

Morrow Owners' Review

a national newsletter for users of Morrow's Micro Decision computers
P.O. BOX 5487, BERKELEY, CA 94705 (415) 654-3798



5 ways our General Ledger can make your business more successful

(even if you don't know accounting)

What are the secrets of success? Well, five are listed on this page. And you can put them into practice with our General Ledger—a powerful tool to help you plan strategies, reduce costs and manage your business efficiently.

This full-function General Ledger has many features seldom found in G/L systems. Remarkably, it is also simple to use and requires practically no knowledge of accounting.

So, take a look at how our General Ledger can help make your business more successful.

One Sharpen your business strategy.

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Two Reduce accounting costs.

A typical business pays significant amounts each year to bookkeepers and CPA's.

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Technical Information

Accounting Features

Auto-assignment of debits/credits • always in balance • account and department names on screen for verification • departmentalized financial statements • fixed-asset management with calculation of depreciation • flexible financial statement formats • graphic 12-month account analysis for income and expense • up to six 30-character descriptions for each journal entry • audit trail • 5-digit account number • 3-digit department number • comes with sample data.

Reports Produced

Income Statement (current, previous-year, budget) • Balance Sheet (current, previous-year) • Account activity graphic analysis • Chart of accounts • Journal • General Ledger • Fixed-asset information • Depreciation projection • Loan amortization schedule

Documentation

250-page, fully-indexed manual discusses dozens of accounting terms and concepts, shows all procedures, screen formats and reports, contains many examples.

Software Features

Compiled in COBOL for fast execution • B-tree indexed files for fast data access without sorting • menu-driven with many one-stroke commands • auto-recovery of damaged files.

Hardware Requirements

Dual-floppy drives or hard disk • 130-column printer • IBM-PC (96K RAM) or CP/M-80 computer (60K RAM).

Three

Make your financial dealings faster and easier.

You need and appreciate the cooperation of bankers when it's time to expand your business or buy new equipment. Since bankers always want your current balance sheet and income statement, you can imagine how much simpler and faster your financing will be when you can give them current, accurate, professional-looking financial statements at a moment's notice.

Four

Improve day-to-day management of your business.

A well-run business is organized, and uses up-to-date information. To make the right day-to-day decisions, you must know how your business stands today—who owes you, who you owe, what the trends of income and expense are. With accurate, current facts, your decisions will be better and your business will benefit.

Five

Keep better, more accurate records.

When you go back to analyze the year's business—or go for a tax audit—or take your books to the CPA for tax preparation, you will appreciate clear, organized records which show every item of income and expense with detailed description, purchase and depreciation history for your property and equipment, and financial statements for every month of the year. You can easily and quickly answer any questions about your business.

Bonus

You don't need to know much about accounting.

Until recently, you had to know accounting to really benefit from a general ledger system. Now you don't. Our system knows about the accounting equation and the rules for debits and credits—so you don't have to. It keeps your books in balance—always. It carefully checks your data and confirms your choices on screen. A sample chart of accounts comes with the system—you can adapt it to your own business, and be up and running right away. Finally, the manual clearly explains dozens of accounting terms, and how they apply to this system. From beginning to end, this system assumes minimal accounting experience.

Guarantee

30-day moneyback guarantee.

We believe this is one of the simplest, most capable General Ledgers on the market today. We guarantee you will like it. **If you purchase this system from us and are not 100% satisfied—for any reason—return it within 30 days and we will refund your purchase price—promptly and cheerfully.** (This does not apply to purchases of the manual or DEMO alone).

We welcome phone orders and accept VISA, M/C and COD. Most orders are shipped UPS Blue Label within 24 hours. So, call today or send us the coupon below. You'll be glad you did—we guarantee it!

- Please send full General Ledger System with Fixed-Asset Management for \$385. If I am not 100% satisfied, I will return it within 30 days for a full refund.
- Send DEMO version of G/L with manual for \$45.*
- Send Manual for \$30.*
- Send free brochure.

*Cost of DEMO or manual can be applied to later purchase of the full G/L System.

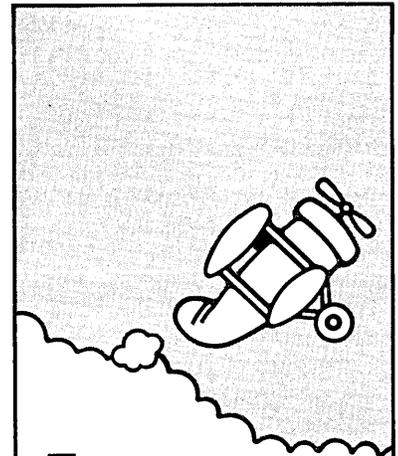


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And Now For The Good News . . .

Data Tech/Reliance, Inc. is pleased to announce that we have signed an agreement with Morrow Designs to provide out of warranty service on all disk drive subsystems sold by Morrow Designs! If you have questions relating to the performance of your subsystem or are in need of service, do not hesitate to call on us for support.

Other Subsystems and Disk Drives Supported by Us:

IBM PC/XT, T.I. PC, Xerox 8XX, Altos, Micromation, Digital Microsystems, Compaq, Wang, Radio Shack, Tallgrass Technology, Xcomp, Data Storage Solutions, Maynard Electronics, Miniscribe, Shugart, Seagate, Tandon, Micropolis, Remex, TEC, BASF, Durango Systems, Computer Memories, Inc., Molecular Computer, Convergent Technology, Basic Four, Please Call For Others.



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Morrow Owners' Review

EDITORIAL

P.O. Box 5487, Berkeley, CA 94705
MCI Mail: MREVIEW (ID 217-1566)
(415) 654-3798

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DEADLINE FOR ALL SUBMITTED MATERIAL,
including articles, classified ads, display ads:
Friday, July 6, 1984, noon,
at the above address.

WRITTEN CONTRIBUTIONS of more than 30 words should be submitted on a 5 1/4 " Morrow format floppy in a WordStar file; right margin at 50 (^OR = 50). Always include printed hardcopy of your prose. If you enclose postage, your floppy will be returned within a month. No modem transfers. Instead use MCI Mail (preferred over floppies) addressed to: MREVIEW (MCI Mail ID 217-1566).

CLASSIFIED ADS are \$2 per line of 50 characters. Maximum 6 lines, maximum 50 characters per line. Be sure to include name, address and phone number. Indicate which information should not be printed.

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

SPECIAL CREDITS

Front cover - Augusta Lucas-Andreae
Cartoon #1, page 3 - Applied Software Techn.
Cartoon #2, page 3 - Robert Johnson
Photo's page 11,12 - Jeff Weissman
Cartoon page 13 - Robert Johnson
Photo's page 25 - Jeff Weissman
Cartoon page 31 - S.F. Business Journal
Cartoon page 35 - Robert Johnson
Drawings page 40,47 - MD11 User's Guide
Last-minute editor - Carolyn Shaffer
Prime Morrow supporter - Ed Niehaus
Thanks, Emma, for visiting us and helping out.

If you could have seen us producing the first issue, during those crazy two weeks in March, you would have probably laughed your heads off at our struggles and judged us rank amateurs. Well, we are! We fell into just about every trap beginning editors and publishers can fall into. It is something of a miracle that the premier issue of MORROW OWNERS' REVIEW came off as well as it did.

It is the vision that counts. We had a bunch of exciting dreams of what could be. Some of them turned out well, others proved nearly fatal. But we had huge doses of luck and lots of support, especially from the Morrow people. Now we are enjoying the company of a growing number of contributors and supporters, who are waking up to the endless potential of a national users' newsletter.

In the process of developing the MORROW OWNERS' REVIEW we made a long list of mistakes. They proved to be essential. We've got to learn from something. For instance, we spend far too much time getting ready, leaving far too little to do the real production job. In many cases, when we had a problem and all the advice we got averaged out to zero, we just sat down and made a guess. Frequently, pure intuition saved us. And "us" is really a very small group: primarily Dana Gaskin and myself, with long distance help from the other editors and with occasional assistance from those noted under SPECIAL CREDITS on this page.

After we finally delivered the first issue to the post office, we sat back and waited for the mail. Nothing happened for quite a while. Bulk mail is slow. Some people got their copy in 4 days, some after 4 weeks! How do you develop clout with the Post Office? How come my copy of InfoWorld is always on time and yet my copy of MOR took 3 weeks to travel less than 5 miles?

Finally the mail came. Thirty, fifty, ninety pieces a day. At first this was exciting, but soon it became a bit frightening. Do all those people expect to be answered? The M.O.R. "office" is only two people strong. Help!

This gave us a glimpse of the feelings of many people at Morrow who are besieged by heaps of mail. They often tell me how bad they feel about those unanswered letters. But, because we are not Morrow, but end-users like you, we may have a better chance to cope with the situation. We do not have to worry about the competition, the production problems and parts suppliers the way Morrow does. This gives us the breathing space to work out creative schemes for maintaining the flow of communication. Watch us pull it off. (I keep my fingers crossed...)

In the last few weeks we received over a thousand pieces of mail, 600 returned survey forms among them. In the August issue, we intend to report the interesting findings of this survey. From a first glance, it is clear that your tastes range over a wide area. Hackers are eager for more



technical stuff; beginners want more basic material; many desire news from the factory; some worry about why Morrow does not advertise more; nearly everybody wants lots of display ads in MOR.

We have learned that, while most of you thought it was a great first issue and rated MOR 8 on a scale of 10, hardly any of you wants to be "active" in it, and, so far, nobody wants to be "very active". Most of you did say you are willing to pay around \$15 per year for a monthly and \$10 for a bi-monthly, but some are willing to pay \$25 or more. Most of you are not involved in a Morrow users group, but some have joined FOG (First Osborne users Group) or a Kaypro users group. Nearly all of you identified yourselves.

The next big heap of mail contained requests to be put on the mailing list, requests for "all" back-issues and address changes. As you may remember, the Morrow warranty list is the basis of our mailing effort. From the incoming mail, club lists, and other such sources, we have compiled a separate "additional" list, now about 2,000 strong and growing fast. While the number of duplicates is down considerably now, some will still exist. Let us know if you receive more than one copy. Send in your labels marked "duplicate".

And then there were the letters, filled with questions, comments, complaints, proposals for articles, and, occasionally, humor. Some included completed articles on floppies.

We cannot answer all questions, of course, but we are developing a system whereby the questions are forwarded to a growing group of people who will try to answer them. It's a slow process and we are constantly thinking of how to improve the information flow.

Some of your letters are wonderfully rich in good ideas. We don't have space to share all of these, but you can find a sampling in LETTERS TO THE EDITOR, starting at page 4.

We also received scores of phone calls, most of them recorded on our trusty answering machine. We cannot possibly answer all of them, but we do enter each call in a log and try to respond to the most crucial ones. When we ran low on cash we

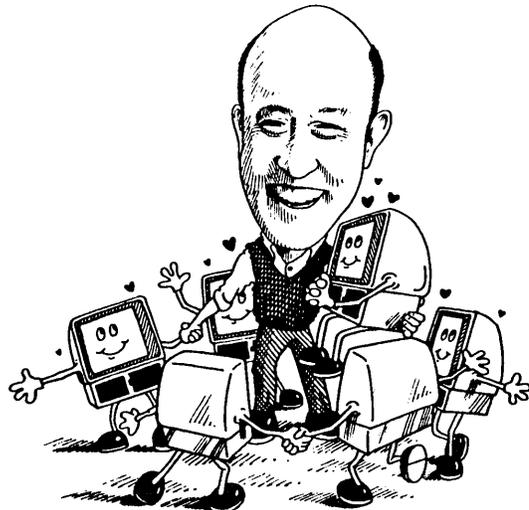
decided we could only respond by calling collect. Surprise: All those calls were accepted!

Just when we were at our financial low point, the contributions began coming in. Our "Call for Contributions" on page 33 of the last issue started as a take-off on fundraising letters, meant mainly to entertain. Of course we held a slight hope that some would see the seriousness behind the humor. More than forty people either took us seriously or wanted to contribute anyway, just to make sure we would keep going. Thanks to all of you who sent checks and joined our growing roster of Stapler-members, T-square supporters and Pyramid-waxer donors! You'll get your gift acknowledgement yet, and a year's free subscription, when this publication begins to charge a yearly fee.

With the time between the mailing of the first issue of MOR and the deadline for the second so short, we expected to be faced with a dearth of written contributions. Not so! Again we received many more than we could possibly publish. Most of these, though worthy of publication, had to be put on file for a future issue. Some may never make it into print. We think these deserve a better fate. For instance, we received many articles on how to install WordStar for this or that printer. Your printer may be just the one mentioned in the article that, for space or technical reasons, we decided to file. Suppose we bundle these and other unsolicited articles together on a floppy and mail it, at cost, to whoever requests it?

Enjoy this issue. You'll notice the changes we have made, many based on your suggestions. We need your constant feedback. Even if you only get a form-letter response, or even if you don't hear from us at all (we can only do so much), rest assured that we read every letter at least once.

Already we are hard at work on the next issue. It is going to be better, of course. Especially when you are willing to be a part of it. We are all in this together.



LETTERS TO THE EDITOR

We are printing here excerpts from the astounding pile of letters to the editor we received. Editorial comments are between <angled brackets>.

COVER TO COVER

Dear Editor:

I should have spent the last several hours working, or sleeping, or doing homework, but instead I read (from cover to cover) the first issue of the Morrow Owners' Review that came in the mail today. It is now well past midnight, but I have to write this letter to thank you for publishing such a fine newsletter.

I have had my MD2 for exactly a year, and I have used it almost daily for schoolwork, working at home, and a myriad of other tasks. I have never regretted buying a MD2 over any other system. With the publishing of Morrow Owners' Review. I can see where I can become even more productive as we Morrow owners share our ideas with each other.

Rick Owen, Idaho Falls, ID

PASS IT ON TO THE BROTHERHOOD

Dear Editor:

I was delighted to receive my first copy of Morrow Owners' Review. It was a surprise on two counts--first, it was totally unexpected and second, the quality of the publication is very good indeed. It's good to know that one is not alone.

I have discovered a couple of software problems that should be passed on to the brotherhood. Two programs that will not run on the MD11 are SmartKey II and Uniform. According to its manual, SmartKey II can be installed for CP/M 3.0 using the gencom utility. Perhaps on some other computer, but not on the MD11. All attempts to install and run this program led to a system lockup. The version of Uniform I tried to use was the MD2/MD3 version. It also locks up the system when run. It appears that CP/M 3.0 is not as compatible as we had been led to believe. In any event, I am left staring at a flock of useless function keys on my keyboard and a treasure of unusable data files on floppies, left over from my last computer.

Wallace S. High, Pasadena, CA

<True, Uniform won't run on the MD11. Have you contacted MicroSolutions about that? Another inter-machine file-transfer program is 'MultiForm' by Computer Review. It is known to work on a MD11. See their ad in next issue.>

MORE ADVERTISING?

Dear Editor:

You have gone to considerable effort to turn out a well-done newsletter, and a response to your survey calls for a little more detail than the form permits.

On Advertising: Almost any ratio would be acceptable. The reason for reading publications is finding out what is available for your system. Those of us who pore through the newspaper in futile search of software for anything other than Apples and IBMs find it encouraging to know there are programs for the Morrow. The more ads, the better; just make sure they apply to the Morrow system, and don't displace all the articles.

David Bowen, Monrovia, CA

DOCUMENTATION INCOMPREHENSIBLE TO BEGINNERS

Dear Editor:

Your first newsletter was interesting -- even though I haven't learned to use any portion of my computer in the six months I've owned it. The instructions are very poorly written for a beginner like me to understand.

I suppose after my disgust settles, I'll be smart enough to contact the customer service department of Morrow as well as the Better Business Bureau and the small claims court in San Antonio and other places complaints may be made.

Roy Walters, San Antonio, TX

<Your points about the documentation are well taken. But, come on, Roy, don't give up so soon! Join a users group and learn how to enjoy your machine. Write Clarence Heier for help. There is already a users group in Fort Worth. Get in touch! A mere 250 miles won't daunt a Texan, will it?>

FOR AN INDEPENDENT INTERNATIONAL MORROW REVIEW

Editor:

I have just recently joined the group of Morrow Owners. To date I have been completely satisfied with both of the Morrows used. The first was a rented MD-3 while my MD-11 was on back-order. My dealer gave me the MORROW OWNERS' REVIEW today and these comments are being made as I work my way through the newsletter.

1. A suggestion: this national newsletter should be INTERNATIONAL.
2. MORROW REVIEW is snappier than Morrow

Owners' review, and besides it is the Morrow which is being reviewed.

3. Charge a subscription fee. That is the only way that you can be truly independent, by being self supporting. Also, with the monies received you can pay professional staff, pay for articles submitted, and generally convince the world at large that this is a serious endeavor.

George Harris, Ontario, Canada

SEEN IT ALREADY IN BAMDUA

Dear Editor:

I was delighted to receive my first copy of the MORROW OWNERS' REVIEW a few days ago.

Despite my pleasure my pleasure on seeing the reality of this new publication, I must confess to being a bit disappointed by the first issue. Three specific points lead me to make this confession:

1. 25% of the total publication was reprinted from the BAMDUA newsletter. As a BAMDUA member I had already seen it.

2. Some of the non-BAMDUA material seemed to have been printed simply because it was available; there was little if any useful information in several of the articles.

3. I had expected something more in keeping with the design and editorial standards established by the Morrow-produced literature received with my Morrow machines.

Harry Lewenstein, Palo Alto, CA

<The 700 BAMDUA members are a tiny minority of the current estimated readership of 18,000. Should we deprive the non-Bamdians of some good stuff? Quality will always vary and so will taste. As for a first issue, you have to start somewhere. In this and future issues you will see a significantly higher percentage of original material.>

MORE THOUGHTS ON THE FIRST ISSUE

Dear Editor:

I'd like to share with you some thoughts on the first issue of the MORROW OWNERS' REVIEW.

First, I think it is a great idea - so don't take my comments to be discouraging. However, ringing praise will not improve the product, while some (listened to) complaints might.

I have a general concern, and this applies to the BAMDUA newsletter too, that "hackers are in and users are out." To set a baseline, I am a manager in a high-technology industry (with a degree in engineering), I read a lot on computers and software (subscribing to several of the popular magazines), and use computers a little in my work. However, I find much of the really helpful sounding material in the M.O.R. (and the BAMDUA newsletter) to be fairly cryptic. I'd very much like to take advantage of it, but it is

either incomplete (to me anyway) or written in "code" that presupposes a good deal of knowledge about the inner workings of operating systems or details not familiar to people who just want their computers to be well behaved tools.

The cover cartoon is most appropriate - as an "A.I.D.S. orphan" I find it particularly hard to get plugged in on information I need to make better use of my MD - newsletters seem to hold out the best and most efficient hope. <AIDS was a San Francisco computer store that went out of business 9 months ago. Ed.>

The Editorial asks what I want from the (or any) newsletter. Since Morrow is not on the tip of every computer writer's pen, a newsletter needs to provide the reviews and advice specific to Morrow that one finds in the popular press in the IBMs, Apples, and other more common units.

I really think the idea of a Morrow newsletter is a good one - but wonder if this and good local newsletters can coexist - particularly if there needs to be a charge for both. Maybe the M.O.R. should be the basic Morrow newsletter (sent out to all users groups via MODEM) and the local groups should append the local information, meeting notes, items of interest, etc. to it before printing and mailing. Then it could serve both needs without the duplication evident in this first issue.

Thanks for all your hard work in getting the M.O.R. started. I hope you can look at these as constructive thoughts and not as just complaints of a non-participant.

Morley S. Farquar, San Francisco, CA

FLOPPY DRIVE HEADS DON'T FLY

Dear Editor:

Thank you very much for your first issue of the 'Review' - it was great and I appreciate the effort that a lot of people must be expending free to get it out.

The article about 'sleepy' drives was not quite accurate. A floppy head is not considered as a 'flying' head - it is contact recording ... it does contact more than it flies. I think the surface velocity on a floppy is much too low to support a reliable 'flying' head. I suspect the real problem is the newer direct drive spindle motors, which are marginal in starting torque, to say the least. A real fix would be to have the supplier provide better motors, but of course that doesn't help the drives already shipped. I don't know if the drives in question have a dropping resistor in series with the motor, but if they do that would be the place to attack. The problem may be aggravated by the 'Joe' block effect you described, but I think it is basically only caused by the difference in 'static' and 'dynamic' friction and low torque motors.

David L. Stoddard, Newbury Park, CA

<I stand corrected. You are quite right. The slow rotational speed of floppies (300 rpm) does not allow for real flight. My flying story would have fit the MD11 hard-disk better, but luckily the torque of its drive motor is sufficient.>

ALL QUIET ON THE MD3 FRONT?

... and benefit I did, especially from the article on how to quiet down the drives in my MD3. I have no idea what I did, but whatever I did sure made the machine a lot quieter ...

... I especially liked the article on 'Quieting Down Your Morrow'. This is the style of article I enjoy. Step by step instructions for doing something useful ...

... and the noisy drives drove my roommates crazy! Now they are quiet. Thanks so much for that article!

... after following the instructions in Brian Leyton's's article my drives are as noisy as ever. Did I do something wrong?

... I was lucky to see the newsletter on a colleague's desk. I borrowed it and have already put one article (on quieting your disk drives) to use. It was very effective ...

... Tried your recommendation for quieting the drives, but now they appear twice as loud as before! Would you please ask Brian Leyton to call me collect ...

<Enough, enough! We can hear your grinding drives from all over; or is it your teeth? Anyway, Dave Block hopes he'll have the last word. See his Q&A column in this issue.>

WONDERFUL USERS GROUP

Dear Editor:

Congratulations on the first issue of MOR! It looks like things are off to a swinging start.

Let me tell you how wonderful I have found people to be in our users group. The willingness to share expertise, resources, and support is just phenomenal!

It is ironic to think that the necessity for groups like this is all due to the fact that most of us have truly gotten more for our money than we could have imagined, yet, at the same time, have bitten off more than we can chew.

If we were able to utilize all the power of our systems as easily as we, say, run a washing machine, or even a car, there really wouldn't be this need. But since that obviously isn't the

case, thank God we do have some way to reach out and "share the wealth" in such a positive, rewarding way.

I just want you to know that I think all the hard work you and the others, who have created BAMDUA and M.O.R., is really appreciated. Keep up the outstandingly good work! I look forward to tapping into your expertise, and help to keep the energy flowing!

Susan Miller, Mill Valley, CA

ENDEARINGLY AMATEURISH

Dear editor:

Ever since my son bought a Radio Shack computer years ago, our home has been inundated by his bulk mail. Last month I gathered my resolve, put aside my 1958 Voss portable and finally purchased a Morrow MD3. Each day I eagerly searched through the mail for some recognition from the outside world that I, too, had entered The Computer Age. Finally, your newsletter arrived! Hallelujah!

Tell Mr. George Morrow that any money he is contributing toward your publication is money well spent. In this part of the world Morrow is rarely advertised and scarcely known. I was beginning to wonder if the company really existed. Now I feel reassured, as though I have established communication with the little green folk on Mars.

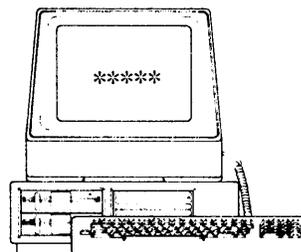
There is something very endearingly amateurish and wry about your newsletter. I can actually understand entire articles, which never happens when I plow through BYTE. Of particular interest is any news about the Morrow company, comparative prices, others' trials and tribulations, software critiques...in short, just about everything!

I also like the idea of Users Groups. Very novel. But what do we say to one another face to face? I thought computer users had no close encounters, but tapped out anonymous messages to one another over their modems late at night...like communicating with distant stars.

In any case, new horizons lure me onward. My Morrow patiently communicates with me by the hour, so who could imagine ever being lonely--or bored--ever again? My personal stock is rising, too, or do I just imagine a new gleam of respect in my husband's eyes?

Looking forward to your next issue. Already fond of you,

Marilyn Umehara, Mt. Vernon, NY



Put your crayons away!

You've grown up, isn't it time your company did too?

Nobody said business was child's play. Add a professional, grown up look to your reports with GRAFIKS 2.0 by Robonics. Suddenly, it's a snap to create bar charts, line graphs, scatter plots and pie charts. You can even plot math functions with ease. And at only \$125, GRAFIKS 2.0 may just be the friendliest software package you'll ever own!

Labeling your graph is easy: move the cursor on the screen and type in characters or graphic symbols. GRAFIKS 2.0 reads data from SUPERCALC, dBASE II, MBASIC, CBASIC and WORDSTAR files. After you proof a graph on the screen, print it for posterity, quickly and easily.

Amazing Flexibility!

- You can vary the size and location of pie charts, while selecting and exploding important slices.
- Bars can be clustered into logical groups, or spaced evenly across the page.
- Up to six different variables can be stacked onto every bar, each shaded in a different pattern.
- Plot mathematical functions by just typing in a formula.
- Plot separate points for a scatterplot, or automatically connect the points for a line drawing.
- Overlay an unlimited number of graphs to form composite charts.
- Very high resolution — 600 x 640 on an Epson 100, higher on some other printers.

Professional, Down-to-Earth Business Features!

- Bar graphs, pie charts, line graphs, scatter plots, math functions, freeform labeling, superimposed graphs, autoscaling.
- Interfaces to SUPERCALC, dBASE II, MBASIC, CBASIC, WORDSTAR, LOGICALC, PERFECT CALC, PERFECT FILER, PERSONAL PEARL.
- Supports many different dot matrix printers, including Epson, NEC, C.Itoh, Okidata and IDS.
- Extremely friendly screen-oriented menus, which allow you to back up and correct mistakes at any time.
- Interactively create, view and edit charts on the screen before printing.
- Automatically saves graphs on disk for later use or update.



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(213) 316-7740

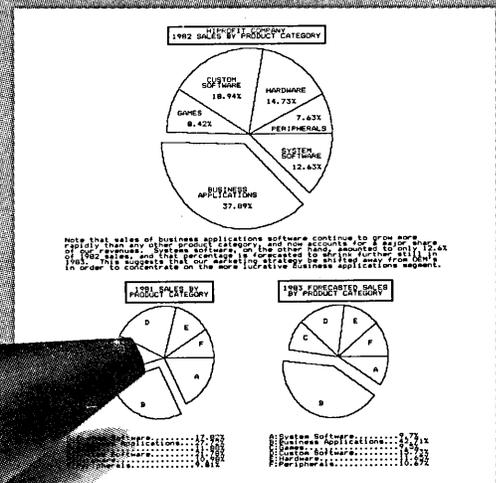
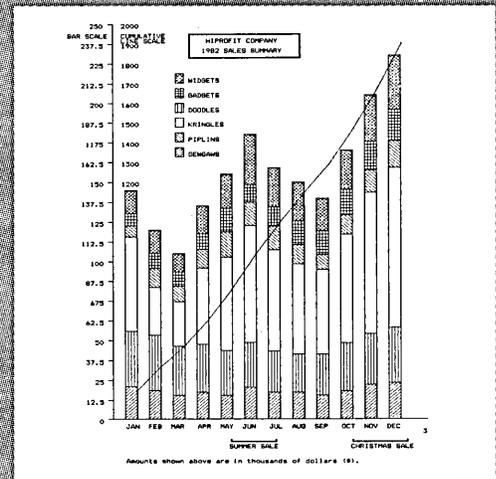
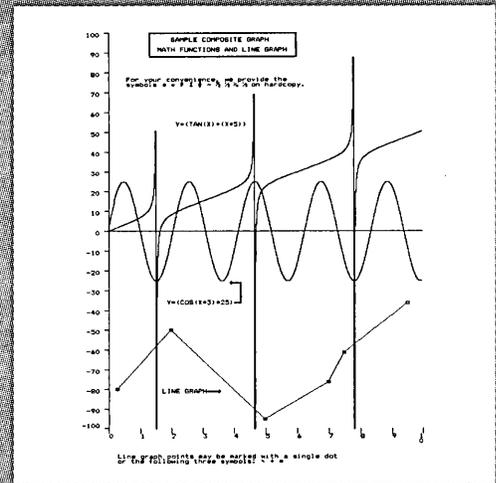
Dealer inquiries invited. Contact your local dealer for a free demonstration!
 Or complete and return this coupon to receive GRAFIKS 2.0 by mail.

Yes! I want to see the whole picture!

Please send me the complete GRAFIKS 2.0 package. I have enclosed a check or money order for \$125 (CA residents add 6.5% tax). Foreign orders add \$10.

- Osborne 1: Single density Osborne Executive Morrow
 Double density Kaypro

Name _____
 Address _____
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Osborne 1 is a trademark of Osborne Computer Corporation, CBASIC is a registered trademark of Compiler Systems, SUPERCALC is a registered trademark of Sorcim Corporation. MBASIC is a registered trademark of Microsoft. WORDSTAR is a registered trademark of MicroPro International Corporation. KAYPRO is a trademark of Non-Linear Systems. MORROW is a trademark of Morrow Designs, Inc. PERSONAL PEARL is a registered trademark of Pearlsort. LOGICALC is a registered trademark of Software Products International. PERFECT CALC and PERFECT FILER are registered trademarks of Perfect Software. GRAFIKS created by Todd Hammond.

GRAFIKS 2.0

Part of the business express series from Robonics

Lawyers Accountants Professionals

You're all beset with the same problem. How to keep track of multiple billable hours, variable item charges, and complex scheduling without spending all the office hours at the task.

The solution: The Office Express — part of the Business Express series from Robonics. It's a sweet little software system that nimbly waltzes through all those tedious and time-consuming tasks.

With individual programs designed for your professional needs, it calculates client charges, accumulates supplier costs, totals and makes up statements, tracks payments, receivables, account status and more. Then provides a wide variety of reports for quick review.



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YES! I'm interested in the Office Express.

- Please send me information
 Please send the demo for \$60.
 Please send me the Office Express. I enclose \$395.

(California residents add 6.5% tax).
Foreign orders add \$10.00

- Legal CPA Professional

NAME _____
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In addition, the Office Express scheduling function sorts and catalogs attorneys' dockets, client appointments, and other dated obligations, keeping you up to date at the touch of a key.

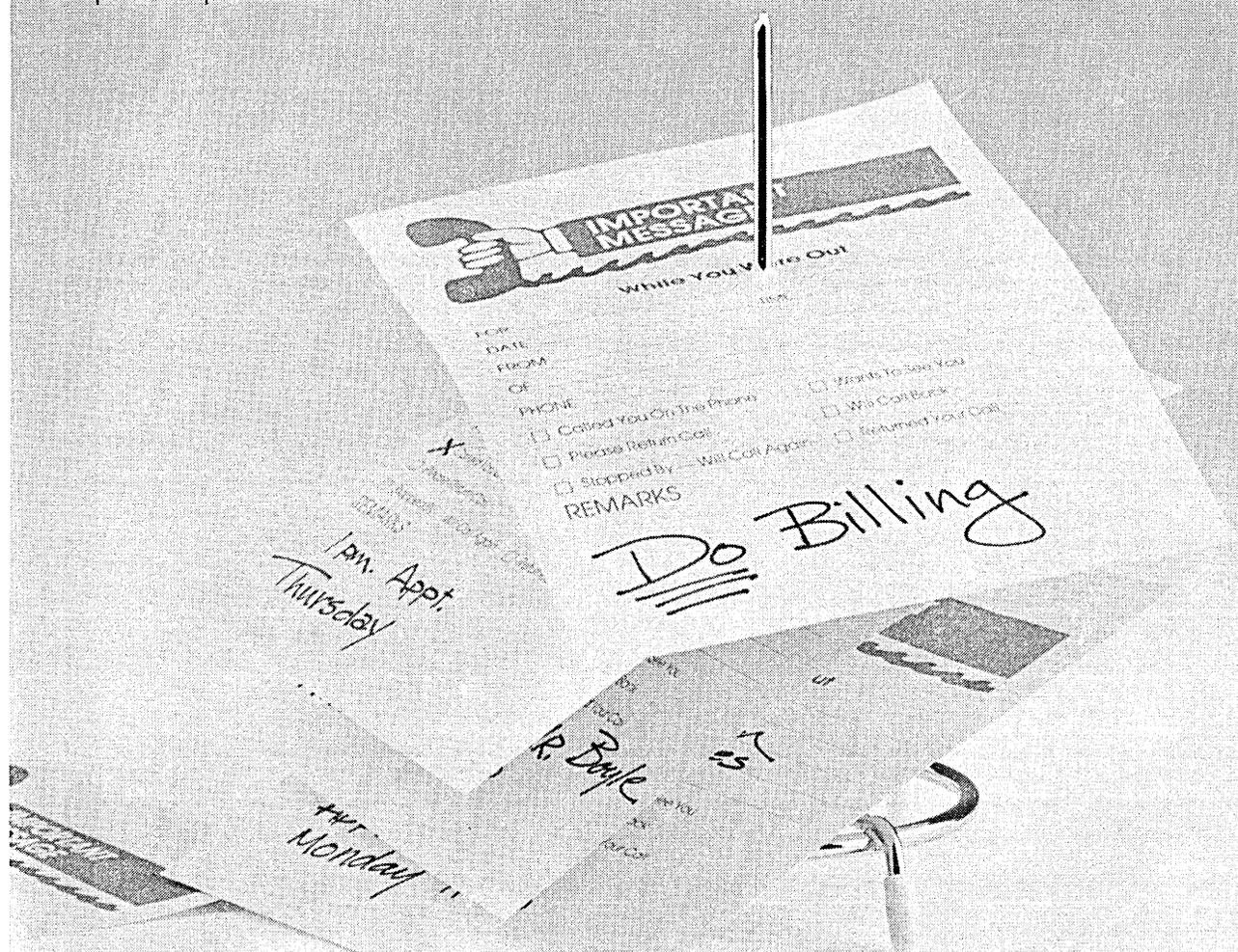
Best of all, The Office Express is easy to use. Clear, on-screen menus walk you through the procedures. An extensive manual in plain English helps anyone learn the system in minimum time.

Demo it! Send us \$60 and we'll send you the manual and a demo floppy. You can find out for yourself just what this program is capable of doing. If you like it, the \$60 goes toward the purchase. If not, return it for a full refund.

Try the Office Express today. At your local dealer's or by mail.

Dealer inquiries invited.

Get Organized!



OFFICE EXPRESS

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Consider: you're the owner of a small business, needing comprehensive computer accounting to manage for growth. But you're wary of spending big dollars demanded by the heavy hitters now on the market.

Relax. Salvation is at hand.

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The Accounting Express has everything the big boys have: General Ledger, Accounts Receivable and Payable, Inventory Management, Payroll...all the fancy stuff. Eight integrated menu-driven modules that handle accounting



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Yes! I'm interested in the Accounting Express.

- Please send more information.
- Please send the demo. I enclose \$60.00.
- Please send me the programs indicated.

I enclose a check for \$ _____
 (California residents add 6.5% tax).
 Foreign orders add \$10.00.

- | | |
|--|---|
| <input type="checkbox"/> General Ledger | <input type="checkbox"/> Accounts Payable |
| <input type="checkbox"/> Inventory Mgmt. | <input type="checkbox"/> Purchase Order Journal |
| <input type="checkbox"/> Payroll | <input type="checkbox"/> Order Entry Journal |
| <input type="checkbox"/> Accounts Receivable | <input type="checkbox"/> Point of Purchase |

Individual Modules: **\$99.95** each

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 STATE _____
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complexities with ridiculous ease. That come with comprehensive documentation. In English. So you get your system up and running in a jiffy.

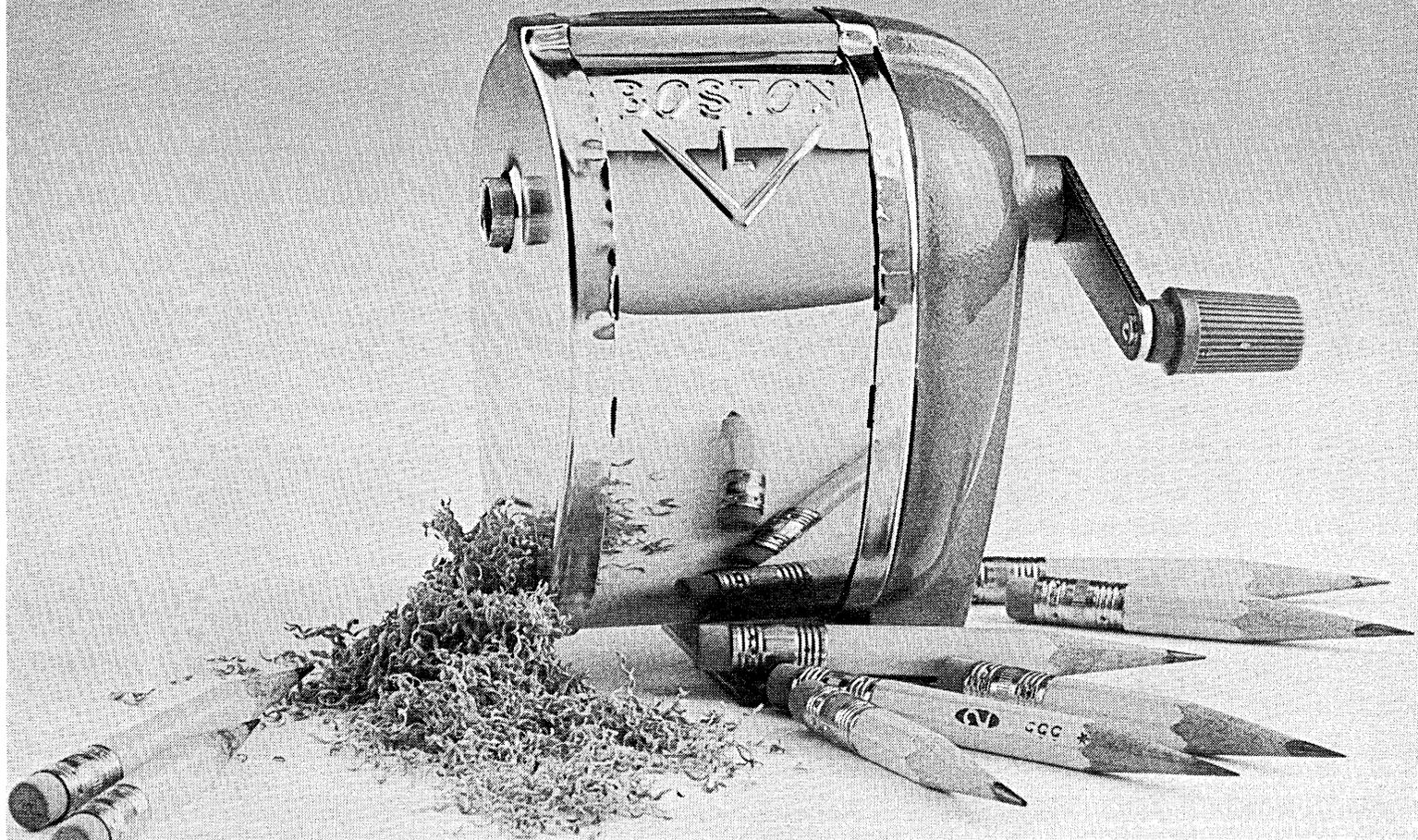
Difference is, the price. At \$99.95 a module, it's well within reason. A complete accounting system is less than \$800.00.

Try it out. For just \$60.00 you get a complete set of manuals and demo disks to see for yourself how good the system is. If you're sold, the \$60.00 goes towards your purchase. If not, return it for a full refund.

Try The Accounting Express today. Now at your dealer's or by mail.

Dealer inquiries invited.

Sharpen Your Act!



ACCOUNTING EXPRESS

Part of the business express series from Robonics

AT THE FORUM

by Peter Campbell

(On a recent monthly meeting BAMDUA invited five Morrow dealers and two representatives from Morrow to a panel discussion with the BAMDUA membership. The result was a most lively and informative evening where we dealt with how we communicate. A crucial issue as we all know. Peter Campbell is a BAMDUA member with good ears and sharp eyes as the following article shows).

Tuesday evening, April 24: Morrow Forum Night at the Lawrence Berkeley Lab.

Representatives from "The Factory," Dealers, and Users were pitted against each other like so many lions and gladiators. As everyone left the meeting licking wounds, it was clear that everyone was a victor.

On Morrow's team were President Bob Dilworth and Director of Engineering Howard Fullmer. The Dealers' team consisted of Norm Smith from Micro Age (Pleasant Hill), Gerald Wright from Digital Deli (Mountain View), Suzanne Musick from Berkeley Computer (Berkeley), Barry Bruch from World Business Center (Los Altos), and Larry Van Valkenberg from Sunset Computers (San Francisco). The Users' team outnumbered the other two, as might be expected.

The opening blows were delivered by the Dealers. Suzanne spoke of the responsibilities of the three teams. The manufacturer is responsible for a good product, good documentation, and good support. The dealer is responsible for knowing the product, giving after-sales training, and providing adequate service facilities. The user is responsible for taking the time to learn the system, allowing enough time to learn a project, and trying to solve a problem from the manual, or the user group, before calling for help. Larry spoke of the difficulty of the dealer trying to be an expert on 3-6 lines of computers.

Norm supports the user groups, and encourages us to use them extensively. He discourages the perception that, because Morrow is the least expensive line they carry, the dealer will not give support. He also wants to discourage the Morrow owner who takes three days of Staff time to develop a Personal Pearl accounting system. The owner who tries to work out a problem first is the one who is easiest to help. Gerald is concerned that dealers cannot afford to carry the less expensive lines because the users' expectations for support are often greater than the profit margin on those units.

Addressing the factory point of view, Bob Dilworth reminded us of the extreme youth of the industry. Everyone is trying to learn how to be

profitable. If a company is not profitable, it will not be around long, e.g., Osborne. The consumer is better off buying from a healthy company, be it dealer or factory. Many companies, even some of the "biggies" are not yet sure just what healthy is. It is clear what costs of production and marketing are, but it is not clear what after-sale support costs.

Then it was the Users' turn! The first blow was dealt to documentation -- particularly, how difficult it is to understand. Although other issues dealing with communication and support problems surfaced, the issue of "bad" documentation was the users' main weapon. They kept up the assault for nearly an hour.

Morrow, reeling from the attack, defended its position with a shield of valid points. Most documentation is written by the software publisher, not Morrow. This is probably not the best way to do it, but economics dictate this procedure. To re-write all documentation would be very expensive. The NewWord manual actually was written by Morrow, and it is a good one. But it cost \$20,000 to produce. The cost of re-writing all the manuals would be prohibitive, and would make it necessary to raise the price of the computer. Morrow is probably the best buy in today's market. We should not expect to pay \$2,000 for a computer and then get \$3,000 of hand holding.

A theme of the attack was that it is difficult for a new user to get started. Support organizations, such as phone support for a fee, and BAMDUA have sprung up to help with the situation. But the fact remains that the documentation is not written with the beginner in mind.

Morrow is trying many new approaches to improve their support, but there is a lot to learn. Dave Block's Q. & A. book is an attempt to deal with the many questions users have. Morrow is also experimenting with the hiring of U.C. students to work with user problems. Recently they hired a disabled person, and may make his expertise available by telephone at some point in the future. The company would probably have to charge for this service.

The main problem of after sale support is cost--there just is not enough profit in a Morrow to pay for much support. Stores like ComputerLand that don't carry Morrow also don't carry other computers that have bundled software. They want their customers to buy all needed software from them, because that is where a lot of their profit is.

Upgrades for our machines were mentioned briefly, but this does not seem to be a large

issue right now. Several upgrade kits are available, but of the five dealers present, only one had received an order for one. They had all received many inquiries. The best way to provide for future upgrading is to choose software wisely. A WordStar file, for example, is just as usable in another operating system.

The outcome of the evening's discussion seems to be that most of us bought a Morrow because we thought it was a good deal. Morrow wants to continue to keep its computers reasonably priced,

and obviously the dealers want to continue to carry the Morrow line. We all have to reach a compromise on cost, dealer service, factory support, and user expectations. Lets hope the battleground doesn't end up like the great Colosseum in Rome -- a reminder of past history rather than a scene of action!

This article first appeared in the BAMDUA newsletter of May 1984.

A CHAT WITH GEORGE

by Richard Anderson

On April 4th a group of Bamduans got to tour Morrow's San Leandro factory and check out how they put our computers together. Jeff Weisman and I also interviewed the man himself, right in his rather free-form office which he shares with his wife. His desk was fully occupied by stacks of papers and an artfully balanced Leaning Tower of circuit boards. He was dressed casually, down to his tennis shoes, and he put us right at ease with his jokes.

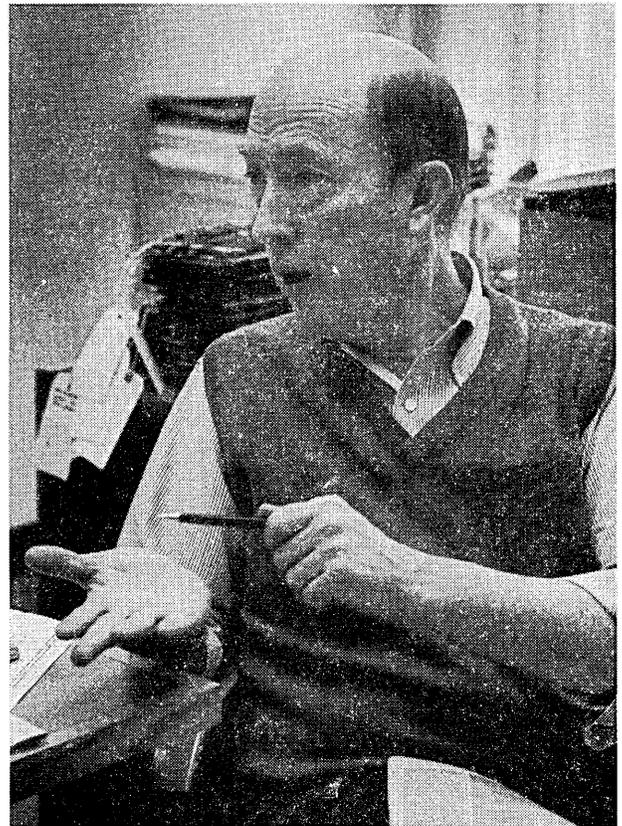
We learned some of the real inside stuff. "Everybody gets to holler around here. A month or so ago Howard Fullmer wandered into Dilworth's office and said, 'By golly, I made it until Wednesday before I hollered at George this week.' And Dilworth asked, 'But was George in Monday or Tuesday?'"

On the other hand, George is dead serious about making cost-effective machines.

"It's an emotional matter. You know, I didn't realize how much of a Scotsman I was until I made a visit to Scotland about a year ago, looking for investors. I never thought of myself as being anything but a mongrel American with a strange attitude toward spending money. For instance, I'm a record collector. I'll spend money for records that people will think, 'Why in God's name do you ever pay that much for a record?' But when I am crafting a product I'm just insane about getting the last dollar out of a design. I thought it was just some quirk of nature until I got to Scotland. I felt so at home. I spoke exactly the same language, with a different accent." By the way, he came away with Scottish investors.

Here's a sampling of his remarks, with me as straightman.

How long do you think your customers are going to find their main needs served by an eight-bit machine?



GEORGE If you look at products that go out the door the number one use is word processing and there's no difference in performance between an eight-bit and a sixteen-bit environment because it's heavily dependent on the diskette and the drive. The disk drive doesn't run any faster in a sixteen-bit environment than in an eight-bit environment. There's constant thrashing on the

disk, constant reading and writing on the disk. If word processing is what you are going to use your machine for, dollars spent on a sixteen-bit machine are completely wasted. The same is true for database management. Matter of fact, for anything that uses the disk a lot you're not going to see much difference in performance. One area that the eight-bit does not address itself well to is the spreadsheet. That has nothing to do with processing speed or power. It has to do with the address space,

Which gives 64K period because it's two bytes?

GEORGE That's right. As long as spreadsheets stay memory-resident any system that has a greater address space will give you greater performance.

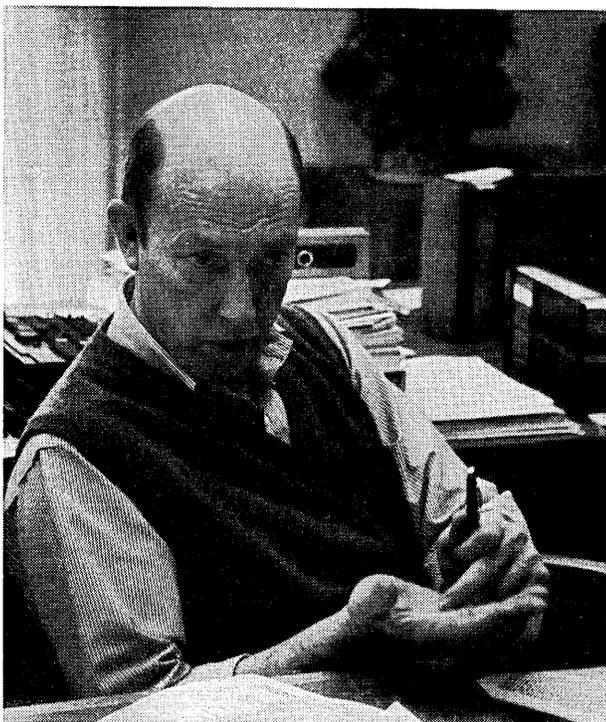
Are the kneetop computers going to take over?

GEORGE No. There's going to be a real significant place for those things, but I don't think they're going to take over. I think a person's going to want to have one of those things and one at home. Look at the stereo market. They love to have a second stereo. At the slightest excuse they'll buy a second stereo. Well, I think they'll go out and buy a second computer just the same. The true portable will be very popular. It's going to be the very next fad. Don't ask me what the one after that's going to be.

Will disk drives appear on them?

GEORGE Oh, absolutely.

And they'll still fit in a briefcase?



GEORGE I don't know if it'll fit in your briefcase, but it will be no more bulky than your briefcase. If a portable computer is crafted well I'm not sure that you need as big a briefcase. You may be able to put most of what you carry, in the pouch you carry the portable in. I don't think that Gavilan fits in your briefcase. The things from Radio Shack do, but they're not portable computers. They're kind of a ...

Terminal?

GEORGE Yeah. I think bulk storage and common software with the machine is a very important necessity. A high resolution screen which closely approximates a video screen is also important. We're not there yet, but we're reasonably close.

Why is that black amber screen on your portable so wide?

GEORGE It's wide for two reasons. If you look at the aspect ratio of a normal computer screen you'll find the dot density is a lot less one direction than another and the cursor looks tall and thin. If you look at the cursor on the black amber you see that it's almost square. (George scribbles some calculations to demonstrate his point.) The characters are just as readable. So from a character resolution point of view our screen has almost the same resolution as a twelve inch diagonal screen. The resolution of that screen is almost the same as the IBM PC monochrome monitor. (More scribbling.)

Your ability to perceive dot density is going to be limited by the densest coordinate and the dot density at 5x9 and 12" diagonal are almost the same. Our screen is wider than Kaypro. It's not as high but it's wider and the dot density is much more uniform in that screen than in most other screens. By the way one of the reasons the Macintosh looks so nice is the dot density is uniform. The density in the Macintosh is not quite as good as in the IBM monochrome, but it is better than in the IBM color screen.

So the reasons for the the 5x9 are that the dot density is much more uniform. It allows us to make a product that is much slimmer than it would have been otherwise. Also it does kind of piggyback on one of HP's products and typically one finds that HP did a lot of home work about the ergonomics, the appearance and the appeal from a user point of view. HP picked this. We were influenced by that and we saw why they did it.

It also allowed us to make a product that had greater aesthetics, and it was a bit different without being too different or requiring us to do a new ROM. It's nice to differentiate yourself as long as you don't shoot yourself in the foot while you're doing it, like Dot. You ever heard of Dot? They had a nice product but they had a three-and-a-half inch drive and they didn't have any push at all to get software on it. They were different all right, but they were so different they lost a foot. I think they lost a whole leg.

THE COM FILE

[This is a new column by Ed Niehaus, Director of Marketing Communications, Morrow. As his title suggests, he is very interested in developing and maintaining good communications with end-users and dealers. Especially in the Bay Area he is a well known Morrow personality with the Morrow user groups. He has done a lot to build fine relations with BAMDUA and the MORROW OWNERS' REVIEW. Editor]

It was an interesting experience: my first computerized meeting. A Morrow user group meets on Fridays at 7:00 California time on CompuServe. I just sipped my drink and watched at first. It takes a little getting used to...you type in your one line remark and it appears along with your name on everyone's screen. A rhythm of sorts develops so you're not interrupting one another too much. Our conversation (if that's the word for it) ranged from technology to comedy. I had just gotten the hang of it when my free introductory hour of CompuServe time ran out. (Type "go pcs-47" to reach the CP-MIG, V.2C(7).)

When Sypko asked me to do this column, we decided to make it about COMMUNICATION. As shown by the CompuServe thing, communication can take many forms. I'd like the form of this column to be "two-way." Drop a line to my attention at the MORROW OWNERS' REVIEW.

Communication between Morrow and users.

Morrow is a small company, in the old-fashioned sense. Everyone knows everyone else. It's more than just a job, we all feel as if we're part of something worthwhile. A computer is a tool, a "lever" for your mind. Inexpensive access to this tool is what Morrow means to us.

We've learned a lot about YOU from the over 2500 who completed our survey. You are well educated (52% have been to grad school). Nearly all of you paid for your computer with your own money. And you bought your computer primarily for work, not for play.

You typically shopped around thoroughly before you bought, and most of you were influenced by friends or coworkers. After you bought, you discovered that your computer was one of the most important purchases of your life, and that you were using it in ways you never could have expected.

You were surprised to find that your computer was an imperfect tool. You discovered bugs in the software and gaps in the documentation and experienced events late at night that tempted you to throw your computer out the window.

Some of you found your dealer to be helpful. Others didn't. If you called us for help we put you on hold, and if a message was taken, we probably didn't call you back. If you wrote us a



letter, it probably wasn't answered. If you have found a source for help, chances are good that you found it at a Users' Group.

Why is this? Can't Morrow and the dealer be of more help?

Most computers don't come with free software. The computer you bought was probably the least expensive your dealer sells. Your dealer makes a relatively small profit on our low-priced, complete systems. Support time costs money. He resists spending more on support than his small profit on the sale, because to him making money simply means: not spending more than he takes in.

Then how about Morrow's supporting the user? When my head hits the pillow tonight I'll have this nightmare that something I've written in my column will send a third of you scrambling to your phones to call us. Those 10,000 calls would surely put us under. We are a small company, in a fiercely competitive business. We've always put more emphasis on engineering and production than on marketing, and our phone staff is very small.

We have around seven hundred dealers worldwide. They sell our products, provide support, and give us feedback. Our whole marketing program is designed around them. Any time a user gets through our phone labyrinth and talks to one of our support people, he is tying up a resource that is critical to our dealers' survival. We do our best to keep users away.

Does this mean we aren't interested in your problems? Of course not. We want to know about them. If it is economically feasible, we want to help. How? By correcting bugs. By making helpful information available to all our users. By fostering and supporting user groups. And by supporting our dealers. We can't help you one-on-one, but we can do it as a community. All of us.

Cartoons with neckties.

Now, about this cartoon of me. The necktie. People are easy to tell apart in this industry. We "marketing types" can be spotted before you see the whites of our eyes. Suits, especially dark blue or dark gray are the order of the day. Pin stripes. Neckties. No self-respecting programmer or computer engineer wears one. Except maybe at a trade show or job interview.

Salespeople in the computer industry come from diverse backgrounds. No one is surprised to see computer companies lure "marketeers" from companies like Pepsi and Phillip Morris; after all, isn't this the fast lane now?

Many take pride in the "objectivity" of not being computer enthusiasts. After all, isn't the computer just a tool, like a calculator, or a three martini lunch? Just a way to help us reach

our goals?

MD11 love at first try.

When I bought my MD11 four weeks ago, I looked at it that way. A tool. No big deal. Sure it would be convenient to have all my letters and my SuperCalc stuff available without shuffling through floppies. I've never been good with floppies anyhow; I always lose the little paper jacket.

But what's the big deal? I wondered.... Why is everybody so excited about this new computer?

Morrow has always believed that small computers should be menu-driven, and the MD11 is no exception. However, I found it to be from the "A>" prompt that the MD11 really shines. It's fast. Key SC return and before you can blink your eyes, you're in SuperCalc.

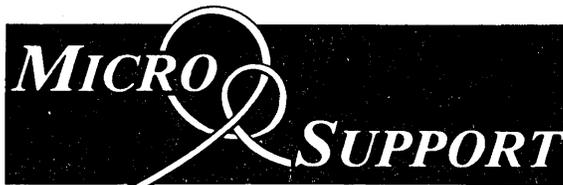
Best of all, you can edit the command line. My MD3 often didn't accept my PIP instructions because I accidentally hit the semi-colon instead of the colon. Well, my MD11 lets me bring the same line back again, move the cursor over and fix it.

Also, there are function keys. Programmable function keys. Well, yours truly, who never programmed anything in his life, programmed some function keys. It had crossed my mind, why not set up the keys to boot programs? Push one key and there's NewWord, push another key and there's Personal Pearl, push another and you're in Backfield or running your Basic program or whatever. All from "A>" prompt. The best of both worlds: one button access like the menus, but even faster.

Well, of course it began to get more elaborate. I started writing little SUBMIT routines and suddenly I realized I had been up 'til 4:00 in the morning. Three nights in a row. I was hooked. I never dreamed I'd be using my first "M.O.R." column to come out of the closet, but here goes: Mom, guess what...I'm a hacker....

Well, I still wear ties to work most days. However, I'm thinking of buying a plastic shirt pocket protector to hold all these new pens.

When you need help with your
Morrow
Systems and Software



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(8:30 a.m. - 4:30 p.m. PDT)

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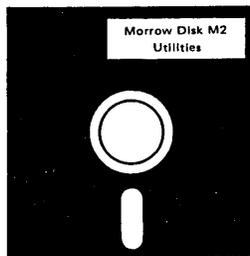


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Special for

Morrow Users Disks
\$12⁰⁰ each



Your Morrow

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

NEW!

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.
S.MODEM: This is MODEM7 setup for SMART-MODEM compatible modems. Handles autodial and autoanswer.
SQ/USQ: Programs to squeeze and unsqueeze files for faster transfer.

NEW!

Morrow Disk M2 Utilities

Really oodles of spiffy little (and big) programs to help you get full use of your KayPro.
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 is 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.
DUMPIX, DU-77, COMPARE, FORMFEED, DIR-DUMP, . . . and all have documentation on disk.

NEW!

Morrow Disk M3 Games

PACMAN.COM: Despite the KayPro'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.

NEW!

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.

NEW!

Morrow Disk M5 MX-80 Graphics

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

NEW!

Morrow Disk M6 Prowriter Graphics

This is a complete Prowriter 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.

NEW!

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.

NEW!

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.)

NEW!

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.

NEW!

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 KayPro. 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.

NEW!

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.

NEW!

Morrow Disk M12 Pascal Compiler

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NEW!

Morrow Disk M13 Z80 Tools

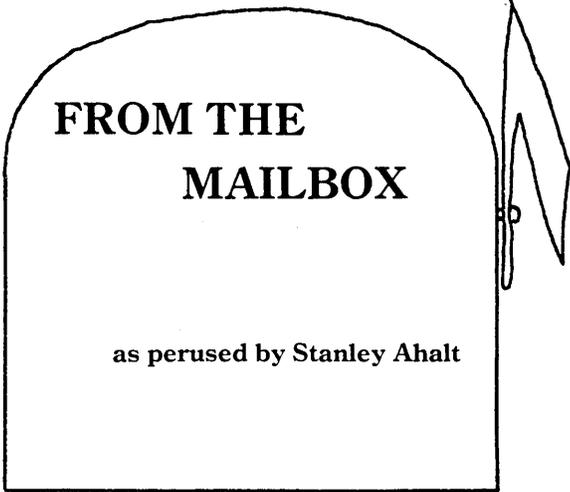
This is for those of you who are into Z80 assembly language.
XLATE.COM: A very good 8080 to Z80 translation routine.
DASM.COM: An easier to use version of ZZSOURCE (the Z80 disassembler). This full disk includes source and documentation for both routines.

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This column is designed to be used by YOU, the Morrow user, wherever you are located around the country. Send in your questions, comments, rumors, or complaints. Better yet, send in an article that we can include in the MOR. Every one of you has a unique perspective on the use of your computer, and you should share it with others who may have the same interests and aspirations. I will attempt to answer your questions, whether they are software or hardware related. When I can't answer the question, I try to find someone who can, or we just print the question so that some other clever user can solve your problem!

Rules of the game: NOTES are interesting tidbits of current general interest. RUMORS are just that; they have no basis in reality. I accept no responsibility for rumors.

NOTES:

Borland International is now offering Version 2 of its famous Turbo Pascal program. Major additions include overlays and windowing. You can upgrade from Version 1 for \$29.95. See the May, 1984, issue of MICROSYSTEMS for the advertisement.

Don't forget the Morrow conference every Friday night at 10 p.m. on CompuServe's CP/M CO.

Has anyone written a program which talks directly to the 8251 UARTs we have in our machines? It sure would be nice to be able to change number of stop bits, bits/word, parity, etc. I am going to write a program like this unless someone can save me the trouble!

I'm still working on my "BEST OF THE PUBLIC DOMAIN." Please send me the best PD programs you have used. I will promptly return your disks. When I am finished, I will be offering the programs, with all the documentation I can find, free of charge.

Micro Mike's offers a 16-Megabyte Winchester Hard Disk for the Micro-Decision. Price is \$1995. 806-372-3633.

RUMORS:

There should be a technical manual available available for the Micro Decision in 2 or 3 months.

Borland International will soon release packages for the C programming language and for Modula 2. Let's all keep our fingers crossed. If these efforts are anything like Turbo Pascal, the folks at Borland will have a gold mine on their hands. (Borland says: "Modula-2 should be out by Fall 1984." Editor).

The printer port on the Morrow 50 terminal will not send to a printer.

The BAZIC CRT install program fails, giving a "file error in line 550."

There have been some rumblings concerning the NewWord (NW) word processing package. A number of problems have been encountered. For instance, I recently sat down to answer an exam question using NW and found that NW was occasionally dropping letters during the word-wrap at the end of the line. This may be caused by the patch that I put in (see related article this issue) to handle the backspace. Others have encountered problems with the half-intensity mode of displaying blocks. To be fair, I understand that more recent versions of NW have corrected some of the problems, but that still leaves most of us with problems. If you have had problems using NW, please write in and let me know. If we can document our case well, I am sure that the nice folks who wrote NW will help us solve the problems.

```

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From Jim Fears, Montana

Jim wants to print LogiCalc Reports wider than 132 characters. (When asked about this Dave Block exclaimed: "Impossible!" So be it. Editor.) His Brother HR-1 is capable of printing up to 192 characters on a single line. Similarly, he wants to print reports wider than the screen (80 characters) when using Personal Pearl. Finally, he can't get WS's dot commands for variable line height, character pitch, or sub/superscripting to work with his printer. Come on, folks...let's solve these problems.

From MUG.1 (newsletter from the Morrow group in Minneapolis, MN):

If you want to write off your computer for tax purposes, it must be used in an income producing business. If you split the use between personal and business, keep a log so you can deduct the appropriate amount. For more information, obtain IRS Forms 4562 and 3468.

From Ralph Mathisen, University of South Carolina

Ralph needs to communicate with his school's mainframe, and hasn't been able to find programs which will help him do this. I know I sound like a broken record, but does anyone out there already know how to do this with an off-the-shelf package? My wizard programming friend, Geoff G., modified a copy of Teled for me so that I can communicate with the mainframe at Clemson University, but it is a pretty specialized fix. Surely there must be a PD or commercial program which can be used. I know this type of program exists for the Apple!

(Yes, there is! There exists a program pair named KERMIT and MKERMIT. KERMIT runs on your Morrow (and many other Z80 based machines) and MKERMIT is its big brother running on the mainframe. Was developed by Columbia University. Is used a lot by BAMDUA members who are Univ. of California students or staff. We hope there will be an article on this next issue. Editor).

From Robert Seals, Tennessee

Robert is dying to get his IDS Model 480 to perform like it should. How does one get WS to do things like microjustification? He also has problems with Logicalc, in particular with the @ function and LCDump. I can't answer these questions, so here is your chance to show me up!

(See DAVID'S Q & A COLUMN this issue about the Logicalc problem. On microjustification: There is a very informative book available for about \$25 from "Writing Consultants", 11 Creek Bend Drive, Fairport, NY 14450, 800-828-6293. It is called

PROPORTIONAL SPACING ON WORDSTAR. It also shows how you can get two or more fully justified columns on a page, how to underline spaces between underlined words. Works on all versions of WordStar and will drive Diablo, Xerox, Qume, NEC and other daisywheel printers. Go for it! Editor).

One More Time:

I've been using my drives for about 18 months, with no problems. Don't I need to clean them? How? I know there must be a head-cleaning pro out there somewhere. (OH, COME ON!)

I want to thank all of you who have sent me letters. Without you, this column would be even more boring (if that is possible). For those of you who haven't written...MAY YOU DROP A BIT IN A 1-MBYTE FILE!!!!

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	John Robert Hollingsworth				123 45 6789	
	Present home address (Number and street, including apartment number, or rural route)				Spouse's social security number	
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City, town or post office, State, and ZIP code			Your occupation	Engineer		
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Presidential Election Campaign	Do you want \$1 to go to this fund?		Yes	<input checked="" type="checkbox"/>	No	Note: Checking "Yes" will not increase your tax or reduce your refund.
	If joint return, does your spouse want \$1 to go to this fund?		Yes	<input checked="" type="checkbox"/>	No	

540		CALIFORNIA Resident Individual Income Tax		1983
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Your first name and initial (if joint return, also give spouse's name and initial)		Last name		Your social security number
John Robert Hollingsworth				123 45 6789
Present home address (Number and street, including apartment number, or rural route)				Your occupation
15135 Sunset Blvd.				Engineer
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We are now offering a demo tax program for \$25 that includes federal tax forms 1040, A, B, and W, and California tax forms 540, A, and B. This is the same program that we just used to enter over 400 taxforms. Use the demo program to check your tax return from this year. Have the program recalculate taxes with various amounts of IRA payments to see the effect on tax due. If you have filed an extension use the program to do your tax return.

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CONCURRENT EDITING AND PRINTING WITH WORDSTAR

by Steve Torrence

(The following article applies to MD11 or to MD3 with Rev. 2 board. To find out if you have an Rev. 2 board, boot your MD3 and watch it tell you what ROM Revision it has (2.3, 2.5 and so on). It is assumed that you have some understanding of communication protocols (XON/XOFF) and I/O port addresses. The article is written so that even novices can try this WordStar modification, but please do it on a BACKUP copy of your WS working diskette, just to be sure).

To be able to edit one file while printing another can save tremendous amounts of time. WordStar allows concurrent printing and editing of different files as long as both are simultaneously available on one or another of your disk drives. When I first used this feature of WordStar on our MD3 and Morrow MP200 printer, I was horrified to find that, for about two-thirds of the time taken to print every page, no key I pressed had any effect whatever. The computer simply stopped listening! According to the WordStar manual, the problem lay neither in the computer nor in the printer, but rather in the way they were talking to one another. Our dealer had originally, and at the time mercifully, told me to specify "no communications protocol" and the "CP/M List device" when installing WordStar. This is the simplest arrangement, but with a serial printer it gives very poor performance.

The people who wrote WordStar were aware of the problem and have supplied the solution, which is to install WordStar to use a communications protocol and to bypass CP/M and talk directly to the printer with WordStar's own "port driver." Unfortunately, the Morrow manual lacks much of the technical information needed to do this. A letter to BAMDUA brought me the missing items, provided by David Block of Morrow. The results are spectacular. The computer does stop listening to the keyboard from time to time, but for only a second or less, not for over a minute at a time.

I'll give detailed instructions for the solution below, but first I need to talk about the choice of communications protocol. The communications protocol is the code whereby the printer tells the computer when it is and is not ready to receive characters to print. WordStar's authors recommend a protocol called ETX/ACK. Another, called XON/XOFF, is also available. I use the XON/XOFF protocol for two reasons. First, if the printer expects a particular protocol, all programs that use the printer must use that protocol. Most software prints via CP/M and the Morrow version of CP/M can do the XON/XOFF protocol but not the ETX/ACK. By choosing

XON/XOFF I have kept my printer available to all of the programs that I use. Second, I have not managed to get the ETX/ACK protocol to work.

There are two steps to making concurrent printing and editing in WordStar tolerable. A third step is needed if you also want to print with other software. Once I knew what to do the entire process took me about half an hour. Please note that none of this applies to printers with parallel (i.e., Centronics) interfaces.

1. Set up the printer to use the XON/XOFF protocol. The following instructions are for the Morrow MP200 (= Transtar 130) printer. Consult your printer manual if you have something else.

a. The internal jumper settings must be changed. After unplugging the printer and removing the data cable, remove the back panel (instructions are on p. 21 of the MP200 manual) and move the little plastic blocks from position 1 to 2 and from position 8 to 7 of the jumper pins at the lower left corner of the printer board. Put it all back together.

b. Open the front cover of the printer. There are two groups of little switches behind the control buttons on the front panel. Make sure that switch #1 of the left-hand group is set to "off."

2. Re-install WordStar. The information given below applies to the MD3; it should be the same for the MD2 provided it has a Rev. 2 board. The MD11 has different port addresses (see the BAMDUA Newsletter vol.2 #2: p.7). In what follows, what you are to type is underlined and upper case and I have omitted the program's frequent requests for confirmation of your choices.

a. Put a copy of your WordStar program disk on drive A, a copy of your WordStar Distribution Disk on drive B, and type B:INSTWS. Answer N (not a first-time installation), choose option D at the Installation Options Menu, and enter the name of your WordStar program file (probably A:WS.COM) in answer to the filename question.

b. At the terminal and printer menus select U (no change.)

c. At the Communications Protocol Menu select X (XON/XOFF protocol).

d. At the Printer Driver Menu select P (WordStar's port driver). This choice, like that at the protocol menu, will call forth an opaque bit of text. Forge ahead.

e. You will now be asked a series of questions about the "printer port." From time to time you will be asked if you want WordStar to attempt to determine an answer for itself or accept it from you. Always answer A (accept the answer from you). Rather than go through the whole dialogue step by step, I'll just list the answers to the various questions:

MD3 case:

The printer ports are I/O ports (answer I)
The output port number, in hex, is: FE
The output status port number, in hex, is: FF

The bit that changes at the output status port when the output port becomes ready to accept a character for output, in hex, is: 01

The bit that changes from a 0 to a 1, in hex, is: 01

The input port number, in hex, is: FE
The input status port number, in hex, is: FF

The bit that changes at the input status port when a character has been received from the printer, in hex, is: 02
The bit that changes from a 0 to a 1, in hex, is: 02

MD11 case:

The printer ports are I/O ports (answer I)
The output port number, in hex, is: 62
The output status port number, in hex, is: 63

The bit that changes at the output status port when the output port becomes ready to accept a character for output, in hex, is: 04

The bit that changes from a 0 to a 1, in hex, is: 04

The input port number, in hex, is: 62
The input status port number, in hex, is: 63

The bit that changes at the input status port when a character has been received from the printer, in hex, is: 01
The bit that changes from a 0 to a 1, in hex, is: 01

MD3 or MD11:

f. You will be asked if the modifications to WordStar are complete, answer Y. Finally, you will be asked to confirm the

choices you made at the various menus and the newly installed version of WordStar will be run automatically.

g. Print something to make sure it all works.

3. To enable the rest of your software to use the printer, you need to tell CP/M to use the XON/XOFF protocol. Put a disk with the SETUP.COM program on it in drive B. With each of your program disks in turn, put the program disk in drive A, type ctrl C, then B:SETUP. At the SETUP menu, enter D (change from hardware handshaking to XON/XOFF), F (to save the change to the disk in drive A), and ESC (to exit from SETUP). The change will not become effective until the next reset or power-up. Since I made these changes, I have found programs other than WordStar (e.g. dBASE II, TurboPascal, and CP/M itself) to behave exactly as before.

The ability to get on with editing the next file without waiting for the printer to finish has saved me much time and frustration. I hope you find it useful, too.

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INSTALLING WORDSTAR

FOR DOT-MATRIX PRINTERS

by

Frank Oechsli and Sara Oechsli

Dave Block's Q & A item in the April issue about installing WordStar for dot matrix printers was great. He suggested that someone write an article for a specific printer. This article will not only tell you how to install for a specific printer but will also take you step by step through what you actually do when you "drop into the patcher." These comments refer to WordStar, Version 3.0. The newer version of WordStar is supposed to have a simpler (and similar) method of patching, but we haven't used it.

We will give specific details for an Epson MX-80 printer with Graftrax-plus. It turns out that the commands given here are identical to those for the Gemini 10X printers which many Morrow owners got bundled with their machines. These printer commands we will use are for sub- and super-scripting, double and compressed character width, emphasized and italic characters. First, we will give the command strings needed to turn on and off the features mentioned and later will give a concrete dialogue with the Patcher program to illustrate.

The scripting commands are special. For daisywheel printers, WordStar superscripts by rolling the paper down about a half line, printing the superscript, and then rolling the paper back up to the line. The Epson and Gemini printers don't do reverse line feeds but WordStar has another trick; if the printer can do half line feeds, the printer prints superscripts a half line above the normal print line, spaces down a half-line and prints the normal line, spaces another half-line and then prints subscripts. To do this, WordStar must be told the printer command for half-line feed. WordStar is only half smart, though; once you tell it to do scripting this way, normal line feeds are two half line feeds.

In the following table we give (1) a name for the command, (2) the symbolic location name, (3) the printer command string, and (4) the WordStar command. The symbolic location name merely tells WordStar where you want to insert the command string (the colon is required!). The first byte of the command string tells how many characters follow. For the last three items, there is no specific WordStar command given since these command strings are used indirectly by WordStar.

PRINT PATCHING TABLE

(1)	(2)	(3)	(4)
Compressed on	PALT:	01 OF	^PA
Compressed off	PSTD:	01 12	^PN
Double width on	RIBBON:	03 1B 57 01	^PY*
Double width off	RIBOFF:	03 1B 57 00	^PY*
Emphasized on	USR1:	02 1B 45	^PQ
Emphasized off	USR2:	02 1B 46	^PW
Italics on	USR3:	02 1B 34	^PE
Italics off	USR4:	02 1B 35	^PR
Half line feed**	PSHALF:	05 1B 41 06 OD OA	
Normal feed**	PSCRLF:	04 1B 32 OD OA	
Printer reset***	PSFINI:	02 1B 40	

* a "toggle" command; turns feature on and off.

** Line feed commands are not given directly. They are used when superscript, ^PT, and subscript, ^PV, commands are given.

*** Resets printer on leaving WordStar so that all selected features (including half line feed) are turned off.

Now we get to the nitty-gritty! How do you "fall into the patcher" and what do you do when you get there? Here we give a running commentary in [brackets], WordStar's prompts to you in normal typeface, and your computer entries in underline.

[Put a copy of the WordStar program you want to patch (I'll call it WSA) and the INSTWS program on drive B.]

B>INSTWS<CR>

[You will get the copyright notice and a query:]
Do you want a normal first-time INSTALL, etc.
[Answer] N<CR>

[You will get an INSTALLATION OPTIONS MENU.
Choose:] C<CR>

[Now you will be asked to name the WordStar file to be patched (let's call it WSA) and the new WordStar file to be saved (let's call it WSB).]

[Answer all the rest of the questions either:]
U<CR> [no change or] Y<CR> [confirm.]

[Then you will be asked:]
ARE THE MODIFICATIONS TO WORDSTAR NOW COMPLETE?
IF THEY ARE ANSWER YES TO THE NEXT QUESTION.

IF YOU WISH TO MAKE ADDITIONAL . . .
OK (Y/N): N<CR>

[Now you drop into the patcher. Don't panic. If you do something wrong you can always correct it or push reset and start over. We will show dialogue starting with codes for turning compressed mode on and off and ending with resetting the printer, skipping some of the in between items.]

LOCATION TO BE CHANGED: PALT:<CR>
 ADDRESS: 06B5H OLD VALUE: OOH NEW VALUE: 01<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06B6H OLD VALUE: OOH NEW VALUE: 0F<CR>
 LOCATION TO BE CHANGED: PSTD:<CR>
 ADDRESS: 06BAH OLD VALUE: OOH NEW VALUE: 01<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06BBH OLD VALUE: OOH NEW VALUE: 12<CR>
 LOCATION TO BE CHANGED: RIBBON:<CR>
 ADDRESS: 06DDH OLD VALUE: OOH NEW VALUE: 03<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06DEH OLD VALUE: OOH NEW VALUE: 1B<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06DFH OLD VALUE: OOH NEW VALUE: 57<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06EOH OLD VALUE: OOH NEW VALUE: 01<CR>
 LOCATION TO BE CHANGED: RIBOFF:<CR>

[Keep on this way through the whole sequence, using the names in column (2) and the values in column (3). Note that the first byte (2 digits) in a command string tells how many 2-digit hexadecimal characters follow in that sequence. Whenever you answer <CR> only for a location, the location merely increments by one. The final sequence in the dialogue is:]

LOCATION TO BE CHANGED: PSFINI<CR>
 ADDRESS: 06F8H OLD VALUE: OOH NEW VALUE: 02<CR>
 LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06F9H OLD VALUE: OOH NEW VALUE: 1B<CR>

LOCATION TO BE CHANGED: <CR>
 ADDRESS: 06FAH OLD VALUE: OOH NEW VALUE: 40<CR>
 LOCATION TO BE CHANGED: 00<CR>

The last entry of 00 for the location to be changed is the signal to the patcher that you are all done patching. You will get one more chance to decide if everything is OK. If you reply that it is, the changes are saved to the new WordStar program, WSB.

These particular dot matrix printers can't print both 10 and 12 pitch as do daisywheel printers. The patch you've done will give you 5 cpi (^PY on), 8 1/2 cpi (^PY on and ^PA), 10 cpi (default) and 17 cpi (^PA). These character widths can be used together and in conjunction with italics, emphasized and double strike, except emphasized cannot be used in compressed mode.

Remember to adjust the right margin for the size type you are using. Expanded type with a right margin of 60 will run off the side of the page! If you are using these special type sizes for inset paragraphs you might use page offset (.PO) to make the inset rather than resetting the left margin. This will prevent the text from running off the right side of the screen when you are typing. Remember that page offset counts characters for the left margin in the type size in effect when the (.PO) command is given.

CUSTOMIZING NEWWORD

by Bart Anderson

The "NWinstal.com" program that comes with NewWord makes it easy to customize the program to your tastes. After some experimentation on our new MD3, I was able to program the function keys, turn off the keyclick, change the cursor from a block to a less obtrusive underline and use the fast (160 cps) mode of my Okidata ML92 printer. I hope this article will encourage other new Morrow owners to take the plunge.

First, you'll need a working NewWord diskette. Use a copy -- not an original -- so you won't worry about ruining a precious disk. Then you'll need to copy "NWinstal.com" onto this diskette. I made room for this by erasing the tutorial files "PRACTICE.DOC," "SAMPLE1.DOC" and "SAMPLE2.DOC." With this diskette in drive A, put a copy of the NewWord distribution diskette (from Morrow) into drive B. Get into CP/M from the opening menu of NewWord by typing "X." Be sure you're logged onto drive A, then type:

A> PIP NWINSTAL.COM=B:NWINSTAL.COM

(Note that "NWinstal.com" is spelled with only one "L.") Take the distribution diskette out from drive B and, using the "dir" command, check to see that "NWinstal.com" is on your disk.

Read the well-written "Nuts & Bolts" section in the middle of your NewWord manual to discover the many features that you can change using "NWinstal." For example, you can change the default help level to "2" so that the Edit Menu that takes up the top third of the screen won't ever appear while you work on a document. But what if the feature you want to change isn't in the NWinstal menus?

Using the NWinstal Patcher

You'll have to change hexadecimal values in the user areas of NewWord using the NWinstal patcher to make these changes. Read pages 5-20 to 5-22 in "Nuts & Bolts," then in Appendix C look over the listings of the user areas. Appendix B

has some good information, including an ASCII-Hexadecimal-Decimal conversion table on page B-3.

056A 056B 056C
02 1B 31

To get to the patcher, put your NewWord disk (with NWinStal copied onto it) in drive A. Get into CP/M and type "nwinStal." To the two questions the program asks you, answer "nw." When the main menu comes onto the screen, press "H" to select "Special Patches."

Then select option H to changes these addresses:

0570 0571 0572
02 1B 30

In order to turn off the keyclick and change the cursor from a blinking block to an underline, I chose the ERASCR option (selection M on Patch Menu #1). At address 032A, I changed the value from 03 to 09. I then changed the values at addresses 032E to 0333:

Now whenever you want to printout at 160 cps (unjustified), insert ^PW into your text. (The Okidata seems to take about a line of print before it begins to type in the new mode.) To return to correspondence quality, type ^PQ in your text. You can also program ^PE and ^PR in the same way to get other features, like compressed type. Other printers would use different codes.

032A 032B 032C 032D 032E 032F 0330 0331
09 1A 1B 29 1B 4A 30 1B
esc J 0 esc

0332 0333
22 33
" 3

Function Keys

These are the hexadecimal equivalents of control codes for the new MDT 60 terminal. The first, "ESC J 0", turns the keyclick off. The second, "ESC " 3" (i.e., Escape, quotes, then 3) changes the cursor. These codes are listed on pages 3-11 to 3-17 of the MDT 60 User's Guide. (You can also type these control codes in directly from CP/M. For instance, to get rid of keyclick for one session, type "ESC J 0." However, the changes you make will disappear when you turn off the computer.)

I've saved the function keys for the last because programming them requires changing over 100 addresses. It's really not difficult, however. You will use the FUNDLY and FUNTBL user areas (pages C-5 to C-7 in the appendix). Select option I on Patch Menu #2. This brings us to SHYSIZ which is at the address immediately before FUNDLY. Use the patcher to enter the values in the table at the end of this article. Now your function keys will execute these commands:

Why change this particular user area? I don't know. I tried several different areas and this was the only one that worked. Is there another way? Neither the NewWord nor the Morrow manuals explained how to make these changes.

Set up = ^KS F6 = ^KV
F1 = ^KD F7 = ^KW
F2 = ^QF F8 = ^PS
F3 = ^QA F9 = ^QR
F4 = ^KB help = ^QC
F5 = ^KK home = ^Q-del

left = ^QS
up = ^QE
down = ^QX
right = ^QD
erase = ^QY

Faster Printing

I had less trouble finding a way for my Okidata ML92 to print out files at 160 cps. NewWord automatically prints out in the correspondence quality mode, which is usually what one wants. However, the faster mode is perfectly readable and prints out a rough copy in much less time. You can get it from CP/M. Type the command "type" followed by the name of the file you want printed. Before you press return, hit ^P. (This tells the printer to print.)

Do it Yourself

Study the FUNTBL example on pages C-5 and C-6 to figure out how to program different functions. Morrow says that you can program over 90 function sequences, using the function keys (and numeric keyboard) together with the control and shift keys. If you run out of room for your function table in the FUNTBL user area, you can continue it elsewhere, as explained on page C-7. If you are at home with the patcher and hexadecimals, you shouldn't have much trouble.

Unfortunately, control characters in the text of your file seem to stop the printer. Also, it's inconvenient to have to go from NewWord to CP/M and back again. The solution is to program the ^PQ and ^PW custom print controls to switch you from correspondence to draft modes. This modification is easy to make. Choose option G on Patch Menu #3. Change these addresses as follows:

The only snag comes when you look for the control codes of the Morrow function keys. The ones in the MDT 60 User's Manual don't work! Table 3-2 on page 3-8 of the manual says that the unshifted code for F1 is 40h. The value you should enter is 1C 40. The same holds true for the other function keys: The value you enter should be 1C followed by the code given in tables

3-1 and 3-2 in the MDT 60 manual.

I would avoid programming commands like ^S, ^D, ^E and ^X for the arrow keys, which you hold down for auto repeat; strange things sometimes happened when I tried them. Besides, it makes more sense to reserve the function keys for the more awkward two-keystroke commands.

Suggested Function Table

0236 - 0245:
01 03 02 1C 00 02 0B 53 02 1C 40 02 0B 44 02 1C
time set up ^K S F1 ^K D F2-

0246 - 0255
41 02 11 46 02 1C 42 02 11 41 02 1C 43 02 0B 42
F2 ^Q F F3 ^Q A F4 ^K B

0256 - 0265
02 1C 44 02 0B 4B 02 1C 45 02 0B 56 02 1C 46 02
F5 ^K K F6 ^K V F7

0266 - 0275
0B 57 02 1C 47 02 10 53 02 1C 48 02 11 52 02 1C
^K W F8 ^P S F9 ^Q R erase

0276 - 0285
49 02 11 59 02 1C 4A 02 11 45 02 1C 4B 02 11 58
era ^Q Y up ^Q E down ^Q X

0286 - 0295
02 1C 4C 02 11 53 02 1C 4D 02 11 44 02 1C 4E 02
left ^Q S right ^Q D home

0296 - 02A0
11 7F 02 1C 4F 02 11 43 00 00 00
^Qdel help ^Q C

This article first appeared in the BAMDUA newsletter of May, 1984.

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TOURING THE MORROW PLANT



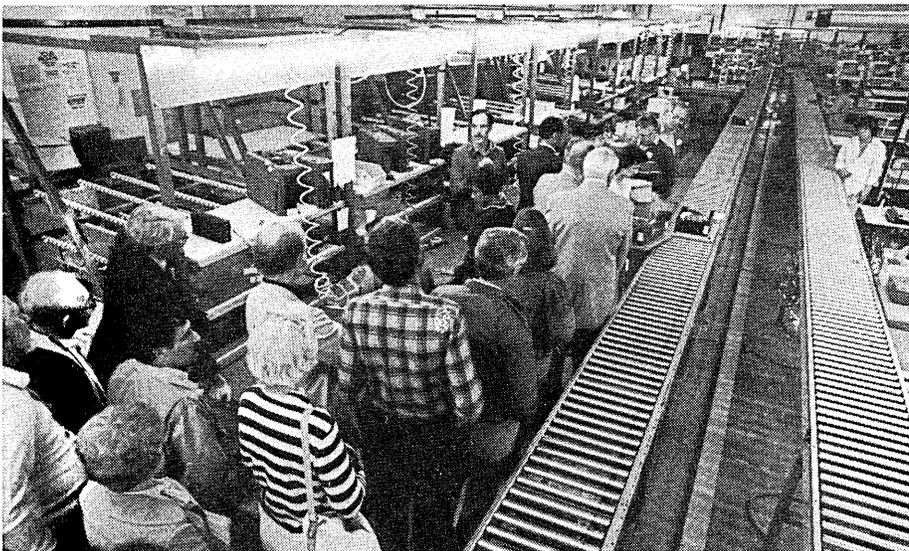
The users are coming! The users are coming! The whole Morrow plant goes a-twitter as twenty BAMDUAns arrive for a tour of the factory.

<----- Ed Niehaus, who was our host for the afternoon (with necktie, left side of picture) explains some fine points at the beginning of the assembly line.

BAMDUAns look over the shoulder of Debra Irene Nealy -----> who is busy putting a MD11 together.

It just happens to be inventory day at Morrow, but the assembly line is started up anyway to show the visitors the production of the various machines. (During the week of BAMDUA's visit the production mix consisted of MD11s, MD3s and MD3Ps.)

After assembly the units trundle down the line to the test area, recognizable by the rows of terminals in the background. Photo below.



After testing the computers trundle up the assembly line again (towards the camera) and arrive in <---- the packing area.

First the cover is slipped on. Then the computer with manuals and software is carefully loaded in the carton box. Steve Mackey, Morrow's manufacturing manager, (facing the camera, center of picture), answers endless questions posed by the 20 BAMDUAns. The Morrow people are most gracious hosts.

These are pictures of the tour of April 3, 1984.

SMARTKEY II

by Stan Ahalt

When I was first asked to review SMARTKEY II my initial reaction was - "I'm sure this might be useful for those folks who have terminals which don't generate WS compatible function key codes. I probably won't find much use for it." Was I wrong! This is probably the most useful software I have ever seen. But even this program cannot turn every keyboard into a magic wand; if you have a MDT20 terminal, you are probably out of luck.

SMARTKEY II is sold by Software Research Technologies, Inc. (formerly Heritage Software), and some of the local groups have arranged group buys. There is an offer to readers of the MORROW OWNERS' REVIEW (see ad in April 1984 issue, page 36) for \$69.95. The offer is reputedly extended into June. Write Software Research Technologies, Inc., 3757 Wilshire Blvd., Suite 211, Los Angeles, CA 90010 or call them at (213) 384-5430.

The most obvious use of SMARTKEY II is in mapping the function keys of the more common terminals into one or more ASCII codes which, in turn, command the application package to do your bidding. For instance, you might program your F1 key to produce the string ^K^B, which WS (or NW) will then interpret as "Mark Block Begin." Your other function keys can be similarly configured so that you can execute your favorite WS commands with a single keystroke!

SMARTKEY II does this by intercepting the BIOS calls which read the keyboard. When you type "smartkey" in response to the CP/M prompt (A>), the SMARTKEY II program is loaded into the TPA (Transient Program Area) in memory. Then, whenever you press a key on your keyboard, SMARTKEY II intercepts the ASCII code that particular key generates and changes it into one or more other ASCII key codes. Of course, if you haven't told SMARTKEY II to change a particular key, then it passes it along unchanged.

Let's work through a simple example. When you push the "a" key on your keyboard the ASCII code for "a" is sent to your computer (via the RS-232 cable on the back of the computer). For an "a" the ASCII code sent is 1100001 in Boolean (or

141 in octal, or 97 in decimal, or 61 in hex - these are all equivalent). Let's say that you want the "a" key to produce the WS "Delete Line" command, which is ^Y (control-Y). You simply "instruct" SMARTKEY II to make the change for you, and what WS sees when you push the "a" is 0011001 boolean (which is the ASCII code for ^Y).

I suspect at this point you have some questions. Your first question might be, "But what if I want to type that 'a' into my text?" Well, you're out of luck! So don't pick the letter "a" to represent ^Y... instead, use ~. It isn't likely that you have a great need for ~ in your daily writing, so you're safe.

But that limits the number of keys you can change with SMARTKEY II to those that you don't normally use. On most keyboards, this limits your choices substantially. Luckily, the folks who wrote SMARTKEY II have solved this problem.

Usually, your function keys produce a string of characters (or actually a series of ASCII codes). For instance, F1 might produce SOH,1,ETX. These are all valid ASCII codes, and to find out their boolean equivalents refer to the ASCII chart included with most terminals. Similarly, F2 would produce SOH,2,ETX. SMARTKEY II simply strips off the header (the first character - SOH) and the trailer (the last character of the string - ETX) and then checks to see if you have instructed it to change the middle character into something else.

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auto-indent feature of the Turbo Pascal editor automatically indents properly for the "block structure" of Pascal)

```
<.(><()^H>
<.[><[]^H>
<.I><:INTEGER;^M>
<.B><:BOOLEAN;^M>
<.R><READLN();^H^H>
<.W><WRITELN();^H^H>
<.d><^Q^S^E^K^B^Q^D^K^K^M^K^C>
      (See comments below)
```

To use these definitions I have the compiled definitions stored in the file "pscl.def" so I simply enter "smartkey pscl" on the command line followed by "turbo" to invoke the Turbo Pascal program and then I proceed as usual, except that I now have all of the major Pascal keywords and phrases available to me at a single keystroke! You would be amazed at how this cuts down on my typing and syntax errors.

Let me call special attention to the last line of the DTX file above. This command, ".d" for "duplicate," duplicates the line above the line in which the cursor sits. This is a feature found in the USCD Pascal editor which I have always wished was included in WS. (Note: A form of this command is available in NW.) This is the type of command that makes SMARTKEY II so powerful. And I can tailor ANY package to suit my whims using SMARTKEY II.

Summary

I rarely praise a software package as highly as I have this one. Usually there are some bugs, but I haven't found any in SMARTKEY II yet. Since SMARTKEY II resides in the TPA, I am curious to know if SMARTKEY II can be written over by programs which use a lot of memory. However, this hasn't happened to me yet.

To be fair, there are other programs available which perform much the same as SMARTKEY II. MicroKey by First Principles automates the function keys on the Freedom 50 and Freedom 100 terminals. Unfortunately, if you have a MDT20 you are out of luck; even SMARTKEY II can't help MDT20s. There are also programs similar to SMARTKEY II in the public domain, including FCNKEY and QWIKEY. I haven't used these, so I cannot comment on them. I can comment on SMARTKEY II.

SMARTKEY II allows you to redefine any key into any other key, or set of keys. The power of this simple concept cannot be underrated. You can create helpful environments for programming (as shown above), get help with repetitive chores (see the letter writing example), or even rewrite the "CPM Shell" (no reason why ".p" can't be redefined to "pip", etc.). I can see no limits to the uses for SMARTKEY II.

SMARTKEY II
Software Research Technologies, Inc.
3757 Wilshire Blvd. Suite 211
Los Angeles, CA. 90010
(213) 384-5430

NEWWORD REVISITED

by Stan Ahalt

Morrow has recently been shipping its new products with a new word-processing program called NewWord instead of WordStar. Since Morrow offers to replace your WordStar with NewWord for the reasonable cost of \$100, it may be interesting for you to preview the product before laying down your hard earned cash.

Well, I have been using NewWord for about two weeks and I've been able to form some conclusions. In general, I like the package, although I have some reservations. It is not totally WS (WordStar) compatible, but it is reasonably close. There are a few things I would like to see changed (I'll elaborate on those later). However, the built-in MergePrint facilities are very, very nice.

One of the best things about NW (NewWord) is

the manual. The first section is a tutorial that is as readable as any that I have seen. It begins explaining NW at a very elementary level and gradually leads up to more advanced features. The second section is the "Nuts and Bolts" section which explains, in detail, how to customize the package for your personal needs. Finally, the third section is the "Encyclopedia", which contains functional information about all of the commands, and the system in general. Each section includes a well designed and complete index which makes finding the page that answers your question much easier. If you have ever tried looking up an obscure point in the WS manual, you will appreciate the NW manual. The folks at NewStar Software and Morrow deserve a pat on the back for the fine manual.

When I first fired up NW, I couldn't use my left arrow cursor key. On my terminal, the left arrow generates a ^H (control-H). This works fine on WS, as it should, since WS accepts either ^H or ^S as the backspace (same as left arrow) key. If only NW did the same! I solved that problem by writing the following routine which maps all ^H's to ^S's:

```

042B C3 31 04 UCONI      JMP MORPAT
0431 2A 01 00 MORPAT    LHLD 1
                        MVI L,9      ;get adrs
                                ; of BIOS
                        CALL JMTHL
FE 08                  CPI 8        ;compare
                                ; to ^H
CO                      RNZ
3E 13                  MVI A,13     ;replace
                                ; with ^S
C9                      RET
043F E9                JMTHL     PCHL

```

You can locate UCONI and MORPAT in the NW User Area Listing, page C-19 of the manual. The only problem with the above solution is that now when I push the "hide block marker key" - ^K^H - on my terminal (a Wyse 100 which I love because of its dedicated WS function keys) NW receives ^K^S, which causes the file to be saved. Luckily, I can get around this by using ^kh (just like the WS alternative) to hide the block markers.

Table 1 is a list of most of the commands which differ in WS and NW. The differences in functionality between the two packages can be seen by examining these commands. I've included only those commands which are either different between the two, or unique to one of the packages. Common commands, such as .pa, are not included in the table.

WORDSTAR		NewWord	
^W	Scroll down one line	^w	Scroll up one line
^Z	Scroll up one line	^z	Scroll down one line
^Q^W	Scroll down cont.		
^Q^Z	Scroll up continuously		
^QO-9	Cursor to place marker		
^Q^P	Cursor to pos. before	^qp	Find page
^Q^K	Cursor to end of block		
^Q^V	Cursor to start of find		
^Q^B	Cursor to block begin	^qb	Align document
^O^F	Set marg/tabs from txt	^of	Take ruler from text
^O^V	Var. tabs ON/OFF		
^O^P	Pg. break dsply ON/OFF		
^KO-9	set/hide place marker		
^K^E	Rename a file		
^K^F	Directory ON/OFF		
^K^P	Print a file		
^Q^Q	Repeat a function		
^U	Interrupt	^u	Undo or erase
		R	(Fnd/Rpl) in rest of file

Special find characters:

^A	any char	(To do the same in NW, use ^PM for the control char ^M (CR) to be replaced. Other control chars can be done the same)
^S	any special char	
^Ox	other than x	
^N	CR,LF	

Printing Commands

^P^K	Right-left	(Although not shown in the NW manual or menu, the same can be done in NW)	
^P^G	Phantom rubout		
^P^L	form feed		
^P^L	Line Feed		
^P^M	Overprint next line		
		^pRET	overprint line

Dot Commands

.bp	bidirect. printing	.av	Ask for variable
		.bpon/.bpoff	Bidirect. print
		.cs	Clear screen
		.df	Data file
		.dm	Display message
		.fi	File insert
		.fl-3	Lines 1 - 3 of footer
		.fo^pk	Alternate corner on footer
		.hl-3	Lines 1 - 3 of header
		.he^pk	Alternate corner on header
			(Not in NW manual, but same)
.hm	Heading margin		(Not in NW manual, but same)
.sr	Subscript roll		
.uj	Microjustify	.ujon/.ujoff	Microjust. ON/OFF
.ij	Comment		
		.lm	Set left margin
		.ls	Set line spacing
		.ojon/.ojoff	Justify ON/OFF
		.pfdis	Reform para. with vars.
		.pfoff	Don't reform any para.
		.pfon	Reform every para.
		.pg	Restore default page nos.
		.rm	Set right margin
		.rp	Print N times
		.rr	Automatic ruler
		.rv	Read variable
		.sv	Set variable

Main Menu Commands

C	Protect a file
T	Transmit a file

TABLE 1

For instance, the ^qb command reformats the entire document (^b reformats a single paragraph). This process can be stopped by using the ^u (Undo or Unerase) command.

Indeed, ^u is one of the most useful commands which appears in NW and not in WS. When ^u is executed after a delete command, the character, word, or words that were previously deleted are deposited at the position of the cursor. Note that you can only undelete the last thing that was erased.

Still, this is a very powerful capability. It is very similar to the undelete capability on the UCSD text editor. However, on the UCSD editor all deletes that are made consecutively are stored in a buffer, and that buffer can be dumped at the cursor position. I hope that the NW people eventually adopt this idea, as it allows one to sweep up text with the cursor and the reposition it somewhere else in the document.

One of the commands not implemented in NW that can be found in WS is ^KO-9, which allows the user to set place markers in the text and then go to that point with a single command. I have used this feature extensively to do what I call "thought processing." I enter all notes, comments and thoughts into a document and then arrange these using the place markers to represent their position in my outline form. Then, using the block

move commands, the text is re-arranged to fit the outline. Maybe the next version of NW will have this command, I miss it.

Notice that NW contains a number of commands which have no equivalent in WS. These commands allow NW to do what is called MergePrinting, or in more common parlance, Boiler Plate Printing. It allows you to produce a number of letters or other documents which contains the same text except that each letter can be personalized for a particular individual, or can include information specific to a particular circumstance. Mailmerge, one of the companion packages to WS, provides the same capability, but you don't have to spend extra money for this feature with NW, plus it is integrated into the package nicely.

The following is a data file I created as an example:

```
Morrow Owners' Digest
104 West Wistaria
Arcadia
CA, 91006
Emma, Paquin
Morrow Owners' Review
PO Box 5487
Berkeley
CA, 94705
Sypko, Andreae
```

The test file follows. The .av command asks for a variable, in this case the date, which is entered from the keyboard. Next, NW opens the data file b:users.txt and then reads the variables (.rv) from the file. Finally, the screen is cleared and NW announces which letter is being printed.

```
Column 1
v
.av "Please enter today's date.. ", date
.df b:users.txt
.rv group,address1,address2,address3,address4,
      name1,name2
.cs Now printing letter to &name1& &name2&
      &date&
```

(The .rv and .cs command lines are normally left in one line, unlike printed here. Editor).

```
Stan Ahalt
102-B Victoria Lane
Clemson, SC 29631
```

```
&group& Attention: &name1& &name2&
&address1&
&address2&,&address3&
&address4&
```

Dear &name1&

I am enclosing the review of NewWord for the next issue of the Morrow Owners' Review. I know this new newsletter will be an invaluable aid for all Morrow users. Good Luck.

Warmest regards,

Stan Ahalt

This produces the following two letters when the Mergeprint option is selected:

March 7, 1984

```
Stan Ahalt
102-B Victoria Lane
Clemson, S.C. 29631
```

```
Morrow Owners' Digest Attention: Emma Paquin
104 West Wistaria
Arcadia, CA
91006
```

Dear Emma

I am enclosing the review of NewWord for the next issue of the Morrow Owners' Review. I know this newsletter will be an invaluable aid for all Morrow users. Good Luck.

Warmest regards,

Stan Ahalt

March 7, 1984

```
Stan Ahalt
102-B Victoria Lane
Clemson, SC 29631
```

```
Morrow Owners' Review Attention: Sypko Andreae
PO Box 5487
Berkeley, CA
94705
```

Dear Sypko

I am enclosing the review of NewWord for the next issue of the Morrow Owners' Review. I know this new newsletter will be an invaluable aid for all Morrow users. Good Luck.

Warmest regards,

Stan Ahalt

As you can see, this is a very powerful feature which would justify the cost of NW by itself if you frequently need to produce the omnipresent "COMPUTER FORM LETTER".

NW also allows the user to protect a file, using the C command from the main menu, so that the file cannot be altered inadvertently.

On the negative side, NW does have some bugs and drawbacks. The worst two bugs are the display of text in dim mode, and the dropping of characters.

In order to display text that will be printed in bold as highlighted, NW elected to use the DIM display mode for regular text. This makes the regular text very difficult to read, particularly in conditions where the ambient light is very bright. You can correct this problem by disabling all of the video attributes using the "Y" option on Patch Menu #1. However, this forces blocks to be delimited by the standard and <K>. It would be very nice if blocks could be displayed in DIM intensity with regular text displayed in NORMAL intensity.

The second major bug concerns the dropping of text. This occurs when you are typing very fast and come to the end of the line where the word-wrap function comes into play. Occasionally, some of the characters you typed will not be displayed. If you move the cursor back over to the beginning of the line (where the lost characters were supposed to have appeared) the characters will reappear. This bug is very bothersome, and has been corrected in Version 1.29. Unfortunately, Morrow is still shipping Version 1.18 or Version 1.19, depending on the machine shipped.

On the other hand, NW includes some very nice features. In addition to the ones already mentioned, consider the "memory indicator." The status line includes an indicator which shows how much of available memory, your text presently occupies. Since disk accesses are avoided when the entire file is held in memory, you can really speed things up by paying attention and keeping your files short enough to fit in the available memory. NW makes it easy to break up your files by the inclusion of the .fi (file insert) command which allows files to be "chained" together.

Summary:

NewWord is an excellent package that sacrifices some of the features of WordStar while adding other, equally useful, features. The NW people claim that NW is file compatible with WS, and I have no reason to dispute the claim. Thus, it is conceivable that you could use both packages in conjunction and have the best of both worlds. However, NW does have some problems, as I have described.

Some of these problems have been corrected in Version 1.29. I hope that Morrow makes the updates available to all of us. I want to thank Paul Mierau of NewStar for answering my innumerable questions concerning Version 1.29. Version 1.29 includes the on-screen attributes (as advertised - underlining, etc., and also includes conditional mergeprint capabilities. These commands allow you to substitute text conditionally, depending on the value of variables. Makes for a very powerful MailMerge-like capability.

NewWord offers the same basic text editing capabilities as WordStar, and the price is right. For those of you who are already familiar with WordStar, you will have no problem adapting to

NewWord. If you really need the Boiler-Plate capability, then NewWord is probably the most cost-effective way to go, particularly if you have not already invested in WordStar. NewStar Software, the authors of NewWord, has a winner on its hands!

MORROW ORIENTED CBBS'S

by Sypko Andreae and Emma Paquin

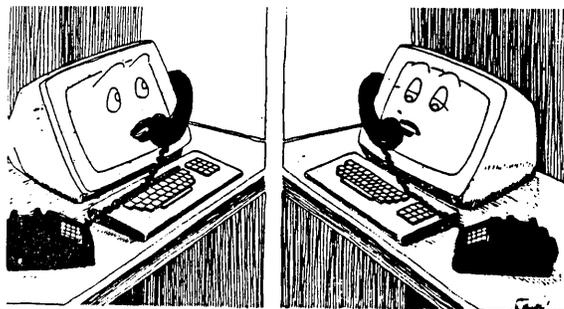
First let's get the jargon straight: CBBS stands for Computerized Bulletin Board System. You can call such a system by telephone using a modem. Sometimes these bulletin boards are referred to as RBBS, with R meaning "Remote". From these computers you can down-load or up-load any CP/M file. RBBSs are a good source for public domain software. If you want to learn more about this amazing communication network maintained by volunteer "Sysops" (System Operators), read the famous article "Downloading from RCPM systems" in the USERS' GUIDE TO CP/M, #3, 1983.

The following is a list of known Morrow oriented Bulletin Boards. Several more are in the planning stage. If you know of any new ones please drop M.O.R. a note.

3/12 means: Uses either 300 or 1200 Baud.

3 means: Uses only 300 Baud.

BAMDUA CBBS	(415) 654-3882	24 Hrs.
Berkeley, CA	3/12	
CMDUG RBBS	(203) 445-5019	24 Hrs.
New Haven, CT	3/12(?)	
CRITICAL MASS (RBBS)	(707) 884-4221	24 Hrs.
Gualala, CA	3	
LAMUG RBBS	(818) 340-9947	Eves + Wknds
Calabasas, CA	3/12	
MORROW CBBS	(415) 632-1951	24 Hrs.
San Leandro, CA	3/12	
SCMUG RBBS	(408) 438-6392	24 Hrs.
Santa Cruz, CA	3	



PRELIMINARY REVIEW OF REACHOUT

by Sypko Andreae

Many of you may have heard of the wonderful program ReachOut that comes bundled with the Morrow Modem MM300. It originates from a small company called Applied Computer Techniques. (See ad next page.) ReachOut for the MM300 is a specially adapted version of the standard Reachout communications program. The latter works with all modems except the MM300. Even though this preliminary review is based on the standard version, there are only minor differences between the operation of the two programs and so most of what I write about will apply to both.

The Morrow modem MM300 sells for \$299, which seems a little high for a 300 baud smart modem, but you receive two very worthwhile pieces of software with it: The Morrow version of ReachOut and MICROezLNK from Advanced Micro Techniques. (See their ad in this issue.) MICROezLNK enables you to hook up with the TELEX network.

If you do not already have a smart modem and you don't need 1200 baud, then the MM300 with all this software is a pretty good deal. If you already own a smart modem then you should go for the standard version of ReachOut made available to readers of the MORROW OWNERS' REVIEW through a special discount offer.

At first Stan Ahalt and I were going to team up on a thorough review of ReachOut, based on both our explorations of its riches. But equipment breakdowns and other mishaps delayed our venture. Now you will enjoy two reviews on ReachOut: First this one, meant to give you an operational taste of the program, then, in the next issue, a more technical exploration by Stan Ahalt.

Why give ReachOut so much attention? Most of us who are acquainted with its workings agree that it is a very special piece of software, unique in more ways than one. It has everything to do with its creator, Sandy Gossman, who has been in love with telecommunications and computers for a long time. He got hooked on telephones at age five and took a screwdriver to one to see what made it work. I quote Sandy from the Author's Note in his splendidly written manual: "I first saw a computer in the early 1950s. I have since been fascinated by them, and especially the concept of transmitting intangible intelligence, in the form of data and programs, over distances of thousands of miles in a matter of minutes."

ReachOut was borne of that fascination and his private need for a high-quality piece of telecommunications software. He spent over 7000 hours on it in a three year period. Even though the current version is remarkably complete, Sandy will assure you that it is still not finished! Like anything that is alive, there is always room

for growth; that is the stuff of which ReachOut is made, comprehensive, sophisticated and complete as it already is.

Sandy occasionally tells people that they don't need to read the manual, because the menus and built-in help system are usually all you need. But his manual states "For the most enjoyment and utility, READ THE MANUAL". Still, the menu system is easy to operate. There are five major menus and you will find yourself dwelling most of the time in just four of them. The menus are linked in an easy-to-remember way, so you don't get lost like you do in so any other versatile menu-driven pieces of software that, in their labyrinthian ways, make you feel like you will never be able to come up for air again!

Creating menu-driven software, that really works well with humans is a fine art. In that sense Sandy is an artist. His menu design is amazingly simple when you realize how many complex options it offers. But I still think you ought to read the manual anyway. No matter how-well-thought out and complete the 25 screen pages of the on-line help system are, the information is expressed in economical English without redundancy. Most of us need a little redundancy before our minds catch on.

That is where the manual comes in. It is written in plain English. Oh, joy! (You can clearly discern that Sandy was a teacher.) If you only wanted to enjoy a smooth education in telecommunication software, read this 155 page manual! The version of the manual that comes with the MM300 is virtually identical.

The manual is complete. It goes through all the menu choices in detail, explaining at appropriate times some aspects of the technical concepts effecting the feature being discussed, in clear English, so even the rankest novice will be able to see the light. Sandy's writing is always to the point and does not suffer from inappropriate humor, a trap so many computer writers fall into in an effort to "humanize" computer manuals. It is well-organized and has a helpful spirit about it. It has a seven page index and a five page glossary. The last page of the manual gives advice in case of difficulty: it consists of a page of questions ("Is the modem turned on? Are the baudrates identical?") or helpful hints (try this, try that), winding up with one last-resort gesture of the helping hand: "Call us."

After a cursory reading of the chapter on installation I found out how easy the installation is. The first time installation makes you state what computer, modem, and terminal you have; the

basic stuff. Then, you make choices regarding some other 35 items. If you re-install, to change a parameter not changeable within ReachOut, you can skip over the basic stuff and set new values for those items you need to change.

When you transfer a file, you should use a file-transfer protocol to insure accuracy because then the file is "error-checked," block for block. If a block fails to arrive intact, it is automatically send again. There is a choice of three file-transfer protocols: ReachOut-to-ReachOut, Christensen (CKSUM) and CP/M User's Group (CRC). This means you can communicate with your friends using any version of the public domain program MODEM7.

There is also the Echo-plex mode of transferring the file. This allows for a transmission with errorchecking even though the receiving side is not capable of error-checking. Each character sent by ReachOut is echoed back by the receiver and compared by ReachOut with the character sent. If the compare fails, file transfer is suspended and you, the operator, are politely invited to choose one of four ways out. If the compare succeeds, you will know for certain that your file got out there intact, even though the transfer took twice as long as in the other file transfer modes.

In terminal mode you can "capture" in a disk file the characters displayed on the screen with the "logging" mode. You can also send a file in terminal mode, something you cannot do with MODEM7 as far as I know. It is called "Rapid-typing" in

ReachOut parlance. Handy for sending off a text file to a mainframe or institutions like CompuServe and the Source. No error-checking this way.

ReachOut can, of course, be used with manual modems (no auto-dial, no auto-answer). But if you have a smart modem (auto-dial, auto-answer) ReachOut can dial a phone number from either the keyboard or from a directory. You can create the directory with a word processor like WordStar, following a few simple structural rules. You can ad "sign-on" scripts to any entry, to automatically handle an intricate interaction (account number, password, menu choices, etc.) that may be required after the host system answers.

The REMOTE-CONTROL option enables you, during a voice call, to set your system ready to be remotely controlled by the other person who is also using ReachOut. It is the same as having ReachOut in the AUTO-ANSWER mode, except that you don't have to terminate your voice call. At the conclusion of the transfer the call can be terminated by the other person. I checked some of the many features of ReachOut on a MD3 and a MD11, for which I needed to create two different ReachOut configurations from my one distribution disk. I used an Anchor Automation Signalman XII smart modem and a MDT60 terminal. ReachOut is incredibly rich in features. It is a true pleasure to operate software that works so well, because it was created as a labor of love. Now check out Stan's opinions next issue.

ReachOut™

FOR LESS. You've read the review .

Now SAVE 40%. Regularly \$199.00 .

Special offer: \$125.00, incl. shipping.

**Can be used on your Micro Decision
with virtually any modem,**

including 1200 baud models

Offer expires August 1, 1984 .

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MCI MAIL

by Clarence Heier

If you ever thought that there should be another way to send mail in this electronic age, you ought to investigate MCI Mail. MCI Mail is an electronic mail delivery system offered by "the other" phone company. You can become an MCI Mail subscriber for free and receive mail at your electronic post office at no charge. You can also send mail to anyone whether a subscriber to MCI Mail or not. All you need is a modem-equipped computer or terminal.

There are several options for sending mail through MCI Mail. Instant letters arrive in another subscriber's mail box in seconds. The letters are in the other party's "In Box" until he reads them. Instant letters cost \$1.00 per "ounce" (7500 characters). MCI Letters are sent via modem to your correspondent's nearest laser printing center. They are printed and mailed via first class mail and normally will arrive on the next business day. MCI Letters cost \$2.00 per "ounce." Overnight Letters arrive before noon the next day. This service is available in 20,000 cities and towns. The cost is \$6.00. Four-Hour Letters arrive within four hours of sending and cost \$25.00. Telex Dispatch goes to any Telex machine, anywhere.

There are several options. You can have your letterhead and signature reproduced by the laser printer, you can have a message put into your "In Box" when the other party has read his Instant Message, you can send carbon copies to several other people on your letter, and you can also mail in volume at discount rates. You also become a Dow Jones News/Retrieval subscriber automatically when you sign up for MCI Mail.

You can sign up via modem. Just call 1-800-323-7766. After the modems connect, hit return twice. The screen will prompt for user name. Type "REGISTER" and return. You will then be asked for a password. Enter "REGISTER" and return again. Next you will be asked a series of questions. Answer each of them, entering return after your response. In a few days you will receive a packet from MCI telling you all about it and giving you your password, customer number and your MCI Mail ID number.

This system sounds like a good way to send articles to the newsletter very quickly and very inexpensively. The articles can be pre-written and uploaded. If the Editor is also an MCI subscriber the article will be in his "In Box" in a matter of minutes. The Editor can then take it from his "In Box" and store it on MCI as a draft or download it to his system for further editing. This sounds like an ideal way to avoid sending disks back and forth. I haven't tried it yet but it should be possible to send programs back and forth via this service. As long as they are .ASM or .HEX programs they should be ready for assembly or loading after stripping out the message part of

the letter with your word processor. You could save a lot of toll charges this way.

If you would like to comment on this article, or perhaps send me some Public Domain Software, my MCI Mailbox is CHEIER, Sturtevant 209-8555.

From the Editor: The MORROW OWNERS' REVIEW now also has an MCI Mailbox. Hopefully that will stem the flow of floppies somewhat. For the four M.O.R. editors this is really a great solution for our file communication problem. Express Mail of floppies does not go everywhere and for just a few files it is too expensive. We have tried many MODEM7 transfers across the country, but it fails too often in the most mysterious ways. Tired of this we are now going to use MCI Mail, using local phone calls and high quality channels over long distances. Floppies will only be used when we have to transfer a lot of files, like over 100kBytes.

The MORROW OWNERS' REVIEW MCI Mailbox is:

MREVIEW, 217-1566 (in Berkeley)

Book Review

by Clarence Heier

Title: THE COMPLETE HANDBOOK OF PERSONAL
COMPUTER COMMUNICATIONS
Author: Alfred Glossbrenner
Publisher: St. Martins Press
ISBN: 0-312-15718-5

THE COMPLETE HANDBOOK OF PERSONAL COMPUTER COMMUNICATIONS is as subtitled, "Everything You Need To Go Online With The World." The book is well written in that all terms are defined when first used. The book is helpful for the novice computer user as well as the advanced telecommunicator who wants to know more about the information services. In-depth discussion of The Source, CompuServe, The Dow Jones News/Retrieval Service, Dialog, BRS, Orbit, The Information Bank, and NewsNet appear in the book. Much helpful advice is given, advice that is only learned by using the system and is not contained in the manuals made available by the services. Information is also contained on Bulletin Board Systems and Computer Conferencing. Although the book tells how to select equipment and what the various features do, it does not include a buying guide, which would be a helpful companion to the book in selecting equipment and software.

All who have or are contemplating the purchase of a modem should own this book; the cost (\$14.95) can easily be saved by taking advantage of the hints and time-savers presented, just by reduced connect time charges in a few sessions of The Source.



DAVID'S Q & A COLUMN

[Dave Block is Micro Decision Product Manager at Morrow. He receives a daily heap of mail you wouldn't believe. A typical letter contains a cursory greeting followed by one to ten questions. He would like to answer them all, but that is clearly impossible. So he wrote the Preliminary Micro Decision Question and Answers book. If you are lucky you can get it for a dollar from BAMDUA. The real book will be out soon. In the meantime Dave agreed to write this column to deal with about 10% of the questions that arrive in the MORROW OWNERS' REVIEW mail. If you have a modem you may also try the Morrow Bulletin Board System at (415) 632-1951. Who knows, you may get to "talk" to the SYSOP himself: Dave Block].

Well, here I am again. I'll have to get used to seeing my name in print. And that drawing, Ugh! I actually look quite different from the drawing, but I couldn't convince the cartoonist of that. You'll just have to believe me on that one. This issue, I want to provide several tidbits of information and a warning. I'll also give a little information on the new Morrow Bulletin Board that is partially up and running, and answer a few questions.

* T H E W A R N I N G ! ! ! *

* All Micro Decisions (including the *

* MD11) have a potential gotcha. That is *

* that the RS-232 (serial) connectors for *

* the printer/modem (and Aux on the MD11) *

* have +5 volts, and +/- 12 volts at the *

* connector. Whenever connecting serial *

* devices to these machines, you should be *

* aware that these exist so that you won't *

* short out the power supply, or connect *

* them to the device being interfaced. *

* These voltages are supplied so that the *

* Morrow Modem can power itself right off *

* the connector. The voltages are on the *

* following pins:

* pin 9 ----> +12 volts *

* pin 10 ----> -12 volts *

* pin 14 ----> +5 volts *

How to Quiet Down Those Drives.

Now something about that article in the April 1984 issue by Brian Leyton (p. 34). It described how to quiet down his Morrow by changing the step rate of the drives on his MD3. How about your MD3?

Many of you attempted to perform the change and ran into a problem. What the article showed, and what you saw on your screen was quite different. The problem arises because the address of where to start changing things varies among different bios revisions, and machines. One thing that doesn't vary is a pointer to the area to be changed. To calculate the correct address in your system, perform the following operations.

FROM CP/M, TYPE THE INFORMATION THAT IS UNDERLINED
<R> MEANS: HIT RETURN KEY.

A>SYSGEN<R>
SOURCE DRIVE NAME (OR RETURN TO SKIP): A<R>
DESTINATION DRIVE NAME (OR RETURN TO REBOOT): <R>
A>SAVE 48 CPM64.COM<R>

A>DDT CPM64.COM<R>

DDT VERS. 2.2

NEXT PC
3100 0100

-S2344<R>

2344 HH<R> (NOTE: WRITE DOWN THE HEX NUMBER HH)

2345 YY.<R> (NB: WRITE DOWN THE HEX NUMBER YY)

-HF7,F2<R> (This is calculating an address in low memory.)

dddd 00XX (This is an offset in memory)
(Ignore dddd)
(Write down hex digits XX)

-H23,XX<R> (This calculates the actual address in memory)

00ZZ dddd (Here, the two hex digits 'ZZ' are important. Let's assume they are '28' but whatever they are, substitute them for 28 below.)

-S28HH<R> (HH IS FROM ABOVE)
28HH 21 (HIT <R> UNTIL YOU SEE...)

28dd BF <-----> (This is what you are looking for. If you don't see this after pressing <R> 4 or 5 times, then you have done something wrong. Ask a friend for help. When you get to this point, type in "DF", followed by <R>. This should leave the screen looking like...)

28dd BF DF<R>
dddd

(Now, press <R> 9 times, until you again see a "BF", and replace it with a "DF" as you did above. REPEAT THIS PROCESS FOR A TOTAL OF 5 TIMES.)

(Then, continue on.....)

-
-
-
-^C<R>
A>SAVE 48 CPM64.COM<R>

A>SYSGEN CPM64.COM<R>
SOURCE DRIVE NAME (OR RETURN TO SKIP)<R>
DESTINATION DRIVE (OR RETURN TO SKIP)A<R>
<R>
A>

Now, re-boot your system using the backup diskette you have been working with. You should find that your machine sounds quieter.

By the way. This is an approved change for all MD3's. MD2's with the TEC floppy disk drives (see MEET THE DISK DRIVES IN YOUR MORROW in the last issue of MOR) will also work with this fix.

TV Interference

Several newsletters have mentioned the TV interference caused by the Micro Decision, and suggested that it may have been this interference that caused us to replace the power supplies in Micro Decisions over a year and a half ago. Well, It's not that easy. The power supplies were replaced for a different reason that caused the floppy drives in MD2's to behave erratically. The first units shipped exhibited electro-magnetic interference on the disk drives. All Micro Decision model have been tested and found to comply with the limits for a Class A computing device pursuant to subpart J of part 15 of the FCC rules. (Whatever that means.)

Call in!

The Morrow Bulletin Board System (MBBS) is up and running!!! As of the time of this writing, it still has a few minor problems, but I expect them to be ironed out soon. The Bulletin Board allows the exchange of information and comments among users, short messages to be mailed to individual users, or directly to Morrow. Additionally, users can read the Q and A manual on-line. The bulletin board can be reached at (415)632-1951. Currently, it only operates at 300 Baud but 1200 is coming fast. Try it, you'll like it. I wrote the BBS program in Turbo PASCAL from Borland, and hope to make it available when completed to Morrow Users groups.

Questions and Answers:

Question: Is there an ESCAPE sequence that can be sent to tell the MP 100/200/300 printers to operate in typewriter mode so that they do not buffer characters. It is difficult to use the system to fill out a form when you have to guess where the characters will be printed.

Answer: Unfortunately, there is no way I know of that will allow the printers to operate in this way. I spent a great deal of time trying to figure this one out several months ago to no avail.

Question: Programmable Function Keys (PFK's). Are they, how, when, etc...

Answer: Micro Decisions being shipped as of May 10th are being shipped with two programs for providing PFK's. Smartkey II from Heritage Software, and Key, from Morrow. They both have their advantages, however only Smartkey II will run on previous Micro Decisions. MD11's only include KEY since Smartkey will not run with CP/M 3.0. Owners will be able to get a version of Smartkey II for the Micro Decision from their dealers after June 1st.

Question: The LogiCalc function '@' doesn't work as shown in the manual. In fact, it doesn't do anything at all. What gives?

Answer: The '@' function described in the manual has been eliminated from LogiCalc. The function was to allow entering a co-ordinate into a formula by moving to the cell and typing '@'. This function has been automated so the '@' isn't necessary.

Question: How do I get the LCDUMP program of LogiCalc to work? Some of the information goes to the screen, and some to the printer. I want it all to go to the printer.

Answer: You can get around this problem by typing LCDUMP^P<R>. When asked for output file name, respond with CONSOLE:. This will cause all data to go to the screen and the printer.

TROUBLE SHOOTING YOUR MICRO DECISION

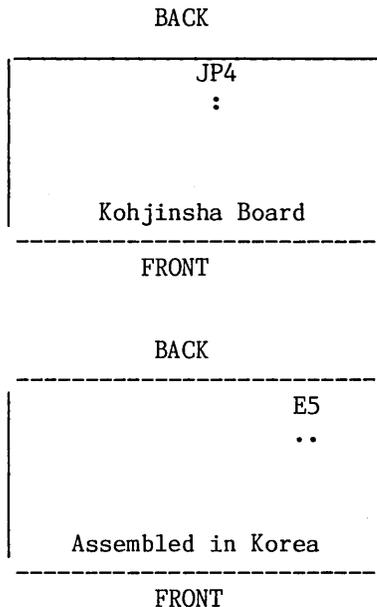
By Dave Mintie

If your Morrow has a revision 2.0 motherboard (parallel port), you have a unique test mechanism built right into your 4K ROM. This test mechanism, called ROM DIAGNOSTICS, enables you to determine if most of your MD's innards are functioning properly. Once enabled, the diagnostics unleashed by your ROM will let you test the proper functioning of your 2 serial ports, parallel port, internal RAM and disk drives.

If you are the least bit uncomfortable about removing the cover of your Micro Decision, this article is not for you. If you suspect problems with your machine, see a qualified dealer. If your unit is still under warranty, then the admonition remains the same. If your warranty has expired and you feel qualified... read on my friend.

To access the ROM diagnostics, remove the cover and locate jumpers labeled JP4 or E5. The revision 2.0 boards are manufactured in either Korea or Japan. The Korean boards are clearly marked "assembled in Korea." On this board the jumper you are looking for is labeled E5. The Japanese board is labeled "KOHJINSHA" and the jumper location is labeled JP4.

TOP VIEW OF MOTHER BOARDS



Once located, install a jumper block at either JP4 or E5 depending upon the board you have. You can purchase a jumper block at a Radio Shack or similar type of electronics store. In a pinch, you of course can wire wrap the two pins together. Replace the cover of your unit and turn the system on. If you pass the usual power on memory test, the following menu will appear on your screen.

1. PORT 1
2. PORT 2
3. CENTRONICS PORT
4. LOOP BACK ON PORT 2
5. RAM TEST
6. FDC R/W
7. FDC SEEK TEST
8. VFO TEST
9. BOOT

ENTER # :

Let's examine each one of these test functions one at a time.

The PORT 1 test checks out your terminal serial port by sending a barber pole test character pattern to your terminal screen.

The PORT 2 test sends the same barber pole test pattern to serial port #2. Make sure your serial printer or other device is connected for proper test results.

The CENTRONICS PORT test again repeats the same pattern to your centronics printer.

The LOOP BACK ON PORT 2 test verifies that your 8251 USART chip in charge of running port #2 is functioning properly. To complete this test you need to make a "MODEM TESTER." Go to your local RS or electronics part store and purchase a 25 pin DIN connector (MALE), often referred to as an RS232 plug. Solder pins 2 & 3 together with a short length of wire. Then solder pins 5 & 20 together in the same manner. You will notice that each pin is clearly marked and assigned a number from 1 to 25. Now plug this modified connector into port #2 of your MD and proceed to select this test from the menu. The test will immediately show "pass" or "fail."

The RAM TEST shows you what's going on inside your MD's 64K of RAM memory. The test, when completed, will display any address that is "bad." It will also show you the value expected and the value read from the bad address.

The FDC READ/WRITE test requires that a freshly formatted BLANK diskette be used. If you use one with any data on it, it will most likely

destroy the data. The test displays any errors on the screen.

The FDC SEEK TEST performs what's called a "butterfly seek test." Select the appropriate disk drive and the system will self test the outermost to innermost tracks and then back again.

THE VFO test. This is a variable frequency oscillator test. This test works on Shugart SA200 disk drives only. I did not have the necessary equipment to follow through on this one. More on this in a later issue.

BOOT test. Selecting this function will automatically cause your system to boot a diskette mounted in the A drive.

After you have completed the test, be sure to remove the jumper block. Failure to do so will result in a return to the test menu on rebooting the system.

The test results should enable you to pinpoint a problem area should one occur in your system. I own two MD3's which are in almost constant use and have never experienced any problems with either of them. I initially ran the test to satisfy my curiosity about the "undocumented" ROM diagnostics. One word of warning.....caution must be used in handling your MD's motherboard. IC's are very sensitive to static electricity.

EXPERIENCE WITH THE E-SYSTEMS

"PIGGYBANK" RAMDISK

by Charles T. Tart

Back at our September BAMDUA meeting in Berkeley, Peter Wallace of E-Systems demonstrated their "Piggybank" RAMdisk for the Morrow. This adds 385k of memory that the Morrow interprets as another disk drive, so it's the equivalent of having another disk drive. Since this one is all electronic, though, the access time is much faster than with a mechanical floppy disk, there's nothing mechanical to wear out, and it makes no noise.

I was enthusiastic enough to get one the next day and have Peter Wallace install it in my MD2. It is advertised as easy enough for an owner to install, and in most circumstances I think that is true, but I'm glad I had Peter install mine, for an immediate problem developed.

It worked great with their CP/M, but not with mine! The problem turned out to be that Morrow had distributed at least two versions of CP/M, slightly different enough from one another to make a big difference. I've heard that E-Systems has now straightened the problem out with Morrow, so no one else should run into the problem.

With that reservation out of the way, I'm happy to recommend this RAMdisk. I use my machine 90% for word processing with WordStar, about 10% with Personal Pearl to maintain a mailing list. As you unfortunately know, WordStar can be frustratingly slow while searching for the correct overlay. Now I put WordStar on the RAMdisk, and it must be at least 10 times as fast for many functions.

Things that used to take several seconds now seem to happen about as fast as the screen can redisplay, i.e, less than a second. In a review of another RAMdisk in BAMDUA Newsletter number Sytko Andrea compared WordStar to a deluxe motorhome: it's packed with features, but awfully slow. With the RAMdisk, it's like a zippy sports car!

The biggest slowdown with Personal Pearl is when you have to prepare a mailing label report that involves sorting. With hundreds of names on the mailing list, that can take a long time. Now I PIP the Produce Reports files and the Sort files (these are PEARLPR.COM, PEARLPR.LIB, PIP.COM, PSORT.COM, PSORT.LIB, and PEARL.AOO from your working PEARL disks) on the RAMdisk and it's much faster.

Starting from Option 3, Final Report, for example, it took about one-and-a-half minutes for the entire Sort procedure to be done and start printing using the RAMdisk, whereas doing it the usual way with two floppies took almost five minutes.

Some peculiarities: I normally configure my RAMdisk so it becomes Drive A. The normal Drive A then becomes Drive B, and the normal Drive B becomes Drive C. That works fine with WordStar and with Personal Pearl. If I PIP the systems disk onto the RAMdisk and then try to do something like formatting, though, the Morrow gets confused about the fact that Drive A is really Drive B now, and won't work right. Too bad. I have to hit

reset to drop out the RAMdisk and use Drives A and B in normal (slow!) fashion. The RAMdisk's memory stays intact, though, and rebooting the RAMdisk with the booting floppy gets it all back again.

Recently Peter Wallace (he's been very helpful) switched my RAMdisk to an MD3. This is an older MD3 (no parallel port, ROM 1.3) which has a motherboard layout just like the MD2. The RAMdisk was designed for the MD2 physical layout, so mechanically it fit, although the leads to the disk drives were short enough that we had to make my top drive A and the bottom one B, the reverse of the usual MD3 setup. This leads to some confusion using the MD3 in the normal mode, as you must remember that a screen message saying something like "your lower drive..." now means your upper drive. If you have a newer MD3, E-Systems may have to modify their RAMdisk connecting plug to make it fit.

The RAMdisk is working beautifully in the MD3, with one small problem that can be easily worked around.

I have a Qume 102A terminal. Because Personal Pearl doesn't have terminal selection data (according to the user help people) to handle the Qume, I have the Qume emulating a Hazeltine 1500, for which they do have terminal selection data. Thus I had to re-install WordStar for a Hazeltine 1500. Somewhere in the Morrow systems installation for making working disks, the WS.COM file which was set up for the Hazeltine 1500 gets

switched to specifying a Soroc IQ-120/140 terminal. This works fine with the mechanical disk drives, but when I PIP it onto the RAMdisk, WordStar doesn't seem to display properly.

The problem is that WordStar, at installation time, measures how much memory there is (it "sizes" memory, as the jargon goes). It then uses the top of memory to maintain little buffers in -- without telling anyone. That is why you have to install WordStar in a 63K CP/M environment, which is the environment that "Piggybank" requires, because it wants to use the top 1K of memory for its little driver! As long as you remember to treat WordStar this way, you are in good shape. The "Piggybank" instruction sheets are clear on how to create a 63K CP/M, so you should have no problem.

I love my RAMdisk! I feel imposed upon when I have to wait (it seems so long!) for mechanical disk access. But remember: When you turn the power off, or get a power line interruption, you lose everything on the RAMdisk. You can put the file you're working on on the RAMdisk, for example, for greatest speed, but you'd better remember to ^KD it fairly often and then use 0 to copy it to a floppy. I now just put WordStar, MailMerge, Correct-It, and a few useful utilities on the RAMdisk, stay on WordStar operating on A (the RAMdisk) but leave my files on C. You should still save with a ^KS or ^KD every few pages, though, if you want to minimize any possible loss.

FARMER BROWN ISN'T THE ONLY ONE WHO CAN'T CATCH A PIG!



Winchester and Floppy disks can't either... the PIGGY-BANK is just too fast for them all. Just install the PIGGY-BANK, load the software, and hang-on for a high-speed run for your money! As a semi-disk (ramdisk) the PIGGY-BANK runs 20 times faster, so you can load programs like Wordstar or Perfectwriter in less than one second. Formatting or saving files are done in a blink of the

eye! Or try the ultimate adventure—run CP/M+ (3.0) and use the PIGGY-BANK as bank-switched memory. The 384K bytes, silent operation, and reduced wear and tear on diskettes and drives means saving time and money. You can catch up with the PIG at your Morrow dealer or contact us directly.



E-SYSTEMS, BERKELEY 2308 FOURTH STREET, BERKELEY, CA. 94710 (415) 486-0686

DISKETTES DETERIORATE!

By Phyllis Brooks

I've gathered a lot of conflicting evidence on the life of disks. Some manufacturers suggest that a diskette used only as a back-up is well-nigh immortal -- as long as you protect it from extremes of temperature, ringing telephones, spilled coffee, and a dozen other hazards. But what about those carrying hardworking applications programs? Here's a short case history that may help others to avoid the panic that struck me last fall.

I use my computer largely as a word-processor and it usually runs at least an hour a day -- some days up to ten hours. Text is being entered, recorded, edited, shifted, and printed constantly. The sound of the Spinwriter printing away is the normal dim background to other activities in the house. Suddenly last September things started to go wrong.

I was in the middle of a book manuscript, full of footnotes, and was constantly using the Control-PT command to produce superscript numbers. As I printed off a draft of a chapter, the superscript numbers suddenly weren't superscript any more. I knew that I had done something wrong. So I painstakingly went through the thirty-page chapter again, reinserting the Control commands to be sure that they were there. (The screen told me they were there, but every comparative beginner on a computer knows that errors must be her fault!) No luck.

I knew that the superscript/subscript commands were under the same kind of control as the dot commands for line height, so I checked the settings on my printer to be sure that none of them had been moved. (I hadn't done it, but who knows what the cats might have been up to at midnight?) Still no superscripts.

Then I checked out the dot command for line height (.lh). Sure enough, it didn't work either. I set the line height to 4, adjusted line spacing to 3, and instead of the one-and-a-half line spacing I was used to getting with this procedure, I got triple spacing from the printer. Something was very wrong. Was it my computer or the printer? In either case, I could see dollar signs dancing in front of me as I headed for the dealer to ask embarrassing question #79 -- "How did I break my machines?"

Fortunately Tom Elliott at the Computer Center on University Avenue was very consoling. He's good at, "There, there." Before I brought printer or computer in, he suggested making a new copy of my WordStar program disk (which I had been using for about 8 months by then). I went home

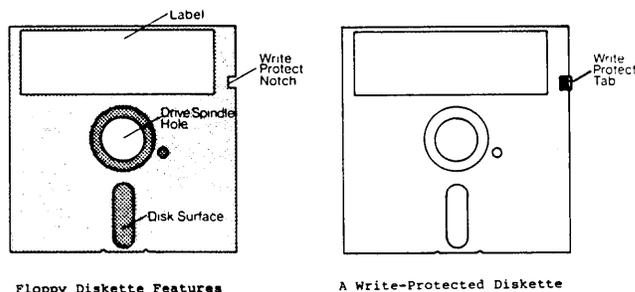
and recopied the disk. Not very confident, I took my chapter and printed it, using the new disk to issue the print command. (No, I didn't go through and reenter the Control-PT commands in the file.) Hallelujah! A perfect print-out.

Since then several people have told me that word-processing is hard on the magnetic coating on disks. I've been told to recopy program disks about once every six months, and retire disks on which I create constantly changing files after about a year of use. Back-up disks may well have a very long life, but the constant recording and erasing of files does eventually do bad things to disks.

MORAL: If inexplicable things start happening to text files -- lost commands, omitted text, etc., -- first recopy your word-processing program disk. To paraphrase Shakespeare, "The fault, dear Brutus, may lie not in ourselves but in our software that we are malfunctioning."

This article first appeared in the BAMDUA newsletter of May 1984.

[Ed Niehaus of Morrow tells me that some people have had diskette deterioration problems while using the QUEST bookkeeper system. It appears that QUEST is also hard on diskettes and can cause significant wear. The symptoms with QUEST were even more insidious than with WordStar because a few posted statements would suddenly not make it anymore and it would not be obvious immediately. Most annoying! Better to replace your QUEST floppies every 3 months or so then be sorry a year later. Editor.]





A "PIVOT" IS BORN!

by Sypko Andreae

Congratulations everyone! There is a new baby in the Morrow family of computers. Ah! And a healthy nine pound baby it is. Morrow Inc. was most happy to leak the news on the little newcomer in whispered but excited tones to your editor.

PIVOT is the name. Doesn't it look cute? Wouldn't you like to sling it over your shoulder and take it to the beach for an afternoon of relaxed wordprocessing while getting a tan? Or sneak it to your secret cabin in the woods to write that one glorious chapter that will make your book? Or tote it to the meeting you have to report on? Or carry it to class to take notes? That's right, you don't need an outlet. PIVOT has a rechargeable battery inside which will keep you going for four hours. Heard of the standard VCR Ni-Cad battery pack? That's it.

Small and light, yes. But don't let its size deceive you. This little machine packs a lot of power into a nine-pound package. Its heart is a 80C86 processor. That means it's a 16-bit computer. Now you can burst out of the old 64K RAM constraints. You can start at 128K and go up to 512K if you wish. And, yes, Virginia, the PIVOT will run LCTUS 1-2-3.

The liquid crystal display is 80 columns by 16 lines. It displays amazing things. Push the clock key and a world map appears on screen. Pick your time zone and, thanks to the built-in clock, see what time it is in, say, Rangoon.

The traveling executive's shoulder-strap computer would not be complete without a built-in modem. Press the telephone key and your spreadsheet or NewWord goes to sleep while your modem program springs to life, permitting you to inspect the latest Dow Jones quotation or fire off that memo over the MCI Mail network. In the excitement, don't forget first to plug your PIVOT into the phone jack.

Need a ten key calculator while you're in the midst of some other program? Push the key with the math symbols on it, and there it is, on one side of the screen, sort of like a one-column spreadsheet.

How can all this be? Modem, clock and calculator software is all tucked away in ROM. When you're done with it, you are back in RAM again. Your original program wakes up and proceeds as if no magic had interrupted it.

PIVOT runs MS-DOS. Using 5 1/4" floppies you can get your files to and from your MD3 using UNIFORM or MULTIFORM -- or directly if your MD3 runs MS-DOS with the 8086 co-processor board. We'll explain in the next issue. You want one right now? I do understand, but you will have to wait till August. I know, I can hardly wait myself.

MORE THAN YOU EVER WANTED TO KNOW ABOUT SERIAL COMMUNICATIONS

by Ed Berne

In the first issue of "Morrow Owners' Review" Dave Mintie explained how Morrow computers communicate with the world (including their own terminals). In this article I will go into more detail on the same subject.

The Morrow MD2 uses a 8251 UART chip to control each serial port. As Dave explained, this chip has the function of translating the parallel data (eight bits at a time) used by the computer to serial data (one bit at a time) for transmission to the terminal, printer or other peripheral. The chip contains one byte transmit and receive buffers as well as various control and logic elements.

The 8251 is a very versatile chip. It can communicate either synchronously (bits are sent or received evenly over time) or not, using "words" from 7 to 12 bits long. When the computer is powered up the ROM sends information to the 8251 setting it up. In the case of the MD2 Rev.1, the ROM tells the 8251 to send or receive data asynchronously with one start bit, eight data bits, no parity bit and two stop bits - a total of 11 bits for each character. The start and stop bits are used by the UART chip to detect the beginning and end of each character. These bits are added automatically by the UART when it is sending and stripped off automatically when it is receiving.

My terminal operates at 9600 baud. Baud means "bits per second". Even though it takes 11 bits to transmit one 7 bit ASCII code, I can transmit 9600/11 or 872 characters per second to the screen. A 300 baud modem, using the Morrow transmission method, sends characters at a rate of 300/11 or 27 characters per second.

In addition to converting data between parallel and serial, adding or stripping bits, calculating parities, and controlling transmission rates, the UART chip sends out a status byte. This byte is read at the status port (OFD hex for the terminal port, OFF hex for the printer port) and gives information on the communication status.

The bits of the status byte are interpreted as follows:

Bit 0 (Least significant bit) - Receiver ready (RxRDY). If this bit is set, the 8251 input buffer contains a character ready to be read by the CPU (central processing unit). The CPU can read the character with an IN instruction. When the character is read, this bit is reset. When the computer isn't busy CP/M "idles" in a loop which continually monitors this bit to see if there has been a keypress at the terminal.

Bit 1 - Transmitter ready (TxRDY). When set indicates the transmit buffer is empty and ready to receive data from the CPU (via an OUT

instruction) for transmission. When the CPU sends a byte this bit is reset. CP/M always checks this bit before transmitting a character.

Bit 2 - Transmitter empty (TxE). No more data to send. Basically used in synchronous mode to indicate that a SYNC character is about to be transmitted.

Bit 3 - Parity error (PE). If set, indicates that a parity error was detected on a received character.

Bit 4 - Overrun error (OE). This error occurs if the CPU fails to read a character before the next one becomes available. Since the receive buffer can only hold one byte the earlier character is lost.

Bit 5 - Framing error (FE). This bit is set if a valid stop bit is not detected at the end of a character and may indicate invalid data was received.

Bit 6 - Sync detect (SYNDET). Only used in synchronous transmission.

Bit 7 (Most significant bit) - Data set ready (DSR). Monitors peripheral status. The Morrow CBIOS (a section of CP/M) tests this bit before sending data out the printer port to be sure that the printer is ready to accept it. This bit could also be tested to determine whether a modem, for example, was properly connected and ready.

The three error bits (3,4,and 5) operate in a similar fashion. They do not stop or inhibit the operation of the port. It is the responsibility of the software to read the error status and take appropriate action. The Morrow CBIOS (Revision 1.3) does not monitor these bits. The error bits will remain set, once they detect an error, until they are reset by an "error reset" signal.

The attached program shows how you can read the status bit with BASIC. It is really just an exercise, but possibly could form the basis of a subroutine in a program that manipulated the serial ports. The key lines are 140, where the status byte is read and assigned to the variable STATUS; and 260, which decomposes STATUS into bits. Try running the program with your printer both turned off and on to see the effect on the DSR bit.

A thorough understanding of serial communications and the 8251 UART chip would be necessary for anyone who wants to interface uncommon devices to a Morrow MD. Further, the performance of standard peripherals might be improved by customizing the device drivers in the Morrow CBIOS to the actual peripheral devices being used.

In the final article in this series, I'll discuss programming the 8251 to modify the communication parameters, such as baud rate, number of stop bits, etc.

```

10 'This MBASIC program reads and reports the status of a serial port
20 TRUE = -1: FALSE = 0
30 PRINT CHR$(&H1A)      'Clear screen
40 PRINT TAB(23); "Which port do you want to see the status of ?"
50 PRINT:PRINT TAB(38); "(T)erminal
60 PRINT:PRINT TAB(38); "(P)rinter
70 ANSWER$ = INPUT$(1)
80 OKAY = FALSE
90 IF ANSWER$ = "T" OR ANSWER$ = "t" THEN PORTNAME$ = "TERMINAL": OKAY = TRUE
100 IF ANSWER$ = "P" OR ANSWER$ = "p" THEN PORTNAME$ = "PRINTER": OKAY = TRUE
110 IF NOT OKAY GOTO 70
120 IF PORTNAME$ = "TERMINAL" THEN PORTADD = &HFD
130 IF PORTNAME$ = "PRINTER" THEN PORTADD = &HFF
140 STATUS = INP (PORTADD)
150 FOR I = 0 TO 7
160 READ BITNAME$ (I)
170 NEXT I
180 PRINT:PRINT:PRINT TAB(32) "STATUS OF "PORTNAME$" PORT"
190 PRINT:PRINT:PRINT TAB(28) " BIT"," BIT"," BIT"
200 PRINT TAB(28) "NUMBER","NAME","VALUE"
210 PRINT
220 FOR BIT = 0 TO 7
230 PRINT TAB(28);
240 PRINT BIT,
250 PRINT BITNAME$ (BIT),
260 PRINT (STATUS AND 2^BIT)/2^BIT
270 NEXT BIT
280 END
290 DATA RxDY,TxDY,TxE,PE,OE,FE,SYNDET,DSR

```

LOST & FOUND DEPT.

by Clarence Heier

An important part of every computer system is a strong network of users groups and newsletters. MOR encourages the formation of these groups through the services of LOST AND FOUND. LOST AND FOUND will assemble regional lists of all people interested in the formation of a group and disseminate this information to the people that write in. If you are interested in the formation of a group in your area, but don't know anybody else with a similar system, please write:

Lost and Found
Morrow Owners Review
C/O Clarence Heier
3430 93rd Street
Sturtevant, WI 53177

We will compile lists of names by geographical area, and share those names with each person that writes. LOST AND FOUND is also available for tips and advice on the formation of a group.

Even if you don't consider yourself a "hacker" and use your system only for word processing, you will benefit by participating in a users group through the sharing of ideas and by making new acquaintances.

The information on these lists is kept confidential and is distributed only to those that write from that geographically area. We will assume that by writing to us, you are giving permission for us to release your name, address, and phone number to others with a similar interest.

The above address is for LOST AND FOUND only. All other M.O.R. business should be addressed to:

MORROW OWNERS REVIEW
P.O. Box 5487
Berkeley, CA 94705

USER GROUPS, ARE THEY FOR YOU?

By Dave Mintie

Unless you are actually a member of one, very few know what a user group is or how it can benefit a computer owner or user.

User groups have been in existence since the early days of mainframe computers - primarily organized for the various users within large corporations. They were the only ones who could afford to own a computer system. If a group member spoke of a software package that went for "eighty nine ninety five," he meant thousands. These groups would meet monthly and offer a forum for members for the exchange of information regarding the eccentricities of their systems and software. Today, with the advent of the micro computers some of which are designated personal computers, thousands are entering the arena of computer ownership for the first time.

Enter the micro computer user group. There are now literally thousands in existence throughout the world. Many were started by some of those mainframe converts who had belonged to groups like Guide or Share. Most are started by owners and users of micro computers who just couldn't get the kind of support that they really needed from their local dealers.

Most dealers sell systems "right off the shelf", still in their original shipping cartons. The box is usually filled with voluminous manuals entitled "Guide to Operations, Operating system tutorials, Programming primers, instructions, care and maintenance, etc., etc.

For most first time users, this pile of instruction books is largely incomprehensible.

When I purchased my first system, an early single board computer, I handed over my check for \$2,000 dollars. In return, I got a box, unopened, containing five books along with a cursory five-minute explanation on how to format a disk from the salesman. It was a Saturday, so I took the thing home, opened it up and just stared at it for at least an hour. I was terrified to even turn it on, fearful that in my ignorance I might cause a "crash" or some equally ominous fate.

I read... and read...and read for the next week. It all looked so easy back at the computer store. I was reading much and understanding little. To this day, the manuals always seem to be written for engineering types who thrive on computer jargon that seems incomprehensible to us ordinary folks. I was able to determine from my reading, that understanding the operating system was the key to understanding how to successfully operate the computer. My machine utilized CP/M, somewhat of a standard in those days, so I set out to purchase an easier-to-understand CP/M manual. I went through five CP/M books including one done

completely with cartoon style illustrations and one entitled, "CP/M FOR THE COMPLETE IDIOT," before I finally started to catch on.

The more I talked to other new users, the more I found that mine was not such an unusual experience. All of us were "No Tech" types taking the plunge into the "High Tech" world.

First time users seem to make numerous return visits to computer stores and inevitably meet other first time users. In many cases, these users band together to form local user groups. In some cases user groups are announced on store bulletin boards or electronic bulletin boards. Some submit announcements to computer publications. I've joined several, found in one of these ways.

What are the benefits of joining a user group? A local group offers the opportunity for those who are not "main frame" types and do not have a traditional computer background, to get the kind of guidance and support they need and can't find anywhere else. It is really amazing to see new members suddenly realize that they are in a room full of other people who have the same kinds of problems with their machines. More importantly, they can get unbiased straight forward answers to their questions from other users.

National user groups, on the other hand, are primarily useful for their newsletters. They keep their members informed of developments concerning their computer system on a national scale. Such things as new products, enhancements, upgrades, bug reports and "fixes" or solutions to software bugs or problems. Many national groups maintain large libraries of Public Domain Software, all available to members for a token fee. Public Domain Software is a program or collection of programs that are "donated" for public use by their authors. Many of the programs in these collections are superior to those offered for large sums of money in the retail market.

National users groups also have a lot of clout in influencing corporate "big wigs" to make marketing decisions favorable to current owners of systems. In the Micro world, state-of-the-art seems to change completely every six months. If you've invested hard earned bucks in your system, you don't necessarily want to be left behind. A manufacturer who provides upgrades, software and hardware, can only benefit you as the end user.

So, join a local user group or a national one, or both. The choice is yours. If you own a Morrow computer, we hear of new groups being formed every month. Chances are, there is one near you or there soon will be.

UPDATE ON MORROW USER'S GROUPS

Here are changes and additions to the MORROW USERS GROUPS listed in the April, 1984 issue of the MORROW OWNERS' REVIEW.

MICRO DECISION BAKERSFIELD USERS GROUP (MDBG)
 1919 LACEY STREET, # D
 Bakersfield, California 93304
 (805) 832-3682 Contact: Joe O'Bannon
 Meets: last Monday of month
 Location: Genuine Appliances
 320 Eureka St., Bakersfield
 Fees: \$12 per year, includes newsletter.

MORROW OWNERS DIGEST -- Newsletter Only
 104 West Wistaria -- \$8 for 6 issues; SASE.
 Arcadia, California 91006
 (818) 447-6541 Contact: Emna Paquin

LAMUG (Formerly Morrow SIG)
 568 Elizabeth Street
 Pasadena, California 91104
 (818) 794-3950 Contact: Robert L. Parker
 Meets: 4th Thurs of month at 7 PM
 Location: 11430 Chandler Blvd., No. Hollywood

STANFORD MORROW USERS GROUP (SMUG)
 1419 Prince Edward Way
 Sunnyvale, California 94087
 (408) 789-9285 Contact: Ed Gallaher
 Meets: 2nd Wednesday of each month, 7:30 PM
 Location: Polya Hall, rm 111, Stanford Campus

VALLEY COMPUTER CLUB
 (has no specific SIG)CP/M Group
 P.O. Box 6545
 Burbank, California 91510
 (213) 447-6541 Contact: Emma Paquin
 Meets: 1st Weds of month 7 PM
 Fees: \$10.00/yr - has newsletter

GMUG/LMUG -- Starting local RBBS
 P.O. Box (Drawer) 18724
 Greensboro, North Carolina 27419
 (919) 272-8399 Contact: Kenn Melton
 Meets: 2nd Friday of month
 Fees: none at this time

MILWAUKEE AREA MORROW USERS GROUP (MAMUG)
 (Formerly: WISCONSIN ASSOCIATION OF MORROW USERS
 C/O Computer Commuter, 183 East Wisconsin Avenue
 Oconomowoc, Wisconsin 53066
 (414) 567-9192 Contact: Brian C. White

Please contact Renee Potter (415) 430-1970, ext. 315 (Morrow), for any additions or changes. I would also like to establish regular contact with all of you to keep up with your group activities, meetings, BBS numbers, etc. If your group publishes a newsletter, please put me on your mailing list.

I wish you continued success with your group, and if I can be of additional assistance, please don't hesitate to contact me.

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A TRIP THROUGH COMPUTER LAND

With the Port Washington Curmudgeon (Part Two)

by Jack Eckert

SYNOPSIS:

Not wanting to be left behind in the computer revolution I decided to purchase one. Part One discussed some of the trials and tribulations that I went through prior to and when I made my decision. I ordered a Morrow MD3 after surveying the market. I hoped that Morrow would at least be in business long enough to insure that the warranty wouldn't expire before the company did. Osborne had crumbled. Texas Instruments relinquished a share of the market. The IBM blitz was well underway. Everybody was buying Apples (during the depression apples were sold on street corners). And I was getting cold feet!

What a field day some of the "Snake Oil Salesmen" were having in their tent shows!

And that little woman who has been a member of my household for these thirty years was very unenthusiastic about my entering the last part of the Twentieth Century. "You have a typewriter and an adding machine. What more do you need!" she said emphatically, in her naturally sweet and demure way.

PART TWO - GEORGE MOVES IN.

The day arrived at long last. Box after box was lugged downstairs, out through the doors of the bank, and loaded on to my mini-truck. I expected the momentary arrival of the towns "finest"; sirens blaring. In my mind I saw the headlines in next week's paper, "Local Curmudgeon Caught Red-Handed," they screamed, "A likely story," said the judge. Twenty-to-life for the Curmudgeon.

"Give me a call if you have any trouble," said the dealer as I handed him a check for full payment. "No problems do I foresee," said my ego. "Look at all of the books I get with the machine and I know how to read."

(How was I to know that there are some who write instruction manuals who don't know how to write!)

The drive home from the bank was uneventful. I confess that I watched the rear view mirrors until I got home and closed the garage doors behind my latest acquisition.

It was late morning and my friendly overseer was at work.

One by one I lugged the boxes up two flights of stairs to my temporary office. One by one I unpacked them. Each device was neatly set up on a

converted dining room table. Each of the many books was put in a book rack so that I could find what I needed, when I needed it. I was organized.

"Oh boy, the wires." "What goes where?" "Ah ha, the book!" "I wasn't an engineer all these years for nothing." "Which book?" "CP/M 2.2 must be it, that's about the operating system," I mumbled to myself.

I took it out of the book rack and opened it up. "Oh no," I gasped. "I don't understand the words in the Table of Contents. I really blew it this time! I should have listened to my boss and bought the Commodore-64," I moaned.

I called the dealer. He was out to lunch.

"Eureka," I said, "I'll call Fred."

Fred is a sometimes business associate who has in depth knowledge of computers. He has a few of his own. Has taken many courses in them. And best of all, he was scheduled to teach a course in them. What a good friend to have in my hour of need!

Fred came over. We both sat down and tried to make sense out of the CP/M 2.2 Manual.

After an hour, we finally figured out that that was the wrong manual. We made a new selection, the loose-leaf binder, the one with the fewest pages.

"It is in English," I said.

Fred agreed. "Now how do we hook this thing up?"

We took it wire by wire, is what we did. Yes, wire by wire until there were none left. Fortunately, the book showed where the on/off switches of the machine were or we would still be looking for them. Our persistence paid off at last. Four hours after pick-up and six man-hours to get it connected.

And now the acid test. The MD Manual said it was menu driven. Good! The switches were thrown, words came on to the screen, and no menu.

All we got was:

A>

"I'll give it a computer command," said Fred as he typed in FILES after the A>. So now the screen looked like this:

A>
A>FILES
FILES?
A>

So he tried it again. Same thing. Meanwhile, with my thickest glasses on my nose I pored through the loose-leaf notebook. No Help!

We faced that CP/M 2.2 Manual again.

Time was drawing short. That sweet little woman with the vile temper would soon be home. How could she be faced when two of us geniuses couldn't get the contraption started?

A hasty call to the dealer! "On another line," was the answer. "I'll wait." At last after what seemed to be a couple of hours he came on line.

"Why don't you try typing in AUTO PILOT CPMENU," he said. "Call me back if it doesn't work." I hated to let him get off the line. I didn't know if I would ever reach him again.

A> AUTO PILOT CPMENU

And the Menu came up. At last we were on our way. Nine man-hours to get our first screen full of something besides gibberish. Hardly a good day. The coach turned into a pumpkin and we shut it all down, closed the door and retired to "Miller Time."

Five brews later we decided that the Curmudgeon was to face the lioness in her den. Fred went home!

"What are all of the boxes in the garage that have the fractured light bulbs on?" the love of my life asked.

"Why, Sweetie Face, I have been to the store," I replied.

"WHAT STORE?" she shrieked.

(Visions of divorce court danced through my mind. The question was: Would she try to get the new computer too?)

"Why, Dearie, I bought something for the business," I said in a soothing and gentle voice.

"WHAT BUSINESS?"

"Why, the business Fred and I are going to

start," I said, hoping to transfer some of the wrath.

"JUST EXACTLY WHAT DID YOU BUY?" she demanded to know.

"A micro computer," I whispered. My head hung down, my chin on my chest, like Marley's Ghost.

"A COMPUTER!!!!!!!!!!!!!!!!!" she shouted. "Which card did you charge it on?"

"I paid cash," I mumbled bravely, replying sensibly to her question in a way only the Curmudgeon would understand (and the dear readers, too).

"CASH, CASH.....we don't HAVE any cash," she said.

"Not to worry!" said I. "I withdrew it from the bank."

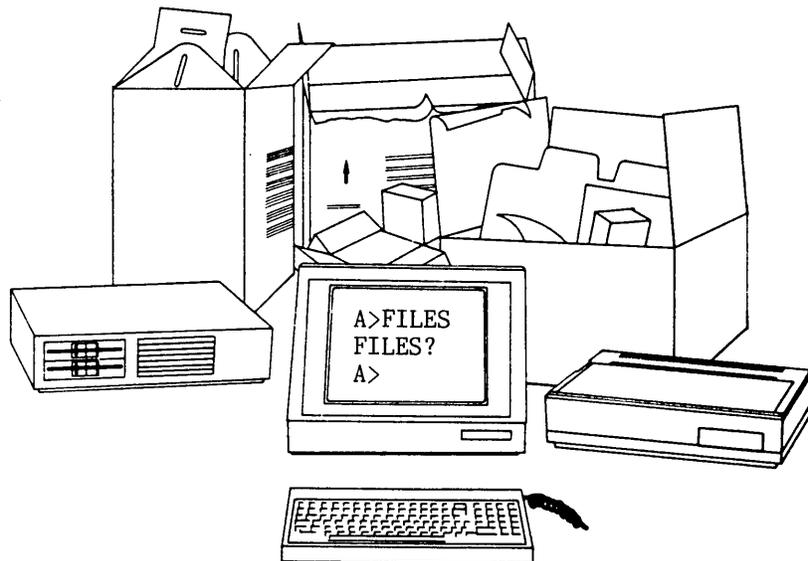
"Oh NO!" she said. "And who sold you that THING?" she demanded to know.

"A guy above the bank."

The remainder of the conversation is not fit for the eyes and ears. Suffice it to say that the water was drained from my water bed that nightwhile I was in it!

In the next episode the Curmudgeon begins to conquer the wily computer. Fortunately, Friend Fred is the family lawyer and decided to take my side for the duration of this altercation. Will the Curmudgeon conquer "Personal Pearl?" Will "WordStar" confuse the poor old guy? Does "Logicalc" prove to be logical? Is "Basic" really basic? Or is it "baZic"? How does "George" get his name? Find out in the next issue of the Morrow Mag (or Orphans Review).

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COMPUSERVE TALK

CompuServe Information Service
19:02 PDT Friday 04-May-84

* CP-MIG Conference Schedule *

Morrow users - Fridays at 10:00 Eastern

Welcome to channel 30, SYpko Andreae

(30,Chris Morrow) To make the MD3 run quietly.

(30,Brian Leyton) Chris- Great! I did hear about a couple of Probs, but I was very happy w/ results.

(30,Chris Morrow) Brian, I now WORRY that the thing is too quiet!!!

(30,Brian Leyton) By the way, I got the info from some guys at Priority 1 elect. They wanted credit.

(30,Matt Pericles) Hello, all.

(30,Brian Leyton) By the way, has everyone seen the new overlay for MDM7 which allows up to 9600 baud?

(30,Stan Young) Brian - on MD3?

(30,Alex Krauska) No Brian, I am still on MDM718

(30,Stan Young) Matt, how you feeling?

(30,Matt Pericles) Ok, I don't know if I can stand three more weeks though.

(30,Chris Morrow) Hi Syoko

(30,Brian Leyton) Stan, does anyone have an overlay for MDM7 for an MD-11?

(30,Michael Conroy) WELCOME BAMDUA!

(30,Stan Young) Brian - not that I know of. Shouldn't be difficult once you know the ports!

(30,Michael Conroy) Hi Syoko

(30,Stan Young) Hi, Syoko - did my ad get there?

Hello Stan Young. No ad yet. Hopefully tomorrow.

(30,Michael Conroy) Syoko?

Hey! we have a working MDM7-11.COM ! Who wants ..

(30,Stan Young) Syoko - just type - we'll see it!

? CBXLNG - Line too long: 80 max

(30,Michael Conroy) Just don't type long lines.

(30,Michael Conroy) That's it!

(30,Alex Krauska) If a line gets cluttered, type ctrl-v to retype the line.

(30,Stan Young) You've got it licked!

We got a MDM11.COM; it is Dave Block's ...

(30,Stan Young) We lost Matt

(30,Stan Young) MDM711?

(30,Michael Conroy) MDM11.COM?

Yes MDM730.COM modified for MD11

(30,Alex Krauska) I logged on to Dave Blocks' Morrow BBS. - Interesting.

Morrows BBS works only off and on: "Development"..

(30,Chris Morrow) Do you have the phone # Alex?

(30,Michael Conroy) 415-632-1951

(30,Brian Leyton) By the way, the Los Angeles Morrow BBS should be up soon ...

(30,Stan Young) Syoko - do you mean MDM711.COM?

(30,Michael Conroy) Dave said he was running MDM730 last week.

(30,Gary Breuckman) I'm running mdm730

(30,Stan Young) That's what I'm running here.

(30,Dave Garland) yes, I'm running mdm730.

(30,Michael Conroy) It's MDM730 setup for an MD11?

(30,Stan Young) And waiting for MDM740!

(30,Michael Conroy) Stan- Irv said 730 was it!!

Dave Block had a MDM730 that he modified for MD11

(30,Dave Garland) Stan-no, MDM730 is supposed to be the last of the line.

(30,Stan Young) Nope - he changed his mind. Jumping to MDM740!...

(30,Alex Krauska) That may be it for Irv, but he hasn't Copyrighted the name!

Brian: Lots of response to your MOR article ...

(30,Dave Garland) Alex-he claims to have copyright.

(30,Matt Pericles) Back, again.

(30,Brian Leyton) the # for the LAMUGBBS will be 818-340-9947

Brian Leyton, you still there?

(30,Michael Conroy) Brian- who is sysop? Hours? Baud rate?

(30,Brian Leyton) Wel Yaeh, I'm still here,Syoko, I'm glad it was well liked.

(30,Stan Young) Syoko, you know if my ad arrived?

Responses mixed: For some it worked, for many it didn't.

(30,Michael Conroy) So what is MD7-11.com Syoko?

It is MDM730 adapted for MD11, Michael

(30,Michael Conroy) Well gee, I'll take it-along with the MD11!

Brian: Dave Block is scanning responses with me.

(30,Brian Leyton) Well, guys Sorry, but I have to go. Hope to come back next week!

(30,Michael Conroy) Night Brian.

(30,Stan Young) Night, Brian. Hope to see you here next week!

(30,Dave Garland) bye Brian

(30,Richard Coveney) Bye

(30,Stan Young) Syoko - is Ahalt going to drop by?

(30,Michael Conroy) Anybody want a Morrow SIG?

(30,Alex Krauska) Think there are enough of us to interest Compuserve?

(30,Dave Garland) Michael-what do you mean?

(30,Michael Conroy) Dave- there is a separate Kaypro SIG, we could do one too.

(30,Stan Young) Syoko - do you think there would be interest in a Morrow SIG among..

(30,Chris Morrow) Syoko, has my MCI Mail letter arrived yet?

(30,Dave Garland) Michael-sounds good to me. Get us on the SIG menu and maybe attract more.

(30,Stan Young) Dave - that's the idea!

(30,Michael Conroy) How about an online edition of MOR?

(30,Alex Krauska) Michael - Kaypro sells an order of magnitude more machines than Morrow..

(30,Michael Conroy) Quite true Alex- I'm "blue-skying" here.

(30,Alex Krauska) But I suppose even people who own computers made by a small firm can have

(30,Alex Krauska) their own sig.

(30,Stan Young) Alex - there is an OSI sig!

(30,Bill Lamp'1) EVENING, ALL.

(30,Dave Garland) Aha! The Information Explosion in action!

MORROW OWNERS' REVIEW

P.O. BOX 5487

BERKELEY, CA 94705

BULK RATE
U.S. POSTAGE

PAID

GOLDEN STATE
DIRECT MAIL

(30,Stan Young) Hi, Bill!
(30,Dave Garland) Hi Bill
(30,Alex Krauska) People who buy Morrows must be very vocative.
(30,Stan Young) Sypko, are you receiving me?
(30,Michael Conroy) Or are you out too lunch.. are you receiveing me.
(30,Alex Krauska) Matt - I guess you do have to be informed - to buy a Morrow!
(30,Michael Conroy) Alex- because the MD owners are so few and far between , we may have...
(30,Michael Conroy) more need and desire for a SIG than the Kaypro folks...
(30,Michael Conroy) they have enough local support but I find I am the local MD expert <ha!>.
(30,Stan Young) You too, Michael?
Sorry, have to serve dinner, will just monitor...
(30,Michael Conroy) A CRT dinner!
(30,Stan Young) OK, Sypko, see you later!
(30,Dave Garland) see you later, Sypko
(30,Chris Morrow) bye Sypko
(30,Michael Conroy) Where's Ed and Dave?
(30,Matt Pericles) Gang, I'm going to cut out. My bill is getting too high.
(30,Michael Conroy) Haven't seen BYTE yet Matt.
(30,Michael Conroy) Night Matt.
(30,Dave Garland) nite, Matt
(30,Chris Morrow) See you later Matt
(30,Stan Young) OK, Matt. Have a good evening. Three more weeks, eh?
(30,Alex Krauska) Does anyone know why you have to give back your Mpro disk to get Newword for \$100?

(30,Stan Young) Which one?
Brian still there?
(30,Stan Young) Alex, suspect it has to do with the way the license agreement is written.
(30,Dave Garland) Welcome back, Sypko
(30,Stan Young) No, he left a while back.
(30,Stan Young) How was dinner?
(30,Bill Lamp'1) Is it worth the \$100?
(30,Alex Krauska) Stan - But what can they do with the disK?
(30,Dave Garland) Masticate it!
(30,Michael Conroy) Reformat it and use it for PP!
(30,Michael Conroy) Wonder if Morrow switched because KPro was picking up Mpro line?
(30,Chris Morrow) By Berlin, that is, not a hint!!
(30,Stan Young) Sypko - still looking at mid-june for next MOR?
Yes, indeed!!! Real great issue again!!!
(30,Michael Conroy) If your circle could be spirals, and your idols weren't machines...
(30,Stan Young) Did my ad make it in time?
(30,Alex Krauska) Morrow probably wanted to cut costs, besides I hear the Newword manual is better.
(30,Michael Conroy) Keep em coming Sypko!!
(30,Stan Young) Alex, the manual is MUCH better.
(30,Stan Young) Hmm. Sent it next day mail yesterday!
(30,Chris Morrow) Sypko, first issue was terrific.
+++
OK
ATH
OK