TANDY LAPTOP COMPUTING NOVEMBER 1991 -VOL. 8, NO. 8

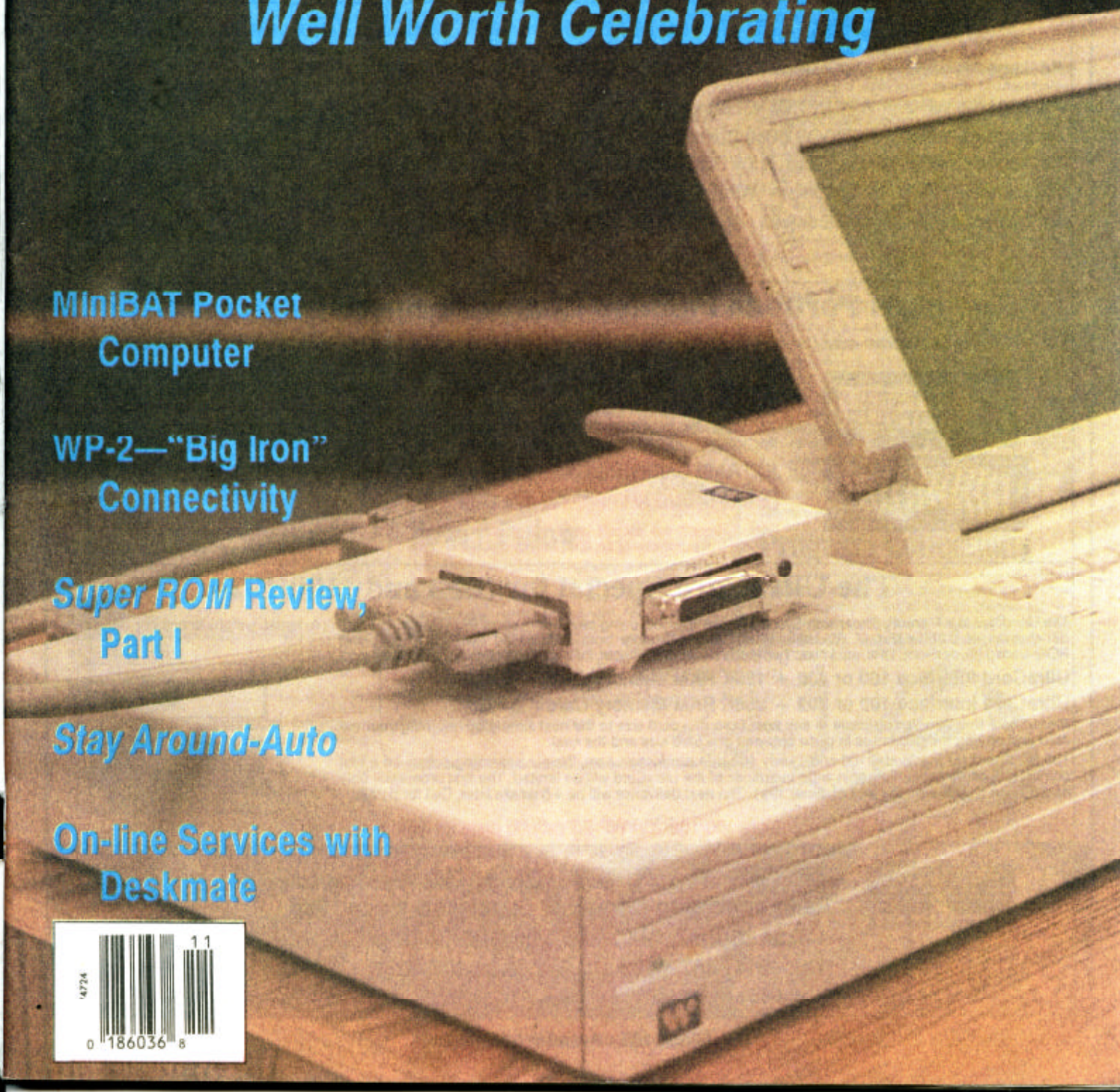
TERRY KEPNER'S

portable 100

$3.95/CAN $4.95

A MONTHLY PUBLICATION (EXCEPT COMBINED JULY/AUGUST ISSUE)

Weltec Parallel Port Adapter & Drives: Well Worth Celebrating



MiniBAT Pocket Computer

WP-2—"Big Iron" Connectivity

Super ROM Review, Part I

Stay Around-Auto

On-line Services with Deskmate

11

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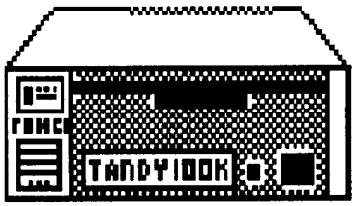
Laptop and Palmtop Computer Specials

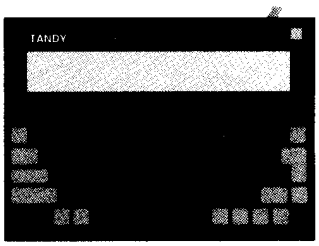
TANDY 100/102/KC-85 OWNERS: **TANDY 100K PORTABLE 3.5" DISK DRIVE SPECIAL** (Reconditioned units only)
Units come complete with manual, cable, Tandy utility disk and are fully guaranteed by Ultrasoft Innovations for 90 days.



PACKAGE #1: TDD-1 + DISKPOWER + SUPERA = $159.95 (Reg. $269.95)
PACKAGE #2: TDD-1 + DISKPOWER + TEXTPOWER = $159.95 (Reg. $249.95)
PACKAGE #3: TDD-1 + DISKPOWER + ULTRASCREEN = $159.95 (Reg. $229.95)
PACKAGE #4: TDD-1 + DISKPOWER + ASSEMBLER = $159.95 (Reg. $229.95)
PACKAGE #5: TDD-1 + DISKPOWER + DISASSEMBLER = $159.95 (Reg. $229.95)
EXTRAS: 3.5" DISKS (Quantity 10) = $8.95 / AC POWER ADAPTER = $6.95
UPS GROUND SHIPPING & HANDLING IS EXTRA = $6.00

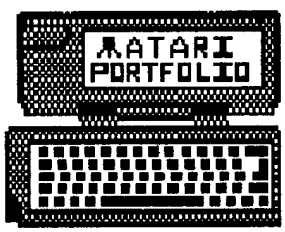
The Tandy WP-2 Word Processor Special (New units only)

Package#1: WP-2 + 128K Memory Chip* Bundle . . . $ 399.95 (Reg. $ 430.00)
Package#2: WP-2 + WPDUET (MAC) Bundle . . . . . $ 419.95 (Reg. $ 450.00)
Package#3: WP-2 + WP2DOS (IBM) Bundle . . . . . $ 399.95 (Reg. $ 430.00)
Package#4: WP-2 + 128K Chip* + WPDUET Bundle $ 479.95 (Reg. $ 530.00)
Package#5: WP-2 + 128K Chip* + WP2DOS Bundle $ 459.95 (Reg. $ 530.00)
EXTRAS: CARRYING CASE $49.95 / AC ADAPTER $6.95 / 200K DISK DRIVE $ 179.95
UPS GROUND SHIPPING & HANDLING IS AN EXTRA $8.00 (*Note: memory chip installed)



The Atari Portfolio Palmtop Computer Special (New units only)

The Portfolio is a 128K Pocket-sized Computer, based on MS-DOS 2.11, with a 40 x 8 LCD screen, only 1 lb weight & with built-in application software.



PACKAGE #1: PORTFOLIO + 032K MEMORY CARD + PARALLEL INTERFACE = $349.99 (Reg. $480.00)
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PACKAGE #3: PORTFOLIO + 128K MEMORY CARD + PARALLEL INTERFACE = $449.99 (Reg. $600.00)
PACKAGE #4: PORTFOLIO + 128K MEMORY CARD + SERIAL INTERFACE = $479.99 (Reg. $630.00)
PACKAGE #5: PORTFOLIO + 128K MEMORY CARD + PC RAM CARD DRIVE = $499.99 (Reg. $650.00)
EXTRAS: CARRYING CASE $29.99 / AC ADAPTER $9.99 / PORTFOLIO BOOK $17.99
UPS GROUND SHIPPING & HANDLING IS AN EXTRA $8.00

Note: Ultrasoft will accept trade-ins of used Tandy 100/102/200/DVI and accessories (in any condition) against the purchase of an Atari Portfolio or Tandy WP-2 and related accessories.

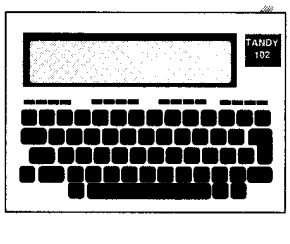
The UltraCard Special for the Tandy 100/102

The UltraCard is a Memory Expansion System for the 100/102, using credit-card sized RAM Cards. The unit is external, weighs only 8 ounces and has dimensions of 6.25"x4.5"x0.5" (WxLxH). RAM Cards will store both RAM-based (.BA, .DO, .CO) and ROM-based (SuperRom, URII, etc.) files. Two cards slots are available, for a total of 512K memory expansion.

UltraCard Interface 100 or 102 + 128K RAM Memory Card = $349.90
UltraCard Interface 100 or 102 + 256K RAM Memory Card = $449.90

Please note that you can upgrade at any time from one card size to the next simply by returning your old card and paying the difference in price between one card size and the next.

The UltraCard for the Model 100 and Tandy 102 is in production now. We are accepting orders on a first come - first serve basis. To begin with, quantities of the UltraCard will be limited. The first orders will only begin to be shipped by the end of June, 1991. The next deliveries will be 4-6 weeks later. Call for details.



Please contact Ultrasoft for a complete 100/102/200/WP-2/Portfolio product listing.

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Circle 135 on reader service card.

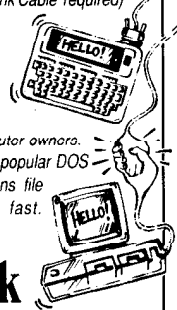
More Than Just a Laptop User Group

Club 100 — Pleasant Hill, California — Tandy Laptop User Group

Lapdos II

Turn your Model 100/102/200/NEC8201 into a PC-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to MS-DOS computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Feature rich! (Computer <—> Link Cable required)

WP2DOS

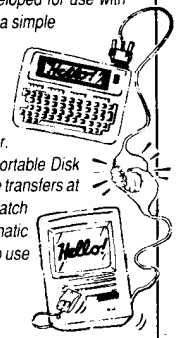


Turn your WP2 into a PC-partner. The only "file transfer" and "file conversion" software available for WP2 to DOS computer owners. Online utilities convert WP2 .DO files to popular DOS word processing file formats ... maintains file formatting codes. Super easy and fast. (Computer<—>Link Cable required)

Computer Link <—>Cables

Custom-built cables specifically developed for use with Lapdos II and WP2DOS. More than a simple "null-modem" cable.

100duet



Turn your Model 100/102 into a Mac-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to Macintosh computer for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Automatic file translations allow your Mac programs to use your laptop files, directly!

Loader

Add-on connection program enables Model 200 and NEC8201 owners to use 100duet.

WP2duet

Turn your WP2 into a Mac-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to Macintosh computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Automatic file translations allow your Mac programs to use your laptop files, directly! Maintains file formatting codes.

The Ultimate ROM II

Four programs in one make this more than just a "super" ROM. ***T-WORD:*** *overwrite/insert mode while editing, imbed print controls, control print output (margins, line spacing, page feeds, headers, footers, auto page numbering, bold face, underline, italics, mail merge, labels, and more), pixel-plot view of document before printing.* ***T-BASE:*** *true relational base operations, key field sorts, math, report generation, etc.* ***IDEA!:*** *outliner program for concept development.* ***VIEW 80:*** *see up to 60 characters per line while in TEXT, TELCOM and BASIC, fast processing, easy to read.* ***TS-DOS LINK:*** *automatically loads and runs TS-DOS from disk without conflicts (TS-DOS on disk, sold separately).*

TS-DOS on Disk

Super fast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. Use by itself or with the Ultimate ROM II or other ROMs.

TS-DOS on ROM

When all you need is disk access without using RAM. Super fast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. ROM version includes file compression in RAM. Program runs from ROM - uses no RAM!

ROM2/Cleuseau

The very best programming tools available for Model 100/102/200 and NEC8201 laptop programmers. Two ROMs in one, and more. ROM2 is a full functioned 8085 macro assembler. Cleuseau adds much needed features to BASIC and TEXT. Call for full details.

Power Pillow

Good-looking, powerful, long-lasting battery pack encased within an attractive black-vinyl holder provides hundreds of hours of battery life. Attaches to the back/bottom of your laptop with velcro (included). Hand crafted and tested. (Requires 4, "D" cell batteries, not included).

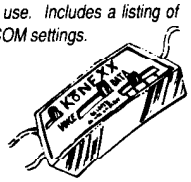
Keyboard Bands

Just the right size dental rubber bands necessary to almost eliminate Model 100/102/200 keyboard noise. Great for library and meeting use. Easy to install. Instructions included.

Quick Reference Card

Don't leave home without this handy three-fold card, containing all the functions for Model 100/102 use. Includes a listing of BASIC, TEXT commands and TELCOM settings.

KONEXX

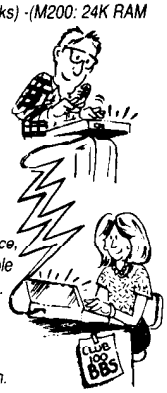


The hottest, new line-attachment for going online through office PBX and hotel phones. Does not require a dedicated line. Active electronics provide much more than simple switching. Attaches, in-line, between the phone handset and the base. Includes clips for hard-wired base-to-handset found in most hotels. Small size - fits in pocket.

RAM Expansion

Expand your Model 100/102/200/WP2 computer's RAM. RAM chips, RAM expansion modules and WP2 RAM disks available. (M100: 8K RAM chips, 64K and 96K RAM Exp Banks) - (M102: 8K RAM, 128K and 256K RAM Exp Banks) -(M200: 24K RAM banks) - (WP2: 128K RAM disk)

Free BBS



Our free-2-use bulletin board computer is available 24 hours a day. Features: free public conference, free classified advertising, free laptop reference material, free newsletter, free downloads, product ordering, assistance, and more. Log on with any computer. Simple menus fit all 40 character, 8 line displays. Fast, interrupt drive, easy to use for beginners. Friendly. No online cost. Unlimited online time. PC Pursuitable! Optional online library access $1 a month.

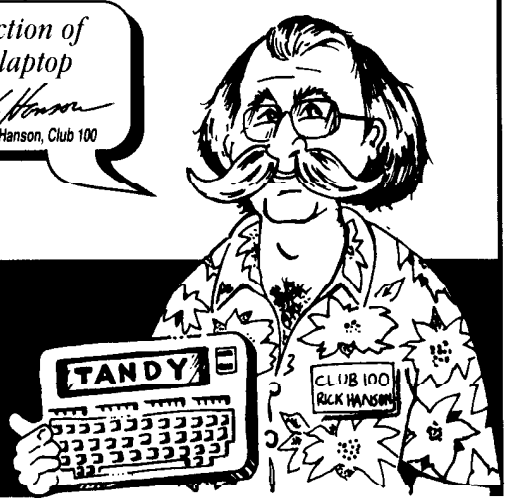
Program Collections

We have the largest "quality" collection of public domain, shareware and author-specific programs available for Model 100/102/200 users, i.e., text, print, telcom, business, graphics, drives, utilities, games, music, programming, education. Available online or mail order on disk. Listings available.

"Look to Club 100 for the largest selection of performance products to make you a laptop power user. Call today!"

Rick Hanson

Rick Hanson, Club 100



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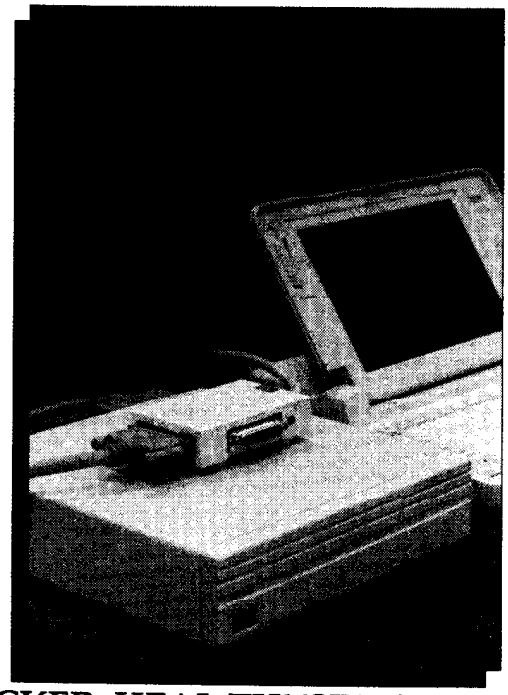
Circle 160 on reader service card.

VOL. 8, NO. 8
November 1991

ON THE COVER:
The WELTEC Parallel Port Host Adapter and the Maximate hard disk drive, connected and running on a Tandy 1100 FD.



11 HACKER, HEAL THYSELF!
by Robert Hodgins
✔ MS-DOS ✔ M-102 ✔ WP-2
A simple prescription for healthier hacking (or how to hack without upsetting the family).

12 THE WELPORT PARALLEL PORT HOST ADAPTER & HARD DISK DRIVE
by Terry Kepner
✔ MS-DOS M-102 WP-2
Add a hard drive to your computer by using -- and not losing -- your parallel port.

15 *STAY AROUND-AUTO*
by Jim Samuel
✔ MS-DOS M-102 WP-2
Stop working and resume where you left off -- in an MS-DOS computer!

16 THE MINIBAT: A MINICOMPUTER
by Terry Kepner
✔ MS-DOS ✔ M-102 ✔ WP-2
A handheld computer you can actually touch type on with one hand, quickly and accurately.

22 DRESSING UP YOUR DOCUMENTS
by Mike Nugent
MS-DOS ✔ M-102 WP-2
WriteROM can make letterheads!

25 THINK GLOBAL!
by George Sherman
✔ MS-DOS M-102 WP-2
Expand your horizons with a modem and DeskMate.

27 *NIM.BA*
by Paul Globman
MS-DOS ✔ M-102 WP-2
This game leaves no stone unturned.

33 BIG IRON CONNECTIVITY: PART II, REMOTE COMPUTER COMMUNICATIONS
by Stan Wong
MS-DOS M-102 ✔ WP-2
Make your WP-2 talk to other computers and on-line services.

36 *M100TEXT*: A MODEL 100 *TEXT* WORK-ALIKE FOR THE PC
by Stan Wong
✔ MS-DOS M-102 WP-2
Get the easy-of-use you expect from the Model T's on a standard IBM-PC.

40 PLAIN VANILLA TO BANANA SPLIT ROYALE: AN INTRODUCTION TO *SUPER ROM*
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Transform your Model T with Super ROM.

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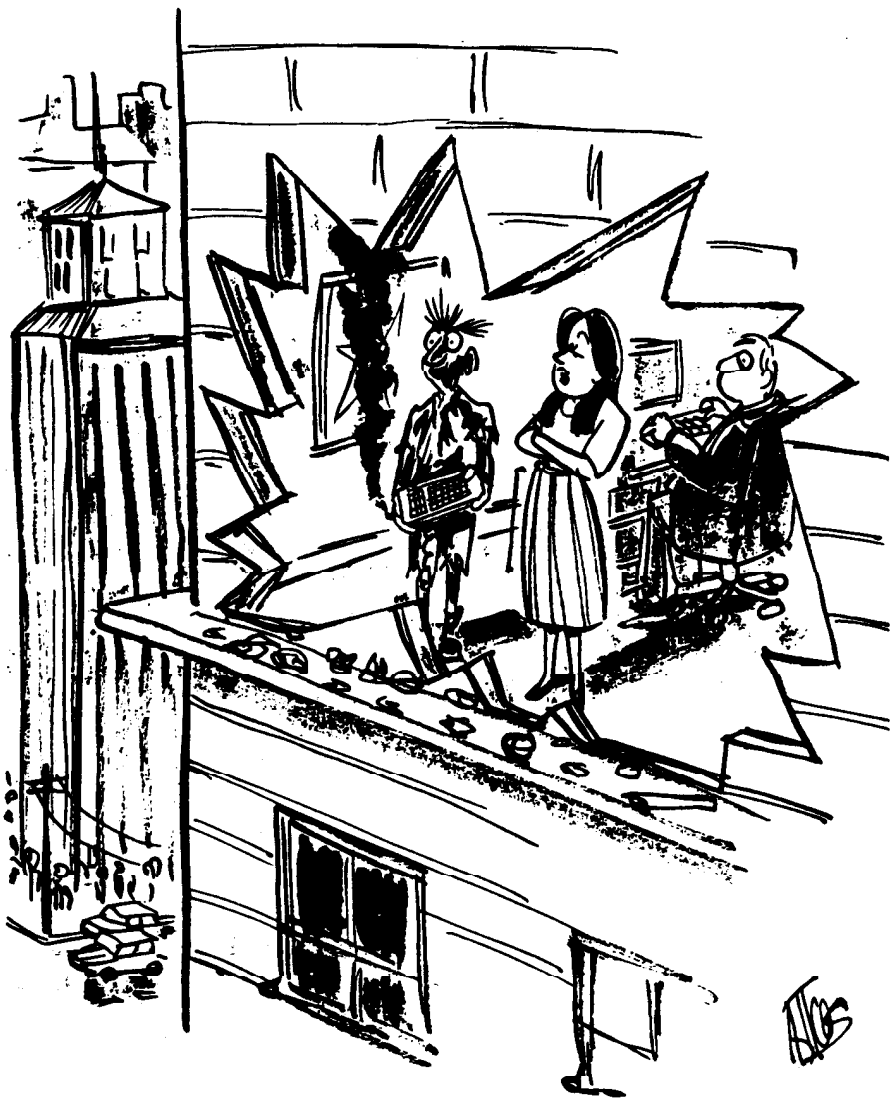

"This time I think it's definitely a hardware problem."

Toolbox

Manuscripts were typed into Microsoft Word 4.0 on a Tandy 1500 HD, where they were edited, spell-checked, and had basic format instructions inserted. From there they were loaded into a Tandy 4000 (80386 CPU, Tandy EGA Monitor, Tandy LP-1000 LaserPrinter) desktop computer and placed into Aldus' IBM PageMaker 3.01 Once there, design decisions on photo, figure, and listing sizes and placements were made. Here, pull quotes are placed, headlines, intros, and bylines are sized and positioned, and advertisements positioned.

Normally, the Tandy LP-1000 is capable of emulating only a Hewlett Packard Laser Printer Plus, but with the addition of the Destiny Technology Corporation (300 Montague Expressway, Suite 150, Milpitas, CA 95035. (408) 262-9400) PageStyler 4.5MB kit, the LP-1000 is turned into a fully-compatible PostScript printer, with all 35 native fonts that are found in the Apple LaserWriter Plus printer. The Destiny PageStyler is available through the Tandy Express Order Hardware system.

Page previews were output from the Laserprinter. When everyone was satisfied with the appearance, final pages were output and artwork and line art ads were positioned. The finished magazine was then delivered to the printer, who printed it, labeled it, and mailed it to you.

TERRY KEPNER'S
portable 100

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TRUE THANKS

You can't keep a good man down, or a good computer magazine. I am an ex-subscriber to *Portable 100*. I had difficulty obtaining Model 100's and Tandy 102's. I have written many programs for these great little laptops. People were asking me where they could purchase them in order to run my software. I was told by various contacts that they were not being made anymore, that I couldn't get them. I wrote a letter to you folks asking for help. You answered my query with a list of places that handle these laptops. I thank you.

I did not resubscribe to *Portable 100*.

You not only answered my question, solving my problem, you even wrote me personally. This, I thought, demonstrated exceptional customer concern. I felt if they take the time to answer my inquiry with a personal letter, they really have a genuine interest and concern for us out here in the dog-eat-dog world of software developers.

I did not resubscribe to *Portable 100*.

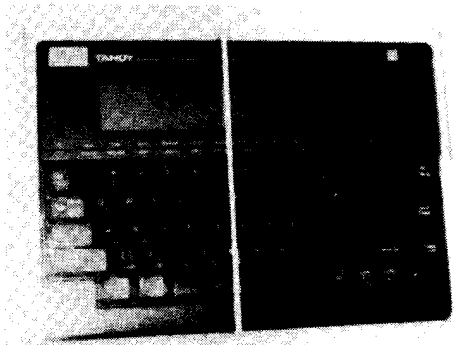
I received a letter, some time later from you. You asked if I had been able to obtain Model 100's and Tandy 102's. I was able to direct several customers of my software to your list of suppliers, and I did not respond to your follow-up letter.

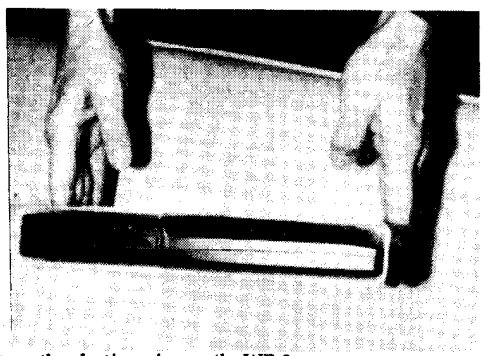
I *still* did not resubscribe to *Portable 100*.

The mail came in today, and I'm sitting at my desk, looking over yet another inquiry from you. The concern you have at *Portable 100* is unbelievable. This kind of concern for a single individual demonstrates what the term "American Enterprise" is all about. You do care about others, you try to help as much as possible, you attempt to assist as much as you can. That is why the computer industry is where it is, and that is "ahead of the rest of the world." This is a great country we live in, with great people, and yours is a great magazine.

So, please accept my thanks for the great concern and help in finding places that handle the Model 100's and Tandy 102's. Also accept my *Portable 100* renewal. I'm back and am looking forward to the wealth of information that *Portable 100* provides.

My software for the 100's and 102's is very application specific. I provide software on these laptops for data entry and analysis functions that feed my desktop computer GENETICS system. This GENETICS system is being used by hundreds of users here in the USA, Canada, and several countries overseas. Therefore, to provide existing Model 100 users with something they may find useful, outside of our main area of genetics, is like shooting at shadows in the dark. If there is a need for programs on these laptops, that someone can define, I will be more than happy to write it. Just tell me what it is, how it should work, what it should interface with, and I'll answer their request personally, as you have so faithfully done for me.





Photographs 1 and 2. If you look carefully, you can just see the plastic casing on the WP-2.

***I did not resubscribe to* Portable 100.**

Once more, thanks for your personal interest, your dedication to the needs of users, and your invaluable information in *Portable 100* on Model 100's and Tandy 102's.

Bob Schoeberl
Minneapolis, MN

Glad to be of help, Bob. (Anyone who wishes to take Bob up on his offer can reach him at P.O. Box 2753, Minneapolis, MN 55402.)

-MN

ON TARGET WITH WP-2

Michael Daigle's article about the WP-2 was right on target! Many thanks for sharing his thoughts with a real neophyte.

I use my WP-2 for word processing just as he does, and love it. I serve as a trustee for the American Dental Association and spend a lot of time on airplanes. The WP-2 has been an excellent tool for me to use in writing the many letters and reports which have to be completed. I now use the flight time as work time and usually have everything completed when I get home. At that time, I merely hook the WP-2 up to my printer and print everything. I do not like the screen, but, overall, the WP-2 is better than anything else on the market for my particular needs.

My two biggest complaints have been the ON/OFF button and the lack of enough memory space. Your article told me where to get another chip that will improve the storage capability by 124K and I ordered that last night from Purple Computing.

The second problem discussed in the article dealt with the ON/OFF switch. I went to the plastics company here and had a case made from 1/8-inch plastic that has been great. I use my case constantly and it serves as a good lap table also. I tried to figure some smart way to put a lid on the top of the case, but have found that a big rubber band works perfectly. It cost me only $20.

Thanks again for letting Michael share his experiences with the WP-2. I hope he writes more so that people like me can follow his ideas.

Heber Simmons
Jackson, MS

We're glad to hear that his article helped

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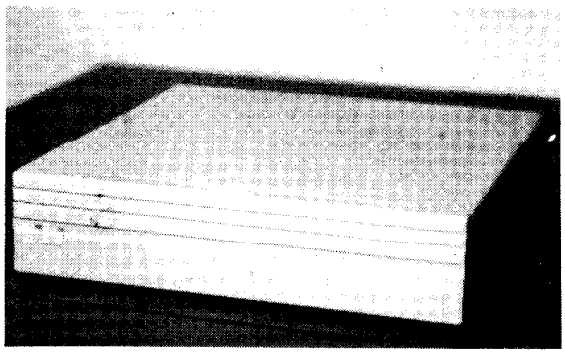
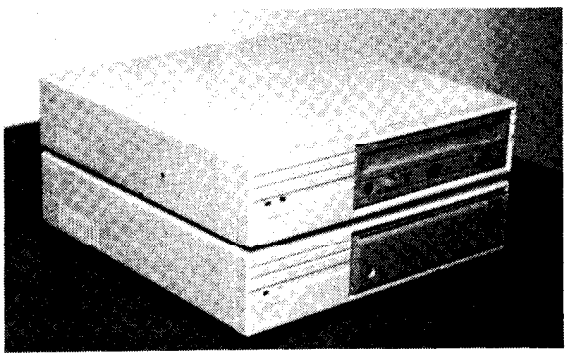
THE ULTIMATE IN TRANSPORTABLE DATA STORAGE DEVICES!



MAXIMATE™ - SCSI INTERFACE

High Capacity fast access self-contained Transportable Hard Disk Drive features parallel port access (See the Welport). Available in 40MB, 80MB and 100MB



TAPE/CD ROM MAXIMATE™

SCSI Tape	150/250 MB	CAll
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SCSI CD ROM	600 MB	PRICE

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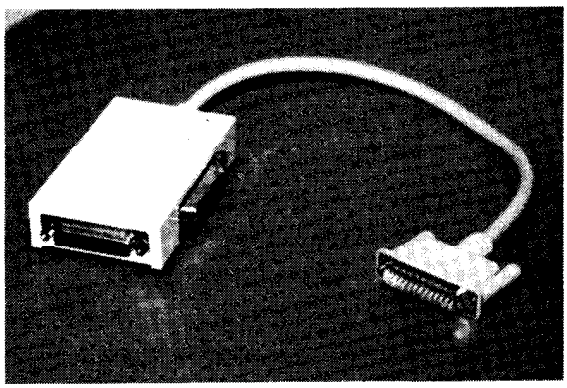

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you, especially with the memory problem. MicroMime is another advertiser of ours who offers memory upgrades; you can find his advertisement elsewhere in this issue.

Your case looks like a simple, and inexpensive, solution to the problem. It's hard to tell from the pictures, but the case is a U-shaped sheet of plastic with five-inch strips on the sides, at the top. The top remains open, letting the WP-2 easily slide in and out.

Stan Wong's column on the WP-2, "F1/F2," should be just what you wanted, in ideas and shared experiences.

-tk

MODEL 100's IN THE USSR

In March, I was invited by the Minister of Health of the USSR to come to Moscow to give lectures and demonstrations on computer imaging, as is used in my dental practice. I brought a 386SX computer with laser storage, Sony monitor, keyboard, graphics board, thermal printer, and RGB television camera with assorted accessories, to the Central Research Institute of Stomatology. As might be expected, the Soviets had never seen anything like my system before! I have been asked to coordinate the first Soviet-American Dental Conference (Feb. 1992) in Moscow, as a result of my work.

Photo 3. Taken during a lunch break at the Central Research Institute of Stomatology in Moscow while the author was there for lecturing and demonstrations on computer imaging. The two dentists pictured are Kulasa (left) and Tanya.

Perhaps of more interest to you is the enclosed photograph, taken during a lunch break at the Institute. This is the second time my Tandy 102 has visited Moscow, and it, too, was a hit with the stomatologists. I use it mostly for text editing and storage until I download into my mainframe, and on occasion for games.

The two young dentists are (left to right) Kulasa, and Tanya. They were playing a variety of games, including *BARDCE.BA* and a chess program. Most of the dentists are women, the men go into the higher paying manual labor jobs. Tanya was a favorite of mine, in part because she held the key to the bathroom! I am not in the photograph, although that's my hand at the extreme right.

As computer imaging will be a lecture and demonstrations subject, again, in February, 1992, those persons interested in attending are invited to contact me. Transportation on Lufthansa Airlines, hotel, sightseeing have already been arranged. Project Mutual Exchange is a non-profit organization dedicated to the exchange of medical and scientific information, and persons between the USA and foreign countries.

I have been a subscriber to *Portable 100* for about a year, and do enjoy it. I support the advertisers (note the Node RAMPAC), and would like to see more articles on laptops in general. I'm about to buy an MS-DOS laptop to fill the gap between the Tandy 102 and my bigger PC, and feel that the *Portable 100* writers would have the best advice.

Dr. Tom Frymark
McHenry, IL

People wishing to reach Dr. Frymark can do so at 2301 Johnsburg Rd., McHenry, IL 60050. And thanks, Tom, for your photograph and letter.

-tk

FATAL LIMITATIONS

Mike, you've been doing a superb job. Your wit and wisdom is just what the doctor ordered for *Portable 100*. However, if the computer itself is fatally limited, then the magazine is going to be fatally limited—unless the magazine can help the computer surmount those limitations!

Is there no future for *Portable 100*? Looking around this plane I am on, I see very few computers in use. I think I would see a lot more if the people had the equipment with which I am writing right now.

It seems to me that there are two ways to go: As publisher of *Portable 100*, you can wait and hope for some new computer that will come out and make *Portable 100* essential reading to that computer's owners; or you can take the initiative to develop something that will rejuvenate thousands of present Model 100/102 owners and make them want to subscribe, or resubscribe, to *Portable 100* to make full use of what they own.

The number of existing Model 100 owners is perfectly enormous—if only you had something distinctly new and incomparably helpful to offer to them.

In fact, you would be well served if all you could do was to get the 15,000 Club 100 members all to subscribe. Isn't the reason that your magazine so assiduously presents new products, and talks them up, that you know for a fact that lots of existing Model 100 owners are out there are groping for things that will make their Model 100's "sing," and thus not lay them aside?

Okay, I have a suggestion.

My Model 100 cost me $1,240—eight years ago. It has been worth it. With some costly additions that are a bit cumbersome, I actually think I could not do better today, at any price. That is, I could not at any price go out and buy anything that would do as nicely what my Model 100 will do—with 225K Booster Pak and *MacDOS/LapDOS*.

However, you may be sure that I would not even *consider* a Model 100 today—nor would I consider subscribing to *Portable 100*—if my present Model 100 lacked (as it first did) a disk drive, *T-Word* in ROM, and software which allows me to lift whole files into my desktop computer. These expensive extras are essential to my continued use of my Model 100—and, therefore, my subscription to *Portable 100*!

But here is the point: I believe lots of Model 100 owners are turning to MS-DOS laptops only because they do not have, or do not know about, all these crucial "extras" which I enjoy.

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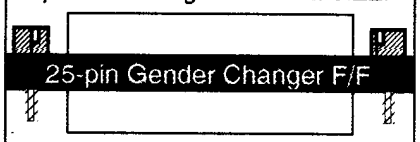

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large proportion of your subscription base, but they surely are not a large proportion of the installed base of Model 100 owners—who are for the most part, I'll bet, busy professionals, writers, journalists—people who will never write, or copy, programs in *BASIC*.

Thus, I actually believe—and it may be so obvious no one has thought of it—that *Portable 100*'s future depends on a low-priced, slightly modified *Ultimate ROM II*. What would that be like?

First, reduce *UR-2* to just *T-Word*. Next, add in all of *TS-DOS* (not just part, as was done for the Model 200 version). Then add *LapDOS* and *MacDOS*. Add the ability to access, seamlessly, an optional 256K RAM pack (like Booster Pak does). Finally, add in *Lucid*.

I have all this in my slightly bulky Model 100/Booster Pak. It cost me a bundle, but 500,000 Model 100 owners only need to buy the additions, not the computer. An improved ROM would put them back in use. Those without a disk drive might want the RAM pack and just use the Model 100 as a data source.

I suggested this to Mark Eppley, but he was more interested in selling Sharp Wizards (more profitable).

Until recently, *Portable 100* has not been selling hardware or protecting any particular hardware market. I think you can help the Model 100 market, and yourself, by putting out an improved ROM with all these capabilities and paying royalties to the various manufacturers. I believe they can earn more money by bundling their stuff than by selling it separately.

Ralph Winter
Pasadena, CA

I would love to get even half of the Club 100 members to subscribe! But, Portable 100 *doesn't seem to appeal to those people. I don't know why.*

The difficulty with trying to attract the professionals is that most are perfectly happy with what they have. While they might want upgrades, they are not going to subscribe to a magazine just in case they might see a valuable addition; just as the majority of car owners want to improve their cars, but don't subscribe to a car magazine. Only the "fanatic" subscribers do (aficionados?). What could we offer such professionals that would keep their attention every month?

Portable 100's *future depends on a low-priced, new* Ultimate ROM II.

It's plain to see that you've thought this problem through. We've been trying for years to foster the products you've mentioned, and we're beginning to see results.

Your suggestions for the Ultimate ROM II *are very good, but for technical reasons are not very likely. The* Ultimate ROM II *is compiled* BASIC *code (except* T-Word *and* View-80*). Trying to fit all those features into one 32K chip is just not going to work. (Please, someone prove me wrong!)*

You may not know it, but Tri-Mike Network East (who now handle the PCSG Model 100 line) has a Custom Super ROM *that offers a full-featured word processor, spreadsheet, database manager, and* Disk+. Disk+ *lets you access the disk drives on a desktop computer (and not just MS-DOS machines) with your Model 100/102. This easily knocks off points one, three, and five of your list. The penalty is that the* Thought *outliner must be left out.*

Trying to add a DOS is not possible; it consumes too much memory in the chip. You might be able to have a word processor with DOS and Disk+ *in it (TMNE is already trying to do that), but there wouldn't be room for the spreadsheet program. Unfortunately, Mike at TMNE is so busy with other projects (like* Portable 100*) that he doesn't have much time left over for that project, so it moves in sporadic spurts.*

But making such a wonderful product does not promote Portable 100*. After buying such an upgrade, why would any professional continue to subscribe? Only people interested in learning new uses, or typing in programs, will continue to subscribe. At least, that's been our experience so far.*

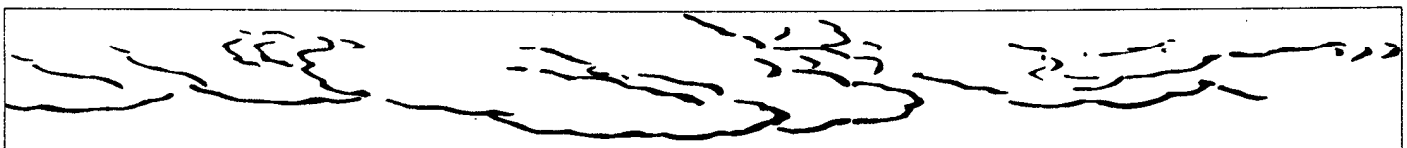
Of course, if everyone were to upgrade to a perfect Model 100, Portable 100 *would no longer be needed. We could not offer anything of value to our readers. And neither could our advertisers! And without them, we don't exist.*

Isn't that a neat catch-22? Until then, we will try to offer as much to our readers as possible, and promote upgrades to the Model 100 line. We are not interested in developing the ROM you describe for one very simple reason: We have our hands full just putting out the magazine every month. And developing and coordinating all that code is not a trivial task. We don't have the time for both.
-tk

CLASSY!

The article on the 100's in the Alhambra school was a great story ("Computers with Class," Jul/Aug '91). Way t' go!

Cory Hawkins
CompuServe message



It's My Column

and I'll Rant If I Want To, Rant If I Want To, Rant If I Want To ...

Some of you are not going to like this month's column. Especially those among you who happen to work for Tandy. But I'm not in the best of moods right now; I feel like picking on someone, and Tandy looks like a deserving target.

More than a full year ago, I asked for reader input in designing the hypothetical "Model 300." Since it appeared that Tandy could find no room for improvement in the Model 102, I thought we'd see if we could rack our collective brains and come up with some *do-able* ideas that Tandy could use in the long overdue revamping of a classic machine.

I won't recap what we came up with. (You can find the details in my column in the November 1990 issue). Suffice it to say that a lot of people contributed some very good ideas, with the result being a practical and affordable computer that could have been the next generation Model T.

Our only mistake was in expecting Tandy to build it.

ON THE BRINK

There was a time, in 1983, when I looked upon the brand new Model 100 and thought that the future had finally arrived, that I was standing on the brink of a revolution in the way a person could use a computer to get work done. This was the machine that justified the term *personal* computer, and I was convinced that the people who created this wondrous device were visionaries.

Now it's almost 1992, and I'm using a machine that's nearly identical to that 1983 computer. The Model T's ONLY salvation has been from the loyal and courageous aftermarket, and I have come to the reluctant conclusion that Tandy's involvement with the creation of this unique little idea box was some kind of a one-shot fluke. I would advise you NOT to hold your breath waiting to see it repeated.

Let me put it this way: I truly believe that Tandy would not notice a good idea if it grabbed the company firmly, wrestled it to the ground, and nibbled with serious intent upon its corporate gluteus maximus. Now, some of you may be thinking that I'm just picking on Tandy because they haven't seen fit to build the machine of my dreams. Well, you're right.

It doesn't have to be the Model 300. But I can't believe that Tandy can't come up with *any* ideas, after nearly NINE YEARS, for an improved Model T. No, I don't think it's a lack of ideas. I think it's a lack of something else ...

Spherical recreational devices, to be specific.

You see, I think that even Tandy itself has come to believe that it stumbled across the Model 100, and that it's not likely to be that lucky again. And I think that this lighting-can't-strike-twice mentality is demonstrated by the sad fact that the Model T sold in the 1992 catalog is almost identical to the one sold in the 1983 catalog.

I'll bet dollars to donuts that Tandy will NEVER upgrade the Model 102. I'll bet they just keep putting it in the catalog, year after year, until it falls below some minimum profitability profile, at which point all remaining units will be blown out dirt cheap. Tandy will snack on the Model T while there's still some meat on the bones; it will eventually belch out the remaining units at cost, and will move away from the table, patting its stomach, licking its lips, and wondering what looks good over at the clock/radio buffet.

And there's the problem: to Tandy, the Model T may just as well *be* a clock/radio, or a stereo speaker, or a "D" cell flashlight. But there are a lot of people out there who have a real affection for the machine, and that alone is enough to elevate it from the status of "ordinary appliance." Come on, Tandy; get a clue. How many monthly clock/radio magazines are published?

Equally scary is the suspicion that Tandy may think they already *have* upgraded the Model T, in the form of the 1100FD DOS-box laptop.

While my opinion of that machine has gone way up since buying one a few months ago and using it on a daily basis, I'm not likely to confuse it with a Model T for an instant. Because as good as the 1100FD is, it still weighs six pounds and is limited by a 4 to 5 hour battery life between charges.

THE WAVE OF THE FUTURE

Oh well. I'm still convinced that a next generation Model T is coming. But I'm also convinced that when it arrives, it won't say "Tandy" anywhere on it.

ITEM: Just a few weeks ago (as I write this), a new forum started up on CompuServe. Called the PALMTOP Forum, it is dedicated to the "palmtop" type personal information/organizer machines. These include the Casio BOSS, the Hewlett-Packard 95LX, and others.

Growth on the forum can only be described as explosive, especially in the Sharp Wizard section. The new Wizard 8200, with its 40-column display, QWERTY keyboard, 128K of RAM, and innovative selection of IC card aftermarket software (including a *BASIC* language card), is an example of a machine that is blurring the lines of distinction between organizer and computer.

After an accident demonstrated to me the Achilles heel of my old Day-Timer-type physical organizer (namely, not having a backup), I switched to the Wizard. It is remarkable. I even have the 1200-baud modem that Sharp makes for it (the Wizard 8000 series has built-in terminal software), and it makes telecommunicating on my Model T seem like starting fire with flint and stone by contrast.

Sales of this new Wizard may have even caught Sharp itself off guard. It's STILL (again, as I write this) hard to get the 8200 in many parts of the country.

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The unit is so successful that Sharp has just announced that they will be offering a 256K version next spring.

THE WAVE OF TODAY

ITEM: There is a new category of machine out there that is the tip of an iceberg that is almost too large to imagine. Call the category the *Information Appliance* for the moment.

These devices began as electronic pocket spelling checkers and thesauruses a few years back. They grew to include foreign language translators, currency converters, and so on. Now we're seeing full-blown electronic dictionaries, with definitions, synonyms, examples of usage, and much more. Some of the high end models even have a speaker built in, along with the ability actually to speak a word aloud to you to demonstrate the correct pronunciation.

We're seeing remarkable advances in this category, typified by the exciting new Concise Columbia Encyclopedia by Franklin. Sold for $400, this wondrous gadget contains thousands of articles. And the millions of words that comprise these articles are searched in just seconds as the machine helps you find the specific information you need. It's only 6 x 6 x 1 inches. It weighs a single pound. Extraordinary.

ITEM: There are rumors of a new type of "universal" info appliance coming down the turnpike, one that provides the display and keyboard only. On-board slots will allow you to plug in different cards that will accomplish anything your heart desires.

Need to research something? Slip in the encyclopedia card. Time to write an article? Slip in the word processor card. Want to crunch some numbers? Slip in the spreadsheet card. Want to play a game? Slip in the chess card. Time for a little self-improvement? Slip in the Spanish tutor card, or the touch typing tutor card, or the ... well, you get the idea.

Maybe Tandy's only contribution to the future in this regard will be to provide the nostalgia buff with a "Model T" card for such a device.

The point is obvious. The consumer electronics market is on fire, and Tandy is standing way off to the side, toasting marshmallows and wondering what to name the next Panasonic- or Grid-built DOS-box they decide will grace the pages of their next computer catalog.

Geez, just call it the ME-2. Wake up, Tandy. You could probably sell every single Model 300 that rolled off the assembly lines. You don't even need the courage of your convictions—just get your head out of your Astroturf and take a good hard look at the Model T. It's only got 32K OF RAM! It's only got a 40-COLUMN DISPLAY! IT'S NINE YEARS OLD, AND IT'S STILL SELLING!!!

My God, Tandy, what does it take to get your attention?

Well, even as the Model T seems frozen in time, one thing is changing quickly: Tandy is not the only game in town anymore. Next month, I'll introduce you to a new computer that comes so close to the mythical Model 300 (in intent if not actual execution) that it will make you believe in miracles.

In the meantime, I hope the good folks at Tandy will let us know exactly where they finally decide to lay the Model T to rest. I and a lot of other *Portable 100* readers would like to gather around the grave and say a soft and sad goodbye.

by Michael Daigle

Michael can be reached by mail at 2125 North Farragut, Portland, OR 97217, on CompuServe (ID 76166,3303), and GEnie (DAIGLE).

Hacker, Heal Thyself!

Whatever the prognosis, use this prescription for healthier hacking.

by Robert Hodgins

We computer lovers live in an imperfect world. We thrive on our flights into self-expression: spending hours tickling the keyboard and watching our creativity flow across the screen, onto the printer, or over the modem. But our usually loving families consider our computing to be antisocial. In their eyes, the very act of computing is an attempted escape from our familial responsibilities and a waste of time that really belongs to them. To keep peace, we creep away to hidden rooms (basements) and perform our rituals late into the night after others have fallen asleep.

Some techniques to integrate computer lovers into the family unit were reviewed in this magazine in April 1990, but there are some things that we—the afflicted—can do to speed the integration of our needs with those of our families. Help is available.

In this article are the steps to our liberation. The first step is to recognize that the chief commodity in computer adoration is time: time to explore, time to experiment, time to create and time to manipulate. The next step is to realize that this time needs to be squeezed out of an unpredictable schedule or interspersed into unused time slots like the unpredictable "spouse-goes-for-a-second-cup-of coffee" slot or the fleeting "kids-take-out-the-trash" slot. So, the whole key to happier computing is simply to make more time.

H. G. WELLS, TAKE NOTE

Here are some useful and workable tips to make more time for your needs. Encourage your wife to call her mother. This tip works better if it is a long distance call since the forbidden apple syndrome prolongs the time of the call.

Encourage your husband to visit sports shops, hardware stores and pool halls. For absolutely desperate situations (you haven't been able to tickle the keys for weeks), encourage your in-laws or his/her old roommate to visit. They never talk to you anyway, so you can expect lots of free time.

Move all of your teenage daughter's cosmetics to the bathroom; make sure the mirror is clean and there is lots of light. Buy a ghetto blaster for the bathroom and at least 20 cassette tapes of the current top ten stars. Keep a supply of shampoo and conditioner available. Encourage thrice daily hairwashes.

Get a VCR for your teenage son and a subscription to the local video store. You know, the store where the videos have semi-naked people on the boxes. Encourage your kids to hang out at shopping malls or 24-hour convenience stores. Teach them to drive. Enroll your family in night courses at the local college (or the college in the next county).

Encourage your wife to call her mother.

PLAN B

Here are some more aggressive approaches for particularly difficult situations. Wander about the house and in a loud voice comment on how the lawn needs cutting, the garden needs weeding, the walls need painting, and the bedrooms need cleaning. This clears the house of children for hours. (Warning: Do not do this in front of your spouse. He/she might agree with you and hand you a mop!)

This next tip is subtle, yet it works every time. It is especially effective if your kids are into a techno-bop purple hair lifestyle. Pick a nice Saturday morning and innocently suggest a nice leisurely drive out to visit dear old Aunt Agatha, who lives several hours away in the country. When the stampede for the door is over, the house will be yours for the day (maybe even the whole week).

The absolute last resort is to purchase computers for your family. Get them interested in your hobby. This approach can work well until the day you discover that not only have they hacked into your code, cut its size in half, and doubled its speed, they have also added several new features, and made it work the way it should have the first time!

GET REAL

Of course, there is only one way to truly carry on with the task you love (or love to hate). Explain to your loved ones that you have interests that fascinate you, just as they do. But, emphasize that you will always make time for them. Do show them you care for them.

A shameless plug for Tandy notebooks would point out that one of these little boxes is the optimal machine for at-home hacking. Flip it on and you're streamlining code long before the wife can pour her second cup of coffee. (To compare: a typical PC can take 30 seconds just to boot up and the loud chirp screams to your family that you are about to "waste some family time." Even with volume turned down, those rotten little drive lights flashing back and forth are a dead give-away).

Sometimes right in the middle of a good hack, you may not know that your loved ones need a chat or a hug or a kiss—like, right now. But, when the need makes itself apparent to you, the Model 102 is great because it only takes a few seconds to close a file, save it to RAM and shut . . . the . . . darn . . . thing . . . off. Welcome back to the family!

Robert Hodgins is a biochemist at the University of Alberta in Canada who likes to write "on the side." He has been happily using his Tandy 102 for about four years, and his family really supports his addiction. In fact, his wife wouldn't let him get rid of the 102 when he moved up to a DOS machine—she wanted it for herself!

COMPATIBILITY: All Tandy MS-DOS computers.

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by Terry Kepner

Would you believe me if I told you that I ran our six megabyte *dBASE III Plus* circulation database on a Tandy 1100 FD? The single-drive, $699 computer? The clerks at the local Radio Shack didn't, either, until I proved it to them.

I wasn't so sure it would work until I actually did it myself. And I could not have done it without the Weltec Welport Parallel Port adapter and its companion Welport 40MB hard disk drive.

And both will work on all the Tandy MS-DOS portable computers. Simply. Easily. Flawlessly.

THE WELPORT ADAPTER

The basic piece is the Welport, the SCSI Parallel Port Host Adapter. This small device is not much larger than two audio cassette boxes stacked on one-another, with a cable coming out one end. The cable ends in a male 25-pin connector designed to plug into the parallel port on your computer. The other end and one side of the little box contain connectors. One is labeled *SCSI*, the other is *PRINTER*.

And that's it. The printer connector means you can have your cake and eat it, too. When using the Welport device, which works by plugging it into your computer's printer port, you are not penalized; your printer is still available!

Up till now, I've seen several disk drives and other devices that attach directly to your printer port (the Micro Solutions disk drive comes to mind first). Some of these made a replacement printer port available, some did not. The problem with all of them was that multiple devices were difficult or impossible to configure.

You can have your cake and eat it, too.

Other devices did not use the printer port, but required plug-in cards (such as the SPC Quickbrick). While they left your printer port available, they would not work with computers without an internal card slot.

The Welport sidesteps that issue by being an SCSI device (Small Computer Standard Interface) that plugs into your parallel port. In English, that means that the connector has a special electronic standard connector on one end and a parallel port on the other. The parallel port removes the requirement for a special card slot (which makes the manufacturer's life a little easier), and the SCSI port means that almost every SCSI device will work with the Welport.

This makes life easier for the hardware add-on manufacturer because he no longer must make a dozen different connections for one device to match all the computers on the market.

Unlike most of the other manufacturers, Weltec is not locked into selling only one or two devices that fit their special adapter. Thus, any SCSI device, be it a floppy disk drive, hard disk drive, CD-ROM drive, tape backup unit, or what have you, all of these will work with the Welport adapter. And, because the SCSI devices are designed for larger, more powerful computers, almost all of them include secondary connectors on the

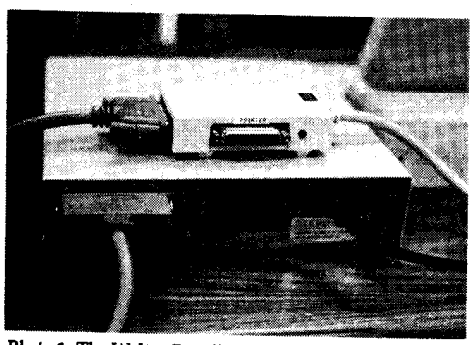

Photo 1. The Weltec Parallel Port Host Adapter and the Maximate 80MB Hard Disk Drive, beside an 1100 FD.

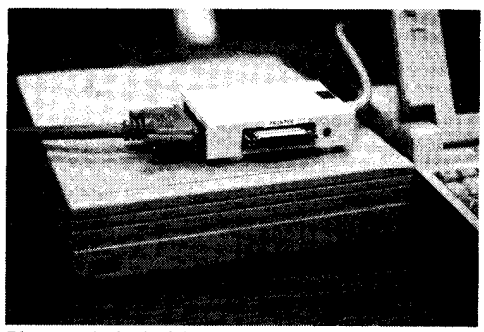

Photo 2. The back of the Multimate, showing the connectors and extra power plugs for other SCSI equipment.

back for daisy-chaining additional devices.

So, this one device will let you add many different products to your computer without requiring additional special hookup units. Sort of a "one size fits all."

THE MAXIMATE

Now, to test the Welport, I needed an SCSI device. Weltec sent me two; a 40MB and an 80MB hard disk drive. I'm happy to say that both are performing perfectly.

As an added surprise, even though I am running both under MS-DOS 3.3, I did not have to partition the drives to get them to work. So I have had the full use of the entire hard drive surface on both drives.

I deliberately maxed-out both of them just to test this feature, and used them that way for several days. No problems. Disk optimization and defragmentation

I have the full use of the entire hard drive surface on both drives.

software ran without interruption. I have to admit to being impressed.

The Maximate hard drives are quite a bit larger than many other floppy and hard drives for portables, which I found disappointing. It's clear that they designed the case for much larger drives than they currently house, but they are thin enough to fit in a briefcase. They won't leave you room for your computer, but they are light enough to transport from location to location.

On the other hand, you can easily stack several of these without worrying about the stability of the stack.

The drives contain two lights: one indicates it is on, the other comes on when the hard drive is in use.

Being SCSI devices, these drives have secondary connectors on the back for daisy-chaining. Looking at the back, you'll also see two three-prong electrical connectors. This makes is easy and simple to stack daisy-chained units, and turn them all on and off with a single switch. I thought that was a nice touch.

GETTING STARTED

Getting started on the 1100 FD wasn't as easy as it first appeared. Oh, the installation program was simple enough, and the installation booklet adequate. The problem was that the 1100 FD has only one disk drive.

At the final step of installation the booklet instructs you: *If you are using a floppy disk as the boot disk, place it in drive A:. Press ENTER.* I did, and a moment later, after selecting *YES* for making a change to *CONFIG.SYS*, I got an obscure error message.

Repeating the installation gave the same result. An hour later, and many attempts, I tumbled to the solution: Lie. I booted up the 1100 FD with a RAMdisk as drive D, and told the installation software that that was my bootup disk. It finished running and returned me to the opening installation menu.

After exiting, I copied the *CONFIG.SYS* file to my real bootup disk in drive A, and then edited the file to read *DEVICE = A:DSHUTTLE R=6 W=0.* Rebooting the system gave me immediate access to my 40 MB Maximate hard

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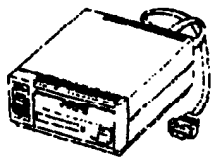

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drive.

The installation program assumes you either have two floppy drives or one floppy and an internal hard drive. Thus, it tries to copy essential information from the Weltec installation disk to your boot disk. On a single-floppy computer, this obviously leads to a conflict as both disks are not on-line at the same time.

Naturally, installation on a dual-drive computer like the 1400 FD would not run into this problem.

Prior to working with the 1100 FD, I had hooked the system up to our circulation computer. The heart-stopper was when the installation software asked if it was all right to format the hard drive. Confusion and fear made me bail out until a quick call to a Weltec technician reassured me that I wasn't about to wipe out all those important subscribers. The installation program works only with SCSI devices. With that settled, I restarted and soon had it working on that computer. That's how I put the *dBASE III Plus* and six megabyte file on the drive for the 1100 FD to test drive.

IN SUMMARY

The Welport lets you add SCSI devices to your portable computer without requiring that you give up your parallel port or use a special card slot. It lets you use any SCSI device with your computer, without a penalty. Because it draws its power from the SCSI device, it doesn't require a separate power supply. The down side to that is that the SCSI device must be on for you to access your printer. You can't just turn on only your computer and printer.

The Welport also frees you from dependence on one manufacturer: any SCSI device, from any supplier, will work with the unit. It lets you keep up with the latest technology, too. All the latest stuff is designed for SCSI ports first. So as soon as it is released, you can use it.

The Welport also frees you from dependence on one manufacturer.

The Maximate hard drives work well and quietly. While they are large, they are light. For a home or office work station, they easily fit the bill. You can use your portable for work on the road, and then return to the hard drive for the more disk intensive work requiring the higher capacity and speed.

If you already own a portable, buying a Welport and Maximate is cheaper than replacing your present computer with a newer model. Plus, these new devices won't become obsolete when you do decide to upgrade. You can keep them for use with the new machine without needing another interface card.

Weltec Digital
3002 Dow Ave., #132
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Maximate — 40 MB — $529.00
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COMPATIBILITY: All Tandy MS-DOS computers.

Stay Around-Auto

Add auto-resume to your MS-DOS laptop.

by Jim Samuel

Unlike many readers of this magazine, my first exposure to the Model 100 came after I'd already had several years experience with MS-DOS computers. At the time I bought my first Model T, MS-DOS laptops could not be had for under $2,000 and weighed at least 15 pounds. The M100, on the other hand, was small, light, and best of all, inexpensive.

But as I used my M100, I began to like one feature more and more. I liked the fact that I could turn it off in the middle of a job and turn it back on later to have it pick up right where I left off. If I could only get the same combination of features in an MS-DOS laptop, I thought, I'd have my ideal personal computer.

I've seen several MS-DOS notebooks that have come close to my ideal, but none has contained the exact combination of features that I need. Some notebooks, such as the Tandy 2810, have an excellent "resume" feature that would let me stop in midtask. But at more than six pounds and more than $2,000, it is too heavy and too expensive. Recently, I've seen 4-pound Texas Instruments Travelmate 2000 notebooks selling for less than $900. The price and weight are right, but they have no resume feature.

ENTER A NEW FEATURE

Now I've found a program that will let me have the best of both worlds. It's called *Stay Around-Auto*™, and it will let me add a software-based resume feature to any MS-DOS computer I want. While *Stay Around-Auto*, from North Shore Systems of Incline Village, NV, is not as fast as the resume feature included in the Tandy 2810 notebook PC, it is a highly acceptable alternative for computers that lack that capability.

You activate *Stay Around-Auto*, a memory-resident utility, by hitting either the *Alt-0* or *Ctrl-Alt-ENTER* key combinations. Do so and your computer screen blinks; then a few seconds later you get a message that says it is okay to turn off your computer. The next time you start your computer, it starts right where you left off. There are no menu choices to make.

HOW IT WORKS

In operation, the program saves the information it needs to your computer's hard disk. When you restart, *Stay Around-Auto* uses that information to take your computer back to where it was when you last turned it off. To work, *Stay Around-Auto* must be started from your *AUTOEXEC.BAT* file.

The program works with MS-DOS 3.1 through MS-DOS 5.0 and DR-DOS 5.0. It will not work with programs that run in 386 protected mode, *GeoWorks Ensemble*, *Microsoft Windows*, or Tandy *DeskMate*.

Startup is so fast, you won't even see it do its job.

It does work with Quarterdeck's multitasking *DESQview* program. The program uses approximately 19K of RAM.

North Shore Systems president Richard Stouffer reports that the company is working on a *Windows* version and is also talking to other companies to resolve other compatibility problems.

While *Stay Around-Auto* does not provide the instant-off of the M100, it is an excellent choice for MS-DOS computers that lack a hardware resume feature. Like many programs, performance is dependent on the computer being used. On a Tandy 1500HD, shut-off times ranged between 10 and 13 seconds, depending on what I was doing at the time. On a 16-MHz 386SX with a 24-millisecond hard drive, that time dropped to between five and eight seconds. Startup is so fast that you won't even have time to see *Stay Around-Auto* do its job. On my PC, I can watch the normal configuration startup messages; then next thing I know, I'm right in the middle of *Microsoft Word 5.5*.

Stay Around-Auto is easy to install with the install program provided on disk. One word of warning: READ THE MANUAL BEFORE YOU TRY TO INSTALL THE PROGRAM. *Stay Around-Auto* contains a counter that limits to two the number of computers the program can be installed on at any one time. An uninstall program will reset the counter, so you can install it on as many computers you want, but not at the same time. Unfortunately, the instructions for using the uninstall program are buried in a section titled "General Information."

In addition to the installation counter, the original program disk is copy protected. Since I prefer to copy all my program disks and use the copies for installation, that fact does make me a bit nervous about using this program.

At press time, *Stay Around-Auto* is available only directly from the manufacturer. However, Stouffer reports that he is currently talking to several distributors, and by the time you read this, it should also be available through Walden Software stores, Software, Etc., and other software retailers.

PRODUCT SPECIFICATIONS & SUPPLIERS

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P.O. Box 8687
Incline Village, NV 89450-8687
(702)831-1108

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The MiniBAT: a Mini-computer

Here's a handheld computer you can actually touch type on, and you can port the files to all the Tandy computers!

by Terry Kepner

Imagine driving down the highway at 55 mph while typing, without having an accident! Imagine getting an idea in the middle of a darkened theater and being able to type your note, without leaving the theater to find enough light for you to work. Imagine taking notes or working on another project while you're stuck in a meeting, without anyone else knowing you're not paying attention. Imagine doing all this with a handheld computer that fits in your coat pocket.

Stop imagining, you can do all that today, with the MiniBAT palmtop computer. The MiniBAT is the American version of the English Agenda computer sold in Europe for the last year or so.

The MiniBAT uses a unique set of five buttons to allow keyboard touch typing with one hand.

These buttons make the MiniBAT unique.

THE BIG DIFFERENCE

At first glance, the MiniBAT looks like one of those phone/address/calendar units like the Sharp Wizard or the Casio B.O.S.S., but it has one very big difference: five large buttons on the front spaced around the alphanumeric keyboard.

These buttons make the MiniBAT unique, and a writer's dream. If you relax your hand and place it on a table, the positions of your fingers correspond to the positions of these buttons. And you play these buttons the way you would play a piano: in chords. That is, you use combinations of buttons to generate the different alphabetic characters.

This sounds complicated, looks difficult, and feels strange, but you'll be astonished at how easy it is to actually learn and use. The alphabet takes maybe fifteen minutes to learn (much faster than learning where the keys are on a standard keyboard), the punctuation symbols and numbers, another fifteen minutes. In an hour, you'll be well at home with MiniBAT. A typing course on the MiniBAT might take all of two hours, compared with the fifteen to twenty hours required to learn touch typing on a standard keyboard.

Because you are using only one hand for typing, you have a top speed of around thirty-five to forty words per minute. While many people will disparage this as far too slow, consider that trying to touch type on a standard keyboard while driving is impossible (not to mention suicidal). Consider that touch typing in the dark generates gibberish if you miss the home row. And finally, consider that you can't carry a full-sized keyboard for touch typing in your coat pocket.

Not only does the MiniBAT let you type in your notes and data rapidly and accurately, it also features a word processor for text manipulation and controlling your printouts. For text manipula-

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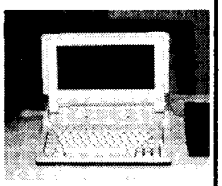

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tion you have the standard features of moving around with the arrow keys, plus scanning through the file by sets of three lines and searching for a given character. Unfortunately, there isn't a search or search and replace function for words or phrases, although you can copy, delete, and paste a character, word, portion of a file, or entire file.

Compensating this lack of search in a file, you can start at your main menu and search for a word or phrase in any file by simply typing it in. The MiniBAT will display the number of files it found with that word or phrase, and let you flip between them until you see the file you want.

Another nice touch is that when you edit a file, the MiniBAT takes you to the last place you edited in that file, instead of simply dumping you at the beginning of the file.

The print controls are fairly complete, including line spacing; justification; tab width, top, bottom, left, and right margins; hanging indents; embedded printer codes for underlining, and bolding, and any other special codes you require (no limit); and fan-fold, roll, or sheet-fed paper.

There is no printer port on the MiniBAT, only an RS-232 port (the twelve-pin connector I described above, so it can only directly print to an RS-232 equipped printer, or through a serial-to-parallel port adaptor. Indirectly, you can use the *PC-Link Plus* software to print on your desktop's printer. More on that in a minute.

Even though the MiniBAT comes in both 32K and 64K units, file sizes are limited to 8,000 characters each. Mitigating this is that the MiniBAT uses a compression technique to pack characters. Thus, even though the file length may be given as 5,409, the actual size in standard bytes on another computer is larger. When you reach the end of a file, simply start another and keep on typing.

As a word processor, the MiniBAT is not a full-featured machine, but then it's not supposed to be. It's a note taker and diary information system that's always ready. You could use it as a primary machine by printing to paper and editing the paper copy, and then returning to the MiniBAT to make corrections. However, you would not have a place to keep old files for future use.

I've noticed that chording is becoming almost "invisible" to my thought processes.

I find the word processor part to be my favorite. Getting to a new file takes one key push. This means I can (and have done so) turn it on in the dark, press the one button to get me to a new file, and start typing via key chords. When I finish, I turn it off. Just like working with the Model 100. Only I use just one hand to touch type, instead of my normal two-hand hunt and peck system.

I've noticed, after several months, that chording is becoming almost "invisible" to my thought processes. Typing the word "the" is no longer three separate chords, it is a roll of the hand from top two, to bottom two, to index finger. Fast, efficient, and quiet!

Finally, touch typing with chording eliminates that typist's bane: carpal tunnel syndrome, a crippling condition brought on by the unnatural positioning of the hands on a standard keyboard (notice that your wrists are bent instead of straight when typing).

MORE THAN A WORD PROCESSOR

If all the MiniBAT offered were word processing abilities, it would be an interesting curiosity, but I couldn't really recommend it. It is more, though. Lots more.

The MiniBAT is an alarm clock, diary, calculator, daily action list, phone and address book, and information system.

The alarm clock can be set for single events (like a one o'clock appointment on Thursday, December 3, 1991), and repeating events (like every Monday, at 7 PM). You can set the repeating events as every day, every day from Monday to Friday, every Saturday and Sunday, or weekly by day.

The alarm itself is a monotone of two-beeps, repeated once every minute until you turn it off. I found this both effective and annoying. Annoying in that I had to turn on the MiniBAT and press the "cancel event" key; effective in that if I was in a noisy environment and missed the initial alarm, I always heard the subsequent beeps when I reached a quieter area.

I like the ability to set weekly alarms

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by day. It's very handy for repetitive, weekly classes and appointments (I use it to remind me to pick my wife up from work; her schedule is different from day to day, but the same every week).

The diary is, of course, tied to the alarm feature. It is an explanation of your appointment, with any notes you feel it requires. You don't have to have an alarm with a diary entry. Each diary entry is actually a file, so the maximum size is 8,000 characters.

The calculator is a simple four-function program with percentages built in. It can be called from within any of the MiniBAT files, and its calculated results embedded in the file, if you need that. I wish it had a memory function, but it is useful.

The action list is simply a section of files containing things you want to keep on a "to do" list. Diary entries with alarms can be transferred to this list area by pressing the *ACT* key when the alarm goes off. Naturally, you can print out the action list to a printer if you have one connected.

Finally, we have the information system, which includes the phone and address book functions. This is the real backbone of the MiniBAT.

The MiniBAT is organized as twenty-six "drawers," much like a big filing cabinet.

FILE AWAY!

The MiniBAT is organized as twenty-six "drawers," much like a big filing cabinet. Each drawer can contain many different files, each with an 8,000-character maximum size. (Of course, making several 8,000-character files will rapidly use up all the memory.)

Several of the drawers are already allocated: the "a" drawer is the for the action list, the "d" drawer is for dairy entries, the "r" drawer is for repeated alarms, and the "x", "y", and "z" drawers are reserved for controlling the BAT (setting printer and RS-232 parameters, for example).

You don't have to restrict yourself to these preset drawers, you could use the "l" drawer for luncheon appointments, the "f" drawer for family birthdays and anniversaries, and so forth.

Locating files is simple. The last file you edited is always first, followed in descending order of recent use by the other files. The bottom file is the file you have not accessed for the longest time

You can also access the files in alphabetic order by the first word in each file. This is a little weird, but by putting an important descriptor as the first word, you can categorize your files by subject matter regardless of the drawers they may actually occupy.

Another choice is to search by word or phrase (and

wildcard searches are allowed). If the entry you want has a specific word or set of characters, just type them in and the MiniBAT will display any matches, sequentially. This is much more powerful than it looks, because the more characters you add to the search string, the narrower the search becomes.

For example, typing *603-* will list all the files with those four numbers. Pushing *9* (after seeing how many files have "603-") will narrow the search to only the files with "603-9." Pushing *4* will lock it down even farther.

SECURITY

Always a problem with computers, and especially so with portables, losing a handheld computer with all your important phone numbers, addresses, and other information can be downright deadly. The MiniBAT prevents this in two ways.

First, small 32K memory cards are available that let you backup your information, either single files or in 32K chunks of files. You cannot edit a file in a storage card, but you can scan through them.

Restoring them is just as easy, either selectively or everything. The only caveat is that a backup erases the information previously stored in a card, and a restore erases information in the MiniBAT.

Second, you can password protect your MiniBAT. Only someone who knows your password can access the data. Forgetting your password is fatal; all information is lost when you reset the unit.

CONNECTING UP

Hooking up to another computer is so simple it should be a crime. If you require two-way file transfer, the *PC-Link Plus* software (Macintosh and IBM-PC versions available) takes only a few keystrokes to send files in either direction. Both versions come with the proper cable. The connector on the MiniBAT is a special twelve-pin dual-row in-line connector, so you can't use a standard serial cable.

The software lets you send or receive a single file, a group of files, or a complete backup of the MiniBAT between the two computers. You can also use it to link the MiniBAT to your desktop computer's printer. You can even link the MiniBAT to your desktop computer and use the chording keys instead of the regular keyboard (how's that for a portable keyboard!).

The software also converts MiniBAT files for use with Borland's *Sidekick Plus*, breaking out and merging the Notepad, Phonebook, Outlook, and Time Planner files. It enhances the both products. It also makes it easy for you to keep your secretary up to date on what your activities.

With the IBM cable, you can also trade files with other computers. I tested it with the Model 100 and had a successful transfer literally the first time. All I did was plug the two together with the cable and press the *6* button at the main menu. (Well, I did set the *STAT* settings on the Model 100 to *58N1E* first.) The MiniBAT immediately started "printing" the current file to the Model 100.

After going into the "settings files" and turning off the margins (and adding a linefeed), the next file came over as clean and pure as if it came from another Model 100. Shipping it back was just as simple.

The next file came over as clean and pure as if it came from another Model 100.

I did notice, however, that the Model 100 *TELCOM* lost characters when it updated the display. I avoided this the second time by going into *TEXT* and pressing the *F2* (*Load*) key and loading the file directly. After several 8K loads, I still haven't lost any characters in the transfer.

POWER

The MiniBAT has no user-replaceable batteries. It doesn't need them. The batteries will last for about twenty hours of continuous use. In daily use, that works out to about a week (no one uses their computer for eight hours a day, every day). Still, I would have liked batteries I could change as I needed.

Recharging is via the included power supply. Plugging it in overnight every few days is more than sufficient to keep the unit fully charged.

SUMMARY

The display will dismay most people. At four lines by twenty columns it sounds and looks incredibly tiny. When I first saw it, I thought it was a joke. And the keys are tiny, too.

But remember the MiniBAT's purpose. As a diary/alarm/phone/address information system, a large display is not needed. It gets around the problem of tiny keys by providing large keys for chording. By using the *Diary* and *Caps* keys beside the thumb key, every command and character possible in the MiniBAT is available for touch typing.

As a word processor that fits in your pocket, I defy anyone to try to type faster or more accurately on a Poqet, Atari Portfolio, or HP-95LX. I dare them to try to even get into their word processor while driving at night, much less do anything useful.

My wife likes the new computer. Her reasons are strictly personal: I no longer haul around that large bag with my Model 100 every time we leave the house; when she is driving and says, "Oh look at that," I don't look up from the keyboard and say, "What?" Instead, touch-typing with only an occasional look at the display, I see what she sees at the same time she does. It gives, she says, the illusion that I am not ignoring her. Plus, I don't look like some kind of techy nerd.

PRODUCT SPECIFICATIONS & SUPPLIERS

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Baton Rouge, LA 70802
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MiniBAT — $595.00
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Spreadsheet Card — $100.00
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Infoworld rated Lucid's performance "excellent"

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TMNE says "Satisfaction Guaranteed or your money back within 30 days!"

LUCID© is here now. It is on a ROM cartridge that snaps into the compartment on the back of your Model 100. It takes no memory to load and no memory for operating overhead. That means you have the full 29.6k bytes free to store your data.

First, LUCID© is memory conserving. It will let you build a large spreadsheet—255 row by 126 column capacity. You build huge spreadsheets in your Model 100's RAM that could consume 80 to 100K on a desktop computer.

Secondly, LUCID© is fast. LUCID© is so rapid, a 36 column corporate financial statement took less than 4 seconds to calculate.

Thirdly, LUCID© has features you won't find in most other spreadsheets. For example, when you type a label (text) it will cross column boundaries; in other words when you type a label or title it will appear as you type it irrespective of column or width. LUCID© also allows you to set column widths individually, and of course LUCID© has insert row and insert columns, as well as other standard features. LUCID© even lets your formulas refer to cells in other spreadsheet files.

Further, LUCID© has what no other spreadsheet has: Cut, Copy, and Paste. It uses the same keys as Cut and Paste in TEXT, but here's the difference: it takes all the formulas with it when you paste and they all automatically recalculate with the entire sheet.

And here is what is really amazing. You can copy or cut from one spreadsheet and paste into another spreadsheet or even a TEXT file.

LUCID©supports all BASIC math functions as well as Log, sine, cosine, tangent, exponentiation and other sophisticated math functions.

LUCID© has so many features that you will say "this is what I need in a spreadsheet", such as automatic prompting of an incorrectly typed-in formula showing just where the mistake was made.

LUCID© has expanded "go to" functions that remember and produce a windowing capability.

But perhaps most remarkable is that LUCID© is not only a spreadsheet but a program generator as well. First, LUCID© lets you protect all cells against entry or change, and then unprotect just the cells you want for someone else to use as input fields.

LUCID© will not only process values, but text input as well so that the facts other than numbers can be responded to. LUCID© has the ability for you to refer in a formula to cells containing words. This feature combines with the capacity of doing "if then" statements that work by doing table lookups against even massive X/Y charts of text or numerical information. You can produce a program that responds to inputs with no programming knowledge whatsoever.

You can prepare a report section in your spreadsheet with instructions to your user for printout, and they can produce a personalized printout that responds to their input. All your formulas and tables that did the calculations and provided the facts are invisible to that user. LUCID© is useful for doctors for patient questionnaires, troubleshooting technicians, purchase clerks, people doing job quotes, stores for customer workups, insurance agents and anybody who needs to process specific facts and numbers to produce a report based on those responses.

LUCID© comes with a manual that explains not only the characteristics of LUCID©, but will train you how to use a spreadsheet even if you have never seen one before. You are shown how to do budgets, forecasts, breakeven analysis amortizations and many other types of personal and business reports and calculations.

User friendly is such an over-used term in this industry, but a typical comment has been "I have never seen a spreadsheet that does so much, and yet LUCID© is so much easier and faster to use."

LUCID© is a result of a most exhaustive developmental effort in which PCSG's objective was to develop a spreadsheet that was better than the state-of-the-art. We are so pleased because LUCID© provides for the Model 100 spreadsheet capability you cannot equal on a desktop computer.

LUCID© is, in our opinion and that of those who have examined it, a breakthrough. We sell it on a 30 day trial. If you are not completely satisfied, return it within 30 days for a full refund. Priced at $99.95 on snap-in ROM. Please add $5.00 for shipping and handling. Mastercard, Visa, American Express or C.O.D.

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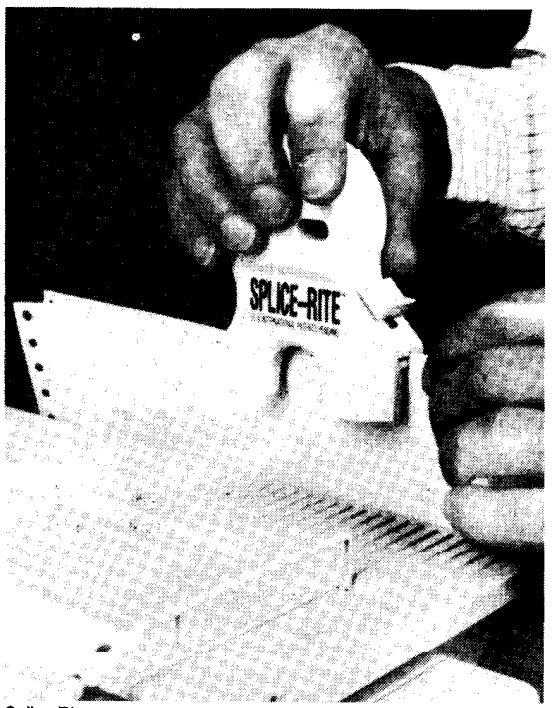
Circle 74 on reader service card.



Splice-Rite *starts you on your new pack of paper without a struggle.*

Splicing Device for Computer Paper

Splice-Rite is an ingenious hand-held device for splicing computer printer paper during the printing process without mechanical shutdown or pause. It is as quick and easy to use as a stapler, saving time and money.

The operation of Splice-Rite is as fast and straightforward as that of a zipper, yet less complicated from a mechanical standpoint. All the user does is hold the edge of the last sheet in the printer against that of the first sheet in the replenishment stack, and "zip" the Splice-rite unit across the juncture from one side to the other. The device, which is loaded with a specially-designed replenishable transparent tape cartridge, instantly joins the two sheets together in a super-strong, near-invisible bond. With the press of a button, the Splice-Rite unit then cuts the tape at the end of the splice.

The company's studies show that a user may save as much at five per cent of his/her paper volume by spending $19.95 for Splice-Rite. For more information, contact Splice-Rite, 2880 Holcomb Bridge Road, Suite B9-506, Alpharetta, GA 30201 (404)664-5505. *Or circle #69 on your Reader Service Card.*

Multiplan Price Reduction

Multiplan for the Model 100 is still available, but now at an even better price. Previously listed at $35.00, Robert Rice now has the program available at $20.00 (plus $3.00 shipping and handling). *Multiplan* is a Microsoft-designed spreadsheet program that comes on a snap-in ROM module for the Model 100 and Tandy 102.

Multiplan is very easy to install. It simply fits into the option ROM socket on the bottom of your Model 100 or 102. It only fits one way so you can't make a mistake. The package includes a reference manual, a tutorial manual and a quick reference card. One advantage of *Multiplan* for the Model 100/102 is that it is very easy to exchange data with PC- or Macintosh-based spreadsheets.

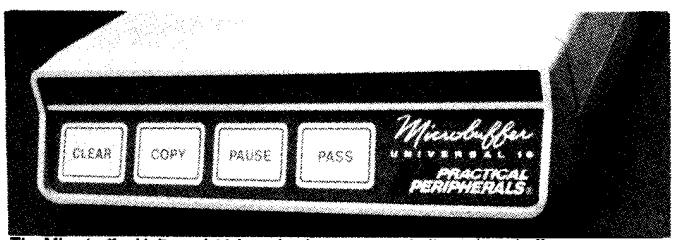
Multiplan was reviewed in the June 1991 issue of *Portable 100* magazine.

Robert Rice stocks a variety of Model 100 and 200 software packages including *Multisolutions* ROM for the Model 200. He offers a no-nonsense guarantee: If you don't like it, send it back for a full refund of your purchase price. Send for the Model 100, 102 & 200 software catalog, complete with full descriptions and prices, to: Robert Rice, P.O. Box 53798, Houston TX 77052-3798. *Or circle #70 on your Reader Service Card.*

Get Serious About Protection

As modern computer systems and components move out of high-rises and industrial parks and onto the road, protection for these extremely delicate products while in transit becomes a primary concern. *Anvil Cases*, one of the leading manufacturers of protective cases for all kinds of traveling equipment (from musical to electronic), is one of the companies represented by the Computer Service Supply Corporation. All Anvil cases have high-impact laminate on sturdy plywood, aluminum edging, spring-loaded and recessed twist-latches, strong riveted handles, sturdy partitions, ball corners, riveting throughout. You've seen them everywhere from airports to rock concerts.

Computer Service Supply Corporation also carries cases for software as well as hardware. For a more information, including pricing, contact Computer Service Supply Corporation, P.O. Box 673, HillTop Center Bldg. C, Londonderry, NH 03053 (800)255-7815 (in N.H., (603)437-0634). *Or circle #68 on your Reader Service Card.*



The Microbuffer Universal 16 *is a simple-to-operate in-line printer buffer.*

16 MB Printer Buffer

Practical Peripherals, Inc. has released the *Microbuffer Universal 16*, an in-line printer buffer that can be configured to provide up to 16 Megabytes of memory using any combination of 256K, 1 MB, or 4 MB SIMMS. This versatile buffer supports any printer/computer combination: parallel to parallel, parallel to serial, serial to serial, or serial to parallel. In-line buffers such as the Microbuffer Universal 16 are used for data-intensive output where data volume requirements frequently exceed the built-in capacity of printers, such as large spreadsheets, data-intensive bit-mapped graphics, CAD systems, or similar applications.

The Microbuffer Universal 16 has touch-sensitive front panel controls that allow users to clear buffer memory, interrupt operation, make up to 255 copies and manage operations. It has three handshake modes: CTS/DSR (hardware), XON/XOFF (software), and ETX/ACK (software). Different input/output baud rates (from 300 bps to 38,400 bps) and handshake protocols are supported.

The Microbuffer Universal 16 is shipped with 32K of memory installed. A power adapter, user's manual, and an IBM-compatible buffer configuration/utility disk are included in the package. As with all Practical Peripheral products, it has a five-year warranty on parts and labor with factory repair or replacement and is made in the U.S.A.

Suggested retail price is $259.00. For more information, contact Practical Peripherals Inc., 31245 La Baya Drive, Westlake Village, CA 91362 (818)706-0333. *Or circle #64 on your Reader Service Card.*

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COMPATIBILITY: Tandy 100, 102, 200.

Dressing Up Your Documents

Give your forms a facelift with Write ROM.

by Mike Nugent

In my line of work, I get letters. Lots of 'em. And most have something in common. They're well written, thoughtful, intelligent, and ... well, barfy looking! Entirely left justified. Monospaced. Ten characters per inch. And letterheads, if any, are generally uninspired.

Why, given the powerful technology sitting literally in our laps, and the capabilities of even low-end printers, do we produce such so-so output? I believe it's mainly because most folks just never learned how to use what they've got.

Let's fix that, shall we? As *Super ROM/Write ROM* owners, we have all we need to put more personality in our printouts, more pizzazz in our papers, while expending less time and effort than it takes to produce the "uglies" we currently crank out.

Figure 1 is an example of a style I use for TMN East correspondence. While not exactly elegant, it's at least not totally boring. Of course, it reflects my own personal taste—or lack thereof—and yours will probably differ. That's fine. I just want to show you what can be done.

GETTING TO KNOW YOU

To best use what you've already got, you'll need to expend a little energy "up front" to familiarize yourself with *Write ROM*'s features and those of your printer. Since *Write ROM*'s extensive manual can be intimidating, I'll point out pertinent sections for you to examine in greater detail. We'll go a slowly so you can become comfortable—and perhaps downright competent—with the software.

The section on *FUNCTION KEY FORMATTING* (p. 19) is a good place to begin reading and experimenting (yes, experimenting—there's no substitute for hands-on experience!), paying particular attention to pages 25, 32-37, and 39-44. These function key settings are your *global defaults* ("default" meaning a condition or setting that occurs automatically if you haven't specified something else). These particular global defaults define your basic page layout: margins, line spacing, page length, number of printing lines per page, etc. They're stored in the *WSPEC.CW* file (*WSPEC.DT* in the stand-alone ROM version) you see on your main menu.

They are well written, thoughtful, intelligent, and ... well, barfy looking!

WSPEC's job is to remember your settings. When run, *Write ROM* first looks for the *WSPEC* file. If there isn't one, *Write ROM* creates one containing some "factory" global defaults. If there already is one, *Write ROM* just leaves it alone. Thus, *WSPEC* always contains the last used settings, whether "factory" defaults or custom settings you've specified.

While the "factory" *WSPEC* default settings work as-is on most printers, you should experiment to find settings that are most pleasing to you. Create a test document. Then change left and right, top and bottom margins, justification, line spacing, etc. Use *Map* (p. 52) to see how the various changes alter the document's appearance. Print them on your printer, too, to see how they affect actual printouts. Just play around to get a feel for it—the experience will prove valuable later.

Figure 2 is a map of the letter in Figure 1. It looks a bit different than the actual letter, because of some special tricks I used in creating the letter's style and letterhead. More on those as we progress.

FONTS

Since *Write ROM* is designed to help you get the most from your printer, you'll need to know a bit about your particular printer. Keep the printer manual handy. It's not nearly as scary as it looks, and with a little hand holding via this column, you'll soon feel at home with it. You may even wonder how you got along without it. For now, some basics ...

Most printers default to what's called *pica* font, a standard type size consisting of ten characters per inch (10 cpi) horizontally. This yields 80 characters per line on standard 8-inch wide paper (8 in x 10 cpi = 80 char). With no margins, your lines would print 80 characters across, which would look crowded and ugly. *WSPEC*'s factory default margins (left 8, right 64) look much better, with 56 characters across and some "white" space on either side of the printed page.

I printed the letter in Figure 1 on my Kodak Diconix 150+ portable printer, using the somewhat smaller *elite* font: 12 characters per inch, 96 characters per line (8 in x 12 cpi = 96 char). Again, without margins, printed text would span the entire width of the page and would look pretty scuzzy, so I've set my global defaults to a left margin of 10 and right margin of 75. This prints more characters per line than pica (65 vs. 56), still with pleasing margins. If you own a Diconix, you may want to try similar settings.

"SWITCH" HITTING

Most printers offer both pica and elite fonts and can switch between them in several ways. One way is by flipping an actual switch, usually somewhere inside the printer (see your printer manual), to make it default to either pica or elite mode when first powered on. And some printers may have a pushbutton on the front panel to switch between modes when the printer is off-line. These "hardware" methods are fine when you want the entire document printed only in the selected font.

You can assign all sorts of software commands this way.

But what if you want both pica and elite fonts within a single document, for example, to make a particular passage or quotation stand out? You can use a "software switch," a command sent to the printer by your computer. Upon receiving the command, the printer switches into the appropriate mode, in this case pica or elite. Many other modes exist, as you'll see later.

Commands can differ somewhat among printers, so check your printer manual to see what yours requires. My Diconix emulates two printer types, Epson and IBM. Using its Epson mode as an example, the command *ESC-P* switches it to pica font, and *ESC-M* switches it to elite font.

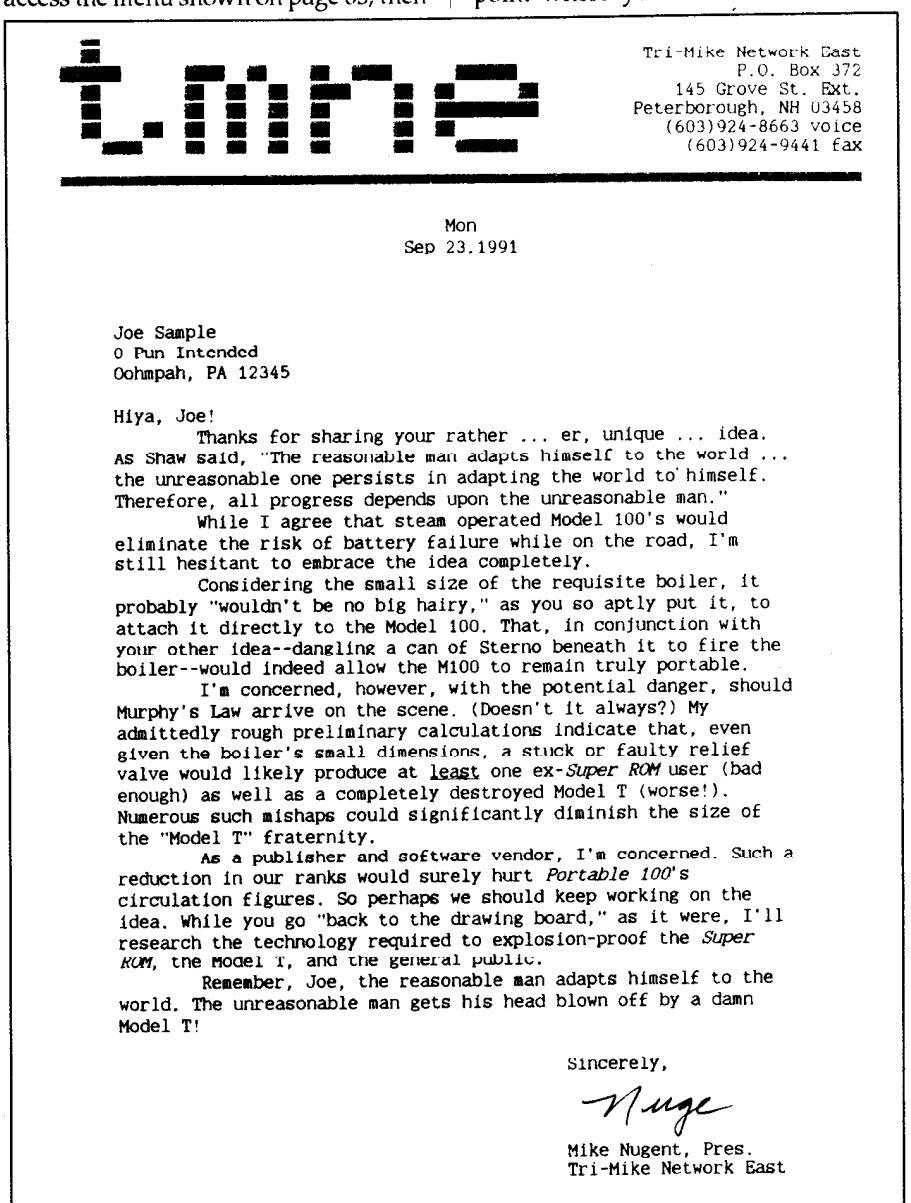
MY WISH IS YOUR COMMAND

How do we send software commands to the printer? The *PRINTER FEATURES* section (p. 79) of the *Write ROM* manual explains one way. (Also see Appendix B on page 191.) You assign *CODE*-key combinations which, when encountered in your document, cause *Write ROM* to send the proper software commands to your printer. You can assign all sorts of software commands this way, such as bold, italic, underline, etc., but for now, let's continue with the pica/elite example.

Suppose your Epson-compatible printer defaults to pica font upon power-up, and you wish to print portions of your document in elite. You can use *Write ROM*'s alternate print feature (p. 90) to control it. Press the *PRINT* key to access the menu shown on page 83, then *F4* (*Code*) to call up the printer code menu, and finally *F5* (*Alt*) to access the alternate printer feature settings.

Since Epson-compatible printers use *ESC-M* to turn elite font on, at the *Alternate ON:* prompt, type *027077* (027 = *ESC*, 077 = *M*) and press *ENTER*. At the *Alternate OFF:* prompt, type *027080* (027 = *ESC*, 080 = *P*) and press *ENTER* (for *ESC-P* to return to pica). Finally, at the *Alternate CODE character:* prompt, press *CODE-e* (for "elite," or whatever *CODE*-key combination you prefer) to set the code for turning elite on and off.

Thereafter, to switch to elite font within your document, you'd just press *CODE-e* at the place in the text where you want it to start, then *CODE-e* again at the point where you want it to end and



Tri-Mike Network East
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Peterborough, NH 03458
(603)924-8663 voice
(603)924-9441 fax

Mon
Sep 23,1991

Joe Sample
0 Pun Intended
Oohmpah, PA 12345

Hiya, Joe!

Thanks for sharing your rather ... er, unique ... idea. As Shaw said, "The reasonable man adapts himself to the world ... the unreasonable one persists in adapting the world to himself. Therefore, all progress depends upon the unreasonable man."

While I agree that steam operated Model 100's would eliminate the risk of battery failure while on the road, I'm still hesitant to embrace the idea completely.

Considering the small size of the requisite boiler, it probably "wouldn't be no big hairy," as you so aptly put it, to attach it directly to the Model 100. That, in conjunction with your other idea--dangling a can of Sterno beneath it to fire the boiler--would indeed allow the M100 to remain truly portable.

I'm concerned, however, with the potential danger, should Murphy's Law arrive on the scene. (Doesn't it always?) My admittedly rough preliminary calculations indicate that, even given the boiler's small dimensions, a stuck or faulty relief valve would likely produce at least one ex-*Super ROM* user (bad enough) as well as a completely destroyed Model T (worse!). Numerous such mishaps could significantly diminish the size of the "Model T" fraternity.

As a publisher and software vendor, I'm concerned. Such a reduction in our ranks would surely hurt *Portable 100*'s circulation figures. So perhaps we should keep working on the idea. While you go "back to the drawing board," as it were, I'll research the technology required to explosion-proof the *Super ROM*, the Model T, and the general public.

Remember, Joe, the reasonable man adapts himself to the world. The unreasonable man gets his head blown off by a damn Model T!

Sincerely,

Mike Nugent, Pres.
Tri-Mike Network East

Figure 1. Create customized letterheads and styles using Write ROM *or* Super ROM

GOOD MEMORIES

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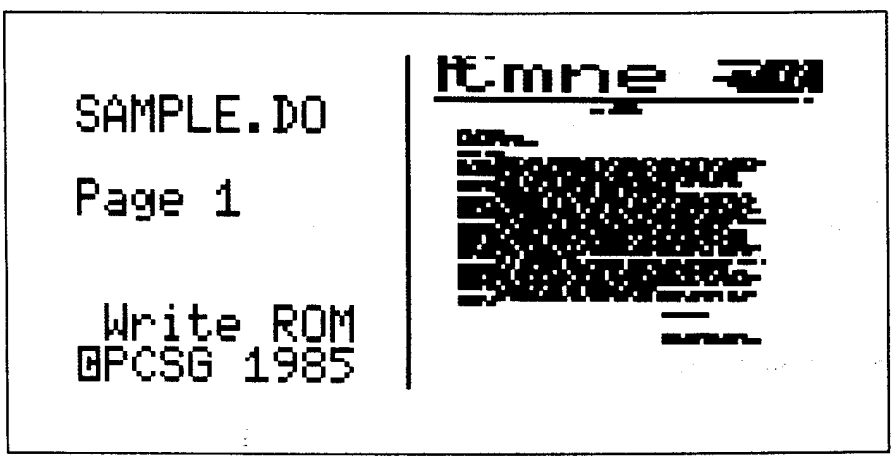

Figure 2. Write ROM's Map *feature lets you preview the form of the letter in Figure 1 before printing.*

return to pica.

Go ahead and try it. Assign the proper codes for your printer (see your printer manual) to the *Alt* function and put a few *CODE-e*'s into a test document. Now *Map* it and print it. See how it works, switching from pica to elite and back again?

Have you noticed something else? Something perhaps not quite right? Yes, the elite text gets kinda squished toward the left side of the page. It doesn't look that way on the *Map*, but it sure comes out funky on the printout! That's because *Map* is basing its characters-per-line calculations on the margins (8 and 64) you've set for pica font.

How do we get around this weirdness? Well, first of all, it ain't weirdness! It's *Write ROM* doing what you've told it to do—or more correctly, not doing what you didn't tell it to do!

You changed the font, so you must tell *Write ROM* the new margins; it can't read your mind. Therefore, you are now going to take control of the printing process. You will tell *Write ROM* exactly what you want, and *Write ROM* will obey!

YOU'RE THE BOSS!

Along with your new "Power" comes some new "Responsibility." (You knew that, right?) To take complete control of *Write ROM* and your printer, you'll need to learn to handle *DOT COMMANDS* (p. 59). Dot commands override *WSPEC*'s global defaults and give you more direct control over your documents. While not terribly difficult, it may require a bit of effort. (If you're too wimpy, just quit here and keep writing ugly letters. But if you want to have the "write stuff," meet me back here next month!)

Erratum: No, your eyes aren't going bad. In last month's column (It's A Bird, It's A Plane, It's..." Oct. '91), Figure 4 and Figure 6 were transposed by the printer. You probably figured that out, but I thought I'd mention it, just in case.

-MN

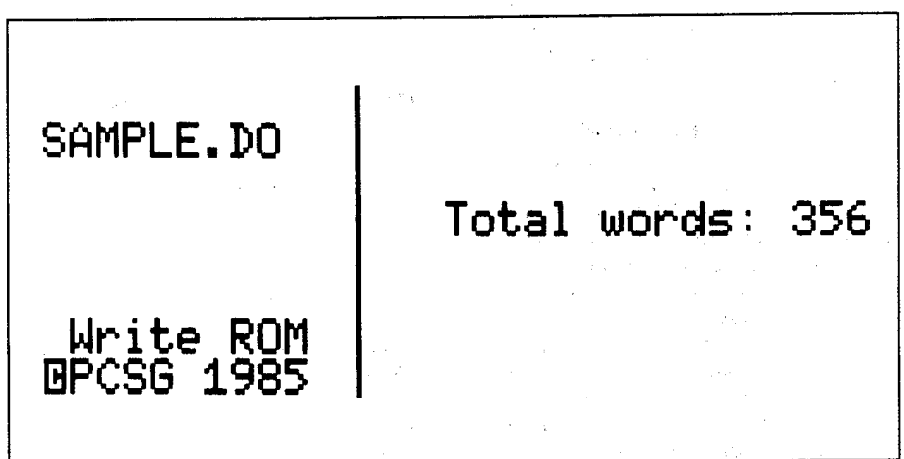

Figure 3. Write ROM's Map *feature gives you the total word count, including the header.*

COMPATIBILITY: All MS-DOS computers.

Think Global!

Expand your horizons with a modem, your computer, and DeskMate.

by George Sherman

The pedestrian programs I've talked about so far—word processors, spreadsheets, and the like—are enormously useful and important for doing business, for work, and home. But for pure edification, I enjoy most connecting to other computers. Telecommunicating. It's one of the greatest pleasures I get from my 1400LT. I probably spend 75 to 80 percent of my computing time telecommunicating.

This month I am going to mention several ways to do it and give you a brief description of using *DeskMate* for it. Next month, I'll go into more detail regarding the mechanics of the operation.

Basically, telecommunication is the means by which one computer talks to another. This can be anything from an interoffice local area network, or LAN, to a network of thousands upon thousands of computers all over the world.

To accomplish this connection you need a modem, a device to connect your computer to the local telephone company's lines. You would be amazed at how much the purchase of this one item can broaden your knowledge and your horizons.

REASONS TO GET A MODEM

Let me cite some examples. 1) I have recently been in almost daily contact with a person on the Island of Guam who is an engineer with United Airlines. 2) I recently received an invitation to travel on a privately owned rail car from one of my correspondents who lives in Houston. 3) During the Panama invasion, I monitored messages from a Panamanian who lived just one block from the Papal Nuncio where General Noriega was holding out. 4) Most recently, I was active on two forums on the CompuServe Information Service (CIS) discussing the Persian Gulf war.

As a result of this latter exchange, I was almost always ahead of the local and national newscasts, with the exception of CNN, of course.

And 5) in October of 1990, my wife and I were the guests of a young man on Martha's Vineyard whom we had never met—and didn't even know what he looked like until we arrived at the ferry boat dock. I had been corresponding with him through my computer for over four years, and we had become fast friends.

I was almost always ahead of the local and national newscasts.

Oh, yes, one other example. 6) I am writing this article today because a couple of years ago I uploaded (sent) to CIS a message addressed to "ALL," which was read and answered by one Mike Nugent (note the masthead). And I've been stuck ever since. (Big wide grin, honest, Boss.)

DESKMATE AND ITS ENVIRONMENT

In almost every city of any size where people are using computers, you'll find at least one and possibly more bulletin boards (BBS's). These are usually run by individuals from their homes as a hobby and a way to meet other people as well as exchange ideas and messages. Depending on the software running the BBS, each has its own characteristics and requirements. Where they parallel each other is that most usually cost nothing to join or use.

Incidentally, as our masthead explains, *Portable 100* also operates a bulletin board reachable by your computer through a modem at (603)924-9770.

Reaching out beyond the local area are the national computer networks and switching services such as CompuServe, DELPHI, GEnie, Prodigy, and of course—*PC-Link*. All these provide E-mail or message exchange. Many provide special interest groups or SIG's, in which intercommunication between members of like interests is the order of the day.

In addition, several provide reference material from on-line encyclopedias. And they often offer *IQuest*, a means to search for items of interest from hundreds of newspapers and periodicals, interface or connection with travel agencies such as Eaasy Sabre owned by American Airlines and OAG Travel Service, and many other services too numerous to mention.

PC-LINK

One of the programs included with your purchase of *DeskMate* is *PC-Link*, owned by Tandy Corp. The program is a completely automated telecommunica-

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tion system ready and waiting for you to explore.

With it you can, in addition to communicating with an outside world of other PC users, access all types of useful information, news, stock quotes, airline reservations, and an up-to-date encyclopedia. You can check reviews of the latest MS-DOS-compatible software. And you can get support for *DeskMate* and Tandy computers straight from Tandy headquarters.

For an additional minimal surcharge you can enroll in *PC-Link* Plus and download (receive information) from a large library containing over 7,000 public domain software programs, attend live conferences with experts on subjects that interest you, learn tips and hints on using software programs directly from the publishers, meet other PC owners from around the country, and enjoy online games and contests.

To sign on to *PC-Link* you need the following: a Tandy or Hayes-compatible modem, a working home telephone line, a VISA, MasterCard, or personal checking account number, your *PC-Link* registration certificate, which comes with your *DeskMate* materials, and a working copy of your *PC-Link* disk.

Start *PC-Link* from your desktop and follow the simple item-by-item instructions. The program provides an 800 number, which when dialed by the program gives you the local access telephone numbers for your area code. While on-line with this free "sign on" number, you can choose as a first and second choice the phone numbers to access *PC-Link*.

Once you have completed this portion of the sign on procedure, *PC-Link* dials the number you have chosen so that you can complete the registration process. A registration form will appear on the screen. Here you enter the information included with your *DeskMate* packet. You then move through a series of screens that ask you to enter your address and billing information. Once you have completed the registration, you are ready to explore *PC-Link*.

DeskMate also provides a means of accessing CIS or other national networks through *Telcom*, a full-featured telecommunications program. In next month's article, I will go more deeply in the use of this feature of *DeskMate*.

DeskMate also provides a means of accessing CIS or other national networks

MORE EXAMPLES

Need some more incentive? 1) I recently read some messages written by Roger Ebert of Siskel and Ebert fame. 2) Last week I "talked" to a person who had just finished making a movie with Christopher Lloyd (the one who appeared in all three *Back to the Future* movies). 3) Several months ago, I did some encyclopedic research on the rain forests of Brazil.

4) Last fall, I acted as my own travel agent and booked a round trip flight for my wife and me from Tulsa to Boston via Dallas-Fort Worth. I chose the seats, had the lowest possible fares automatically picked for me (we flew the entire round trip for less than $500, total fare for both), and, for a week, reserved a luxury car, which was waiting for me to pick up when I landed at Boston.

After setting up the whole itinerary via Eaasy Sabre, available on *PC-Link*, I told the computer to make the tickets available at the office of my local travel agent. When I walked in his front door and gave him the trip number assigned by Eaasy Sabre, he accessed *his* computer for the file *I* had already set up, and he printed out my tickets and boarding passes.

5) I recently queried for information about possible sightseeing suggestions for a trip my wife and I have coming up and got loads of suggestions. 6) Oh, and another thing... but you get the idea.

Between now and next month, go out and buy a modem. It will be one of your most rewarding investments.

BY GEORGE!

COMPATIBILITY: Model 100, 102, and 200 (sometimes others, with changes).

NIM.BA

This game leaves no stone unturned.

by Paul Globman

In the game of Nim, two players take turns removing stones from several piles of stones. At each turn, a player may remove as many stones as he or she likes, but all from the same pile. The player to remove the last stone wins.

In *NIM.BA*, the piles of stones are represented by numbers, and the Model 100/200 is your opponent. When you run *NIM.BA*, you begin at LEVEL 5 (5 piles of stones). The number of stones in each pile is randomly selected, between 1 and 7 stones per pile.

Use the left or right arrow key to select a pile; then press a number (*1-7*) to indicate how many stones you want to remove from a pile. You always have the first move, and the play alternates between you and the computer. The program ignores any attempt to remove more stones than a pile contains.

When all stones are removed, the program beeps and indicates who won. The following keys (commands) are available at any time during the game:

ESC—press *ESC* to abort the game and return to the menu.

NEW—press *N* to abort the game and play a new game.

REPEAT—press *R* to abort the game and restart with the same piles of stones.

SKILL—press *S* to abort the game and start a new game at the next highest skill level. Increasing the skill level increases the number of piles of stones. Ten (10 piles) is the highest skill level and the most difficult level to beat the computer.

NOTE: These commands respond to uppercase characters only, so press the *CAPS LOCK* key.

Have fun.

Paul can be reached by modem on CompuServe (72227,1661) and GEnie (P.GLOBMAN), or by mail at 9406 N.W. 48th St., Sunrise, FL 33351 (please enclose SASE if you're requesting a reply).

```
Ø REM NIM.BA (c) 1991 by Paul Globman
1 DEFINTA-Z:P$="   "+CHR$(152)+"   ":FOR
I=27TO29:B$=B$+CHR$(I):NEXT:L=5
2 B$=B$+"NRS":X=VAL(RIGHT$(TIME$,2)):X=R
ND(-VAL(MID$(TIME$,4,2))*6Ø+X)
3 TT=Ø:FORI=1TOL:R(I)=INT(RND(1)*7)+1:TT
=TT+R(I):B(I)=R(I):NEXT:P=1
4 X$="NIM.BA (c) 1991 by Paul Globman":C
LS:T=TT:FORI=ØTO4STEP2
5 LINE(Ø+I,Ø+I)-(239-I,63-I),1,B:NEXT:PR
INT@45,X$
6 GOSUB22
7 X$=INKEY$:IFX$=""THEN7
8 X=INSTR(1,B$,X$):IFX=ØTHEN14
9 ONXGOTO18,11,12,3,13,1Ø
1Ø L=L+1:L=L+(L>1Ø):GOTO3
11 P=P+1:P=P+(P>L):GOSUB23:GOTO7
12 P=P-1:P=P-(P=Ø):GOSUB23:GOTO7
13 FORI=1TOL:R(I)=B(I):NEXT:GOTO4
14 X=VAL(X$):IFX<1ORX>R(P)THEN6
15 R(P)=R(P)-X:T=T-X:IFT<>ØTHEN19
16 BEEP:BEEP:PRINT@248,"You ";
17 PRINT"win... Please try again":GOTO7
18 MENU
19 GOSUB22:GOSUB24:Y=S(J):P=I:PRINT@2Ø8,
"I'll take"Y"from pile"I
2Ø R(I)=R(I)-Y:T=T-Y:FORI=1TO15ØØ:NEXT:P
RINT@2Ø5,SPACE$(3Ø):IFT<>ØTHEN6
21 BEEP:BEEP:PRINT@248,"I ";:GOTO17
22 FORI=1TOL:PRINT@162+I*3,R(I):NEXT
23 PRINT@2Ø3+(P-1)*3,P$:RETURN
24 B4=Ø:B2=Ø:B1=Ø:FORI=1TOL:R=R(I):B1=B1
+RMOD2:B2=B2-(R=2ORR=3ORR>5)
25 B4=B4-(R>3):NEXT:F=4*(B4MOD2)+2*(B2MO
D2)+B1MOD2:IFF>ØTHEN28
26 I=RND(1)*(L+1):IFR(I)=ØTHEN26
27 S(J)=RND(1)*R(I)+1:RETURN
28 ONFGOTO29,3Ø,31,32,33,34,35
29 RESTORE38:GOTO36
3Ø RESTORE39:GOTO36
31 RESTORE4Ø:GOTO36
32 RESTORE41:GOTO36
33 RESTORE42:GOTO36
34 RESTORE43:GOTO36
35 RESTORE44
36 FORI=1TO4:READQ(I),S(I):NEXT:FORI=1TO
L:FORJ=1TO4:IFR(I)=Q(J)THENRETURN
37 NEXTJ:NEXTI
38 DATA 7,1,5,1,3,1,1,1
39 DATA 7,2,6,2,3,2,2,2
4Ø DATA 7,3,6,1,3,3,2,1
41 DATA 7,4,6,4,5,4,4,4
42 DATA 7,5,6,3,5,5,4,3
43 DATA 7,6,6,6,5,2,4,2
44 DATA 7,7,6,5,5,3,4,1
```

Listing 1. Challenge yourself against the computer with NIM.BA.

Quick & Dirty Area Codes

Through the years, I found myself faced with the same problem Kent Peterson wrote of in *AREA.BA* (Sep. 1991), namely, phone messages with an unknown area code. After searching through pages of area codes in the phone book a few dozen times, I figured a simple way to eliminate those searches. Putting my Model T into *BASIC*, I went through the area code listings in the phone book, state by state, typing in each area code as I came to it as though it were a line number in a *BASIC* program, each followed by the standard abbreviation for the state. With that finished, I *SAVE*d the "program" as a text file (*AREAC.DO*) and, lo and behold, all the area codes were listed in numerical order.

Now, to find the state an area code belongs to, I go to *AREAC.DO* and either run down the list to the number I want or else press *F1, (Find)* type in the number, and there it is.

While this doesn't give the time in that state, typing the hourly difference between my state and the other states after their names (*-1, -2,* or *-3* hours from here) would make it simple to figure the time.

Though not as sophisticated as Kent's program, this one requires a lot less typing and, without time zone notations, uses only 818 bytes.

Bert Strauss
New City, NY

CHAOS.BA UPDATED

Here is an embellishment of Jim McBurnett's interesting *CHAOS.BA* program. Using it, the performance fills the screen of the Model 100. His line numbers have been retained so that his explanations stand. New comments are shown as *REM*'s.

You need not count the spaces shown in the middle of lines 6, 7, 8, and 9. Just insert as many as will bring the close-quote for each program line immediately under its companion open-quote, found in the previous line on the screen. Use *GRPH-SHIFT-Y* key combination to obtain the triangle shown in line 6.

The five thousand rolls of the die set by this program take less than six minutes. Additional pixels might darken the display, given the opportunity. Increase the *5000* in line 90 to *10000* to test the possibility: it will now take eleven minutes to run.

The mechanism of generating this fractal, or strange attractor, or whatever it is, can be explored by altering both *0.5*'s in line 80 to a lesser number. I tried 0.25. Results might be even more interesting if the pixels on the Model 100 screen were smaller.

Truly, "an interesting waste of time."

Robert M. Organ
Bethesda, MD

```
5 PRINT@160,"CHAOS.BA  J.McBurnett, Port100(Nov89)18":FOR W=1TO2000:NEXT 'title and delay
6 CLS:PRINT@80,"Start at A                    on a ABC" 'caption
7 PRINT@120,"Roll die: aim                  at A, B or C"
8 PRINT@160,"Move halfway to              Aor? Place dot"
9 PRINT@200,"Repeat from dot             Roll 5000 times":L1=1/3:L2=2/3:DEFINT I,J,X,Y,Z
20 J=VAL(RIGHT$(TIME$,2))
30 FOR I=1 TO J:N=RND(1):NEXT I
40 N=RND(1)
50 IF N<=L1 THEN X2=0:Y2=0:PRINT@100,"A":GOTO 80
60 IF N<=L2 THEN X2=60:Y2=60:PRINT@100,"C":GOTO 80
70 X2=120:Y2=0:PRINT@100,"B"
80 X1=.5*(X1+X2):Y1=.5*(Y1+Y2)
90 PSET((60+X1),(2+Y1)):Z=Z+1:IF Z<5000THEN 40 'number and count runs
100 PRINT:PRINT:PRINT:END 'move BASIC's "OK" to end of screen
```

Listing 1. An embellishment of CHAOS.BA, *a quasifractal program that fills the screen pixel by pixel.*

```
0 'POWR-DOS front end for SuperRom's LUCID// by Rick Sparber \\
1 'This program prompts for a LUCID file name stored on disk.  It then gets the
file and calls LUCID
2 'The trick is to interface with SuperRom by faking keyboard strikes that get y
ou to LUCID.  ASCII characters are poked into the type ahead buffer as a pair of
 bytes.  The first is always 0 and the second is the decimal equivalent
3 'of the character.  If I want to poke in a function key, then the first byte m
ust be a 255 and the second byte is the "psudo ascii" value of the key.
4 'F1 -> 0, F2 -> 1, etc.  I pass these keys to the poke routine by maping them
to F1 -> 201, F2 -> 202, etc.
8 LFILES V:'verify POWR-DOS is sane
10 INPUT"LUCID file name on disk (no .CA) or ? for list of files:";F$:'prompt fo
r file name or list files on disk
11 IFF$="?"THENGOTO80
13 ONERRORGOTO30:'set up to handle errors starting at line 30
17 LOADM":"+F$+".CA",F:'try to get file off of the disk. If it already exists in
 RAM, kill off RAM copy and try LOADM again
19 A$=CHR$(20)+CHR$(31)+CHR$(13)+CHR$(201)+F$+CHR$(13):GOSUB 1000:'this string i
s poked into the type ahead RAM.  It says hit right arrow, down arrow (now over
20 '"Super", then hit <enter>, then hit F1 to ask for LUCID, then supply file na
me followed by <enter>
25 MENU:'with that string poked in, return to the MENU.  The operating system wi
ll then start to empty the type ahead buffer
30 IF ERR=67 THEN GOTO 50:'if LUCID file already exists,kill off RAM copy and ge
t fresh copy from disk
40 PRINT "FATAL ERROR";ERR;" AT LINE";ERL:END:'all other errors crash program
50 KILL F$+".CA":GOTO 17:'LOADM complained that the file already exists in RAM.
 Kill it off and try LOADM again.
80 LFILES:GOTO10:'list all files on the disk and then prompt for a file name aga
in
1000 KB=-86:'this routine pokes characters into the type ahead buffer
1010 L=LEN(A$):FORI=1TOL:'do one poke for each character in the string A$
1015 S=ASC(MID$(A$,I)):'get decimal value of the character
1020 IF S > 200 THEN GOTO 1035 ELSE POKE(KB+2*I),0:'if value is > 200 then this
is a function key so need to poke 255.  If not >200, then we have an ascii chara
cter so poke 0
1030 POKE(KB+2*I-1),S:'place character into type ahead buffer
1032 GOTO 1040
1035 POKE(KB+2*I),255:S=S-201:'for "psudo ascii" characters, we poke in 255.  Th
e reduction of S by 201 brings it to the correct value for poking just ahead of
the 255
1037 GOTO 1030
1040 NEXT:POKEKB,L:'end of loop to poke in all characters.  Then we poke in the
number of characters that we put in the buffer at the first address in the buffe
r
1050 RETURN
```

Listing 2. Pull Lucid *files from a disk and access them with one command with this program.*

ONE COMMAND DOS

I own two great add-on products: *POWR-DOS* and *Super ROM*. They could have been made for each other, but alas, are not. Wouldn't it be nice to be able to pull *Lucid* files from the disk and access them all in one command. Well, with a little help from Mike Nugent, I was able to write the following program. Remove the comments and the program uses 314 bytes. The same programming technique can be used to pull files from the disk, rename them to *NOTE.DO* or *ADRS.DO*, and then call the appropriate built-in routine.

Rick Sparber
Wheaton, IL

DEFUSR appears monthly to answer your questions about Tandy notebook computers.

Send your queries to: DEFUSR, PORTABLE 100, P.O. Box 428, Peterborough, NH 03458-0428.
Please enclose a stamped, self-addressed envelope for our reply.

BRIGHT IDEA?

I love my 1500HD, or at least have no reason yet to switch upward. The boot-up routine seems to illuminate the screen at a higher brightness level, then it cuts back to about 3/4. This is independent of the brightness and contrast switches. What is going on? Can it be kept on high brightness? Can someone suggest the correct command(s) or code to achieve and retain high brightness level of the screen during the boot-up?

Steve Lenkowsky
Norwalk, CT

Paul Globman responds:

Steve, When you first turn the laptop on you would get a brighter screen momentarily. But once the "power up" sequence has completed and the LCD bias voltages are routed, the LCD brightness adjusts to the manual settings (via the switch and contrast control). There aren't any commands to achieve and retain the high brightness level of the screen at that moment after power-on.

-PG

DICONIX WORD PROCESSING

I am the proud owner of Tandy's 100, 102, and 200 computers. My question is: What printer programs seem to work best with the Diconix (Kodak) ink-jet portable printer?

Charles Hudson
Cooperstown, NY

Most all of them do, Charles. I use Write ROM *with excellent results. (See my SUPER HERO column in this issue.) The Diconix can emulate both IBM and Epson modes, so any word processor that supports those modes will work with the Diconix.*

-MN

RAM, ROM, AND OSBORNES

How can I best upgrade my Model 100? My machine now has 32K RAM and an early version of *Super ROM*, and a Tandy Portable Disk Drive (PDD-1).

I'd use the Model 100 more except for a few problems: not enough memory, slow and inconvenient disk drive, I don't know how to transfer data to my workhorse desktop (Osborne with ROMBO electronic RAMdisk), and I don't want to risk lost data and programs due to machine lockup and cold starts.

Specifically, I want more memory, but I don't want to pop *Super ROM* in and out... and I may want to add some other ROM programs. What can prevent lost data from cold boots? And how can I prevent cold boots? What specific cable/program works best for Model 100 to Osborne? Radio Shack sold me "null modem adapter" part #26-1496, but didn't tell me how to use it. I want to transfer text or data to *WordStar* or some other program in my Ozzie.

I want more memory, but I don't want to pop* Super ROM *in and out...

Two major considerations: I've seen advertisements for several memory upgrade options, drive operating systems, data transfer setups, and so forth... but which are compatible with *Super ROM* and each other? And with other programs I want to keep permanently loaded (such as *FILEMN*)?

Second, some solutions would cost so much perhaps I should look at a new laptop PC instead. I'm a writer/photographer, so my basic needs are word processing and database management.

Grant Mangold
Linn Grove, IA

First, a minor point. The current version of Super ROM *is 1.8. Upgrading to it costs $25. Contact TMNE for details on doing that.*

Second, the only product I know of that addresses all your points is the Booster Pak, which you can get from Purple Computing. It lets you put in multiple ROM chips and has provisions for up to 2MB RAM. It provides an environment that protects the different chips from clashing in RAM and causing lockups or crashes. And even if you do get a crash, the only RAM affected is the 32K in your Model 100. The RAM in the Booster Pak is unharmed and all files are intact.

It isn't all that expensive, either. It costs $199 with no RAM. RAM chips cost just $10/32K, with a maximum of fourteen possible. If you want to use optional ROM's like Super ROM, *you must have one RAM chip for the image. In practical use, if you buy the basic unit with 10 chips, you'll have 288K storage with 32K for your option ROM.) The disadvantage to the Booster Pak is that you are limited to a maximum file size of 28K for each file. It also adds about 0.75-inches to the depth of your Model 100, and about a pound of weight.*

Your other choice is to buy a six ROM ROM-bank device and a multiple RAM-bank unit from Tri-Mike Network East (TMNE) (Club 100 also sells Model 100 RAM-banks). The ROM-bank device *uses a switch to select the various ROM's,*

USE YOUR DESKTOP COMPUTER AS A DISK DRIVE FOR YOUR M-100.

Now—
IBM, MS-DOS version works over the phone!

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NOW AVAILABLE ON M-200

on Snap-In™ ROM

Try *Disk*+ for 30 days. If you aren't as excited as we are, return it for a full refund.

When we designed *Disk*+ we did it out of necessity. We wanted a way that we could just connect a Model 100 to our desktop computer with a cable and save files onto the desktop's disk drive. We wanted it to be so simple to use it would be self-explanatory.

Picture this. *Disk*+ comes to you on a Snap-in ROM and a diskette for your desktop. You take a quarter and open the little compartment on the back of your Model 100. Then you just press the ROM into the socket. *Disk*+ appears on your main menu just like a built-in.

You connect your Model 100 to your other computer using an RS232 cable (available from TMNE for only $20).

You just place the *Disk*+ diskette into the desktop's drive and turn on the computer. It powers up automatically and says "awaiting command" on your desktop's screen. Then you just put the widebar cursor on the Model 100 main menu on *Disk*+ and press ENTER. You are shown your RAM files arranged just like the main menu.

To save a file to your other system's disk drive, you just move the widebar cursor to the file you want to save and press ENTER. It is saved instantly with no further action.

To look at the disk directory, you just press a function key on your Model 100. You see immediately the disk directory on your Model 100 screen, and it is arranged just like your Model 100's main menu.

To load a file from the diskette to your Model 100, you just move the widebar cursor to the file and press ENTER. The file is transferred to your Model 100's RAM instantly. You can press F8 and go back to the main menu, and the file you loaded from diskette is there, ready to use.

It is so nice to be able to keep your documents, programs (both BASIC and machine code) and *Lucid* spreadsheet files on the diskette, and bring them back when you need them. All files are ready to run or use with no changes or protocol by you.

If you have access to a desktop computer and don't have *Disk*+, then evidently we have done a poor job telling you about it.

All files and programs that you load or save, go over and come back exactly as they are supposed to be because of full error checking. This guaranteed integrity is really a comfort. *Disk*+ is wonderful in so many other ways. For example, you can do a "save all" of all your RAM files with just a touch of a function key. That group of files is saved on the diskette under a single filename with a .SD (for subdirectory) extension. Any time you want, you can bring back all those files at once, or just one or two if you like, again with one-button ease.

Disk+ takes up no RAM. That's zero bytes either for storing the program or for operating overhead.

What really excites most *Disk*+ users is text file cross compatibility. Your Model 100's text files are usable on your desktop computer, and your desktop's text files become Model 100 text files.

This means you can write something on your Model 100, and with *Disk*+ transfer it instantly to your desktop and start using it right away on your bigger computer. Or the way we like to work is to type in a document on the desktop computer and then transfer it to our Model 100 with *Disk*+. Then we print out the document, beautifully formatted, using WRITE ROM.

Disk+ works with just about every micro sold, from IBM PC and its clones, to all Radio Shack computers (yes, all), to Apple II, Kaypro, Epson and most CPM. Just ask us. More than likely, your computer is supported.

Incidentally, hundreds of Model 100 owners have gone to their Radio Shack stores and bought a color computer because it is so low priced, and with *Disk*+ they have an inexpensive disk drive.

And if that weren't enough, how about this: *Disk*+ also provides cross-compatibility between different computers like IBM, Apple or the Model 4 using the Model 100 as the intermediary device. Quite a feature!

The snap-in ROM is really great because you can use other ROMs like *Lucid* or WRITE ROM. They snap in and out as easily as an Atari game cartridge and you never lose your files in RAM.

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and requires a bit of care in use: you have to make sure you are not in a ROM when you move the switch. If you do, you'll have an instant cold boot. Other than that, you can safely use multiple ROM's without plugging and unplugging.

The RAM-banks are available in 64K and 96K units (TMNE has only the 96K units). These add that much RAM, so you'll end up with either 96K or 128K in your Model 100. The disadvantage to these units is cold-starts; the banks are just as susceptible as the Model 100. Sometimes you will lose files, sometimes you won't. Fortunately, crashing a bank only affects the contents of that bank.

Pricing for the banks is available from TMNE and Club 100.

Then there's data transfer. Essentially, it's easy. For the Osborne's RS-232 port you don't need a null modem; this is one computer that is the exception to the rule of always using a null modem. Simply cable the two computers together with a normal serial cable. Go into TELCOM *on your Model 100, and use your communications software on the Osborne. Depending on the software you use, you might have to force it into using "local" mode (you'll have to refer to your manual for specifics on that). Set the stats on the Model 100 to 38N1E, and on your Osborne set them to 300 baud, eight-bit words, no parity, one stop bit, and XON/XOFF on.*

You should be able to see what you type on one appear on the other.

Another alternative is to get Disk+ *from TMNE. Put the disk in your Osborne and run the program. Plug the ROM chip into your Model 100, and start it. You can now transfer files back and forth directly from your Model 100 menu.*

Finally, we get to compatibility. None of the chips from different manufacturers are truly compatible with each other, but care in switching between the chips usually prevents problems. The DOS's are just as mixed up. For example, FLOPPY.CO *can mess up the memory bank switching in the multiple bank devices.* TS-DOS *won't.* Sardine *also gives the multi-bank devices fits.*

As for the chips and DOS's, I'm not aware of any problems or conflicts.

-tk

THE DMP-105, AGAIN

The internal battery on my Model 100 has never been replaced and I do not see any problems indicating it is "dying." Can this battery be obtained and installed by me? What warnings should I expect?

Some print details have been used to fancy up my printouts, but their use is very infrequent because the printer will not always accept my codes or commands. Sometimes the printer prints out decorative items (like the diagonal square boxes—*GRPH-SHIFT-^*), and other times it doesn't. Is there a procedure for me to obtain this format when I want it?

Around once a month, whatever I have done wrong seems to accumulate within my Model 100 and degrades my installed programs. So, I simply cold-start and reload all my programs. It does not take long—but it is irritating.

Bill Brewer
Austin, TX

I have one of the first Model 100's ever made (Serial # 3333) and the battery on it is still going strong. Unless your computer loses RAM information when you remove the batteries, you need not worry about the battery. In other words, if ain't broke—don't fix it!

I also have a Tandy DMP-105, and the trick is always to make sure it is in the correct mode when you want to do anything fancy. First, send character thirty (^^) to make sure the printer is in standard mode. Then send ASCII characters 27 (ESC) and 19 (control-S), i.e., ^[^S, to put it in standard character mode. Now, when you send it character 230, you should get the two diagonally placed blocks printed.

You'll end up with either 96K or 128K in your Model 100.

The graphic characters are good only in the standard, compressed, and elongated character fonts. They are also only six dots high. If you want to make a diagram with these characters, you have to first set the linefeed to half-forward (^[^\). All this information is listed in your printer manual.

Sounds like your programs are mucking around with high memory and stepping on each other. Try contacting the author of your commercial software. If you describe what's going wrong, he might be able to provide a fix for you. Good luck.

-tk

COLD-STARTS

In the Nov. 1990 issue, I found what I thought would be the answer to a problem that has plagued me of late. After a

The Beginner's Guide to the WP-2

A 26-page booklet that tells you everything you need to know about the WP-2—what it can do, what it can't do, and how to use it with tape cassette, disk drive, and other computers. It even includes the cable instructions for connecting it to Macintosh and IBM-compatible computers! If you own a WP-2, or are thinking of buying one, then you must have this book! Order today!

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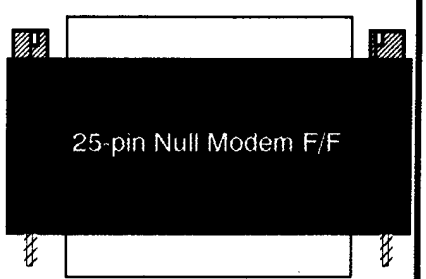

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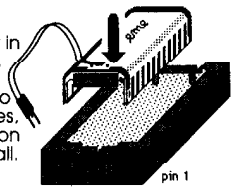

There are two ways to use extRAM: (It's one or the other at any one time.)

As a ***RAM-file-bank***, you double your space for .DO, .BA and .CO files. You store reports, data and programs you aren't currently working with out of the way in the extRAM and call them back instantly when you need them. Our new, improved file-bank software hides in the extRAM itself, so it uses minimal RAM space, and it is "cold boot" proof too. It also now includes extensions to BASIC for reading and transferring individual text files. Adapted from original software, *SLX* and *EXTBAS*. © 1989 by Paul Globman.

As a ***ROM-file-bank***, or ***emulator***, you can load extRAM with the kind of software that normally resides on option ROM chips. But no more physical chip swapping! You swap in new ROM *images* on command, from files stored on disk or RS232. Great for users of more than one ROM, or ROM developers. Loads 32K image in 40 seconds. Works with most ROM software. Software R2D2X © 1990 by Wilson Van Alst.

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DEFUSR

cold start, I found I could not reload Ultrasoft's *Disk Power*, so I reverted to using *FLOPPY.CO*. For reasons not clear to me, *FLOPPY.CO* ceased to function after I used *TELCOM* for some external communications. It seemed to me that Paul Globman's *RUN.100* might do the trick, still *FLOPPY.CO* was still resident in RAM.

However, when I entered *RUN.BA*, the program did not execute *FLOPPY.CO*. In fact, *FLOPPY.CO* disappeared from the menu as a result.

Globman notes that *RUN.BA* is similar to a previous program, *KILL.BA*. Just how similar are these programs? Are they possibly identical?

Bruce L. Brown
Bayside, NY

You have several problems here. After a cold start, following the initial loading instructions that came with Disk Power *should load it if it is intact. You do not mention which version of the Portable Disk Drive you have. If you are using the PDD-1, then don't forget that you must set the four switches on the bottom to ON to load* FLOPPY.CO, *then set them to OFF to use the drive.*

If Disk Power *still refuses to load, then it's possible you have a blown or bad disk. You should have used a backup of that disk instead of the original. Check with Ultrasoft about getting a replacement disk.*

Second, TELCOM *should not affect* FLOPPY.CO *in the slightest, unless you accidentally loaded something over it while you were in* TELCOM. *It's more likely that the real problem is that another program you have used did something in high memory to change* FLOPPY.CO *and mess it up.*

If you are not changing HIMEM *or* MAXRAM, *then you really have two copies of* FLOPPY.CO *in RAM: one under the name* FLOPPY.CO, *the other in high RAM hidden by HIMEM. Damaging the one in high RAM doesn't bother the one in low RAM. Try resetting HIMEM with* CLEAR 256,MAXRAM *and then typing* CLEAR 256, 54700. *Putting the cursor over* FLOPPY.CO *and pressing* ENTER *will load that version into high memory.*

RUN.BA *and* KILL.BA *are similar, but they really are different. Your problem with* RUN.BA *is probably caused by the damaged* FLOPPY.CO.

-tk

I have a Model 200 and use it for work and play, but I'm getting bored again.

EXTERNAL RAM PACKS?

I'm interested in installing extra RAM in my Model 102. I understand there are 32K modules about the size of a pack of cigarettes that plug in at the system bus at the back of the computer. Do you know who makes these?

Milton Anken
Tamara, FL

Node Data Systems makes and sells the units you want. They come in sizes from 128K ($179) up to 512K ($299). They advertise in Portable 100, *and you can reach them at (916)477-9148. Their address is P.O. Box 1534, Grass Valley, CA 95945.*

-tk

8085 BOOKS

I have a Model 200 and use it for work and play, but I'm getting bored again. I was wondering if you could point me in the right direction to learn assembly language for the 8085 microprocessor. I have looked in book stores and can't find a thing on it, everything is for the IBM and compatibles. I also need to know a little more about the memory above *MAXRAM*. Can you help?

Lawrence D. Taylor
Ardmore, OK

It is a problem. Fortunately, it is not insurmountable. First, there are only four op-codes difference between the 8080 CPU and the 8085 CPU, and all four are additions to the 8085. These four codes are not commonly used in 8085 programming, so you needn't worry about missing anything important. Thus, any book on the 8080 CPU is applicable to the 8085.

There used to be several books on the 8085 CPU available, but all are out of print. Your best bet would be to check used book stores and see if they have any. We have had good luck that way, and so have several of our readers. If that fails, drop by your local library and ask to see Books in Print. *The librarian ought to be able to help you find any books still in print on the 8080 CPU. I do remember seeing a book with 8080/8085 in the title, but it was a year or so ago.*

For a high RAM map, Greg Susong's article, "No Memory Lost with 200's RAM Map," July 1985, pp. 45 and 58, will do the trick. We have that issue available for $5.00 if you want to purchase it.

-tk

COMPATIBILITY: WP-2.

Big Iron Connectivity: Part II
Remote Computer Communications

Make your WP-2 talk to other computers and on-line services.

by Stan Wong

In Part One of this installment, I got as far as configuring the *Telcom* function through the system setup menu. Today I am going to engage in "remote computer" connectivity. For the purposes of this discussion, a remote system is one that you have to access through the public telephone system. To use a cliché, you can reach out and touch someone.

The WP-2 is a useful machine all by itself, but its usefulness to me is multiplied when I use it in conjunction with my desktop computer. My 386SX desktop machine is "big iron" relative to my WP-2. For that matter so is my 6-pound DOS notebook computer.

I'm going to use CompuServe as an example of a remote system. It could just as well be your office computer or your favorite bulletin board. I'm also going to assume your modem supports the Hayes AT command set. Since 99.9 percent of modems sold today support the Hayes AT command, set you have little to worry about.

MANUAL LABOR

Pressing *F2-9* gets you into the *Telcom* function. After a brief pause, you should see the following at the top of the screen:

```
Dial number#
Press ENTER to dial or enter #
```

Let's assume manual control of this session. You'll learn about putting the WP-2 on autopilot later. Like flying an airplane, before you can put it on autopilot, you have to know how to do the job manually.

MODEM CONNECTED TO THE TELEPHONE

Initializing your modem to match your phone system and remote system is an arcane art. All three must be operating on the same wavelength, so to speak. I can only go so far as to recommend that you use the modem default settings. If you have an occasion to change the settings your modem probably has a non-volatile memory, which means that it can remember the settings between sessions.

You should test your connection with the modem by typing *ATZ <ENTER>*. The modem should respond with an *OK*. If not, find a friend and offer gastronomic rewards for assistance (if the friend is of the opposite sex, then use your judgment on appropriate rewards).

Beware of so-called *line-powered* modems. These modems don't use batteries and rely on power from the phone line and your computer. At least one of these won't work with the WP-2 and probably all won't. See my review of the Practical Peripherals Pocket Modem in the October issue for more information.

Once you see the *CONNECT* message, you are ready to go online.

TELEPHONE CONNECTED TO MA BELL

Commanding the modem to dial the remote computer's phone number is simplicity itself. For example,

```
ATDT833-9915
```

dials my local CompuServe node. The modem ignores extraneous characters such as hyphens and parentheses. If you are dialing from an office phone and need to dial a *9* followed by a short pause to get an outside line, use the comma to introduce a delay in the dialing sequence. For instance, the following is what I would type to dial the *Portable 100 BBS* from my office phone:

```
ATDT9,1-603-924-9770 <ENTER>
```

For those of you who still have pulse dial equipment use the *ATDP* command.

WE HAVE CONTACT!

Once the modem establishes a two-way connection with the remote modem, your modem responds with:

```
CONNECT 2400
```

Assuming of course, that you have set everything up as a 2400-baud communications session, that you have a 2400-baud modem, and that the remote system handles 2400 baud. You may also see a *CONNECT 1200* or *CONNECT* message. The important thing is that you get a *CONNECT* message to indicate that you've established a modem communication session.

Once you see the *CONNECT* message, you are ready to go online. Many remote systems have an *autobaud detection facility*. That means that the first character you type enables the remote system to decide what baud rate you are operating at. For most systems, this character is the *ENTER* key. For CompuServe, however, you need to type a control-C (^C—hold down the *Ctrl* key and press the C key once; then let go of the *Ctrl* key).

If the auto-baud-rate detection process is successful, you should see a prompt from your system asking you to identify yourself. From here on, you're own your own. If you are logging onto

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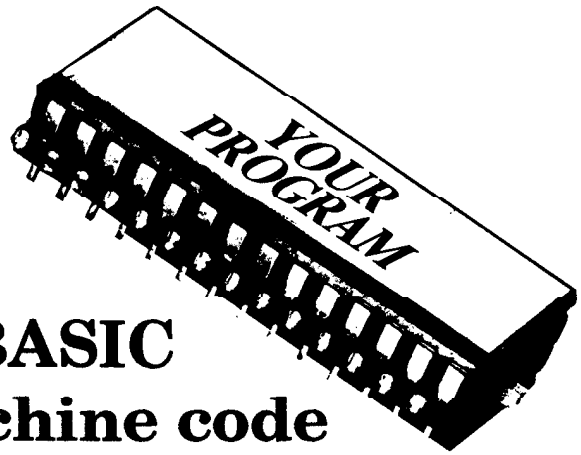

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CompuServe, you should see the following initial prompt:

```
User Id:
```

The following is a sample CompuServe session that merely logs in and then terminates the session without doing any useful work. The user responses are in bold. Modem responses are in italics.

```
ATZ
OK
ATDT833-9915
CONNECT 2400
^C
User ID: 70346,1267
Password: secret*stuff
.
.[session continues here]
.
/bye
.
[log-out messages here]
.
NO CARRIER
```

THAT'S ALL, FOLKS!

Your modem disconnects from the phone line once it detects that the remote system has dropped the carrier. The *NO CARRIER* message is the result. I usually issue an *ATH* command to hang up the phone, just to be sure.

You can start a new session to another system after finishing the current one. It's a good idea to reset the modem. Use the *ATZ* command.

LOOK, MA (BELL), NO HANDS!

You can automate the dial-in and login process for your favorite remote system. Unlike PC telecommunication programs, like *Procomm*, the WP-2 lets you store only one set of autologin parameters in memory. If you are a frequent BBS user, this can be a real limitation. Thus, odds are that the WP-2 won't be your machine of choice for heavy duty telecommunications needs though.

Those, such as reporters and journalists, who need to transmit plain text will find the WP-2 *Telcom* functions adequate.

DIAL "M" FOR MODEM

In last month's column, I had you skip certain parameters in the *Telcom* setup menu. Now I'll go back and fill these values in with something more meaningful.

If you recall from last month, you enter the *Telcom* setup menu by pressing *F2—*, then *F2-T*. Pressing *PgDn* gets you to the second page of the menu. Let's fill in the last two entries.

Place the cursor over *Dial Number:*

and put the phone number you want your modem to dial. In the CompuServe example above, I would put in:

```
Dial Number: 833-9915
```

If dialing from an office phone I might put something like:

```
Dial Number: 9,833-9915
```

AUTOPILOT

The *LogOn sequence* entry is where you put the WP-2 on autopilot. Essentially this is nothing more than a script of expected responses from the remote and your responses to predictable input. For CompuServe, I would enter something like:

```
===^C?U70346,1267^M?Psecre
t*stuff^M
```

The WP-2 uses the following special characters in the autologin script:

= Pauses for 5 seconds

^ send next character as a control character

? wait for the next character to be received

! send the next symbol as a character

Experimentation is the order of the day.

Let's decode the logon sequence above. The three equal signs causes the WP-2 to wait for 15 seconds after dialing to account for the time to dial, have the remote system answer, establish a connection, and be ready for your input. You'll have to fiddle with the right amount of time. Too short and the remote system won't be ready for your data. Too long and it'll give up and drop the connection. What works for one session may not work in the next. Experimentation is the order of the day.

CompuServe requires a control-C to be the first character entered so that it can autobaud your modem. The caret symbol (^) followed by a C stands for the control-C character.

Next, the WP-2 waits until it receives a *U* character back, the *U* in *User*. It then sends the string *70346,1267* followed by a carriage return (^*M*). This is my user ID. Next it waits for the character *P*. When it sees the *Password* prompt, it sends the string *secret*stuff* followed by a carriage return (^*M*), which represents my password. At this point, I should be logged into CompuServe and I can begin communing with the computer.

The *!* character isn't used in the above script, but if you have to send the ^ character, it must be preceded by the *!* character, because the ^ has a special meaning as mentioned

BUT WAIT, THERE'S MORE!

Gee, this is getting to sound like an advertisement for ginzu knives. The only thing sharp around here is my wit (ouch!). But let's press on. Press *PgDn* to get to the third, and last, page of the *Telcom* setup. You'll see the following:

```
Initialize modem: ATZ
Dial sequence: ATDT
Terminated code: 0D
Prefix:
Area code:
```

If you followed last month's column, you would have already made entries for the first three parameters.

The *Prefix* parameter lets you specify a special dialing code. You can put the long distance access digit *1* here. Or, if you are working from an office phone and need to dial the number 9 followed by a short pause to get an outside line, put *9* here.

The *Area Code* parameter lets you specify an area code to be prefixed to the number to be dialed.

Here are (at least) two ways to dial a long distance number:

```
Dial Number: 924-9770
Prefix: 1
Area Code: 603
```

and

```
Dial Number: 16039249770
Prefix:
Area Code:
```

The WP-2 sends the strings in the fields *Prefix*, *Area Code*, and *Dial Number* to the modem in that order. It's up to you what you put in those fields.

READY FOR LAUNCH

Now you're ready to turn on the autopilot. Exit out of the setup mode. Invoke *Telcom* (*F2-9*) and you'll see the familiar:

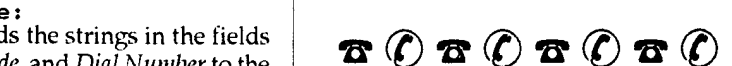
```
Dial number#
Press ENTER to dial or enter #
```

This time, just press *ENTER*, and let the WP-2 take you on autopilot to your favorite BBS. Happy computing!

WINDING DOWN

This month I've gone online with a remote computer. Next month I'll explore direct connections to a local computer. I suspect that this is how most will use the WP-2: as a remote keyboard, or data bucket, to their desktop PC or Mac.

This is your column. I want you to help define the "yellow brick road" for me to follow. Fire up your WP-2 and send me a letter in care of Portable 100 *or directly at P.O. Box 28181, Santa Ana, CA 92799-8181. If you prefer the electronic medium, use GEnie address STAN.WONG, CompuServe address 70346,1267, or Internet address dasun!wongs@Sunkist.West.Sun.Com.*



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M100TEXT: A Model 100 *TEXT* Work-Alike for the PC

Moving up can be easier than you think.

by Stan Wong

Changing to a different computing environment is often traumatic. It ranks right up there with having a root canal without anesthetic. It's not just an incremental change. A new program here, a couple of changes there. No, everything is different. New hardware, new application programs, new operating system. Old habits ingrained into your fingertips must change.

I came to the Model 100 world from a desktop PC environment. You could say that I was "moving down." I'm a *WordStar* junkie on my PC, so I wrote the *TextStar* program for the Model 100 (see March '89) to make both text editing environments as similar as possible. That helped ease my transition to the Model 100.

However, many of you have the opposite problem. You started with the Model 100 and now are being introduced to the wonderful world of PC's and Macs. Being a PC bigot, I can't help you Mac users, but for Model T users moving up to the PC, I can help ease *your* transition.

THE M100 TO PC TRANSITION

The Model 102 still survives in the marketplace despite its early 1980's design. Few users today use the 102 as their only machine. Many have some sort of desktop system as their primary computer.

To ease the transition from the Model 100 to the PC, I've written the *M100TEXT* program. *M100TEXT* is a Model 100 *TEXT* workalike that makes your IBM PC or compatible work like your trusty Model 100 TEXT program! For fast relief from finger cramps, see the end of this article for information on how you can get your copy (but stick around to read the rest of my article first).

EASE OF USE

There's not much to discuss about *how* to use the *M100TEXT* program. Because it's an emulator, you should be familiar with it already. It has the same command set, action, and feel as the Model 100 *TEXT* program. You don't need much of a user's manual. Just use what's in your Model 100 owner's manual.

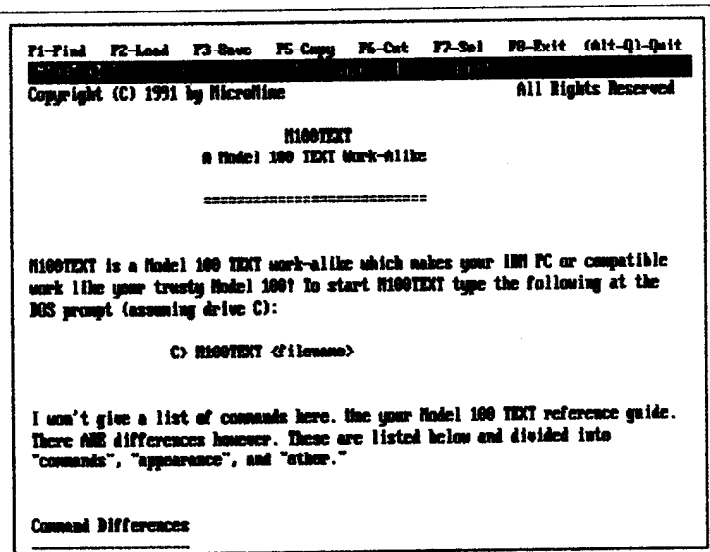


Figure 1. A look at a PC screen where the documentation for M100TEXT *is being edited using the* M100TEXT *editor, an editor that emulates Model 100's* TEXT. *Note that the PC version uses the full 80 x 25 character screen.*

This could be the end of this article except, practically speaking, there *are* differences. In the spirit of "moving up" I took advantage of some features that the PC provides, trying hard not to ruin the emulation. Since you already know what *TEXT* looks and feels like, I'll concentrate on the differences.

DESIGN CONSIDERATIONS

I wanted *M100TEXT* to operate just like *TEXT*. For instance, what about operations interfacing to the cassette recorder? Doing a ^*V* to load a file from the cassette recorder doesn't make any sense on a PC. I've implemented it as a "read disk file" operation instead. (For *WordStar* users, this is equivalent to the ^*KR* command.)

Some of the differences are in the user interface. For instance, would you want to see only a 40 x 8 display of your file on a monitor that's capable of 80 x 25? Neither would I. That's why *M100TEXT* uses all the PC screen lines to display text.

Other differences relate to physical differences between the Model 100 and the PC. The PC has no dedicated function keys such as the *PASTE* and *LABEL* keys. I've implemented these as *Alt*-key sequences.

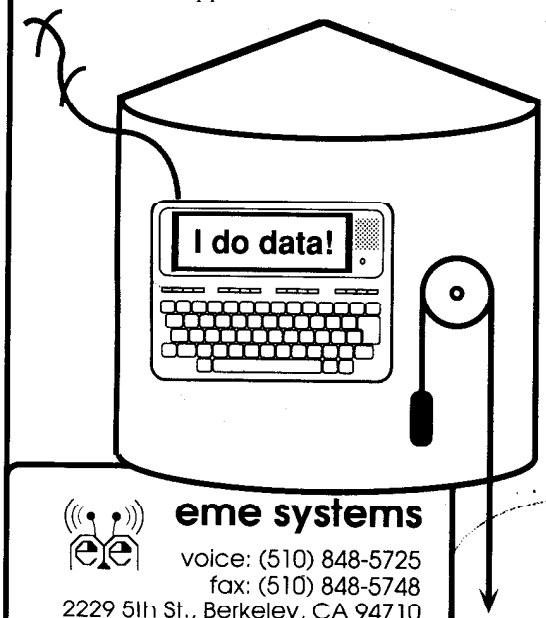
M100TEXT SCREEN

Figure 1 shows a screen shot of the *M100TEXT* program editing the program documentation.

When *M100TEXT* starts up, the first two lines are devoted to status. (The first

The Tale of Eel and Owl:

The ***OWL*** is our M100/T102-based ***On-site Weather Logger***. Please call or write or circle the reader service number if you'd like a catalog and price list. We'll use this space to tell you about current applications of the OWL.

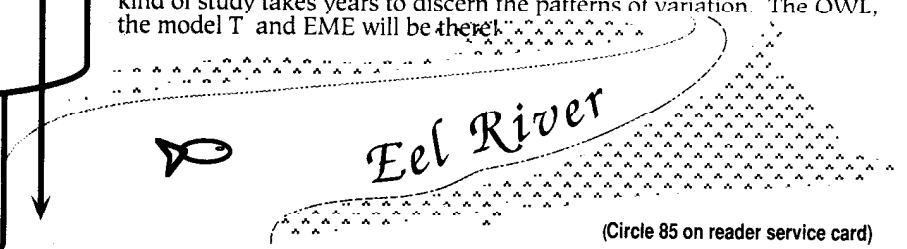


eme systems
voice: (510) 848-5725
fax: (510) 848-5748
2229 5th St., Berkeley, CA 94710

If you sign onto the Club100 BBS and look at the userLog (conference area option <L>), you will see that more often than not the first entry in the morning is somebody named "OWL 0". That is an unattended call-in from a model T located in a remote area on the banks of the Eel river in Northern California. Every night at 2am, that OWL station relays the data it has collected during the previous 24 hours—the height of the river, the water and air temperatures, light intensity, and rainfall. We later log on to the BBS and upload the numbers to our EXCEL speadsheet, where a macro parses the data and charts it.

Professor Mary Power and her colleagues at the North Coast County Regional Preserve have contracted with EME Systems for the data collection hardware and charting in a long term study of the river's Ecology. California has wet winters (we wish!) and dry summers. In summer great beds of algae bloom in the river. They are the base of a food chain that feeds everything from caddis flies to trout to eagles. The winter floods wash away the algae, and every summer it grows again.

The OWL monitors rainfall and river height for the floods, and the light level and the temperatures for the algal growth. Weather is one important part of the puzzle of the web of life on the river. A long California drought has taken a heavy toll on the diversity of species. Bullfrogs are invading from downstream and eating the tiny yellow and brown native frogs. Late floods the last two years have nipped the algae production—and high up the food chain the fishermen have grumbled and headed for home. This kind of study takes years to discern the patterns of variation. The OWL, the model T and EME will be there!



(Circle 85 on reader service card)

line is a copyright message.) Pressing *Alt-L* (*LABEL*) toggles the label display as shown above.

The second screen line is devoted to showing the status of your file. A typical line might look like:

M100TEXT.DOC Line: 93 Col: 30
Size: 4537 Insert Save

The name of the file that you are editing appears first. The current line and column number of the cursor location precede the size of the file in bytes. Next is the state of the insert/overtype mode (*INSERT/OVR*). The *Save* indicator appears when you have made a change to the file. You must exit with *F8* if want those changes to be saved.

COMMAND DIFFERENCES

There are no dedicated keys for *PASTE, LABEL, PRINT* as on the Model 100. These are selected through the following Alt-key sequences:

Alt-P PASTE
Alt-L LABEL
Alt-W SHIFT-PRINT (print entire file)
Alt-S PRINT (print screen)

There are minor differences in several of the commands. Most of these differences are fairly esoteric (also listed in the program documentation). See Table 1.

NEW COMMANDS

Alt-B Reform (wordwrap paragraphs).
Alt-R Set the right margin (default 79).
Alt-Q Quit the file without saving any changes.
Ins Added as an insert/overwrite mode toggle (default is insert)
Home Same as ^*Q* (line left)
End Same as ^*R* (line right)
PgDn Move down one screen
PgUp Move up one screen

The last five commands reflect use of the dedicated editing keys found on all PC keyboards. The use of these keys is consistent with that of most PC text editors.

F1-Find	The *ESC*ape key cancels the *FIND* command instead of *Ctrl-C*.
Ctrl-C	Cancel *SELECT, SAVE, LOAD, FIND, PRINT* commands. Will cancel *SELECT* but not the other commands.
Ctrl-G	Save file to cassette tape. Implemented as save to disk.
Ctrl-I	Insert eight-character-wide tab. Implemented as eight spaces.
Ctrl-V	Load cassette file. Implemented as load disk file.
Ctrl-Up	Not supported.
Ctrl-Dn	Not supported.

Table 1. Minor differences in commands from the Model 100 TEXT *editor used in* M100TEXT *for the PC and compatibles.*

APPEARANCE DIFFERENCES

Again, the entire 80 x 25 line screen of the PC is used rather than the Model 100's 40 x 8 line screen.

Prompt and message strings appear at the top of the PC screen. On the Model 100, they appear at the bottom.

The Model 100 uses a left-pointing arrow to show the end of the text file. *M100TEXT* does not use a similar indicator. The Model 100 also uses a left-pointing triangle to mark the end of a line. *M100TEXT* doesn't, which more closely emulates the way PC editors operate. A future version may make *M100TEXT* more *TEXT*like.

The M100 automatically wordwraps text when additional text is added or text is deleted. *M100TEXT* doesn't. While

M100TEXT wordwraps when you are entering new text, you must manually reform your paragraphs using the *Alt-B* command. A paragraph is defined as a continuous stream of text terminated by two CR/LFs. In essence, you must put a blank line between paragraphs.

You can use the new *Alt-R* command to set a right margin. This can be handy for formatting text to be printed. You can also set a right margin of 40 so that the line length matches that of the Model 100!

OTHER DIFFERENCES

The Model 100 does not have the PC concept of backup files. On the M100 if you make changes and want to abandon them, you're stuck, unless you made a copy of the file (and had enough memory) *before* you started editing. In *M100TEXT* a backup file is created when you exit the program with the *F8-MENU* key. The original file is renamed with an extension of *.BAK*.

Also, the PC concept of abandoning edits to a file is implemented via the *Alt-Q* keystroke. Since DOS machines are disk based, rather than memory based like the Model 100, saving a file when it's not needed can cause more disk activity than is desirable. This can be important for battery-powered DOS laptops like my Tandy 1500HD where the hard disk powers down to a battery-saving standby mode when it hasn't been accessed in several minutes. Abandoning a file without saving does not cause the disk to power back up, thus saving battery power and wear and tear on the disk.

You can set a right margin of 40 so that the line length matches that of the Model 100!

LIMITATIONS

M100TEXT cannot edit files larger than 64K. This has to do with the segmented addressing architecture of the Intel 80x86 microprocessor family. I could have made the limit larger only by expending considerably more programming effort. The program exits with an *Error reading file* message if you specify a file larger than 64K. I guess I could claim that the M100 can't store files larger than about 29K anyway, so 64K is actually an improvement over what you're used to.

The paste buffer is limited to 1,024 bytes. The program beeps at you if you try to cut or copy more than 1K to the paste buffer.

HOW TO GET *M100TEXT*

I am distributing *M100TEXT* through the M100SIG of CompuServe. As of this writing, it is also available on the *Portable 100 BBS*, (603)924-9770 (see the masthead). If you don't have access to a PC modem, then you can send $6 (U.S.) to me and I'll send you a disk. Please specify if you need a 5.25-inch or a 3.5-inch disk. Write to me at P.O. Box 28181, Santa Ana, CA 92799-8181.

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WRITE ROM is the definitive word processing extension for the Model 100. PCSG produced the first text formatter for the Model 100, now sold by Radio Shack as Scripsit 100. Now, 18 months later, PSCG introduced WRITE ROM. Those who have experienced it say WRITE ROM literally doubles the power of the Model 100.

WRITE ROM — as its name implies — is on a snap-in ROM. You simply open the little compartment on the back of the Model 100 with a quarter and press WRITE ROM in. It's as easy as an Atari game cartridge. You can use other ROM programs like Lucid whenever you wish.

WRITE ROM lets you do every formatting function you'd expect, like setting margins, centering, right justifying and creating headers and fobters. But it does them under function key control.

WRITE ROM remembers your favorite format settings so you can print a document without any setup, but you can change any formatting or printing parameter instantly with a function key.

WRITE ROM's "pixel mapping" feature shows you an instant picture on the screen of how your printout will look on paper.

In all there are 64 separate features and functions you can do with WRITE ROM, and some of these features are truly breakthroughs for the Model 100.

First, WRITE ROM lets you do search and replace. Any word or phrase in a document can be searched for and replaced with any other phrase where the search words appear.

Second, WRITE ROM lets you send any text (formatted or not) to any other computer over the phone with just a function key. What's more, it dials and handles sign-on and sign-off protocol automatically.

Third, WRITE ROM has a wonderful feature called Library that lets you record favorite phrases, words or commonly used expressions (often called boilerplate).

Any place you wish Library text to appear you just type a code. WRITE ROM automatically inserts the text just like a Xerox Memory Writer. Picture what you can do with that kind of capability.

WRITE ROM is blindingly fast. No one can claim faster operation. Because it is on ROM it uses virtually none of your precious RAM. It works with any printer, serial or parallel. You can make a duplicate copy of a document file under a new filename. Rename or delete (kill) any RAM file with function key ease.

This description only scratches the surface of this amazingly powerful piece of software. Dot commands allow control of such things as margins, centering, line spacing and other changes in the middle of a document. Most are WordStar™ compatible.

A mailmerge feature allows you to send the same document to every name on your mailing list, personalized for each recipient.

WRITE ROM enables you to do underlining, boldface and correspondence mode as well as any other font feature like superscripts that your printer supports, in a way that many users say "is worth the price of the program."

To underline you don't have to remember a complicated printer code. You just type CODE u, and to stop underline, CODE u again. The CODE key is to the right of your spacebar. Boldface? CODE b to start and stop. Easy to remember and do. Five different printer features of your choice.

We couldn't list all the features here. For example, you can select not just double space but triple or any other. You can use your TAB key in a document. WRITE ROM allows you to undent. This means you can have paragraphs with a first line projecting to the left of the rest of the paragraph. WRITE ROM has a feature unique for any word processor on any computer. It's called FORM. FORM is an interactive mechanism that lets you create screen prompts so that you or someone else can answer them to fill out forms or questionnaires.

With FORM, any place that you had previously typed a GRAPH T and a prompt in a document, WRITE ROM will stop and show you that prompt on the screen. You can type in directly on the screen and when you press F8 you see the next prompt. It goes to a printer or a RAM file.

Think how you can use FORM. A doctor or nurse could use it for a patient's history with each question appearing on the screen. An insurance salesman could use it for his entire questionnaire. You could construct a series of prompts to answer correspondence, typing the answers, even using Library codes. This feature lets you answer letters in rapid-fire fashion, each with personalized or standard responses.

Before WRITE ROM you had to be a programmer to create a series of prompts. Now it's as simple as GRAPH T.

PSCG makes the claim that WRITE ROM is the easiest, fastest and most feature-rich formatter for the Model 100. We're happy to offer WRITE ROM because it expands the 100 to a dimension of text processing you cannot equal on even larger computers.

We brashly state that WRITE ROM is the best you can buy. But put that to the test. If you aren't as excited as we are, return it for a full refund. Priced at $99.95 on snap-in ROM. Mastercard, Visa, American Express and COD. Please add $5.00 shipping and handling charge.

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Plain Vanilla to Banana Split Royale: An Introduction to *Super ROM*

This add-on has endured—like the Model T—well preserved.

by Gene Wilburn

As they come from the factory, Model T's are plain, good, and ordinary—like a dish of vanilla ice cream. In the next few installments of JOYRIDE, we're going to discuss adding bananas, chopped nuts, whipped cream, and a thick, warm chocolate sauce—turning those plain dishes into hot-fudge banana royale delights.

The secret to this transformation lies in the empty socket on the underside of your machine near the battery compartment. It's called an "optional ROM socket" and it's just sitting there waiting to be filled. Filled with what? Why with neat and clever programs that can lift your Model T use to new heights.

For new users of Model T's, let's catch up on a brief bit of history. When the Model 100 was released in 1983, it was an instant hit. People then, as people now, found many uses for the units—everything from the mundane to the insanely clever. They also discovered that the 32K memory space was prize real estate. If you stored too many *BASIC* programs, you didn't have enough room for data. Also, *BASIC* programs were slow.

A number of very good programmers began exploiting the optional ROM socket. They created machine-language and compiled *BASIC* programs that resided on a ROM chip, freeing up RAM for file storage. One of the early offerings came from Tandy itself—*MultiPlan ROM*—a spreadsheet from Microsoft that preceded *Excel*.

Because only one ROM chip ordinarily resides in the ROM socket at any one time, developers became even cleverer. They built in whole suites of integrated programs into one single ROM chip. The competition among developers was as intense and exciting as today's competition among Macintosh developers.

The two most popular multiprogram ROM chips were *Super ROM* and *Ultimate ROM II*. The good news is that both of these products are still available. Because each contains so many goodies, I am going to need several columns to discuss their features. This month and next will be devoted to *Super ROM*. The two after that will look at *Ultimate ROM II*.

Super ROM integrates four programs onto one ROM chip. Included in the package are *Write ROM*, a word-processing package, *Lucid*, a spreadsheet program, *Lucid Data*, a database program, and *Thought*, an outliner. This month we'll look at *Write ROM* and *Thought*.

It provides a good match between the Model T and its printer.

WRITE ROM

Anyone who has used *TEXT* for any length of time knows that it doesn't quite cut the mustard as a word processor. It's a very acceptable text editor, but it lacks printer support for page formatting and text attributes. It also lacks some basic functions such as search and replace.

Write ROM bills itself as a "text formatter." For those who want to use a Model T as a self-sufficient computer, without the need to export files to a PC or Mac for finishing, it provides a good match between the Model T and its printer.

For starters, it adds several desirable functions to *TEXT*. Search and replace and word count are my two favorites. It also has the ability to draw a little pixel map on the screen that shows the overall look of a formatted, printed page. This is a miniature version of the "greeking" feature used by *PageMaker* and *Ventura Publisher*. Another pleasant feature is the ability to rename or kill a file from the *Write ROM* menu.

Write ROM uses a "runoff" formatting philosophy—i.e., instructions about formatting are embedded with "dot commands," such as *.pa* for "begin a new page." The effects take place when you "run off" the file to a printer or equivalent. If you associate dot commands with *WordStar*, you're right, but the dot-command approach has far older roots in the mainframe and minicomputer world, in programs such as *roff*, *nroff*, *troff*, and *Script*.

Dot commands have had bad press in recent years, but I've always liked them. They provide a tremendous advantage when it comes to troubleshooting a page layout because they are visible. The instructions are unambiguous. They are also easy to learn and use.

Here, for example, is how a bit of text formatting works:

```
.ol 10
.or 75
.oj off
.os 2
.ox on
```

In this example I have set the left margin at 10 characters from the left edge of the page, and the right margin at 75 characters from the left edge, giving a

line length of 65. Full justification has been turned off (*.oj off*), line spacing has been set to double space (*.os 2*), and I have instructed *Write ROM* to insert an extra blank line at the end of each paragraph (*.ox on*).

There are also dot commands for indent, undent, include another file at this point, merge entries from a merge file, center text, turn header and/or footer on or off, move page up, start new page, and do conditional page feeds.

Write ROM provides a good system for merging files and library paragraphs. Library paragraphs are standardized chunks of text that can be pasted into a document to create "boilerplate" letters. Having a merge capability is useful for documents like form letters and address labels.

PHONE TRANSMISSIONS

Formatted text is useful for word-processing requirements, but *Write ROM* has a few tricks that go beyond the ordinary. In addition to printing to the Model T's parallel port, it can also print directly to a RAM file, to the serial port, to cassette, or to the built-in modem.

The ability to send formatted documents through the modem or serial port allows Model T *Super ROM* owners to send attractive E-mail and fax messages via CompuServe or other electronic services. By creating a correct entry in *ADRS.DO*, you can automate the entire process. (For a complete description of how to perform a faxing session on CompuServe, see Ronald A. Cameron's cover feature "Super FAX It with *Super ROM*" in the July/August/September 1989 issue of *Portable 100*.)

PRINTER CODES

Any word processor worth its salt must allow you to adapt to a variety of different printers, and *Write ROM* comes through in style.

It has a feature that allows you to insert the escape sequences your printer needs for underscore, bold, printer initialization, correspondence quality mode, and a freebie category called "alternate print feature." You might use this for another attribute such as italic. *Write ROM* also supports a CR and CR/LF toggle that allows your Model T to use both Tandy and nonTandy printers.

OVERALL IMPRESSION OF *SUPER ROM*

As I've said previously in this column, I use my Model T's as feeders to my desktop systems. Because of this, I have never personally been interested in turning my Model T into a full-fledged word processor.

Having said that, I must also say that I'm impressed by the functionality of *Write ROM*. It provides critical missing pieces to *TEXT*—such as word count and search and replace—and it provides versatile formatting and printing options. Its ability to print to file, *COM* (serial) port, and modem give it an edge in the age of fax.

The only serious drawback to *Write ROM* is simply that it's an older product. It was designed with dot-matrix printers in mind and is monospace-font oriented. This will still meet the needs of many users, but even dot-matrix printers now have attractive, built-in proportional fonts in various point sizes. It cannot fully exploit the rich font sets available in today's laser printers. (But then what Model T products can?) If font control is not high on your list of priorities, however, you'll find *Write ROM* an excellent product for your Model T.

In addition to function-key formats,

This underscores the tight integration of *Super ROM*.

Write ROM lets you embed printer codes directly into your text files, or into library files, for surprisingly powerful printer control. By storing complex laser printer commands in a library file, for example, you can turn desired printer features on and off just by typing their corresponding library codes into your documents where you want them to take effect.

THOUGHT OUTLINER

Outliners are difficult to define. Everyone uses them differently, but there is one factor in common—once you get hooked on one, you can't live without it.

Outliners were designed, originally, to help you organize your thoughts for writing. You can "blue sky" and "brainstorm" like crazy, jotting down one thought after another. Later, the program allows you to move these thoughts around, organizing them into groups and hierarchies.

But outliners work just as well for other jobs, such as keeping track of projects or maintaining todo lists. Outliners take a bit of discipline, in the beginning; then they seem to provide the discipline required to stay on top of work. Nice programs.

It's good news to find that *Thought* is one of the programs included in the *Super ROM*. As you shall see, *Thought* is a snappy and highly versatile outliner.

THOUGHT BASICS

If you're not familiar with outliners, you may be wondering why anyone would bother with them since you can create your own outlines in *TEXT*. Let's just say the difference between doing your own and using an outliner is the difference between flag football and the NFL.

All outliners work on hierarchical principles. Headlines have subheads, which can have sub-subheads, etc. Outliners have the ability to collapse and expand portions of outlines at any heading or subheading level. That is, you can hide all the details of sublevels from view while you're working on the overall organization of a presentation, article, or project.

You expect to find this feature in any outliner and, to be sure, it is a feature of *Thought*. *Thought* calls this HIDE and SHOW rather than COLLAPSE and EXPAND, but the functions are identical. These functions are triggered by the

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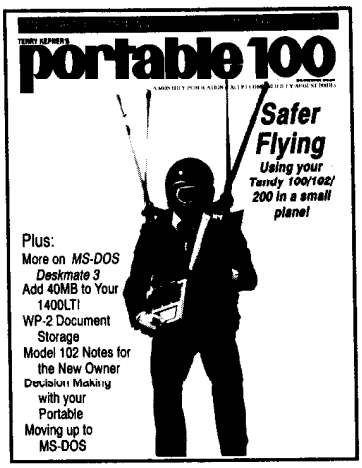

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MODEL T JOYRIDE

Model T's *F2 (Hide)* and *F3 (Show)* function keys.

Another large difference between a real outliner and doing your own in *TEXT* is that a real outliner lets you "drag" headings or subheads in the outline to other places in the outline, and to different levels in the outline. What's special about this feature is that any subheads below a dragged heading are automatically dragged with it. *Thought* handles this function through the *F5 (Drag)* function key.

Advanced outliners allow you to *clone* entries—creating copies in other places in the outline that are linked. If you change any of the clones, the changes are reflected in all of them. Thought handles this feature well with its *F4 (Clne)* function key.

The ability to sort outline entries is sometimes a godsend. *Thought* delivers this ability through its select sequence *F7 Sel*—allowing *Save, Sort, Copy,* or *Cut* on selected outline headers. *Thought* also features block cuts and copies.

Sometimes you want to add paragraphs of text at points in your outline. In *GrandView* on a PC or *More* on a Mac, you can simply begin writing. *Thought* does not provide quite as much flexibility as this, but it does surprisingly well. You can give your heading or subheading a name like *PT3.DO* and it immediately flips you into *TEXT*, where you can write to your heart's content. Everywhere you need full text, you can do the same. This underscores the tight integration of the *Super ROM* modules.

These two *Super ROM* programs are still impressive.

SUMMING UP

There are additional features of *Write ROM* and *Thought* beyond the scope of this column, but I've touched on the essentials. Overall, these two *Super ROM* programs are still impressive, after all these years. This is a tribute to the programmers who created the products at Portable Computer Support Group (PCSG). A few extras, such as proportional font support, are missing, but the programs are still highly useful.

I would be amiss if I didn't add that these programs have snap. Unlike the products in some ROM's, the *Super ROM* programs are all written in machine language. There are no lengthy delays as you work through any of the programs.

It should also be mentioned that *Super ROM* is no longer sold directly by PCSG. Tri-Mike Network is now the official distributor. See their ad (on back cover) for additional details and pricing information.

Next month I will look at part two of *Super ROM*—*Lucid Data* database and the incredible *Lucid* spreadsheet.

You can communicate with Gene via CompuServe (his ID is 72435,732), through regular mail in care of Portable 100, *or direct at 91 Inglewood Drive, Mississauga, Ontario, Canada L5G 1X9. Please add sufficient postage if you mail to Canada and an international reply coupon when requesting a reply.*

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Data Acquisition with M100/102. REI, RR1 Box 113F, Royalton, VT 05068. (802)763-8367. 10/91

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Note: The italicized entries in each month below are Tandy 100/102 related articles.

1985

January: DG has the One to Go, *Model 100 Proves Itself in the Jungles of Nicaragua*, Meet the Dulmont Magnum, *Telecommuter: Software that's Ingenious, Kyocera's Three Aces. End Telephone Tag with M100's.*

February: NEC Wishing upon Its Starlet, In-Depth Reviews of HP 110, Sharp PC-5000, *Chattanooga Systems AutoPen, AutoPad, Trip.*

March: Reviews of Epson Geneva and Osborne 3, Comparisons of Two Thermal Printers (Brother HR-5 and Printex TH-160); *The Pluses and Minuses of Batteries, M100 Data Acquisition.*

April: Reviews of Sord IS-11, Sharp PC-1350, *DISK+, T-BASE*, and Roadrunner; *Free Software: Textpro*, Technology Transfer Damming the PICO Pipeline to Russia.

May: Review of DG1, Which Spreadsheet Should you Buy? Servicing Picos, LCD Screens in Color, Federal Express.

June: Reviews of *Tandy 200, 2.2 Companion,* and *T-Backup, M100 File Transfer*; Wrangler improves the Odds with Sharp PC-5000s, Dow Jones News/Retrieval On-line Database, *Courtroom M100's.*

August: Reviews of Datavue 25 and *Touchbase Modem*; QuickTrip Convenience Stores More Efficient, Tracing Tribal Roots and Translating the Bible in Jungles of Papua New Guinea.

September: Reviews of HP Portable Plus, *WriteROM, ThinWrite 80 Portable Printer*; A Flat Mac, *M100 Meets Challenges at Woods Hole Oceanographic Institute.*

October: Reviews of Kaypro 2000, *T-View 80*; Computerized Fire Department, Stretching the limits of Telephone and Computer, *BASIC translation Tactics.*

November: Reviews of Bondwell 2, NEC 8027A Printer, CQ Haste; *PICO Formatter*, Search and Rescue Via Computers, Industry Views from an HP Exec.

December: Close Look at Ericsson Portable and *TMPC (time management software)* Travel Tips, Tricks for Traveling, *Dialer Program, Project management with the M100.*

1986

January: Reviews of Gridcase 2, Access, Word Finder, and Prospecting, CP/M and MS-DOS, *Security Program*, Can Universities Cope with Picos? News from Comdex, *Jazz up your LCD.*

February: Reviews of ZP-150, and LeScript Word Processing; *Stevie Wonder Inspires Stardom in M100*, Can Universities Meet Expectations of Computer-literate Students? *Cold-Start recovery, Personalized Form Letters.*

March: Reviews of Panasonic Exec.Partner, Lync 5.0, and *Hardwire*; University Rethinks its Tasks, Picos in Medicine, *Auxiliary Battery Packs Spell Independence, More Muscle for the M100.*

May: Reviews of Toshiba T1100, IBM PC Convertible, Casion FX-7000G Calculator, SG-10 Printer; *MIKEY, Appointment Manager*, and *FAST*, IRS Crowns Zenith';s Z-171, Handhelds in Restaurants.

June: Reviews of Zenith Z-171, *LapCoder, SuperROM, LAPDOS, and BlackJack*; Go Shopping at PC in Rochester, NY, OM10 RAM Map (pt 1), A Tale of Two City Councils.

July: Reviews of Bondwell, ROM2, Letterjet HS-80, and Sidestar.; Electronic Cottage, Taking Stock of Investment databases II, NEC 8201A's LCD, OM10 RAM Map (pt 2)..

August: NH's Governor discusses Laptops, PC-7000 from Sharp, Choosing your test-oriented Database manager, *Model 100/200's Lend a hand to Job Seekers*, NEC-8201A's Communication Connection.

October: Reviews of Toshiba 1100+, New Word, *Dicomix Printers*, Fortune 500 Picos, Interview with DG Exec's, Desktop publishing with Picos.

November: Picos in Libraries, *Clever M100 Combinations, Exploring TPDD Part I*, Reviews of Datacomputer 2.0, *TPDD, TS-DOS.*

December: Pcios on Wall Street, Connecting to On-line Databases, Telephone Problems, *TPDD Part II*, Reviews of *Cleuseau, French/German Tutor 3, Pocketsize Modems*; 1986 Article Index.

1987

January: Book Publishing With a Pico, *Framework in a Pico*, Review of Right-Writer, JK Lasser's Money Manager, HP+Enhanced, Electric Webster, *Disk Power*, Pico's Computer Buyer Guide.

February: *Poor Man's Idea Processor*, Macintosh-Pico Connection, *M100 Cursor key alteration*, Handhelds: HP-18C, Langenscheidt 8000, TI-74, Reviews of Sord IS11-C, *Lets Play Monopoly, $100 letter quality printer.*

June: Lawyers & Laptops, *Personal Management System, M100./Mainframe Terminal Prog.*, Reviews of Wang Portable, *Search, Sprint and Supercalculator, Best of Compuserve book*, Chess-to-go.

November: *Control That Printer, Academia & Laptops*, Laptops on Capital Hill, Starlet Secrets, Reviews of Psion II, *DVORAK keyboard.* & Spark.

December: Global Laptopping, Starlet Software, Toronto Blue Jays & GRiD, *NiCd Notes*, Review of IMC LCD-286, 1987 Article Index.

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January: Portable Computer Cellular Communication, Laptop Roundtable, Pico Portable Guide, Reviews Telemagic, Direc-Tree Plus, SchwabLine, Quotrek.

February: TenniStat, Flexibility of Form, T200 and T16, Reviews Eclipse, T1100 Hard Drive.

May: Handhelds Fight Crime, A Pico in China, Compaq Port. III, Datavue Snap, Fax hits the Road, HP Portable Vectra, T1400LT, Three Pocket Modems, Close-Up's Customer & Support.

June: Multispeed in the Tropics, *Monitoring Alkaline Batteries*, PSION and Mass Storage, Datavue Spark, Smith Corona Portable Word Processor.

July: Toshiba on the Road, *Diskette Ratings, Metered NiCd Manager*, Procomm on the NEC, WordPerfect 4.2 on the T1000, Sales Ally.

September: Laptops & the Learning Disabled, WordPerfect 5.0, Dynamac EL, HP-71B, WordPerfect Executive, Webster's New World Writer II.

October: Portables at Sea, Macintosh Navigating, Piloting and Celestial Progs, NEC-8300, Compaq Port. 386, File Transfer, Golden Parachute.

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