

small computer support group

Indiana University Bloomington, Memorial West, M10, 337-2893

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Editor: J.V. Lombardi, Bryan 205, IUB, 7-8669

INTRODUCTION

This second issue of the NEWSLETTER highlights word processing applications for microcomputers. Among all the uses of microcomputers, it is word processing that has generated the most interest among those writing to the NEWSLETTER. In this issue we feature an overview of word processing by Carolyn J. Mullins of the IU Office of Information and Computer Services. In addition, there is a user's report on the EasyWriter word processor for the Apple II.

Many Apple II users have expressed interest in using CP/M based software. Included in this issue is an article on the Softcard which makes CP/M accessible to Apple II users.

We also have a follow-up article on the diskette difficulties of the TRS-80 and the Apple II.

Finally there is a user's report on a file transfer package that will move WCC files to the Apple II.

This issue begins, however, with a note from the Small Computer Support Group, the publisher of this NEWSLETTER.

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THE SMALL COMPUTER SUPPORT GROUP

Facilities

The Small Computer Support Group has moved from Memorial Hall to a University house at 1125 Atwater. This is directly behind the new Music practice building on Third Street, and within easy walking distance of most of the campus. A, B, and C parking is available (?) behind the house.

Personnel

The Group currently has three full-time staff. John W. Smith, Manager, brings to the Group 15 years experience in small computer applications, particularly in DEC computers and laboratory data acquisition and analysis. John can be reached at 337-2893. Craig Campbell, Hardware Systems Specialist, has four years experience in microcomputers, and specializes in hardware design, interfacing, and low-level language applications. John Buckley, Software

Systems Specialist, has five years experience in software design, with special emphasis on microcomputer applications. Craig and John can be reached at 337-0912 or 337-0913.

Equipment

The SCSG has several small computing systems that are used for internal development. They are also available for user evaluation, program testing, and limited applications. These systems include:

MIRCOSYSTEM I

- STD buss Z-80 system, 64B (CP/M 2.2, FORTRAN, FORTH)
- 2 serial ports
- 2 disk drives (580KB each)

MICROSYSTEM II

- Apple II Plus, 48KB (BASIC, integer and Applesoft)
- 13" color monitor
- 2 5 1/4" disk drives (146KB each)
- Apple serial card
- CCS communications card
- Integer BASIC card
- Bit Pad digitizer (on loan from Computer Science)

MINISYSTEM I

- DEC LSI-11, 64KB (RT-11, V4, BASIC, FORTRAN)
- 4 serial ports
- 2 8" disk drives (512KB each)

Peripheral equipment that can be utilized by any of the above systems includes:

- LA-120 DECwriter
- ADM-3A video terminal
- Directran modem
- Omnitec Acoustic coupler

The Group has a second Apple system that can be taken to the users office or lab. This consists of:

- Apple II Plus, 48KB (Applesoft BASIC)
- 9" B&W monitor
- 2 Disk drives (146KB each)
- Apple serial port

This unit can be borrowed for a day, or rented for longer periods. Call 7-2893 if you want to schedule access to any of the equipment.

Organization

The SCSG is a part of the Office of Research and Graduate Development, reporting to the Associate Dean for Academic Computing. The Group is set up as a cost center but receives

base funding from R&GD. This base funding provides for consulting, system design, and general user assistance. The Group is currently working out a rate structure and policies for billing for appropriate services. It is not the intent to make ability to pay a major factor in determining who receives service, but it is clear that the ability of the SCSG to provide quality service will depend to some extent upon the users willingness to pay for that service. Future articles in the NEWSLETTER will cover policies and procedures in this area.

Network Communications

The Group has made a major commitment to provide communications between the small computers it supports and the I.U. Computing Network (CDC-6600/172, DEC-10, PRIME). We are attempting to provide a well integrated package that will utilize all existing communication modes and allow easy addition of support for future communication enhancements. The following packages are nearing completion:

Apple	to	WCC
CP/M	to	WCC
CP/M	to/from	DEC-10
CP/M	to/from	PRIME
TRS-80	to/from	WCC

Packages in development, but not as far along, include:

Apple	from	WCC
Apple	to/from	DEC-10
CP/M	from	WCC

Using the AFT program on the DEC-10, data rates of 100 characters per second have been achieved, while on the PRIME, full 120 cps is possible. Users interested in gaining access to these packages should contact the Group, but must realize that they are, as yet, not fully debugged and tested.

WCC has given the SCSG a 1200 bps port to the CDC-172 for the purpose of higher speed file transfer. (This port is not intended for 1200 bps interactive access, so don't ask.) Because of a problem at the CDC end, the maximum throughput we have been able to achieve with this port has been 60cps. With WCC help, we are attempting to reach the theoretically possible 120 cps. Note that with the current communications system 1200 bps is not possible with an acoustic coupler; you must have a Directran. Contact John Smith if you wish access to this port.

Thanks

I would like to thank John Lombardi for taking on the job of assembling and editing this NEWSLETTER. It would still be in the input queue if he had not volunteered to assume that responsibility. I also thank the users who have prepared articles for

the NEWSLETTER and encourage all of you to share your ideas through this vehicle.

John W. Smith
Manager

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WORDS, WORDS, WORDS . . .

The 1980s have produced something for nearly everyone who wants to process words, and microcomputer users are no exception. The two most popular word processing software packages are SBA's Magic Wand, to which Magic Menu has recently been added, and MicroPro's WordStar. (IU endorses both, but with this caution: details related to licensing,, installation, and ongoing support have not been worked out. For the present, then, users are pretty much on their own.)

Magic Wand's virtues begin with step-by-step documentation and instructions and an easy-to-learn editor. It also has nearly all the features of a complex text formatter, including counters. Even with long files (up to 41,000 characters), the cursor moves from top to bottom or bottom to top in the blink of an eye. It has system, numeric, and starting variables that enable definition of "macros" and programmability that experienced users will appreciate. Its list-processing capability includes variables with "IF..." and "IF NOT..." statements that allow users to send a letter to some people in a mailing list and not others and to tell the machine to vary phrases and paragraphs depending on the characteristics of the recipients.

The list processing also allows building and maintenance of other data bases that can be used in almost any way you can imagine. For instance, I built a data file with a record for each campus and merged the data file with the text file for a proposal. The procedure is the same as that for merging address lists with form letters.

The major disadvantage, primarily to inexperienced users of word processing, is due to the Wand's use of formatting commands. For instance, where WordStar uses control keys to center lines, Magic Wand uses a command: \CTR\. Thus, as with T-FORM, what you see on the screen isn't necessarily what you get on paper.

Conversely, WordStar's major advantage is that what you see is what you get. When you press the control key together with "O" and "C", the line centers before your eyes. The problem with WordStar, as Larry Press put it in onComputing, is that on-screen formatting demands lots of editing commands, many of which involve two keys plus the control key. Even with on-screen menus, it's hard to keep the commands straight because some parts of the menus are poorly written--for instance, several pairs of different commands have the same explanation--and the documentation is too

bulky and poorly organized to be of much help. Also, once a line has been formatted, an editing change usually requires reformatting the paragraph that contains it. For instance, suppose you make a global change of "IU" to Indiana University." You'll add several more characters to each line that contained "IU", so you will have to reformat the paragraphs. (This problem doesn't occur with Magic Wand because it reformats when it prints the file.) When combined with Mail Merge, WordStar can merge letters merge letters with mailing lists to produce letters and labels, but it can't choose among records on the basis of characteristics.

The larger the file, the longer WordStar takes to move from top to bottom of the file. With small files, though, such as individual letters, the larger number of ways to move the cursor and the on-screen formatting can help you finish a job more rapidly because you won't have to print it once to double-check how the final product will look.

For detailed information on both of these word processors and comparisons of the two with each other and with other software packages, see Larry Press's article, "Word Processors: A Look at Four Popular Programs," in the Summer 1980 onComputing; Glenn A. Hart's "Magic Wand Word Processor," August 1980 Creative Computing; and Steven Jong's "Word Processing Software Round-Up," January 1981 Personal Computing.

The third of these articles describes AppleWriter, Super-Text, Easy Writer, Scripsit, Apple Pie/Format, Pro-Type, Electric Pencil II, Wordsmith, WpDaisy, and WordStar. In addition, Jong explains and compares six text formatters--Word4, TPS, TEX, TFS, TEXTWRITER III, AND TEXTFORMER. The formatters can be used on text prepared with another word processor. For instance, TEXTWRITER III commands can be used with WordStar Text to get features such as automatic tables of contents. Jong gives textual descriptions and clear, readable charts that match the software packages with their editing, formatting, and printing features. If you need a word processor for an Apple, TRS-80, or Commodore pet, this article will help you narrow your search.

If you want more information on the many word processors for the Apple, see Don Wood's "Word Processing with Your Apple" in the April 1980 issue of Personal Computing. This article is so specific about small details and advantages that I suspect the writer had had hands-on experience with most of the packages. Such does not seem to be true of Jong's article.

Finally, if you have a TRS-80 Level II, even with as little as 16K, see Richard R. Galbraith's "Basic Typist," also in the April 1980 Personal Computing. The Basic Typist is a word processor programmed in Basic, that you can install at no cost on your TRS-80. Galbraith lists the complete program--all you have to do is type it in. You don't need a hardware modification to get

upper- and lowercase letters. Although the screen will show uppercase letters only, documents will print in upper and lower.

Carolyn J. Mullins
Office of Information and Computer services

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EASYWRITER FOR THE APPLE II -- 40 COLUMN VERSION

The Easywriter word processor for Apple II microcomputers is a complete system for entering and printing upper/lower case text material. It is published by Information Unlimited Software (281 Arlington Ave., Berkeley, CA 94707) and sells in the \$100-\$150 range for the 40-column version. There is also an 80-column version that is more sophisticated for \$250, but it requires an 80-column card which adds another \$300 to \$400. This report refers only to the 40-column version.

EasyWriter is a text editor and text formatter in one package. It is written in FORTH, an efficient high-level language, and has its own disk operating system. The program is distributed on disk with a comprehensive manual. While the disk is uncopyable with normal Apple copy routines, the program has its own copy utility that will transfer the program to a new disk without the title page. This means that the user has unlimited backup facilities but can only get updates by returning the original disk with the title page. The copy program also personalizes each copy with the name of the registered owner.

This word processor does almost everything a first-rate word processor should do. It will take in text effortlessly, format it flawlessly, and print it flexibly. Each disk can hold up to 31 different files. No file can exceed 20,000 characters. Total disk space is on the order of 120,000 characters. A file of 20,000 characters is equivalent to perhaps 8 to 10 typed double-spaced pages. Files can be printed in sequence and thereby set a continuous run of all the files on one disk. If you pay attention and change disks at the appropriate time, you can link files on several disks.

The editor accepts text as a continuous string of characters with imbedded commands to indicate end of line, end of paragraph, end of page, and other formatting commands. EasyWriter has a facility to insert a user-defined character so that non-printing characters or characters that are not accessible from the Apple keyboard can be entered in the text. However, this facility is rendered less useful because you can only define one of these special characters at a time. Also, EasyWriter in this version will not underline in any practical way, and the facilities for overstrikes such as would be used for accents and umlauts are exceedingly primitive and almost impossible to use in a real document.

The printing system is very flexible. The imbedded formatting

commands permit instant changes in margins, indentations, and the like. EasyWriter has a few peculiarities that may or may not be critical in a given application. There are no footers, and the headers are not easily manipulated. For another, the justification routine has a peculiarity in that if a sentence ends at the end of a line, there will be two blank spaces between the period and the right margin. This makes a few funny-looking lines in justified text.

The editor is fast and convenient. Cursor movements are easy to use; there is a search command that works as fast as the screen can scroll. There are commands to insert and delete characters and lines. There are commands to put a screen and a half into a buffer to be recalled and inserted elsewhere in the same file or in another file.

Because this is a 40-column system, the screen never shows what the printed output will look like. In this, EasyWriter works like a combination of a text editor and T-FORM in the WCC environment.

The print formatting system permits the use of any printer on the market, and if the printer has special features, most of these can be implemented through EasyWriter by the printer set-up routine or formatting commands.

The program is well-done, and although it is not as sophisticated as Magic Wand, WordStar, or the professional EasyWriter, it is an outstanding value for people who are preparing manuscripts for publication. It is probably not adequate for the production of camera-ready copy unless your requirements are relatively simple.

EasyWriter has two serious drawbacks. The first is that the system uses a special disk operating system. It is impossible to access EasyWriter files from other Apple programs, and similarly, it is not possible to prepare files with a Basic program and process them with EasyWriter. This system means that if you want to use a mailing list, for example, you must purchase the mailing list program currently available from Information Unlimited Software at about \$70. That limitation may not be a serious problem for some users.

The second problem is that EasyWriter is not available yet in a version compatible with Apple sixteen sector disks. This is not really very serious, but it is a nuisance to have to boot the Basics disk and then the EasyWriter disk to get started. It is a minor aggravation to know that you could get another file on every disk if they would just convert this system to a sixteen sector format.

The company, I should add, is very helpful with any difficulties that may occur in using the program. Such difficulties are, in my experience, mostly the result of user incompetence, bad disks, or

other non-EasyWriter problems. The program is easy to use and reliable.

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CP/M AND THE APPLE II

Many Bloomington campus microcomputer users are interested in the CP/M system for its popular software support, including word processors, and in the Apple II for its graphics commands integrated into BASIC. Since these are based upon two different microprocessors, the 8080/Z-80 and the 6502, many potential buyers have to make a choice. Microsoft's Z-80 software interface for the Apple II now makes it possible to combine the benefits of the two alternatives both easily and at a reasonable cost. I thought that the readers of the NEWSLETTER might want to hear of the ease with which I am able to use my CP/M software originally on a S-100 bus microcomputer but now in the Apple II. This includes not only ASCII source files, but also an editor, FORTRAN compiler, and linking loader. Thus I am having full use of the native-code FORTRAN on the Apple even before Microsoft releases their version on Apple diskettes.

The Softcard package contains a Z-80 microprocessor interfacing card which plugs into interface slot #7 of the Apple. With software the Z-80 takes control of the bus lines and decodes the address lines, so what is page #10 to the 6502 is available as page 00 to the Z-80 and CP/M. This leaves the Apple memory-mapped CRT available for text. Apples with ROM BASIC and monitor in upper memory have CP/M memory available up to the start of the Console Command Processor (CCP) at address 37,888 decimal. This can be expanded to 50,176 by replacing the ROM with 16K of RAM either on an Apple Language Card or a memory expansion card which is now on the market.

The hardware comes with software on both 13-sector and 16-sector diskettes. These load the new version 2.2 of CP/M automatically upon power-on. Included is the Microsoft Extended BASIC which has flexible printing format, 40 significant characters for names of variables, and support for the Apple high-resolution graphics. In addition, there are a number of utility routines tailored for interaction with Applesoft hardware and files. One of these permits the user to configure the console device to be an external terminal in order to gain upper/lower case for 80-character lines and to tailor the escape codes for cursor control and screen blanking according to the terminal in use. In my application the software and documentation supplied allowed me to transfer CP/M files from my S-100 bus SOL to the Apple through serial I/O ports on the two machines.

The Z-80 interface card does not support the 256 I/O ports of this microprocessor. Instead, communication with peripherals is through memory mapping using the addresses assigned for the Apple

bus. The CP/M drivers handle this for the console, list, and disk devices so there is no problem for normal applications. If an external terminal is used for the console device there are some situations where the user may have to use the Apple keyboard RESET button to get back to CP/M from a programming loop. Otherwise, the Apple II probably can be used for CP/M routines which are not machine dependent. If supplemented with an 80-character/line display scheme the Apple should be able to handle most of the popular CP/M software, including word processing.

James E. Randall
Medical Sciences

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TRS-80 DISKETTE PROBLEMS

Last May, I installed three TRS-80 microcomputers in my laboratory, each equipped with an expansion interface unit, a Radio Shack minidisk drive, a specially designed interface unit for controlling laboratory equipment, plus a line printer for the system as a whole (Radio Shack Printer II). The system came online very quickly, about six weeks after delivery. It has performed admirably over five months of use, about six hours per day, with one aggravating exception: disk operations are sometimes troublesome a universal characteristic of the TRS-80. Attempts to make backups, load programs, or save resident programs result too often in "disk error", "I/O error", "CRC error", "track locked out", or "flawed disk" messages.

Conclusive tests have identified the expansion interface unit as the culprit; nothing is wrong with our "flawed disks" or the disk drives themselves. On the recommendation of a recent magazine article I purchased a simple plug-in device for installation in the expansion interface, and the device has virtually eliminated our diskette problems. This "Percom Data Separator" is available for \$29.95, plus shipping, from:

Percom Data Co., Inc.
211 N. Kirby
Garland, TX 75042
(Toll-free: 1-800-527-1592)

Installation takes just a few minutes but requires disassembly of the expansion interface, which voids the 90-day warranty.

James Allison
Psychology

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APPLE DISK II DISKETTE PROBLEMS

In the first issue of the NEWSLETTER we reported on difficulties with diskettes on the Disk II. After considerable experience with the reinforcing kit that applies small vinyl rings around the diskette center-hole, we can report that it definitely improves the reliability of the diskettes. This is especially so with older, well-used diskettes. This kit is available for use at the Small Computer Support Group and should be tried by any users having trouble with diskette reliability. The best fix, of course, is to get reinforced diskettes in the first place. These are available through IU Central Stores. See the list in the first issue of the NEWSLETTER.

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FILE TRANSFER PROGRAM FOR WCC TO APPLE II

Many microcomputer users want to be able to down-load files from the CDC or DEC computers to the IU computers. Although there are potential transfer procedures that will do this very rapidly, these are not yet available. In the meantime, it is possible to transfer files in both directions with a program called ASCII EXPRESS II (Southwestern Data Systems, P.O. Box 582, Santee, CA 92071 (714)-562-3670). This is an outstanding package that will not only allow the file transfers, but permits simple editing of the file before or after the transfer. It provides, when used with the D.C. Hayes Micromodem, macros for log-in and automatic dialing. It is compatible with upper/lower case displays as well as the standard Apple display. The actual file transfer takes a maximum of about 24,000 characters at a time in either direction. It works by filling a buffer with the data and then transferring it to WCC or filling the buffer from WCC and then permitting it to be written to disk as a sequential file. If the file in WCC is too long for the buffer, it can be transferred in sections through the use of one of the copy utilities available in the WCC library. Each buffer-full is then appended to the disk file being built. This transfer is, of course, slow since it depends on the WCC transmission rate of 300 baud. It takes about 25 minutes to transfer the full 24,000 characters. While that is slow, it is a whole lot faster than any other system currently available. The program is well documented, flexible, and costs about \$60.00. Southwestern Data Systems is very helpful in resolving any difficulties encountered. The program will also work with the Communications card, although I haven't tested it.

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NEW PROJECTS FOR THE NEWSLETTER

We are currently developing an article on the Superbrain computer. We are very eager to hear about the experience of Indiana University users with printers. Many people have dot-matrix printers and others have typewriter-quality printers of the daisy-wheel or thimble variety. Printers can greatly improve

the usefulness of microcomputers, but the range of printers and features is large. Advice and experience from users of these devices will be very helpful. We would also like to know what printers you have, even if you do not have time to write up your experience with the printers. If there is convergence on a small group of printers, it may be possible to help users with service difficulties. The Small Computer Support Group is also interested in the range of other peripherals currently attached to microcomputers on campus. For example, are there any plotters, digitizers, graphics attachments, and other hard-copy devices being used around campus? How about upper/lower case cards for the Apple, special languages implemented on TRS-80 or other computers, expansion chassis, clocks, music synthesizers, voice recognition devices, and similar items?

Please let us know what you have and what you would like to know more about. We welcome enthusiastically any notes or articles, especially if they relate to word processing, useful research applications, or successful teaching uses.

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NOTE: If you received this NEWSLETTER you are on the mailing list. If you or a friend want to be added to the list, please send in the form below.

 Name _____
 Mailing Address _____
 IU Department and Phone _____
 Special Interests _____

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SMALL COMPUTER SUPPORT GROUP NEWSLETTER
 Bryan Hall 205 IUB
 Bloomington, IN 47405

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HARDWARE SURVEY

Microcomputer _____
 Printers _____

 Other Peripherals or Accessories _____

Name _____
 Address _____
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