonstration code, lines 1110-1810 comprise a short routine to input a string containing commas, semicolons or whatnot and lines 2000-3410 perform the actual parsing of FX\$ to obtain the remaining I/O parameters.

Listing:

```
2 REM ***** BEGIN DEMONSTRATION CODE
*****
5 FX$ = "":FI$ = "":HOME
10 SL = 6:DR = 1:VL = 254
15 PRINT "ENTER FILENAME,<SL>,<DR>,<VL> :";:GOSUB
1110
110 PRINT "SL = ";SL;" DR = ";DR;" VL = ";VL
120 PRINT "FX$ = ";FX$:PRINT "FI$ = ";FI$
310 END
410 REM ***** END DEMO CODE
*****

510 :
610 REM Get Filename/Slot/Drive/Volume Subroutine
710 :
810 REM Inputs : None, Outputs : FX$ (full
file descriptor), FI$ (filename only, SL (Slot
#), DR (Drive Number), VL (Volume Number)

910 :
1110 REM Input string with commas
1210 FOR I = 1 TO 40
1310 J = PEEK (- 16384): IF J < 128 THEN 1310
1410 POKE (- 16368),0:J = J - 128: IF J < > 8 THEN
GOTO 1510
1420 REM Rubout Processing
1430 IF I = 1 THEN 1310
1440 I = I - 1: IF I = 1 THEN FX$ = "": GOTO 1442
1441 FX$ = LEFT$(FX$, LEN(FX$) - 1)
1442 PRINT CHR$(8);" ";CHR$(8);: GOTO 1310
1470 REM Check for CR, add to string
1510 PRINT CHR$(J);: IF J = 13 THEN 2010
```

```
1710 FX$ = FX$ + CHR$(J)
1810 NEXT I
1910 GOTO 3510
2000 REM Parse String
2010 FOR I = 1 TO LEN(FX$)
2110 IF MID$(FX$,I,1) < > ",;" THEN FI$ = FI$ +
MID$(FX$,I,1): GOTO 3410
2210 FOR J = I + 1 TO LEN(FX$)
2250 REM Get Slot #
2310 FI$ = MID$(FX$,J,1): IF FI$ < > "S" THEN 2610
2410 FI = VAL (MID$(FX$,J + 1,1)): IF FI > 0 AND
FI < 8 THEN SL = FI: GOTO 2610
2510 GOTO 3510
2540 REM Get Drive #
2610 IF FI$ < > "D" THEN GOTO 2910
2710 FI = VAL (MID$(FX$,J + 1,1)): IF FI > 0 AND
FI < 5 THEN DR = FI: GOTO 2910
2810 GOTO 3510
2850 REM Get Volume #
2910 IF FI$ < > "V" GOTO 3310
3010 FI = 0
3110 FOR K = J + 1 TO LEN(FX$):FI = FI * 10:FI = FI
+ VAL (MID$(FX$,K,1)): NEXT K
3210 IF FI < 254 THEN VL = FI
3310 NEXT J: RETURN
3410 NEXT I: RETURN
3510 PRINT CHR$(7);: PRINT "INVALID ENTRY": GOTO
1110
3610 RETURN
```



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A NEW SIG - CESIG

by Roy Rosfeld

The first organizational meeting of CESIG (Computer Entrepreneur) was held on September 17, 1983. Eleven members attended to discuss the future of the new group.

The group was formed to encourage people to band together to assist each other in the general area of entrepreneurship. Bernie Urban noted an article in a recent issue of Infoworld concerning a similar group in the Boston area. A small group discussed this subject after the WAP meeting in August and the idea took wings. I must have left the discussion for a moment, because somehow I got elected to be the temporary chairperson. At any rate, I threw together a general outline for the organizational meeting on Sept. 17th.

It is hoped that the group will entice persons who are both idea seekers and contributors, as well as technique seekers and contributors. Plans are being made to have mini-lectures at regular meetings and to hold special meetings in which special subjects will be discussed in both lecture and seminar style. Some of the subjects suggested were developing business ideas, writing business plans, creative problem-solving, questions of law and accounting, running a consulting practice, marketing, dealing with lenders and obtaining venture capital, interpersonal relations and many more.

As a group, we hope to study both success and failure stories to learn the goodies and the baddies from each. We also expect that the knowledge and experience of the sum of the total group membership will contribute greatly to the education of its members. In order to learn who has what to offer, the group has solicited a "Talent Inventory" from each member. In this way, the group will be able to draw upon the talents and experiences of all the members and to reap the benefits of total group participation.

It was generally agreed that the purpose of the group should be educational and that it should not be expected to be a substitute for legitimate professional assistance. Accordingly, the purpose is rather to have professionals make themselves available to others in the "getting started" or "growing pains" aspects of the business world. An example might be for an attorney to inform members of the various forms of business organizations - sole proprietorships, partnerships, corporations - and the relative advantages and disadvantages of each. If a member then elected to organize as a corporation, it would seem proper that that member would be expected to pay a fair compensation to the attorney for any efforts in drawing up and filing the necessary incorporation papers. Similarly, explaining what a business plan is and what it should contain is quite different than actually participating in drawing one up. It should be noted that in the two examples the member is actually receiving something of value in the way of educational information, in essence, a "freebie."

The next meeting will be held on October 22, 1983, after the general WAP meeting, at the WAP office. In addition to regular business, there will be an election of officers - Chairperson, Librarian, and Columnist. If you are interested in joining with our group and share our goals and expectations, please come to the meeting. In the meantime, if you have any questions, please feel free to call me at (301)-340-7962 or call Bernie Urban at the club office.

TELECOMM SIG NEWS

by Dave Harvey

The August meeting of the Telecomm SIG was held at USUHS on August 27, after the main meeting. Several announcements were made; the most important was that the new Anchor Automation Mark 12 modem, which is a "smart" 300/1200 baud (212A type) modem, has been seen in a local store, which implies that it is finally on the market. Recently advertised prices for this modem are in the \$280 to \$320 range. The SIG Chairman has been promised one of these units for evaluation purposes. If this evaluation is positive, a group purchase will be arranged, and it is also possible that the WAP group purchase will carry it. The ABBS will also employ two of these modems; that is, two phone lines, each with 300/1200 baud capability, will be supported.

George Kinal then reviewed the subject of using an Apple for amateur radio teletypewriter (RTTY). There are three approaches:

1. Several companies sell packages consisting of a TU (equivalent to a modem) and the appropriate Apple software. Examples include Kantronics and Macrotronics.
2. Some companies supply the software only; any commercial or home-made TU can be used. One of the earliest such programs was the "GALFO" software. A newer package with very interesting features is "Super-RATT". This program provides an RBBS (radio bulletin board) capability. It interfaces via the game port. It might be of some interest to the hearing-impaired community, since it operates in Baudot code. (Most RTTY work on the lower, short wave frequencies in Baudot. ASCII is used on the VHF bands).
3. The EGBERT program is unique in that no TU is required. The generation of tones (modulation) and reception (demodulation) are done by the software; connection to the radio equipment is via the cassette jacks. On the short wave bands, where there is a lot of static and interference, an "active filter" is advisable to clean up the received signal, but an active filter is still cheaper to buy or build than a TU. In fact, one of the distributors of the EGBERT package is now also selling an active filter board kit which plugs into an Apple slot.

The Telecom SIG held its September meeting after the WAP meeting on September 17. Nominations were held for SIG Chairman. Nominated were George Kinal for Chairman and Dave Harvey for Columnist.

There was no formal program at this meeting; however, general questions presented by the members attending were answered. The majority of the questions had to do with using the WAP ABBS. One suggestion was that since some members do not have printers it would be nice if a hard copy of the WAP ABBS instructions were available. It was mentioned that a past issue of the WAP Journal (July and August 1982) had a writeup on the ABBS and how to use it. It was suggested that a copy of that issue be obtained from the WAP office. The NEW MEMBER REFERENCE BOOK also has directions on use of the ABBS.

It was announced that the new MARK 12 Anchor Modem will be arriving in the next week and will be evaluated by George Kinal.

OKIDATA MICROLINE 92 - APPLE WRITER //e Partnership by Jean Panagakos

Judging from the contents of the different Washington Apple Pi issues (and other computer magazines) and from what I have also learned, embedding printer commands in word processing programs is one of the commonest problems facing computer owners. I have learned to do the embedding for the Okidata Microline 92, using my Apple //e with a Grappler+ interface and Apple Writer //e program. When Mr. Aronow's column ("Apple Writer //e-Okidata 92 Embedded Print Commands") appeared last month, I had almost completed this article. I was lacking some of Apple's Control Code equivalents (those for the ASCII Codes on C-3, C-5, and C-6 of the Okidata User's Manual). Because I wrote this column from a slightly different viewpoint and also because I was able to use some Okidata printer commands which were not included in his article, I decided to submit my guideline for embedding, anyway. Mr. Aronow's listing of the "Keystroke" commands gave me the idea to list them, as well, in my article. I think my procedure will work with other interfaces besides the Grappler+, as I did not use any information from the Grappler+ manual to do the embedding. All I required was a tip (from Diane Lorenz) about using the "ESC" key for embedding, the Apple Writer //e manual, the Okidata Microline 92 manual and printer, my Apple //e, and lot of trial and error (a lot!!!). I also received a tip from Okidata's Technical Support section. I used Appendix C of the Okidata User's Manual and Appendix E of Assembly Lines: The Book for the control codes.

In the first section I will cover the procedure for embedding the functions within the body of the typed material. This method is not difficult, once you learn that Control-V is necessary, as well as "ESC" or another Control function. To demonstrate the technique of embedding, I will use the situation of wanting to change from the data processing mode to the correspondence quality mode. Furthermore, in this demonstration the word "September" will be the first word in the correspondence quality mode. From this point on I will use the convention of using the brackets ([]) with the letter inside to indicate that you should press the "CONTROL" key plus the letter inside the brackets. Thus [V] = Control-V. Without further ado, let us begin our embedding journey using the procedure below:

1. Press [V] (I have assumed that you realized that the Apple Writer //e program has already been booted, "RETURN" has been pressed, your printer is connected to your computer, and the printer is "on").
2. Press the "ESC" key.
3. Press "1" (the ASCII code for correspondence quality is "ESC-1"). By the way, don't type the quotations marks. They are just included for clarity.
4. Press [V] again (to turn off the embedding).
5. Type (without a space between the last [V] and September) "September."
6. Press [P] and fill in "NP" next to the "[P]rint:" which appears on the screen. The printer will then start printing and you will see that the word

"September" is in the correspondence quality mode. Please note that the printer will continue to print in the correspondence quality mode until you change the command back to the data processing mode. This procedure will work for the functions listed on C-4 of the Okidata Microline 92 manual. The information on Control-V was found on page 57 of the Apple Writer //e manual.

7. For the ASCII codes listed on page C-3, C-5, C-6 of the Okidata manual, I was able to figure out the embedding procedure, after I received a tip from the Technical Services Department of the Okidata Corporation. I was told that I needed Apple's Control Code equivalent to the ASCII Code. I was able to find some of these control characters on pages 45 and 46 of the Apple //e 80-Column Text Card Manual. The remaining ones were obtained from Appendix E of Assembly Lines: The Book (which is kept in the WAP Office). Apple's Control Code equivalent for these latter ASCII codes are as follows: [J] (for LF), [M] (for CR), [L] (for FF), [K] (for VT), [I] (for HT), [Q] (for DC1), [S] (for DC3), [T] (for DC4), ? (for ?), [^] (for RS), [\] (for FS), Control-] (for GS), [] (for US; note that this is the underline symbol obtained by pressing the "SHIFT" key and the hyphen key), [X] (for CAN), [R] (for DC2), [C] (for ETX), [B] (for STX), and [N] (for SO). Unfortunately, I could not embed the Control-M or the "?" for some reason.
8. The procedure for embedding the commands on C-3, C-5, and C-6 is as follows:
Press [V], then the control character (for 10 cpi, it is [^]), then press [V] again (to turn off the [V]), and presto!!! the commands are embedded.

Now that you have learned how to embed the functions using the ASCII code, it might also have occurred to you that it might be simpler to embed the functions using a symbol, rather than the Control-V, "ESC" or Control-character, Control-V sequence. Apple Writer //e has just this ability, called a glossary. However, as you may have already found out, the glossary listed on the bottom two-thirds of page 58 only applies to either the Apple Letter Quality or Dot Matrix printer (not surprisingly). After much trial and error, using the directions on page 59 of the Apple Writer //e manual, I managed to make my own glossary of the functions listed on page C-3 and C-4 of the Okidata manual.

Several points should be made about symbols which are permitted in the glossary. First of all, through trial and error I learned that I could only use one symbol for each ASCII code. That is, when I tried to use CQ for correspondence quality, it did not work. So, I reduced it to C. The only other restrictions are that you not use the "*" character or the "?" character. Upper and lower case characters are interpreted differently, so you may use both. Initially, I thought I could not use p, c, r, q, n, up arrow, down arrow, 0, 2, 7, B, b, -, because, as you can see on page 58 of the Apple Writer //e Manual, they are already listed in the "SPECIAL" file. The solution to this problem is to temporarily delete these symbols from the screen after you boot the "SPECIAL" file to begin making the glossary. Then when you save your new glossary file, the Apple's

contd.

"SPECIAL" file symbols won't override your symbols. That is how I was able to use p, B, b, 0, 2, and 7 for my own symbols. If you did not delete the Apple symbols for p, B, b, 0, 2, and 7 from the screen, then the control characters for these symbols, which are different from yours would appear (since Apple's symbols with their control characters are listed first on the "SPECIAL" file) instead of your control characters. Now that I have given you a few cautionary words about the symbols to use, I will go on to the actual technique for making a glossary of printer commands.

1. Load the "SPECIAL" file on the Master Apple Writer //e disk (this helps make the special glossary) using the [L] function.
2. Type your symbol for the specific function. For example, my symbol for the data processing mode was D.
3. Press [V].
4. Press "ESC" (You will see something similar to the "[" appear) in the case of the commands listed on C-4. For those listed on C-3, press the "CONTROL" key.
5. Type in the number or letter next to "ESC" (under the ASCII Code column) for the particular function desired (this applies to the commands on C-4). For the data processing mode it was 0. For the commands listed on C-3, type in the letter or character within the brackets for the desired function (i.e., after having pressed the "CONTROL" key in step 4). See procedure 7 above for the Control Code equivalents.
6. Then press [V] again (to turn off the embedding). My line for the data processing symbol plus the embedded code looked as follows: D[1.
7. Press "RETURN".
8. Continue using the procedure listed in 2-7 until you have typed in all your symbols with their corresponding ASCII codes.
9. Return to the first line of your new glossary (using the "up arrow").
10. Move the the cursor until it is directly on top of the "[" symbol or other control character(on top of a shaded ~ in the case of the control character for 10 cpi).
11. Load the "CONTROLV" file using [L]. In other words, the screen will look like this when you load the "CONTROLV" file: [L]oad:CONTROLV. The "CONTROLV" file is used to embed the [V] function. Otherwise, once the program is put into memory the computer does not read the [V] as a command. After you have loaded the "CONTROLV" file, press "RETURN", and you will see a shaded V appear in front of the [symbol.
12. Next move the cursor to the right until it sits on top of the symbol next to the [. In the case of the data processing mode the symbol would be 0. In the case of Apple's Control Code equivalents for the ASCII symbols found on pages C-3, C-5, and C-6, you should move the cursor one space to the right of the Control Code equivalent (i.e., to the right of the ~ in the case of the 10 cpi Control Code equivalent).
13. Load the "CONTROLV" file again and press "RETURN". You will see a shaded V appear in front of the symbols (applies to those on C-4; in the case of the data processing mode the V will be in front of

the 0) or to the right of the symbols (in the case of those on C-3, C-5, and C-6; for example, the V should be to the right of the shaded ~ in the case of the 10 cpi control character).

14. Continue doing this for the rest of the glossary. It is somewhat tedious, but the results are rewarding.
15. When you have completed embedding the [V] function for all the glossary symbols you have created, save the file. I saved my glossary to the Master Disk, although according to the Apple Writer //e manual, you are not supposed to save files to the Master Disk. I think this is one of the exceptions to the rule. To save the file you use the [S] command.
16. Once the glossary of embedded printer commands is saved to the disk, you use the [Q] E (followed by the name of your glossary file) whenever you want to use your "SPECIAL" glossary. That is, at the beginning of each word processing session, after booting the Apple Writer //e Master Disk, you would load the new glossary file using the [Q] E sequence and the name of the new glossary file. You would then insert the disk on which you wanted to work. Refer to page 51 of the Apple Writer //e manual if you are not sure about this procedure.
17. Once the glossary file is loaded, type [G](the glossary function command), followed by your symbol for the command desired. In the case of the data processing mode, the screen will look like this after I type [G] followed by my symbol(D): [G]lossary:D.
18. Press "RETURN". You will then see the [0 appear on the screen where the cursor was last sitting. I think this symbolic glossary of embedded commands is somewhat faster (for a touch typist) than typing the ASCII codes themselves.

I know this process seems long and tedious, but actually, once you master it, it is really quite simple to carry out. I purposely broke down the procedure into small steps, to insure that there would be no misunderstanding and also to make it simpler. I hope this will help some people who, as I, have been struggling to embed their printer commands. I have included my set of embedded symbols below (on the far left) as they would appear in the "SPECIAL" glossary file. The first letter or number on each line is my symbol for the particular printer command. Thus, if I want to go into the correspondence quality mode I would press [G]C or if I want to go into the 6 LPI mode I would press [G]6, etc. Remember that in your "SPECIAL" glossary file the "V" shown after your glossary symbol and the [or Control-character is shaded (i.e., in inverse). Also the [symbol and the Control-character symbol which follows the "V" are also in inverse in your "SPECIAL" glossary file. The inability to show the shading (or inverse) is (hopefully) the only inaccuracy in my reproduction of the "SPECIAL" glossary file.

I did not include the symbol for designating number of lines for page length (ESC-F, page C-4 Okidata manual) as the number of lines would vary and the symbol would be different. I also did not include commands which would not apply to Apple Writer //e (such as the commands for entering and exiting the graphics mode and down-line loadable character generator). As mentioned above in the first section (procedure 7), I could not get the carriage return (ASCII Code CR, Apple Control Code equivalent CR) and ? (end of VFU load sequence) to work. For this reason they were not included in my "SPECIAL" glossary file. The lines with asterisks next to them do not actually demonstrate the command described.

contd.

My "SPECIAL" Glossary File	Definition	Glossary Command
DVEV0	(data processing mode)	[G]D
CVEV1	(correspondence quality mode)	[G]C
tVEV5	(Sets TOF- first line of printing)*	[G]t
6VEV6	(designates 6 LPI)*	[G]6
8VEV8	(designates 8 LPI)*	[G]8
UVVVC	(adds underline to the characters that follow)	[G]U
uVEVD	(stops underlining)	[G]u
NVEVH	(half-dot enhanced printing)	[G]N
MVEVT	(half-dot emphasized printing)	[G]M
mVEVI	(stops emphasized or enhanced printing)	[G]m
SVVJ	(Prints characters that follow as suPscrIPts or stOpS subscrIPts)	[G]S
sVEVK	(stops superscript)	[G]s
BVEVL	(subscrIPt)	[G]B
bVEVM	(stop subscript printing)	[G]b
LVJV	(moves paper up one line)*	[G]L
FVLV	(form feed)*	[G]F
TVKV	(feeds paper to tab position of selected channel number as pre-programmed in Vertical Format Unit)*	[G]T
HVIV	(moves printhead to next pre-programmed horizontal tab position)*	[G]H
pVQV	(releases printer from Print Suppress Mode)*	[G]p
PVSV	(Print Suppress Mode)*	[G]P
VVTV	(begin loading tab positions in VFU)*	[G]V
0V~V	(10 cpi)	[G]0
2V~V	(12 cpi)	[G]2
7V~V	(17 cpi)	[G]7
WV_V	(double width)	[G]W
dVXV	(clears buffer; resets print modes, except for HT,VF,FF, and left margin, to default setting)*	[G]d
IVCRV	(prints data and feeds paper one line without carriage return)*	[G]I

Ⓔ

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GAMES PEOPLE PLAY: Two Reviews

by Leslie Shriner

PARTHIAN KINGS

Parthian Kings, by Avalon Hill, is based on city-state rivalry and is as good a fantasy wargame as any now on the market. While it is not overly complicated, the game definitely has depth. It also has some new features not found in any other fantasy wargame. The game is interesting to play and real strategy is needed to win. There are only a few hindrances that I found while playing the game.

In this game one to four players fight for superiority over five cities. The player must regulate taxes (too many taxes and people pack up and leave) in order to buy an army made up of four different levels of soldiers. Each player has a wizard which becomes more and more powerful as time goes on and he can select from up to eight spells. Magic is a very important part of this game. If used well, it can make the difference between winning and losing the game.

The action is slow when using computer opponents. Each round of play takes about ten minutes to complete. There are two modes of play to choose from: a fight to the finish or one for only a set number of turns (trying to get as many points as possible in that time). The player's turn is divided into segments or "phases" for deployment of troops, spell casting, troop purchase, etc. With four players this can take a mighty long time.

The graphics are good. Unlike some wargames, graphics are not forgotten in Parthian Kings. Each type of soldier has a different shape and the terrain is very clear and colorful. It is easy to identify mountains, trees, fields, lakes, etc. The graphics, in my opinion, make up for the length of time it takes to play the game. Of the many fantasy wargames I have seen, this one has the best graphics.

There is very little sound. I didn't find this to be a drawback as sound is not really necessary in a war game. The sounds it does have are simple and well-placed (fighting and shooting arrows).

One of the best features of this game is that a player can create his own army. Depending on how many special features one wants a soldier to have, troops can cost very little or they can add up to quite a sum. Features are strength, armor class, movement and firing ability. The secret of winning this game is in building a good army. Deployment of these forces is also important. Strategy goes a long way but, let's face it, you can't win with an inferior army.

The documentation is complete but some parts are difficult to understand. The game comes with an instruction book of 20 pages. The sections that seem the most difficult to understand are for building an army and deployment of troops. By reading, trying to play, then re-reading the manual, the game becomes much clearer.

Parthian Kings runs on any Apple II or //e with 48K and one disk drive. Commands are entered from the keyboard with simple, one or two key instructions.

I enjoyed this game. The slowness of play was offset by the graphics and ease of command-entry. Other than the speed, my only real complaint about the game is that it is hard to tell who is attacking whom. If one pays close attention, he can usually tell; but not always. This is a fun game to play and at a list price of only \$24.95 it is worth the cost.

SPARE CHANGE

Spare Change by Broderbund Software is a cute, non-aggressive game which has good graphics and can become addictive in a hurry. In this original hi-res action game, you own an arcade and the stars of your most popular game are loose and are trying to steal enough tokens to retire. You can, for a token, distract the Zerks. They can't resist the jukebox, popcorn machine or telephones. In the meantime, you must fill up two hoppers with tokens. When you fill the hoppers you can go on to the next level. After every four levels the player gets what are called "Zerk Shows" at which time one can see any five halftime cartoons he wants.

The game begins easily enough, but speeds up as you reach higher levels. The level of difficulty can be changed by re-setting the Zerks' characteristics. On the easiest settings, one can easily reach the 20th level or higher while raising the attributes to maximum makes the first level a real challenge. So no matter what level game player you are, this game will stay interesting and fun to play for a long time. Another thing that makes this game so playable is its responsiveness to the keyboard and joystick controls.

The graphics and animation in Spare Change are just about the best I've ever seen. The animation has no flickering at all and the whole thing is very colorful and fun to watch. Between levels are a series of cartoons which are very appealing and humorous. As just about every part of the game is animated, the Zerks move in a variety of ways when they run, toss tokens, dance, get mad, etc.

The sound is excellent. Unlike many games, Spare Change has great sound effects as well as good graphics. The jukebox plays a variety of tunes and the popcorn machines and telephones are very realistic. Each of the Zerks' activities (moving, kicking, tossing, etc) has its own sound. I have never played a game with such good sound effects. There is also a sound toggle for loud, soft, and off.

The documentation is good. Included in the instructions are details on all special features. The instructions for the game are concise and easy to understand. Broderbund Software always has had complete documentation and this game is no exception.

Spare Change runs on any Apple II or //e system with 48K and at least one disk drive. It is joystick or keyboard operated. The game works well with a self-centering TG-type joystick, or an Atari-type joystick with a Wico adaptor because reaction time is a little better than with a non-centering joystick. It does work quite well with a non-centering joystick though, especially after some practice. The keyboard option also works fairly well after some degree of practice. There is even an option to change keys if the player doesn't like the keyboard set-up they offer.

Some other features I liked are that the player can save his high scores, restart game or change options during game play, see any cartoon desired at the "Zerk Show" and use the pause feature to cut down on tiring.

This game is very well written. It is creative and basically non-violent. The graphics, animation, and sound are about the best I've seen. Because it has such a wide range of level settings, young children and advanced gamers alike can have fun playing it. This is one of Broderbund's best releases.

GAME VIEWS

by Jeff Bruner

Got any cheats or patches for any of your games? Give me a call at (301) 977-0835 or WP1738 on the ABBS so I can pass them on to other readers. Thanks! Also, I know you ALF people are out there, so let me know.

Name: A.E.
Maker: Broderbund
Price: \$29.95

First there was Choplifter!, then Serpentine, and finally, A.E. The people at Broderbund just seem to get better. How they plan on outdoing A.E. is beyond me.

Although designed as a pollution-fighting robot, the A.E. has managed to slip through quality control into the unsuspecting universe. The player's job is to control this nuisance. Of course, this is easier said than done. The firing mechanism in A.E. is difficult. To fire, press the button. To make it explode, you have to release it. Well-timed and placed shots can kill the A.E. and give you a "perfect attack". You must have three perfect attacks before you can move onto the next level.

The graphics and sound in A.E. are great, and the game gives you the urge to play "just one more game". This game is in the top of its class. A four-star product.

Name: Wizmaker
Maker: ARS Publications
3710 Pacific Ave. #216
Venice, CA 90291
Price: \$20.00

Wizmaker is a utility program for your Wizardry and Knight of Diamonds characters. If you are a Wizardry fanatic who doesn't believe in cheating, stop reading right here. ARS Publications, the distributor, even says in their advertisements, "CHEAT! Make yourself a 1000th level superhero!" Honestly, I believe that's going a little too far. After using Wizmaker, I discovered that a 250th level fighter strikes for 120 hit points - the only disadvantage is that s/he (yes, ERA has affected Wizardry) is now practically invincible.

Some of the things you can adjust with Wizmaker are age, experience points, gold, attributes, levels, and spells. The only thing that the program does not have is the ability to change your characters' possessions. Other than that, your new characters on Wizmaker should have a merry time romping through the Proving Grounds of the Mad Overlord.

CHEATS! (aka, patches)

Before you do these, you must BLOAD the game and enter the monitor (CALL -151).

Cannonball Blitz
6315:60 (harmless cannonballs)
3C01:EE (infinite number of men)
7FDG (starts game)

A.E.
EE1:# of men you
want
7FDG (starts game)

Alien Ambush
4608:20 12 46 EA EA (auto-fire)
60E9:# of ships (max. 80)
4000G (starts game)

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WIZFIX FIX

by Bill Guion

Wizardry buffs got a real treat in the August 1983 issue of inCider magazine. That issue included a program called WIZFIX, billed as a utility that enables you to examine your Wizardry characters on a backup disk and change their characteristics.

WIZFIX is the end result of a lot of work by the author, Kerry J. Lantz, who investigated a backup character disk until he was able to decode the characteristics information. WIZFIX is the result of his remarkable effort.

My son, the Wizardry player in our household, and I typed in WIZFIX, carefully following the directions in the article. After proofreading what we had entered against the listing in the magazine, we then proceeded to the acid test, running against a backup disk. Things seemed to work pretty well. There were two problems with the program, but a little investigation of the input buffer shed clues to the problems and soon led to fixes.

There have been a number of messages left on the WAP bulletin board relating to WIZFIX, most of them asking for help to make it work. Since we have been successful, I decided to share our experiences with the rest of the WAP membership in the hopes that someone else will benefit from what we learned.

The problems were associated with the characteristics "experience" and "hit points." In both cases, the original WIZFIX didn't utilize all of the bytes it should have. In the following paragraphs I will explain what was missing and provide a copy of the changes we made to fix each problem. (In the program statements, additions and/or changes are shown in UPPER CASE, and the original text is shown in lower case.)

Hit Points. As WIZFIX was designed, the hit points are calculated from byte 134 (present hit points) and byte 136 (maximum hit points). This limits the maximum value for either of these characteristics to 256, but hit points can exceed this value. It turns out that each of these items is really a two byte parameter, present hit points being contained in bytes 134 (least significant byte) and 135 (most significant byte), and maximum hit points in bytes 136 and 137.

This oversight needs to be accounted for twice, once in line 250 where the hit points are read, and again in lines 525 and 526 where the updated values are put back in the buffer.

```
250 le = peek (base + 132) + ( peek (base + 133) *
    256):ph = peek (base + 134) + PEEK (BASE + 135) *
    256:th = peek (base + 136) + PEEK (BASE + 137) *
    256:ac = peek (base + 176): if peek (base + 177) >
    0 then ac = (ac - 256)
```

```
525 k = peek (base + 136): IF K < 246 then poke base +
    134,k + 10:poke base + 136,k + 10: POKE BASE +
    135, PEEK (BASE + 137): RETURN
```

```
526 POKE BASE + 134,K - 246: POKE BASE + 135, PEEK
    (BASE + 137) + 1: POKE BASE + 136,K - 246: POKE
    BASE + 137, PEEK (BASE + 137) + 1: return
```

Experience Points. The situation here is similar to the above, with an added twist. The original WIZFIX used four bytes to calculate the experience points.

Bytes 124 and 125 are the least significant syllable, and bytes 126 and 127 are the most significant syllable, the syllables being added after multiplying the most significant syllable by 10000. Once again, there is more to include. Bytes 128 and 129 are also a part of the experience points, this syllable being multiplied by 100,000,000 before being added to the others. Here, also, the changes appear in two places, lines 244 and 247 where the experience points are being read, and lines 540 through 543 where the updated values are put back in the buffer.

```
244 E5 = PEEK (BASE + 128):E6 = PEEK ( BASE + 129)
```

```
247 EP = EP + ((E5 + (E6 * 256)) * 100000000)
```

```
540 if peek (base + 126) < 254 then poke base + 126,
    peek (base + 126) + 1: RETURN
```

```
541 POKE BASE + 126,0: IF PEEK (BASE + 127) < 254 THEN
    POKE BASE + 127, PEEK (BASE + 127) + 1: return
```

```
542 POKE BASE + 127,0: IF PEEK (BASE + 128) < 254 THEN
    POKE BASE + 128, PEEK (BASE + 128) + 1: RETURN
```

```
543 POKE BASE + 128,0: POKE BASE + 129, PEEK (BASE +
    129) + 1: RETURN
```

If you are satisfied that you have entered the original program correctly, try making the changes described above and see if that helps your problems. Of course, if you have problems with something other than "experience" or "hit points", these fixes won't help you.

Other Possible Problem Areas. If you are still having problems, or your problems are not related to the above fixes, there are other things you might try. The author chose to use some parameter names which might be a source of problem. For instance, he uses 0\$(letter 0) for the alignment (good, neutral, or evil) and he uses 0 (also the letter 0) as the index for 0\$. Check lines 310 and 605 to see if you typed 0\$(0) or 0\$(0) (zero). It should be 0\$(0) (letter). There are other places where you may have confused the letter 0 with the number zero, so double check this possibility.

If you are not reading your backup disk properly, you may have a mistake in line 905. This line pokes a short machine language program into locations \$300 - \$305 (768 - 773) as well as modifies some of the parameters DOS uses when reading the disk. A typing error here can be disastrous.

Finally, the article mentions the necessity of adding line 912 if your Wizardry disk is the Proving Grounds. This line is not in the listing, only in the text of the article.

Summary. I do not know much about Wizardry, so the testing that has been done on the modified WIZFIX may be incomplete. But the program does read the backup disk, modify the parameters, and write them back to the disk. Furthermore, we have been successful in transferring the backup disk to the scenario disk and going adventuring with the modified characters. ☞

FALL DISK ROUNDUP

by Robert C. Platt

Here are the initial results of the Documentation Team's summer efforts. They include a brief description of each program on the disk, known bugs, and hints on using the disk. Documentation for the remainder of the WAP Library can be found on pages 12 to 34 of the New Member Reference Book.

Each program has been assigned a unique serial number enclosed by brackets { }. Programs are referenced in the subject index by this number, but it is not a part of the program name on the library disk.

DISK 12: GAMES VI (Reviewed by V. Khera)

- {12.1} AIR DEFENSE - A lo-res shootup game (I).
- {12.2} AIRPORT - Use keys 1, 2 and 3 to guide an airplane through a slot on the left side of the screen. lo-res graphics (I).
- {12.3} APPLE KINGDOM - You are the leader of an agrarian community and must decide how to distribute and maintain the wealth of your "nation".
- {12.4} BOUNCING BALL - A ball bounces around the lo-res screen as random colored lines appear and disappear. (I).
- {12.5} CHECKERS - A lo-res checkers game with one level of difficulty.
- {12.6} DODGEBALL - One or two players try to avoid up to ten lo-res balls. (I, paddles)
- {12.7} FLYING SAUCER - A lo-res game in which two players use paddles to move and try to shoot each other. (I)
- {12.8} FOOTBALL - Text game. Enter plays by number for offense and/or defense. One or two players or the computer can play against itself. Contains some errors.
- {12.9} GO BACK - Guide a black dot through a hole in a moving obstacle with paddles. Two players. Lo-res graphics (I).
- {12.10} GOLF REVISED - Text golf game simulation of 18 holes. Choose clubs and swing strenght.
- {12.11} GOSOEM - Game Oriented Study of Economics Management. Enter data for two products such as cost, advertising, etc. and try to make money. Error may occur if numbers get too high. (I).
- {12.13} GUNNER - Text game to determine a gun elevation required to destroy an enemy target.
- {12.14} HANDBALL-PONG - Lo-res pong for two players. Handball is same as pong. Paddles on the screen change size (I).
- {12.15} LUNAR-120 - Land a spacecraft on the moon by selecting a burn rate for fuel. Text. Not so easy.
- {12.16} LUNAR-500 - Lo-res game. Burn fuel to land on a flat area of the screen.
- {12.17} MINI TREK - Go around trying to kill the

Klinggons ... numbered commands (I).

- {12.18} POKER - Bet against the Apple, who unfortunately does not always recognize a win! Text.
- {12.19} SCRAMBLE - Make your best attempt to descramble words. Take as many tries as you need (I).
- {12.20} SPACE NAVIGATOR - Lo-res game. Guide your blue dot across the screen avoiding the white dots. (I, paddles required).
- {12.21} SUPER HOCKEY - Text. Enter type of shot and where it goes. Summary at end of game.
- {12.22} TV TRIVIA - Asks questions about old TV shows. If you answer incorrectly, you do not get a second chance, nor is the correct answer provided (I).

(I) indicates an Integer Basic program.

DISK 13: GAMES (Reviewed by Doug Waters)

- {13.1} BACKGAMMON - By Mr. Wizard. Works but complex to play.
 - {13.2} BLACK BOX II - A 15 x 15 reactor with randomly placed atoms. You control the particle gun which you shoot at atoms which you cannot see. A reaction starts when you hit an atom. The object of the game is to locate the atoms by using the least energy. The game offers 10 levels of difficulty.
- To play, use the I,J,K and M keys to move the cursor. Use RETURN to fire. Press 0 when finished to see how many energy units were used and the percentage of atoms found. Firings use 1 unit, and incorrect guesses use 3 units.
- {13.3} BOWLER - A good color graphics game which takes 30 seconds to play. The ball moves quickly across the screen so quick reflexes are needed. This game may be too fast for some.

- {13.4} CONNECTION - A Basic connect 4 game. The object is to get 4 blocks in a row, horizontally, vertically, or diagonally before your opponent. The game is played on a 7 x 7 grid, by two players.
 - {13.5} CRIBBAGE - Requires a prior knowledge of the game to play.
 - {13.6} DOG STAR - An adventure game. (Would someone with the instructions, please contact the librarians.)
- FORT - Another name for Dog Star Adventure.

- {13.7} ORBIT MATCH - (requires paddles) by Gene Broadway and Roger Clayton. You set the thrust and direction of your spaceship using the paddles. The object is to dock with a satellite without crashing into the Sun or the edge of the screen.
- {13.8} SHOOTING GALLERY - Fire your Cozar gun at items that float slowly across the screen. The 1 key fires. You get 10 points for each hit, with 300 needed to end the game.

- {13.9} SUB KILLER - (requires paddles) by Bob Mini-
- contd.

litch. Drop depth charges and detonate them to destroy submarines. A good test of hand/eye coordination. You have 30 depth charges per game with your score based upon the number of subs hit.

{13.10} SUPER NIM - The object is to remove from 1 to 3 pieces from the display on your turn so as to take the last piece off the board. The computer's skill level and the number of displays can vary. Theoretically, you can win every game. Fun communicating with your Apple.

{13.11} DEVILS DUNGEON - A text adventure game. While you are in an underground dungeon, you must kill some monsters to get the gold. Each level has 16 rooms posing a variety of problems.

DISK 19: COMMUNICATIONS (Reviewed by Tom Warrick)

WAP Disk 19 contains programs written for the D.C. Hayes Micromodem II, one of the first and most widely-used modems for the Apple. The programs must all be modified to work with other modems or serial card/modem combinations. Also, several of the programs duplicate programs that come on a disk with the D.C. Hayes Micromodem II; the programs on that disk are in the public domain and available through WAP as WAP Disk 116.

{19.1} BINARY TRANSFER - Lists memory in hexadecimal form suitable for downloading by another Apple directly into its memory.

{19.2} CBBS FROM BILL HYDE - Automatically dials one of several computer bulletin board systems (CBBS) around the country. Many of these BBS numbers are probably no longer working. Despite the name, this is not a bulletin board program.

{19.3} DATAMOVER - A four-sector binary program that loads at \$800. I could not get it to work.

{19.4} DEMO PROG 1 FOR MICROMODEM - Describes how to dial telephone numbers manually on the Micromodem.

{19.5} DEMO PROG 2 FOR MICROMODEM - Describes how to dial telephone numbers under program control.

{19.6} DUMB TERMINAL PROGRAM - Makes the Apple a dumb terminal for use in calling other computers or bulletin boards. A predecessor of the DUMBO program on WAP Disk 116.

{19.7} MICROMODEM II AUTO DIALER - Same as CBBS FROM BILL HYDE with a few additional phone numbers.

{19.8} MICROMODEM II SELF-TEST, MICROMODEM SELF TEST PROGRAM, and SELF TEST PROG MICROMODEM II: Essentially all the same, these programs test the hardware and firmware of the Micromodem. Also available on WAP Disk 116.

ERRATA: Line 110 and 120 of the MICROMODEM SELF TEST PROGRAM should read:

```
110 PRINT:PRINT"UNPLUG THE MICROCOUPLER FROM"  
120 PRINT "THE TELEPHONE LINE"
```

{19.9} MICROMODEM PROGRAM EXCHANGE - Despite its name, this program exchanges text files with another computer. The other computer must have its own software to send or receive text files.

{19.10} MICROMODEM STORE & FORWARD - Allows very short messages to be sent to the Apple and then forwarded to another computer after an interval chosen by the sender. Also on WAP Disk 116.

{19.11} MICROMODEM TEXT TRANSFER - A short but difficult to use program for transferring text files to another computer. The other computer must have its own software to send and receive text files.

{19.12} MODEM CHESS - Allows two people to play chess via modem. Only one player needs to have this program; other computer need not be an Apple. A pretty useful program for this sort of thing. Can also be used without a modem by two players at the keyboard.

{19.13} PICK UP PHONE IN ANSWER MODE - Allows the Micromodem to answer the telephone and turn on its carrier. Duplicates the "IN#"slot command in the Micromodem firmware. Also on WAP Disk 116.

{19.14} PICKUP - Same as previous program but missing copyright notice as required by law. Also on WAP Disk 116.

{19.15} TELEPHONE ALARM CLOCK PROGRAM - If you have an Apple clock card in addition to a Micromodem, this will allow you to set a time for the Micromodem to call a pre-selected number and play a distinctive series of tones. Also on WAP Disk 116 as "ALARM."

{19.16} TELEPONG - Allows two players with Apples and this program to play Pong with each other.

WAP: COMMUNICATIONS 1: Displays a greeting and a CATALOG.

DISK 23: GAMES VIII (Reviewed by Doug Waters)

{23.1} BATTLESHIP - (paddles required) The object is to sink the Apple's battleships before it sinks yours. Each side has 5 ships. One player.

{23.2} FOUR - by Jeff Mason. Same as Connect 4 on Disk 13. The object is to get four squares in a row. Two players.

{23.3} GROCERY STORE - by Jeff Mason. Guess a product in a grocery store from the first letter of its name. Don't be fooled by the number of blanks on the screen.

{23.4} HANGMAN - by Jeff Mason. A classic hangman game, where you must guess the word before losing your life.

{23.5} J MASON MENU - A menu for accessing some of the other programs on this disk.

{23.6} THAT'S RIGHT - by Jeff Mason. Select the true statement from among the five presented. Includes a challenging set of questions.

{23.7} TWENTY QUESTIONS - by Jeff Mason. Complete these cliches by matching verbs and phrases.

{23.8} US PRESIDENTS - by Jeff Mason. Arrange the presidents according to the chronological order of their presidencies.

{23.9} TROLLS GOLD - Move your man without being eaten by the troll.

{23.10} COLOR WUMPUS III - A text adventure game. You are in a 20 room cave hunting wumpuses with arrows. You can fall into a pit, be carried away by bats, or hit with your own arrows. Good luck! You can either shoot or move to a new room on each turn.

{23.11} COUNTRY DRIVER - Steer your car through a curving road using a paddle. Depending upon the difficulty level selected, you get from 2 to 4 minutes of

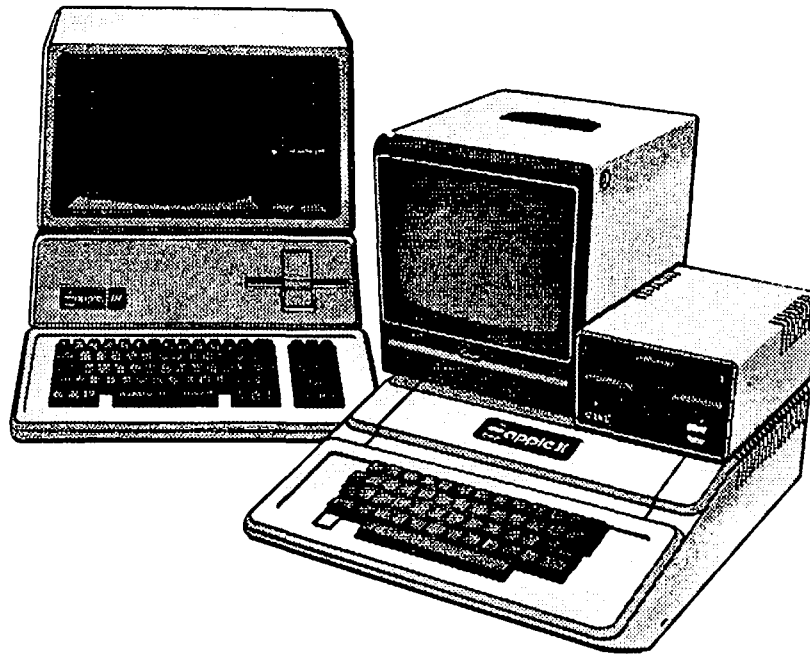
contd.

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acing challenge. The Apple tells you how often you finished or crashed for your score.

{23.12} DODGER - You can either move or shoot at up to 50 bad guys.

{23.13} DOGFIGHT - A two player aviation game. (Paddles required)

{23.14} GOLF - After selecting which club to use, the Apple will tell you how far you are from the hole.

{23.15} JIG-SAW - Solve a 9 piece puzzle. The blocks are numbered, but start with 1 in the upper left, 3 in upper right, and 9 in lower right.

{23.16} JUGGLE - (paddles required) Try to keep the balls in the air. You control the number of balls, with 10 points awarded per bounce.

{23.17} MARTIAN INVASION - A basic invader game with 10 skill levels. Shoot you lazer at the aliens before they stomp on you upon landing.

{23.18} PORK BARREL - You vote on bills and decide on advertising. Up to 4 players can serve a two year term. (Note: putting too much money in one area will result in an illegal quantity error in line 5250 -- any fixes?)

{23.19} MASTERMIND - by Robert J. Davis. The object is to guess 7 colors. Five skill levels offered.

DISK 25: UTILITIES VII (Reviewed by Ross Lenet)

This disk is primarily a collection of programs that show off the Apple's graphics and sound capabilities. The title "Utilities" is a bit misleading - only a couple of the programs fall into this category. Anyone fascinated by computer graphics would enjoy many of the programs on this disk, but children would be especially likely to enjoy them. With a few notable exceptions, the on-screen documentation for the programs on this disk is rather poor. Trial and error is the order of the day.

{25.1} WAP: GRAPHICS 9 - This is the greeting program and displays the disk's catalog.

{25.2} GRANDAPPLE - This is a cute little program that uses the hi-res screen and sound to simulate a clock's "tick-tock", alarm and chimes. It can be used as a timer.

{25.3} DISPLAY COLORS - This program does just what the title says: it displays the Apple's lo-res colors in a right-to-left scrolling fashion.

{25.4} BOX 3D - This program displays boxes of various sizes and shapes on the hi-res screen.

{25.5} BOX PADDLE - Use a paddle to move a box along the hi-res screen.

{25.6} HIRES BIG BOXES - This program with the slightly misleading name draws rectangles of various sizes on the hi-res screen to create some interesting designs.

{25.7} HIRES BOXES - This is virtually identical to the previous program.

{25.8} HIRES CHAR TABLE GENERATOR - This program fails to perform the activity implied by its name, because it calls a binary program not present on the disk.

{25.9} CHAR GEN HELP - This program gives a source for appending character sets created by the previous program to user programs.

{25.10} SUPEROSE III - This is a graphics program that creates floral designs. The "A" in the program's instructions stands for "automatic", and the "M" stands for "manual". When using the "M" option, you must type in two numbers separated by commas.

{25.11} SUPEROSE II - This is similar to the previous program but creates different designs.

{25.12} PAPER TIGER HIRES DUMP - This program dumps the hi-res screen to the IDS-440 printer. (Warning: Use this program with a different printer at your own risk.)

{25.13} PERSIAN RUG - This program creates a beautiful, sparkling picture of a Persian rug on the hi-res screen. This is perhaps the nicest graphics program on the entire disk.

{25.14} CHESS CLOCK - This program uses the lo-res screen and sound to simulate a timer for a game between two persons.

{25.15} HIRES-SKETCH BIN - This program purports to save hi-res pictures to disk but does not seem to work properly. Before it crashes it succeeds in telling where to obtain documentation.

DISK 27: MATH (Reviewed by V. Khera)

{27.1} FOURIER SPECTRUM ANALYZER 10 - Based on Dec. 1979 Byte article. Input: data, beginning and end coordinates, scale. Output: frequency in radians and Hertz, amplitude/modulus.

{27.2} FFT - A machine language fast fourier transform routine.

{27.3} FFT TEST - Demonstration of FFT routine written by Bruce Field.

{27.4} FFT.SCR - Source code for FFT in S-C Assembler format.

{27.5} FFT.INFO - FFT documentation.

{27.6} EC=ERFC(X) GOSUB 8/22/80 - Calculates the error function and its complement, used in heat flow and other boundary value problem solutions. The formulas used are: $ERF(X) = \frac{2}{\sqrt{\pi}} \int_0^X e^{-t^2} dt$ the integral from x to infinity of $EXP(-X^2)$ Delta x. $ERFC(X) = 1 - ERF(X)$.

ERFC GOSUB REMARKS - Documentation on the above program.

DISK TO WAP 8/23/80 - Same as ERFC GOSUB REMARKS.

{27.7} GREATEST COMMON DENOMINATOR - Uses Euclid's algorithm to calculate the GCD.

{27.8} EIGHT QUEENS PROBLEM - Calculates solutions to the classic chess problem. Text. Slow.

{27.9} BISHOP CALCULATES PI - Calculates the value of pi up to 1000 digits. From Micro, No. 5, p. 15 (Aug 1978) (I).

{27.10} PRIME NUMBERS - Calculates primes up to 32766 very quickly (I).

{27.11} GRAPH I - Prints a bunch of asterisks. Uses MID\$ function. To use, add a line with a value for B\$.

contd.

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{27.12} SQUARING BINOMIALS SUMMONS - Does a coin flipping simulation and a binomial squaring drill. The program provides the correct answer after two incorrect responses. At end, student gets a performance summary. (I)

{27.13} COIN TOSSING SIMULATION SUMMON - See above. (I)

{27.14} HEADS / BINOMIAL - See above (I).

{27.15} HISTOGRAM - Reads data statements and produces a histogram sideways. Adjusts to some strange scale. Text.

{27.16} PYTHAGOREAN TRIPLES - Calculates Pythagorean triples and draws them in hi-res graphics. Also prints the length of each side.

{27.17} DEMO OF SPEEDY MATH - Satire of the flashing-light-know-it-all-computer-in-calculation-mode stereotype.

{27.18} APPLE PI CALCULATED - Same as BISHOP CALCULATES PI (I).

{27.19} GAUSS - JORDAN - Solves simultaneous equations using Gauss-Jordan elimination method.

{27.20} ANGULAR DISTANCE - Computes angular distance between two points on a sphere. To use, enter the latitude and longitude of each point.

{27.21} ELEMENTARY MATH - Uses lo-res graphics to drill in simple addition (I).

{27.22} UNIVERSAL BASE CONVERSION - Converts numbers between bases 2 and 16.

{27.23} SHELL METZNER SORT - Standard Shell sort routine.

{27.24} FUNCTION PLOT - Lo-res plot of a function.

{27.25} POLYNOMIAL REGRESSION PLOT - Lo-res. No remark statements. Answers presented as variable = value. E.g. B(1)=0 gives mean and standard deviation.

{27.26} BAR GRAPH GENERATOR - Creates a lo-res bar graph of up to 19 bars scaled to fit the screen. (I).

{27.27} MATRIX OPERATIONS - Adds, subtracts, multiplies by a scalar or multiplies by another matrix. To use, enter the matrix elements and the dimension of the matrix.

{27.28} MATRIX INVERSION - Calculates the inverse of the input matrix. Must input a square matrix.

{27.29} HEX/DEC CONVERSION CHART - Prints values in hex increments of \$100 and their decimal equivalents. Then prints values and equivalents of \$00 to \$FF. (I)

DISK 100: UTILITIES A (Reviewed by Richard Langston II)

{100.1} LHS RECST VTOC - Lawrence Hall of Science Reconstruct Volume Table Of Contents. This program checks a disk for errors in the VTOC, or sector allocation. It corrects any errors it finds. If you have any HELLO files 99 sectors long, or three line programs that occupy 67 sectors, this program will fix them.

{100.2} LHS DISK MAP - Shows used, unused, and damaged sectors on the lo-res screen.

{100.3} LHS CATALOG - An improved catalog that shows

file type, length in sectors, binary start address, and length in bytes. Information can be in hexadecimal or decimal and can be displayed on the screen or a printer.

{100.4} FRE(X) - Displays the number of sectors free on a disk.

{100.5} MASTER CATALOG - Helps keep track of your program library. Catalog your disks into this program and it will sort them by name, type, or volume. You can print the listings to the screen or printer, and you can add or delete entries. See WAP Vol. 5, No. 8 for information about using it with the NEC 8023 printer.

FIX SECTORS - Same as LHS RECST VTOC.

{100.6} AMPER INTERPRETER - Provides PRINT USING and other text formatting routines using the ampersand (&). Run PRINT USING AMPER-DEMO for more information.

{100.7} TAPE INPUT SPEAKER'RNTE and TAPE LOADING AID - Make loading tape programs easier. Since I don't use tapes, I could not test these programs.

DISK 102: GAMES A (Reviewed by Richard Langston II)

{102.1} BLACK BOX - An Applesoft text game.

{102.2} BLACK HOLE (by Dick Johnson) - A lo-res Integer game. Escape from the black hole by avoiding its inhabitants.

{102.3} CARIBBEAN CRUISING - Use your paddle to steer your hi-res ship around the islands.

{102.4} CONCENTRATION - An excellent lo-res Integer basic version of the popular game. Select squares with the paddles.

{102.5} DIGITAL CLOCK - Type in the time and sit back to watch your Apple display the time in big lo-res numbers.

{102.6} HORSE RACE - A day at the races including betting, odds, and a simulated horse race.

{102.7} I AM BUDDA - Ask the computer a question, get an answer.

{102.8} IT'S A SMALL WORLD - Listen to the Apple play this tune.

{102.9} MAGIC CAVE - Avoid being captured by the forces of evil and escape with the treasure. Use the keyboard to find your way through the lo-res maze.

{102.10} NO MIS - Computer "Simon."

{102.11} REVERSE - A number game.

{102.12} ROM THE ROBOT - Control ROM the Robot. He will climb, walk run and do other interesting maneuvers on the lo-res screen.

{102.13} SOUND DEMO - A variety of music and sounds.

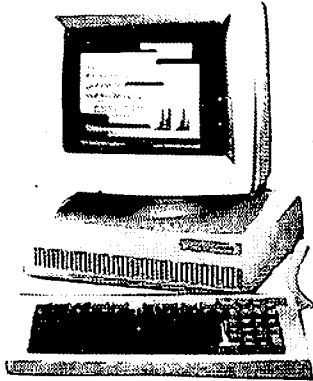
{102.14} DOG FIGHT - Hi-res battle in space age jets. Paddles needed.

{102.15} FIFTEEN GAME - A text screen version of the 15 cent hand game. Arrange the 15 numbers in order in the 16 squares.

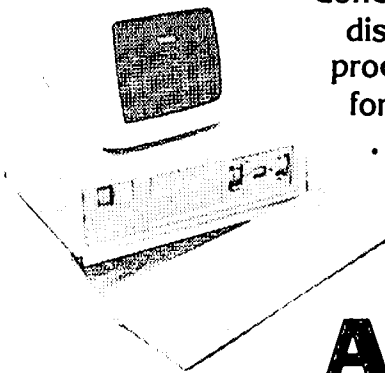
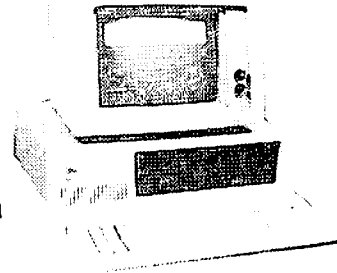
{102.16} SMALL MARQUEE - Guess the names of classic movies with all vowels and spaces removed.

contd.

We have them all.

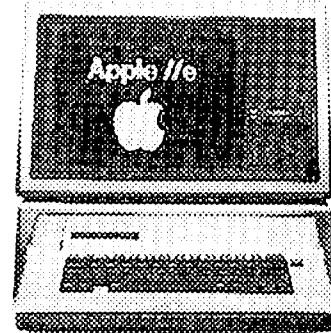


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{102.17} COMPUTER HANGMAN - An excellent hi-res adaptation of the pencil and paper game.

DISK 105: FIG FORTH/UTILITIES
(Reviewed by Richard Langston II)

FIG-FORTH 78 Forth Interest Group Forth is implementation of the popular Forth language for a 48K Apple. Only one disk drive is needed to use this language, but two are supported. Forth has been used to write operating systems and major software for other computers, such as the IBM PC. Forth is a "stack-oriented" language; that is, operations are performed on two first in-last out data structures called stacks, similar to the Apple's 6502 stack. The major parts of the language are the two stacks (the Data Stack and the Return Stack) the Dictionary, and the Disk Screen Area. The disk includes extensive documentation describing each of the Forth commands (called "words"). Additional information on the Forth language for the Apple can be found in Bill Wurzel's "Speaking of Forth" articles in WAP January 1983-July 1983 and Bob Platt's "A Page From the Stack" article in May 1983 WAP. For an interesting look at Forth and other languages, read Jerry Pournelle's article "The Debate Goes On..." in BYTE Vol 8, No 8 (August 1983).

{105.1} APPLESOFT SEARCH/REPLACE - Searches Applesoft programs for designated strings.

{105.2} DATA STATEMENT CREATE - Shows how data statements can be made from disk files.

{105.3} REMINDER GENERATOR - Helps create REM statements in boxes of stars (*).

{105.4} ROWSTER - An Applesoft disk ZAP utility. Read/Write individual sectors. Data on each sector is shown in hex and ASCII.

{105.5} SCREEN DUMP - A variety of screen dump routines for an IDS 440.

DISK 122: IAC 17
(Reviewed by James F. Cumber, Jr.)

{122.1} AUTOMATIC BINGO - This program is a hi-res graphic program that automatically generates and displays Bingo numbers at the rate of one every two or three seconds when "RUN".

{122.2} BEGINNING - You must "RUN INSTRUCTIONS" first in order to find out how to make this program go. When you finally "RUN" this program it automatically does unlimited hi-res plots of random ellipses.

{122.3} BINGO - Basically the same as AUTOMATIC BINGO, except that you must prompt for the next number, rather than having them generated at a rapid, automatic rate.

{122.4} BINGO CARD - This program randomly generates text mode Bingo cards every time you hit "RETURN". If you have a Silentype printer on your Apple, and enter the "PR#1" command before you "RUN BINGO CARD", the Silentype will print a new card every time you hit "RETURN".

{122.5} BLACKJACK - This is a standard BLACKJACK program run in text mode. When it asks you if you "WANT A CARD?", you must respond with "YES", "HIT", "NO", or "STAND". Responding with only "N" always results in a "STRING ERROR" message, and responding with only a "Y" sometimes results in a "STRING ERROR" and stops execution.

{122.6} COLOR MATH - This is NOT the same as the Apple Contributed Program of the same name! In fact,

calling it "COLOR MATH" is a gross misnomer; all it does is display in color lo-res numbers between 0 and 99 that you specify, in the color that you have pre-selected. There is NO math involved!

{122.7} COMPUTER ART - When you follow the directions in the "INSTRUCTIONS" program and then hit "RETURN", this generates automatic, random, hi-res, elliptical "moire" patterns until interrupted by a "RESET". Some may find them more interesting and attractive than the moire-pattern generator that comes on the DOS Master disk.

{122.8} CRYPTOGRAM - Offers automatic creation and practice in solving simple substitution ciphers. In fact, it's one of the best programs I've seen on the subject. Unfortunately, the directions do NOT give you any hints on how to go about solving ciphers (not a word about frequency lists, or examples), so you'd best go to the public library for a book on simple ciphers before you tackle this one. If you are interested in the complete subject, try to find the book The Codebreakers by David Kahn, since it is a relatively complete history of secret codes and ciphers, and tells a great deal about how to solve them.

{122.9} DATA DISPLAY AND SAVE - I could not get this one to run properly at all. What I did see of it looked to be almost useless for any practical data storage, except for very specialized applications.

{122.10} FAST MEM TEST - This one keeps freezing up at "32", and I cannot tell if it's doing its job or not.

{122.11} HANGMAN - This is all fouled up! If you guess a letter that appears in the word, it "hangs" you. If you guess a letter that does not appear in the word, it kicks you out of the program!

{122.12} HANGMAN 2 - This is more like it. It works properly!

HELLO: This is the "BOOT" program for this disk.

INSTRUCTIONS - This program reveals the instructions for the programs "BEGINNING", "COMPUTER ART", "TWINE", and "MUSIC".

{122.13} LAS VEGAS SLOT MACHINE - This program ostensibly recreates a Las Vegas Slot Machine...Unfortunately, it freezes up after each display and you must "RESET" and "RUN" to go again.

{122.14} LIFE - Best and easiest "LIFE" I've ever seen, in that the instructions explain how the game actually works! The lo-res graphics are well done.

{122.15} MOON LANDER - The instructions on this one go by too fast. The graphics (lo-res) are simple and to the point. Unfortunately, I have no game paddles, so I could not check the game operation.

{122.16} MUSIC - This program presumably is supposed to play music. Unfortunately, if you follow the directions in "INSTRUCTIONS" you get:

```
*** > 32767 ERROR
```

```
STOPPED AT 125
```

If you "LIST 125" you find:

```
125 CALL PEEK (220) +256*PEEK (221)+27: REM - SGN  
P LOAD F
```

This (according to a complete program listing) is part of a relocatable tone generator. Why it "bombs" like this I shall leave to those more expert in Integer BASIC and the various PEEKs and CALLs.

{122.17} NEVADA CRAPS - The graphics (lo-res) are adequate to the task, and it would probably be interesting to those with an interest in "Craps".

contd. on pg 57

BYLAWS AMENDMENT

by

Robert C. Platt

Our Special Interest Groups (SIGs) provide a valuable opportunity for the exchange of technical expertise and for small-group interaction. SIGs are the life-blood of the WAP. Although our SIGs have evolved informally, WAP has reached the point where a bit of structure may be useful. In particular, talented potential SIG leaders may have been reluctant to volunteer to chair a SIG because the term of office was open-ended.

Accordingly, the Board has amended the Bylaws to establish annual SIG elections each October. Each SIG will then elect a Chairman, a WAP Journal columnist, and whatever other officers it wishes to serve a one year term.

Elections will be held at each SIG's regular meeting time in October, with two exceptions. The PIG has just held its election and its officers will serve through October 1984. EDSIG will hold its election on November 1.

The Bylaws amendment changes Article X, Section 2 to read as follows:

SECTION 2. ORGANIZATION. Each special interest group shall elect from among its own members a Chairman and Journal Columnist. The election of special interest group officers shall be conducted annually during the month of October, under the supervision of the Board of Directors. Each special interest group shall publish an account of its activities in the WAP Journal.

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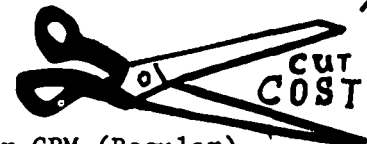
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LISA, FROM A STANDING START

by Lewis H. STRAUSS

Back in the weeds - yes, that's where I was waiting for things to "settle down", but when LISA was announced I couldn't resist and bought one for the office in Washington, D.C. and one for my home 4,500 miles to the west on the Big Island of Hawaii. Installation in Washington by the dealer was easy (I wasn't there!), but the one in Hawaii arrived on my lanai in several boxes like large "unaccompanied minors". With no authorized LISA dealer within 2,000 miles and the LISA 800 support number not operating in Hawaii, it looked very much like a do-it-yourself operation. My total experience was limited to hand-held calculators and a paperback on BASIC. I had never even touched an Apple! The question being addressed here then is, "Can a reasonably well-educated person with no specific computer experience install and operate LISA without any outside help?"

The answer is (I am relieved to say) "Yes". Once one burrows through the myriad boxes of protective wrapping, packing lists, and registration forms, LISA comes out and sits on the desk rather simply, looking like any other computer except for the mouse. There is no problem plugging anything in. The various registration cards are going to ask you questions that even the doctor never asks, one of which is the serial number of your machine, which is under the overhanging disk drive. (It is not the serial number under the keyboard.) A dentist's mirror would have helped. The set-up documentation is, like the rest of LISA documentation, spectacular, down to the color photographs on how to put an electric plug into the wall and where to put one's fingers when opening a box and picking things up. I really can't believe this detail is necessary. There is also a good bit of repetition in that the set-up procedures for LISA itself, the Profile hard disk drive, and the printer have a great deal of overlap, and the same can be said for the documentation of the six onboard programs, each of which comes with its own volume of documentation. Since Apple boasts that all LISA programs operate in the same general way, it follows that there is at least one chapter in common in each of these sets of instructions.

Of course, no computer is without its peculiarities and especially in the early stages of its appearance in the marketplace. Some of them might be amusing to all you pros.

1. When you turn the LISA on or off the procedure it goes through takes several minutes. This has nothing to do with the hard disk drive reaching speed; it is merely housekeeping and self-testing. Since you have to wait until the LISA is off before turning off the Profile, you can't wait until closing time and turn off the LISA and run out the door. You have to wait around until LISA tells you it's okay to turn the Profile off. A similar situation exists with the floppy disks, if you request that they be ejected. It takes 30 seconds or so for the housekeeping procedures to be completed before the physical ejection occurs.

2. When adding outboard items to LISA, one has to go to the Office Systems program in the Profile and tell it what has been added and at which port and then power down and back up again through the housekeeping logic to take the new peripheral on board.


3. The optional keyboard which contains lots of interesting symbols such as the > is not yet operable

with LisaCalc; thus many formulas must be written with more clumsy notation.

4. The number and specific nature of LISA messages is truly astounding. For example if, as in #3 above, you write an incorrect formula, LISA will tell you in plain English that: "The formula you have typed is missing a right-hand parenthesis" or whatever. I am tempted to write to Apple and say, "Okay, you guys, I give up. How many help, warning and stop messages are there really in LISA?" You will understand that with 900,000 lines of internal housekeeping instructions (40,000 in assembly language and 860,000 in Pascal), LISA will definitely keep you on the straight and narrow.

One of the principal and continuing boasts of all computer companies is that their product is "user friendly". But, in the case of LISA, it is actually true. The document handling part of LISA; that is, what would be called in other systems loading programs, opening and closing files, copying to diskette, etc. etc., can all be learned in less than 15 minutes by a person with zero computer experience. And it is absolutely true that none of these functions require the operator to touch the keyboard. Not only that, but LISA will tell you such things as that a disk is unformatted, and if anything goes wrong LISA will tell you what do do about it, how to isolate the offending component, and finally the part number! (LISA can be completely disassembled without tools.) It can be honestly said that the handling of data with LISA is as easy as moving one's wrist and index finger very slightly (provided one's thumb and middle finger are enclosing the mouse at that time).

That is not to say that 30 minutes will suffice for all LISA studies. The individual software programs which are "loaded" by pointing at a "pad" of the appropriate "paper" in the "file cabinet" (Profile) each have their own special functions, and using them requires additional study. How far one wishes to penetrate into the complexities of each program determines the amount of time required. For ordinary typing, another 15 to 30 minutes should take care of the word processing function (LisaWrite). LisaList requires about the same amount of study. LisaDraw is a lot of fun, and to make good dimensioned engineering drawings requires another 30 minutes or so of study. LisaCalc, Apple's version of the spreadsheet program, is naturally the most demanding, and an hour or more could easily be consumed, especially if one intends to write complex mathematical or logical formulas. It is the only program with a help screen, an impressive display of ifs, sins, and, ors, ints, abs, etc.

Whither from here, one may ask? Like most computers, LISA appeared on the scene with a little slow program and insufficient software. The release labeled 1.0 will obviously be updated when someone gets around to converting the remaining 860,000 lines of Pascal instructions into machine code. Three months after the introduction, LISA still does not have a program to drive a modem although it is promised weekly, and no programs to help the financial managers, statisticians, etc. among us. It is reported that 142 companies here and abroad are writing programs for LISA and that they will be merged into LISA's unique program structure by Spring. By that time, my LISA, which resides in my bedroom in Hawaii, will be exploding with abilities. 

THE STRUGGLING DINOSAUR

by C. Swift, Prop.

My life has not been an easy one.

Now that I've gotten that off my chest, I want to explain why. It's not that the world has been cruel to me; quite the contrary. But the very contrariness has been mixed with paradoxes.

First of all, I'm too old to learn new tricks. (Well, not DEAD, you understand, but operating below maximum efficiency...) This has been true for over forty years.

Take the automobile, for instance. I learned to drive with the "old-fashioned" stickshift. Then came the automatic transmission. I learned to tune my car. Then came electronic ignition.

And telephones - without elaborating, let's just say that I miss the operator. (You youngsters won't even know what that means!)

Or electronics - I had just gotten used to "thinking" tubes when some meddler had to invent the transistor. So I learned transistors - whatever happened to them, anyway? Now it's "chips", to my continuing dismay, because to me a "chip" is still something to be avoided while strolling through the pasture.

But, undismayed, I ploughed (today most say "plowed") on. The efforts I put into learning a slide rule went by the wayside when the calculator came along. (Sometimes I get out the old slip-stick, dust it off, and just hold it close.) Somehow it doesn't seem fair to push a button to find the square root...

And then came the HOME COMPUTER. Summoning up all my will power, I went forth into the marketplace and, after much soul-searching and acquiescence to the times, I grasped my checkbook firmly and bought the Apple II+. Three months later the Apple //e came on the market ... more memory, lower case, 80 columns, convenient ports, less expensive, who knows what all?

My life has not been an easy one.

Still undaunted, I have struggled to learn BASIC. Surely that would be a good start. I mean BASIC just had to be "basic". It took me six months to find out that this is a symbolic instruction code. I still don't know what a symbolic instruction code is. Maybe I'll never know. I may be too tired to care!

Now I'm told I need software to gain full use of my "outdated" computer. I'm going back to my checkbook? Not this fossil. Maybe I don't know what a "spreadsheet" is, and I'm certainly dubious about "data bases", but I'm doing just fine, thank you. At least I'm having fun. I wrote a BASIC program that showed me my mortgage company was 31 cents off on the monthly payment. That alone was worth the struggle. (Unfortunately, it seems I owe them the odd 31 cents, so I haven't mentioned it to anyone.)

Young Squirt No. 1 said to me, "You really should have started with Assembly - you wouldn't be wasting all those milliseconds."

Young Squirt No. 2 said to me, "You really ought to learn Pascal - it's the only way to go."

Young Squirt No. 3 said to me, "You really need to

invest about \$800 in software - you don't know what you're missing."

My reply to these Young Squirts is always the same: (Ed. Note: Deleted).

My life has not been an easy one, but I sure am enjoying it!

JOB MART

HELP WANTED

WORD PROCESSING job for typist with Apple II - 5 tapes to transcribe; papers; indices. Final project: 150 pgs; intermediate, approx. 300. Call 699-1690 Friday through Monday. Let's make a deal!

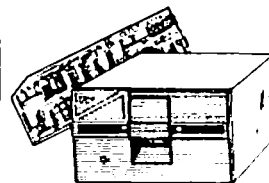
WANTED TO HIRE: Someone to transfer Apple II Data files to a HP 9000 via RS232 (modem or direct). Contact Phil Dinunno, 949-1414.

TYPIST wanted for word processing. Evening or day-time \$3.50 - \$5.00 per hour, on call basis, will train. Call Cara Cira, 468-5718, evenings.

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A PAGE FROM THE STACK

by Robert C. Platt

This issue contains some of the results from our disk documentation project. As you can see from the companion article, our disk library offers both diversity and depth. The WAP Library reached this point only through your volunteer efforts. Please keep those contributions coming! Remember, you get a free library disk for every disk of programs which you contribute. I will be at the library sales desk before the monthly meeting to discuss your contributions and answer questions.

TEMPLATES WANTED

Several members have donated VisiCalc templates to the library. I hope to add at least two more library disks in our Spreadsheet series, but I need a few more templates to round out the disks. (Our contributions included several 1982 tax templates, but we hope to revise them for 1983 in time for April 15.) In addition to club contributions, we have just received from the Comm Center the disk assembled from their VisiCorp exchange seminar. If you are a spreadsheet user, why not donate your favorite template or utility to round out our collection.

Seven disks will premiere this month: Disk 142 Pinball Games, and six new EAMON Adventures.

DISK 142: PINBALL GAMES

Bill Budge's Pinball Construction Set program creates Hires pinball games according to a users specifications. Although the Pinball Construction Set is a copyrighted program, the resulting game programs can be distributed. This disk contains four such games: FLIP IT, MAXX'S MADNESS, SUPER BLAST, and THE MAXX MACHINE.

To play one of these games, merely BRUN the file. The space bar can be used to select the number of players. To start the ball in play, press game paddle button 1. The Apple game paddle buttons are used to operate the left and right "pinball flippers." If you have an Apple //e, the open and closed Apple keys can be used instead of the game paddle buttons.

The QLOADER program is a machine language routine that can be called from Applesoft using the & command. It loads binary files from disk more rapidly than the corresponding PRINT CHR\$(4);"BLOAD" commands. The command has two forms:

```
& "NAME",6000  
& N$,6000
```

where NAME is the name of the binary file in quotes, or N\$ is a string variable that has the name of the file. The number or arithmetic expression following the comma is the starting address of the location where the file should be placed in memory. If the file is to be loaded to the same memory locations from where it was saved, leave out the comma and the value. Note that the value must be in decimal, not hexadecimal. See line 230 in file WAP 142 for a sample. QLOADER was contributed by POM'S, the French magazine for Apple users.

NEW EAMON DISKS

The following descriptions were prepared by Brad Simpson, WAP's resident Eamonologist. These disks are

only a part of those we recently acquired from CALL-A.P.P.L.E. (The E number following the name of each disk refers to its CALL-A.P.P.L.E. designation.)

Disk 196: MERLIN'S CASTLE (E-17) - Remember King Arthur and the Knights of the Round Table? Well, it seems that some nasty little elves deposited you in the castle of King Arthur's wizard. The elves are telling you to find Merlin's "Singing Sword" or else!

Disk 197: HORGARTH CASTLE (E-18) - Fair Rowina has been captured! YOU are her only hope for rescue. (Boy, is she in trouble!) Match wits against the evil Prince Hogarth in trying to regain Rowina for her father (and a thousand gold pieces!)

Disk 198: DEATHTRAP (E-19) - You have been chosen to take up a bet made by one of your enemies. He bet 20,000 gold pieces that you would not be able to survive the cave known to the mountain people as "Death-trap." You had better be a good warrior to go through this one!

Disk 199: THE BLACK DEATH (E-20) - Journey to the Mad Doctor's hideout to find a cure for the plague that enshrouds the land. In spite of the fact that the hideout is well-defended, you go anyway.

Disk 200: THE TEMPLE OF NGURCT (E-23) - Dark tales of fearsome beasts and strange happenings are coming to your ears from travelers who use a little-known mountain pass. They say that anything that could be in a nightmare comes from a temple near there. The King will pay you 5,000 gold pieces (to rid his country of these things) upon the return of a certain gold medallion and any loot you can carry out.

Disk 201: BLACK MOUNTAIN (E-24) - The Chief Guard at the palace has summoned you to the kingdom's Justice Department. Black Bark, the infamous murderer and all-around terrorist is to be tried for his crimes. Your mission is to go after Bark and return him to the palace for trial.

If you decide not to volunteer for this mission, other alternatives await: (1) Find the mayor that Black Bark took hostage. (2) Retrieve the Queen's priceless antiques, dangerous weapons and keepsake momentos which were stolen by Black Bark. (3) Find the weapon, believed to be a mace, used in Black Bark's last murder. (4) Return the evidence that would help convict Black Bark. All in all, a very good adventure, with good tricks and traps.

Disk 202: NUCLEAR NIGHTMARE (E-25) - DOOMSDAY is here, unless you can stop the Mad Scientist who is thinking of using his new weapon to destroy the Kingdom. You must travel to the Mad Scientist's hideout to destroy the weapon, kill the Mad Scientist, and capture the top secret plans.

Note that Disk 181 is required to use these Eamon adventures. Please let us know your reaction to these disks; if interest warrants it, we will add more Eamon disks to the WAP Library.

APPLE II Outperforms IBM PC with 'Supermini' Virtual Memory Technology

If you need to get SERIOUS, POWERFUL, PROFESSIONAL results from your II + /e, for Business or Engineering applications, nothing comes close to MegaTASK PLUS! Modelled on and developed from minicomputer-based commercial timesharing software available to large corporations for thousands of dollars annually, MegaTASK PLUS is primarily designed for the APPLE II owner who demands quick, effective analytical solutions to business problems—and immediate RELIEF from the frustrations and limitations of using hundreds of dollars of mutually-incompatible 'canned' software packages, or WORSE, programming in Applesoft, assembly or Apple DOS!

MegaTASK PLUS is a combined, multi-product hardware-and-software package that provides an instant Virtual Memory expansion, an Applesoft-compatible SuperBASIC, and a series of Business Management packages that greatly enhance the power and value of the APPLE II in both systems programming and business applications areas. MegaTASK and MegaDOS employ multitasking, virtual memory optimization and virtual storage technology, which, until now, were limited only to mainframes and the 'super' minicomputers. The SMARTCHIP™, an Intel 8748 Single-Chip Plug-In Microcomputer, provides sufficient processing power to enable your APPLE II to outperform both the IBM PC and Apple's new Macintosh computer. Yet, all you need to begin is an APPLE II series computer plus one diskette drive. And generally, no modification to your existing Applesoft programs, assemblies and DOS 3.3 files is necessary.

MegaTASK and MegaDOS accordingly generate an enormous enhancement to the power available to the APPLE II owner, specifically:

- Multitasking System processing techniques. (As many as 16 PROGRAMS or TASKS can execute at one time).
- The MegaDOS VS/OS (Virtual Memory Operating System) can place within reach of your system MEGABYTES of Virtual Memory. Largest program size: 8 Megabytes. Largest ISAM file: 451 Megabytes. Largest transparent core array: 75 million FP numbers.
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- Enormously simplified ease of programming—modular, insulated routines, localized variables, ability to pass variable names. Dependence on line numbers totally removed.
- Substantially increased speeds: program execution (3x-10x), file access (6x-10x), alpha data transfer rate (2x-6x), and numeric transfer (>20x).

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- Manuals for MegaTASK, MegaDOS and MEGABASE II in sparkling white binders
- 1 SMARTCHIP™ Memory Management Micro-processor
- Six diskettes PACKED with applications programs, including Mega GRAPH, Mega EDIT, Mega TEXT and several Report Generator examples.
- A One-year Replacement Warranty on all products.
- A 60-day Financial Risk-Free Return Policy. If you are not completely satisfied you can return the product in good condition with proof-of-purchase for a complete refund.
- A 14-hour-per-day telephone Hotline to support you in your use of the entire MegaTASK PLUS series of software packages.

Because of the much larger amount of memory that is available to the Apple's microprocessor through Virtual Memory, the increased processing speed, and the integration of major applications packages PLUS custom modifiability by users who know Basic, MegaTASK PLUS may well surpass or replace most of the worthwhile APPLE II program packages currently available on the market. With the introduction of this product, Quantum Leap has made a commitment to be the technology leader in the area of business software systems for personal computers. This will be achieved through Quantum Leap Technologies' continuing Applications Software Package Series—quarterly diskettes and manuals mailed free to purchasers of MegaTASK PLUS for one year from date-of-purchase.

Quantum Leap software systems are designed to give you, the user, powerful professional and business tools with which to get the day's work done faster, more pleasantly, and more professionally. We live in and exciting age for personal computing. Multitasking and Virtual Memory promises to make any computer substantially more powerful than is possible with currently limited memory (Byte Magazine Editorial, March 1983). Only MegaTASK PLUS offers you these technologies. PLUS, standard Applications Packages to capitalize on them—all available for your APPLE II!

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HIRES GRAPHICS FOR AJ PRINTERS

by Bruce F. Field

At the urging of Lee Raesly I am going to describe a couple of programs to draw graphics on Anderson Jacobson daisy wheel printers. The first program dumps the entire high resolution screen, either page 1 or page 2, to the printer, while the second allows you to plot a single shape from a shape table. I have used a variation of the second program to make overhead transparencies. My shape table consisted of large ASCII characters; I simply typed in what I wanted on the transparency and the printer printed it in large type letters. With only a little modification these programs can also be used for any daisy wheel printer that has a plotting mode (you must be able to move the carriage one "period" width at a time, approximately 1/60").

The first program, Listing 1, which dumps the hi-res screen is very easy to use. Load your hi-res image from disk, or run a program that generates it. Then load and run this program. You will be asked if you want hi-res page 1 or 2 (it will accept no other response) and then tell you to get the printer ready for printing. Press any key when you are ready to start printing. There is no specific escape sequence; however you can always exit the program by pressing RESET.

Be prepared to wait a little bit when dumping the screen. The printer prints at 30 characters (dots in this case) per second. The hi-res screen consists of 280 x 192 = 53760 dots. 53760/30 = 1792 seconds or 29 minutes 52 seconds! In order to speed this up some, the tabbing feature of the printer is used to skip over white space in the plot, so that graphs and things like that often print in only 10 or 15 minutes. You may also gain a slight speed improvement (approximately 20%) by compiling this program with one of the commercial Applesoft compilers that are available.

The second program, Listing 2, is almost as easy to use. This program will take a shape from a standard Applesoft shape table (described on pp. 92-100 of the old Applesoft Reference Manual) and print it on the printer. The shape table containing the shape you want to print should be stored on disk. You do not need to have only one shape in the table as the program will ask you which shape you want printed. You must of course know the shape number of the shape you want. Run the program and it will first ask you for the shape table name. There are several possible responses. The best is to type in the shape table name. You can stop the program by typing "STOP" (without the quotes). Or, if you have previously printed a shape and just want to print another shape from the same shape table, press only RETURN. You will then be asked for the shape number. The number must be in the range of one to the number of shapes in the table, and this range is shown on the screen. Once you answer this question the printer will draw the shape on the screen to verify it is what you want and then prompt you to setup the printer. Pressing any key other than RETURN will take you back to the beginning of the program. Set up the printer so that the print carriage is at exactly the spot on the paper where you want the shape to start, and then press RETURN.

For the more adventuresome I offer the following comments on how the programs work. First the hi-res dump program, Listing 1.

Line 180 GOSUBs to a subroutine that pokes a short machine language program into page 3 of memory. This machine language routine calls another routine that computes the memory addresses of the vertical lines on the hi-res screen. Lines 190 through 280 setup miscellaneous strings and variables, prompts for the hi-res page number etc. Line 350 initializes the printer to the plot mode with the carriage to move 1/60" horizontally and 0/60" vertically after each character (dot) is plotted. Line 370 pokes the hi-res page number so our machine language routine can find it. Lines 380 to 480 consist of a big loop to print each of the 192 lines from the screen. First we compute the memory address of the start of the screen line (program lines 390 and 400) and then we enter another loop to print each of the 40 bytes in the screen line. Here it gets a bit tricky. We get a byte from memory and remove the eighth bit which is the color shift bit (line 420). Then if the byte is zero (i.e. no dots plotted) we increment variable BUF by 7 (the number of dots that would have been plotted) and go get the next byte. If the byte is not zero we first go to lines 511 through 514 and print a string that causes the printer to tab over the number of blank dots in variable BUF. We return to lines 430 to 470 which breaks the byte up into individual bits and either prints a "period" or a space depending on whether the bit is set or not.

Now I'll try to describe the shape printer, Listing 2. Lines 160 through 310 again setup miscellaneous strings and variables, prompt for the shape table name and the shape number. The shape table is always loaded starting at \$6000, just above the second hi-res screen. This leaves plenty of room for a big table. Lines 360 through 390 draw the shape on the screen, prompt for you to get the printer ready, and set the printer to the plot mode. Lines 450 and 460 compute the address of the start of the shape and line 470 gets a byte of the shape. Each byte can contain 1, 2, or 3 plot/move commands, lines 490 through 520 separate the byte into 1 to 3 commands. Lines 530 through 560 print a period if the command is to plot, and then call the appropriate subroutine to move the carriage to get ready to plot the next point. The shape address pointer is incremented in line 570 and another byte is obtained. The process stops when the end of the shape table is reached which is indicated by a zero byte and this is detected in line 480. Lines 390 (the plot mode setup) and lines 620-650 are the only lines that are printer specific.

Listing 1: HIRESDUMP

```
100 REM -----
110 REM   HIRES DUMP ROUTINE TO
120 REM   ANDERSON-JACOBSON PRINTER
130 REM
140 REM   B.F. FIELD      21-APR-82
150 REM -----
160 REM
170 HIMEM: 4096
180 GOSUB 520: REM SETUP MACH LANG
190 D$ = CHR$(13) + CHR$(4)
200 E$ = CHR$(27): REM ESCAPE
210 P$ = "." : REM PLOT CHARACTER
215 Z$ = "000"
230 INPUT "WHICH PAGE? (1 OR 2): ";P
240 IF P < 1 OR P > 2 THEN 230
250 P = P * 8192
```

contd.

```

260 PRINT : PRINT "SETUP PRINTER AND PRESS ANY KEY"
270 PRINT D$"PR#1": PRINT
280 GET A$
290 REM -----
300 REM INITIALIZE PRINTER
310 REM MOVE ONE POSITION
320 REM HORIZONTALLY AFTER
330 REM EACH POINT
340 REM -----
350 PRINT E$"P"E$"H+1"E$"V+0"
360 REM -----
370 POKE 230,P / 256
380 FOR Y = 0 TO 191
390 POKE 773,Y: CALL 768
400 AD = PEEK (38) + 256 * PEEK (39): REM SCREEN
ADDRESS
405 BUF = 0
410 FOR X = AD TO AD + 39
420 BYTE = PEEK (X): IF BYTE > 127 THEN BYTE = BYTE
- 128
425 IF BYTE = 0 THEN BUF = BUF + 7: GOTO 475
427 GOSUB 511: REM FLUSH BUFFER
430 FOR S = 1 TO 7
440 BIT = BYTE - 2 * INT (BYTE / 2):BYTE = INT
(BYTE / 2)
450 IF BIT = 0 THEN PRINT " ";: GOTO 470
460 PRINT P$;
470 NEXT S
475 NEXT X
480 PRINT : NEXT Y
490 PRINT E$"N": PRINT : PRINT
500 PRINT D$"PR#0": TEXT
510 END
511 IF BUF = 0 THEN RETURN
512 N$ = STR$ (BUF):N = LEN (N$)
513 IF N < 3 THEN N$ = LEFT$ (Z$,3 - N) + N$
514 PRINT E$"X"N$;:BUF = 0: RETURN
520 REM -----
530 REM SETUP CALL TO HPOSN WITH
540 REM X,Y,A REGISTERS SET
550 REM -----
560 POKE 768,162: POKE 769,0: POKE 770,160:
POKE 771,0: POKE 772,169: POKE 774,76:
POKE 775,17: POKE 776,244: RETURN

```

Listing 2: SHAPE PRINTER

```

100 REM -----
110 REM PROGRAM TO DRAW SHAPES ON
120 REM ANDERSON-JACOBSON PRINTER
130 REM
140 REM B.F. FIELD 21-APR-82
150 REM -----
155 HIMEM: 4096
160 D$ = CHR$ (13) + CHR$ (4)
180 E$ = CHR$ (27): REM ESCAPE
190 P$ = " .": REM PLOT CHARACTER
200 PRINT D$"PR#0"
210 HOME : VTAB 21
220 INPUT "SHAPE TABLE NAME? 'STOP' TO END ";T$
230 IF T$ = "STOP" THEN HOME : TEXT : END
240 IF T$ = "" THEN 280: REM USE TABLE ALREADY LOADED
250 PRINT CHR$ (4)"BLOAD "T$","A$6000"
260 POKE 232,0: POKE 233,96:TB = 96 * 256
270 SCALE= 1: ROT= 0
280 N = PEEK (TB)
290 VTAB 22: PRINT "SHAPE NUMBER? (1-"N")";
300 INPUT " ";N1
310 IF N1 < 1 OR N1 > N THEN 290
320 REM -----
330 REM SETUP PRINTER TO PLOT
340 REM -----
350 HGR
360 DRAW N1 AT 140,80: REM DRAW SHAPE ON SCREEN
370 VTAB 23: PRINT "SETUP PRINTER AND PRESS RETURN "
380 PRINT D$"PR#2": PRINT : GET A$
385 IF ASC (A$) < > 13 THEN 200
390 PRINT E$"P";: REM SET PRINTER TO PLOT MODE

```

```

400 REM -----
410 REM PLOT SHAPE ON PRINTER
420 REM SHAPE NUMBER IN N1
430 REM START OF TABLE IN TB
440 REM -----
450 AD = TB + N1 * 2
460 AD = PEEK (AD) + 256 * PEEK (AD + 1) + TB
470 CM = PEEK (AD)
480 IF CM = 0 THEN 200: REM END OF SHAPE
490 C(3) = INT (CM / 64): REM SEPARATE COMMANDS
500 C(2) = INT ((CM - C(3) * 64) / 8)
510 C(1) = CM - C(3) * 64 - C(2) * 8
520 N = 3: IF C(3) = 0 THEN N = 2: IF C(2) = 0
THEN N = 1
530 FOR I = 1 TO N
540 IF C(I) > 3 THEN PRINT P$;:C(I) = C(I) - 4
550 ON C(I) + 1 GOSUB 620,630,640,650
560 NEXT I
570 AD = AD + 1: GOTO 470
580 REM -----
590 REM CHARACTER SEQUENCES FOR
600 REM PLOTTER MOVEMENTS
610 REM -----
620 PRINT E$"Y001";: RETURN : REM UP
630 PRINT E$"X001";: RETURN : REM RIGHT
640 PRINT E$"Z001";: RETURN : REM DOWN
650 PRINT E$"W001";: RETURN : REM LEFT

```



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LHR CHECKBOOK REVISITED

by Leon H. Raesly



Last July I wrote a checkbook template for The Spreadsheet 2.0 (and Visicalc) and it was published in the August issue of the Pi. I have received a number of calls and letters in a positive tone about that template.

Three of the individuals indicated that they wished that it would automatically total and save their deductions for tax purposes each month.

So this is a two part article. The first part will show you how to expand the original checkbook to identify and total the deductions each month, and the second part will give a template for totaling your deductions for the year, without having to enter them again! It will also allow you to complete your taxes next April (with a 1040 template) in about 30 minutes!

So on to the first part. I am assuming that you entered the checkbook listed in the August issue of the PI. So the first step is to boot The Spreadsheet 2.0 (or Visicalc) and then load your SAVED copy of that template.

The planned expansion has three parts. I will take each part in order. The first part is to enter a column for an account number for the deductible items. I have used the following account numbers and account names, but you can use any that make sense to you. You can also expand the number of deductible items as much as the memory in your machine will allow!

OTHR=8
PROF=7
LOSS=6
INTS=5
TAXS=4
MINS=3
DOC=2
DRGS=1

The abbreviations stand for:

OTHR = any OTher deductible expenses.
PROF = PROFessional expenses
LOSS = any casualty LOSS
INTS = INTereSt of any kind.
TAXS = TAXeS, of any kind
MINS = Medical INSurance
DOC = DOCTors and Dentists
DRGS = DRuGS and Medicines

To add the expanded portion to your checkbook, go to column G, and insert a column with the I)nsert command:

```
/ I C
```

This will become a new column G. The go to column M, and insert TWO new columns. These will become the new column M and column N.

This will mess up slightly the appearance of the reconcile area at the bottom of the template, so go to this area now, and move the labels and formulas over to the left one column so that it looks pretty again! With The Spreadsheet 2.0 you can move the entire block at one time, and with VisiCalc you will have to move it a row at a time. You can use the R)eplicate command for this.

Now, just type the partial template listed at the end

of this article into you template exactly as listed. This will actually be only the information at the head of the new columns, and at the end, the monthly summary information, plus one row of formulas.

You will notice that you still have some large blanks in the template, so now fill them in with the R)eplicate command. Go to cell G8 and replicate this down the column to G32. Then go to cell M and R)eplicate cells M8 and N8 down to row 32. If the cursor is in cell M8, the command would be:

```
/ R M8...N8:M9...M32:
```

Now go to cell R8, and R)eplicate R8 through Z8 down to row 32. If your cursor is at cell R8, the command would be:

```
/ R R8...Z8:R9...R32:
```

That is all there is to it. As before, if you wish to add additional rows, just move to row 32, and I)nsert as many rows as you wish. The formulas are set so that they will automatically adjust themselves to the new number of rows. After I)nserting, R)eplicate row 32 to fill as many rows as you added.

To use the template, load it into memory, and then turn off the automatic recalculate. The command would be:

```
/ G R M
```

Then enter your data, and when finished, make it recalculate with:

```
!
```

Next, you need to save it to disk:

```
/ S S <filename>
```

I use the month in the filename, since I will be saving one copy each month. An example is: LHR CHKBK-NOVEMBER. Then you will need to DIF the summary data to the disk, for use in the new template that will give you the summary of all your deductables. Go to the column AB, and position the cursor over the first cell of the data. The command to save in DIF format is:

```
/ S # <filename>
```

I use the month name and the word data as the filename, so that I can distinguish the file as a DIF file. i.e. LHR CHKBK-NOVEMBER.DATA

Well, that's all for now. Next month I will present the template and procedures that will allow you to have the data from this template at your finger tips for 12 months, and in a tax summary form, without having to re-enter any of the data! Thanks for listening.

```
>B45:"WRITTEN BY:LEON H. RAESLY  
>G44:"COPYRIGHT 1983  
>G43:"----->  
>G42:"TS ---->  
>G41:"----->  
>G40:"----->  
>G39:"----->  
>G38:"E----->
```

contd.

```

>G37:"CE----->
>AC36:/-*
>AB36:/-*
>AA36:/-*
>Z36:/-*
>Y36:/-*
>X36:/-*
>W36:/-*
>V36:/-*
>U36:/-*
>T36:/-*
>S36:/-*
>R36:/-*
>N36:/-*
>M36:/-*
>G36:/-*
>AC35:/-*
>Z35:" *
>Y35:/F$@SUM(Y8...Y33)
>X35:/F$@SUM(X8...X33)
>W35:/F$@SUM(W8...W33)
>V35:/F$@SUM(V8...V33)
>U35:/F$@SUM(U8...U33)
>T35:/F$@SUM(T8...T33)
>S35:/F$@SUM(S8...S33)
>R35:/F$@SUM(R8...R33)
>AC34:/-*
>Z34:" *
>Y34:"OTHR=8
>X34:"PROF=7
>W34:"LOSS=6
>V34:"INTS=5
>U34:"TAXS=4
>T34:"MINS=3
>S34:"DOC=2
>R34:"DRGS=1
>N34:" DTE
>M34:"CHK#
>G34:"ACT#
>AC33:/-*
>Z33:" *
>Y33:/--
>X33:/--
>W33:/--
>V33:/--
>U33:/--
>T33:/--
>S33:/--
>R33:/--
>N33:/--
>M33:/--
>G33:/--
>AC32:/-*
>AC31:/-*
>AC30:/-*
>AC29:/-*
>AC28:/-*
>AC27:/-*
>AC26:/-*
>AC25:/-*
>AC24:/-*
>AC23:/-*
>AC22:/-*
>AC21:/-*
>AC20:/-*
>AC19:/-*
>AC18:/-*
>AC17:/-*
>AC16:/-*
>AB16:/--
>AA16:/--
>AC15:/-*
>AB15:+Y35
>AA15:" OTHER
>AC14:/-*
>AB14:+X35
>AA14:" PROFESSN/
>AC13:/-*
>AB13:+W35

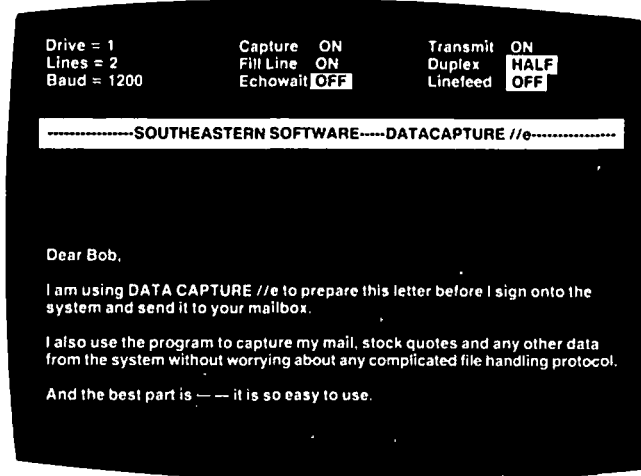
```

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contd. on pg 59

ZARDAX -

AN UNUSUAL WORD PROCESSOR

by William C. Jacobson

Various reviews of this software from "Down Under" have rated Zardax an outstanding word processing program. I cannot agree with those assessments. Zardax has some innovative and powerful features, but it also has a number of idiosyncrasies and serious deficiencies. All of these matters are discussed at length in this article.

Zardax is a product of Computer Solutions of Mt. Gravatt, Queensland, Australia. It is distributed in the United States by Action-Research Northwest of Seattle, Washington. The list price of Zardax is \$210, but discounts are available.

The program can be configured for all versions of the Apple II, including the //e. Document work space with a 48K machine and a 40 column screen is 13,500 characters. This figure increases to 31,000 characters with a 64K version (II+ with a 16K card or standard //e) and an 80 column card. Once fully booted, the entire Zardax program is loaded into memory, and will operate with a one floppy disk drive system.

My review was conducted on a //e with 128K of RAM. The additional 64K of RAM on my computer has no effect on the size of edit screen memory, but it may be used for other purposes.

At several places in the article, I make reference to the special "Open Apple", Delete and up/down arrow keys of the Apple //e. The commands invoked by these keys also exist on other versions of the Apple. They simply require a different sequence of keys, as explained in the Zardax manual.

I used Zardax to write this article. My normal processor is WordStar.

OVERALL FEATURES

A. User Manual.

The manual is mounted in a loose leaf binder which is indexed but not tabbed. It is well organized and written, but is primarily textual. There are very few illustrations of how materials will appear on screen, an excellent training aid used extensively in many manuals, including those for the PFS //e series of programs and WordStar (Version 3.3).

B. Installation.

The procedure for setting up Zardax is simple and straightforward: Select the Setup option from the initial screen, insert the Zardax utility disk and follow a series of well written procedures. Setup information, including printer drivers and other routines, is contained on a separate utility disk and read into the Zardax master. From time to time, updates of these utilities are made available to owners at no cost.

The setup procedure may be too simple, as many default settings for document formatting are not included as user modifiable options (e.g., left and right margins, page size, etc.). These default settings can be changed only by modifying an Applesoft program resident on the Zardax utility disk. While this is not a difficult procedure, it does introduce the possibility of errors and is very cumbersome to use.

As explained below, Zardax has print formatting com-

mands which allow you to temporarily modify standard default settings by imbedding commands in the text of a document. These are one-time changes that must be re-entered for each document.

C. The Main Menu.

A second screen contains the Main Menu for Zardax. User options shown on the left side of the screen include document create, print, retrieve (load), transfer, delete, lock, and unlock.

In addition the Main Menu has glossary and disk initialization options, as well as two unusual features: Multipr and Vidmulti. Multipr permits sequential printing of several related documents, the combined length of which may exceed available memory. To use this function, create a file that contains the identification numbers of files to be printed, save it, and press "M" for Multipr. Then enter the number of the special file and the print routine will begin.

Vidmulti does the same thing, except documents are printed to screen rather than to paper. You may preview files and determine if page numbering sequences, formatting commands and other settings are compatible prior to document printing.

The balance of the main menu screen displays the names of files located on the default drive. In addition to file name, each document is assigned a number by Zardax (e.g., "B1") which must be used for any disk related commands. If you wish to load a document, for example, press "R" for Retrieve and enter the document number. This procedure eliminates the chore of typing in a file name.

If there are a large number of files on the default drive, the Main Menu screen is literally crammed with information, making it somewhat hard to read. This is particularly acute on 80-column screens where two columns of files may be displayed, in addition to the document options mentioned above.

This menu also shows file size and remaining disk space readouts.

C. The Edit Menu and Screen.

A third screen, the Inner Menu, contains a series of document input/output commands. In addition to a readout of remaining edit screen memory, the following options are displayed:

CHANGE	-- Edit the document
DRAFT	-- Print a draft of the document in memory
MAIN MENU	-- Return to the previous menu
PRINT	-- Print a copy of the document in memory
RENAME	-- Change the name of the file
VIDEOPRNT	-- Print the file in memory to screen

The commands listed below are also accessible from, but not displayed on the Inner Menu:

01	Draft print, but not from page 1
02	Videoprint, but not from page 1
03	Write formatted copy of document to disk
04	Unformatted dump to printer
00	Continue loading of too large document
OCY	Turn on concurrent printing (spooling)
OCN	Turn off concurrent printing (spooling)
OCW	Concurrent printing pause (wait)

contd.

The edit screen contains a "flashing" cursor, the name of the document in memory and a cursor position read-out. The cursor is fixed at the second line from the bottom of a screen. Thus, the cursor does not "move around" among lines of text, like most word processors. Instead, text lines move "to" the cursor (i.e., all lines move up or down the screen, respectively, when the appropriate arrow keys are pressed). Regardless of how much text may be "below" the cursor line, you will only see the line that is being edited and the one immediately after it. While this is not a problem for original entry of data (the next line is blank), it makes editing of existing text difficult if you need to reference any information that is two or more lines below the cursor.

I found the fixed cursor line very cumbersome to use. One of the processors available for the new DEC computers uses a similar feature.

Cursor motion and scrolling are accomplished by arrow keys for line and character movement; Open Apple key-left/right arrow key for jumping 10 characters to the left or right; Open Apple key-up/down arrow for moving 10-lines up or down; Control-E for end of file; Control-B for beginning of file.

The 10-line vertical jump makes scanning of a series of screens difficult. The Zardax screen is 21 lines in height. Therefore, a "jump" of only 10 lines will place the 1st line of the next screen in the middle of a mish mash of text, making it very difficult to locate. A total screen scroll would be far preferable, so that the next line of "new" text would always appear at the top of the screen.

Zardax does not use on-screen word wrapping. Instead of shifting a word that exceeds the right hand margin to the next line -- the standard word wrap function used by most processors, Zardax splits the word. The first part of such a word appears on one line, and the remainder on the next. Thus the word "processor" might be split "proce" and "ssor", if the letter "e" were placed in the last (80th) column of a line. Obviously, there is no resemblance between the format of data on the screen and that which appears on the printed page. The Videoprint (print to screen) feature must be used extensively to spot and correct format and other errors, another very cumbersome procedure.

Word splitting makes it very difficult and time consuming to proofread a page. Words that have been split cannot be read as entities, and proper spacing and punctuation are almost impossible to check accurately. Also, because every line breaks at the same column, the screen takes on an aura of "sameness" that becomes somewhat oppressive during a long editing session.

The numeric readout at the bottom of the edit screen echoes the current position of the cursor in a paragraph (e.g., character 239 of a 543 character paragraph). The counter is reset to zero at the beginning of each paragraph. This is a meaningless statistic after the first line.

Characters to be underlined are shown in inverse video on the edit screen. Position the cursor at the first character to be underlined, and press Open Apple-Z as many times as necessary. To remove underlining, use the Open Apple-Y command.

D. Text Deletion, Copying and Movement.

There are three methods available for the deletion of text:

- DELETE KEY - Characters to the left of the cursor.
- OPEN APPLE DELETE - The character over which the cursor is located.
- WIPEOUT FUNCTION - Any Section (S) of "marked" text; the current Paragraph(P); or everything after (A) or before (B) the cursor position.

As the authors of Zardax indicate, the Wipeout function should be used with great caution. Text deleted with these commands is not retrievable. The Section delete command may be the safest to use. Simply enter Control-X at the beginning of the text to be deleted, position the cursor at the end of the section, and press Control-W. You will then be offered the above mentioned options of P/A/B/S. Enter "S" for Section and the marked text will be removed.

Commands which Zardax does not have include word and line delete. This is unfortunate, as the word delete command in particular is a great assist in the editing process.

The Section delete protocols are also used for copying text. Mark the text to be copied and press Control-P to execute the command. Enter a disk file name for the text to be saved. Press the Return key and the text will be written to disk and deleted from memory. If you wish only to copy this text, not delete it, you must use the insertion procedure described in the next paragraph to restore these data.

To insert VisiCalc and other text files into memory, position the cursor at the desired insertion point and press Open Apple-I. Enter the number of the document to be loaded from the list of disk files displayed on the screen (e.g., "B1"), and the entire file will be inserted.

If you want to move a single paragraph a relatively short distance, Zardax provides a simple method to accomplish this. Position the cursor in the text of the paragraph to be moved, and press Open Apple-M. You may then press "U" or "D" to move the text up or down in the document. The paragraph will "move with you." Once you have reached the desired place, press the space bar to terminate the move function.

All of the "cut and paste" commands described above work very well, and help facilitate the edit process.

E. Document Formatting & Printing

Like most processors, Zardax has an extensive menu of formatting commands that may be imbedded in the text of a document. These commands modify the standard page size, margins and other defaults for the document in memory, and initiate boldface printing, headers, footers, line spacing, justification, centering and a wide variety of other features. I will discuss only two of these: special printer commands and indenting.

There are seven commands (Z1-Z7) that may be specifically customized for the features of a given printer. For some of the printers listed on the Zardax setup menu, many or most of these commands may already be programmed; however, they may be modified by the user. Such commands may be imbedded anywhere in text. This makes it extremely simple to use italics, other fonts and the special features of your printer to full advantage.

The indent command was used extensively in this article to "outdent" numbered paragraphs (i.e., have printed text wrap around to a column that is to the right of the paragraph number). While the indent feature of Zardax certainly is not simple to use in this manner, it is effective as long as you adhere to

contd.

the following rules:

1. Turn off justification ("NJ"), if it is being used, so that columns will line up properly.
2. Determine the column settings for the offset character (number, letter, bullet) and text. For this section I selected columns 5 for the indent and 9 for text entry. To set the screen tabs, however, I had to take into account space occupied by the paragraph indent command on the initial line of each indented paragraph. Thus I added five characters to the above settings for the command "IPnn". This means that tabs were actually set at columns 10 (5+5) and 14 (9+5), even though the printout columns would be 5 and 9.
3. Move the cursor to the position of the first paragraph to be indented; enter "IP08"; press the tab key once; enter the offset character (the number "1." in this section); press the tab key again and enter text. The actual indent column setting must be one less than the desired column number for text entry, because you are indenting from column 1 to column 9, a difference of 8 columns.
4. Repeat the steps in item 4 for each paragraph you want to indent.
5. Turn justification back on.

Using these rules, you may enter as many indented paragraphs as needed, with the expectation that text will wrap around (when printed) to the second tab setting. Again, this section verifies that the procedure works, and works very well. It just sounds strange. The indent features of many other processors, including Word Juggler, are far easier to understand and implement.

You must make certain to align the paper in your printer six lines above the printer element or head, if you want top and bottom margins of one inch each. Zardax does not have automatic top and bottom margin functions that can be invoked by a software command. The six line setting must be readjusted manually if you want to locate a header in any part of the top margin. This is a rather primitive way of making these settings, and certainly is not typical of most sophisticated processors.

OTHER FEATURES

To say that Zardax is loaded with features is a major understatement. In addition to those discussed previously, the following are worth mentioning:

Printer Spooling. This permits concurrent use of the print function and text editor. That is, the document in memory is directed to a floppy disk, hard disk or RAM disk emulator for printing, freeing the console device for document editing. If you have a 128K Apple //e, Zardax uses only the basic 64K, so the additional 64K may be used for spooling.

To activate any type of spooler device, go to the Inner (document edit) Menu and enter "OCY" along with information on the disk device to be used. For example, the additional 64K of RAM on a 128K //e may be accessed by the command OCY51. The latter numbers indicate slot (5) and drive (1). Any printing activity will be directed to the named spooling device, until the feature is shut off or Zardax is exited.

Like most spoolers, the speed of keyboard to computer interaction is much slower during concurrent printing. This statement holds true even for the Apple Lisa, when attempting to use the spooler feature of Lisa-Write. It simply is not a replacement for a good

hardware buffer like Microfaser or the Wespercorp BPO interface card. With a buffer, the document in memory is directed to an external device. Once the document has been transferred to the buffer, a matter of seconds for relatively short documents, the full functioning of the computer is restored.

RAM Card. To use an additional 64K of //e memory as a RAM card, go to the main menu and set the default drive to slot 5, drive 1. All save actions will be directed to the RAM device. Needless to say, any save or load action is almost instantaneous. You should use such a device with caution. Once you exit Zardax, all data in RAM card memory will be lost. In addition, if you decide to use the RAM device for data storage and printer spooling, any data previously saved on that device will be overwritten during the spooling process.

FORM LETTERS & LABELS

Data from an existing data base or a file created with Zardax may be used for the generation of form letter and address label variables. The only requirements are that the bracketed names of each variable be listed at the beginning of the file to be used, and each variable in a record be located on a separate line.

To set up a form letter document, locate variable names where needed in the letter or label-- e.g., "<first name>." To print the document, press escape to enter the Inner Menu, and press "P" for print. You will be asked for the name of the data file. Enter this information, press return and the merge/print process will begin. It is that simple.

Data variables may be used out of sequence and as many times as needed. This means that you may refer to a variable "<First Name>" as many times as you need to personalize a business letter.

Zardax will not permit conditional printing. Thus you must edit a Zardax data file, or use a separate data base to select only those records that you want to process. For example, if you wish to send letters to clients with the Zip Code of 20014, Zardax has no facility for making this selection. It must be done by some other means. Word Juggler is an excellent example of a processor that does have this facility; it will permit the nesting of "IF/THEN/ELSE" statements some 27 levels deep!!

DISK I/O

The Zardax procedures for disk interaction could not be simpler. For example, I wanted to save this article on two separate disks (original and backup) during the edit session. To do this, I pressed escape to display the Inner Menu and pressed "S" to save the document to the data disk in drive 2. I then pressed "M" to return to the Main Menu, and "T" for the Transfer function. Next, I entered the appropriate number ("B1") from the list of files displayed on the screen, and pressed the Return key. The backup was made to the disk in drive 1.

To re-enter the edit screen, I pressed Escape to return to the Inner Menu and "C" for the Change feature. I was then wafted back to the document in memory. With a 20K file, this process took about 35 seconds with drive 2 located on hard disk, and 60 seconds with two floppy disk drives.

A serious deficiency is the lack of warning messages when you are about to take potentially "destructive" actions. For example, if you create a new document or edit an existing one, forget to save the new or revised document and are about to load another file

contd.

(an action which erases the file in memory) or exit Zardax, there is no warning that you must save the file you created/edited or lose your hard work. Even the most experienced of computer addicts will occasionally commit such errors of omission.

In addition, there is no double check when you execute the delete file command from the Main Menu (e.g., "Are you sure you want to delete (filename)?"). Because this command executes as soon as a file number is entered, the potential for a disastrous mistake is great. I believe that it is absolutely essential that your word processor "take the worry out of being (forgetful)." Zardax does not do this.

SUMMARY

Zardax has some of the best and worst features that I have encountered, and quite a few somewhere between these extremes. Its best features are printer & disk related I/O (load, save, backup, videoprint, etc.) which are easy to use. The RAM card and spooling functions of Zardax are interesting but not that useful, given their limitations.

The worst of Zardax's functions are screen display and mistake prevention related. The word splitting and poorly designed cursor movement commands make document creation and editing a time consuming and unnerving process. In addition, the lack of mistake prevention measures makes the use of many essential commands very risky.

For me, the interaction of machine and user must be transparent and not intrude on my thought process. I want to concentrate on what I am doing and not on extraneous matters. I did not have this level of comfort with Zardax, despite spending a considerable amount of time and effort working with it.

Experiences and needs vary widely, so my observations should be used as a guide, not gospel. Nonetheless, prospective buyers should spend considerable time trying out Zardax to make certain they can live with its peculiarities.

If you are an Apple //e owner with 128K of RAM on your computer, you may want to give Word Juggler and its companion spelling checker, Lexicheck, a try. These well designed programs have many marvelous features, and are exceedingly easy to use. Another good processor is Executive Secretary. It can be configured for almost any model of the Apple, and has many bells and whistles that you may find attractive. Word Juggler (without Lexicheck) and Executive Secretary are about the same price as Zardax.

Fall Disk Roundup contd. from pg 44

{122.18} NJ LOTTERY - It appears to work right, but I personally fail to see the fascination.

{122.19} PHILA. COLOR ORGAN - This is another variation on the old "Keyboard Organ", only you set the note duration at the beginning and cannot change it as you go along. I have a version of "Keyboard Organ" that my younger brother modified that is much better; it uses the paddle pots to change the duration during execution.

{122.20} PHILA. PINBALL - Couldn't fully check this one for lack of paddles.

{122.21} RANDOM LINES - Just as it says, it draws random, lo-res white lines (horizontal and vertical) until "RESET" is pressed.

{122.22} SKUNK - This one requires paddles, and I have none.

{122.23} SLOTS - Works easily.

{122.24} SLOW MEM TEST - Same as "FAST MEM TEST" but slower, because it does a more complete check. It still freezes up at line 32, however.

{122.25} STARWARS RESCUE - No paddles, so couldn't check.

{122.26} STATES AND CAPITALS - Good for children learning their States and Capitals, as they try to answer correctly to complete the U.S. flag. This one even requires that the capital be spelled correctly to be scored.

{122.27} THE HART PIANO - After a couple of samples, it gives you "PIANO #2" which is a "Keyboard Piano".

{122.28} TITLE DEMO - Demonstrates the ability to generate multi-color, lo-res advertising/promotional titles.

{122.29} TWINE (TYPE GR FIRST) - The only difference I see between this program and "BEGINNING" is that this one requires more effort to get running!

{122.30} TWO CIRCLES - Hi-res circular/elliptical "moire" patterns drawn two at a time.

{122.31} WINGS(TYPE GR FIRST) - More circular/elliptical "moire" patterns.

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VISICALC FORMULAS IN SCREEN FORMAT!

by Leon H. Raesly



It is very difficult to follow the logic of someone's template when you read the formula printout in that long column of figures. And it is just as difficult if you enter (or load) the template, and try to move all around the screen from cell to cell trying to follow the logic. How nice it would be if you could not only print the template in it's screen format, but have it print the formulas in the screen format!

There are commercial programs that will do that for you. They convert the formula in some way, you re-load it into VisiCalc, and then print it in the normal manner, and instead of the values on the print-out, you have the formulas. Quite nice, but also expensive. Most of these programs cost between \$75 and \$125 each. If there was only some simple way to do it.

There is! Use your word processor and turn the formulas into labels! It works like a charm! I use either Apple Writer (for medium programs) or Screen-Writer (for large programs). Any word processor will do, if the word processor uses standard DOS text files. Also, it must be either of large memory capacity (like Apple Writer), or disk based (like ScreenWriter).

The secret is how VisiCalc stores the template on disk. If you look at one (such as LHR CHKBK elsewhere in this issue), you will notice that each line begins with:

```
>n#:
```

where n is a cell column, and # is a cell row (i.e. >A1:). The semicolon acts the same as a RETURN, and hence each line is actually a GOTO command, such as:

```
>B8<RETURN>
```

If you look at the lines for a template further, you will notice that all values of formulas simply write that value or formula. But labels are preceded with " ", which is the VisiCalc symbol for a label. This means that if we could somehow introduce a quotation mark BEFORE the formula, VisiCalc would see it as a label, and put the formula in the cell as a label, instead of as the actual formula that would compute.

The procedure is relatively simple. First, boot VisiCalc, and load the template in the normal manner. Then insert a row at the top of the template. Then enter the row letters across the top. Then insert a column at the left side of the template. Then place 2 in cell A2. Then place this formula in cell A3:

```
+A2+1
```

Then replicate that down however many rows you have. Now save it to disk in the normal manner. Use a different suffix so that you can distinguish it in the future.

Now boot your word processor in the normal manner, then load the template into the word processor's memory by whatever procedure is appropriate for your word processor. Then do a global "Search & Replace" using the appropriate commands. In Apple Writer the command would be:

```
CTRL F /:/" /a
```

What you are doing is replacing each : in each line with a semicolon and a quote, i.e. :". Since all lines have the : , this means that all formulas are now preceded by a ". All lines that were labels now have two quotes, and one of them would show on your printout. So to clean-up the printout, do another "Global Search & Replace", replacing the two quotes with one. In Apple Writer the command would be:

```
CTRL F /" /" /a
```

Now save it to disk with a different suffix. I add the .FORMULAS as the suffix, thus also letting me know both the name, and that it is converted to formulas. Now boot VisiCalc, and load the .FORMULAS template. Now set your column width to the maximum that you need. If your largest formula was 23 characters long, set all columns to 23. The command would be:

```
/ G C n
```


where n is the column width. The maximum width possible is 36 characters.

I use The Spreadsheet 2.0, since its variable column width saves me much printed space. With VisiCalc, you may have to print the template in two or more segments, then scotch tape it together.

Since you placed the column letters above the columns, and the row numbers on the left, it is now very easy to read the template, and understand it's logic. The formulas are all right there, and if the formula refers to cell R10, you can see immediately what is in R10!

If you are using a CP/M or Pascal based word processor, then you have two extra steps to do. The PI has a program on one of the CP/M disks that converts standard Apple DOS to CP/M, and back again. So just buy that disk (\$5), and use it to convert the text file to a CP/M file, load it in your word processor, and follow the instructions above.

The same is true if you have a Pascal based word processor. On one of the Pascal disks the PI has a program to convert standard Apple DOS to Pascal, and another to go back again. So use that program to convert to Pascal format, load it into your word processor, and follow the instructions above.

Well, that's all there is to it. You have just saved up to \$125! No more will those templates be so hard to read, or follow the logic. Just convert the formulas to labels (as above), and print them all out! Thanks for listening. 

```

>AA13:" LOSSES
>AC12:/-*
>AB12:+AB12+V35
>AA12:" INTEREST
>AC11:/-*
>AB11:+U35
>AA11:" TAXES
>AC10:/-*
>AB10:+T35
>AA10:" MED INS
>AC9:/-*
>AB9:+S35
>AA9:" DOCTORS
>AC8:/-*
>AB8:+R35
>AA8:" DRUGS
>Z8:" *
>Y8:/F$@IF(G8=8,H8,0)
>X8:/F$@IF(G8=7,H8,0)
>W8:/F$@IF(G8=6,H8,0)
>V8:/F$@IF(G8=5,H8,0)
>U8:/F$@IF(G8=4,H8,0)
>T8:/F$@IF(G8=3,H8,0)
>S8:/F$@IF(G8=2,H8,0)
>R8:/F$@IF(G8=1,H8,0)
>N8:/FI@IF(C8=0,E8,0)
>M8:/FI@IF(C8=0,D8,0)
>G8:"ACT#
>AC7:/-*
>Z7:" *
>G7:"ORWA
>AC6:/-*
>AB6:/FI/--
>AA6:/FI/--
>Z6:" *
>Y6:/FI/--
>X6:/FI/--
>W6:/FI/--
>V6:/FI/--
>U6:/FI/--
>T6:/FI/--
>S6:/FI/--
>R6:/FI/--
>N6:/--
>M6:/--
>G6:/--
    >AC5:/-*
    >AB5:" DATA
    >AA5:" SUMMARY
    >Z5:" *
    >Y5:"OTHR=8
    >X5:"PROF=7
    >W5:"LOSS=6
    >V5:"INTS=5
    >U5:"TAXS=4
    >T5:"MINS=3
    >S5:"DOC=2
    >R5:"DRGS=1
    >N5:" DTE
    >M5:"CHK#
    >AB1:" AB
    >AA1:" AA
    >Z1:" Z
    >Y1:" Y
    >X1:" X
    >W1:" W
    >V1:" V
    >U1:" U
    >T1:" T
    >S1:" S
    >R1:" R
    >N1:" N
    >M1:" M
    >G1:" G
    /W1
    /GOC
    /GRM
    /GF$/GC9
    >G1:/L4
    >M1:/L4
    >N1:/L4
    >R1:/L7
    >S1:/L7
    >T1:/L7
    >U1:/L7
    >V1:/L7
    >W1:/L7
    >X1:/L7
    >Y1:/L7
    >Z1:/L2
    >AC1:/L2
    /X!/X>S1:>AA1:
    
```

6

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ELECTRONIC MAIL THROUGH THE POSTAL SERVICE

by Stephen M. Libster

E-COM (Electronic-Computer Originated Mail) is a new U.S. Postal Service product permitting businesses to send letters anywhere in the 48 states within one or two days. E-COM messages travel via phone lines to one of 25 specially-equipped post offices (SPOs). At the SPO, the message is printed (using dot-matrix style), enveloped, and dispatched for delivery as a conventional letter. Any microcomputer with a modem and E-COM text-formatting software can transmit E-COM letters. I have included a brief review of E-COM software at the end of this article.

Here are some of the details of E-COM service and usage. To begin, a user must become certified. Certification is a one-time procedure consisting of the transmission of test messages. Upon completion, the user pays an annual \$50 fee and makes an advanced deposit, against which postage is automatically deducted. E-COM costs 26 cents per one-page letter, including the first class stamp. Of course the mailer also pays the telephone bill for transmitting the messages.

E-COM accommodates several different text formats. It can handle form letters, including the customized text-insert formats common to mail advertising. For personal correspondence, the user can transmit a completely different letter to any number of addresses. Each message must be no longer than two pages; the extra page costs five cents.

To route an E-COM letter from the D.C. area to the San Francisco area, the user first dials the telephone number of the desired SPO and then completes a series of access codes. At this writing, an E-Com message can be sent to any SPO for delivery anywhere in the U.S. However, only messages sent to specific zip codes within the destinating SPO's service area will receive one or two day delivery. In the case of the San Francisco area, the two-day zipcodes begin with 894, 895, 897, and 936-969. Moreover, the Postal Service may soon require that all E-COM letters be transmitted to the SPOs nearest to their destination. In this example, any letter for delivery to the above zipcodes must be transmitted to the San Francisco SPO. For a nation-wide mailing, the E-COM user might make as many as 25 separate phone calls, one to each SPO, under this proposal.

Once the user accesses the appropriate SPO, he/she then transmits a message or messages, followed by an address list in the case of a form letter. The SPO computer automatically processes the message and "mails" it to the addressee. Upon completion of the E-COM processing, the SPO provides an acknowledgement through the mail.

A number of firms market E-COM software. Programs are available for the Apple, IBM, CP/M, and Radio Shack computers, ranging from roughly \$200 to \$500. Some also include communication programs while others incorporate mailing-list databases. The prospective purchaser should ensure that the software vendor will update its software to reflect future E-COM service changes, such as those discussed above.

Below is a review of one brand of E-COM software. The reader who desires further information on other E-COM programs should consult the July, 1983 issue of Personal Computing.

Recently, Digisoft, Inc. sent me a copy of its MAILCOM (tm) software for review. My MAILCOM version 1.2 runs on an Apple II or II+ with the following configuration:

- 16K RAM Card
- Eighty-column Board
- CP/M Operating System
- Two Disk Drives
- Modem
- Communications Software

MAILCOM costs \$195, a high price considering the relative simplicity of the programs on the disk. One program is a screen-type text editor. The user can substitute WordStar or any other CP/M based editor. A second program edits address files. This too can be replaced by any program that produces CP/M text files. There are two other programs to assemble the messages and address files for transmission. MAILCOM does not include a communications package.

In general, I found this software to be fairly easy to use. However, it did contain several disappointments. The screen editor made use of the cursor-up and cursor-down keys, which are unavailable on the Apple II or II+. MAILCOM lacks a preview mode to examine the E-COM message in the format as it will be printed. It would be advantageous to have a program that would facilitate the sorting of address records by zipcode. For my previous example, the program would scan zipcodes and copy into a file all addresses nearest to the San Francisco SPO. This technique would ensure that all messages would be transmitted to a SPO closest to their ultimate destination. Digisoft informed me that certain enhancements will be made shortly.

In conclusion, E-COM software could be a valuable addition to a business microcomputer library. It is especially attractive to frequent mailers who demand one or two-day delivery and can accommodate their messages to the E-COM format. While more expensive than first class mail, it offers significant savings over MAILGRAM rates and may save on letter production costs as well.

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The MICRO CONNECTION INC. is having a GRAND OPENING sale to announce the opening of their new store at 8228 Fenton Street, Silver Spring, MD. The telephone number at the new store is 495-5960. The hours are from 10 AM to 6 PM Monday through Saturday, with plenty of parking right next door. Super SALE SPECIALS and our MONEY SAVING COUPON will give you even greater savings. Call the MICRO CONNECTION at the following numbers for specifics:
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APPLE TECH NOTES

by Ed Schenker

This month's column deals with DOS.

BASICS DISKETTE

The Basics diskette that ships with DOS 3.3 and the Language System is a Pascal diskette that will boot a 13 sector diskette in a 16 sector drive. It has a Pascal directory that can be seen from the Pascal filer but not from DOS.

The DOS 3.3 COPY and COPYA programs will successfully copy the BASICS diskette. Pascal users can copy the BASICS diskette with the Filer like any other Pascal diskette.

The BASICS diskette MUST boot from slot 6, drive 1 because it is a Pascal diskette.

The BASICS diskette will not allow all 13 sector diskettes to boot. Some software protection schemes do not accept that form of boot. Try using the BOOT13 program on the DOS 3.3 master diskette instead.

APPEND

The APPEND command will open a sequential file and read through all the records in that file until it finds the end. Then the next WRITE command will append information to the end of the file. Unfortunately, there are some problems with APPEND:

When the last carriage return being written out is also the last byte in the last sector of the file, DOS doesn't bother allocating another sector for the end of the file mark. So the next APPEND never finds the end of the file and the file pointer gets left at the beginning of the file. The next WRITE command will write over the next record.

One way to tell if this will happen is to try a READ after the APPEND command. If the read returns an 'OUT OF DATA' error then you can do a normal APPEND (I'm assuming you're using ONERR GOTO in Applesoft). A successful read means that APPEND will overwrite the file. In that case the only way to add to the end of the file is to copy the entire file into another and write the new information into the new file after the old information is there. Then you can delete the old file and rename the new file with the old name. (HUH?)

If you write out a file of 255 sectors and then use APPEND to add more information to the file, you will wipe out random sectors in your file.

VOLUME NUMBER

The volume number on a DOS diskette is kept in the address field of every sector of every track of the diskette. There is no way to change this information other than re-initializing the diskette.

MISC

The number of sectors required for a DOS file can be calculated:

$SECTORS = LENGTH / 256 + LENGTH / 256 / 122$

The first part of the expression is the physical numbers of sectors required to hold the data. This will

be 2 bytes higher for a program and 4 bytes higher for a binary file. The second part is for the Track/Sector list. There will always be a Track/Sector list and a sector for data even if there is no data, so the minimum number of sectors for a file is two.

Numeric data that is stored in a DOS text file is not stored in a packed format. The information is on the disk in the same ASCII format that a printer would have received. Example:

```
3.14159      7 bytes + a carriage return
3            1 byte + a carriage return
```

There is no way for DOS to store packed variables. (Ed. Note: There are ways, but they require "trick" programming techniques.)

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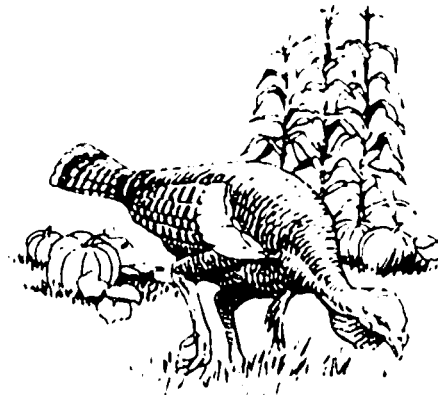
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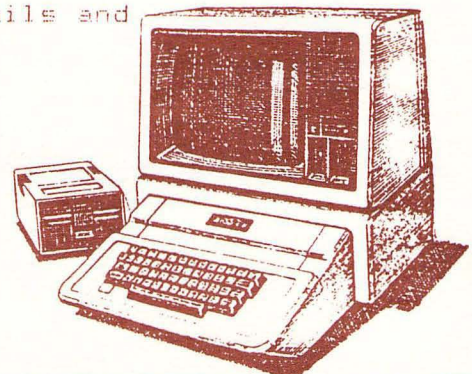
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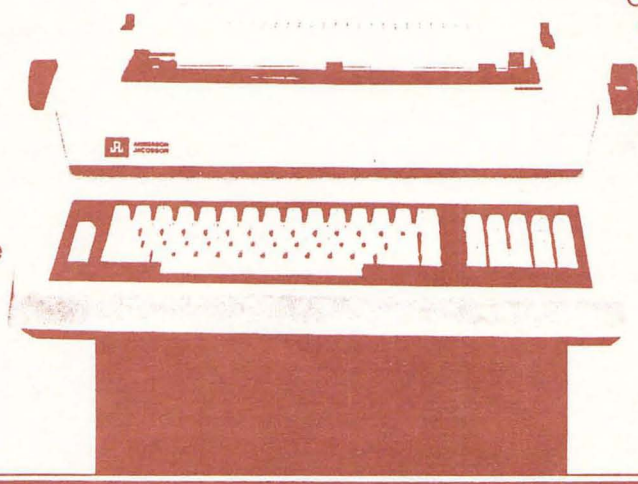
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