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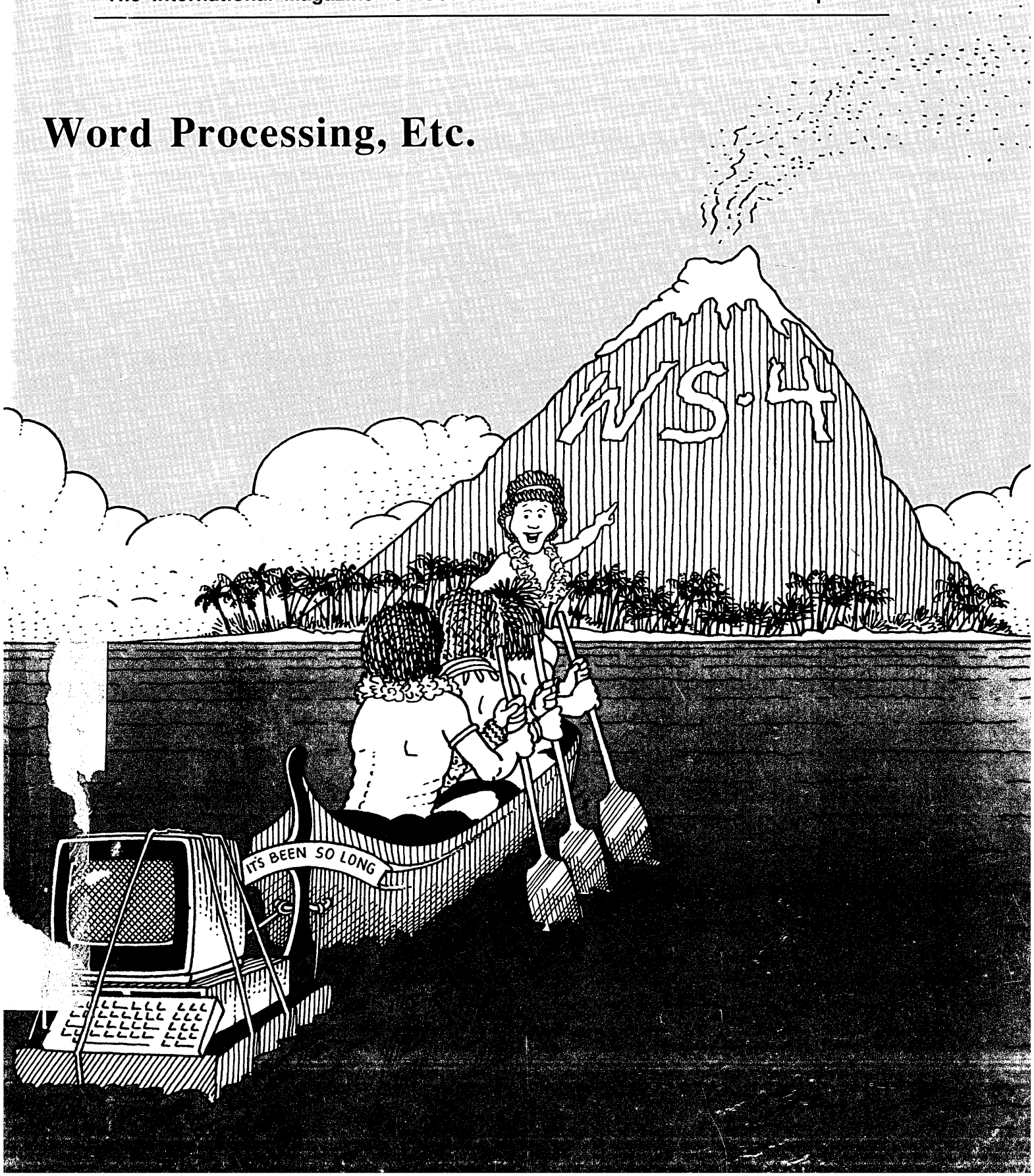
MORROW OWNERS' REVIEW

The International Magazine for Users of Morrow and Other CP/M Computers

Word Processing, Etc.



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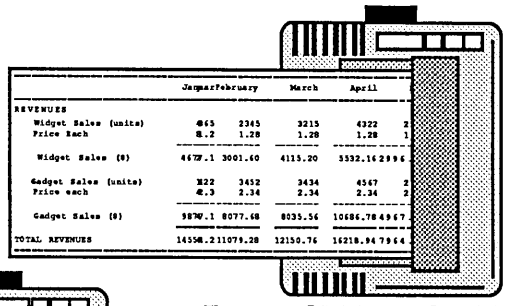

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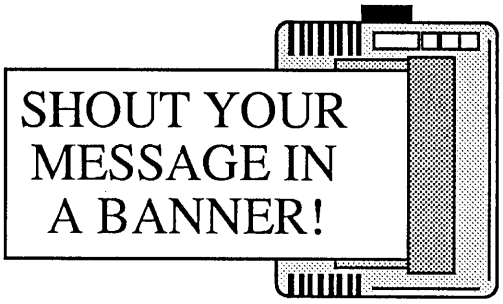

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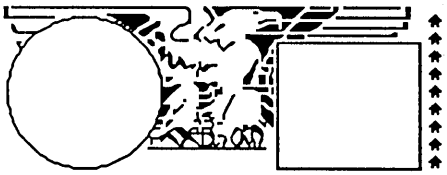


Letters to the Editor

Angry at MicroPro

After the news about WordStar 4 for CP/M, a mailing from MicroPro arrived announcing they were ready to start taking orders. A phone call elicited the information that they were going to start shipping August 14, 1987, which sounded great. But there was a hitch: MicroPro will not offer WS 4 in Morrow format! Only generic CP/M on 8 inch floppy, or 5 1/4 inch floppies for Osborne, Kaypro and Apple will be supplied.

My reaction to this is "to H--- with MicroPro." I, for one, have neither the expertise nor the time or inclination to try to convert one of of these formats to Morrow, take the risk of something going awry, no matter how "simple" the conversion is supposed to be.

Harold Houston
Albuquerque, NM

(We were unhappily surprised too. Checking with MicroPro we learned they were not going to budge. But help is on the way. Read IMPORTANT ANNOUNCEMENTS in this issue. —Ed.)

Changing Needs

When I first bought my Morrow MD3, I was delighted to discover several issues of MOR enclosed with it. They had such a friendly, outgoing tone to them and increased my confidence as a Morrow owner and as a novice computer user.

Now that Morrow is (sadly) no longer selling computers, I wonder how many of us are really novices anymore. I find that the types of columns and articles I used to enjoy the most — the elementary stuff — I now give only passing attention to. The articles I really thrive on are ones which challenge me to further expand my capabilities. "Doubling the Speed of Your Terminal Port" (June/July '86) got me started with computer electronics and is my favorite so far. Us "techies" need some hand-holding too.

The editorial is often one of the best pieces in the issue. It is generally well thought out and written, and uses ideas to summarize a lot of information. This kind of writing is more valuable to me than the purely informative articles of which there are so many in other computer magazines.

I truly appreciate the nurturing role MOR has taken in acquiring and distributing information specific to Morrow computers. In publishing the MOR manuals, addresses of repair shops, parts sources, back issues, and distributing ZCPR and the MACK clock kit, MOR has gone beyond the role of magazine publisher and become a vital resource for what would otherwise be a scattered collection of orphaned Morrow owners.

Carson Wilson
Chicago, IL

(Weekly we are surprised by letters that indicate how many subscribers qualify themselves as beginners. The response to MOR's questionnaire shows the same (see elsewhere in this issue). MOR prides itself on its nurturing role. We try to shape the editorial material and select the mailorder products in that spirit. Some of us spend a lot of time on the phone helping out. These services turn out to be very expensive, one of the reasons MOR is operating at a loss. —Ed)

What About Us MD-HD Users?

I have been a subscriber from the beginning. I have all the issues to date. I am an MD11 owner and use my computer for both personal and business applications. What bugs me about the magazine is that in all the issues over the years you could count the references to MD hard disk machines on one hand and still have fingers left. It appeared as if the MD-HD series did not exist.

I know that there are a lot of MD2 and MD3 owners out there, but you have apparently forgotten that there are also MD-HD owners. Maybe I am the only MD-HD owner subscribing to MOR. If I am, I apologize for thinking that you should be writing articles for the HD systems at all!

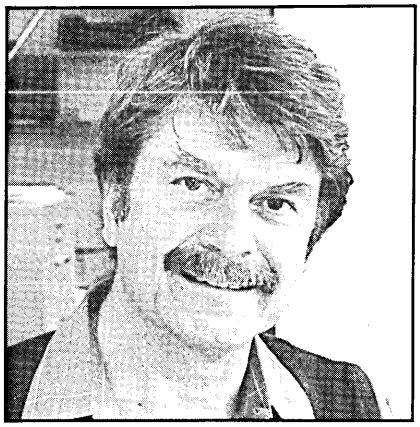
I think that MOR has forsaken MD-HD owners the same way that Morrow has forsaken its customers.

Ray Hunt
Clayton, NC

(Don't apologize. We do print MD-HD articles regularly. Remember Jon Koerner's excellent piece on hard disk crash recovery? Also notice the article on the MD222 in this issue. True, the MD-HD users among subscribers are a minority, but a substantial one at that. The trouble is that as a group they are less inclined than the MD2/3 users to submit articles to MOR. And have you noticed the FLOBs specifically dedicated to CP/M 3.0 goodies? There are at least twelve of them. Lastly, most articles in MOR are neither MD2/3 nor MD-HD specific, but address the general needs of both groups. —Ed.) ■

Some of the letters come from MOR Questionnaire responses.

Editorial



WordStar 4 for CP/M: Good News and Bad News

After MicrPro bought NewStar Software, the manufacturer of NewWord, some eight months ago, MicroPro promised a WordStar update for both MS-DOS and CP/M. It released the MS-DOS version (WordStar Professional Release 4) in early 1987 and scheduled the CP/M release for the end of this year.

The good news is that in July, MicroPro surprised everyone by announcing shipment of the CP/M WordStar 4 by mid-August. In a massive direct mail campaign targeted to every known CP/M user, MicroPro revealed the price of the update as $89 plus $5 for shipping. We learned that users' associations can negotiate group purchases for $10 below the list price.

Now for the *bad* news. Dozens of Morrow owners who called MicroPro to inquire about WS 4 learned, to their chagrin, that it would not be available in Morrow format. It seems that earlier in the year, MicroPro decided to stick with just four formats: Kaypro, Osborne and Apple on 5-1/4-inch floppies and generic CP/M on 8 inch floppies.

You can imagine the anger this generated among Morrow users. In the Letters to the Editor section you'll find an example of the several letters MOR received on this subject. Although most of these strongly worded commentaries reached the offices of MicroPro as well as that of MOR, they have not appeared to sway MicroPro from its original decision. Representatives of the company claim that if it made a Morrow format available, the users of other makes of CP/M computers would demand the same attention, and MicroPro simply couldn't do the work involved in fulfilling these requests.

After having been orphaned by the demise of Morrow Designs, Inc., Morrow users now feel abandoned by one of their main software suppliers. And they are hopping mad. Although many Morrow users can translate two of the available CP/M versions of WS 4 into Morrow format with FOREIGN.COM, many of the non-technical users among us may find such a task too formidable or time-consuming to carry out. See Important Announcements on page 44 of this issue if you need help.

It seems inconceivable that providing WS 4 in Morrow format would cost MicroPro more than it could afford. We wonder what the extra cost would be compared to the amount of Morrow owners' business the company is now bound to lose. MicroPro has been infamous for its poor customer relations in the past. By promising support for WS 4, it seemed to be changing its ways. MicroPro's decision to not produce a Morrow-formatted WS 4 casts considerable doubt on the company's newly won reputation for effective support.

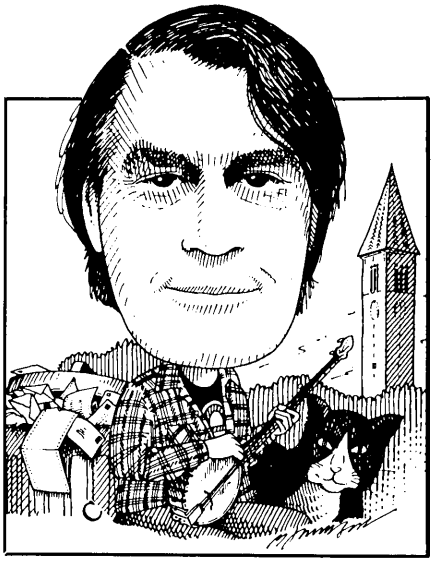
Merging for Survival

Close down or merge? Those seem to be the two distinct tacks Morrow users' groups are taking as membership activity and financial support shrink. Most MUGs, when their bank accounts sink beneath an acceptable level, throw in the towel and mail their leftover cash to MOR (and we thank you). Others try to stay in the ring through a variety of merger strategies. Some hook up with other MUGs or with CP/M groups supporting different machines.

BAMDUA on the West Coast is now planning joint activities with the local Kaypro group called BAKUP. With 300 members each and active BBSs, the groups appear well-matched — although, so far, they have chosen to cooperate rather than merge. For the coming year, the clubs have agreed to hold combined general-member and board meetings, and they are considering a plan for joint newsletter publication. A few hitches stand in the way of a full merger. For one, BAMDUA has acquired nonprofit and tax-exempt status while BAKUP has not.

In Santa Cruz (California), Boulder (Colorado) and other locations, MUGs live on as special interest groups within other local CP/M organizations. The MOR-Atlanta Users' Group recently offered the MUG-Washington group a different kind of shot at survival, or, in this case, reincarnation, since MUG Washington had already disbanded. The Atlanta group invited all members of the former Washington group to join them at a special rate. Many former MUG-Washington members have taken MOR-Atlanta up on its offer, despite the distance between the two cities.

Mergers, friendly takeovers and close collaborations have proven to be effective strategies in our current situation. MOR strongly supports these efforts and will do everything possible to assist.



From the Mailbox

by Bill Steele

ONE of the things that makes using our computers both frustrating and fun is their enormous complexity. Even the designers of the hardware and software didn't understand them completely, let alone know what would happen when the two elements were combined. We're out here groping through the ultimate adventure maze, finding undiscovered corridors and hidden trap doors. This column is where we post arrows and warning messages for each other.

Sometimes it takes a while, but we do get the arrows. Some months ago **John William Johnson** wrote that he couldn't update the Correct-It master dictionary by using DICTEDIT to append AUXDICT.TXT. It turned out some of the words were being copied minus their last letters. Others wrote of problems with truncated words in other software, but no one thought of what now seems the obvious reason until I got this letter from **Lee Woofenden of Guemes Island, WA:** "One day I used the TYPE command with ^P to print a WordStar file. To my surprise, the last letter of every word printed in italics on my Epson LQ-1000. [I found] that the eighth bits had been set to 1 instead of 0 on these characters, putting them out of ASCII code range. My guess is that this is WordStar's way of marking places it can put in line breaks when reformatting paragraphs. [Correct-BS]. When I heard of John William Johnson's problem a bell went off in my head. I found that when I used a text file created in WordStar to update the dictionary, the final letter of most words was dropped. Then I stripped out the high bits with "PIP NEWFILE=OLDFILE[Z]" and when I ran DICTEDIT with this file the final letters were not dropped. You could also use the public domain program HARDSOFT to strip high bits. WordStar does not set the high bit of the final letters in any line that ends in a hard carriage return, such as the last line of a paragraph, so you can avoid the problem by putting each word in your auxiliary dictionary on a separate line, as Correct-It's Learn and Append commands do."

Most of us knew about WS and NW setting the high bit at the ends of words, but nobody made the obvious connection. Thanks, Lee. From this I would guess that Mr. Johnson and others with truncating problems were editing AUXDICT.TXT in document mode. Use the non-document mode and you should have no problems.

On the less successful side, **Arthur Sherburne** writes that the "Not enough memory" message he gets when he tries to open a library with NULU is not due to insufficient disk space, as I suggested last time. (MOR Vol. 4, #4). Anyone else have an idea?

Mr. Sherburne also points out that my blank screen program can be shortened just a trifle by substituting CHR$(26) for CHR$(27)+CHR$(43). The first is "CTRL-Z," the second is "ESC +", and both perform the func-

We're more on our own than ever, so if you know a solution to a problem, don't assume someone else will write in; there are not so many of us that you can count on that. Whether you have questions or answers, keep them coming: ***Bill Steele****, P.O. Box 782, Ithaca, NY 14851, 607/273-2132; MCI: WSTEELE, 254-5833.*

tion of clearing the screen on the MDT-50.

Jan Rines of Narragansett, RI finds that her MP-100 printer is no longer giving the sharp, black printout it did at first. Jan has tried several different ribbons and different kinds of paper, and has had the printer serviced and the head pressure increased, adding "I noticed in MOR Vol. 4, #3, page 34 that Ron Jacobs mentions that Silver Reed printers are prone to problems caused by lack of cleaning. I could try this if you tell me what to clean." All this comes, of course, when camera-ready copy needs to be turned out. Jan also asks, "If I am reduced to renting a printer, are there any laser printers which will accept a NewWord file?" My own experience is that single-strike ribbons give the kind of results you've been complaining about, while multi-strike ribbons give a nice black print. There's also a difference between ribbons made for Silver Reed *typewriters*, which are usually "correctable," and those made for computer printing. Finally, ribbons have a limited shelf life and may sort of "dry out." Some of this was covered in MOR Vol. 2, #3, page 21. That article recommended buying ribbons from a company called American Ink, 603 East 10th Street, Oakland, California, 94606, (415) 268-0825. I've personally had good luck with multi-strike ribbons from Quill Corporation, P.O. Box 4700, Lincolnshire, IL 60197, 312-634-4800. If there *is* something wrong with your printer, my guess would be the problem is in the solenoid that hits the back of the daisy wheel to drive the character against the paper. I guess wear and/or dirt could make it lose its punch. Cleaning it might help, but I suspect it's not easy to get at, at least for an amateur. NewWord versions 2.xx can be installed for the HP Laserjet. Some other laser printers can emulate the HP, and some laser printers can emulate Epson, Qume and other popular dot matrix or daisy printers, so by installing NewWord for one of those printers you should be able to print out on a laser with no trouble. To use different type fonts on a laser printer you would patch the appropriate escape code for each font into one of the User Codes (Ctrl-Q, W, E or R), then enter that code when you want to change fonts.

Al Beechick of Pollock Pines, CA asks "Can you tell me how to use my cursor keys with Turbo Pascal? NewWord uses the cursor keys on my MT-70 terminal perfectly, but in Turbo, MBASIC or at the A> prompt they act differently." The arrow keys on the MT-70 (and the MDT-60) are function keys, just like F1-F10, that send a burst of two characters and can be programmed by KEY.COM or SmartKey to send any keystrokes or sequences of keystrokes you want. You are probably loading the file NW.KEY along with NW, and this programs the arrow keys to send ^E, ^S, ^D and ^X. Since Turbo Pascal uses WS/NW editing commands you could probably load NW.KEY before Turbo and have the arrow keys work as you want; however I'd write a new key file for Turbo (perhaps by editing and renaming NW.KEY) with additional commands for the compiler, etc. You could also write a key file for MBASIC, although the BASIC editor is so awful that I wouldn't bother; I write programs in the non-document mode of NW, then run them from the R option.

Answering a question from last time, the prolific **Gordon Northrup of Lee, MA** reports that KEY.COM definition files are limited to 1000 bytes — "almost no room for addresses, let alone boiler plate." My own solution for boiler plate is to program a key that reads in a file. Mr. Northrup also suggests reprogramming the linefeed key at the bottom right corner of the keyboard to a backspace: "It's easier to use than almost anything to remove typos, and is a minimal problem when hit by mistake." If you do this, remember that you are changing Ctrl-J into Ctrl-H, and that this will apply anywhere and everywhere else. Ctrl-J is the command to change help levels while editing a file, so you should reprogram some other key into Ctrl-J if you ever want to do that. You might also need to enter a Ctrl-J to do search and replace involving carriage returns--remember that a carriage return in WS/NW is actually Ctrl-M, Ctrl-J (i.e., a carriage return followed by a linefeed). And as we pointed out last time, you can only do search and replace involving Ctrl-J in non-document mode.

For those who haven't tried it, help level 0 is a joy — no characters lost while the system is writing stuff to the screen, and no bothersome "Do you really want to do this (Y/N)?" prompts. But you need to be able to get back to level 2 once in a while to check page numbers or see a directory.

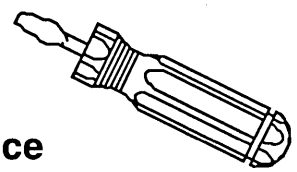
Paul Schatz of Houston, TX would like to know the patch points to change the default tab stops in WordStar. NewWord has such a patch listed in the User Area listing (the label is INIRLR, but you don't need it–you can change the tabs through the Special Patches menu), but WordStar doesn't. I'll throw this to someone who owns a copy of the WordStar Customization Manual.

A cautionary tale from **Rex Rectanus**, who spends six months of each year in **Ft. Myers, FL**, where he has an MD3, and six months in **Rector, PA**, where he has an MD2. Just before leaving Florida last time he bought 15 single-sided disks, formatted and sysgened them using the MD3 Morrow Menus, and PIPed bushels of data to them to carry to his summer home. When he arrived, however, his MD2 wouldn't read the disks. He wonders if the MD3 format and sysgen programs are incompatible with the MD2. Well, yes and no. The Pilot menu program on the MD3 calls the utility program FORMAT.COM, which will ask if you want to format a single- or double-sided disk. If you answer

double-sided without thinking, it will format a double-sided disk no matter what "kind" of disk you put in the drive. The only difference between disks sold as "single-sided" and "double-sided" is factory quality control; in fact, a lot of people save a lot of money by using SS disks on DS machines, usually with the added insurance provided by the public domain program FINDBAD, which locks out bad sectors. To format SS disks on an MD3 you have to remember to tell the program you want a single-sided disk. Once the disk is formatted as SS, data PIPed to it even on an MD3 will be readable on an MD2. The situation is similar with SYSGEN, which ordinarily copies the operating system you're using on your computer onto the new disk. If you sysgen from Drive A on your MD3, you will put the double-sided operating system on the new disk, and that won't work on an MD2. However, this is a good time to point out that you don't need to sysgen a disk that is only going to hold data; you only need the operating system on a disk from which you are going to run programs.

Meanwhile, Mr. Rectanus has got DS disks, which his MD2 can't read. Short of flying back to Florida to visit his MD2, he needs to find someone nearby who has an MD3 and can copy his data onto SS disks, or someone who has some other CP/M computer with double-sided drives plus a copy of UNIFORM or one of the other programs that allow you to copy from one manufacturer's disk format to another. Try the local Kaypro or Osborne computer club. If that fails, try for someone with an IBM-PC or compatible computer and the MS-DOS version of UNIFORM, which can copy between MS-DOS and most CP/M formats. ■

Jacob's Bit



By Ron Jacobs of Jacobs' Computer Service

Installing software such as WordStar for a particular terminal means setting WordStar to send the correct nonprinting ASCII characters to the terminal. Terminals included in the group which Morrow named "Level 3" are capable of such actions as inserting a blank space into the middle of a line of characters, inserting a blank line between two lines of text, deleting characters and lines, moving the cursor to any screen position from any other screen position, clearing the entire screen display, clearing from the cursor to the end of the line, and clearing from the cursor to the end of the screen. Different terminals use different command sequences to accomplish these tasks.

Morrow sold the following terminals: Lear Siegler model ADM 20, Liberty Electronics models Freedom 100 and Freedom 50, the MDT 60 and the MT 70. However, the Micro Decision computer systems that Morrow sold with these terminals were all set so that all applications software (programs such as Logicalc, WordStar, and Personal Pearl) were to be installed for operation as though they were being used with the Lear Siegler ADM 31 terminal.

Morrow did this for the convenience of the computer user. The ADM 31 was a popular terminal and applications software installation programs usually offer the selection of ADM 31 for the terminal the software is to operate with.

Morrow matched its terminals (none of which were ADM 31s) with the software which was installed for ADM 31 terminals by having the BIOS part of the CP/M operating system "trap" codes on their way from the software to the terminal and translate them to the correct code for the terminal, if translation is necessary. This is possible because applications software uses BDOS calls to send characters to terminals. Applications software uses BDOS calls so that the applications software need not know details such as I/O ports assignments of the particular CP/M computer that it is being used on. The BDOS, which is the same for all CP/M computers, then calls the BIOS. The BIOS is written specifically for the hardware of the computer it is running on.

The ADM 20 terminal is a source of confusion for many Morrow owners. This is because the ADM 20 uses a different DIRECT CURSOR ADDRESSING (DCA) string than do the other Morrow terminals. Also, all of the other Morrow terminals use the same DCA string as does the ADM 31, so that for DCA strings the BIOS is only needed do translations for the ADM 20. A Micro Decision that operates well with an ADM 20 where DCA is concerned will not work with any other Morrow terminal unless either the applications software or the BIOS is changed. Morrow's MD 1, 2 and 3 CP/M operating system distribution disks were set up to install the Morrow BIOS for the number of disk drives in the computer and for the type of terminal being used. The program that did this was INIT.COM, and it used INIT.001, INIT.002, and INIT.003 to do formatting, disk copying, and terminal selection, respectively. For hard disk Micro Decisions, a different program, also named INIT.COM, selected the terminal to be used and patched the BIOS for that terminal. ■

Forever Z

By Rick Charnes

FIRST things first. WordStar 4.0, which will be released by the time you read this, has a number of excellent features specifically tailored for us ZCPR3 users. This reflects the superb hand of Dave McCord, Echelon's chief technician and creator of the Morrow bootable disk. Dave has been working with MicroPro on this and the resulting product is now the most ZCPR3- enhanced major CP/M-compatible application program that we have. Files can now be referenced either from the command line with their named directory reference; i.e., "A0:COMMAND>WS LETTER:SYLVIA.LTR". Both the "D" (edit a document) and L)og a new directory commands will accept a named directory. The currently logged named directory is also displayed at the opening menu along with the DU: designation, adding a very nice touch.

Rick Charnes bought his MD-2 many years ago when he thought of himself primarily as a writer. Now a self-admitted fledgling technical type, his computer has turned from tool to toy. His immense love affair with ZCPR3 leaves some occasional time for mundane things like work. He is president of BAMDUA.

WordStar's R)un a program command has had its power greatly increased under ZCPR3. It fixes a major problem that previously existed for us, viz. it could not previously run a non-COM-file alias. This of course means ARUNZ/ALIAS.CMD entries, which is the main way we are making aliases. Since such a large part of our work from the command line consists of referencing ALIAS.CMD aliases, WordStar can now be used very much like a one-time ZCPR3 shell. Additionally, we can now run any resident commands such as REN, SAVE, ERA, etc. from the R) command. Note that this only works for ZCPR3 users; CP/M users (poor souls) cannot run resident commands and are still limited to executing .COM files.

Finally, if you never got the hang of ZRDOS' public directory feature (shame on you!), WordStar will now search along ZCPR3 path for its overlay files, a very nice touch that rounds off the superb work MicroPro has done towards "Z-ifying" this excellent product.

I'd like now to describe two of the most innovative of the new programs hot off the ZCPR3 presses and available from Z-Node BBSs everywhere.

The brilliantly unorthodox nature of the programming work done by Mr. Dreas Nielsen of Corvallis, Oregon has always impressed me profoundly. He works in a realm more or less neglected by other programmers, dealing with what might be called **non-menu** shells and shell variables. Some of you may have experimented with his exotic and brilliant QUEUE.LBR which he wrote in the very earliest days of ZCPR3 when even *ZCPR3: The Manual* was unavailable. It was an extraordinarily sophisticated technique that would place filenames in a "queue" to be executed one by one by a user–specified command or series of commands. The utilities he used when he wrote this 2 1/2 years ago SH, SHSET, SHVAR, SHDEFINE remain even today unappreciated and unused by the vast majority of ZCPR3 computerists.

Following these chronologically in Mr. Nielsen's pantheon was the release of his superb GETVAR/RESOLVE duo, with which one is able to store (GETVAR) and then reference (RESOLVE) a named variable based on user input given in response to program query. I hope to be able to go

into these important programs in a future column.

More recently he has done superb work in enhancing SH.COM and SHVAR.COM, two of the early ZCPR3 non-menu shells. And finally, as his crowning glory, Mr. Nielsen has now graced us with his elegant FOR/NEXT/PERFORM series, contained within the library FORNXT2.LBR. These programs give the 8-bit world something which we have never previously had, "FOR/NEXT" looping **from the command line.** Those programmers among you will understand the significance of this particular form of syntax. It is actually a refinement and culmination of the basic concept Dreas started in 1985 with QUEUE.LBR. As the ZCPR3 world has progressed and more sophisticated tools have become available, programmers such as Mr. Nielsen have been able to use these tools as building blocks from which they may go on and create even more elegant concepts, and FORNXT2.LBR is his gift to us.

The purpose of these programs is to generate a list of "arguments" upon which any number of possibly unrelated commands are then executed (PERFORMed). In one of its simplest applications, the arguments would be a list of filenames. Suppose, for example, you're writing a book and today is the day to put the finishing touches on your last four chapters, each of which exists as a separate file on your disk. For each (using FOR.COM, get it?) of these files, you want to edit it with NewWord and then run it through both CORRECT-IT and GMK.COM ("Grammatik" checks for grammar, style, punctuation, etc.). Since your editor is one of those unlucky persons with one of those obsolete IBM PC's, you have to run them through FILTW.COM to strip out all non-ASCII codes. Then finally before you turn your computer off for the night you want to archive each file to your backup floppy. This is all a fairly ordinary flow of procedures for many writers.

But it sounds like a great deal of repetitive keyboard work, a lot of the same commands to remember for each file, right? OK, let's put our ZCPR3 thinking caps on. We're smart and we know we could write an alias including all of the above commands. But that would still entail running the alias four times, once for each file. We are really enraptured by the Muse today and don't want to be bothered by all that computerizing. Well, if all the files have a similar name, such as CHAPTER.016, CHAPTER.017, etc. we'd know what program would take care of this: Steve Cohen's W.COM. Standing for W)ildcard, W.COM gives programs accepting only unambiguous parameters the ability to accept them wildcarded. We'd simply write our alias, called say, WRITE, enter "W WRITE CHAPTER.*", and off we'd go.

But suppose the chapters of our autobiography are named, for instance, after the various cities in which we've lived, and the filenames are therefore unrelated? Try this on for size, and get a sample of FOR/PERFORM:

```
FOR CHERHIL BOSTON
GLOCSTER FRISCO PERFORM ECHO
PROCESSING $X...$|NW
$X$|CORRECT $X$|GMK $X$| <<
FILTW $X$|AC $X BACKUP: /A
```

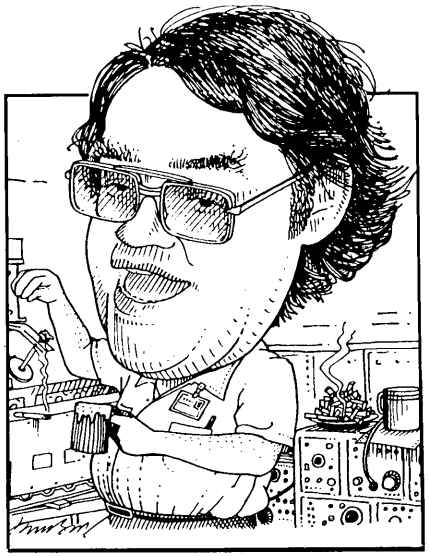
Quite a mouthful, but this command line could easily take us through the entire day's computing. We're all running HSH, of course, the command line editor, so any mistakes in entering are easy to correct. Let's go through it slowly.

The initial "FOR" line creates the list of "arguments," in this case filenames (could be entire command lines!), and places them into a file called FORFILES.SYS that is automatically created by FOR.COM. This is a "system" file (has its $SYS attribute turned on) so a directory display will not ordinarily show it, but that's fine with us. We could if we wished look into FORFILES.SYS with an editor and we would see a text file consisting simply of the four files we entered as parameters.

Now for PERFORM. PERFORM.COM reads the list contained within FORFILES.SYS and in our case substitutes each file, one by one, into the parameter symbol"$X" in its own command line. It's very similar to the usual parameter symbols "$1", "$2", etc. used elsewhere. If you look closely, however, you'll see an odd-looking symbol, "$|". The symbol is a "substitute multiple-command separator." It is PERFORM.COM's substitute for the normal ZCPR3 semicolon (';') used for separating commands in the ZCPR3 multiple command line buffer. Remember: we're not at the system level; we're still working inside an application and applications have their own rules and symbols. It may look like we are stringing together a series of separate commands for the regular ZCPR3 command line buffer, but appearances are deceiving. Everything on that command line is really simply parameters for PERFORM.COM.

We therefore need some way of telling PERFORM that it should consider all our seemingly separate commands as input for it to process. We do this with the '$|' symbol. In the above line when you see a '$|' flush right against a '$x', keep in mind that they are really not together; the former symbol is simply acting to separate what precedes it from what follows it. When PERFORM does its marvelous work of substituting each of the files in FORFILES.SYS one at a time wherever it sees the '$x' symbol, it also will translate each '$|' into a semicolon. Each time it loops through our entire sequence of commands, it does the two substitutions a filename for '$x' and a ';' for '$|'. It THEN sends this "resolved" command line over to the command processor proper and runs it.

(To be continued next issue ...)



Tools for Tyros

by Mike Allen

WELL, this month I promised to help with software installation using the dreaded DDT or portions of installation programs that are DDT-like.

Let's start with hexadecimals. Why do we need to know hex (short for hexadecimal) numbers? Because DDT and some portions of some installation programs were designed by programmers for programmers and hex numbers are very convenient for programmers. If you remember back in my column in Volume 3, Number 4 (Aug/Sept 1986) I talked about binary numbers. There was a pretty little picture of a couple of hands with each finger representing a bit, each hand (four fingers) a nybble and both hands together (eight fingers) a byte. Each group of four bits can be represented by a number between 0 and 15. In hex notation the decimal numbers 10 through 15 are represented by the letters A through F. If we go back to the "finger picture" and hold up the ring and index finger of each hand we get the decimal number 90. This is also the hex number 5Ah. (The small "h" at the end lets you know that it's a hex number.)

So what do we do with these numbers? What do they have to do with software installation? As I said some time before all peripheral devices are not created equal. As we communicate with these devices (like your printer or terminal) we need to tell them what to do. We do this by sending them a byte or series of bytes called control codes or escape sequences. These codes will do different things like telling a terminal to clear the screen or a printer to print in italics. The problem is that there is no standard coding for printers.

The terminal situation is slightly better thanks to Morrow. In the BIOS for your MD is a little chunk of code that translates a fixed set of codes to whatever your terminal expects to see IF you initially installed to Morrow software correctly using the INIT program. The MDs think all terminals are ADM-31s. Installing your software for printers and terminals then is basically the task of telling the software what codes the peripheral is expecting to see to accomplish a specific function. These codes are normally sent as ASCII characters.

ASCII characters are the generally accepted definition of "what number is what character." Thank goodness there is some standardization! An ASCII character is 8 bits or 1 byte. That means that there are 256 different ASCII characters, 0 through 255. (or 00h through FFh.) Originally only 7 bits were used (therefore only 128 possible characters) and the eighth bit was an error checking bit but as technology improved the error checking became less important and the need for the other 128 possible characters became more pressing. A common usage for the eighth bit is to switch in an alternate character set. In the case of my Epson MX80 the eighth bit is used to switch in the italics set.

I'm sure by now you have been figuring out how many printable characters there are and have come up with a bunch less than 128. In general there are 95 or 96 printable characters depending on how the delete (or rub out) character is handled. The other 32 characters are "control" characters that can be generated by holding down the control key and then pressing another key at the same time. Control codes can be generated for the characters A though Z and the symbols @ [\ ] ^ and _ which make up the set of 32. The standard way of denoting a control code in written form is to precede the character with a caret (^). So a control-Z would be shown as a ^Z and a control-^ as a ^^.A few control codes that are better known by their functions than their control representation usually because they have dedicated keys on the keyboard. A good example is the return key. This key actually generates a ^M. Others are the line feed (^J), tab (^I), back space (^H) and escape (^[). This last code, escape, is often used to signal a peripheral that following characters are not to be printed, but to be used as commands. Hence the name "escape sequence" (ESC).

Let's get back to those codes and sequences that the MDs should translate properly. A ^Z (1Ah) will clear the screen and place the cursor in the upper left corner of the screen known as the home position. The ^^ (1Eh) will just home the cursor without clearing the screen. The two character sequence "ESC)" (1Bh 29h) will put the screen in the dim mode and "ESC (" (1Bh 28h) will return it to bright. These last two may not work with all terminals.

Cursor addressing is very important. This is a method of placing the cursor anywhere on the screen so that the next character typed is at that location. This is accomplished by sending the terminal a series of 4 bytes. The first two are ESC = (1Bh 3Dh). The next byte represents the row, with row 0 being the top of the screen row 23 the bottom, with 32 (20h) added to it. The final byte is the column (0 at the left 79 at the right) again with 32 added in. The escape sequence for positioning the cursor to the upper left corner would look like 1Bh 3Dh 20h 20h.

There are two common methods of telling software how many characters

are in a given sequence. The first is to add an extra byte at the beginning that is the number of bytes on the sequence. A single byte, like clear screen, would then look like 01h 1Ah. Dimming the screen would be 02h 1Bh 29h. The other common method is to add a "null" (00h) at the end of the sequence. The previous examples would become 1Ah 00h and 1Bh 29h 00h. Check your software to see which is used.

There are other things that a program may need to know that you'll have to tell it in hex. A common thing is to turn an option on or off. There is usually a single byte that will control the option. Normally the choice is either a "null" or a non-"null" in the byte. Which turns it off or on depends on the software. The "null" is a 00h and FFh is commonly used as the non-"null." Sometimes the program will need to know how big your screen is or other numeric data. These will be stored in specific bytes as numbers.

To install a program using DDT the first step is to plan out what you are going to do. Check the manual for options. There will probably be a list of addresses and a sometimes cryptic explanation of what is needed in that location. If you aren't sure what something does, experiment. Make a list of the addresses and what you want to put in them in hex. Check the documentation for your printer and terminal to see what codes and sequences do what. There will at least be a list of functions and their codes and sequences. It may be necessary to convert those codes to hex numbers. Most printer and terminal manuals have a table that shows hex equivalents. In the Morrow MDT-60 terminal book the table is on page 1-5. My Epson MX-80 printer book also has a table that gives the hex numbers directly from the functions. Next comes DDT.

DDT stands for Dynamic Debugging Tool, and it finds and fixes program glitches. Let's pretend that we are going to install a program called YAHOO.COM for my MDT-60. After reading the documentation for YAHOO.COM, I find that it needs to know the code for clearing the screen. It has six bytes set aside for this purpose starting at location 103h. It wants the first byte to be the length of the sequence and then up to 5 bytes for the sequence itself. I know that I need only a one byte command, ^Z, to clear the screen. Location 103h therefore needs to have a 01h in it. Location 104h needs the command itself. Looking in the table on page 1-5, I panic since I don't see anything in the table that looks like a ^Z. I then notice that columns 0 & 1 and 4 & 5 have a heavy outline around them. I further notice that columns 0 & 1 are the non-printable codes while columns 4 & 5 are those printable codes that have control equivalents. The bell rings! The printable character in column 4 corresponds to the control character in column 0. Ditto for 5 and 1. So where is that pesky Z? There it is in column 5, row A. So if I wanted to send out a "Z" I'd use the hex code 5Ah. But I want a ^Z. Column 1 corresponds to column 5. Substitute a 1 for the 5. Aha, the code for a ^Z is 1Ah. So I'm going to put a 1Ah in location 104h. The other four don't matter since I already told the program (through the 01h in location 103h) that only one byte in the command counts.

With YAHOO.COM in my B drive and the disk with DDT.COM and STAT.COM in my A drive, log onto drive B (b:<cr>). Then type "a:stat yahoo.com<cr>" and note the number of records for YAHOO.COM. Let's say that STAT says there are 17 records. Divide that number by two and round up. 17 divided by 2 is 8.5. Rounding up gives me 9. Write that number down. Type "a:ddt yahoo.com<cr>". After much activity things will settle down and you will end up with a "-" at the left of the screen and the cursor right after it. We're ready to go. We want to modify the bytes starting at location 103h so right after the "-" we type "s103<cr>". DDT assumes that all numbers are in hex and responds as follows:

0103 xx

... where xx is whatever number is presently in location 103h. DDT is now waiting for us to tell it what belongs in 103h so we type "01<cr>" and DDT responds:

0104 xx

DDT is now waiting for something in 104h. Our list tells us to put a 1Ah there so we type "1A<cr>" and DDT comes back and says:

0105 xx

We now have nothing left on our list. To end, type ".<cr>" and DDT comes back with the "-" waiting for another command. If we had other locations to modify we could enter another "s" command. Since we are done we need to exit DDT and save our modifications. To exit DDT type "^C" (that means control-C, remember?) and you will return to the CP/M prompt. At this point our modified program is in memory, but not on the disk. It is important to do *NOTHING* between exiting DDT and saving the modified program. To save the program we need that number we calculated from the number of records shown by STAT. In the case of YAHOO.COM we calculated nine. We then type "save 9 yahoo1.com<cr>". This saves our modified program as YAHOO1.COM. I saved the modified program under a different name than the original to check the modification and if I screwed up badly enough I could always get the original back. Once I knew it worked, I would rename it as YAHOO.COM.

Now that's a *very* basic primer on installation. There has been sufficient interest in NewWord and WordStar installation that I will devote my next column or two to those programs (assuming my copy of WordStar arrives in time). See ya in a couple. ◘

WordStar 4 for CP/M

A Promise Made Good

By Pat Braden

CONSIDER the users who have stuck doggedly to a long-term investment in an Osborne or Morrow. They're like the dutiful, if somewhat frumpy, housewife who dolefully watches her husband drive off in a 16-cylinder hotrod with a blonde chick called MS-DOS.

The CP/M house has been very empty for a couple of years now, programs like OutThink and Write Hand Man notwithstanding. Indeed, the real impetus for switching to MS-DOS has been the cornucopia of programs written for it: nothing like Ventura Publisher or PC-Paint in CP/M, you bet.

Yet there is still a small group proclaiming that CP/M lives. And it's not a lunatic fringe talking: CP/M, in fact, has enough power to do what most of us need. Otherwise, personal computers would never have caught on in the first place. It's also a fact that most people use only a very small portion of the capabilities available to them through any well-written computer program. Otherwise, why should there be stand-alone programs to strip the 8th bit from Wordstar files when PIP.COM has a Z option?

With the CP/M version of WordStar 4, MicroPro revisits the CP/M world to uncover a veritable garden of delights. Want to Undo an erasure? Now, you can. How about a built-in spelling checker? Built-in function key programming? Want a built-in macro generator and 4-function calculator? True proportional spacing? Menu-driven support for more printers than you've ever heard of? How about running another program from within a document? ZCPR and user-area support? Conditional if/else branches during MailMerge? Embedded ruler lines for quick-change margins? The CP/M version of WordStar 4 must approach 100% efficiency in wringing performance out of the Z80 chip.

This kind of brilliance is a significant turnaround for a company which sleepily abdicated its position of dominance a couple of years ago. While WordStar 4 has daunting competition in the MS-DOS world, WordStar 4 for CP/M is clearly the only word processing program to consider. The fact that the CP/M version retains probably 90 percent of the features of the MS-DOS program shows the real potential of CP/M in the hands of a skilled programmer.

The program is well supported. The user's manual represents a complete turn-around in readability and organization. And, if you should have a question not covered by the manual, you'll be astounded to discover that MicroPro has made a major new commitment to telephone support, almost tripling its staff in that area. A call for help gets a courteous and knowledgeable response.

A Walk-Through

MicroPro seems to have blanketed the CP/M community with a mailer for the CP/M version of WordStar 4, so there's no need to reproduce all the refinements listed in their advertisement. I would like to list the most significant changes for me personally:

Documentation Consistent with other modern efforts. That means it's light-years ahead of the 3-ring "programmer's notes" which accompanied the earlier CP/M versions. The science of software documentation is still evolving, and still needs a healthy dose of instructional design. But this manual is well organized and readable.

Installation There's a WINSTALL, but it's actually redundant because of the full-featured WSCHANGE. Those who have struggled trying to cram Epson superscript controls into USR1 or ROLUP will be delirious with WSCHANGE, which can also provide a refreshing menu-driven tour through the entire user area.

Memory and Data Management The new CP/M version of WordStar 4 must cope with a lot of different hardware, indeed. WSCHANGE allows you to select from a variety of terminal emulations, and the "MINIMUM TERMINAL" option tries to cover what hardware the other selections have missed. It's clear the programmers have tried to make this version as workable as possible within the memory and storage limitations of CP/M machines. WordStar 4's status line now displays both "Large File" and "Low Memory" messages to let you know when you're venturing into dangerous waters. There is a single inconvenience trying to use WordStar 4 on single-sided double-density 184 k drives, for the spelling checker will need its own disk and has to be run outside the program. A no-frills version of the program will still fit on one 92k disk, though you won't be able to use the spelling checker because of the dictionary's 138k size. The beta test version of WordStar 4 requires just a bit over 50k of TPA, which is amazingly small considering all the things the program does.

Printer Installation This is now simply a matter of selecting from a very long list of drivers. The printer driver library is 146k, which means that computers with 92k drives must use the generic, default printers. WordStar 4 does provide a way to hack the

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Pat Braden is a professional writer who fell in love with the WordStar bundled with his Osborne computer. His two latest books, both automotive, were written using a Morrow MD3.

large library down to workable size, though 92k-drive owners will have to borrow a double-density computer to make the first cut. You select out just the printers you'll need from the big library and save them in a smaller working library. In my case, I selected nine drivers for a total printer library size of only 27k. To do this, you need WS.COM and WSCHANGE.* on a disk in A:, and WSPRINT.OVR on drive B:. Using WSCHANGE.COM, select the printer driver library on B:, then create a smaller library on B: by selecting out just the printer driver's you're likely to use. Finally, copy the small library back on to your working WS.COM disk.

While we're talking printers, I should note the wonderful ability of the program to change custom printer codes on-the-fly. While editing a document, the dot commands .XQ, .XW, .XE and .XR, followed by the hex code, will redefine the custom print commands ^PQ, ^PW, ^PE, and ^PR.

Opening Menu In addition to all the familiar WordStar options, the opening menu lets you set a file's attribute to read-only, create a table of contents or index a document. You can change user areas and even filter the directory display selectively so that only *.DOC files show, or no *.COM files show, etc.

Macro Generator There is one very significant difference between the old and new versions. In the old WordStar, pressing the escape key would back you out of what you were doing. In the new version, the escape key pops down the menu which lets you use macros. The first couple of times you hit <ESC> the change in function is disconcerting, but the macro menu opens a whole 'nother world of WordStar 4 features. For instance, to write this article, I quickly defined the <ESC>W sequence to write "WordStar," the <ESC>M sequence to write "MicroPro" and the <ESC>C sequence to give "CP/M." Had I desired, I could have defined another key to write "The all-new, value-packed WordStar 4 for CP/M machines from MicroPro." and sprinkled it easily throughout the document with just two keystrokes each.

The macro menu also lets you enter the result of an equation (defined by ^QM) into your text directly. Thus, WordStar 4 has a built-in calculator. The potential of the calculator is well developed: using MailMerge, you can total columns of variable data at print time: instant invoices! Indeed, the math, merge and search/replace capabilities built into WordStar 4 make it just slightly shy of being an integrated word processor, spreadsheet and database.

Not properly a macro, but certainly a significant convenience item, is the fact that you can mark a block of text and then change the case of all the characters within the block: just issue a ^K' to get all lower case, or ^K" for all upper case characters in the block.

Proportional Spacing This, and the "Undo" command, were probably the two most-wanted features of the new version. WordStar's proportional spacing works very well. If you're using an HP laser printer, you can switch between Times Roman and Courier just by turning proportional spacing on (.ps on) or off (.ps off), and you can switch between 8-point small type, 10-point Times Roman, 12-point Courier and 14-point Helvetica with just the .cw command.

Columns Proportional spacing is inherently complex: that is nowhere better illustrated than when you try to line up vertical columns of proportionally spaced type. All word processors face the problem, and most have cumbersome solutions. In the case of WordStar 4, you "anchor" the starting place of a word in a column with the ^P@ command. Thus, proportional columns look like this on-screen:

```
^@Column One    ^@Column Two
^@Second line   ^@Me too
```

(It's clear that one of the escape key macros should be "^P@" if you're going to do columnar work using proportional spacing.)

Independent of proportional spacing considerations, there are two new column-oriented commands: ^KN and ^KI. When you turn column-mode on with ^KN, you can mark and move vertical blocks of type as opposed to whole lines of paragraphs. This is perfect for list management or swapping columns of figures on a balance sheet. The ^KI command controls whether the column, when it moves, writes over or shoves aside the material to its right.

Headers and Footers Up to three lines of header and footer material can be inserted automatically on every page.

Antecedents In the beginning, there was WordStar. A group broke away from MicroPro to form New Star and produce an improved WordStar work-alike called NewWord. NewWord was bundled with Morrow computers, of course. Slowly, NewWord developed its own following and, in its MS-DOS version, was considered "what WordStar should be," according to one national review.

As part of its effort to match the features of contemporary MS-DOS word processors, MicroPro purchased New Star, returning its main players to the WordStar fold: NewWord, in fact, is the basis on which both the CP/M and MS-DOS versions of WordStar 4 are based. That fact must not minimize the value of the gifts which MicroPro has heaped on its own prodigal son: WordStar 4 is significantly better than the latest versions of NewWord, and the CP/M version is especially superior.

In fact, if you've been agonizing for a year or so about upgrading to an MS-DOS computer, you can relax now and save yourself a bundle at the same time: just upgrade to WordStar 4. The improvement will be virtually the same as if you had gone out and bought a new 16-bit machine. My personal prediction is that the CP/M version of WordStar 4 will probably set MS-DOS computing back several years. ■

Big news
for the brave
few of you
who started this
whole thing.

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Finally, all the "if only's." Over 100 truly useful improvements including undo, macros, on-screen boldface and underline, and multiple ruler lines stored with documents. Even something to help you get the most from your laser printer. Everything you need to be at the forefront of technology. Again.

System requirements: CP/M-80 2.1 or higher; 54K TPA w/Math (51K TPA without Math). Disk requirements: two 5-1/4" DD drives, or two 8" drives, or one DD floppy drive and a hard disk.

To order WordStar, CP/M Edition, Release 4, fill in this coupon and send your check or money order to: MicroPro Order Update Department, P.O. Box 7079, San Rafael, CA 94901-7079. **Or call toll-free 800-227-5609 Ext. 764.** Allow 3-4 weeks for delivery.

Name_____
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City_____ State____ Zip_____
Company Name_____
Telephone ( )_____

Osborne™ format 5-1/4" disks_____
Kaypro® format 5-1/4" disks_____
Generic 8" disks_____
Apple® format 5-1/4" disks_____ (available October '87)
WordStar Serial No._____ or include title page of your WordStar Reference Manual.

CP/M Release 4	$89.00
Tax*	
Shipping/Handling	$5.00
Total	

**Only these states require sales tax: CA, GA, IL, MA, NJ, NY, OH, TX and VA.*

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Late Night Thoughts on WS 4

By Ted Silveira

UPS delivered the package just before noon, and inside was a slick maroon box that said "WordStar Release 4, CP/M Edition." Serge called two hours later to say could he have the review by tomorrow evening, please. So what you have here are my notes on this manic first encounter with WordStar 4.

Printing

To nobody's surprise, WordStar 4 looks a lot like NewWord in many places, especially when it comes to formatting and printing. WordStar 4 allows you to have multi-line headers and footers. It also allows multiple ruler lines in a single document, which means that you can use different margins in different sections of your text and still do a global reformat without messing things up. You can even redefine your four user-defined print contorls (^PQ, ^PW, ^PE, ^PR) within a document.

WordStar has also inherited NewWord's extensive printer support. The new printer selection menu has almost 70 printers to choose from, including the Hewlett-Packard Laserjet printer (and thereby, all the many laser printers that emulate the Laserjet).

Macros

WordStar 4 now includes a built-in macro facility that it calls "shorthand." You can define up to 36 shorthand macros (with Escape plus a letter or number), which can be either text or commands. If you press ESC ?, you get a list of your current definitions and the option of adding new ones. It includes some special shorthand functions for inserting the results of WordStar's new math capability (see below). While this built-in macro function is convenient for some things, its limited storage features and lack of sophisticated features poses no threat to displace XtraKey or SmartKey.

Screen Display

For those terminals that have the smarts to do it, WordStar now supports on-screen boldface and underline. Both look quite nice on the screen if you turn off the display of print control characters (^OD). However, on my computers, at least, there's a minor problem. As soon as I enter a ^PS, for example, WordStar redraws the screen, underlining every word from that point to the end of the screen (and even to the end of the file, if I happen to scroll there). When I enter the second ^PS of the pair, WordStar immediately rewrites the screen again, displaying it correctly, but the overenthusiastic underlining takes time and gets annoying after a short while.

The speed of the screen display appears to me to be the same (though I suppose it could be slightly faster). On the other hand, I haven't yet patched the various screen delays as I have on my WordStar 3.3.

Math Functions

The new WordStar has two related math commands. First, it has a built-in four-function calculator that you can pop up on the screen. And second, it can total (add/subtract) any numbers within a marked block. In both cases, it stores the results of the computation — you can insert them in your text with special shorthand commands. Personally, I find a cheap pocket calculator more useful, but then I never have to add columns of figures in my text. Some people will certainly find it useful, but be aware that the functions aren't very sophisticated.

Spelling, Indexing, and Mail-Merge

Previously, to get indexing and merge-print functions with WordStar you had to buy separate programs (at pretty stiff prices). Now, WordStar includes the merge and indexing functions as part of its regular package, and as a bonus, they are more closely integrated into WordStar itself.

MicroPro has also dumped the mediocre SpellStar spelling checker and replaced it with the Word Plus, the general favorite among CP/M spelling checkers.

Documentation

You'll be happy to hear that the WordStar manual is better organized, more clearly written, and includes both a tutorial section and an alphabetized reference section. It's miles better than the legendary manual shipped with earlier WordStars.

Installation and Patching

The new WordStar comes with its own menu-driven patching program, WSCHANGE, that will completely eliminate the need for esoteric DDT patching for most people.

There's More

That's not all there is to WordStar 4, by any means, but it's late, and I've got to upload this file to MOR.

So let's get to the real question: Is WordStar 4, CP/M Edition, worth the $89 upgrade price? It is to me, and then some. It's a fine program.

Ted Silveira writes for several computer publications. He lives in Santa Cruz, California.

Why I Switched to a PC Clone

A Former Morrow Owner Tells All

By Erik Westgard

RECENTLY I was persuaded by my employer to move from St. Paul to Chicago. All I could think of at the time was how many mail forwarding notices I'd have to send out and what I would do if any of my belongings got lost or ruined in the move. It's hard to run out and replace one-of-a-kind furniture and stereo equipment that's no longer made.

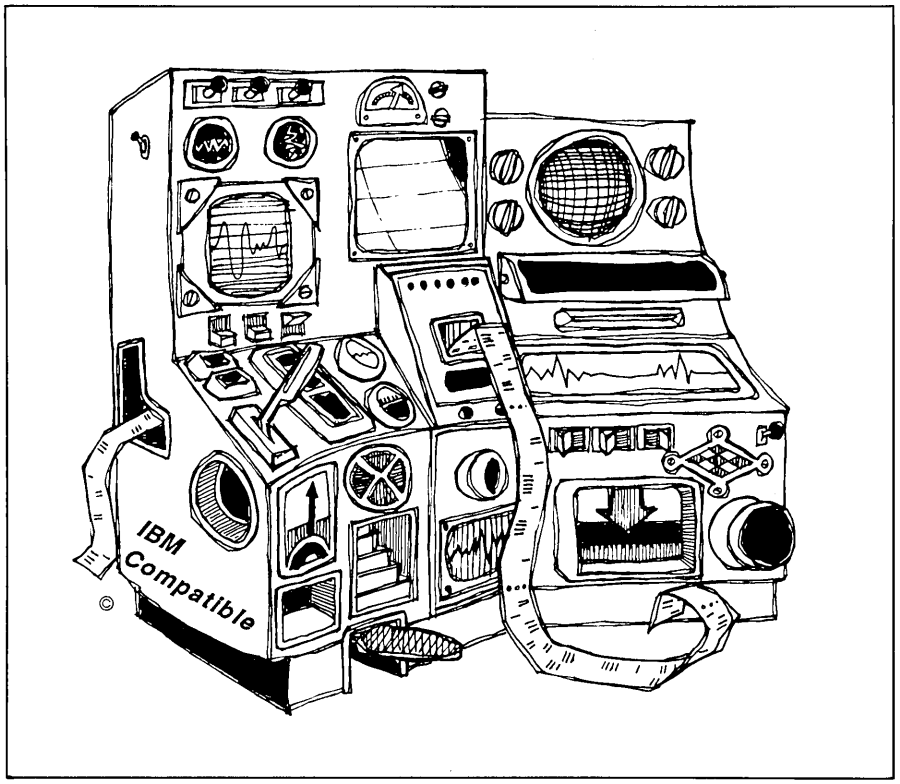
My fears were unfounded, at least with respect to the furniture. All the bookcases and dressers made the move undamaged, as did much of my computer and stereo gear. Trouble began when I set up my Micro-Decision to write change-of-address letters. I had been using a homemade terminal on my MD-2 left over from my college days, which was (barely) working when I left, but had now stopped. All I got were random characters on the screen.

I had an ancient ADM-3A terminal in the basement, but it was upper-case only. A week before, I had returned a borrowed ADDS Regency terminal to the office in St. Paul. So here I was, dead in the water. I looked at catalogs and made some calls for a new terminal, since I wanted one that did VT-100 emulation for dialing into the office. The outfit that sells terminal emulation boards wanted to ship me a new one in three weeks.

The issue of *Computer Shopper* I consulted showed VT-100 style terminals at $399, and PC clones at $499. Since I had run a clone of sorts at the office already, an AT&T 6300, the choice was not a difficult one. I had had bad luck with mail-order diskette drives in an ill-fated attempt to upgrade my MD-2 to an MD-3, so I was determined to buy locally and pay a bit extra. This was to give me what they call "recourse" in the mail-order computer business — better, I suppose, than having "no recourse," which is what you have when the dealer is at the other end of the toll-free number with your money and you are stuck with whatever they shipped.

I checked with the Chicago *Tribune* and found several dealers within about 20 miles, but I wanted one nearby. As the days passed, and my mail got closer to not being forwarded, I began to despair. I was even tempted to fly to Minneapolis to shop at a local discount store for a Korean PC clone called a "Blue Chip."

Fate intervened, however, after a mere ten days. Walking out of a corner restaurant one Saturday morning, I saw a sign for "ICOM." They had computers in the window, so I wandered in. One look at the stacked motherboards and $29 async-cards, and I knew this was the place. I walked up to the proprietor, Bill Jaworski (who, incidentally, was once the largest Midwestern



Erik Westgard works as a sales engineer for a computer company in the midwest. In his spare time, he races sailboats and writes articles for model railroading magazines.

Morrow dealer) and asked him for "the world's cheapest PC clone."

Bill showed me the "Custom XT" with one drive, keyboard, 256K of memory and my choice of oriental-sounding monitors in green or amber for $599. I picked a good-looking amber display called a "Tatung." Twenty extra bucks bought an "AT-style" keyboard upgrade. The next day I brought the machine in for a 640K memory upgrade and, as it turned out, a $279 ten megabyte installed hard disk upgrade. I saved $30 by taking my pick out of the disk controller "grab bag" they had in the back. Bill complimented me on my choice, an Ompti 5510, which supported mixed disk drives and had a powerful on-card processor.

Needless to say, I'm pleased with the new system and its ridiculously low price. The right clone is as good a deal as my original Morrow MD-2 (under $1,000), back when you had to shell out $3,600 for a plain IBM with two single-sided drives and 64K of memory.

Reasons to Buy a PC Clone and Retire the Morrow

Great New Software for Under $100 — MicroPro has a deal for current CP/M WordStar owners ... $94 and a phone call brings you a shiny new DOS version of WordStar, Version 4. Like NewWord, which I should have picked up for my Morrow, this release has all kinds of great new features, but preserves the old commands. You get a fast on-screen spelling checker, a thesaurus, a file conversion utility, and whole-document reformatting at a single keystroke. The CP/M version promises some of the same features, but nevertheless the IBM version is much more powerful.

Graphics — I'm in marketing, and I live and die by overhead transparencies. I used to cut and past the ones from headquarters. Now I make my own, line drawings and all in only minutes with a package like GEM or Overhead Express. These would take hours if done manually (as they used to be).

Exotic Programming Languages — While you can buy a number of good programming language compilers for CP/M (like Turbo Pascal) all the new ones run only on MS-DOS. Quick BASIC, True BASIC, and Turbo Prolog all attracted my interest, and are not outrageously expensive.

Desktop Publishing — This revolutionary phenomenon is quickly becoming possible on an enhanced IBM system, no longer limited to the Macintosh. With the price of some laser printers dropping below $2,000, many clone buyers are choosing this option so as to take advantage of the rapidly advancing technology.

Terminal Emulation — I needed IBM 3101 terminal emulation with my former employer to access a mainframe electronic mail system. In my current job I need VT-100 or AT&T 4410 to access UNIX from home. All along, I've needed VT-100 or a "videotext terminal" to access the multi-user spacewar games on CompuServe. It's hard to do exotic terminal emulation on Morrows, since Morrow-label terminals have only a limited number of functions. For $12 you can get a package called PROCOMM for your clone that gives you a menu of terminal emulations to choose from, as well as all the standard MODEM7 features.

Reasons *Not* To Retire Your Morrow and Buy a Clone

MS-DOS — I respect Bill Gates of MicroSoft. He brought us MicroSoft BASIC, and he's now personally worth over one billion dollars (at the tender age of 31). However, his MS-DOS operating system is miserable. MS-DOS started out as a clone of an early CP/M version. Some of the features in the latest versions (3.3) of MS-DOS are OK, but they are just an incomplete and cheap imitation of UNIX. CP/M is still my favorite.

Speed — Unless you spend much more than you should and buy an "AT," you will find that an IBM PC runs programs like BASIC or WordStar about as fast as your Morrow. George Morrow said as much some years ago, but nobody believed him. I ran some tests and it's true.

Memory — You only need memory for two things. One is graphics and desktop publishing, and the other is for large financial models. If you stick to the current versions of WordStar, they look and run the same in 64K on the MD-2 as they do in 640K on a PC. If you only write magazine articles or letters on your system, you don't need vast amounts of memory or an IBM compatible machine either.

Lotus 123 — If you want to make it big in the accounting or finance departments of a *Fortune* 500 company, you need to learn all about and use Lotus 123, and have them buy you a big, fat PC-AT with tons of memory. As a private citizen you may not need or be able to afford it. Lotus only runs on DOS and costs about $500.

Multiple Users — Sometimes you will be told you can run more than one user on a PC. You can't. You don't have fast enough disks, enough memory or a real operating system, except for XENIX, for which virtually no cheap applications exist. $1,000 is too much for an operating system with no programs you can use. I tried to talk my dad into putting XENIX on his AT, and he replied that we "had enough operating systems, thank you," and what we really needed was "more ways for the machine to do real work and pay for itself."

Keyboards — IBM PC-type keyboards and all the improved versions are still miserable. For some reason they won't go back to the layout on an electric typewriter from the good old days. They best keyboard I've ever used was the $79 keyboard kit I bought from Jameco for my homemade terminal.

Color — Many businesses I've visited over the years say they like to use color monitors on their personal computers, but can't cost-justify them. I have always associated color monitors with somewhat fuzzy characters on the screen and eyestrain. If you spend another $200 over the $500 it takes to upgrade to color, you can get enhanced monitors and graphics boards which will relieve some of the problem. A little-known fact is that most of the $89 monochrome display adapter boards they sell with PC clones run in the "Hercules Compatible" mode, and will support excellent graphics while preserving your eyesight and budget.

Noise — PCs and clones have noisy fans which can spoil your concentration.

Taking Disks to the Office — Uniform, the multiple-disk format program, runs on your Morrow, and you can get a version for the PC. I use a program on my clone called Smart-Disk, which works fine. You can put your WordStar file in IBM format on your Morrow with Uniform, or run Smart-Disk on the PC at the office and just bring in your Morrow-formatted disks.

In Conclusion

If you you feel you need to move to an IBM compatible, go ahead. Feel remorseful for leaving your Morrow behind only if your "upgrade" gains you nothing.

It is the policy of the Morrow Owners' Review *to provide as fair a perspective as possible of the Morrow and CP/M "scene." We know that the issue of switching to clones, Macintoshes, etc. is a painful one for many of you. We also know, however, that a significant percentage of subscribers (about 25 percent) are either in the process of switching or have already. Inthe interest of serving you, we want to make your transition easier. By the same token, we don't want you to waste time and money changing if you don't need to. That's why we're running this article, and hopefully it will prove to be beneficial for many of you. —Ed.* ◘

The Future of MOR

Two and one half years ago, MOR became a subscription magazine. At that time we knew that we needed 6,000 subscribers to sustain a magazine with the level of quality we had in mind. But we never had more than 4,000 subscribers at any one time and so were always short of support.

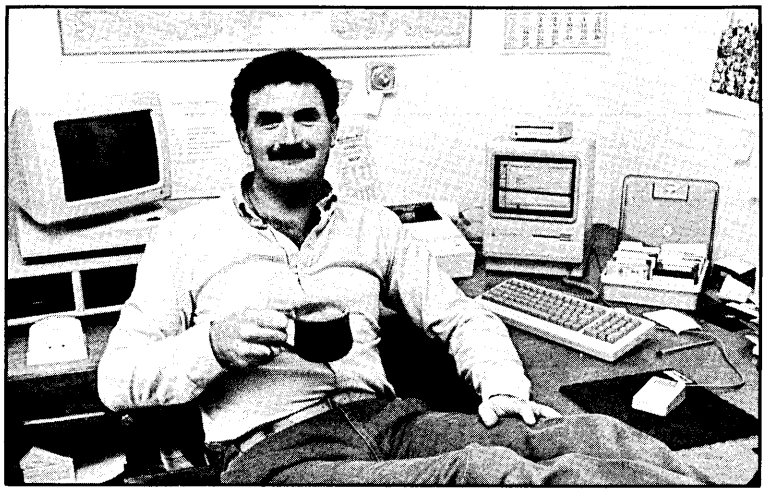
Two years ago, we started the MOR mail order department. That kept us afloat in the face of ever worsening renewal rates and declining display advertising. During the last six months the mailorder sales started dropping, too. Even MOR can't sell the same items over and over to the same people.

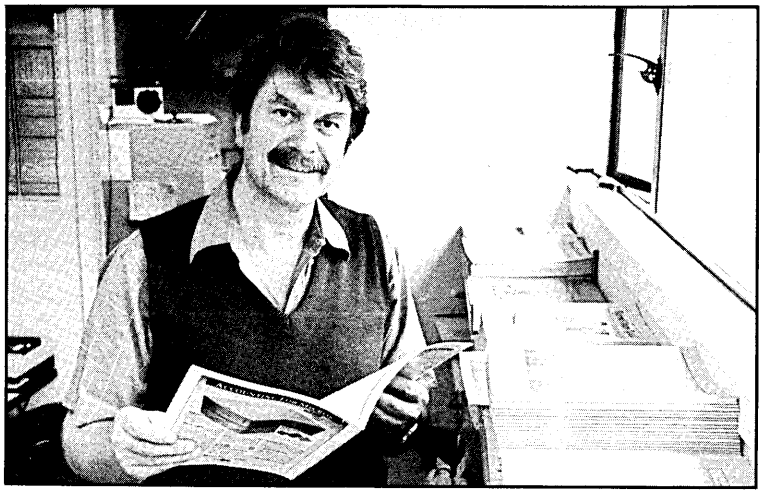
Out of our little office we were able to give rather good support to many more people than we ever thought possible. We also developed some useful services to which Morrow owners had never had access. But, for a small magazine, we have relatively high overhead costs: An office costing $1,000 per month including utilities, insurance and myriad miscellaneous expenses; a staff of five modestly paid part-timers for $5,000 per month including taxes; and a large printer's bill. All this expense, all this effort needs to be supported somehow.

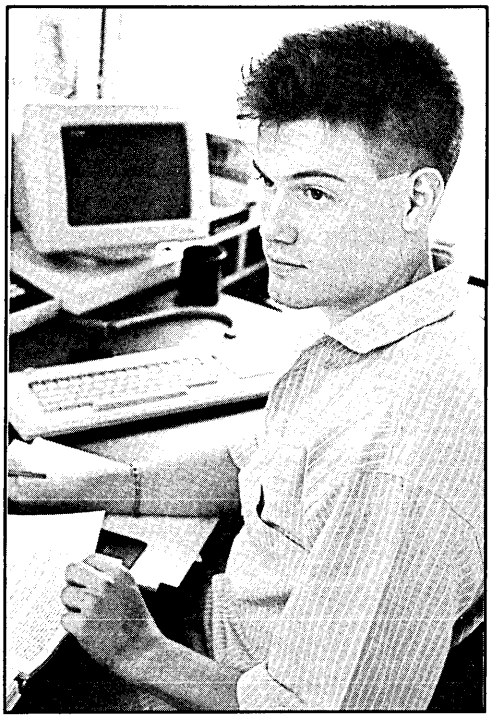
Recently we were faced with a sharp drop in that support: too many subscribers did not renew. It's natural, of course. People are moving on to other machines in ever greater numbers. But the sharpness of the drop surprised us. Nearly all of the renewal money arrives in the three months of May, June and July, because those are the months during which we started with subscribers back in 1985. The renewal rate this year was only 45 percent. Because most of the potential renewals are already in, we know what is in store for the rest of the year: *Slim pickins.*

That is why MOR is forced to start operating on a fraction of its normal budget. After the December issue you can expect some big changes in the way your subscription will be fulfilled. At the time of this writing nothing is definite yet. Before that, by November 1, we will have to close the office and give up the phones. That spells the end of phone support, because MOR will then operate out of a garage ... just like a few of our advertisers!

The only remaining phone connection with MOR will be through the MOR BBS, already the fastest and most effective way to get Morrow-specific help from a whole community of compatible users. The MOR mail order department will also do business as usual, as long as there is a need for it. We, the dedicated staff of MOR, hope you won't take it too hard. *The times they are a-changing.*







The Morrow Staff

Here they are: The people that talk with you on the phone, fill your orders and produce MOR. *(Clockwise from top left corner)* **Kirsten Andreae,** Subscriber Services; **Serge Timacheff,** Managing Editor; **Steven Wartofsky,** Sysop/Tech Support; **Greg Smith,** Operations & Advertising; **Sypko Andreae,** Editor & Publisher; **LeMel Hebert-Williams,** Administrative Assistant.

MOR Products

Original ***User's Manuals*** published by Morrow.

Prod #	Description	Price
601	Correct-It User's Manual	8.00
602	CP/M 2.2 User's Guide (for MD2 & MD3)	12.00
603	CP/M Plus Guides (for hard disk MDs; 5 books)	35.00
604	MBASIC User's Guide	12.00
605	MD Companion Guide (for everyone who isn't compatible with CP/M)	12.00
606	MD User's Guide (for MD2 & MD3)	12.00
607	MD Hard Disk User's Guide	12.00
608	Morrow Software Sourcebook (1983 edition)	8.00
609	NewWord User's Guide	12.00
610	Pilot User's Guide	12.00
611	SmartKey User's Guide	8.00
612	SuperCalc User's Guide	12.00

Service Manuals to help repair or enhance your machine. (Even if you don't do the repair yourself, your repairman probably will need them.)

Prod #	Description	Price
700	Complete manual set (701-710)	80.00
701	Micro Decision Service Guide w/ schematics for Rev. 1.1 & 2.0 (for MD2 & MD3)	25.00
702	Diagnostic II User's Manual (disk sold separately)	25.00
703	Hard Disk MD Service Guide w/ schematics	25.00
704	SA 200 Shugart Mini Floppy Drive Preliminary OEM Manual (for SS drives)	15.00
705	SA 455/465 Shugart Mini Floppy Drive Service Guide w/ schematics (for DS drives)	15.00
706	MDT20 Terminal Reference Guide	10.00
707	MDT20 Service Manual	12.00
708	MDT50 Video Terminal Service Manual	10.00
709	MDT60 Video Terminal Service Manual w/ MT70 Video Terminal Supplement	15.00
710	David Block's original MD Q&A book	6.00

ZCPR3 is a Morrow-bootable CP/M 2.2 replacement by Echelon for MD2s and MD3s. Complete with two disks and manual, the ZCPR3 kit provides an operating system superior to CP/M 3.0. For more information on the ZCPR3, see article in MOR Vol. 3, #5, page 34. Please indicate your ROM Rev. and your disk format (double-sided or single-sided) on the order form.

† For more information on any of the **Z Supplement** disks (Prod. 803, 806 & 807) send a SASE to MOR, attn: ZCPR3 Dir.

Prod #	Description	Price
801	ZCPR3–including: Z-System, 85 utilities, help disk and *The Z-System User's Guide.*	59.50
803 †	ZCPR3 Utilities source. Five disks with the source code to some of the latest Z-System utilities.	35.00
804	ZCPR3: The Manual	20.00
805	Out-Think–Outline processor	45.00
806 †	Z-System source code. Four disks with source code to some of the system segments and BIOS.	25.00
807 †	ZRDOS. Assembled ZRDOS without ZCPR3 plus HLP files.	40.00
808	SuperCalc 2 — Disk and manual. Ideal for Morrow owners who want to upgrade from LogiCalc.	39.00
809	MDHD Revival Kit — Three replacement CP/M distribution disks for adding other hard disks to your MDHD. (See article this issue on p.23) Contact the office for further ordering instructions.	24.00

ROM Upgrade Kits contain instructions, ROM chips and software—everything you need to bring your machine up to date with Morrow Design's last ROM release. (Some software that won't run on older machines *will run* with an upgrade.)

Prod #	Description	Price
901	ROM Upgrade Kit for MD3 (Rev. 3.1)	35.00
902	ROM Upgrade Kit for MD Hard Disks (ROM Rev. 1.9, BIOS Rev. 2.0)	45.00
903	Mike Allen's Clock Kit (MACK). See ad page 21.	64.00

Floppies of the Bimonth

With every issue of ***MOR,*** we compile floppies that contain public domain programs, short articles and other interesting tidbits. Each **Floppy of the Bimonth (FLOB)** costs $8.00. Listed here are the **FLOBs** for this issue. A list of all **FLOBs** to date is available upon request.

A Note on Using FLOBs

Some of the files on **FLOBs** have been compacted to allow us to put more on a **FLOB**. When you receive your **FLOB**, you will need to return these compacted files to their original form. The last three letters in a filename (known as the extension), will indicate how the file has been processed. To aid in determining how the varous files have been processed, symbols preceding the filename indicate what you will need to return the files to their original form. A list of the symbols follows:

✓ Indicates that a file has been squeezed. NSweep (on FLOB #2401), UNSQ, and a host of other programs will unsqueeze files for you.

✙ Indicates that a file has been crunched. UNCR (on FLOB #4301) or LT (a library utility on FLOB #4507) will uncrunch files for you.

◊ Indicates that files necessary to this program are in a "LBR" or library file. You will need to extract the files before using them. Additionally, files within a library file are often squeezed or crunched. NULU (on FLOB #3301), LU, and LT (on FLOB #4507), are a few of the programs that can extract the files for you. (LT has a built-in uncrunching facility).

For your convenience, each October '87 disk contains LT.COM, UNCR.COM and UNARC.COM, if needed. For complete documentation of these utilities, please purchase the appropriate FLOB (see notes above).

Prod #4501 — October '87 Disk #1

◊ PMASTER.LBR	Printmaster, an extensive forms-making program for Epson, Toshiba printers design stationery, signs, cards, etc.
◊ ✙VDE26.LBR	Latest version of VDE, fast in-memory word-processor with lots of features

Prod #4502 — October '87 Disk #2

The files HOMFIN.ARK and TSIGNS41.ARK are archive files (similar to LBR files). UNARC.COM and simple instructions for using UNARC.COM are included on the disk.

✓DU-TUTOR.AQT	Tutorial on DU for those who want a complete walk-through
HOMFIN.ARK	Sophisticated home finance system written for DBASE II (not included)
✙INTE8251.AZT	Complete technical info on programming the Intel 8251 communications chip (the one used for MD2/MD3 serial ports)
TSIGNS41.ARK	Fun, easy-to-use Sign/Banner maker, written in Turbo Pascal Requires Turbo Pascal compiler, dot-matrix printer

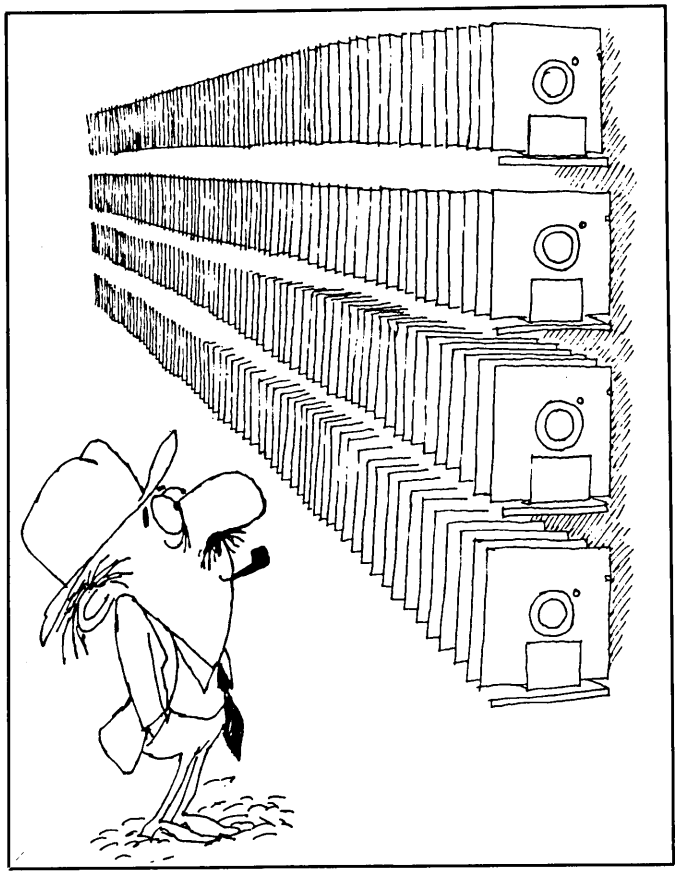
Prod #4503 — October '87 Disk #3

◊ ✙BEOWULF.LBR	The complete text of BEOWULF, put on disk for practice/learning purposes
◊ GRADEBOK.LBR	MBASIC Grades-database programming, includes ability to weight, average individual and class grades

Prod #4504 — October '87 Disk #4

◊ ✙CARGOMK2.LBR	Update to data files for STARSHIP. See FLOB #4305 (June '87)
◊ CHEF-FIX.LBR	Some fixes for CHEF-5. See FLOB #4401 (August '87)
◊ ✙IMPATCH2.LBR	Easy patching utility for IMP245. See FLOB #4505 (below)
◊ PAMPH13.LBR	Converts straight WordStar text files into pamphlet-size documents. Great for designing pamphlets
◊ ✙PLATO.LBR	A syllogism machine
◊ ✙RESTOREA.LBR	Restore for CP/M 2.2 systems. Reduces file fragmentation on the disk, speeds disk accesses
◊ ✙SAP60.LBR	Directory sort-and-pack utility, needs to be run before using RESTORE

More FLOBs ...



Prod #4505 — October '87 Disk #5

◊ CPM22APP.LBR	Official Digital Research Application Notes on CP/M 2.2
◊ ✠I2MDA-3.AQM	Morrow overlay for IMP245
◊ IMP245.LBR	Latest update to small, fast CP/M telecommunications program
◊WISECRAK.LBR	Turn your computer into a borscht-belt comedian

Prod #4506 — October '87 Disk #6

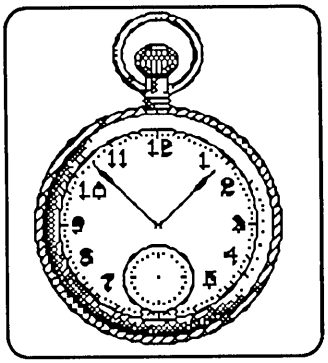
◊ SUPRCKBK.LBR	The last word in computer checkbooks, written for DBASE II (not included)
◊ ✠SUPRDOS2.LBR	A BDOS replacement for CP/M providing features similar to ZCPR's ZRDOS.

Prod #4507 — October '87 Disk #7

◊ ✠APTMANG.LBR	Large, sophisticated Apartment Management database system, written for DBASE II (not included)
◊ ✠LT21.LBR	Complete sources for LT, file un-squeezer uncruncher, extractor

The MACK

Put a real clock in your Morrow!! The Mike Allen Clock Kit (MACK) is a pre-assembled, ready-to-install version of the real-time clock described in his recent MOR article (MOR, Vol. 4, #1, p. 35).



Indispensable for a BBS! Great for tracking time for the IRS!

With the complete instructions you can install this clock in your MD2 or MD3 (with Rev. 2 boards only) or on your MD Hard Disk machine (Rev 1.9 ROM only — see MOR Product #902 for update info).

Compatible with the popular program DateStamper (see review in MOR Vol. 4, #4, page 39). Jim Bottom discusses other uses for a real-time clock in his article "The Best of Times" (MOR Vol. 4, #4, page 37).

An inexpensive solution for your clock needs. Keeps you organized and leaves an electronic "trail."

Only $64 (order product #903 from order form on page 22).

Now's the time to get your MACK!

Order Form

❑ Check/Money Order ❑ VISA ❑ MasterCard

Account no. _____

Exp. Date _____ Signature _____

Name _____

Phone (____) _____

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City _____ State____ ZIP _____

IMPORTANT NOTE: All prices include UPS or first class postage to domestic address. Due to weight constraints, some orders must be shipped UPS so please include a street address. Foreign shipments are additional, please inquire.

Product No.	Quantity	Description	Price
		Subtotal	
		California residents please add 7% sales tax	
		TOTAL	

Please indicate your ROM Rev. and disk format when ordering Prod. #801

ROM Rev. _____

Double-Sided or **Single-sided**

Please send orders to:
MOR, P.O. Box 5487, Berkeley, CA 94705

✂ - - -

Happiness is Driving an MD222

A Turbo MD-HD with a 44Mb Capacity

By Sypko Andreae

THIS article is dedicated to the 24 percent of our readers who have a hard disk machine (MD-HD), such as an MD5 or MD11. If you have had your machine for three or four years,you are getting close to the end of the expected lifespan of the hard disk itself. While everyone seems to agree that the rest of your MD-HD can go on for decades, disk manufacturers — when pressed to answer the question about expected drive longevity — will give a hard-disk no more than five years. Much depends on how much you have used your machine, how faithfully you have parked it before you turned the power off, and how many kind thoughts you gave it over the years.

The question, then, is: What to do when your lovely MD-HD starts crashing? Replace the disk drive with an identical one? Well, you'll find that you can't get the same old disk drives anymore. How about replacing your aged drive with one of those new half-height drives available right now? Great idea, and they are not only faster, they generally have more disk space to boot. Problem: Each hard disk needs its own set of parameters in the BIOS section of the CP/M 3.0 set just right. How do you arrange for that?

With that question in mind MOR decided to launch the **MD-HD Revival Research Project.** Steven Wartofsky was installed as the principal investigator. Our goal was to come up with the simplest instructions possible to enable most people to perform the physical replacement and software adjustments themselves, from software components that we would develop.

We accomplished our goal. We know how to modify CP/M 3.0 to adapt it to many configurations with one or two hard disks of various sizes. We selected what we thought were the best disk drives for the price. We wound up making three MD222's. Steve has written copious notes on what we have learned. We'll use those in the near future to write the instructions for the **MD-HD Revival Kit.** I am referring to them now to write this article, using an MD222, of course!

Getting the Right Stuff

The project involved learning how to select the proper disk drives and how to modify the CP/M 3.0 software. After some study we selected the Seagate ST225 (22Mb) and the ST251 (43Mb). No sooner had we decided on Seagate than we heard the most awful rumors about the ST225. An article in *Micro Cornucopia* (Vol. 35, April/May 1987, page 44) was, in fact, quite critical about it. The author mentioned that "Kaypro has stopped installing Seagates on their XT clones."

That got my attention and I called Bill McDonald, Kaypro's drive specialist. He reassured me that ST225 and ST238Rs were fine and they were using the ST238Rs again. Yes, there had been a few problems. I also talked to technical people from Seagate who confirmed that I should have no problem with any ST225 built after May 31, 1987. That made me feel we timed this project just right.

```
DSDD    Floppy Disk 5.25 inch double sided double density
                                                  48\tpi drive

ST06    Winchester  Seagate, Model ST506 (5 meg)
SA11        "       Shugart Associates, Model SA712 (11 meg)
SQ06        "       SyQuest Technology, Model 306 (6 meg)
CM11        "       Computer Memories Inc., Model 5412, (11 meg)
CM16        "       Computer Memories Inc., Model 5619, (16 meg)
CM34        "       Computer Memories Inc., Model 6640, (34 meg)
CD31        "       Control Data Corporation, Model 9415-5 (31 meg)
MS11        "       Mini-Scribe, Model 3212 (11 meg)
TU34        "       Tulin Corporation, Model TL 240 (34 meg)

Added by Steven Wartofsky as of August 11th, 1987:
ST25        "       Seagate,  Model ST225 (22  meg)
ST51        "       Seagate, Model ST251 (40 meg)
AB67        "       Seagate, Model ST225 defined as C: drive
```

The currently defined drives in the Morrow source code

Steve spent most of his time gathering all the facts needed to modify Morrow's BIOS and BDOS so the ST225 and ST251 would be happy. The BIOS and BDOS sections of CP/M 3.0 can be modified by re-compiling the files HD22DEF.MAC, DRIVES.MAC and DEFINE.MAC using the Morrow-supplied submit files and related programs. After an intricate process of assembling, linking and loading, there emerges a set of modified files that replace the ones used for your old configuration.

Don't worry, you don't have to do any of this programmer's business, because we already did it for you.

What You Need to do to Attain MD-HD Bliss

These instructions are not quite complete and only aim at giving you an idea of what is involved. In the following example we'll show how to build an MD222 out of an MD5. Here is what you do:

Order two Seagate ST225's. The ST225 and the ST251 are the only drives for which we have tuned the CP/M 3.0 software. We were able to get ST225's for $225, with a 90 day warranty. Shop around for a good deal from a dealer or mail-order house you trust.

Order the MD-HD Revival Kit from MOR for $24. You have to specify which configuration you want. Examples:

MD22	A:= 22Mb	
MD222	A:= 22 Mb	C:= ?2 Mb
MD5+22	A:= 5 Mb	C:= 22 Mb
MD11+43	A:= 11 Mb	C:= 43 Mb

You will get three diskettes plus instructions. Diskettes #1 and #2 are similar to your old CP/M 3.0 distribution floppies #1 and #2. The third diskette is a ready-to-go RESTORE diskette you can use to do a restore and re-format after a full backup using BACKFIELD. Your original CP/M 3.0 distribution diskette #3 (Backfield and friends) does not need to change and can be used with the first two MOR diskettes, thus forming a complete replacement distribution CP/M 3.0 set in case you ever want to start from scratch.

MD222 Hardware Installation

It helps to have the Hard Disk MD Service Guide (MOR product # 703) in case you get confused along the way. You'll need a few extra hardware items. One is a 34 wire cable, the other a 20 wire cable. You have to replace the original 34 wire cable with another one that allows for daisy-chaining the two drives. In addition you'll need one additional narrow (20 wire) ribbon cable to serve the second hard drive. The parts cost of these cables should be no more than $25; you can buy the ribbon cable and connectors in any respectable electronics store. You may also need additional drive mounting screws and brackets. Because you have an extra disk drive, you need a Y-connector to enable you to connect two drives to one of the power supply cables.

—Make backups of the three diskettes of MOR's MD-HD Revival Kit.
—Do a FULL BACKUP of your old hard disk, in case you want to ever go back.
—With NSweep copy the following files from A0: of your old hard disk to an empty floppy: SYSLDR.COM, SYSLDRF.COM, CPM3.SYS, CPM3F.SYS, COPYSYS.COM and PIP.COM. Save this floppy for a purpose explained in future instructions.
—With NSweep transfer all files from the old hard disk from user area A1: through A15: on floppies, using the corresponding user areas B1: through B15:.
—Disconnect the 110V power cord and open up your MD5; store all screws so you will remember how to put them back.
—Unplug all cables to the power supply and remove the power supply.
—Unplug the disk drive ribbon cables and remove the old (and tired?) hard disk.
—Remove the floppy drive.
—Remove the old 34 wire ribbon cable and insert the daisy-chained one in the J2 connector on the PC board.
—Plug the additional 20 wire ribbon cable in PC board connector J3B (the one that hasn't been used before).
—Mount the floppy drive and the two ST225's on top of each other in the space where the old hard disk once was, and mount the power supply.
—Connect all the ribbon cables and power cables to the drives (use the Y-connector).
—Remove the Resistor Terminator Pack from the ST225 which is the first in line on the 34 wire daisy chain cable, and in our case Drive A:. Leave the Drive Select jumper in position DS1, the lowest jumper selection. (Some other drives call DS0 the lowest jumper selection.)
—Remove the Drive Select jumper on the second ST225 from its default position (DS1) and put it back in the DS2 position.
—Close the box; you should not have any screws left.
—Turn the power on and stand back. (Any smoke or smell? I hope not!) The ROM message should appear and that's about it, because there is nothing to read on hard disk A: yet.

MD222 Software Installation

—Load diskette #1 of the MD-HD Revival Kit from MOR in the floppy drive and hit reset. Do you want to boot from the floppy? Oh, yes!
—Answer with CONTINUE when asked to do so and the first hard disk will be formatted, all 22 Mb of it.
—Watch the automatic process by which the new SYSLDR.COM is loaded on the first hard disk (temporarily called B:), then watch the switch being made to the freshly written system on the first hard disk, now called A:
—PIP loads all the files from your MOR distribution floppy #1 on A0:, still automatically.
—When the A> finally returns you have a brand new system loaded on your MD222. Congratulate yourself.
—Format the C: disk (the second hard disk). Again it asks you gravely whether you want to CONTINUE. Enter the proper response with gusto.
—Check NSweep to see if you can access the C: drive and marvel about all the space you've got. Time to break out the champagne!
—Use the command "SHOW A: [DRIVE] <RET>" (do not use the quotes) to inspect the full drive characteristics for drive A:, then do the same for C:. Impressive, huh?

Conclusion

If you have never opened your MD-HD before you may consider getting help from a technically more experienced person. If there is no club or technician nearby get in touch with any Morrow oriented repair shop (listed in MOR Vol. 4, #3, June/July 1987). If that does not work, get in touch with **Dutch Treat Computer Services,** the technical/commercial arm of MOR, and see if you can UPS your machine and have them do the work for you. DTCS is in Berkeley, California, and can be reached at (415) 658-0152, or leave a message for me at the MOR BBS. DTCS employs very gifted consultants, one of them being ... Steven Wartofsky! Such a small world.

I like the MD222 a lot. Not only is it quieter than my old MD16, it is quite a bit faster with its shorter access time. The floppy in B: is the same as it ever was, silent unless spoken to. The two Seagate ST225s sit on top of each other where the old 16 Mb CMI 5619 once was and hum softly; they run remarkably coolly. I love having 44 Mb of disk space divided over the 32 user areas provided by the A: and C: drives. MD-HD bliss! And no worry about hard disks wearing out for another five years or so. Wouldn't you want a machine like this for yourself? Then get in touch. We'll give you a hand. ■

Shakespeare Meets Morrow

How Many Plays can a Playwright Write with a Computer?

By Roger Danchik

FOUR years ago I bought my Morrow MD3 specifically to enhance my creative writing. I was determined never to retype a script the eight or nine times it always takes me to prepare it for submission. Since I am working in the playwrighting format, I had special problems finding the commands to insure an error-free script. The play writing form is more complicated than other writings and a script should be absolutely free of errors. This follows the theory that a beautifully presented OK script will always be produced before a badly presented OK script, and unless you're Neil Simon you need every edge you can get.

I knew it was possible to produce a clean script with the MD3, but it wasn't until I started using a combination of WordStar (no, I've never switched to New Word) and SmartKey 2 that I began to produce a trustworthy copy without the need to check and recheck every line on every page. Since no one really knows why a producer buys a certain script, it is important to present it as clean and readable as possible. Following is an example of the layout I use for my finished scripts.

Joan of Arc enters.

JOAN

Did I hear the word pain? You must be talking about life.

ALMA

Hi Joan.

GOD

(Sarcastically) It's the fiery Joan of Arc.

JOAN

Just plain Joan is fine.

There are other formats for scripts, but this is the one I see used most often by playwrights trying to sell their work. Baker's Plays and other publishing houses use a much denser format but they're trying to save on paper and mailing costs. Additionally, using this much blank space will make a shorter play seem much more substantial, thereby giving it the proper weight for a Pulitzer prize.

Problem One - Repetition

When I first started using my Morrow with Wordstar, I tried using an abbreviation (SOC) instead of typing the complete name of the character (SOCRATES) before each line of dialogue. Later, I would use the search and replace command to change the letters into the character's names. For this play I made the mistake of using SOC for SOCRATES and when I later used the ^QA command to change them, it also changed words like socially into Socratesially. That was not the idea. I now know that I could be more specific with the ^QA command and its options, but I was sure there must be a better solution. Besides, I want to see the characters' full names and the blank lines while I work. It makes the play look more impressive somehow.

Enter (Deus ex Machina like) SmartKey 2. The manual was written by a successful television script writer and demonstrated how a keystroke or two could define a whole string of characters.

Fine; my keyboard, a Freedom 100, has ten special function keys. So, I drew a little chart and pasted it to my keyboard, just above the function keys, with the new meanings for each key. Since I always work on many scripts at once, each function key boasted three definitions. F1, for instance, is now marked God, Dan, and Tom. Since I never update anything, I don't have the faintest idea who Tom is.

In the format I use for scripts I center the character's name, have one blank line, then the character's lines and so on. Stage directions (which directors always ignore) have either smaller margins for long ones (over a line or two) or are enclosed in a parenthesis and are included in the dialogue. For example -

(Sarcastically) It's the fiery Joan of Arc.- So, two function keys are taken up with dialogue margins and stage direction margins. You may use any widths you please, but remember scripts are usually bound on the left, so use your .po command to make it 12 or more.

I won't go into the specific commands of SmartKey II because you'll have to adapt your keyboard to whatever definition program you're using. However, here is a character name string that I first used for the character GOD – 3 returns, 31 blank spaces, GOD, two returns – (or for SmartKey II) ^M^M^M(then 31 blank spaces) GOD ^M^M). This string returns the last line of dialogue, adds a blank line, moves over 31 blank spaces (more or less center on a page of dialogue), prints the character's name (GOD), and adds another blank line, all by touching one key. Then you type inspired dialogue.

Roger Danchik is a published playwright now studying for his doctorate in Theatre at New York University. He teaches theatre courses, including playwrighting, produces a one-act showcase, writes reviews for a small paper and sometimes teaches Wordstar.

You could use the ^OC command to center the character's names instead of the 31 blank spaces, but I like the look of it this way. The ^OC command centers from the middle of the name and if you're characters have names of different lengths, for instance GOD and ALEXANDER THE GREAT WHO CONQUERED THE WORLD, then I think it looks better if they start on the same column, rather than having the middles centered. This is a personal preference, so do what you want and if it helps you sell your script, I'll change my format.

Problem Two - The Unknown Pagebreak

This is the major problem with word processing scripts and the one I hear the most complaints about. The problem is to make sure that the dialogue at the end of the page is under the name of the speaker and has not been moved to the next page. In other words, the last line on each page should be dialogue, not the character who is speaking. Computers make this mistake because they don't connect the dialogue with the character's name and they add a page break. If you want to be thought of as an uncaring amateur, this is the mistake to make.

OEDIPUS

How was I to know it was Mother I was marrying. I have Father's nose.

HARRY

23

(That's the page number, Now you have to turn the page.)

But how about the eyes?

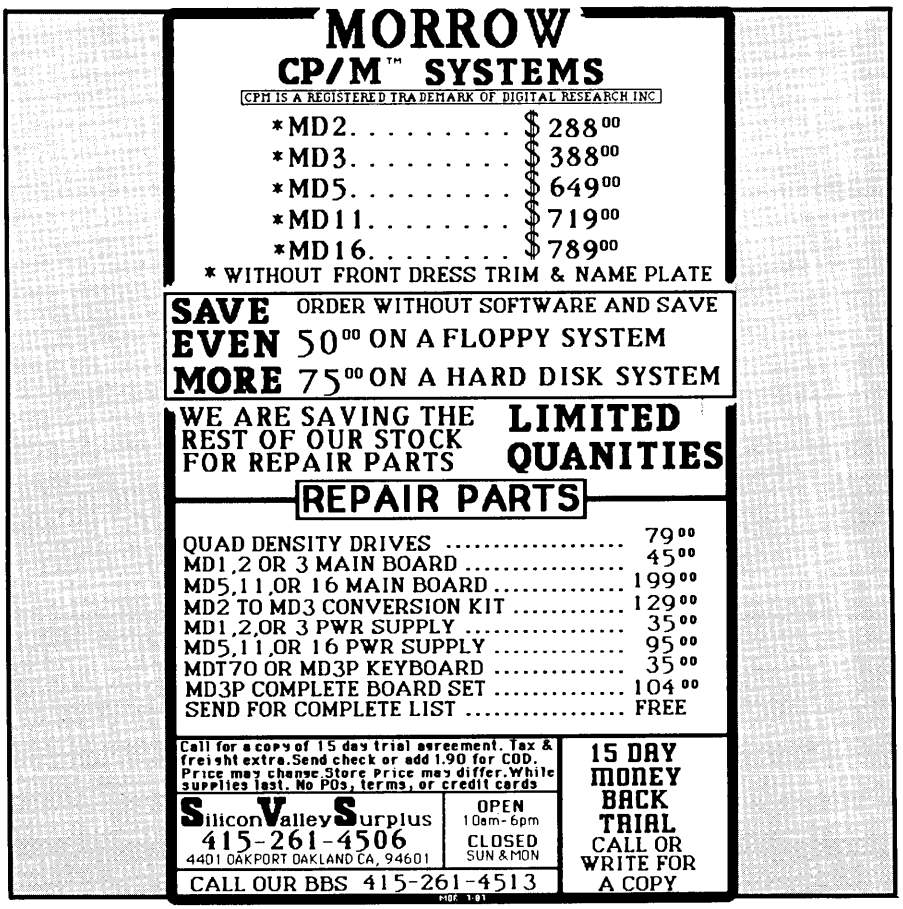
Unless you're a genius, in which case no rules apply anyway, the producer returns your script with an oft-xeroxed note reminding you to enclose a self addressed stamped envelope.

This is actually a pervasive and difficult problem and is the reason I bought a Morrow with Wordstar instead of a Tandy with whatever they had at the time. Even if you're compulsively careful while typing the play, every line change adjusts your entire file necessitating checking it page by page. Worse still, since a heavy three act will be over a hundred pages, it's likely you'll be using Mailmerge to print it anyway, and Mailmerge's formatting makes it nearly impossible to proof for this error.

My solution was to use the .cp"n" (where "n" is a number of three or higher) command. This command goes on the line immediately preceding the character's name and if there are less than "n" lines left on the page, it starts a new page. I have my "n" set at three, but for long speeches and any other moments that I don't want to disturb with a pagebreak, I set it higher. However, it pays to be careful with higher numbers or you may have a lot of blank space at the end of a page. Setting "n" at 3 assures that at least one line of dialogue will follow a character's name and that is much more professional than a name followed by a number and a page break.

Here is what I now use as a SmartKey II name string for the character GOD - 2 returns, .cp 3, return, 31 blank spaces, GOD, 2 returns

That's about as far as I've gotten. This string removes all the formatting, centering and repetitive typing from the writing, allowing me to concentrate on great dialogue. There are probably other shortcuts, especially with SmartKey 2, but like most of the writers I know, I'm much more concerned with finishing scripts (and collecting royalties) than the process involved. So, I've only taught myself what was immediately useful. I hope this helps any other Morrow playwrights out there. ■



On!ward

Using the On! Computer Daily

By Jim Kahnweiler

IN his article in the April/May 1987, issue of the MOR, Ted Silveira rightly lauded the speed, quiet and power protection of the Z80-based, ZRDOS, ON! Computer. I purchased a Morrow MD3 in 1984, to help get my work done. The ON! computer does do everything the Morrow can do, but much, much better. As a professional writer and businessman with a text-oriented work load, I have found the machine ideal for my needs and a tremendous improvement over the Morrow.

Two years ago, Nick DeWolf introduced the ON! Computer with a tirade against the computer industry. The flamboyant computer wizard lectured to an audience at a trade show sponsored by the Aspen Computer Society. In the early 1960s, Nick revolutionized the manufacture of semi-conductors by computerizing testing procedures. He founded the Teradyne Corporation, now the leading manufacturer of automated test equipment for the semiconductor industry.

Nick spoke with the zeal of a television evangelist with IBM as the devil. "Who needs a bazillion megabyte hard disk to write a letter?" he raved. "Just sneeze and, poof, ALL your data is bye-bye. Or your dog pulls the plug. Or what about the clowns at the power company when they change a generator and zap your system into a mass of silicon goo."

He raged on about the computer industry ignoring the true needs of the public; how low profit margins have squeezed dealers so they cannot afford to provide meaningful user support; how manufactures, (IBM in particular) offer equipment assembled from components lacking proven reliability; how software publishers (IBM in particular) have sold un-debugged programs that lack basic functions; how the industry in search for a standard clung to IBM despite serious design and hardware limitations; how the public is over-sold: To use a PC-AT is like fetching a carton of milk from the corner store in a Ferrari.

Nick claimed that his dream-machine addressed all of these problems. "The ON! is the first computer that won't eat your data," Nick boasted. "Instead of whirring disks and dancing heads, the ON! has two megabytes of silent, fast, uncrashable silicon memory. And the battery backup can protect that data from power failures up to fourteen hours! Power spikes won't hurt it. Complete background functions enable the user to leave a program to dial the phone, take a note or make a calculation and come right back. And don't worry about ever turning the computer off by mistake," Nick beamed, "there's no switch. It's always on."

Why not build a better IBM-clone? The way the MS/PC-DOS/8088 or 80286/386 processor works is limited by program interrupts. Protection from power glitches, particularly brown-outs and failures, becomes impossible, especially if the power interrupt occurs during a program interrupt. In a large building an elevator motor can cause a sufficiently long voltage drop to reset a computer. The ON! uniquely provides built-in power protection to save everything up to the last key stroke.

The entry of IBM into the personal computer market was an attempt to drive Atari, Commodore and Apple out of home computers. About the same time the business world found desktop computing. Lacking a convincing standard or clear industry leader, manufacturers, software authors, dealers and business users turned to IBM with its commanding reputation for office machines and dedicated main-frame computers. With MS/PC-DOS designed for only one configuration, programs could be written for millions of machines instead of a few thousand of this or that CP/M computers. Users could take data written on a Compaq and use it directly in a Leading Edge. Programs could be exchanged. Suddenly a device that was not very well designed or manufactured became the de facto standard.

But, IBM concentrated on meeting the needs of power spreadsheet and color graphics users while ignoring the real office tasks – word processing, phone management and mailing lists. Upgrades and product line revisions seemed dictated by the marketing department rather than by innovation or customer need.

ON! Systems knew that in a personal computing world completely dominated by IBM and its clones, it must find a special niche in the market. "Make the ON! a secretary's machine and sell it through office equipment dealers, not computer stores," Nick said. "Let the boss have the turbo charged, fuel injected clone with its graphics and hard drive. He needs it for

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Jim Kahnweiler works as a non-fiction writer and photographer in the Aspen, Colorado area. He wrote the review of GRAMMATIK in the April '86 issue of MOR.

spreadsheets and stock market analysis and a sense of power. The ON! is for her. Paint it lavender and turquoise. Make it simple to operate. Protect her data and her day's input. She has to get the work done...all those letters and memos and mailing lists and phone calls. Make it a work processor with all guts and no glitz."

Besides silence, speed and power protection, the mission of ON! Systems is to produce a machine that is simple to use. The arcane operating system commands that typically confound the non-technical and novice user are menu driven. There is no need for long training periods or special consultants or data managers. The transition to office automation can be quick and smooth – not traumatic.

Nick felt the machine must be reliable and practical for years, without becoming obsolete. The ON! is the first computer to offer a five year warranty. Nick realizes that as a new company ON! Systems must make its income from sales. "A reliable computer generates little revenue from service," Nick stated. "Yet, in some cases, the big computer companies project 50 percent or more of their income from service and upgrades. These companies have a huge service network to feed. They have paid the price by sacrificing reliability in order to support this network. This is not the case at ON! Systems. We do not have to build machines that break. We want to earn our reputation from selling a system that will be reliable for many years. We do not expect to make a ton of money from service. However, our reliability will help our resellers make higher margins on their service contracts because they will not have to spend much time, if any, fixing our machine. With this kind of support, the dealers will be enthusiastic about selling our product.

Nick had us true believers ready to trade in our Kaypros and Morrows and clones for the magic box built by the Wizard of ON! And then he disappointed us. "But," he said "it won't be on the market for two years."

I was undeterred. I wanted an ON! computer, now! After his talk, I told Nick his approach made a lot of sense and offered to help test the product when it was far enough along.

"Are you a programmer?" Nick asked bluntly.

"No," I said, "I just use the computer for the work I have to do."

"Great," Nick replied, "you're just the kind of person we're looking for. I should have a machine for you soon. Keep in touch."

So, I did. Every couple of weeks I called Nick to ask where my computer was.

About eight months later, Nick introduced me to Byron Brooks, President of ON! Systems. He wanted a technical writer who was not as involved with the project as an engineer or programmer. Byron asked me to work on the user's guide in Chicago. What fun, I thought, to get paid to play with a new computer! When I arrived, I soon learned that the hardware was ready, but the software required more refinement. Nevertheless, the best way to learn about a system is to use it and I began writing the User's Guide.

Programmers at ON! have utilized the Z-system MENU.COM utility to write a sophisticated menu system complete with ALIASes and a command library. With a single keystroke the user can make selections from several screens to access programs, files and utilities. A modification program enables the user to customize the menus to meet his or her own unique needs without the programming skills required to write a Z-system menu.

I was wary of a menu system. The menus bundled with my MD3 were clumsy and slow and as soon as I learned how to access programs directly from the A> prompt the menus were gone. With the ON! computer all programs and files stay loaded in RAM, much like a hard disk. But the ON! requires no start-up procedure. Program access from the menus takes only a fraction of a second without disk swapping! For someone like me who can make several "typos" entering "DBASE" from an A> prompt, pressing only one key to load a program saves time and frustration.

ON! Systems has divided the RAM disk into 18 user areas. By calling the RAM disk the ONFILE and the user areas "file folders" ON! Systems helps the novice understand the relationship between user areas and RAM disk. The intent is to place files of related topics in each "folder" and thus the ONFILE becomes a file drawer.

I began the User's Guide by creating a table of contents. This became my outline. I placed each chapter in a different user area or file folder with a separate menu designation. One keystroke opened the NewWord file for that chapter. The first chapter was an introduction, the second explained steps for unpacking and set-up the third described protocols used in the manual, and a fourth presented procedures to install program and system files. The remaining chapters outlined instructions for the menu modification program and other system utilities including ONFILER, a customized version of the ZCPR3 VFILER.

The computer worked as designed; fast and quiet. The TeleVideo monitor has superior resolution–better than the Morrow MDT60 and vastly superior to any clone I've seen. I suffered no eyestrain spending hours in front of the screen. The power protection and battery backup performed as claimed. Despite brown-outs, complete power failures and transporting the computer to different locations, I never lost a bit of data. I especially liked just leaving the machine at the end of the day (after typing ^KS) with the cursor parked in the middle of a NewWord file. When I returned the next morning one keystroke restored the screen and I could begin work right where I left off.

As I submitted each chapter for editing, problems with the software became evident. If my directions were difficult to follow, the software needed

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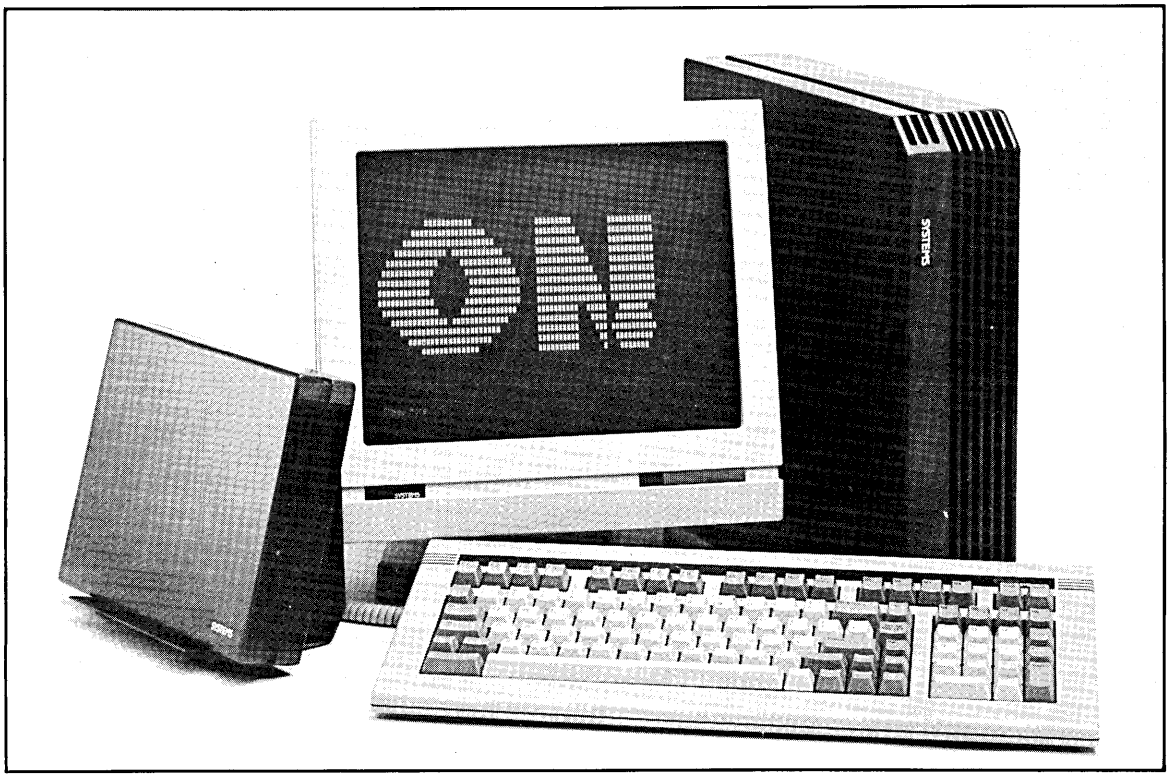

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revision. My use of the programs and menu system was very practical. I was using the software in a real-work situation – as was intended. My suggestions were valuable and many were incorporated in new versions of the programs.

With software constantly improving I revised the documentation frequently. The User's Guide never seemed to near completion. When the term of my contract expired with the Guide unfinished ON! Systems offered me a position. I was tempted, but the mountains remain my home. A computer returned with me to Colorado to become a "beta" test site. Upgrades and revisions were sent as they became available.

The ON! computer immediately went to work in my small business. Files for correspondence, bookkeeping and invoicing were copied to the ONFILE from Morrow formatted disks. The ON! runs virtually all the CP/M programs I have except SMARTKEY II. The program is RAM-resident. The architecture of the ON! allows no room for SMARTKEY.

But ON! Systems does bundle a key-redefinition program called ONKEY which works well and is simple to use. NewWord, dBASE and macros for other uses up to 2000 characters can be created quickly. However, ONKEY does not provide a pause for user input.

I customized the menus for my work as a non-fiction writer and photojournalist. I designate one user area as the "file folder" for general correspondence. Other user areas hold letter files to magazine and book publishers. With a key redefined to copy my letter format file, I can start a new letter with a couple of keystrokes.

Manuscripts have their own "file folder" as do delivery invoices and labels. To print mailing labels for a series of manuscripts or stock photo submissions, I press the key for the label "file folder" and NewWord is called for that user area. Various label formats are stored here and are easy to select, copy, edit and print. The menu selection for General Ledger is in user area A0:, which ON! calls the "transient program file folder." The factory recommends that it be kept empty when not in use.

The copy of "Accounting for Micros" GL module by The James River Group I own runs much faster on the ON! than on my Morrow. Like a complex dBASE II program the module is disk-intensive. Several subroutines have their own separate files. With every file RAM-resident, the ON! can access them almost instantaneously. This version of "Accounting for Micros" was written for CP/M 2.2 and will recognize only drive A: or B: For the Morrow I installed it to look for data on drive B: To make it work on the ON! computer I had to re-install

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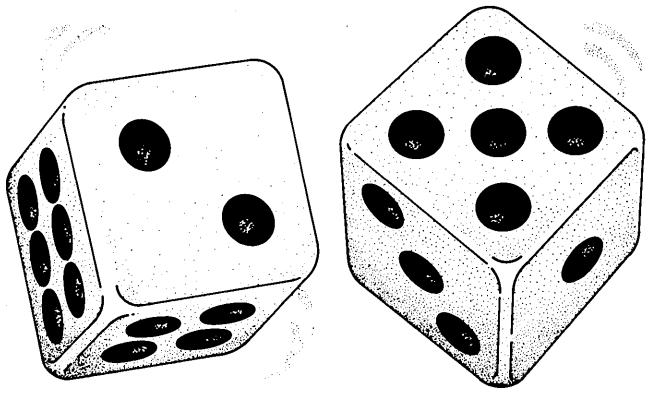

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the program to look for data files in the A0: user area. I defined several function keys to output my commonly used account numbers and reduce those inevitable "typos."

I only use the General Ledger once a month and store the data and program files on two floppies to save room on the RAM disk. When it is time to do the books I copy them to the ONFILE. The task is simple using ONFILER, which works much like WASH.COM. I merely call the file manager program from the menu screen, tag the GL files on the floppy and invoke a group copy to user area A0: To transfer 132k takes only about a minute, but I look forward to upgrading my ONFILE to 4Mb or even 8Mb. I'm spoiled with everything in RAM.

When data entry is completed and reports for the month are printed, I leave the GL program, put the backup floppy in the drive and from menu page 1 press "W." This runs a program that copies only changed files in the logged user area. I return to the GL program, close the month and use ONFILER to move all the files back to the storage disk. This routine leaves the A0: file folder empty.

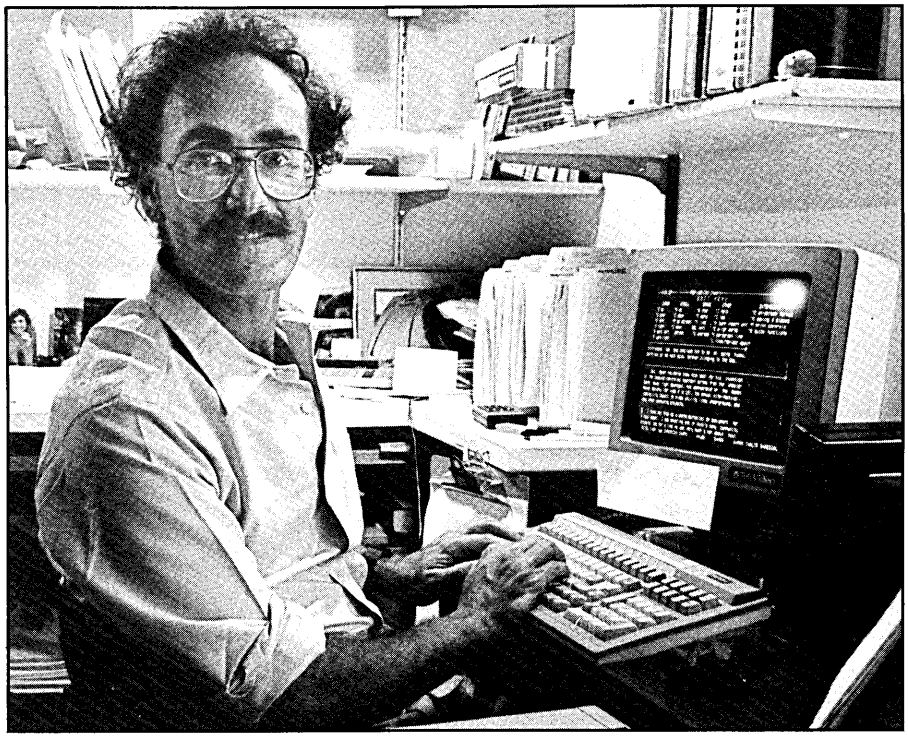
Other menu-drive operations include a program call for a word count utility. I have made the Z-system menu command line pause for the user to enter a file name. After pressing <RETURN> the word count is displayed. Similarly, a single key can call WSENV.COM (a public domain program from FLOB #2402), a routine that prints one label or addresses one envelope. I wrote a dBASE II program for customer billing. With "DBASE INVOICES" permanently typed in the menu command line a single keystroke can run the program.

For dBASE II programming a redefined key outputs "Quit to 'NW','DBASE.'" One keystroke exits dBASE and runs NewWord. After the edit of the .CMD file, exiting NewWord returns me directly to dBASE. No struggling with typos at the (.) prompt.

The menus also enable the user to access myriad Z-system and custom ON! System utilities. I have included screen print-outs as a sample of these selections. For instance, from menu page one or two the user can access a directory for any "file folder" or user area by simply pressing "Q." A prompt waits for the user to enter the number of the "file folder" or a <RETURN> for the logged user area. The File Maintenance Utilities menu provides selections for additional directory options for the ONFILE or the floppy in the disk drive. A single keystroke will backup all new or changed files. No more lazy excuses for not making backups! The user can also select FIND.COM, UNERASE.COM, FBAD.COM and a floppy disk format program from the menu. Acknowledging that this is indeed an MS-DOS world, ON! provides programs to read and write to IBM and clone PC disks. The machine will also read and write to over 40 CP/M formats.

When I left Chicago last September, the ON! utilized only 1/7th of its 256k dynamic RAM. In the last few months the Wizard and his apprentices have enabled all of it for "background" utilities, including a 96k print buffer. These ONHAND TOOLS can be run from any application program or menu screen and upon exiting return the user to the precise place where work was left. MOR readers who use "SideKick," "Write-Hand-Man," "SMARTKEY" or other RAM-resident utilities, have enjoyed the ability to dial the phone, take notes, consult an appointment calendar, make a calculation re-define a key, or output the time and date, all while composing a letter or entering data. To these functions, ON! Systems has added a "screen taker" that will send all or part of the screen display to a printer or file.

The 256k of dynamic RAM is divided into 7 memory banks of 64k each. One memory bank is used by the application program in use, say NewWord. Programs for the ONHAND TOOLS have been loaded in the other banks. Because the Z80 can access only 64k of memory at one time, the user must access the other memory banks from the keyboard through



BIOS activated hardware switches. Perhaps the user wants to make a note. Pressing Shift-F1 will switch from the application program leaving NewWord waiting for input and run the "background" program for NOTEPAD from another memory bank. After completing the note the user exits NOTEPAD. The BIOS returns NewWord to the screen with the cursor at the same location where it was left.

ONHAND utilities are accessed from switchable function key command sets displayed along the bottom of the screen. There is only room to display eight selections which will access a menu of eight related commands. Using shifted and unshifted keys the ON! offers 11 function key commands. Seven function key command sets control the ONHAND TOOLS and there are also seven command sets for NewWord.

ONHAND offers many choices that at first confused me. The manufacturer did not deliver documentation or a reference card to the beta site. With familiarity the utilities became invaluable, especially the notepad and dialer -- how did I ever get along without them?

With aid of the function keys novice NewWord users may be able to learn the program quickly, but they might be hampered if they had to use NewWord on a machine without enabled function keys. After using WordStar and NewWord effectively for years with just the CTRL-key, I have been reluctant to learn a new set of commands.

96 kilobytes of the dynamic RAM are used by the print buffer. Nick promised a built-in buffer when he introduced the machine and it was a feature I eagerly anticipated. A background program function key command set controls the buffer after printing has begun. Press "P" and the printer happily buzzes along while I go on to other things. A single keystroke can abort or pause printing or make additional copies. However, pauses for paper change are still handled by NewWord, not the buffer. The buffer is practical only when using continuous forms, printers equipped with sheet feeders or with laser printers. ON! Systems offers no way to bypass the buffer.

The ON! has two menu systems to choose from, a standard and an advanced. The advanced has two more menu screens for programs and files and several additional utility programs. I prefer the standard. It is simpler and contains all the functions I need. But, I have made several changes to suit my needs. ALIAS commands can be written and tested more effectively from an A> prompt. Z-commands are available only from the FILE and SYSTEM menus in the standard menu. In the advanced menu the Z-command can be called from any menu screen. In neither menu is there a way to access an A> prompt.

I have modified my menu with a selection that clears the screen, pops the menu shells and displays the A> prompt. With a key redefined to output "MENU MAIN" I can return to the menus from the A> prompt without struggling with "typos. I copied the "W - Backup THIS Folder" command from the advanced menus to use with the General Ledger program.

Any user can operate the ON! without the menus as a simple, RAM-based, ZRDOS computer. For someone new to the ZCPR3 system ON! has offered a good place to start. Working daily with the system has given me a basic understanding and appreciation of a range of Z-system functions and utilities. I feel I have acquired the skills to someday design my own menu system. But for the present, the ON! System-designed software effectively helps me complete my business tasks. ■

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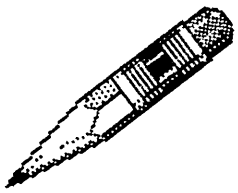


Correct-It

An Old Friend Revisited

By James Bottom

Although Correct-It is no longer published, MOR felt that this article would be helpful because most Morrow Owners received Correct-It with their distribution software. The article also contains information about enhancements for the program that are still available.—Ed.

GEORGE Morrow had a reputation for finding fine software at bargain basement prices and bundling it for sale with his Morrow Micro Decision computers. One of his finer discoveries is Correct-It, that handy-dandy word spelling checker many of us have running with our WordStar or NewStar word processors. But Correct-It, while considered impressive several years ago for its 36,000 words, can't hold a candle to the 100,000+ dictionaries found on many of the memory-heavy PC-DOS machines of today.

Or can it? Thanks to Correct-It's DICTEDIT.COM editing utility you can change, add or delete vocabulary words to fit your line of work, whether that be medicine, law, business, teaching, writing, or simply "hacking." Perhaps even better, you can increase Correct-It's vocabulary each time you end a session by telling it to "learn" new words you think it should have recognized and spell-checked in your document. These new words are put into an auxiliary dictionary that can be later incorporated into your master DICT.BIN. Thus, the growth of your dictionary is inevitable — slow maybe, but steady.

If you're a Correct-It user, you probably already know its value. What you may not know, unless, like me, you haunt and hunt back issues of MOR, is that for a modest investment of $12 and 30 minutes can increase your Correct-It vocabulary from 36,000 to 43,500 words — a 7,500 word increase that requires little extra storage space on your word processing disk.

Tucked away in a corner of MOR Vol. 2, #1 is an advertisement for "Writing Tools," a Morrow-oriented disk containing several writing utilities. After discovering the ad several months ago, my curiosity got the best of me and I dashed off my order. It was a well-rewarded investment.

Writing Tools includes more than an enhancement to your spelling checker. It also contains a word counting utility and a patch routine for making Correct-It run from WordStar version 3.0's "No File" menu. The program will automatically append your existing dictionary with 7,500 words compressed from 90k to a mere 18k. There's even an MBASIC utility included so you can print out the new vocabulary to see what you've got before you start.

Three SUBMITscripts are included for use with your MD2, MD3, and MD5 or MD11.

The product is one of two "Toolbox Writing Tools" offerings from Robert Throckmorton, a writer, marketing executive and self-taught computer programmer in Sacramento, California. It's not surprising that Throckmorton has authored a couple of novels and and several short stories. His documentation shows it. Writing Tools instructions are refreshingly easy to read and unusually complete and simple.

"My impetus for software development has always been selfish," says Throckmorton. "I see a gap where I have a need, and I write a program to fill that need."

Everything you need for the job is on the Toolbox #1 disk, your Morrow CP/M distribution disk and your original Correct-It diskette. From the CP/M disk you must get SUBMIT.COM and XSUB.COM; from your Correct-It disk you need to copy DICT.BIN, your original spelling word list, and DICTEDIT.COM, your master dictionary editor.

With all files grouped as instructed for your Morrow version, type the SUBMIT command: "SUBMIT MDx-EDIT," where "x" is either 2 or 3 for floppy Morrows and 5 for hard

Jim Bottom is a science writer and free-lance journalist with a background in advertising, public relations, photojournalism and now, with three CP/M compatible machines, computing. He lives in Salem, Oregon.

disk Morrows. Now, as Throckmorton wisely suggests, go out for a sandwich, or take a long coffee break unless you have an MD2. If so, you'll have to stick around for some disk switching while the the rest of us snack. The CP/M SUBMIT command, however, does all the work, adding three separate word lists from A to Z to your master dictionary. Why not just one new list? Correct-it's editing utility, DICTEDIT.COM is restricted to less than 4,000 words per file.

It took my MD3 31 minutes and me two cups of coffee to complete the job from start to finish. For ZCPR3 users, substitute ZEX.COM for SUBMIT.COM if you like. In fact, in trying ZEX as well as SUBMIT, I found I had to hit the carriage return key once to keep SUBMIT running on ZCPR3; not at all using the powerful, memory-based ZEX. Also, ZEX executes faster than SUBMIT. In either case, you can sit back and watch more than 7,000 words fly by at high speed on your monitor screen as the two programs work their magic.

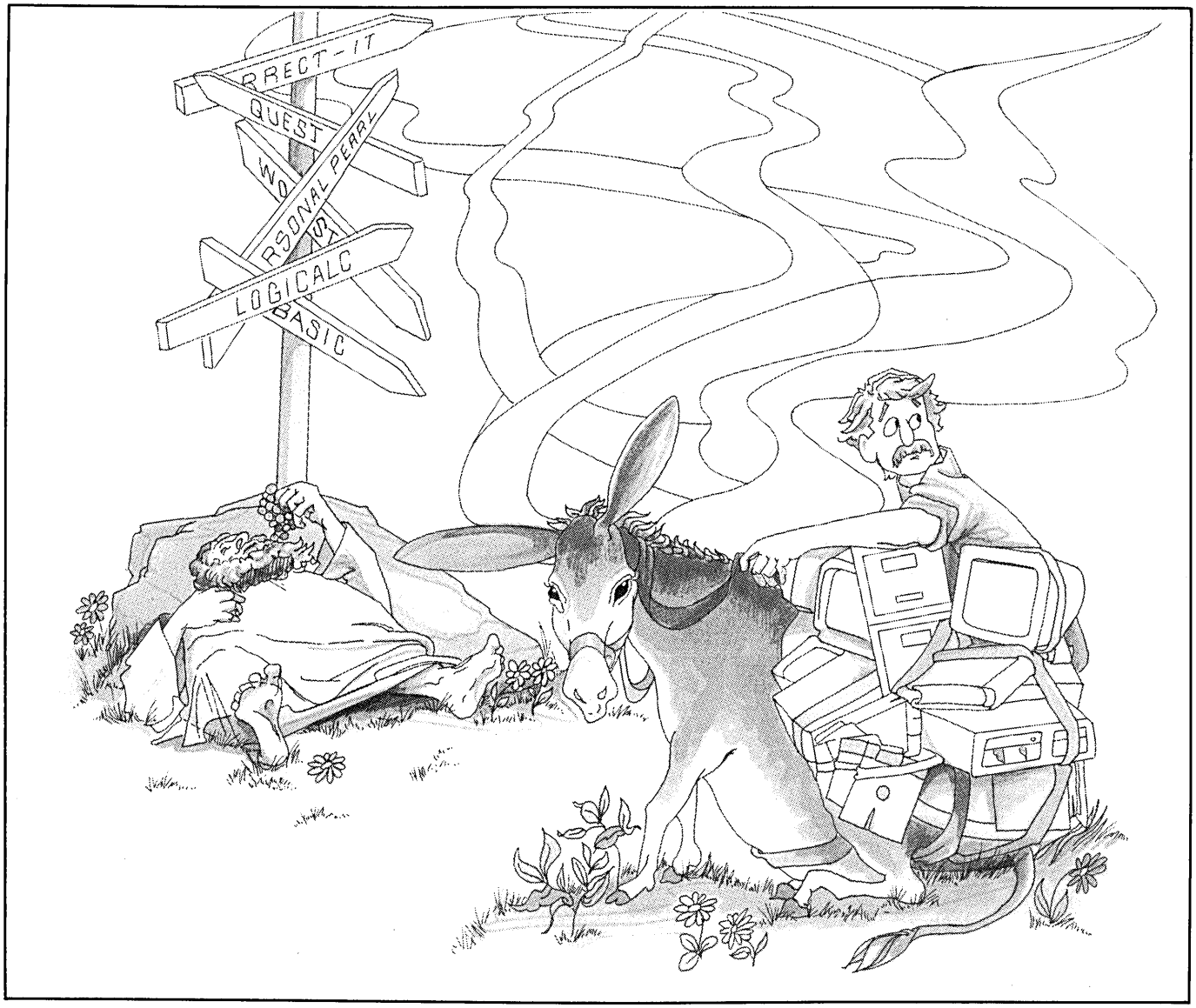
So who needs it? Given enough time and effort, you could eventually get your Correct-It dictionary up there in the speller Big Leagues with MS- or PC-DOSware programs like Word Perfect or new WordStar version 4.0 without a customized, add-on program. But you can also get a 7,500 word jump on the effort in a half hour with Toolbox #1 - Writing Tools.

That's not a bad way to spend a coffee break.

Writing Tools #1 can be ordered from:

Robert C. Throckmorton
7144 Predial Way
Sacramento, CA 95842

Continued on Next Page ...



Other Toolbox "Writing Tools"

If you're a writer, you'll also appreciate Toolbox #1 - Writing Tools' COUNT.COM. It's a versatile word counter for ASCII text files that has 10 command line options including user area selection for counting words in user areas you are not logged on to. There are certainly other word counters for CP/M based machines, and Correct-It also counts words. However, COUNT.COM s runtime options can let you increase counting accuracy by changing the way it looks at words and non-words (i.e., WordStar dot commands, numbers, and abbreviations.), and it is designed to work especially with WordStar or NewWord text files.

COUNT.COM is written in fast assembly language–it counted the 756 words in the accompanying Correct-It article in about four seconds–and you can easily customize it to suit your needs. The "R" command option is great for floppy disk Morrows, since it lets you continually count matching files from disk to disk. If you have a long writing project, say a report taking up storage space on several floppies, you can count all report sections (assuming you've given them matching file name extensions) at once. The program will pause for you to change disks.

I use the "R" option to count two text files located on different disks but with the same name. If the count matches, I've got a duplicate copy of my file. If not, I can assume I have two different versions of the file and may erase one. I consider COUNT.COM a gem.

PATCH-IT.COM answers a long-time Wordstar users' complaint that Correct-It won't work from the main menu. If you have WordStar version 3.0, not the newer version 3.3, it will let you run Correct-It by typing "C" in place of the "Run SpellStar 'S'" command at the "No File Menu," saving you extra keystrokes and time. The patch has the added attraction of making Correct-It remember to put you back into the editing mode of your corrected file when it is done checking your spelling. Also your ruler lines and other settings remain set as you had them.

Perhaps you have special writing needs that won't be helped by the addition of Toolbox #1's 7,500 standard word vocabulary addendum to Correct-It. Toolbox #2 may be for you.

This second group of Throckmorton Writing Tools includes something "for those determined to rewrite their entire dictionary." It contains, among other files, a utility that unscrambles the compression code of the dictionary and changes it to an ASCII word file. Then you can edit it with WordStar or NewWord, adding and deleting words until you've compiled your own specialized Correct-It lexicon.

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ZCPR3: THE MANUAL is the definitive guide to ZCPR3, with 350 pages packed with useful information. Order product #804 from MOR for ***only $20.00***

Review

EZlist

Beta Test of a Mailing List Program

By Sypko Andreae

EZlist from: Arrow Connection
P.O. Box 899, Pollock Pines, CA 95725
(916) 644-2341

- Runs on CP/M 2.2 or CP/M 3.0 — $39.95
- For MOR subscibers — only $19.95 until Jan. 1, 1988

Simple is Beautiful

Looking for a simple, fast mailing list program that only takes a few minutes to learn? Try EZlist, a database program of modest proportions and with some appealing features. It has a lot of limitations, but that also keeps it simple and fast. Good for a "quickie" mailing list that does not need more than 70 characters per field and more than fifteen fields per record.

The program is written in Turbo Pascal on an MD3 and runs in a CP/M 2.2 or CP/M 3.0 environment. I did most of my testing on an MD-HD; an MD222 to be precise. The version of EZlist I tested was a beta-test version, which means that the program is not quite ready for market yet; it still needs some debugging. I am serving as a beta tester, someone who helps the author of EZlist, Al Beechik, find the remaining bugs. More about beta-testing later.

One feature that many of our readers will love is that this program obviates the need to read the manual. There is no manual! This is a self-teaching program. The conversational tone of EZlist is friendly; the author has taken pains to present all the internal information in a way that encourages rather than discourages the novice. If you ever got lost in a labyrinth of menus the likes of which you find in more sophisticated database programs, then you will enjoy using EZlist, which only uses one menu:

```
Choose by pressing the number or letter:
1 Create a new file
2 Add to an old file
3 Edit an old file
4 Change fields on an old file
5 Sort a file (alphabetically, by zip code, etc.)
6 Find duplicates in a sorted file
7 Merge two or more files together
8 Import a word processing file into my list
9 Split city, state, zip into three fields
D Write a file to disk (in ASCII, for word processing later)
P Print a file
R Read a file on the screen
N Select every Nth record
E Exit program
```

Once you select a menu item you simply answer the questions that follow. Sometimes the questions are introduced by a short explanation of the possibilities offered, and sometimes with a few warnings to keep you from doing things outrageous.

The first four menu items are the most straightforward. Item # 3, edit an old file, is based on standard WordStar commands. With the complete record displayed on the screen (i.e. one person's name, address, city, state, zip) you just move the cursor all over the place and correct with the commands every CP/M-er knows.

^D cursor right	^F find field	^N next screen
^S cursor left	^T find text	^P previous screen
^X cursor down	^A find and replace	^W top of file
^E cursor up	RET next field or screen	^Z end of file
^G delete	^I,^O insert on/ off	^Q quit and save file

Sorting goes relatively fast, and is limited to sorting on one field only. I tried this out on a short, manually entered list. Rather than sorting the original database file EZlist creates a new database file in the sort order you have specified. If you do a lot of sorts, you'll wind up with a lot of versions of your database, so better keep an eye on that.

A most useful feature is finding duplicates within your database. In order to find duplicates your database has to be sorted first. If you forget to do that, EZlist will point that out in a friendly way.

What really got my attention was menu item # 8, importing a file. I have some mailing lists in straight ASCII files, in label format. I can update them with WordStar, but I would much rather have the same information in a simple database, so I can do sorts and searches more easily. With EZlist I imported a label file produced by Perfect Filer. It loaded without a hitch, but then I ran into series of problems.

A Growing List of Bugs

As soon as I tried a sort my imported EZlist crashed with a Turbo Pascallian Error message: I/O error 99. Time to put my beta-tester goggles on and start a bug list. Sorting is a prerequisite to finding duplicates (6) and merging files (7), which I was now unable to do. Item # R (read a file on the screen) worked fine, but Item # D (write a file to disk) introduced an extra blank line at the end of each output record. Another one for the bug list.

One thing lacking from EZlist is the selection of a subset. An example of a subset: all the records in a database that satisfy the condition "city = San Francisco". EZlist doesn't let you make a subset, but menu item # N (select

every Nth record) comes close. My responses to EZlist are boldfaced:

```
You can select every Nth record of a file to read, print, or
store on disk. The "N" stands for any number you choose.
For example, if you have a mailing list, you can choose every
10th name, every 11th name, or every 20th name. This gives
you a random selection so that you can test your mailing list.

Choose filename to work from: wans.dbs

Select every __th record.
Fill in the blank with a number: 9

Begin with the __th record.
Fill in the blank with another number: 6

Choose form of output:
R Read on the screen
P Printer
D Disk file for further use by this program
W Disk file for word processing use (ASCII format)
```

If you try larger numbers than 9, EZlist swallows the least significant digit, so that 24 is misunderstood as 2 and 94 as 9. Add to the bug list.

Every program has shortcomings, features that you expect to be there but aren't. In the case of EZlist: Once you have given the P or R command there is no way of stopping it. Aborting the process can be important, in case you realize you made a mistake and want to start over. As it stands now EZlist will carry on until finished whether you want it or not, for many minutes if your list is long.

Another problem has to do with imported WordStar files, which contain strange characters to tell the end of a word, a line or a page (8Ah). While importing a file it is crucial that the pieces of information (name, address, etc.) wind up in the fields set aside for them. These strange characters in a WordStar file will throw the importing process off, so you might find a name in an address field, etc. That is not what you want.

Beta Testing for only $19.95

With all its shortcomings EZlist is still an elegant database program. It is truly easy to learn to use, allows for easy and very fast browsing through the records and for easy editing and searching. The split field feature is clever. The import and various export functions are very useful but need to be debugged where imported files are used.

And that is were you come in. Until Jan 1, 1988 you can be a beta-tester and help Al to fix EZlist's bugs for only $19.95. With the intelligent feedback Al can expect from our Morrow user community he will soon fix all the problems and maybe even make some enhancements if you urge him to. Here is a CP/M program author with a neat idea for a simple and useful tool that is worthy of support. Let's him a hand. You will wind up with a nifty little database program while you in addition will have the satisfaction of having supported one of the few programmers willing to create new things for our CP/M community. And that only for $19.95. ■

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Order MOR Product #805 on page 22 of this issue.

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Review

Notebook I

Efficient Database Management

By Barry Lerich

NoteBook I from: Pro/Tem Software, Inc.
2363 Boulevard Circle
Walnut Creek, CA 94595
(415) 947-1000

- Available for CP/M-80, CP/M-86 and DOS — $150

HOW many times have you scratched your head trying to remember where you read that great article about patching WordStar? Would you like to build an address book database with a variable length field for comments and then use that database to print formatted address labels without accessing another program? These two features introduced me to NOTEBOOK I and I generate new uses for the program each time I sit down to use it.

NOTEBOOK I is a database management system that allows you to store and retrieve large amounts of textual information, sort the information on any field or part of a field, modify the information, print customized reports to disk or printer, and read or write data in other program formats. That's a big mouthful, but NOTEBOOK I is truly flexible and I'm sure there are other features which I haven't tried yet. I'm an engineer and I scan lots of technical information, much of which I don't need today, but I know will be important in the future. With my NOTEBOOK I database and 30 seconds of keyboard time, I can find that hot info whenever the need arises.

NOTEBOOK I can be run under CP/M with 64K RAM, CP/M-86, MS-DOS and PC-DOS. The manual is clear and easy to follow. Installation consists of copying the programs plus PIP.COM and STAT.COM to a formatted disk which has the operating system on it and then running the provided "CONFIG" program to install for your terminal. Although my terminal, Morrow MDT20, was listed in the CONFIG program, I found that I had to modify a couple of escape sequences for correct screen format. Procedures to accomplish this are clear in the documentation. Included with the program is a sample database to use with the tutorial in the manual. The tutorial is straightforward with 20 exercises and will have you off and running on your own in less than two hours.

The beauty of this program is best illustrated with an example. The first database that I built contained a compilation of information that pertained to my Morrow MD2. To start with, you enter the headings or field names. I chose Title, Author, Publication, Issue, Abstract. From the Heading Editor you move right into the edit screen to enter data. NOTEBOOK I uses a full screen editor and a series of control codes to move around the screen (e.g., ^X - down line, ^R - back one record, etc.) While in the edit mode, the menu of control codes is displayed at the bottom of the screen. The editor is quite versatile and you can do just about anything a good word processor will do, including undoing changes you've made. The one deficiency I noticed is the lack of word-wrap capability in the editor. NOTEBOOK will "beep" three characters before the end of the line and you must press RETURN with Insert On to start a new line. This is a little annoying, and takes some practice before it becomes second nature.

Following are the first few records in my Morrow database:

1. Title| Toward a More Useful MD2
   Author| Derek Lee Beatty
   Publication| MOR
   Issue| Vol. 2, No. 1, Feb 1985
   Abstract| Hardware, Disk Drives, Modification, MD2

2. Title| WORDSTAR Deluxe
   Author| Ted Silveira
   Publication| Profiles
   Issue| May 1987
   Abstract| WORDSTAR, Software, Customization, Patching

3. Title| Adding an 8" SSSD Drive to a Morrow MD2
   Author| Mark Sihlanick
   Publication| Micro Cornucopia
   Issue| No. 24, June-July 1985
   Abstract| Modification, Disk Drives, Hardware

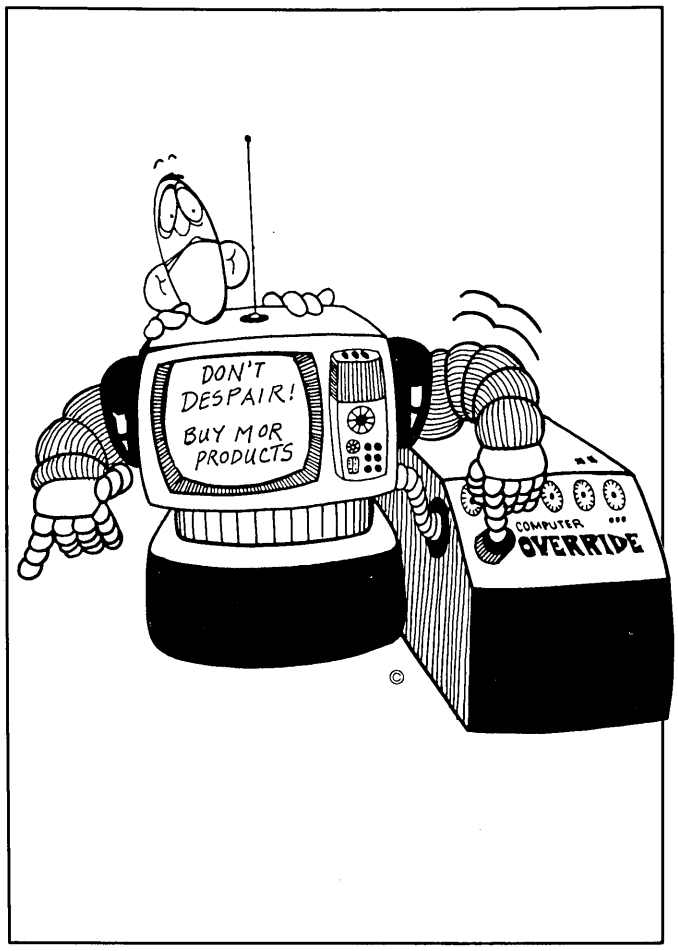
Barry Lerich is an Electrical Engineer with Pacific Bell. He lives in Stockton, California.

Now suppose, six months from now, that I decide to add more disk drives to my MD2. There are two methods for me to find the instructions I need scan through all the magazines and articles on about five feet of bookshelves or use NOTEBOOK I. The choice is obvious. As versatile as is the editor, so are the many varied functions available to you through the Functions Menu. You can shift from one function to another by pressing the ESC key which causes the Functions Menu to be displayed. Open the Morrow database, get into the SELECT function with ESC S and ask for all records which contain "disk drives" in the "abstract" field. Each function is menu-driven and you just need to follow the prompts to get the output you desire. In short order you have access to the first and third record above. If the database is large, you can use the "VIEW" function to extract and save a view of the database which contains only the records you want. Additionally, you can SORT the entire database or any view you have created in any order by one or more than one field, either alphabetically or numerically.

Once you have developed a view of your database that serves your needs, you will probably want a printed report. NOTEBOOK I can prepare reports using a default format or enables you to create formats customized to your needs. The PRINT function is also menu-driven (including the page layout) and can be directed to a printer or to a disk file.

If you prefer to use your favorite word processor to prepare the text for your database, go right ahead! Use the formatting conventions explained in the NOTEBOOK I manual, under the FOREIGN function, and the program will read that data as easily as if you typed it into the database yourself.

I haven't yet needed to SPLIT, JOIN or REORGANIZE my databases, but these capabilities are detailed in the manual should you need them. As database applications go, this program is packed with the most important features of the expensive guys at about one-third the cost. If your needs are mainly textual data, NOTEBOOK I is worth the price.



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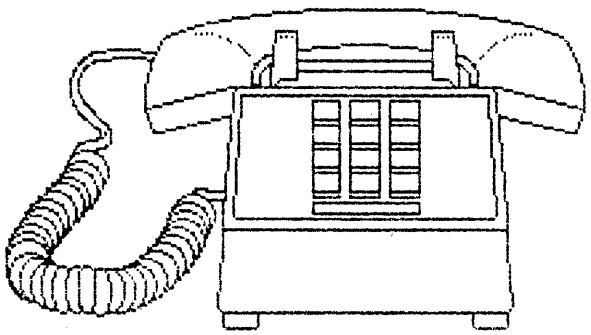

Important Announcements

New MOR ZCPR Version 3.3 Ready

Echelon Inc. has released the much improved ZCPR Version 3.3. Current users of the MOR MD3 Z-System kit can upgrade to the new version by mailng $12 and the Z-System serial number (appearing on the label of the distribution disk) to MOR, Attn: Z-System Update. You will receive a new bootable disk fashioned after the Z-System Master disk (that you have already received) and the *Z-System User's Guide* supplement for Version 3.3. Orders filled after August 20, 1987 already incorporate the new ZCPR Version 3.3. The source code to ZPCR Version 3.3 is available for $16 from MOR on two disks.

MOR ZCPR3.3 Available for All MD2s and MD3s

MOR's bootable Z-system kit, originally available only for Revision 2 MD3s, is now available for Revision 1 or Revision 2 MD2s and MD3s. To order the MOR ZCPR (Prod. #801) appropriate for your system, please note your ROM Rev. number and your disk format (double or single-sided) on the order form. If you don't know how to get this information call the MOR office for help.

WS 4 in Morrow Format

At present, MicroPro will not provide the $89 upgrade to WordStar 4 in Morrow format. Kaypro and Osborne formats are available on 5 1/4-inch disks. Most MD3's and all MD-HD machines have FOREIGN.COM (or OSB.COM) with which it is possible to read a Kaypro or Osborne formatted disk and create a Morrow formatted disk. If you have problems, give MicroPro a call. They have helped several people in getting the disks read. If all else fails, call us and we'll put you in touch with someone who can help you. If you are close to the MUG-Atlanta club or BAMDUA you may get help for free.

New Mexico MUG

In the June/July 1987 MOR we omitted a listing for the New Mexico MUG:

New Mexico MUG
2209 Spruce Needle Rd., NE
Rio Rancho, NM 871214
Phone: (505) 892-8614
Contact: Albert A. Weiner

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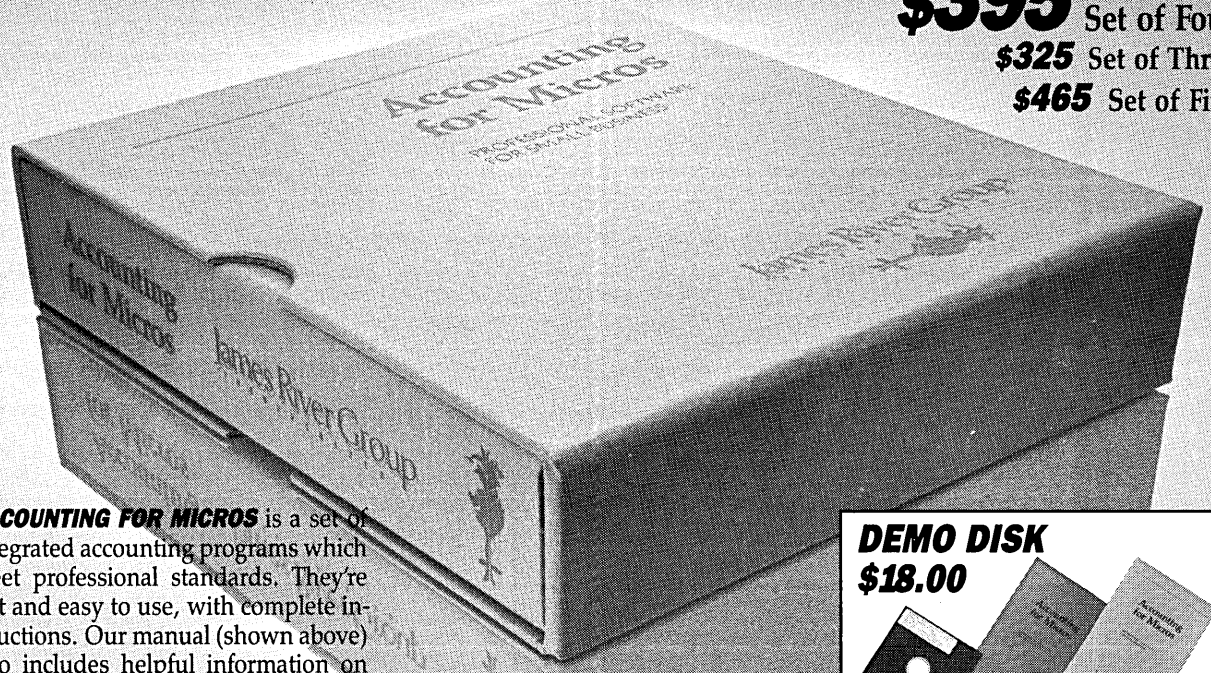

ACCOUNTING FOR MICROS is a set of integrated accounting programs which meet professional standards. They're fast and easy to use, with complete instructions. Our manual (shown above) also includes helpful information on bookkeeping and computers.

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ACCOUNTS RECEIVABLE $125
Allows up to 2,500 customers and 1,000 invoices per month. Invoicing can access Inventory Module. Keeps customer names and addresses. Invoice prints on plain paper or any pre-printed form. Statements can be printed at any time.

INVENTORY $125
Allows up to 4,000 parts. Keeps 3 month history of unit sales as well as year to date. With AR, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

ACCOUNTS PAYABLE $125
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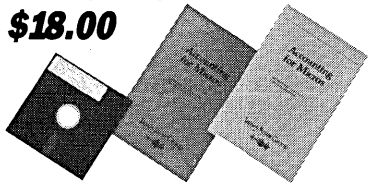

Try all 5 programs above (GL, AR, AP, IN, PR). Order our DEMO DISK for $18.00 (includes shipping). Condensed versions of the programs give you the "feel" of data entry and access. Includes sample reports and instructions. Specify machine.

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