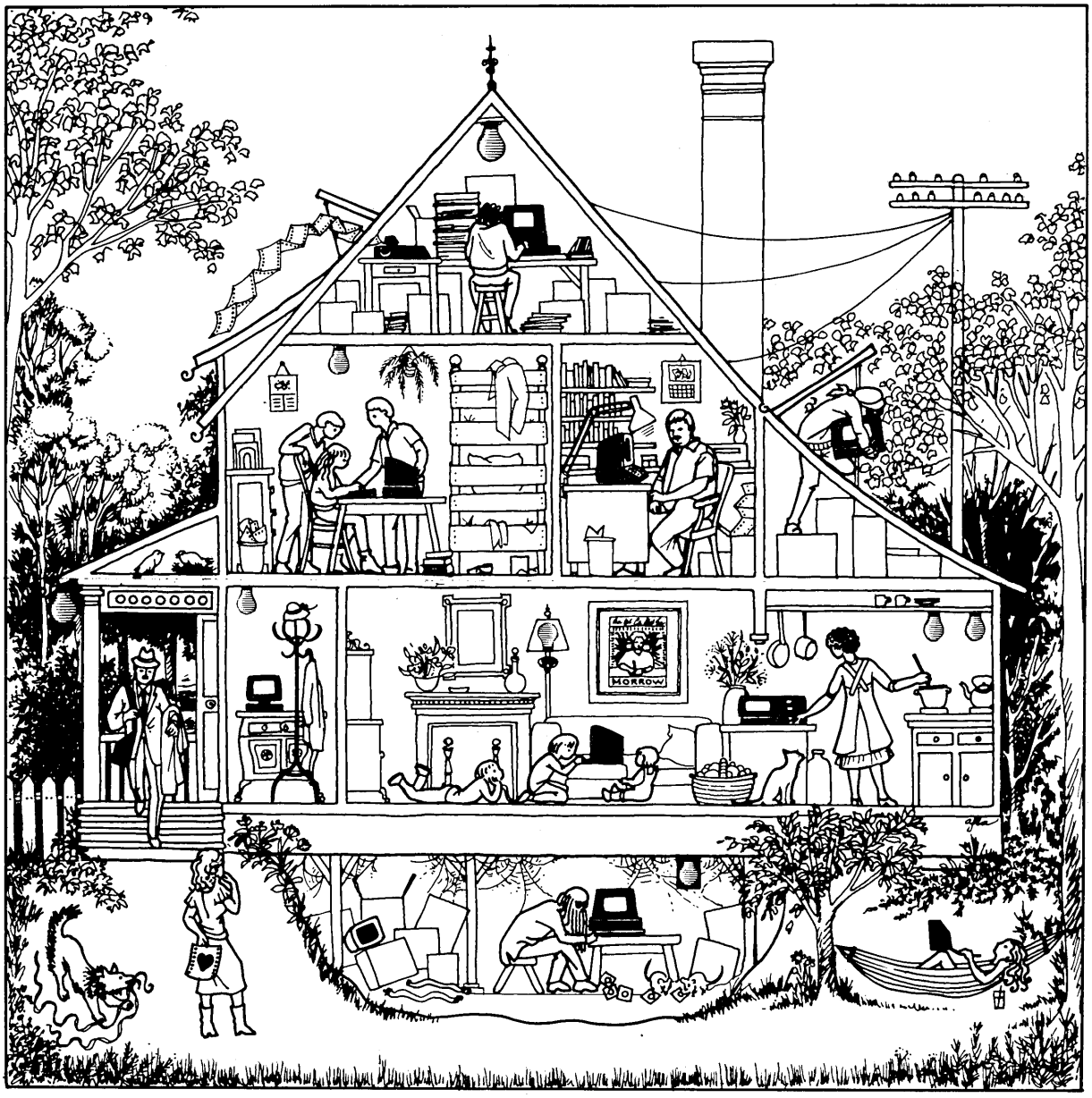
Morrow Owners' Review

VOLUME 2, NUMBER 1, FEBRUARY 1985

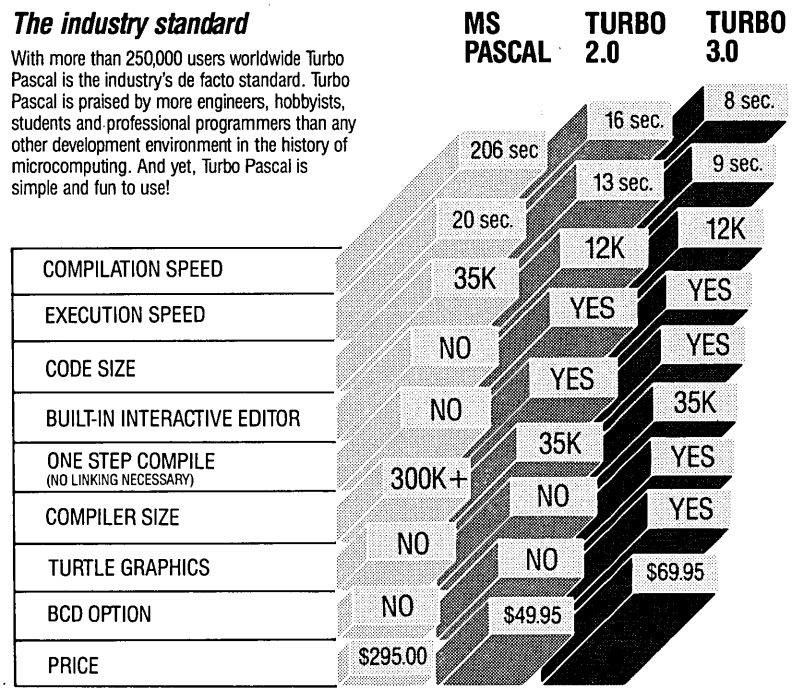


THE INTERNATIONAL MAGAZINE FOR USERS OF MORROW COMPUTERS
P.O. BOX 5487, BERKELEY, CA 94705 (415) 644-2638

They said it couldn't be done. Borland Did It. Turbo Pascal 3.0

The industry standard

With more than 250,000 users worldwide Turbo Pascal is the industry's de facto standard. Turbo Pascal is praised by more engineers, hobbyists, students and professional programmers than any other development environment in the history of microcomputing. And yet, Turbo Pascal is simple and fun to use!



The best just got better: Introducing Turbo Pascal 3.0

We just added a whole range of exciting new features to Turbo Pascal:

- First, the world's fastest Pascal compiler just got faster. Turbo Pascal 3.0 compiles twice as fast as Turbo Pascal 2.0! No kidding.
- Then, we totally rewrote the file I/O system, and we also now support I/O redirection.
- For the IBM PC versions, we've even added "turtle graphics" and full tree directory support.
- For all 16 Bit versions, we now offer two additional options: 8087 math coprocessor support for intensive calculations and Binary Coded Decimals (BCD) for business applications.
- And much much more.

The Critics' Choice

Jeff Duntemann, PC Magazine: *"Language deal of the century . . . Turbo Pascal: It introduces a new programming environment and runs like magic."*

Dave Garland, Popular Computing: *"Most Pascal compilers barely fit on a disk, but Turbo Pascal packs an editor, compiler, linker, and run-time library into just 29K bytes of random-access memory."*

Jerry Pournelle, BYTE: *"What I think the computer industry is headed for: well documented, standard, plenty of good features, and a reasonable price."*

Portability

Turbo Pascal is available today for most computers running PC DOS, MS DOS, CP/M 80 or CP/M 86. A XENIX version of Turbo Pascal will soon be announced, and before the end of the year, Turbo Pascal will be running on most 68000 based microcomputers.

An Offer you Can't Refuse

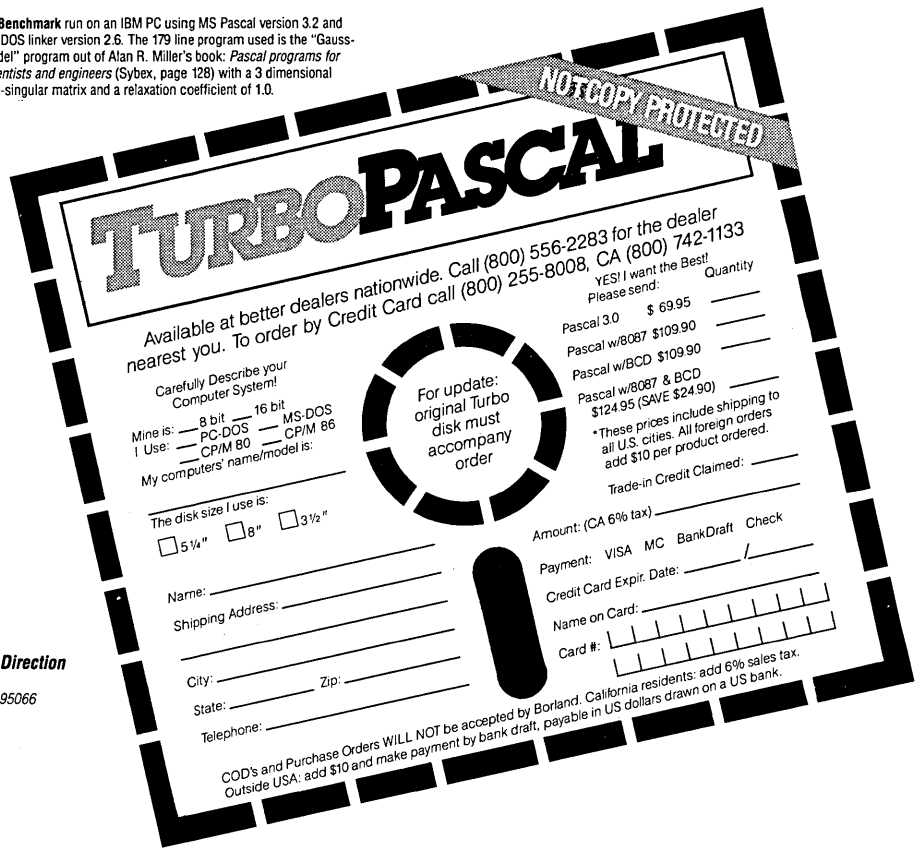
Until June 1st, 1985, you can get Turbo Pascal 3.0 for only $69.95. Turbo Pascal 3.0, equipped with either the BCD or 8087 options, is available for an additional $39.95 or Turbo Pascal 3.0 with both options for only $124.95. As a matter of fact, if you own a 16 Bit computer and are serious about programming, you might as well get both options right away and save almost $25.

Update policy

As always, our first commitment is to our customers. You built Borland and we will always honor your support.

So, to make your upgrade to the exciting new version of Turbo Pascal 3.0 easy, we will accept your original Turbo Pascal *disk* (in a bend-proof container) for a trade-in credit of $39.95 and your Turbo87 original *disk* for $59.95. This trade-in credit may only be applied toward the purchase of Turbo Pascal 3.0 and its additional BCD and 8087 options (trade-in offer is only valid directly through Borland and until June 1st, 1985).

(*) Benchmark run on an IBM PC using MS Pascal version 3.2 and the DOS linker version 2.6. The 179 line program used is the "Gauss-Seidel" program out of Alan R. Miller's book: *Pascal programs for scientists and engineers* (Sybex, page 128) with a 3 dimensional non-singular matrix and a relaxation coefficient of 1.0.



BORLAND INTERNATIONAL

Software's Newest Direction
4113 Scotts Valley Drive
Scotts Valley, California 95066
TELEX: 172373

Turbo Pascal is a registered trademark of Borland International, Inc.

. . . if you pay for it

SUBSCRIBE? Yes, indeed! The Morrow Owners' Review is going independent. Since our beginning, Morrow Inc. has paid the printing and mailing bill. This allowed us to distribute MOR to you free of charge, but now it's time to take off . . . so tighten your seatbelts.

Here's our Flight Plan: Free distribution of MOR will end with the April 1985 issue. Our first solo flight will be the June 1985 issue, mailed out only to paid subscribers. Tickets go for $18/year, but if you get on board early, you pay $3 less.

More than ever, the independent MOR will be *your* magazine, with new departments and features to respond to your needs. Beginners as well as technical wizards can count on MOR for continued quality in how-to articles, reviews, hot tips, tutorials—information you can't find elsewhere. Our columnists will answer those questions you're too embarrassed to ask at your local users group. And all this for less than a box of cheap floppies!

But it's going to take all of us to get this flight off the ground. Got the ticket?

SUBSCRIBE TO MOR!

☐ Yes, I am willing to get MOR free by paying for it!

Name_____

Address_____

City _____ State_____ Zip_____

"My year is no longer divided into 12 MONTHs but 6 MORs!"
— Harry Barber

☐ One year for $18.00

☐ Two years for $32.00

☐ I'm getting on board early for $15.00/year (due by April 15, 1985)

Send check to **Morrow Owners' Review**
Box 5487, Berkeley, CA 94705
Attn: Subscriptions

SPECIAL MAILING COSTS: First Class to U.S., Canada & Mexico—$28 US. All other countries—$28 surface; $55 airmail.
(We do *not* need your serial number!)

2185

NEWS FLASH!!
MOR Independence Day
January 28, 1985
Suddenly we foot
the bill ourselves.
SUBSCRIBE! NOW!

January 25, 1985

EDITORIAL

by Sypko Andreae

It must be a shock for all of you to open up your new issue of MOR and see a big subscription announcement on page 1--especially those of you who have been receiving MOR free for almost a year now. I'd like to fill you in on what's been happening--and some of what is going to happen.

Going independent is a major step for MOR--one that is both exciting and challenging. Although Morrow, Inc. subsidized MOR from its beginnings in April 1984, MOR has always been a magazine for and by Morrow users. We have prided ourselves on our successful grass-roots labor of love. How will independence affect this?

Conversion to independence is a long and arduous process. I have been staying in touch with the Editorial Council, a group of about ten volunteers around the country who have been enormously helpful in making many decisions. I'd like to fill you in on some of our thoughts and considerations.

Here's the story: MOR could not have started or continued without the initial support of Morrow, Inc. They paid about 60% of our expenses; the rest was covered by MOR soliciting advertising revenue. While we had an agreement about editorial independence... well, you just don't bite the hand that feeds you. And, in fact, we had little reason to even think of doing so. Morrow Inc. and MOR have had a mutually-supportive working relationship all along. With Ed Niehaus as our skilled go-between, the few differences of opinion about editorial content were amicably settled in our favor.

Our intention right from the beginning was to eventually make MOR an independent publication. In past issues, letters to the editor have reflected the feelings of readers about this, and a running discussion has been going on with the Editorial Council and on Friday night's CompuServe Conferences. However, we weren't sure when and how we could manage that shift. We certainly did not want to do it too soon. And then, before we knew it, it was no longer a matter of choice but of necessity. Morrow felt it was time to wean us. Once faced with that fact, we decided it might be the right time anyway for us to execute our original plans for independence.

So, here we are, folks! One more free issue in April, and then in June we will come out with our first subscription issue. There are definitely risks involved. First of all, it just seems logical that our circulation will drop initially. The major ramification of this is that our advertising revenue may also fall, since we can no longer assure our advertisers that they will reach 20,000 people with each issue. If ad revenue will still support about 40% of our costs, the other 60% has to come from subscriptions. To cover expenses for the first year, calculations show that we will need at least 6000 subscribers at the $15/$18 subscription fee.

We debated the cost of the subscription for a long time. The main consideration has been to charge an amount to include as many people as possible while at the same time being able to pay staff wages and the bills. All we need is to break even. We don't need to make a profit. Any money left over will be ploughed right back into MOR to enhance quality, size or frequency.

Now let's look at MOR's situation in the short run. Morrow has partially supported this February issue; we have also made an arrangement with them to use their mailing list for rental purposes. This will help, but it's not enough to get us to the first subscription issue in June. In effect, MOR is close to being totally on its own. So, we all need to pull together to make this work. If we don't...no more MOR!

This is what you can do to help between now and June. Send in your subscription early. If you pay before April 15, you'll get a discount (see the ad on page 1)--and we'll have funds! Another thing you could do is find new advertisers worthy of exposure in MOR. It takes a concerted effort to make a display ad sale. In return MOR will give you a one-year subscription mailed first class for each full-page ad sold.

Or...write a splendid article! From now on, we will compensate published authors with a year's subscription (first class mail). We would really like to pay authors, and perhaps in the future we can--although I suspect it will never be what you might receive from the slick publications.

And, while I am on the subject of free subscriptions, all you generous Stapler-Members, T-Square Supporters, Light-Box Sponsors and Answering Machine Sustainers--you will of course get your one year's free subscription, too. Your generous donations were essential way back when, and we haven't forgotten.

As for the thousands of you we hope will fill our subscription rosters . . . just remember the dreary pre-MOR days of fruitless phone calls and depressing manuals. Imagine life without MOR!

To conclude, I think we can assure you that the quality of MOR will not only continue to improve, as those of you who have been with us for a while have noticed, but that MOR will be even more able to respond to users' needs. So, let's all make MOR an on-going success.

CONTENTS

EDITORIAL EXCHANGE

Editorial 2
Letters to the Editor 5

COLUMNS

David's Q & A Column . . . . . Dave Block 9
From The Mailbox . . . . . Stan Ahalt 15
The ComFile . . . . . Ed Niehaus 19
INSIGHT: Paying Bills with Personal Pearl . . . . . Art Zemon 30

FEATURES

Teaching with PILOT . . . . . Erik Westgard 7
Trouble-Shooting your Morrow . . . . . Blake Handler 12
Micro Justification and Prop. Spacing in WordStar. . . Dick Baker 16
Toward a More Useful MD2 (1876K disk-space) . . . . . Derek Lee Beatty 20
Getting Started with TURBO PASCAL . . . . . Erik Westgard 25
Preliminary Response to the SIG Survey . . . . . Stan Young. 35
SmartKey Alert! . . . . . Ted Silveira 37

MISCELLANEOUS

Miscellaneous Announcements 11
List of Advertisers 33
Classifieds 38

Morrow Owners' Review

P.O. Box 5487, Berkeley, CA 94705
MCI Mail: MREVIEW (ID 217-1566)
(415) 644-2638 <== NEW NUMBER

Bi-monthly distribution (one more time for free)
Next issue early April 1985

Editor and Publisher: Sypko Andreae

Managing Editor: Shoshana Tembeck, Administrative Assistant: Dana Gaskin, Graphics: A. Lucas-Andreae
Advertising and Layout: Dana Gaskin, Design: Augusta Lucas-Andreae & Shoshana Tembeck
EDITORIAL COUNCIL: Stan Ahalt, Clarence Heier, Andy Adler, Michael Conroy,
Tim Evans, Brian Leyton, Ted Silveira, Erik Westgard, Stan Young, Art Zemon

DEADLINE FOR DISPLAY AND CLASSIFIED AD COPY
For April 85 issue: Friday, March 1, 1985, noon
For June 85 issue: Friday, May 3, 1985, noon
For August 85 issue: Friday, July 5, 1985, noon

WRITERS GUIDELINES: Written contributions of more than 30 words should be submitted in a WordStar file; right margin at 55 (^OR = 55); right justification OFF (^OJ); two spaces after the period (end of sentence); one blank line between paragraphs; three spaces indentation at the beginning of each paragraph. Thank you! Preferred file transfer: Upload to BAMDUA RBBS, (415) 654-3882. You may also use MCI Mail: MREVIEW (ID 217-1566) or mail a 5 1/4" Morrow format floppy with a printed hardcopy of your prose. If you enclose postage, your floppy will be returned within a month.

CLASSIFIED ADS are available for both private parties and commercial enterprises. Private party ads cost $2 per line; commercial ads run $6 per line. All ads which sell something for profit are considered as commercial. Guidelines for both types of ads are: maximum 50 characters per line; maximum of 6 lines per ad. Be sure to include name, address and phone number. Indicate which information should not be printed.

For information on DISPLAY ADS, write to MOR, P.O. Box 5487, Berkeley, CA 94705, and ask for rate schedule and information sheets.

SPECIAL CREDITS

Front cover -- A. Lucas-Andreae
Cartoons on pages 9,19,30 -- Robert Johnson
Morrow Liaison -- John Seamster

Micro Cornucopia

The Single Board Systems Journal

MORROW USERS DISKS

Micro Cornucopia is drawing rave reviews as the technical journal with style, but Micro C, as we like to call it, is more than just a magazine.

Micro C is also a central exchange of software that people have written or modified for their systems and from these contributions we have put together the following Morrow disks (186K format).

MICRO CORNUCOPIA

P.O. Box 223
Bend, OR 97709

VISA

(503) 382-8048

Morrow Users Disks

$12.00 each

The following are full disks of software assembled specifically for the Morrow. Each program has a .DOC (documentation) file and many come with source.

Morrow Disk M1
Modem software

This disk is absolutely priceless if you will be using a modem to communicate with bulletin boards, other micros or mainframes.
MMODEM: Morrow version of MODEM 795. You can change your baud rate inside the program. Includes source and library so you can customize it if you wish.
SMODEM: This is MODEM7 setup for SMARTMODEM compatible modems. Handles autodial and autoanswer.
SQ/USQ: Programs to squeeze and unsqueeze files for faster transfer.

Morrow Disk M2
Utilities

Really oodles of spiffy little (and big) programs to help you get full use of your Morrow.
ZESOURCE.COM: A true Zilog format disassembler for 8080 and Z80 object(.COM) files. Now you can turn .COM files into . MAC files.
UNERA.COM: Simply enter "UNERA" followed by the name of the file you just erased and presto, the erased file is back! A lifesaver.
FINDBD54.COM: Checks an entire disk, reports bad sectors, and then creates a special file containing those sectors. You save a bundle on disks.
CAT2: This a group of programs which create and maintain a single directory of all the programs you have on all your disks. Even keeps track of which programs are backed up and which aren't.
DUMPX, DU-77, COMPARE, FORMFEED, DIR-DUMP,... and all have documentation on disk.

Morrow Disk M3
Games

PACMAN.COM: Despite the Morrow's lack of graphics, this one looks and plays amazingly like the real thing! Keep it hidden.
ZCHESS.COM: Chess with a 1-6 level look ahead.
OTHELLO.COM: You learn it in minutes, master it in years.
BIO.COM: Generates custom graphic biorhythm.
MM.COM: Master Mind.
WUMPUS.COM: Classic wumpus hunting.
ADVENTURE.COM: This is the famous 550 point super version of Adventure. There isn't room on one disk for this program and all the data files (the cave is huge) so the data files are on Disk M4.

Morrow Disk M4
Adventure Data & Aliens

ADVT.DAT: This disk contains the data files for the 550 point Adventure (the latest, greatest, most cussed version ever devised by half-mortals). You must have both M3 and M4 to play Adventure.
ALIENS: This is the game that made arcades famous. Keep this one hidden from the younger set or you won't get to play Adventure.

Morrow Disk M5
MX-80 Graphics

A complete Epson MX-80 graphics printer package including example files. Same as M6 except for MX-80 (or compatible) printers.

Morrow Disk M6
Prowriter Graphics

This is a complete Prowriter printer graphics package written by the same Micro C subscriber who wrote the MX-80 graphics package. Plot points, lines, circles, boxes, and more. Examples, documentation, and more.

Morrow Disk M7
Small C Version 2 Compiler

This is a greatly extended version of Ron Cain's Small C compiler. Version 2 has more expressions and larger library, true subset of Unix C. Disk contains compiler, documentation, and library —everything you need.

Morrow Disk M8
Small C Version 2 Source

This disk contains the source (written in Small C) of the Small C version 2 compiler. Get M8 if you want to try extending the compiler. (You must have M7.)

Morrow Disk M9
ZCPR

ZCPR: The big news on this disk is the self-installing version ZCPR available only from Micro C. Once you have ZCPR in your CP/M, you'll never go back to straight CP/M! For instance, ZCPR searches drive A for any program not found on drive B, so, even an empty disk in drive B appears to contain every program on A. It's great for text editors, compilers, etc. Plus many more new features to make CP/M easier to live with. In fact, Digital Research incorporated many features of ZCPR into CP/M 3.0.
EX14: a super replacement for SUBMIT.

Morrow Disk M10
Assemblers

We've received a lot of requests for a Z80 assembler. So Dana put in some long hours getting the Crowe Z80 assembler to run on the Morrow (and every other Z80 machine).
CROWECPM: This is a first class Z80 assembler. We use this assembler daily (and we included its source). Takes standard Zilog mnemonics.
LASM: This is a more powerful version of the ASM assembler you received with the Morrow. This will link multiple programs together at assembly time.
PRINTPRN: This program makes it easy to print the listing files generated by the Crowe assembler.

Morrow Disk M11
Library & Checkbook Programs

CHECKS: This has been a very popular group of programs. Categorizes checks so you can keep track which are tax deductible and which get charged to which projects. Includes source and excellent example check files. Very powerful.
LIBR: This is a complete set of library routines which let you group files into a single file called a library. Then CP/M sees them as a single program, but with the library routines, you can list them out separately, run them separately, or divide them up again. Almost like a unix environment.

Morrow Disk M12
Pascal Compiler

This is a real Pascal compiler. It supports only a subset of the language (no records, pointers, booleans, reals or complex) but it generates a real .COM file. Everything is on this disk: the compiler, its source, example programs and documentation.

Morrow Disk M13
Z80 Tools

This is for those of you who are into Z80 assembly language.
XLATE.COM: A very good 8080 to Z80 translation routine.
DASM.COM: An easier to use version of ZZSOURCE (the Z80 disassembler). This full disk includes source and documentation for both routines.

NEW!

Morrow Disk M14
Z80 Macro Assembler

This is a real Z80 macro assembler! Syntax closely follows RMACK and MAC. Also includes pseudo-ops to support conditional assembly, etc. No phase or relocatable code.

LETTERS TO THE EDITOR

INDEPENDENCE OR BUST

Dear Editor:

Re: costs policy: By all means continue to accept Morrow's support as long as it is available until you can assure yourself that a subscription charge would not seriously reduce your readership. There is of course an advantage to independence and separation--you can offer constructive criticism of Morrow more freely when it is indicated. So far there's been very little cause that I know of.

Lawrence J. Marks, Falls Church, VA

Dear Editor:

I can't thank you enough for publishing the MOR. When the first 3 back issues arrived about six weeks ago, I sat up all night reading them cover to cover.

The Morrow Owners' Review is a very valuable publication. It has cleared up lots of puzzles for me, and made the use of my Morrow much easier and more enjoyable. I'd be glad to pay a mailing charge, even a modest subscription charge. Just don't stop publishing MOR!

Evalyn F. Segal, San Diego, CA

Dear Editor:

It seems to me that a publication truly independent of Morrow would be ideal, but I would rather have this than nothing. So please don't go bust trying to go independent!

Walter Eric Pond, Philadelphia, PA

[Well, ready or not: Here we go! Subscriptions from here on out, starting with our June issue. (See the Editorial in this issue as well as the announcement on page 1 for more information.) We hope you join us. We need at least 6000 of you to break even. --Ed.]

MONTHLY?

Dear Editor:

It is obvious that you are over-worked and understaffed. Nevertheless, I am grateful that you have taken your own time to put together a newsletter for Morrow owners.

Morrow Owners' Review has served three purposes for me: it has given me a "peer" group with which to communicate; it has given me a source of help --and perhaps a way by which I may help others, should anyone have some of the same problems that I have had; and it has made available a marketplace comprised of those who provide products and services which support the Morrow equipment.

You will find my personal check enclosed. The amount in excess of the $6.00 required for the back issues is an attempt to encourage the return to a monthly issue of the Morrow Owners' Review.

F.W. Harland, Wichita, KS

[MOR was never a monthly publication, but a bi-monthly right from the beginning (April 1984). But who knows what's going to happen. Subscribe and see....]

UNTRAMMELED EXERCISE

Dear Editor:

MOR should not come out in hard-copy form. It should be on a bulletin board. Members/Subscribers should be able to place material (with space and time limitations) on the board without editorial intervention. The computer holds the promise of realizing Democratic ideals, including the absolute untrammelled exercise of the right of free speech.

Donald W. Ricketts, Los Angeles, CA

[There are lots of Electronic Bulletin Boards where you can do just what you propose. But having to plough through all the untrammeled information in search of the few gems could easily cause you info-indigestion, the disease of the computer age. MOR is in the business of refining information. We work hard to cultivate writers, select, correct and clarify the GigaBytes of information that flow our way. It is called editing.]

ADVERTORIALS

Dear Editor:

You want to know what I think of articles by advertisers? All right: They stink. They cheat readers. They invite legal trouble. They eat up large chunks of editors' time. As you pointed out, the two "advertorial" pieces in the August 1984 issue weren't reviews. They were blatant puff pieces. Loss of credibility is hard to measure, and the damage is hard to repair. Legally, you are out on a limb. Editors are supposed to treat all advertisers exactly alike, and that's usually expressed in terms of selling everyone the same space for the same price. A free article is extra space. We all know that neighborhood and suburban

shoppers often get away with advertorials. We also know what they're worth to their readers. The Morrow Owners' Review deserves better.

Wendell Cochran, Arlington, VA

[You're dead right! Never again! --Ed.]

MORROWTORIALS

Dear Editor:

In response to some of your critics about using articles written by Morrow personnel, I would like to add my opinion. I feel that worthwhile, reliable information should be made available to your readership, regardless of the source. Some of the most valuable information that I have gotten from MOR has come from David Block's column.

Ray Andrews, Vincennes, IN

CALL A TRANSTAR A TRANSTAR!

Dear Editor:

It works! Steve Torrence's piece on concurrent printing with WordStar is the best thing that has happened to me since I bought my MD3. It has increased my productivity at least 50%. My MP200 is chattering away merrily in the background as I type this. Fantastic!

BUT...it ain't no piece of cake and you might hear from some slighly overheated readers about the various places that can and, Murphy assures us, will screw up. First, there is the MP200 Transtar. After learning that all MDs are not created alike, I was reluctant to blast right in until the folks at Binary Magic in Satellite Beach assured me that the Silver-Reed 550 was the same machine. It would really help to give equivalents or differences where Morrow equipment is concerned in articles of this type.

John R. Riggenbach, Melbourne Village, FL

LOST IN SACRAMENTO

Dear Editor:

The September '84 FOGHORN (Osborne Users' Group publication) said that the Morrow Owners' Review is available to us "free for the time being." I joined the First Osborne Group as a last choice since I couldn't find a Morrow group to join. I would certainly appreciate getting the MOR and would, of course, prefer to belong to a Morrow users' group instead of FOG. The FOG people are active, but they talk about Osborne too much for a Morrow owner.

Dennis M. Debacker, Sacramento, CA

[Sacramento? But that is the hometown of one of the most flourishing MUG's in the country! Regular meetings, a wonderful newsletter, library, classes, the works. A call to Milton Levison at (916)421-6268 will get you home. And as long as MOR is free, you are on our mailing list. Want to subscribe? (See p. 1.)

WHEN LIGHTNING STRIKES

Dear Editor:

In regard to Jerry Sheperd's article, page 27 of the October 1984 issue (Vol. I, #4):

IF lightning is a major problem in your area, the "cheap" surge protectors will NOT stop lightning induced surges. The protection is relative to the price. Experience April-October in this area where I live, with Informer terminals and a DEC PDP: lightning induced spikes went "through" cheap so-called surge protectors, circuit breakers and fuses, and burned out the 1488 and 1489 every time. These are high-current driver chips and cannot take even a slight voltage increase. Finally found a six-outlet "line conditioner-stabilizer" for $175.00 rated at 800 watts which worked on the terminals. Thirty and eighty dollar units are okay for local, machine-induced spikes, but NOT lightning!

Robert E. Wallace, Stuart, FL

UNTRAMMELED PRAISE

Dear Editor:

After reading four issues of the Morrow Owners' Review, and noting so many who report difficulty in learning to operate the Morrow and to understand the manuals, I'd like to give you my viewpoint.

My Morrow MD 11 arrived on October 19, 1984. I had never operated a computer before, and so knew less than nothing about one. But I found the manuals exceptionally easy to master, and within a week or 10 days felt very confident (a great change from the first day when I scanned the manuals and the operating instructions!) and forthwith started using it for my purpose: I am a writer. I thought the NewWord manual was a gem of easily followed instructions and cannot compliment the authors enough. I did find the Personal Pearl inadequate for my needs in indexing, but upon obtaining a dBase II, this solved my problems, and I even found that manual easy to follow. I am very much in love with the Morrow, and the menu-driven programs make it as much my right hand as was my typewriter before.

And contrary to what many have found, I cannot give enough praise to my dealer (Tom Nolan, Professional Computer Applications, Louisville, KY). His interest has never ceased. He called me long distance at least once a week during the initial period to see if I had any problems or questions, and was available day or night when I needed him. This is one dealer that the Morrow company can well be proud of for his support!

Michael L. Cook, Evansville, IN

TEACHING WITH PILOT

by Erik Westgard

Education is the great hope for personal computers. Once the checkbook has been balanced, the recipes have been filed, and the electronic mail has been sorted, your computer is free to become a private tutor. While commercial packages are available for math, spelling, history and other topics, what if you need to cover an area of instruction in your home or business that doesn't have educational software (courseware) already available? You might try writing your own.

Developing courseware is cumbersome with most programming tools. Courses usually consist of lessons followed by quiz questions designed to reinforce learning. The programmed lesson text can turn out to be lengthy, filling several screens (30 or 40 lines) per main point. For those who have programmed in BASIC, for instance, each section could require forty line numbers, PRINT statements, (or question marks) and opening and closing quotes. Once we got through programming the text, the section asking for student input would require INPUT statements, IF-THEN statements, variables, and complex matching logic.

But what if we just want to teach and not have to get involved in programming? The language PILOT (Programmed Inquiry, Learning, or Teaching) was designed in the early 1970's at the University of California at San Francisco for the express purpose of allowing teachers to easily develop their own lessons to be run on a classroom computer. PILOT is easy to use and does not require any background in formal programming. [The PILOT User's Guide, describing the language, was shipped with each new machine. If you missed it, they're available from Morrow. --Ed.]

PILOT "lessons" (not called programs) can be written with a text editor like WordStar or NewWord in non-text mode. To start, I format a blank diskette and copy onto it the PILOT.COM file from my distribution disk. I put that in drive B:, my WordStar disk in A:, and then use the L command to change my logged drive to B:. Now I write my lessons, save them, and just type PILOT FILENAME to run the lesson I have written. When the lesson ends, I get the prompt to hit a key, and

What does a lesson look like? With this question we move rapidly from programming to the realm of education. Tom Conolon's book PILOT--The Language and How to Use It (Prentice-Hall International, 1984) has a good introduction to lesson plans and structured lesson development. It is probably advisable to write out in advance your course objectives, intended audience, the time frame of the lesson, and any supplemental materials needed. After you've selected a topic and sketched out a lesson plan, coding the lesson is easy.

The lesson will consist of a number of individual screens presented to the student. For example, your lesson might begin like this:

```
*TOP
CLRS:
LF: 4
T: Welcome to a course in travel expense
T: accounts. Here at the XYZ Company,
T: the proper use of company funds is an
T: important goal, as well as a condition of
T: employment.
```

The notation "*TOP" designates the beginning of a given lesson. Functions, such as "CLRS:" to clear the screen and "LF:" to skip lines, are well documented in the PILOT manual. All PILOT instructions and functions end with a colon or use the colon to divide the instruction from the following data. You will notice that PILOT statements, such as "T:", do not require quotes or line numbers, so one can key lessons rapidly.

To reinforce the learning process, most lessons will ask some questions at the end and provide a way to check the answers. Questions are presented with the instruction "A:" to ask, and answers are checked against the instruction "M:" to match. Matching can be done against one possible answer or several, with commas separating the possible right answers. (Matching is not case-sensitive, so we do not have to worry if a student answers "yes" instead of "YES.") One can provide feedback to the student with the "TY:" or "TN:" instructions. At TY: you can type in a line, such as "Correct" on a match. At TN: you can type in something like, "Sorry, try again," for a wrong answer. Your next screen of instruction might look like this:

```
CLRS:
LF: 4
T: Any single expense item over $$25 requires a
T: receipt. This is both company policy, and
T: an IRS tax regulation.
T:
T: If you had breakfast for $$9.50 and dinner for
T: $$18.95 on the same day, would you need a
T: receipt?
A:
M: NO
TY: Correct.
TN: No. Neither item is over $$25 by itself.
T:
T: >>>
HOLD:
```

Dollar and pound signs have a special function ("reserved" characters) in PILOT, so you need to use

Dollar and pound signs have a special function ("reserved" characters) in PILOT, so you need to use two of them together in a T: statement for them to appear on the screen. The "HOLD:" instruction keeps a screen visible long enough for the student to study it. Put a symbol at the bottom of the screen as a signal to hit the return key to continue the lesson.

One of the advantages of computer aided instruction is that each individual student may review sections of the material as often as needed. For instance, you can put a question in a lesson that allows a branch backwards for review. Or you can program an automatic branch backwards if the student misses answers to questions about a section. You might want to end a section with an option to review, such as:

```
CLRS:
LF: 4
T: We have just completed the section on
T: filling out the expense form correctly.
T:
T: Would you like to review the work just
T: completed?
A:
M: YES
JY: *TOP
```

(example, cont.)

WRITING TOOLS!

COUNT.COM - The perfect tool for students, writers, etc., this program has more features than you'll ever want to know about. It provides an accurate word count of your reports, short stories and chapters. Don't settle for anything less than this very original, exceptionally fast, and incredibly versatile program!

DICTADD.* - No Correct-It user should pass this one by. These files augment your Correct-It Spelling Checker, increasing the power of your dictionary by more than 7,000 words! SUBMIT files are included to make it easy to add these files to your Master dictionary!

PATCH-IT.COM - The secret has been unraveled, and now the benefits can be yours! If you're a die-hard WordStar 3.0* fan and use the Correct-It Spelling Checker, this program is just what you've been looking for. Forget about using the Run A Program option at the No File Menu. This simple-to-use program vastly improves the interface between WordStar and Correct-It.

Documentation included. All three on one disk for just $12. Please specify single or double-sided (MD2 or MD3) format. Enclose check or money order and send to:

RC Throckmorton
7144 Predial Way
Sacramento, CA 95842-3720

Queries please send SASE for reply. *WordStar is a Registered Trademark of MicroPro International Corporation.


```
TN: Okay. Press return for the next section.
T: >>>
HOLD:
```

In this example, "JY" returns the student to the beginning of the lesson. Thus, the student can jump to different sections, according to whether the match (M:) is yes or no. You could also label each section of the lesson, so that the student could choose to jump to any particular part--perhaps choosing from a main menu you program in.

If you wish to jump to a section and then return, PILOT provides a re-usable segment similar to a subroutine in programming. You can set up such a segment by beginning with a label (labels start with an asterisk and are usually up to six characters long), and ending with a subroutine statement, "E:". Place a use statement, "U:", in the lesson where you wish to run the subroutine. An example of a subroutine is:

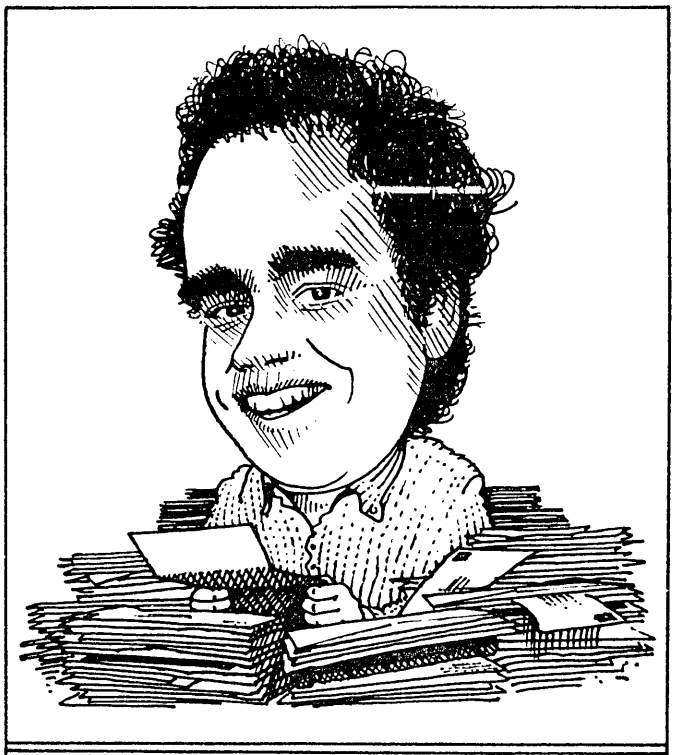
```
*CLEAR
R: This subroutine clears the screen and moves
R: the cursor down four lines.
CLRS:
LF: 4
E:
```

The remark statement, "R:", allows the inclusion of comments in the body of the lesson to aid in revision, debugging, etc. These comments will not be displayed at the time the lesson is run. To execute correctly, all PILOT lessons should have an "END:" statement as the last line in the lesson.

For more advanced applications, PILOT offers a math function, "C:", to allow addition and subtraction within the lesson. One can access the printer with the "PR:" function, output ports with the "OUT:" function, and run CP/M programs with the "CP/M:" function. Short utilities and menus could be written in PILOT, like the menus included on the CP/M distribution disk. Here's one example:

```
*TOP
R: A Printer Test Program in PILOT
T: PILOT Printer Test. Ready printer,
T: then press enter.
HOLD:
T:
PR: YOUR PRINTER WORKS CORRECTLY
T: The message
T: YOUR PRINTER WORKS CORRECTLY
T: should have printed.
T:
T: Another try? (Y or N)
A:
M: Y
JY: *TOP
END:
```

There are countless other uses for PILOT. How about making educational programs for your kids at home? Or quiz games for your parties? Try it! ■



DAVID'S Q & A COLUMN

by David Block, Morrow Inc.

[Dave Block is Product Manager for Morrow, Inc. If you have technical problems or questions on application software, send them to him c/o MOR.]

Well, I seem to be suffering from foot-in-mouth disease. Last issue, I went out on a limb and suggested that you call the Morrow BBS. I went on to describe all the wonderful functions added to it, including file transfer. Well, guess what? The phone line has been down, and the file transfer functions have not been added. We are waiting for the phone line to be fixed, so you'll just have to keep trying.

Every time I sit down to write this column I feel like I must write reams of poetic prose before getting to the questions. This month, I'll skip it....

Eddye Eubanks of Austin, Texas writes to ask if those disk-drive analysis kits on the market for Apple and IBM computers work, and if any similiar item is available for the MD2 or MD3.

Well, Eddye, no such kit is available for the MD series computers. If there were, I couldn't recommend it either (such honesty!). The most important purchase for the disk drives of your MD is a head cleaning kit. If you are worried about disk drives being out of alignment, it should be checked by a service dealer. Dirty heads are much more common then misalignment of disk drives.

Roger Gledhill, an obviously satisfied Morrow owner from Ypsilanti, Michigan wants to know how to take one of his MD2s and his MD11 and add the two drives from his MD2 to his MD11 so that he may have 3 floppies on his MD11.

Roger, I have one question for you--Why? Adding two single-sided drives to the MD11 would not significantly increase the storage. The MD11 can only support one additional floppy anyway, and adding it is not a process that is easily done. If you write to me and promise to write an article about it for MOR, I can help you through the process.

Laurence Moore, Jr. of Gualala, California read my column in MOR, Vol. I, Issue 4 about SmartKey and went looking for it on his MBASIC disk, but couldn't find it. He wants to know if it's hidden, or if it's a defective disk.

Well, Laurence, SmartKey was not always included with the MD. You probably bought your Micro Decision before we had rights to distribute it. That being the case, you'll have to buy it from your dealer.

Bill Harrell of Utica, New York is having a problem with MBASIC when he has two random files open for writing. Every time he does a PUT to the second file, it doesn't advance to the next record, so the data gets written over the same part of the file, replacing the data from the previous PUT command.

I never used Random files under MBASIC, so all I can suggest is that you be sure you are 'PUTing' to the right file. Perhaps there is someone out there who has seen this problem before. If so, they can send the solution to Stan Ahalt's "Mailbox" column or submit it to MOR as a "Hot Tip." Otherwise Bill, try TURBO PASCAL--it's easy, fast, cheap, and reliable.

Until next issue...HAPPY COMPUTING!

■■■

SORT 'EM AND SHIP' EM! $125/both

POWERSORT a CP/M compatible sort package **$95**

Fully interactive — *disk file select/sort/merge package — handles up to 30 sort/select keys — has features usually found only in very expensive sort packages such as wild card characters — sorts files up to 5.5 megabytes and much more.*

POWERMAIL a CP/M compatible mailer package **$49**

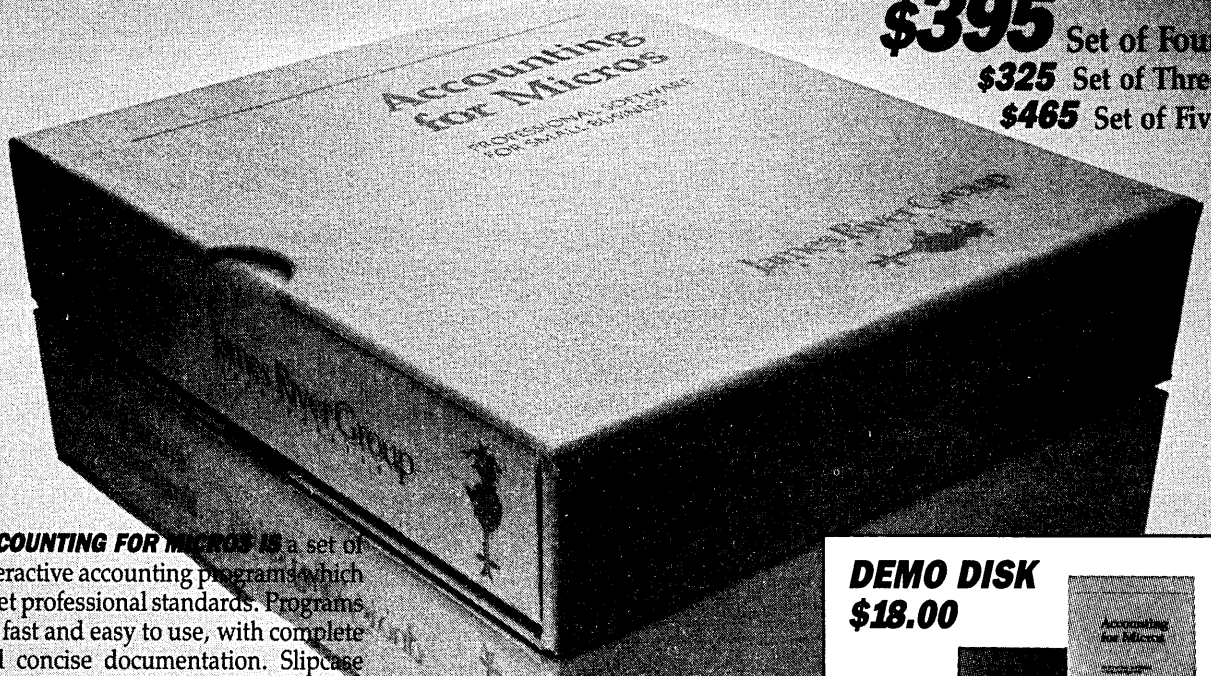
Fully interactive — *allows you to use your word processor to create mailists — any number of labels across and down — repeated city/state/zip address line can be eliminated — optional comment lines — full featured mailer.*

FREE 1985 HARDWARE/SOFTWARE CATALOG ***Call or Write:***

Inner Access Corporation P.O. Box 888 • Belmont, CA 94002 • (415) 591-8295

ACCOUNTING FOR MICROS

$395 Set of Four
$325 Set of Three
$465 Set of Five



ACCOUNTING FOR MICROS IS a set of interactive accounting programs which meet professional standards. Programs are fast and easy to use, with complete and concise documentation. Slipcase and binder manual also includes valuable tutorial information on bookkeeping and general small computer use.

GENERAL LEDGER $125
Allows up to 1,000 accounts & 1,000 transactions/month. Retains mo/end balances for Last year, This Year and Forecast. Includes Cash Disbursements, Cash Receipts and General Journals. Reports include Balance Sheet, Income Statement, Annual Summaries and Journal Reports.

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.

ACCOUNTS PAYABLE $125
Allows up to 500 vendors and 600 invoices/mo. Records invoices and hand-written checks. Prints computer checks on any pre-printed form. Keeps vendor names and addresses.

INVENTORY $125
Allows up to 6,000 parts. Keeps 3 month history of unit sales as well as year to date. With A/R, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

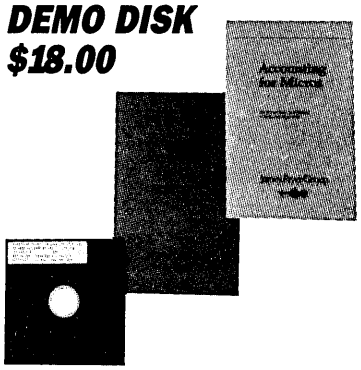
PAYROLL $125
Will handle up to 100 employees with six deductions per employee. Deductions may be determined as fixed dollar amounts or percentages, or referred to a table for automatic look-up. Tax tables are easily entered, or purchased separately.

SET OF FIVE $465
SET OF FOUR $395
SET OF THREE $325

PROGRAMS RUN ON MOST CPM AND MSDOS MACHINES

Apple CPM	Kaypro II, 4&10	Sanyo
Columbia	Morrow MD2, MD3, MD11	Tandy 1200 HD
Compaq	Osborne I & Executive	Tandy 2000
Corona	Otrona	TeleVideo
Cromemco	Panasonic	Xerox 820 5"
Eagle	Radio Shack CPM	8" CPM
Epson QX-10		Other CPM or MSDOS
IBM PC, XT, PC Jr, AT		

DEMO DISK $18.00



Try all 5 programs, order our DEMO DISK for $18.00 (includes shipping). Condensed versions of the programs will give you the "feel" of both data entry and access. Includes sample reports and instructions.

Available direct, from computer dealers, and some B. Dalton Bookstores.

ORDERING: Please specify machine and density. Send check or money order, or use your VISA or MasterCard (please supply expiration date as well as account number). Price includes shipping (MN residents add 6% sales tax). Your order will be shipped by return mail. C.O.D. add $2.00 per order.

James River Group
INCORPORATED

125 North First Street
Minneapolis, MN 55401

OR ORDER BY PHONE
(612) 339-2521

MISCELLANEOUS ANNOUNCEMENTS

NEW USER GROUPS.

Morrow owners in the Boston/Cambridge Area can contact me about starting a local users group. I was a co-founder of the Boston Computer Society. I use Turbo Pascal and microMUMPS for various programming projects, and can provide assistance to people having questions about them. --Richard Gardner, Box 134 Harvard Square, Cambridge, MA 02238-0134; (617)876-2789; Telex: 853012

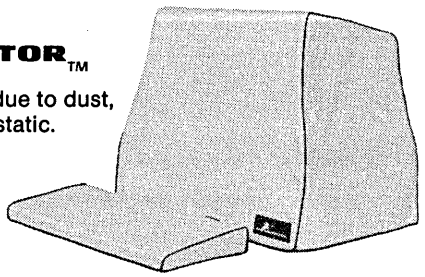
The Beverly Hills Morrow Users Group meets at the home of B. Ennis. Demonstrations and exchanges of software. For more information, contact Bob Brooks: days (213)276-0676, eves (213) 659-7194. Usually meets second Wednesdays.

THANK YOU, EMMA.

Emma Paquin recently resigned as an associate editor of MOR. She was one of the original crew that started MOR and did a lot of copy editing for those first issues. We lost count of the number of floppies we sent back and forth, but there were many. One day last summer she came all the way to Berkeley from her home in Arcadia, just to help out in the MOR office. Thanks for helping us get started, Emma.

Protect Your Investment

THE PROTECTOR™



- Eliminates damage due to dust, smoke, liquids, and static.
- Prevents data loss
- Professional appearance
- Easy to use

The Protector™ is waterproof, yet it breathes. There is no moisture condensation problem.

The Protector is durable. It will never become brittle, crack, or tear.

Custom tailored for the Morrow, The Protector is the best cover you can buy. Fine cotton fabric and expert tailoring make the Protector the only cover appropriate for professional office or elegant home.

Morrow Protector $39.95. Printer Protector $19.95.

Credit card orders receive a $5.00 discount.
To order call 1-800-232-1211. We guarantee satisfaction.

Dealers inquire on your letterhead.
The Protector Corporation, 375 S. 41st Street, Boulder, CO 80303

****

MultiForm-READIT, FORMAT, & COPYDOS

MultiForm allows you to read, write, and format multiple disk formats on the Morrow Micro Decision (MD1, MD1E, MD2, MD3, MD3E, MD3P, MD5, MD5E, MD11, MD16, and MD34 models).

With **MultiForm**, you can copy files to and from different **CP/M**, **MS-DOS**, and **PC-DOS** disk formats. **MultiForm** can currently read, write, and format disks for over 40 **CP/M** computers.

MultiForm's capability to read, write, and format **MS-DOS** and **PC-DOS** disks means you can transfer information to and from:

1. An IBM-PC
2. Morrow's CP-88 co-processor board
3. Morrow's PIVOT portable computer
4. Any MS-DOS machine that is disk compatible with the IBM-PC

Price: U.S. and Canada: **$64.95** ($59.95 + $5.00 shipping/handling)
Foreign orders : **$69.95** ($59.95 + $10.00 shipping/handling)

Visa, MasterCard, check, money order, and C.O.D. orders accepted

---

For information or to order, contact:
Paul Bartholomew
Bartholomew Software
1563 Parkside Court
Freeport IL 61032
(815) 235-1352

MultiForm is no longer available through Computer Review, Inc.

Dealer and Users Group discounts available.

****

TROUBLE-SHOOTING YOUR MORROW TERMINAL

by Blake Handler

[The following tips, from the head of Technical Support for Priority One Electronics in Chatsworth, California, were first distributed at a users group meeting and then published in Emma Paquin's Morrow Owners Digest. When Emma submitted this material, she included a couple of additional recommendations from Blake: 1) If you have to open up and get into your Morrow, put it on a solid-colored towel before you remove the 4 Phillips screws on the front (plus the two on the back for the old models). This makes it easy to find the screws when you drop them. 2) If you do make any changes, be sure to write them down so you can undo them if necessary.]

PROBLEM 1) The terminal does not work.

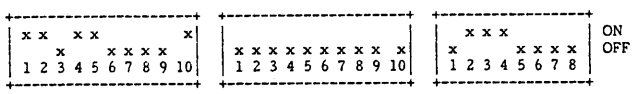
A) Make sure it passes the self test. (Your MDT 50 should beep twice.) Watch the screen for verification right after you turn the power on. If it does not pass the self test, go to step D.

B) Check the terminal's SET-UP.

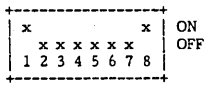
b1) On the MDT 20, the SET-UP key is used to activate the 25th status line. Using the left and right arrows to move back and forth, and the up arrow to toggle 0 or 1, arrange the SET-UP as follows:

```
STATUS 1100 0100 0011 0110 0011 0000 1100 0010 0010  BAUD = 9600
```

b2) On the MDT 50 the DIP switches should be set on the back as follows:



b3) On the MDT 60 when the DIP switches are in the ON position, they appear to be pushed in. On the MDT 60 or MDT 70, the SET-UP is as follows:



C) Check to see if the cable is plugged into the correct port. First, check to see if the cable is plugged into the Morrow port labeled TERMINAL. Then, check to see if it is plugged into the correct port on the terminal. SIDE NOTE: Try swapping the terminal cable with your printer cable, (if it's a serial printer), in case they've gotten mixed up.

c1) The MDT 20's port is labeled RS232C.

c2) The MDT 50's port is labeled MAIN PORT.

c3) The MDT 60 and MDT 70 have only one port. Enough said?

D) I know this sounds dumb, but IS THE TERMINAL PLUGGED IN?

E) Is the brightness turned up?

F) UNPLUG YOUR TERMINAL! Check the fuse on the back of your MDT 50, MDT 60 or MDT 70.
(Sorry, the MDT 20's fuse is internal.)

G) If you are at this step, you will need to open the unit. WARNING! Before opening the terminal, leave it turned OFF and UNPLUGGED for no less than 24 hours. When open, check to see if all the cables are correctly plugged in (wiggle them around a little) and that all chips are well-seated in their sockets. (Push down on all the chips you see.) You will also notice that the terminal has some fuses inside. Check these as well.

g1) The MDT 20 has a board that plugs into the back of the CRT (cathode ray tube, or picture tube). Push this board in as well.

H) Reassemble your terminal and try again.

I) If the unit is still not working, you've done all that you can. Remember to tell your dealer or Xerox Service Center all the steps you've gone through. This will aid them in fixing your terminal and gives you more credibility.

PROBLEM 2) The terminal blanks out all of a sudden.

A) Follow the steps outlined in Problem 1, starting with step F. (Yes, that's right, step F. You're going to have to operate.)

B) This could be a thermal problem, which is a fancy way of saying some chips are heating

up and have stopped working. There is nothing a user can do about this except take it to the dealer or Xerox Service Center.

PROBLEM 3) The characters are all garbled on the screen.

A) Follow the SET-UP procedure in Problem 1.

B) If that did not solve the problem, then the serial port on the computer or the terminal's character generator is bad.

b1) Test your serial port using someone else's "working" terminal or attach a "working" printer (set at 9600 baud) to the computer's serial port. If it works, the terminal's character generator is bad. Have your dealer order this from Morrow. This is easy to replace; it's only a socketed chip. Or take your terminal to Xerox and tell them the steps you went through.

b2) If the computer is the problem, the chip that controls the terminal's serial port will have to be replaced. WARNING! ONLY A PERSON SKILLED AT SOLDERING SHOULD ATTEMPT THIS. REPLACE THE CHIP WITH A SOCKET. IF IT HAPPENED ONCE, IT MAY HAPPEN AGAIN.

b2a) On a Revision 1 board, replace the 8251A UART at location IC9.

b2b) On a Revision 2 board, replace the 8251A UART that is located inboard.

b2c) On the MD11 mother-board, replace the Z80 DART at location U26. (This one is socketed and is easy to replace.)

Care must be taken when opening any piece of electronic equipment. Remember, you are just opening the unit to look for the obvious errors (i.e., chips or cables that have become loose). Unless you really know what you are doing, any major repairs should only be done by factory-trained technicians. ■

FOR MORROW OWNERS ONLY

Newword
The Power of WordStar® for only $100
And MergePrint is Included!!

Newword is a WordStar compatible word processing program with a built-in merge print facility equivalent to MailMerge®

How compatible is it? Well, as George Morrow himself says:

"If you can use WordStar you can use Newword! Why not visit one of our dealers and see for yourself".

Here are just a few of the features you get with Newword —

- Mergeprint is standard - including conditionals (if, then, else)
- Displays true underlining and bolding on the screen*
- Column mode - like WordStar only better!
- Unerase - delete a line by accident? Now you can get it back
- Multiple line headers and footers - up to three each
- Dot commands to implement User Print Controls

Do you have a dot matrix printer? Then you'll like the fact that Newword supports microjustification, variable line height and variable character width on many dot matrix printers.

Visit your Morrow dealer today and try Newword. You can't find a better buy for just $100.

Upgrade your Morrow Newword for $25

If you already have Newword, you know how powerful it is. Your upgrade includes all of the features described above. You will especially like the onscreen display of print attributes. To take advantage of the upgrade offer you must trade in your original Newword diskette.

ORDER NOW!

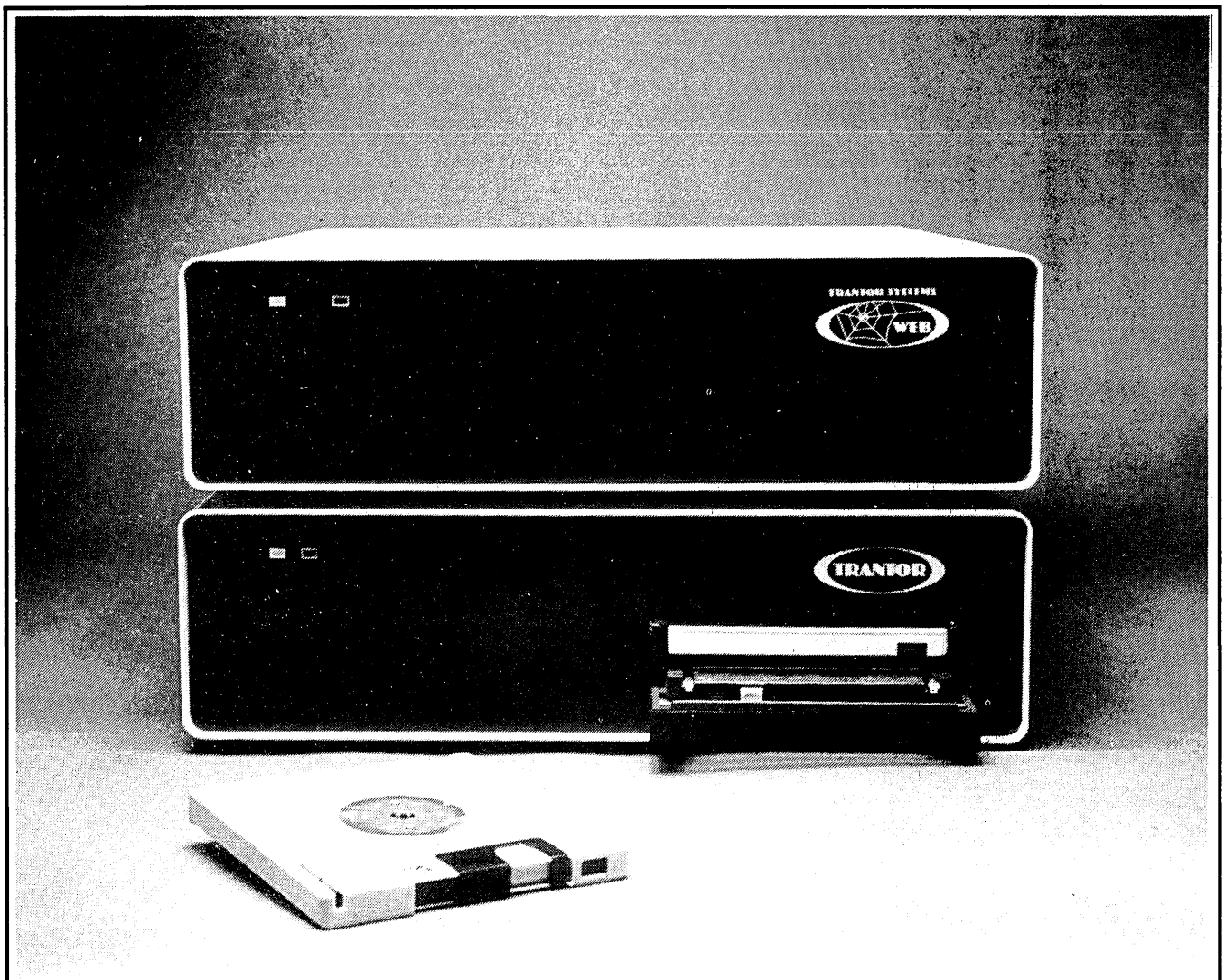
Call or visit your Morrow dealer today. Or, send your check or money order to:

Morrow Newword
Newstar Software, Inc. • 1601 Oak Park Blvd.
Pleasant Hill, California 94523
(415) 932-2526

- Send $100 for Newword, $25 for upgrade (must include Newword disk)
- $3.00 shipping & handling (Continental USA only)
- CA residents add sales tax

NEWSTAR

*terminals with non-embedded attributes only.
WordStar and MailMerge are registered trademarks of MicroPro.



We Support Your Decision

Trantor Systems Quality Products for Your Computer

Hard Disks
11 MBYTE
23 MBYTE
35 MBYTE
47 MBYTE

Available with 5 MBYTE removable cartridge. (As shown)

The WEB™ Network

Converts up to 4 computers into a powerful network with your Trantor Hard Disk.

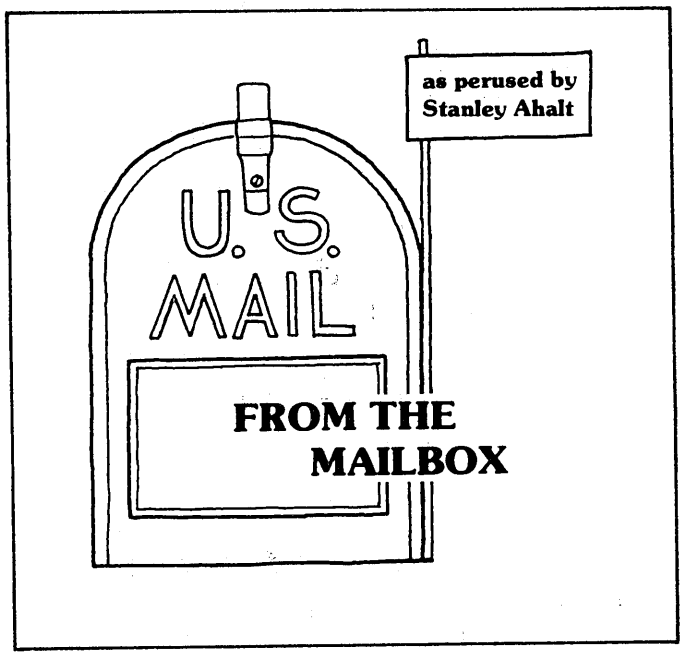
From $1295 complete.

Both with full support software, cables and 6 month warranty

WestWind
COMPUTER
FORMERLY DRIVE C & TRANTOR

Order toll-free USA (800) 526-6500
CA only (800) 831-3144

1690 65th Street Emeryville, CA 94608, (415) 652-3222
Telex: 756329 (DRIVE C UD), WU EASYLINK 62533500.



[This column is an open forum for users to share their questions--and answers. I encourage you to send in both. If I can't answer the question, maybe someone else out there can.]

Many people have written in to inquire about the 8088 co-processor boards which can be attached to our MD's so that we may run some of the MS-DOS programs which are available. I can't comment on them, since I haven't tried any of them out. Can anyone write us a review, or maybe just a few short comments?

From Charles S., England - Along with a number of other people, Charles is having some problems with Logi-Calc. Since Morrow has now started bundling Super-Calc, the publishers of Logi-Calc, Software Products International (SPI), are no longer supporting the Morrow owners who use their software. So let's all pull together. Here's the specific problem: when positioned in column DW, a return <CR> should send the cursor to the first column of the next line. But it doesn't. Also, the command ";U" should present a directory of the disk--no such luck. Why do neither of these features work? ##

From Elaine R, Culver City, CA - Explaining that she is an absolute novice, Elaine writes, "One of the things that really bothers me is that I cannot really understand the CP/M manual. Isn't there a simplified version out for people like me?" Yes! CP/M and the Personal Computer by Thomas Dwyer and Margot Critchfield, Addison-Wesley, $19.95, is one of the best beginner level books on the market for learning CP/M. And once you've mastered the basics, you'll find that The Programmer's CP/M Handbook by Andy Johnson-Laird, Osbourne/McGraw-Hill, $21.95, is an excellent guide to the actual innards of CP/M. Good Reading! ##

From Professor A., Mississauga, Ontario - When using NewWord (NW), the professor uses ^O^S for double line spacing. Everything goes along fine for a while, then the system seems to "drop" the letters one line lower than where they should be. This occurs with a Televideo 925-950 terminal. Although print-outs still turn out fine, it makes reading the screen very cumbersome. Has anyone else had the same problem and managed to rectify it? I know that NW has been revised, but does the latest revision solve the aforementioned problem? ##

From Gordon N., Lee, MA - Gordon would like to know if there is an interrupt handler patch for the MD3 (with MDT 60 terminal) that will allow the arrow keys to repeat when held down? There are two patches in the June 1983 issue of Microsystems, but they may not be applicable. Has anyone out there addressed this problem? Is it even plausible with the MDT 60?##

From Joe V., Clinton, OH - Regarding Personal Pearl: "If one could read data from a list report to be used in calculations in a fixed report, this would be a real improvement." How about it, Pearlsoft, are you listening? ##

From Bill S., El Paso, TX - Bill uses Personal Pearl (PP) to produce merge-print data files for NewWord. The problem is that after .df and .rv commands are inserted into the PP report, NW will consistently read the second line of the report as part of the first line, running the data together. If the data lines are retyped exactly as they appear on the screen, the problem disappears! Sounds to me like PP puts in a nonprintable character at the end of each line. Has anyone else experienced this problem or found a solution? ##

Come on now, folks! Keep the letters and questions coming. We can all benefit from our shared experience. When you write, be sure to completely describe your equipment and problem. Until next issue...Have a great 1985! (Stan Ahalt, 102-B Victoria Lane, Clemson, SC 29631; MCI: SAHALT)

Back Issues

In April the price of back issues of the Morrow Owners' Review will go up to $3.00 per issue. However, until April 15, 1985, you can still get them for $2.00 a copy, first class postage included. All bi-monthly issues are still available, starting with April 1984. Send your check or money order to MOR, P.O. Box 5487, Berkeley, CA 94705, Attn: Back Issues.

MICRO JUSTIFICATION AND PROPORTIONAL SPACING IN WORDSTAR

by Dick Baker

Karl Fuss's article "Proportional Spacing with WordStar" in Morrow Owner's Review #3 prompted me to reattack this problem. Some months back I bought a Modern PS printwheel for my Silver-Reed (= Morrow = Transtar) printer and a copy of the widely advertised book Proportional Spacing on WordStar (Fairport, NY: Writing Consultants, 1983), which gives instructions on invoking WordStar's hidden PS table. I was unhappy with the results and abandoned the effort.

That was because the book gave tables for several PS printwheels, but not mine. And the fact that WordStar's PS table has to be customized for every printwheel is, as Fuss noted, why WS left it undocumented.

While Karl Fuss didn't completely understand how WordStar's PS table works, he did, through keen insight, tireless trial and effort, or Divine Guidance, come up with numbers that make the PS wheel print quite nicely and that improve the look of the regular Courier 10 and 12 wheels. (These paragraphs are in Courier 12 with the new table.)

First, some terms. Standard typewriter (and printer) spacing is 10 pitch (10 characters per inch, evenly spaced; also called pica; same as .cw 12, the WordStar normal pitch) or 12 pitch (12 characters per inch, evenly spaced; also called elite; same as .cw 10, the WordStar alternate pitch). On a standard typeface the wider letters are compressed to minimize the difference between wide and narrow characters, necessary when each character gets exactly 1/10 or 1/12 inch of space. PS printwheels--and typefaces designed for professional setting--show a greater variation in character width, since the typesetter allows for proportional spacing. (This paragraph is printed using the PS wheel at 11 pitch [.cw 11], which, as Fuss suggests, seems to give the most pleasing results.)

Justification means adding space to a line to make the right margin even ("justified right" as opposed to "ragged right"); in WordStar it is toggled on and off with ^OJ (on is default). Microjustification (hereafter "UJ" for brevity) is the capacity to vary spacing between characters, thus deviating from the evenly spaced 10 or 12 pitch found on a typewriter; in WordStar it is switched with a dot command, .uj on/off (on is default). The two are not the same: with justify on and UJ off, WordStar spaces characters evenly and adds full spaces between words to achieve right justification--just as it does on the screen display.

WordStar's spacing table, beginning at 07D8H for version 3.0, 07BAH for 3.3, or at the mnemonic PSTAB: in both, assigns a two-digit number to every printable ASCII character, including the space. Actually, it is two tables in one: The first digit is the variable spacing assigned whenever UJ is in effect (hereafter UJ table); the second digit in each entry is the PS table. You'll note that the UJ table values are almost all 4s and 5s with just a few 3s and 6s; as noted earlier, typewriter-style fonts are compressed to minimize variations in width. The PS table runs from 2 to 7 to allow for the greater range of PS character widths.

Two steps are necessary to use a PS printwheel and proportional spacing [as in this paragraph]: imbed a ^P in the text, which tells WordStar to use the PS table, and tell your printer that a PS wheel is in use. The character array on the PS wheel is different from

standard wheels, because wider characters must be alternated with narrower ones to prevent physical interference. Your printer has the logic to read the PS wheel; it is invoked by turning DIP switches 1-1 and 1-2 on while the printer is off, then powering up.

So much for proportional spacing. Now back to the regular courier printwheels.

Unfortunately, the values in WordStar's UJ table are a little too wide for the Silver-Reed courier wheels. Intercharacter spacing in justified lines tends to be too great, and interword spaces too small, creating a run-together look (this is true of both 10 and 12 pitch, although it seems more noticeable at 10 pitch, as here). In fact, WordStar's UJ often interferes with ragged right printing, inserting undesirable intercharacter spacing. For this reason, I've always turned UJ off in unjustified copy.

I won't repeat here the procedures for patching the WordStar spacing tables; you can use DDT, as described quite lucidly by Karl Fuss, or WordStar's re-install routine. The approach taken here should apply to any letter-quality printer, although, of course, some experimentation with table values will be in order. Also, while I haven't yet used NewWord, I understand that it too has a UJ spacing table and undocumented PS table and should respond equally well to these procedures.

One last note: a quick, convenient way to test table patches uses DDT and GO. At the A> prompt, enter SAVE 0 GO.COM. Enter DDT WS.COM to load WS into the TPA; use DDT's S command to change values; exit DDT and type GO. The altered WordStar will run immediately. If you like your patches, go back and make them permanent.■

WORDSTAR SPACING TABLES (UJ/PS)

3.0	CHR	OLD	NEW	3.0	CHR	OLD	NEW
07D8		52	42	0808	P	54	44
---9	!	43	33	---9	Q	56	45
---A	"	44	34	---A	R	56	45
---B	#	54	44	---B	S	54	44
---C	$	54	44	---C	T	55	45
---D	%	56	46	---D	U	56	45
---E	&	56	46	---E	V	56	45
---F	'	32	32	---F	W	67	56
07E0	(	43	33	0810	X	56	45
---1	)	43	33	---1	Y	56	45
---2	*	54	44	---2	Z	55*	44
---3	+	54	44	---3	[	54	44
---4	,	42	32	---4	\	56	46
---5	-	54	44	---5	]	54	44
---6	.	32	32	---6	^	56	44
---7	/	53	43	---7	_	55	43
---8	0	54	44	---8	`	54	44
---9	1	54	44	---9	a	54	43
---A	2	54	44	---A	b	54	44
---B	3	54	44	---B	c	54	43
---C	4	54	44	---C	d	54	44
---D	5	54	44	---D	e	54	43
---E	6	54	44	---E	f	53	42
---F	7	54	44	---F	g	54	44
07F0	8	54	44	0820	h	54	44
---1	9	54	44	---1	i	52	41
---2	:	43	33	---2	j	52	42
---3	;	42	32	---3	k	54	44
---4	<	54	44	---4	l	52	42
---5	=	54	55	---5	m	66	55
---6	>	54	44	---6	n	54	44
---7	?	54	44	---7	o	54	43
---8	@	56	46	---8	p	54	44
---9	A	55	45	---9	q	54	44
---A	B	55	45	---A	r	53	43
---B	C	55	45	---B	s	53	43
---C	D	56	45	---C	t	53	42
---D	E	55	44	---D	u	54	44
---E	F	55	44	---E	v	54	43*
---F	G	56	45	---F	w	66	55
0800	H	56	45	0830	x	54	44
---1	I	53	42	---1	y	54	44
---2	J	53	43	---2	z	54	43
---3	K	56	45	---3	{	54	44
---4	L	55	44	---4	|	56	46
---5	M	66	55	---5	}	54	44
---6	N	56	45	---6	~	56	46
---7	O	56	45	---7		55	42

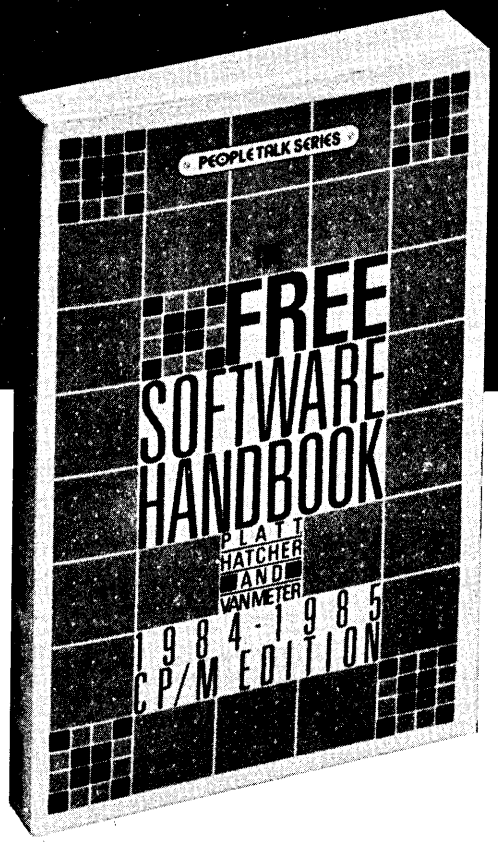
*Differs from table in MOR #3.

"...the very best collection of utility software I've seen...The Kaypro is advertised as "The Compleat Computer"—but this is the bundle of software that makes that true!"

Dave Gerrold, Profiles Magazine

"After using your "Help" books, I am hesitant to purchase any software without checking to see if you have published a book on it."

Houston, Tx.



Free Software Handbook only $17.95!
(Handbook plus software disks $57.95. Disks only $49.95.)
Features the top 70 programs in public domain —
- What they are
- When they're useful
- How to acquire them
- How they work

*If ordering disks please specify machine and disk format.

Also from PeopleTalk:

Wordstar and Friends for the Kaypro 2 & 4,	**$21.95**
Perfect Manual for the Kaypro 2,	**$17.95**
Perfect Manual for the Kaypro 4,	**$17.95**

Supercharge your Kaypro with Smartkey!
Only $74.95 to customize your computer. Program your own keyboard to turn your most-used commands into ONE KEYSTROKE.

Subscribe to the PeopleTalk Quarterly.
Tips, tricks, short-cuts, brainstorms. Plus a Helpline Column with answers. $20.00 per year. (4 issues)

See your dealer or order direct:

PeopleTalk Associates Inc.
P. O. Box 863652 - B
Plano, TX 75086
214/423-4634

MasterCard VISA AMERICAN EXPRESS®

Please include product price in U.S. Dollars + $3 shipping and handling ($10 air mail outside U.S.) Texas residents add 6% tax.

THE COMFILE

by Ed Niehaus, Morrow Inc.

I am still hearing some expressions of concern that Morrow is abandoning the CP/M world. Well, to assure you, our line of CP/M systems, especially the hard disk systems, is still selling very well. As long as there is a market for CP/M machines, we'll make 'em. But when and if that market dries up, we will have to abandon production of CP/M's.

You all know about the MD5-E, the 5 megabyte hard disk machine (see ad in October '84 issue of MOR). The same machine is now sold as the MD5 and comes bundled with the full complement of software. The price is just $2295, including the new MT-70 terminal. This terminal has an easy to read amber-on-grey screen in a sculpted tilt-and-swivel module that sits atop a low profile base. The keyboard is also of a low profile and has a delightful touch.

Besides that, we have an ongoing program of development for this CP/M product line. Several computers, among them the MD3, have been repackaged by building the computer into the base of the MT-70 terminal, which makes it an attractive small package.

And what's new with Pivot--our MS/DOS portable (See MOR, Vol. I, # 5, p. 50). Well, for one thing, chances are you can see it now at your dealer's. We have been shipping them out for over a month. Pivot has turned out to be easy to build and is very reliable. If you're holding off because you're concerned about its being a new product, wait no longer--the bugs are out of this one.

Pivot will include the GSS-Drivers from Graphics Software Systems of Portland Oregon. The GSS-Drivers provide an enhancement to the MS-DOS operating system to allow easy drawing of graphics on specific machines. The software says, "draw an arc of given radius and included angle at such and such center point"; the GSS-Drivers tell a specific kind of computer how to do it.

The drivers use a new ANSI* standard for a VDI (virtual device interface), allowing application software to ignore specific quirks of a given computer or output device. IBM has "blessed" this standard in its new PC/ES series of software by incorporating GSS.

Ironically, rumor has it that IBM did this because IBM's PC/AT is not IBM compatible! Some important software products would not run on the PC/AT, so they added GSS-Drivers. IBM's move in that direction is enough incentive for the software companies to come up with products that are GSS-compatible. This is good news for PIVOT folks, since Morrow is bundling the GSS-Drivers with the machine.

By the way, we have some new faces at Morrow: Barry Berghorn joined us in September. Berghorn comes to Morrow from Via Video, Inc. of Santa Clara, where he was president and Chief Executive Officer. Prior to that he was with Memorex Corporation, where he was responsible for distribution of video and computer media products. His most recent position with Memorex was vice president and general manager of the Consumer and Business Media Group's International Division.

Barry, who holds a B.S. degree from Northwestern University and an M.B.A. from the University of Chicago, also logged eight years in product marketing at Proctor and Gamble.

Larry Fink has joined Morrow as vice President of Operations. Larry did a short tour as manufacturing manager for our friends at Kaypro. Prior to that, he was with the Ford Motor Company for thirty years as an industrial engineer and manufacturing manager.

These faces are part of our new look at Morrow. Personally, I am very glad these people are on board--I am learning a lot from each of them.

---

*ANSI stands for the American National Standards Institute. Bob Groppo says it means "unable to stand still for any length of time." Take your pick.

[Ed Niehaus tells us that he's been getting a lot of mail from people who want schematics or specific technical information. Ed, who says he is "probably the least technical of Morrow's employees," takes care of questions pertaining to Morrow's communications with the users of its products. Please refer questions of technical nature to Dave Block's or Stan Ahalt's columns.]

TOWARD A MORE USEFUL MICRO DECISION

1876K disk-space on the MD2

by Derek Lee Beatty

I'd had my MD2 for a year. I liked it, but I kept running out of disk space. 372 thousand characters sounds like a lot, but it fills quickly. Personal Pearl sure looked nice, but who wants to change disks that often?

Since I'm a programmer and an electrical engineering student, I decided to remedy my lack of disk space. After examining the Micro Decision hardware and software, I connected two double-sided, 80-track drives to my Micro Decision. WordStar and Correct-It fit on the same disk. Personal Pearl fits on one disk.

This article details my expansion to 1876K of disk storage. The modifications I describe will let you have 752K on drives A: and B:, and 186K on C: and D:, without changing the MD2 hardware except by connecting two new drives to the "Expansion Drives" connector. (My system is an older MD2 with the rev. 1.1 circuit board, Rev. 1.3 ROM, CP/M 2.2 Rev. 1.5, FORMAT Rev. 2.3, and SYSGEN 2.0 MD1.2. The instructions in this article are specific to this system.)

Begin by following Stan Young's article in MOR, Vol 1, #1, pp. 14-15, "Disk Drive Additions for Morrow MD." However, use double-sided, 96-track-per-inch drives. (For example, I used CDC 9409-T disk drives.) One note: I couldn't make drive D: work by following the article; to make drive D: work, I had to place the disk select jumper at DS4, and connect pins 4 and 6, instead of 4 and 12. You should use only premium-quality diskettes in the 96-track-per-inch (also called 80-track) drives.

Once you have all four disk drives working reliably, you're ready to begin modifying your Micro Decision's software. You'll need two disks: one blank disk for testing (I'll call this the test disk.), and one FORMATted and SYSGENned disk containing the following .COM files: DDT, FORMAT, PIP, STAT, and SYSGEN. (I'll call this the system disk.) You'll also need a large sheet of paper for notes, and a few hours without interruptions in front of your Micro Decision.

Press the RESET button on your Micro Decision and insert the system disk. Verify that you have only DDT, FORMAT, PIP, STAT, and SYSGEN on the disk--you'll need the blank space.

Follow the instructions below. Type the information that is underlined. <R> means the RETURN key; ^C means control-C, that is, hold down the CTRL key and press the C key. Comments are enclosed in square brackets.

Wherever you see "dddd" in these instructions, you should see some four-character expression from your Micro Decision, but you should ignore its actual value. The labels I suggest for the values you write down are intended to be an aid if you are unsuccessful in following these instructions and ask a "wizard" (a person who spends too much time with computers) for help.

```
A>SYSGEN<R>
SYSGEN VER 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
A>SAVE 48 CPM0.COM<R>
A>DDT CPM0.COM<R>
DDT VERS 2.2
NEXT  PC
3100  0100
-S2344<R>
2344 WW <R>
2345 YY .<R>
-
```

[Write down the two characters WW; label them "low byte of MTAB address." Write down the two characters YY; label them "high byte of MTAB address." Wherever you see YY or WW, below, substitute the appropriate characters.]

```
 -HYY,CF<R>
dddd 00XX -
```

[Write down the two characters XX; label them "high byte of MTAB address in SYSGEN image." Wherever you see XX below, substitute the appropriate characters. Write down the combination XXWW; label them "MTAB address in SYSGEN image."]

```
 -HXXWW,12<R>
IIII dddd -
```

[Write down the four characters IIII; label them "MTAB drive C: address in SYSGEN image."]

```
 -SIIII<R>
IIII 04 24<R>
dddd dd  ^C
A>SAVE 48 CPM1.COM<R>
A>CPM1<R>
SYSGEN 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) <R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT)
  A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
A>
```

[Press the RESET button on your Micro Decision and press RETURN. You should see the

usual messages, followed by the CP/M prompt. This procedure is sometimes called a "cold boot." You'll have to "perform a cold boot" several times before you're finished.]

```
A>FORMAT<R>
```

[You should see the usual message from FORMAT asking you to enter the name of a drive. Enter C. You should see a new message, "Single or Double sided format (S or D)." Enter S. Insert the test disk in drive C: and enter <R>. Formatting should proceed normally. When asked to insert the system disk, enter <R>.

The top of the screen should display the revision number of the FORMAT program. Write this down, labeling it "FORMAT revision number."]

```
A>STAT C:DSK:<R>
```

[You should see about ten lines of information, one of which should be "190: Kilobyte Drive Capacity."]

```
A>PIP C:=A:*.*[V]<R>
```

[Copying will proceed. You should see the name of each file as it is copied. After a few seconds, you should see the CP/M prompt, without seeing any error messages.

Repeat the last three steps, involving FORMAT, STAT, and PIP. However, specify a double- sided format. This time, STAT should display "390 Kilobyte Drive Capacity."

Note whether you have Rev. 2.3 of the FORMAT program. If so, the next step will be simple. If not, you'll have some tedious searching to do.]

```
A>DDT FORMAT.COM<R>
DDT VERS. 2.2
NEXT PC
0B00 0100
-
```

[If you have Rev. 2.3, the address of the byte to be changed in the format program is 08C7. You need not search for this byte. If you have another revision of the format program, the byte to be changed may be somewhere else, and you must search for it. To search, repeat the following command until you've seen the end of some English messages on the right-hand side of the screen.]

```
-d<R>
```

[Each "d" command will display part of the format program in both hexadecimal and text (ASCII) form. You need to find a byte equal to 50 which occurs after the end of the text messages. Once you've found it on the screen, the first three characters on the line in which it appears will be the first three characters of its address. The column in which it appears will give the last character of the byte's address. Columns are numbered 0123456789ABCDEF. Substitute the address of this byte for "08C7" below.)

```
-S08C7<R>
08C7 50 A0<R>
dddd dd ^C
A>SAVE 10 FORMAT80.COM<R> (
```

[At this point, it might be worthwhile to mention that you can take a shortcut when you use FORMAT (at least for FORMAT Rev. 2.3). This shortcut, which wasn't mentioned in my Micro Decision User's Guide, lets you avoid the questions which FORMAT asks. The following command demonstrates this; it formats the disk in drive C: as a double-sided disk. As another example, FORMAT B5 would format the disk in drive B: as a single-sided disk. If you use FORMAT this way, be sure that the disk you wish to format is inserted before you press RETURN; afterwards is too late.)

```
A>FORMAT80 CD<R>
```

[Watch the screen closely. The disk in drive C: will be formatted, but the FORMAT program will not stop until it has formatted all of the disk's tracks. The numbers displayed for tracks beyond track 99 will not be displayed properly; you will see the sequence :;<=>? in place of the upper digits.

Repeat the STAT and PIP tests as before. STAT should again display 390K. At this point, you have established that all the tracks on the drive work, but you have not told CP/M that the last half of the disk exists.]

```
A>SYSGEN<R>
SYSGEN 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT)
   C<R>
DOUBLE SIDED DISKETTE CANNOT ACCEPT SINGLE-
   SIDED SYSTEM
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
A>
```

[You have now established that SYSGEN knows that you have a double-sided drive.

Note whether you have SYSGEN 2.0 MD1.2. If you do not, you're partially out of luck.

(continued)

You won't be able to use a new drive as drive A: by following these instructions. Assuming you do have SYSGEN 2.0 MD1.2, proceed as follows:]

```
A>DDT SYSGEN.COM<R>
SYSGEN VERS. 2.2
NEXT PC
0600 0100
-L389<R>
```

[You should see several lines. The first should end with "JNZ 03B8".]

```
-S389<R>
0389 C2 0<R>
038A B8 0<R>
038B 03 0<R>
038C dd ^C
A>SAVE 5 DOUBLGEN.COM
```

[You have now created a modified version of SYSGEN which does not care whether your disk drives are single- or double-sided.)

```
A>DOUBLGEN
SYSGEN 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT)
   C<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
A>
```

[You have now established that the modified version of SYSGEN will write to a double-sided diskette.)

```
A>DDT<R>
DDT VERS. 2.2
NEXT PC
0100 0100
-A100
0100 MVI C,1F<R>
0102 CALL 5<R>
0105 RST 7<R>
0106 <R> -
G100<R>
*0105
-X<R>
```

[You will see a line containing H=JJKK. Write down the characters JJ and KK. Label JJ "High byte of DPB address." Label KK "Low byte of DPB address." Wherever you see JJ or KK below, substitute the appropriate characters.]

```
-HJJ,CF<R>
dddd 00MM
-^C
A>
```

[Write down the characters MM. Label them "High byte of DPB address in SYSGEN image." Write down the combination MMKK; label it "Address of DPB in SYSGEN image."]

```
A>DDT CPM1.COM
DDT VERS. 2.2
NEXT PC
3100 0100 -
HMMKK,1E<R>
NNNN dddd
-SNNNN<R>
NNNN 28 <R>
dddd 00 <R>
dddd 04 05<R>
dddd 0F 1F<R>
dddd 01 03<R>
dddd 5E BC<R>
dddd 00 <R>
dddd 7F <R>
dddd 00 <R>
dddd C0 80<R>
dddd 00 .<R>
-SIIII<R>
IIII 24 A4<R>
dddd 5A 7A<R>
dddd dd ^C
A>SAVE 48 CPM2.COM<R>
A>CPM2<R>
SYSGEN 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) <R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT)
   A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
```

[Perform a cold boot; press the RESET button, then press RETURN.)

```
A>FORMAT80 CD<R>
A>STAT C:DSK:<R>
```

[You will see "756 Kilobyte Drive Capacity."]

```
A>PIP C:=A:*.*[V]<R>
```

[You now have a drive C: capable of storing 752K of data. However, it is operating at the same head step rate (the speed at which the head moves across the disk) as your other drives. Most MD2's have Shugart SA200 drives with head step times of 20 milliseconds. High-performance drives such as the CDC 9409-T drives will operate at higher speeds (lower step times). The following modification changes the step time for drive C: to 6 milliseconds, close to the CDC drive's minimum step time of 5 milliseconds.]

```
A>DDT CPM2.COM<R>
DDT VERS. 2.2
NEXT PC
3100 0100
-SIIII<R>
IIII A4 <R>
dddd 7A <R>
dddd 58 <R>
dddd 05 <R>
dddd 6F DF<R>        (Illustrative for 6ms step.)
dddd dd ^C
```

```
A>SAVE 48 CPM3.COM<R>
A>CPM3<R>
<R>A<R><R>
A>
```

[Cold boot.

In general, the most-significant nybble (a nybble is half a byte. Get it?) of the fifth byte of each drives "MTAB" entry of can be set to F to give a 2-ms step time, E for 4 ms, D for 6 ms, ... A for 14 ms, 9 for 16 ms, ... 6 for 20 ms, ... 0 for 32 ms. The value of this nybble has been the subject of several articles in MOR.]

```
A>PIP C:=A:*.*[V]<R>
```

[Should be faster and quieter than before.]

```
A>DDT CPM3.COM<R>
DDT VERS. 2.2
NEXT  PC
3100  0100
-IDOUBLGEN.COM<R>
-R<R>
NEXT  PC
3100  0100
-
```

[Using the S command, change memory beginning at XXWW to the following (read by columns).]

A4	A4	01	02
7E	7F	D8	59
58	58	58	58
05	05	05	05
DF	DF	6F	6F
03	03	03	03
05	05	05	05
1C	1C	1C	1C
FF	FF	FF	FF

[Using the S command, change memory beginning at MMKK to the following (read by columns).]

28	28	28	28
00	00	00	00
05	05	04	04
1F	1F	0F	0F
03	03	01	01
BC	BC	5E	5E
00	00	00	00
7F	7F	7F	7F
00	00	00	00
80	80	C0	C0
00	00	00	00
20	20	20	20
00	00	00	00
02	02	02	02
00	00	00	00

```
-^C
A>SAVE 48 CPM4.COM<R>
A>CPM4<R>
SYSGEN 2.0 MD1.2
SOURCE DRIVE NAME (OR RETURN TO SKIP) <R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) C<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT) <R>
A>
```

[Cold boot. Explore!]

You should find that your MD has some new ideas about which drives have which names:

What once was drive A is now drive C and holds 186k.
What once was drive B is now drive D and holds 186k.
What once was drive C is now drive A and holds 752k.
What once was drive D is now drive B and holds 752k.

■■■

Erratum

The phone contact number for the Micro Decision Bakersfield Users Group was incorrectly listed in MOR Volume 1, Number 5, December 1984, on page 52. The correct number is (805)861-3682.

SOFTWARE FOR MORROW

SBACOUNT: Accounting for small business. Tracks all income & outgo, prints checks, posts chart of accounts. Prints chart of accounts, trial balance, profit and loss statement, & check ledger. Reconciles and prints reconcilation. Generates an Income & Expense journal for audit purposes. **ONLY $79.00**

MBACOUNT: Accounting for small business. Full general ledger (20 asset, 20 liability, 20 income, 30 expense & 10 capital accounts all user assigned) PLUS all the features of SBACOUNT as above. **ONLY $89.00**

PROFBILL: Automatic bookkeeping & invoicing for Doctors, Lawyers and other professional people who invoice at various hourly rates. Will handle up to nine partners/employees. Prints invoice or saves for future billing. **ONLY $89.00**

MAILLIST: Mailing list, customer handling, filing program, ten data fields per customer. 8 character cust # - user (or dated program) assigned, sorts by most fields, Add, delete or modify any record. Prints all or part on 1, 2 or 3-up labels on 80 column printer. **ONLY $89.00**

$FINANCE: Personal financial program. Prints checks, posts amount to selected budget catagory, posts debits and deposits, prints check ledger, reconciles and prints reconciliation statement. Similiar program for charge cards. Extracts and prints list of expenditures in selected budget catagories. **ONLY $79.00**

TOUCHTYP: Touch typing course, Beginning, Intermediate & Advanced. Tests and displays typos and displays final score. **ONLY $79.00**

STANFORM: Need to fill out standard or non-standard forms? This program generates programs for printing data in the proper location on invoices, gov't forms, insurance claims, any form that will fit into your printer. **ONLY $79.00**

MSBCHART: Prints MICROSOFT BASIC programs, prints cross reference list of all referenced lines, prints list of variables cross referenced to each line where used. A godsend if you modify or debug Mbasic programs. **ONLY $79.00**

Price includes disc, manual, and shipment next working day by first class mail. Mail in your order today or request detailed program listing. Better yet, if using accepted credit card, phone your order or data request to our 7 day, 24 hour phone service. Californians must add 6% to all prices.

MAP (Visa, Mastercharge & American Express cards accepted)

(Micro-Art Programmers) **Innovative Man/Machine Interface**
173 Birch Avenue Cayucos, California 93430 Phone: (805) 995-2329

MBASIC* is a registered trademark of MICROSOFT

SOFTWARE SOLUTIONS

SPECIALIZED DATA BASE MANAGEMENT PROGRAMS
for
MORROW MICRO DECISION COMPUTERS

Single-Disc, Menu-Driven Alternatives to the PEARL

ADDRESS AND PHONE BOOK PLUS COMMENTS. PHONBK+ is a specialized, menu driven, data base management program for listing names, addresses, phone numbers, and a line of comments. There are routines for entering, deleting, correcting, searching (for last name, city, state code, zip code, area code, or a word or phrase in comments) alphabetizing by last name, sorting by zip code, printing to screen or to printer (all the data or just mailing labels). Ways to modify this program for your special needs are included in the MANUAL.

Other Data Base Management Programs Available: Album List (keep track of your record albums, books, tapes, etc.), Record (phonograph) List, Note Pad (keep and retrieve notes on anything), Address and Phone Book (without comments). Programs Under Development: Wine Cellar, Club Directory, Stock Plot. We will also CUSTOMIZE programs for you.

SEND FOR CATALOG!

Satisfaction Guaranteed!

SOFTWARE SOLUTIONS
927 Mears Court
Stanford, CA 94305
(415) 493-7210

Still Searching For Files Without EUREKA!™ ??

You may not know it, but a disk cataloger can be a big help in managing your computer files. Why not go with the best? **EUREKA!** is a terrific time saver for ...

- Lawyers
- Software Developers
- Writers
- Teachers
- Project Managers
- Accountants
- Researchers
- Secretaries
- Consultants
- Journalists

People who try **EUREKA!** love it.....

"Just started cataloging with comments - Great Idea" GR-MI

"Great time saver in locating material on disks." WB-NY

"Your manual is the best written I have ever seen." MT-NS

"We finally chose EUREKA! ... largely because it has the ability to read comments directly from a file ... EUREKA! is easy to learn and use, has more access and report choices, finds files by many different ways, and has an attractive price."
T. Bove & C. Rhodes, USER'S GUIDE No. 11

EUREKA!, the popular CP/M® disk cataloger

Still only $50

MENDOCINO SOFTWARE COMPANY, INC.
Dept. MR-1
P.O. Box 1564
Willits, CA 95490
(707) 459-9130

add $2.50 shipping
Calif. residents add 6% sales tax

VISA & MasterCard accepted

EUREKA! is a trademark of Mendocino Software Company, Inc.
CP/M is a registered trademark of Digital Research, Inc.

NEEDHELP
WITH YOUR INCOME TAX?
TAX - TRK

$49.95 Plus Shipping & Handling

FORM 1040 & SCHEDULE: A,B,D,W

The program is Menu-Driven with the information entered on the screens and stored on disk for easy change or correction. Printing is done right on the forms or on plain paper. If printed on plain paper, use the plastic overlays provided to copy on the offical form. MORROW Format.

ORDER FROM:
FINANCIAL TRACK SYSTEMS
9208 GUTIERREZ RD. NE
ALBUQUERQUE, NM 87111
(505)243-8975

FINANCIAL TRACK SYSTEMS

NM RESIDENTS; ADD 4.625% SALES TAX

GETTING STARTED WITH TURBO PASCAL

by Erik Westgard

One of the ways to move rapidly from the ranks of beginner to expert programmer is to follow the advice of specialists. Two of their rules are: (1) Programs longer than two pages should not be written in BASIC, and (2) structured programming is a very good thing.

Pascal is the most popular of the structured languages and is widely taught at the college level. Pascal is a fast language (10 times faster than BASIC), and encourages good programming habits, such as using DO loops instead of GO TO's. While compared to BASIC, Pascal is more difficult to learn, judging by my own experience, you will be much happier with the outcome of your programming efforts in Pascal. In this article, I sometimes compare features of Pascal with those of BASIC, which will be helpful to those of you who already have some programming experience in the BASIC language.

Borland International's Turbo Pascal comes postpaid for $54.95 and includes a very readable 300-page manual. (And it arrived a week after I called in the order.) There are two versions of the installation instructions in the package. The first one is in the book, beginning on page five, and the second one is on the diskette itself in a file called READ.ME for those who are too impatient to read the book first.

Before you begin anything, put a write-protect tab on your distribution disk. Then FORMAT two blank diskettes. Label one with PROGRAMS--the ones you are going to create. Use BACKUP to make a copy of the distribution diskette on the other formatted floppy. Call that copy your Turbo working diskette. Put your CP/M disk in the A-drive and run SYSGEN to put CP/M on the outer tracks of your Turbo working diskette. This will make it a "bootable" diskette. If you load it in the A-drive and reset the machine, you'll get the A> prompt of CP/M.

Next, you have to run the terminal installation program. When the A> prompt appears, type TINST. The terminal installation program starts up, and asks for a terminal type. If you find yours on the menu, enter it. Otherwise, the program will let you enter the codes representing the characteristics of your terminal type, one at a time for cursor movement, clear screen, etc. This is to allow you to use the full screen editor which is included with Turbo. (This a very useful program and can be purchased separately from Borland.)

You can start Turbo automatically after you hit the reset button. To achieve this you must copy AUTO.COM from your CP/M distribution disk onto your Turbo working diskette. Type AUTO TURBO at the A> prompt. When you next reset the system, Turbo will run immediately and display the Turbo Pascal menu. You are asked if you wish error messages to be included. Answering "Y" will make that feature available at the price of 1KB of memory space, which means that you have that much less space to use for your own program. The main menu appears in the upper left corner of the screen, offering several options, listing the amount of free memory, and showing the logged disk drive.

When you want to make a program, you first create what is called a "source file" with the editor. To load an old or create a new source file, type E for edit. Source files to be compiled by Pascal always have the filetype ".PAS". You can load MC.PAS, a sample spreadsheet program included on the distribution disk, to get a sample of how Pascal programming is done.

Turbo allows you to compile a program and leave the result in memory for immediate execution or write the result in the form of a runnable .COM file on disk. The sample spreadsheet program called Microcalc did not compile to memory on my MD2 (not enough memory I think), so I typed the character "O" from the main menu to do a compilation to disk. You can specify other compiler options, called "directives," in the source file at the top of your program. For instance, you can direct Turbo to either have your program ignore or accept a CTRL-C from the keyboard. If you don't give the directive to accept CTRL-C, Turbo will have your program ignore CTRL-C by default.

If your program, on execution, gets into an interminable loop or otherwise gets "stuck," you might have to re-boot the computer to get things moving again. But the directive {$U+} will help you pull out by simply typing CTRL-C. The price you pay for it is that your program will now run a bit slower. Don't use this directive with the second programming example in this article (PTERM, Figure 2), as it has an exit routine built in.

I have included two sample Pascal programs for you to try once you have the compiler. One of the biggest problems for a beginner in any language is getting that first program up and running. Pascal has a very complicated syntax (compared to BASIC) and can be a shock to casual programmers who like to program at the keyboard a line at a time. In Pascal, you almost have to lay out the logic of your program on paper ahead of time.

Part of the reason for this is that Pascal forces the programmer to declare variables in advance. In BASIC one can just say A = 10, and the BASIC interpreter assumes that A is a real variable. In Pascal you will have to declare A as a real, integer or byte value in a section called VAR at the top of the program for

global variables, or at the top of a "procedure" for variables used only in that procedure.

Procedures are another Pascal construct. A procedure is a little like a subroutine in BASIC, in that you explicitly call it from a certain point in your main program; execution of instructions will resume at that same point when the subroutine is through.

As mentioned above, each procedure has its own variables (if you want) and can pass information to other procedures. Good programming practice is to break down your tasks into blocks, so that debugging and maintenance are made simpler. BASIC programs tend to be monolithic, and finding a bug in one area usually involves wading through the whole program. It is much better to split the different tasks of the program up into procedures, and Pascal is a language which encourages you to do just that.

Figure 1

```
PROGRAM bubble;
{ Pascal bubble sort 4/81}
CONST
     maxlength=1000;
VAR
   n : integer;
   a : ARRAY [1..maxlength] OF integer;
PROCEDURE readin;
VAR
   i: integer;
   BEGIN
        writeln;
        writeln ('Pascal Bubble Sort ');
        writeln;
        writeln ('# of items to be sorted');
        readln (n);
        writeln ('Type each item on a line');
        FOR i:=1 to n DO
        readln (a[i]);
   END; {readin}
PROCEDURE bubblesort;
VAR
   i,j,t:   integer;
   BEGIN
        FOR i:=n-1 downto 1 DO
        FOR j:=1 to i DO
        IF a[j] >= a[j+1]
           THEN
               BEGIN
                    t:=a[j+1];
                    a[j+1]:=a[j];
                    a[j]:=t;
               END {if}
   END; {bubblesort}
PROCEDURE printout;
VAR
   j: integer;
   BEGIN
        FOR j:=1 to n DO
            BEGIN
            write (a[j]);
            write (' ');
            END;
 END; {printout}
BEGIN {main}
  readin;
  bubblesort;
  printout;
END. {main}
```

The "bubblesort" program, illustrated by Figure 1, is an example to show you how to write and use procedures. This program sorts numbers that you type in, one per line, then sorts the numbers and prints out the sorted result. I have broken the sorting task into three parts. First, in a procedure called "readin," I read in the integers to be sorted from the keyboard, using a "readln" statement. That one is like the BASIC LINE INPUT statement. The numbers go into an integer array called "a" that I have defined globally at the top of the program. One could add some input checking here to screen out invalid numbers.

Next, I run the bubblesort procedure. This routine sorts the array in memory. I use an IF THEN statement that is a little like the one found in BASIC. I can use a BEGIN and END clause to enclose several statements I wish to execute if my expression is true. Finally, when the sorting is finished, I execute a procedure called "printout," which uses a FOR DO loop (like FOR NEXT in BASIC) to write my sorted array out to the terminal. The Pascal "write" statement is similar to the BASIC PRINT statement with a semicolon--like "PRINT A;"--in that it does not do an automatic carriage return. The Pascal "writeln" statement writes a line, then does a carriage return.

Pascal introduces a new type of variable called "boolean." This describes an expression in the language that is either true or false. I use several boolean variables to control the execution of my second program called PTERM (Figure 2). (PTERM is a Pascal version of the BASIC terminal program described in the August 1984 issue of MOR, Vol. I, #3.) The program uses one procedure called "readports" to read ports and keyboard and also write characters to the host. The program can run at 1200 baud and will pass parity settings from the terminal on to the host. (NOTE: Here I am using port assignments and status registers valid for the MD2 and MD3. Other models, such as the MD16, use different input-output port numbers.)

Buy yourself a Pascal textbook, and try some of the sample programs included there. It is a good idea to tape a sample program on the wall as you work to remind you of how to order the statements, how to do the value assignments (different from BASIC), and generally to keep you going. Turbo Pascal, more than BASIC, flags logic errors as syntax errors, so if you get an error message, trace your program flow carefully if you cannot find any syntax problems. You will often find a missing END statement or something like it. A particularly fine feature of Turbo is that it will return to the editor and place the cursor under

the point of any syntax or run-time errors it finds while a program is being compiled to memory.

The definitive reference book on Pascal is Pascal User Manual and Report by Kathleen Jensen and Niklaus Wirth. (He is the Swiss professor who designed the language.) It is published by Springer-Verlag in New York. Peter Grogono's book Programming in Pascal, published by Addison-Wesley in Reading, Massachusetts, is a good textbook, well-written and with plenty of examples. ■

Figure 2

```
PROGRAM pterm; {$A-,B-}
{ A Simple Terminal Program in Pascal 10/84 }
{ Hit the | key -ASCII 124- to end program. }
{ This is vertical bar key }
VAR
   Instat,c1,c2,indat,Condat : byte;
   Outnum, R : integer;
   Alldone, Infromhost : Boolean;
   Inchar : char;
PROCEDURE readports;
   BEGIN
   REPEAT
        BEGIN
        Alldone := True;
        Instat := Port[255];
        c1 := Instat and 255;
        c2 := Instat and 253;
        Infromhost := c1- c2 = 2;
   IF Infromhost THEN {char recieved from host}
           BEGIN
                   Indat:=PORT[254];
                   Inchar :=chr(Indat);
                   Write(Inchar);
           END;
   IF KeyPressed THEN {key pressed on console}
           BEGIN
                   Condat := Port[252];
                   Outnum := Condat;
                     CASE Outnum OF
                          { | key hit to end }
                          124 : Alldone := False;
                          { | at even parity }
                          252 : Alldone := False;
                       ELSE
                        PORT[254] := Outnum;
                   END;
                   END
          END;
          UNTIL Alldone = false;
END;
BEGIN {main}
      readports;
END. {main}


Press <RETURN> to continue
```


Now for your MD2 & MD3!

KAMAS™

Knowledge And Mind Amplification System.

A unique blend of familiar productivity tools with dynamic new ones:
- ☐ **Outline Processing** lets you organize your ideas in a familiar outline form.
- ☐ **Information Retrieval** keeps your thoughts at your fingertips with astonishing speed.
- ☐ **Word Processing** fills out the structure of your ideas with text.
- ☐ **Telecommunications** lets you set up a structured, electronic bulletin board.
- ☐ **Programming Environment** lets you get under the hood and extend your horizons.

It all adds up to **awesome Knowledge Processing power.** Your chance to join the next wave of the integrated software revolution.

Available for CP/M, Z80 systems. Special introductory offer: $147. Send now for your **free** copy of *The KAMAS Report.*

COMPUSOPHIC SYSTEMS Dept. 161 • 2525 SW 224th Ave. Aloha, Oregon 97006 • (503) 649-3765

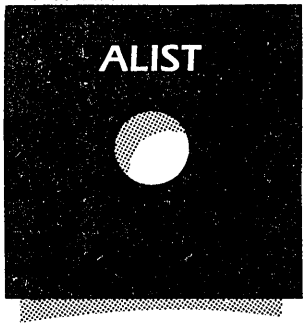
KAMAS is a trademark of Compusophic Systems. CP/M is a registered trademark of Digital Research, Inc. Z80 is a registered trademark of Zilog, Inc.

A simple DATABASE program for MORROW owners!! ALIST ALIST ALIST ALIST

ALIST features include:

$39.95 includes disk manual & shipping

--Variable record length files.
--Up to 10 fields per record.
--Up to 254 characters per field.
--Powerful search features:
GT, LT, EQ, NEQ, contains, does not contain, more.
--Search on 1 to 64 AND/OR conditions.
--Only requires ONE disk. (MD-1 owners rejoice.)
--Easy to learn and easy to use.
--Resides on ONE floppy disk. (Not 12 like the pearl).
--Text editor, does not require a separate word processor.
--User definable output to disk, printer or screen.
--Wordstar/Mailmerge compatible.
--Menu driven.
--User friendly instruction manual.



Minimum Requirements
CP/M, 48K and 1 drive.
Satisfaction Guaranteed

Send orders to:
IRATA - ALIST
2562 E. Glade
Mesa, Az. 85204
(602)-892-0015

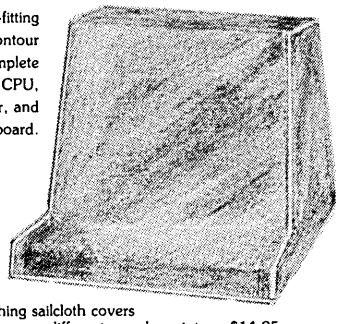
Special Free Offer

SmartKey II speeds up and improves accuracy in computing and is so good that it is now being bundled with Morrow computers. Smartkey II lets you easily reprogram as many upper and lower case keys on your keyboard as you want, even while WordStar, New Word, or any other software is in operation. In a dynamic review of SmartKey II, Stan Ahalt flatly states, "This is probably the most useful software I have ever seen." Peter McWilliams, William Buckley, and others are equally impressed.

Uses for this powerful, easy to operate program are endless. With SmartKey II you can assign up to 3,750 characters to a single key. Once you have redefined keys, you can put them to work or change them at will. You can also store your "smart key" definitions in a special file and use them later, or make numerous definition files to use with a variety of your favorite programs or projects. Imagine saving complex command codes, boilerplate paragraphs, sentences, proper nouns, inventory numbers, or whatever, and then injecting any of them into your work with the stroke of a single key. This is a must-have, time saving computer program for all MD owners.

SmartKey II has a little known super companion program called SmartPrint II. SmartPrint II retails at $49.95. SmartPrint lets you give single-stroke commands to make your dot matrix printer produce italics, greek characters, graphic symbols, boldface, underlining, extended typefaces, accent marks, and much more. SmartKey II retails at $89.95. Now, for a limited time only, Central's **combination pack** of SmartKey II and SmartPrint II is only **$79.** In addition, as a bonus, with your purchase you will receive a **free copy** of Paul Golding's book, *Screen Smarts, The Computer Tamer's Guide.* This book is a $15.95 value. It tells how Mr. Golding, a professional writer, uses SmartKey II to turn his humble computer into a supercharged dedicated word processor. Please don't delay, this offer may not be repeated. Order today to get SmartKey II, SmartPrint II, and a free copy of *Screen Smarts, The Computer Tamer's Guide,* fast.

Introducing A Classic Form Fitting Morrow Cover



Our form-fitting cover follows contour of the complete Morrow CPU, monitor, and keyboard.

At last, the classic MD dust cover you'll be proud to own and use. This first rate computer cover is made from a premium, lint free, static free, washable, free breathing, and fade resistant sailcloth. It comes in a rich looking Navy blue or Sand. The Navy cover has a smart contrasting silver gray piping and trim that adds a superior finished look. Not to be outdone, the Sand cover is handsomely finished in a rich chocolate piping and trim.

Matching sailcloth covers for many different popular printers: $14.95. Indicate make and model.

For a limited time only, your price for this factory direct, custom made, one-piece sailcloth Quality Cover is $18.95. When ordering remember to indicate color preference. This special low price is subject to change. You must be completely satisfied with your purchase of this cover or we will refund your money immediately. Order today.

- Quality tailoring
- Easy care fabrics
- Attractive colors
- Professional appeal

Richly tailored inside and out. Look inside any of our Quality Covers; see the ultimate finishing; we use machines that sew with 3 needles so that edges will not unravel or shed lint. We stress perfection because you deserve the best. Compare for long-lasting satisfaction.

FACTORY DIRECT

Morrow owners are talking about ...

The Compleat Morrow Micro Decision, A Guide to the MD 1, 2, 3, and 11 published by the Computer Book Group of the Reston Publishing Company is hot off the presses. This book is causing quite a stir among new and veteran Morrow owners. It's no wonder too. The author, Steven Frankel, is an independent consultant that has written an entire line of computer books, and as such is uniquely qualified to thoroughly explore and explain the architecture, capabilities, and uses of Morrow computers. This fully illustrated book takes you on a grand tour of the ins and outs of the operation of Morrow computers. Long time Morrow owners say how much they appreciate the informative treatment Steven Frankel has given their computer.

The Compleat Morrow Micro Decision is the first serious book on the Morrow computer line released by a major publishing house. The more than 220 fact-filled pages of this book are jam packed with accurate information and technical advice that make it an invaluable tool for Morrow owners. Hard facts explored here include reviews and advice on the selection of super productive software that will enhance the operation of your Morrow. If you want to learn more about your Morrow computer and how to get real computing power from it, put this book on your desk. It pulls no punches. Retail price of this book is $16.95. Our current price is **$15.** Please call or write today to order your copy of this informative book today. Satisfaction guaranteed or your money back.

"Spikes and surges can be the greatest threat to your computer outside a 4 year old child with a jelly sandwich aimed for the disk drive slot."

Enemies of Morrow®... Spikes, Surges, and Noise

The Morrow has enemies. But now you can protect it from the mish mash of electrical currents that race through your home or business. Powerful up-surges of current can actually blow out your machine. Less powerful, barely noticeable spikes, surges, and noise can silently degrade your system in time, ruining chips, destroying data, and causing expensive service calls.

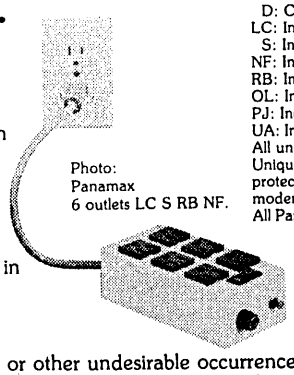


Photo: Panamax 6 outlets LC S RB NF.

PANAMAX SURGE SUPPRESSORS

Description	List	Price
2 outlets, D NF	$ 79.00	$ 59.00
4 outlets, LC S RB NF	$109.00	$ 89.00
6 outlets, LC S RB NF	$119.00	$ 99.00
UltraMax, LC S UA NF	$159.00	$129.00
TeleMax, D 1OL 2PJ NF	$ 89.00	$ 72.00

D: Connects direct to grounded wall jack.
LC: Includes 6 foot long heavy duty line cord.
S: Includes illuminated on/off switch.
NF: Includes EMI/RFI noise filter.
RB: Includes reset button.
OL: Includes outlet.
PJ: Includes 2 phone jack receptacles.
UA: Includes under voltage alarm/brown out protection.
All units include the added security of a 4 amp fuse.
Unique Panamax EMI/RFI noise filters provide protection in common and transverse mode. Essential for modem communications, multi-user stations, etc.
All Panamax units are factory guaranteed for 60 months.

"Power line-associated problems are estimated to cause nearly 70 to 90 percent of the malfunctions in the IBM PC."

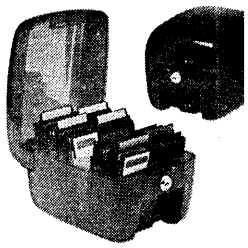
"Overvoltage can be fatal to both data and hardware alike."
P.C. Magazine, March 1983

The fact is: "Line filtering will protect your computer...from power surges or other undesirable occurrences from the power source." Surge protection will help your Morrow provide years of trouble-free service. Also, if you plan to use your Morrow to access information by modem, you must have a reliable high frequency noise (EMI/RFI) suppressor to insure against data loss and scrambling.

There are many "toy" surge suppressors on the market. They are smartly colored, but beware. The performance difference is amazing. The best surge and noise suppressors on the market are made by Panamax. Our "Panamax Challenge Certificate" tells all. It is a startling comparison of Panamax quality with 11 other well-known brands. One aspect of this revealing report tells how Panamax responds to and cuts surges in 5 or less pico seconds, while most other suppressors respond at a comparatively slow 5 to 50 nanoseconds!

Check our regular low prices. Try the Panamax of your choice for 15 days. Receive the "Panamax Challenge Certificate" with your purchase. If not completely satisfied with your purchase, return for immediate full refund. Your Morrow deserves Panamax protection, the best there is. Order today.

Lockable Diskette Defender



Handsome, sturdy, smoke-tinted acrylic tray holds 70 MD-size diskettes. Flip-up lid keeps out dust, debris, and moisture, and locks securely to guard your important work. Comes with 7 dividers with index tabs for easy filing and to keep floppies upright to prevent bending, warping, and scratching. Tough and secure metal lock never comes in contact with diskettes because it is enclosed in a special plastic housing. Super value at $22.95 for one, or $20.95 each if you buy 2 or more. Keep prying eyes and sticky fingers away from your data. Order today.

Price Protection Policy

NEW!

Central Computer Products will meet or beat any price listed in this magazine on products also advertised in our ads. If you see a lower price, please tell us. We'll beat that price and pay shipping too. Try us for dependable lightning fast service today. Thank you.

800-533-8049 USA
800-624-5628 CA

Product Description	List	Central
Morrow Software		
ATI TRAINING DISKS		
CP/M	$ 39.95	$ 34.00
MBasic	$ 39.95	$ 34.00
Multiplan	$ 75.00	$ 52.00
SuperCalc	$ 75.00	$ 52.00
Wordstar	$ 75.00	$ 52.00
BORLAND INTERNA		
Turbo Pascal 2.0	$ 49.95	$ 47.95
Turbo Toolbox	$ 49.95	$45.00
Turbo Gift Pak with Tutor	$ 99.95	$ 92.00
CDE SOFTWARE		
Checks & Balances	$ 74.95	$ 69.95
CHUCK ATKINSON PROGRAMS		
Quick Check Money Manager	$ 95.00	$ 79.00
Quick Check + AR	$195.00	$155.00
Retail Inventory + Q Register	$395.00	$299.00
DIGITAL MARKETING		
Bibliography *	$125.00	$ 99.00
Footnote *	$ 99.00	$ 79.00
Grammatik *	$ 75.00	$ 69.00
Hyper Typer	$ 29.95	$ 26.00
Milestone, Project Planner	$250.00	$199.00
Notebook	$150.00	$109.00
Writer's Pak — includes all * programs and spelling checker	$295.00	$259.00
EAGLE ENTERPRISES		
Citation	$185.00	$155.00
FYI, INC. NEW		
FYI 3000	$395.00	$295.00
SuperFile with Sort & Merge — these programs organize text into data bases	$195.00	$145.00
INFOCOM		
Zork I	$ 39.95	$ 37.00
Zork II, & III each	$ 44.95	$42.00
— other Infocom interactive games, call for prices.		
LEXISOFT		
SpellBinder NEW	$495.00	$299.00
MENDOCINO SOFTWARE		
Eureka, Disk Cataloger — helps you find the right file instantly	$ 50.00	$ 48.00
MICROSOFT		
MBasic Compiler	$395.00	$295.00
MultiPlan	$195.00	$155.00
MICROSOLUTIONS		
Uniform MD2 — Reads and writes 33 + machine formats	$ 69.95	$ 49.95
Uniform MD3 — Reads and writes 78 + machine formats	$ 69.95	$ 49.95
MYCROFT LABS		
Mite	$150.00	$ 99.00
OASIS SYSTEMS		
The Word Plus	$150.00	$105.00
QUIC-N-EASY PROD.		
Q-Pro-4 — with multikey file indexing	$595.00	$395.00
SAN FRANCISCO COMP		
Power!	$169.00	$125.00
DocuPower!	$169.00	$125.00
SOFTCRAFT		
Fancy Font	$180.00	$149.00
SOFTWARE TOOLWORKS		
MyChess	$ 34.95	$ 29.95
Word Wiggle	$ 29.95	$ 27.00
Eliza	$ 24.94	$ 22.00
SORCIM		
SuperCalc 2	$295.00	$235.00
Hardware		
CONSOLINK CORP		
MicroSpooler 64k P-P — for information on other models, please call	$315.00	$279.00
PANAMAX		
PowerMax, 250 Watt UPS	$459.00	$399.00
SWP MICROCOMPUTER PROD		
256k Co-Power-88 MSDOS — Co-Processor lets you run IBM-type software. — Please call for prices on other models. NEW	$500.00	$435.00
Supplies		
Dysan SSDD MD2 disks	10/box	$ 27.00
Dysan DSDD MD3 disks	10/box	$ 37.00

Prices, specifications, and offers subject to change without notice.

Do You Wish Writing Were Easier?

If you need to write, or want to write clearly, your MD2 or MD3 and the software program **Punctuation and Style** can help you get there faster. It improves, clarifies, and enriches your writing by identifying sentences with misused, redundant, faulty, cliched, or erroneous phrases, and shows you how to improve them. It helps you rewrite and check your work by quickly marking and annotating your files for easy correction. In addition to computer-fast identification of awkward, muddy, pompous, and wordy sentence structure, it also finds missing or improper punctuation, unbalanced quotes, wrong abbreviations, faulty capitalizations, and much more. *Punctuation and Style* actually improves your writing by mercilessly pointing out grammatical errors. After a few weeks with Oasis System's *Punctuation and Style* your writing is bound to become more dynamic, expressive, and honest. In time, you'll stop worrying about grammar and work on projecting ideas instead. After all, that's what writing is about.

Punctuation and Style makes writing and rewriting much easier. The list price of *Punctuation and Style* is $125. Central's price is **$99**. Experience the power of this valuable "Punctuation Checking and Writing Improvement Software" yourself. Order today to get this program fast.

Punctuation and Style works on files created with Wordstar, New Word and other word processors. Comes with an easy to use, clearly written manual and an attractive binder. Join thousands who now write with more confidence, faster, and better.

72,000 Word Thesaurus

Stardrive by Robonics is a new software program that makes Wordstar or New Word into a fully intergrated word processor, dictionary, thesaurus, calculator, and graphics kit. *Stardrive* is a four-part Wordstar and New Word power booster. It includes Graphics Express that lets you easily put bars, lines, pies, or other graphics in your text. Math Express allows you do calculations in text files. Spelling Express is a 100,000 word dictionary that checks spelling faster than other programs. Word Express is a 72,000 word electronic thesaurus that lets you put your cursor on a word in your text, press the escape key, and a list of synonyms appears. Then you press a key again to select and place the best word in your text. Some of these powerful functions can be used without ever leaving your word processor.

Stardrive lets you write, spell, draw, and calculate like never before. List price of *Stardrive* is $200. Central's current price is $149. Stardrive is available for Morrows that have storage of at least 250k per drive. Order today to get this multi-pack of powerful programs fast.

Attention: *Stardrive* will give your text files new vim, vigor, and punch. A beautiful thesaurus. At last.

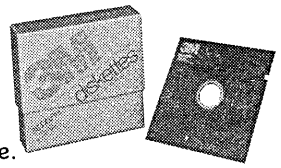
Top 70 Free Programs

The Free Software Handbook is chock full of documentation, reviews, and commentary on the use and abuse of the top 70 public domain programs. It might cost a dedicated hacker hundreds of hours and maybe thousands of dollars to track down this box full of goodies. Super CP/M utilities like Unerase, D.Com, and RPIP are here. Also includes Bio.Com, Wumpus.Com, Adventure.Com, Food.Com, and dozens of other valuable free programs too.

If you want to share in the free software bonanza but don't have the time to search through piles of useless software to find a few precious gems, this book is for you. The list price of *The Free Software Handbook* is $17.95. Central's price is $15.95. If you want both *The Free Software Handbook* and all the programs reviewed in the book, send $49.95 and indicate whether you have an MD2 or MD3 computer. Save yourself the time and effort of compiling these programs. Order the *Free Software Handbook* today.

The Free Software Handbook is published by PeopleTalk Associates. The authors looked at thousands of programs. They challenge readers to find better ones. It can't be done.

Save Money. Save Worry.



3M diskettes.
Certified
100% error-free.
Guaranteed for life.
Tested 327 ways.
They work like a charm on Morrows.

Factory sealed. Best data diskette made.
3M — *One less thing to worry about.*

No minimums — No limits

Box of 10 DS-DD MD 2 diskettes: **$18.**
Box of 10 DS-DD MD 3, 5, & 11 disks: **$23.**
3M Head Cleaning Kits for MDs: $21.
3M DeskTop 24"x 26" Anti-Static Mats: $44.

CENTRAL COMPUTER PRODUCTS

330 Central Avenue, Dept. MR1
Fillmore, California 93015
(805) 524-4189

Dear Central,

Please send me the items listed below. I want fast, friendly service. If I am ordering software, I have included my phone number and the make and model of computer I want the software to work on. My check, money order, or card number is enclosed. Thanks.

Description	Price

Morrow Model _____ Sub Total _____

CA Resident 6% Tax _____

FIRM MONEY BACK GUARANTEE ORDER WITH CONFIDENCE Postage & Handling $ 3.00

Total $ _____

☐ Phone: ( ) _____

☐ Check enclosed ☐ Money Order enclosed

☐ Visa/Mastercard # _____

Exp. Date _____ Sig. _____

Name _____

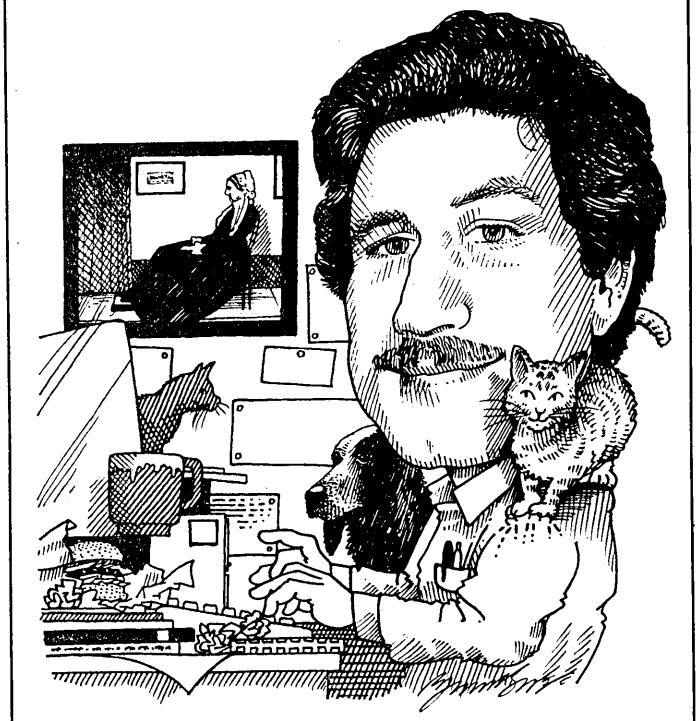
Address _____

City _____ State _____ Zip _____

Visa and Mastercard phone orders accepted. **Call toll free.**
To order by mail use coupon, letter, or photo copy. Thank you.

© 1985 Central Computer Products

Computerese even a mother would love



INSIGHT

by Art Zemon

PAYING BILLS WITH PERSONAL PEARL

[This column is a tutorial meant especially for beginners to teach you how to use the software that comes bundled with your Morrow.]

LogiCalc Leftovers

Before discussing Personal Pearl, I want to clear up a couple of common misconceptions about LogiCalc. Following my last two pieces on using LogiCalc for spreadsheet calculators, I received a number of letters asking, "If I run LogiCalc from drive A, how can I save files on drive B?" The answer is simple but does not appear anywhere in the user's manual. To save a file on drive B, type a file name which begins with "B:". For example, to save your spreadsheet in file "BUDGET" on drive B, type:

B:BUDGET

when the ";S" command asks you for the file name.

Many of you also misunderstood exactly what the ";D" command does. It deletes cells from memory; it does not delete files from the disk. To delete files from the disk, you must use the "ERA" command at the CP/M prompt ("A>" or "B>").

Personal Pearl--Not Perfect but Still Useful

Although Personal Pearl is not as powerful as dBASE II and the other relational data-base management systems (DBMS's) on the market, it can still be quite useful. In this article, I will describe how I use Pearl to organize my bills. In the process, I hope to assuage any fear you may have had about using Pearl for yourself. Next time I will expand this system so that it will actually write the checks on commercial check forms.

For those already familiar with DBMS's: Personal Pearl is closest to a relational DBMS but is not as flexible. Designing a Pearl form is the data definition phase. Pearl does not support ad hoc queries; reports are the only means of extracting data from a form. There is no programming interface to Pearl. Pearl does not allow you to create new relations from existing ones.

Nomenclature

Personal Pearl can best be described as a list management system. It will let you save lists of things (e. g., bills and creditors) in disk files and print reports based on the contents of the lists. The lists can be called databases.

You do not program Pearl in the normal sense of the word. Instead, you create forms. A Pearl form looks just like any other form in the world (blanks to fill in, etc.) but it also serves to define the data which comprises a database. The form has blank spaces to be filled in which are called "fields." The length of a field determines how many characters of data may be stored in that field. The type of a field determines what may be stored in that field.

To get information out of Pearl, you create reports. A Pearl report looks like a form when you create it. The difference is that a form is filled in by you while a report is filled in by Pearl.

The beauty of Personal Pearl is that you only do the hard things once (designing forms and reports). After that, you just fill in blanks on the screen and let Pearl do the hard work.

Before You Try My Examples...

Before you can do any of the things in this article, you must have installed Personal Pearl. (Follow the main menu to do this; space constraints prevent me from describing it here.) If you have already disabled the menu system, just create a new CP/M disk from your distribution disk and boot that. It should come up with the menu.

After installing Pearl, work through the "Easy Tutorial--Address Book" in Chapter Three of the Manual.

This will teach you the basics of creating forms and reports and entering data. For this article, you can skip section five of that chapter, "Customizing."

Overview of a Bill Paying System

I pay bills with a three part system. Each part performs a small set of functions as described below:

CREDITR form
This database contains the names, addresses and account numbers of all the people to whom I owe money. By referencing it from the BILL form, I "validate" my data entry; i. e., the BILL form will only accept bills for known creditors.

BILL form
This database contains all the bills which I have not paid. For each bill, the database contains the creditor's name (validated by the CREDITR form), the amount due, and the due date.

MONTHLY report
When I run this report, Pearl prints a subset of the BILL database. I restrict the MONTHLY report to only those bills with due dates up to a certain date. I use this to see which bills are due.

CREDITR Form

Start by creating the following CREDITR form. You can vary the field lengths to suit yourself. The ones I give look nice on my screen. Be sure to provide labels on the screen for each field.

Name	Width	Type	Description
CNAME	42	C	REQUIRED DATA Creditor's name.
CREDID	44	C	REQUIRED DATA UNIQUE INDEX Uniquely identifies each bill I expect to get. A single CNAME may appear under more than one CREDID. This lets me keep, for example, insurance payments for my MG separated from those for my Charger.
CACCT	41	C	REQUIRED DATA The account number.

Note: my CREDITR form also contains fields for the creditor's address. You may wish to include these or other fields.

BILL Form

Now enter the following BILL form. Note that you cannot install this form until you have installed CREDITR because BILL references CREDITR.

Name	Width	Type	Description
CREDID	44	C	REQUIRED DATA NON UNIQUE INDEX <CREDITR> ACCESS KEY This only allows bills from "known" creditors.
TOPAY	9	N	Enter this field on the form as "$9,999.99" so that you will have a dollar sign and comma displayed as necessary and will have two positions behind the decimal point.
DUEDATE	8	D	REQUIRED DATA This is the date on which the bill is due.

MONTHLY Report

Finally, create the MONTHLY report under the BILL form as a list type report. This allows Pearl to total the amounts to be paid. In the heading section of the report, place column headings which will look nice on the page. There should be no data fields within the heading section of the report.

In the detail section of the report, place the following three fields. They should all be on one line.

CREDID<CREDITR> ACCESS KEY. 44 characters wide.

DUEDATE 8 characters wide.

TOPAY 9 characters wide. Enter as "99,999.99".

In the totals section of the report, place the following field, with appropriate label:

TOTAL 9 characters wide. Enter as "99,999.99". The computation for this field is "TOPAY + TOTAL".

Finally, sort the report on DUEDATE. This will place the bills due soonest at the top of the page when you print a report.

Using this Bill Paying System

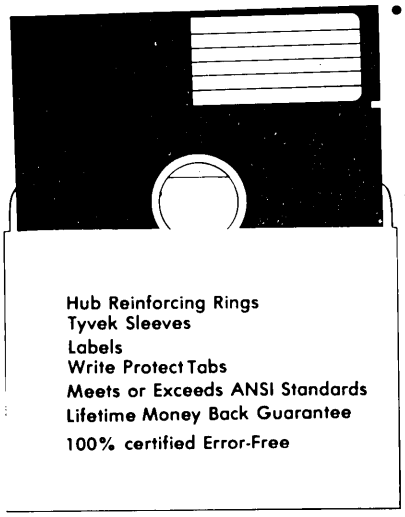
To use this system, start by entering all of your creditors into the CREDITR form. Include your credit card companies, your mortgage or landlord, insurance company, etc. Don't worry about missing some. You can always add more later.

Next, enter any periodic bills into the BILL form. Set the due date for when you want each payment to reach the creditor. For example, you might enter all your car payments for the year. Each one would have a different due date so the MONTHLY report would remind you to pay them at the right times.

As other bills arrive in the mail, enter them into the BILL form. Again, assign each a due date which coincides with the date the creditor should receive the check.

Run the MONTHLY report when you want to pay bills. If you pay bills on the first of each month, you should

(continued on p. 33)



Hub Reinforcing Rings
Tyvek Sleeves
Labels
Write Protect Tabs
Meets or Exceeds ANSI Standards
Lifetime Money Back Guarantee
100% certified Error-Free

MEET PLAIN JANE

(quality media at wholesale prices)

Now you can buy Name Brand
Quality Diskettes at Wholesale Prices

ALL THAT PLAIN JANE LACKS IS FANCY PACKAGING

SSDD-$1.59 DSDD-$1.99

AVAILABLE IN BOXES OF 50 DISKETTES ONLY

QUANTITY PURCHASE? WRITE FOR QUOTE.

COD's:CASH or CASHIERS CHECK ONLY

MasterCard VISA

ORDER TOLL FREE
1-800-851-2753
ILLINOIS(call-collect)
309-833-1157

Integrated Computer Systems
129 North Randolph Street
Macomb,Illinois 61455

ReachOut™ FOR LESS

Powerful, comprehensive, easy-to-use telecommunications!!

- Call, sign-in,"navigate" through the host system, open a file, get data, close the file, and hang-up, ALL WITH ONLY ONE KEYSTROKE!
- Transfer files in ReachOut, ASCII, Christensen, MODEM 7 and CP/MUG 16-bit CRC protocols.
- Have your system receive or send files withOUT you being there!
- And much, much, much, more.

Read the reviews in Morrow Owners' Review issue 2 and 3

A specially-priced version for all Morrow Micro-Decision computers!

ATTENTION OWNERS OF MORROW & CTS MM 300 MODEM SYSTEM:

Upgrades to the version from Morrow and exchange for MITE from CTS are available. Call or write for details.

Regular
$199.00

Sold with a 30-day, money-back guarantee.

APPLIED COMPUTER TECHNIQUES
21 Cottonwood Drive, San Rafael, CA 94901
(415) 459-3212

Special price
$125.00

(continued from p. 31)

request a report of all bills due through the sixth of the next month. (The extra five days allow time for the US Mail.)

Finally, after paying each bill, delete it from the BILL database. By doing so, you prevent the database from growing bigger throughout the year.

Confused?

I realize this has been a bit concise. (Unfortunately, the "real world" imposes size constraints on our magazine.) If you have questions, please write to me. (4743 Matney Ave., Long Beach, CA 90807; MCI: AZEMON; CompuServe: 72406,3275) I will try my best to answer them. If you send me an SASE with 37 cents on it, I will send you complete listings of both forms and the MONTHLY report. If you send me a floppy disk, I will return it with the Pearl databases already set up. [Wow! --Ed.] ■

HOT TIP

When working with the Micro Decision with the cover off, beware of possible interference from nearby equipment, causing your disk drives to perform erratically.

--Ray Andrews, Vincennes, IN

LIST OF ADVERTISERS

Applied Computer Techniques 32
Bartholomew Software 11
Borland International . . . inside front cover
Central Computer Products 28
Chuck Atkinson Programs . . outside back cover
Civil Computing 37
Compusophic Systems 27
English Enterprises, Inc. 11
Financial Track Systems 24
Hollingsworth Business Services 34
Inner Access 9
Integrated Computer Systems 32
Irata 27
James River Group 10
Mendocino Software Co., Inc.. 24
Micro-Art Programmers 23
Micro Cornucopia 4
Micro Extras 33
Morrow, Inc. . . . . .inside back cover
NewStar Software 13
PeopleTalk Associates, Inc. 18
Practical Business Software 36
Pro Micro Systems 38
Pro/Tem Software 40
Robert Throckmorton 8
Software Solutions 24
The Software Store 39
West Wind Computer (Trantor) 14

Do you use WORDSTAR® OR NEWWORD?

Tired of pressing CTRL when editing?

Do you want to be more efficient?

Consider *THE PEDAL*™ from MICROEXTRAS INC.

Simply plug *THE PEDAL*™ into the terminal port of your MORROW* and use your foot to execute CTRL when editing. Your hands never leave the home keys and your eyes never leave the screen. You will soon become more efficient and make fewer mistakes when editing.

Designed with your MORROW in mind, our clever circuit design and quality hardware assure you of reliable performance.

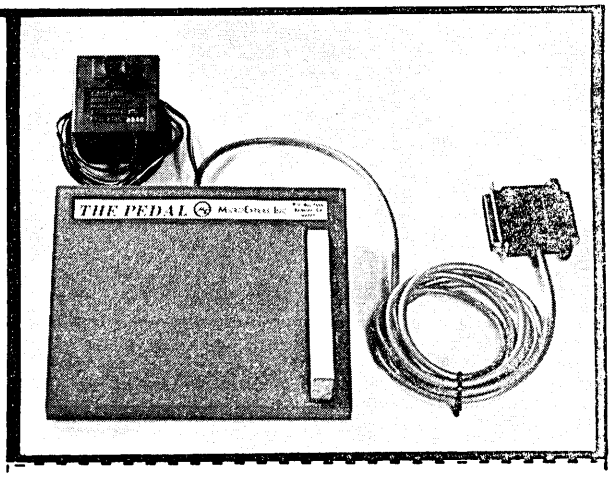
We cover *THE PEDAL*™ with a one year limited warranty because we know we've made it right.

Get *THE PEDAL*™ from MICROEXTRAS INC. - $124.95
(CA residents please add $8.12 sales tax)

MICROEXTRAS INC., Box 7556, Berkeley, CA 94707

* *THE PEDAL*™ may also be used with other Terminal/CPU combinations that communicate via RS-232 at 9600 Baud.

WORDSTAR is a registered trademark of MicroPro.



Brand of Computer _____ Model _____

Brand of Terminal _____ Model _____

Please send me ___ of THE PEDAL @ $124.95 ea. _____

(CA residents please add $8.12 sales tax ea.) _____

___ Check ___ Money Order Total payment _____

Name _____

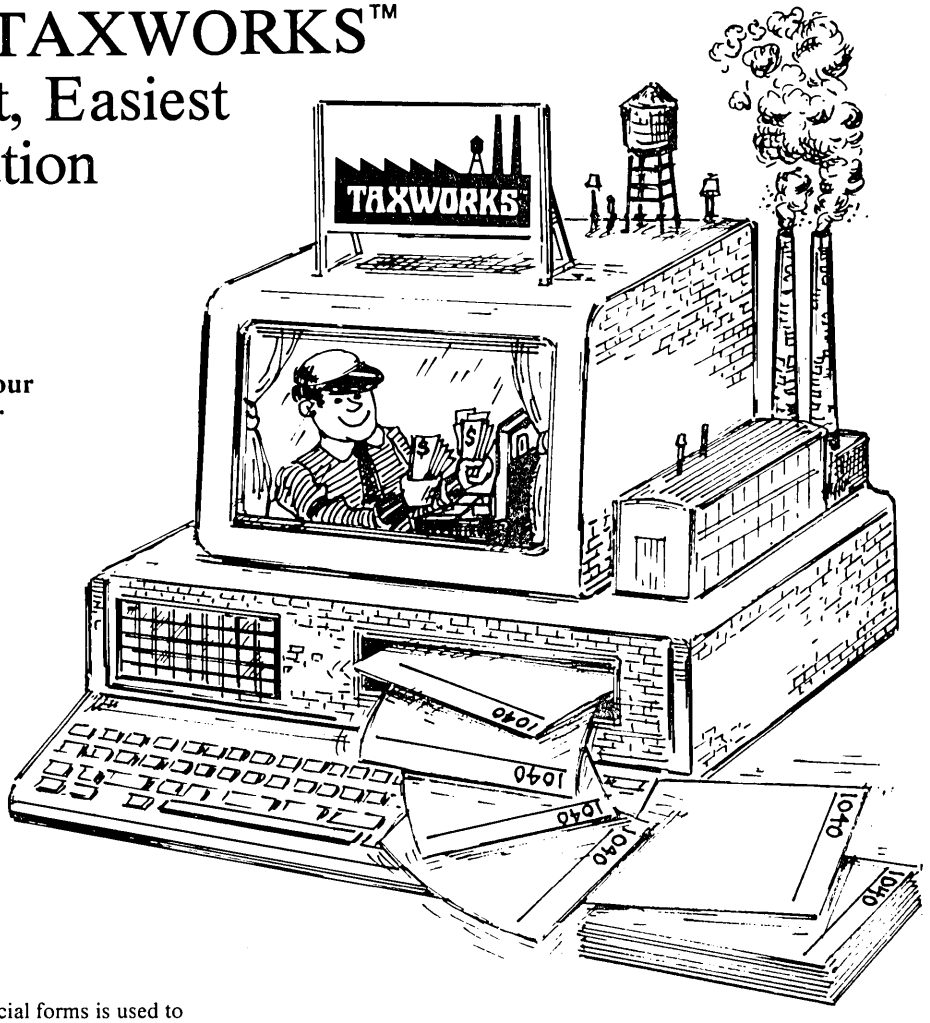
Address _____

City _____ State _____ Zip _____

Signature _____ Phone _____

THE 10-MINUTE 1040

Introducing TAXWORKS™ Your Fastest, Easiest Tax Preparation Program



- **Complete Returns on Your Own Personal Computer —No Waiting Time!**
- **10-Minute Entry Calculation, Print-Out**

RUNS ON MORROW MICRO DECISION or CP/M-80 SYSTEMS

EQUIPMENT REQUIRED
80 Column, 48K computer with dual 180K diskette drives and 80 column printer.

SIMPLE TO OPERATE
A screen format similar to the official forms is used to enter tax data. The program then performs the calculations required on each form, transfers totals between forms, and computes the tax. Corrections and last minute additions on the return can be made at any time. The completed tax return can be printed on official tax forms or on blank paper for xeroxing with plastic overlays included with the program.

- ☐ **PROFESSIONAL** FEDERAL & CALIF. _____ $500.
- ☐ **PROFESSIONAL** FEDERAL ONLY _____ $400.
- ☐ **INDIVIDUAL** FEDERAL & CALIF. _____ $100.
- ☐ **INDIVIDUAL** FEDERAL ONLY _____ $75.
- ☐ **1983 DEMO PROGRAM** _____ $25.

SHIPPING $5.00. IN CALIF. ADD 6.5% SALES TAX

1984 SCHEDULES AND FORMS INCLUDED

TAXWORKS™ PROGRAMS AVAILABLE	FEDERAL													CALIFORNIA										
	1040	A	B*	D	G	W	C	E	SE	ES	2210	2441	4562	540	A	B	D-2	G	H	CEF	ES	3805X	3885	5805
INDIVIDUAL FEDERAL & CALIF	•	•	•	•	•	•								•	•	•	•	•	•					
INDIVIDUAL FEDERAL ONLY	•	•	•	•	•	•																		
PROFESSIONAL FEDERAL & CALIF	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PROFESSIONAL FEDERAL ONLY	•	•	•	•	•	•	•	•	•	•	•	•	•											
1983 DEMO PROGRAM	•	•	•			•								•	•	•								

FOR MORE INFORMATION, IN CALIF. CALL:
1-800-232-"1040"

TAXWORKS
HOLLINGSWORTH
BUSINESS SERVICES
881 Alma Real Dr. Suite T-2 Pacific Palisades, CA 90272
(213) 459-2746

PRELIMINARY RESPONSE TO THE SIG SURVEY

by Stan Young

It looks indeed like we may be able to start our own Morrow Special Interest Group (SIG) on CompuServe. At this early date, we've already had over 100 responses to the questionnaire accompanying my proposal in the last issue of MOR (Vol. I, # 5, December 1984). That's 10% of what we need to make this work. I thought you might be interested in seeing some of the comments received so far. Most of them were from the West Coast, since they get their copies a lot earlier than those on the East Coast.

RM of California writes: "I would rather participate in a SIG than attend a group meeting, and I believe people would learn more with the SIG."

RW, also from California, writes: "I am a brand new Morrow owner. My telecommunications is not even up and running yet. I need all the help I can get."

Another RW, this time from Washington, writes: "We have just started a user group and will start another one soon (branch of first one). SIG will help a lot."

GW of California, writes: "I'm going to hand out copies of this at my users group--OK?" ## It sure is!

BP of California comments: "Good idea, Stan. Let me know if I can help." ## Believe me, I will.

AG of California writes: "What we need are some good instructions on downloading with MDM730. I have doc but it doesn't help me too much when I'm 'on-line'." ## Take a look at MEX112, AG. One of the nice things about it is the online help facility. And the price is right--it's free!

TS of California says: "I'd love to see this happen, Stan. My own experience from users groups is that Morrow owners seem to be pretty computer-naive compared to, say, Kaypro owners, so that it will be important to get together as many technically-inclined people as possible to answer questions on the SIG."

But DF of Oregon wonders: "Would people who are new to the computer game be 'brushed aside' during the conferences because of their lack of knowledge?" ## Based on my experience, DF, the members on the conferences usually welcome new folks. A lot of the new "faces" feel a little out of place at first, but they get over that very quickly. And the "old hands" are usually ready to answer questions and give advice.

FP of California has an interesting idea. He wonders if a SIG could be demonstrated at a users group meeting? Why not check with the folks at your local users group?

PH of California wrote: "My reason for using a SIG would be the reference section. Hopefully, Morrow would allow you to upload as much information as possible." ## I hope so, too.

JO of Washington says: "We are still in the novice stage in many areas, some programs give a lot more problems than we know what to do with as yet." ## As you might imagine, she is looking forward to a SIG.

CR of Ohio wrote: "I use my MD3 in a very small business. I don't have time to search out solutions to computer problems. Need an easy way to talk with others who have solved the problem."

CB of Massachusetts writes: "Would be very interested in detailed info from Morrow. Would love to talk to/share info, public domain (MD modified) software with others."

KF of Washington writes: "Great idea! It's time has come. On the issue of users group meetings, when you have 100 (or more) people in a room, there really is no way to exchange info amongst all of them in 1-2 hours."

W of Montana sent his response using Compuserve's electronic mail facility. He writes: "...an obvious advantage of Compuserve is the fact that you can get through! I call the BAMDUA number in Berkeley now and then and, while it's a nice board, I seldom get through. What is the value of a BBS if you can't get on?" He also says: "I'd sure use a Morrow SIG!!!"

NE of California wants "...an on-line index of 'help'-type articles from various SIG newsletters and other sources." ## Sounds like a good idea to me!

AN of Hawaii wasn't too keen on the idea. He writes: "For all practical purposes, access by telephone from Hawaii to the mainland is unrealistic." ## Actually, it's not as bad as you might think, AN. As a matter of fact, the publisher of one of the most popular newsletters on Compuserve lives in Hawaii, and he puts his material online there using one of the computer networks. So a SIG may not be out of your reach--even across half the Pacific ocean.

What do YOU think? Send in the survey form that appeared in the December issue. Your voice counts! ■

CAN YOUR BUSINESS SURVIVE?

Every day, you're losing customers because you aren't keeping them informed about the valuable products/services you have to offer.

Advertising in magazines and newspapers is not enough. The chances are slim that your customers will read your advertisements buried among all the others. We offer a simple and effective solution ... **E-Z Mail.**

E-Z Mail is the complete program for keeping track of all your customers and printing mailing labels for sending them promotional material on a periodic basis. This is the easy and inexpensive way of giving each customer the "personal" attention they need, which keeps them coming back for more. Without customers, you're out of business.

Our programming staff has worked hard to ensure that you won't have to. **E-Z Mail** is not only easy to use, but it does some very sophisticated things. As far as you're concerned, it's business as usual. Except you'll have more customers.

Ask for E-Z Mail at your local computer store, or, to order direct: send $199.95 plus $5 shipping. Mastercard/Visa accepted. California residents add 6% sales tax.

Practical Business Software
3377 Solano Ave., Suite #307
Napa, CA 94558
(707) 253-8432

E-Z Mail runs on your Morrow and on most other CP/M computers. Please specify which computer system you have when ordering.

SMARTKEY ALERT!

by Ted Silveira

I'd like to add a few notes to my article, "Notes from a SmartKey User," published in the December 1984 Morrow Owners' Review (Vol. I, #5, p.25).

First, there's a typo (my fault, not MOR's). The line that reads:

-f1113,113c,00 <CR> [type "f113,113c,00"]

should read:

-f1113,113c,00 <CR> [type "f1113,113c,00"]

It's a small difference, but it would cause major trouble for someone who followed the wrong set of numbers. Thanks to Arthur Bloch for pointing out the error to me. (For those who are interested, the patch I describe simply wipes out a routine in SmartKey that seems to be calling the Morrow ROM and checking an ID.)

Second, I found that when I was using SmartKey and WordStar together on a large text file, stray characters occasionally appeared on the screen. I reinstalled WordStar from scratch, with SmartKey already loaded into memory, and have had no problems since then. I hear of other people using the combination of SmartKey-WordStar-Morrow without ever having this problem, so maybe the whole thing is just a figment of my imagination.

Third, I also found that interrupting a command run from the WordStar NO-FILE menu (with ^U and ESC) wipes out the SmartKey definition table for some reason--SmartKey remains in memory, but all keys lose their special definitions. Interrupting a command while actually editing a file doesn't seem to bother SmartKey at all. I don't know if this is true of all versions of SmartKey or just the patched version that I use.

I've become a dedicated SmartKey-WordStar user. With single keystrokes, I can now jump to the beginning or end of a sentence or paragraph, jump to the beginning of a paragraph and reform it, delete a sentence, delete the word to the left of the cursor, mark a sentence or a paragraph as a block, or do a save-and-resume (^KS^QP). I love it.

One last note. Though I helped (a little) with the work Brian Leyton did to get ZCPR3 installed on the Morrow, I didn't, as far as I can remember, write the article in the December MOR titled "ZCPR3 Makes CP/M 2.2 Shine." Someone else deserves the credit.

[NOTE: Ted Silveira and others have called to our attention that there is a lot of confusion around the issue of distribution of SmartKey to Morrow owners. Reid Griffin of Software Research Technologies, the publishers of SmartKey, has clarified this issue for us in a phone conversation by saying that there is no arrangement with Morrow to purchase SmartKey for purposes of resale to Morrow customers, nor is there any blanket giveaway of the program. Morrow now bundles SmartKey with new Morrows. The contract between Morrow and SRT pertained only to those who purchased their Micro Decisions with an MDT 60 or 70 terminal during a certain period of 1984. The version of SmartKey which Morrow bundles does not work on the MD11. Owners of the MD11 can purchase from SRT a version that does work on their machine. --Ed.] ■

Get the Proportional Printing Program which

REALLY WORKS!

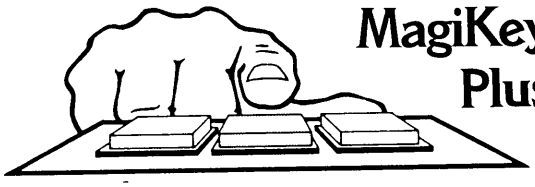
PropStar gives type-set quality true proportional spaced printing from unmodified NewWord and WordStar document files. Prints on daisy-wheel printers with ps type-wheels, including Diablo, Qume, NEC, Brother, C-Itoh, Juki, Silver-Reed.

PropStar is a stand-alone program, not a patch to your w.p. program, gives higher quality print than modified WordStar. **PropStar** follows the rules for typesetting, maintains correct spacing between letters, never crowds text in short lines or lines with many caps. **PropStar** increases letter spacing in "bold" text to avoid run-together letters. **PropStar** doesn't move text from one line to another, you get what you see on your w.p. screen. **PropStar** supports most WordStar and NewWord print features.

Available on CP/M 8" and 51/4" formats including MD-2/3/11. MS-DOS version comes on 51/4" PC media. Only $ 49.95, Visa & M/C accepted, or send check with order and we pay postage. Specify computer and printer models.

CIVIL
COMPUTING
CORPORATION

2111 Research Drive, Suite I
Livermore, California 94550 (415) 455-8086



MagiKey Plus★

MagiKey Plus turns keys into **macros** (character strings) on any CP/M 2.2 computer. Redefine regular keys, two-keystroke combinations, and function keys simultaneously. Add help messages to any program. Macros can auto-execute when a file is loaded, call other macros, define new macros, or wait for you to fill-the-blanks. And, there's built-in batch processing and string editing to correct mistakes. Makes ordinary keyboard redefinition programs look ... ordinary.

MagiKey Professional★

MagiKey Professional is an enhancement of **MagiKey Plus** which simply blows the competition away. Text macros can be megabytes, parameters can be passed between macro files, macros can reassign macros, and macro files can be chained (one file calls another) even while a program is running. With optional modules, you can run programs concurrently, and soup-up WordStar to use every feature of your printer.

MagiKey Plus (MK+) $100.00
MagiKey Professional (MKPF) $175.00
(Inquire about optional MKPF modules)

SPECIAL OFFER FOR MD2 & MD3 USERS
Order during February '85 and pay only $39.95 for MK+ or $69.95 for MKPF.
If you order during March '85, the cost will be $49.95 (MK+) or $89.95 (MKPF).
(Add TAX and SHIPPING to all orders)

Specify MD2 or MD3 format
Shipping - $2.50 in USA, $15.00 foreign
California residents add 6% tax

PRO microSystems
16609 Sagewood Lane
Poway, California 92064
(619) 693-1022

CLASSIFIEDS

FILE UNERASE UTILITY: UNERASE.COM allows you to recover files that have been erased. DIRECTRY.COM displays all recoverable files on the disk. For MD1, MD2, or MD3. $10 or #25 w/source code. RNA Consulting Services, PO Box 1214, Vincennes, IN 47591. Phone: 812-743-2209

DAILY REMINDER is a year-round computerized notebook and appointment calendar for home or office. Monthly calendar highlights important events; features daily printouts. $ 39.95 plus $2.00 S&H from INTERNATIONAL COMPUTER PRODUCTS, 346 North Western, Los Angeles, CA 90004

MULTILINGUAL ARITHMETIC acts as an interpreting calculator for numerical calculations and sequences in French, Spanish, German or English. Translates numbers up to one million. $ 29.95 plus $2.00 S&H from INTERNATIONAL COMPUTER PRODUCTS, 346 No. Western, Los Angeles, CA 90004

ADM-20 Upgrade Kit. adds 19 WS function keys, 37 graphic chars, Programmable inverse/blink/dim/underline modes, type ahead buffer, more. $40. For info write Software Techniques, 3537 W. Charleston Ave, Glendale AZ 85308 or phone 602-439-3059.

PASCAL MANUFACTURING PROGRAMS - Inventory, Work Orders, Bills-of-materials, Where Used Listings, and parts usage Forecasting. MD3 DEMO DISK with manual, $25.00 postpaid; All PROGRAMS $500.00 ($25 demo disk credit). C.A.B. Enterprises, 7474 W. Roxbury Pl., Littleton CO 80123. SASE for info.

TURBO-SCREEN I/O Screen Editor/program Generator. For your Turbo-Pascal (tm) compiler.Crt attributes supported. Call just ONE pre-written procedure to access any screen. Output to crt, printer, disk. $45.00 PASCOM COMPUTING, 9836 Pleasant Lake Blvd, Suite 19, Cleveland, OH 44130

Compu-CHART -- the only technical analysis program in CP/M. Buy/sell stocks from a fully informed perspective. No on-line fees. Printouts. $99.95 + $3.00 shipping. CA residents add $6.50 tax. New TEK Industries, P.O. Box 46116, Dept. Q, Los Angeles, CA 90046, (213) 874-6669

SIMPLIFY YOUR 1984 1040 TAX FORM PREPARATION: Prepared blank IRS 1040 & Schedules A and B Logicalc file. You fill in blanks, Logicalc does the arithemetic. Instructions included on disk. $12.00 including S&H. Paul Dudley 140 Railroad Mills Rd. Pittsford, NY 14534 (716) 385-2368.

(continued)

Ready to move up to multi-user? Decision I (D210) only months old, 16 MB hard disk, all software. Also Televideo terminal, IDS printer, & Anderson-Jacobsen printer. Will deal! Don: 414-276-0773.

CASINO CRAPS is an entertaining and educational computer game with fascinating monochrome graphics develops a quick and clear understanding of the game with special emphasis on Free Odds. $25 includes S&H from MicroGem Software 1170 Ayer Drive, Gilroy, CA 95020 (408) 842-1467

EC CATALOG: Powerful, full-screen disk catalog and file search program for CP/M 2.2 and 3.0. Alphabetical & printer listings & disk labels. "Point" on screen to select disk. Wildcard file specs. 22p manual. $20 postpaid, or write for info. Phil Hess 917 N. 10th Lafayette, IN 47904

BASIC PROGRAMMERS: BASICREF generates cross-ref. listings of BASIC programs (ASCII or tokenized). Customizable processing. Up to 10x faster than available public domain programs. CRT/file/printer output. $19.95 incl s/h. IBM PC & CP/M 5.25". Specify. LTA, 7 Ledge St., Stoneham, MA 02180

The BEST and the BRIGHTEST: TURBO PASCAL. You've read the reviews, now try the program. Turbo Pascal list price: $54.95 incl shipping. LTA's price: $47.95 incl shipping. Spec. computer LTA, 7 Ledge St., Stoneham, MA 21080

SMART SHOPPER pays for itself by reducing your grocery bills. When you shop, keep track of what, where, when, and how much. Instructions included. Easy to use! 30 day money back guarantee! $29.95 from Delicious Bytes, 3132 Skipper St, San Diego, CA 92123. Shipped day order rcd. (619) 565-4656

TIME SAVER FOR WRITERS, EDITORS -- Choose best dot command combinations quickly, confidently to format written copy. Buy "A GUIDE TO EASY PRINT FORMATTING FOR NEWWORD AND YOUR MICRO DECISION" -- set of handy new charts. $5 postpaid. Heritage North Press, PO Box 3533 , Eugene, OR 97403.

PRINT HEBREW on your MD. If you have an Epson or Gemini printer you can print Hebrew text in three sizes (+English) with the program LAVLAR. You can also design your own alphabet, re-design the given one and change the key codes. Send $18 to LAVLAR, 1018 N. 18th St., Allentown PA 18104

$49 MasterCom

FOR TELECOMMUNICATIONS

MasterCom is a full featured, smart terminal and file transfer utility for Morrow and other CP/M computers and all IBM PC-DOS compatible computers. It is easy to use for the beginner, yet has the features and speed for the advanced user. No long training is required. You will be communicating immediately using the descriptive pull down menus.

We are so enthusiastic about MasterCom that we provide a 30 day money back guarantee. If you don't like it, return it!

MasterCom can:

- Make your system a terminal to a HOST bulletin board or time sharing system (such as Dow Jones, Compuserv, WestLaw, etc.).
- Capture data onto your disk and/or printer from the HOST.
- Send text and program files to almost any type of computer.
- Exchange any type of file using error correcting protocol with another **MasterCom** or Xmodem Protocol equipped computer.

MasterCom includes the following features: auto-dial, auto-answer, host mode unattended operation, directory display, batch transfer, file viewing, file rename, file erase, wild card file specification, stored responses invoked by a single key stroke, filter or ASCII display option for received control characters, on-line selection and revision of communication parameters. **MasterCom** supports most file transfer protocols, including Christensen XModem, Xon/Xoff, line at a time (time delay or handshake) and speed throttle.

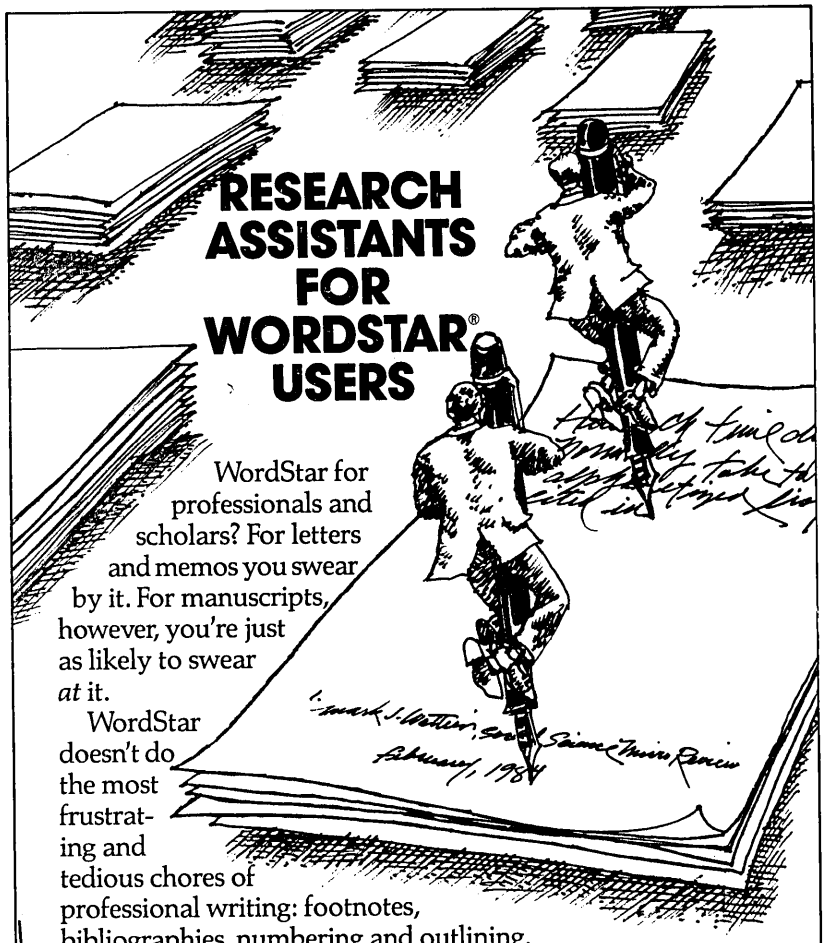
MasterCom is available in most disk formats. A single user license is $49. COD, prepaid, MasterCard, Visa and authorized purchase orders accepted. U.S. orders are shipped UPS surface ($5) or UPS air ($7). International orders shipped airmail ($10). Same day shipment on most orders. Call our software HOT LINE:

906/228-7622

The Software Store

706 Chippewa Square

Marquette MI 49855



RESEARCH ASSISTANTS FOR WORDSTAR® USERS

WordStar for professionals and scholars? For letters and memos you swear by it. For manuscripts, however, you're just as likely to swear *at* it.

WordStar doesn't do the most frustrating and tedious chores of professional writing: footnotes, bibliographies, numbering and outlining.

Pro/Tem's **Footnote**™ numbers and positions footnotes in your text, and handles cross references as well. It produces a what-you-see-is-what-you-get file. Edit as often as you like. Footnote will renumber and reformat your manuscript each time.

With **Bibliography**,™ you type and proofread each bibliographic entry just *once* in a WordStar file—your master bibliography.* Then as you write, enter citations in your usual way. Bibliography automatically constructs a bibliography of all the works cited, or copies the full citations into your footnotes.

Need to number—and renumber—paragraphs, sections, or other items? **Number**™ does it all—in any style you want. Even outlines of up to five levels, and cross references.

Buy all three programs for $199, or any one for $99. Call us toll free (800) 826-2222. Or write Pro/Tem Software, Inc., 2363 Boulevard Circle, Walnut Creek, CA 94595.

PRO/TEM®

*You can also maintain the master bibliography with Notebook I or II, Pro/Tem's database manager for unlimited text.

All programs run under MS/PCDOS, CP/M, and CP/M-86. Footnote is compatible with NewWord.® Bibliography and Number are compatible with most other word processors as well.

(Classifieds, cont.)

SHUGART disk drives, brand new, fresh and guaranteed. SA 455 1/2 ht. DS (upgrade your MD1, MD1-E or MD2 to an MD3) $159. SA 200 2/3 ht. SS (upgrade your MD1 to an MD2) $95. Add $5/drive UPS. Drive data cables, $20. G. Shacter, 9639 Dorothy Ave., South Gate, CA 90280 (213) 566-3556.

Don't pay 200-300 dollars for those crash dBase II Seminars. Let me help you get you started, by being your personal tutor. Learn at your own pace. Call today for my low rates, so you can begin to attack that blank screen. Days (415) 563-4321 Ext. 2711, after 6 pm (415) 465-7370 Wil Ussery

FREE SOFTWARE - With purchase 40 DSDD disc @ $2.20 THE DESKMASTER consists of FINANCEMASTER,very smart checkbook, 3 reports, auto reconcile; MAILMASTER, address book/label prog; SCHEDULEMASTER, electronic calendar. PCS, 35 Palm, SF, CA 94118, 415-387-9647, $88 + $3 shipping + 6 1/2% CA, specify MD1,2,3,11.

MAILING LIST RENTAL: Mailing list of MORROW OWNERS' REVIEW available to qualifying advertisers for direct mail purposes. Prior approval of mail sample is required. For more information write MOR at P.O. Box 5487, Berkeley, CA 94705, attn.: LIST RENTAL, or via MCI Mail: MREVIEW (MCI ID 217-1566).

BACK ISSUES of Morrow Owners' Review are available starting with April 1984 issue. Price will go up after April 15, 1985 to $3 per issue, so order now ($2/issue). First class postage paid. Send check to MOR, P.O. Box 5487, Berkeley, CA 94705.

MALE COMPUTER BUFF seeks female hacker. Long-distance dates no problem. Age irrelevant but 1200 Bd Smartmodem essential. Do not send photo--ever. Instead, leave E-Mail for SEEKING BUFF at any RBBS.

Get XT performance at a Jr. price.

$2295.
plus tax

Now you can get the instantaneous response, massive storage, and easy operation of a hard disk in a truly affordable desktop computer system – the Morrrow MD5! At $2295, it's less than many floppy disk computers!

The Morrow MD5 comes complete with monitor, keyboard, and computer with 5 megabyte hard disk and 384K backup floppy disk drive. Plus, the MD5 price includes over $1200 worth of name-brand software: superfast CP/M® 3.0 operating system, NewWord™ word processor, Correct-It™ spelling checker, SuperCalc™ spreadsheet, Personal PEARL™ data base manager, Quest* business bookkeeping system, and 2 programming languages.

And now, affordable 11-megabyte ($2995), 16-megabyte ($3495) and 34-megabyte ($4995) Morrow systems are also available!

You've never been able to buy this eXTra measure of performance at such a JR. price. Come try the MD5 for yourself at your nearest Morrow dealer.

Call (800) 521-3493 (in California (415) 568-8599) for a dealer near you. Or write to Morrow, 600 McCormick Street, San Leandro, California 94577.

MORROW

CP/M is a registered trademark of Digital Research Inc. NewWord is a trademark of New Star. Correct-It is a trademark of Morrow Designs, Inc. SuperCalc is a trademark of Sorcim Corporation. Personal PEARL is a trademark of Relational Systems, Inc. *$37.50 licensing fee required.

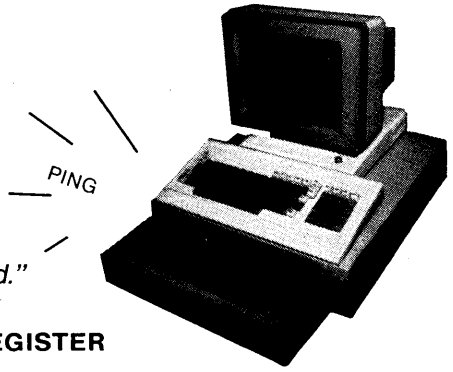
MORROW OWNERS' REVIEW
P.O. BOX 5487
BERKELEY, CA 94705

Bulk Rate
U.S. Postage
PAID
Golden State
Direct Mail

NEWS FLASH!!
MOR Independence Day
January 28, 1985
Suddenly we foot
the bill ourselves.
SUBSCRIBE! NOW!

CHUCK ATKINSON makes money and inventory management easy with *new* **QUICK CHECK PLUS®** and **QUICK REGISTER®**

. . .the greatest programs on earth for small businesses and professional people!



"It is fabulous. . .
the best software I've ever had."
Dr. George Yama,
Pulaski, Virginia

New
QUICK CHECK PLUS (QC+)

This program makes money management easy, even for those without accounting or computer experience. It includes bookkeeping, checking, accounts payable and accounts receivable. It will show income, expenses, balance, and pay records at the touch of a button. The program loads and runs in a flash.
QUICK CHECK PLUS, $195.

QUICK REGISTER
including
RETAIL INVENTORY PROGRAM (RIP)

QUICK REGISTER (POINT OF SALE) turns your computer into a very special cash register. Enter the quantity and item number of each sale, and the computer records the sale, prints the invoice, and adjusts the inventory! RIP lists the inventory several ways instantly. It takes care of inventory control, purchasing, labels, and keeps track of vendors.
QUICK REGISTER with RIP, $395.

For the name of your nearest dealer, write or call:

CHUCK ATKINSON PROGRAMS
Route 5, Box 277-C • Benbrook, Texas 76126 • (817) 249-0166