

May 10, 1987

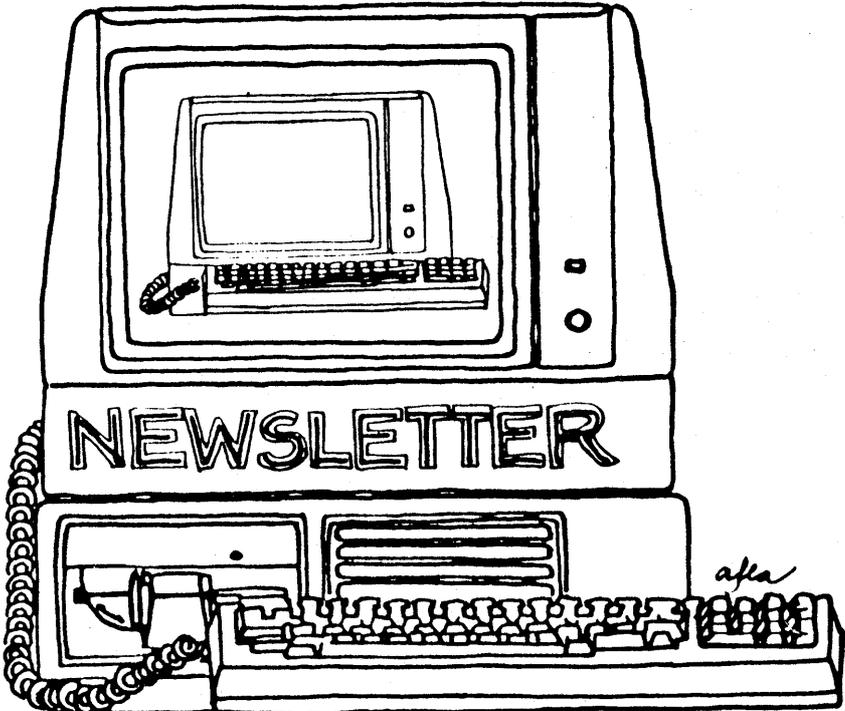
Volume 5

Issue #4

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**BAY AREA MICRO DECISION USERS ASSOCIATION**

# BAM DUA



A MUTUAL SUPPORT NETWORK FOR USERS OF  
MORROWS' MICRO DECISION COMPUTERS -  
P.O. BOX 5152, BERKELEY, CA. 94705  
415: 644-2805

**BAY AREA MICRO DECISION USERS ASSOCIATION**  
A Morrow computer users' group

BAMDUA, the Bay Area Micro Decision Users Association, is open to all who are interested in Morrow's Micro Decision computers. Membership fee is currently \$16 per year and includes a subscription to our monthly newsletter. For information, membership application forms, etc., please send a self-addressed stamped envelope to the BAMDUA P.O. Box 5152, Berkeley, CA 94705.

The main BAMDUA meeting is held the last Tuesday of each month. To accommodate our Special guest, it has been changed from May 26 to JUNE 6, a SATURDAY. SEE BELOW:

+++ Next main BAMDUA meeting: ++++++  
+  
+ WHEN: Saturday, June 6, 1987, 7:30 p.m. +  
+ WHERE: Chabot Science Center +  
+ 4917 Mountain Blvd., Oakland (off <sup>580 Fremont</sup> ~~Warren~~ Freeway) +  
+ GUEST: Leon Williams, President & CEO, MicroPro Corp. +  
+ TOPIC: WORDSTAR 4.0 FOR CP/M!! & related matters!! +  
+ (You cannot afford to miss this!) +  
+++++

The NEXT BAMDUA MEETING will be on Tuesday, June 30 at the Berkeley Public Library. It will feature Howard Fulmer, former chief engineer at Morrow Designs. He will talk about his experiences at Morrow and what he is doing now. Don't miss it!

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**NEWSLETTER SUBMISSIONS**

If you wish to submit material to the newsletter, please submit material material by the 23 of each month; make a WS or NW file on disk, preferably with left margin at default and right margin at 68, justified; Include your name, address and telephone number. Send newsletter materials to: BAMDUA Newsletter Editor (address above).

We reserve the right to edit articles submitted for publication. In keeping with the spirit of "public domain" we grant permission for articles appearing in this Newsletter to be reprinted by other users' groups as long as proper identification is made of author and source. We cannot guarantee the accuracy of information printed here, but we do assume that all authors take an interest in providing responsible information to the best of their ability.

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**BAMDUA PEBS/RCPM**

A system of the Bay Area Micro Decision Users' Association

Micro Bulletin Board System (tm) Sysop: Steven Wartofsky  
Phone: (415) 654-3882  
Access: Registration (See Bulletin on line). 24 hrs.  
Baud rates: 300, 1200  
Hardware: Morrow MD-5 running CPM+ (CP/M 3.0)  
1 Floppy Drive (B), 2 Hard Disks: (A-5 meg; C-16 meg)  
Software: MBBS, BYE504, KMD14, SFILE26, LD, MAP



# FROM THE PRESIDENT'S DISK

by Rick Charnes

As I write in late April we are gearing up for another of our slam-bang general meetings, the demonstration of the ON! computer. I received a phone call from Joe Wright just yesterday, too late to announce to more than a few, informing me that Nick De Wolf, the chief engineer and designer of the computer itself, is flying out from Aspen, Colorado just for our meeting. BAMDUA general membership meetings continue to attract some of the best speakers in the area. Nick is a 58-year old ex-hippie electronics/computer genius/inventor with hair down to his shoulders who designed a psychedelic water fountain/light show in Aspen's central square. When investors were looking for someone to design a revolutionary new computer radically different from anything on the market, Mr. De Wolf, who made his fortune in the transistor field 20 years ago, is the man to whom they turned. He is a real entertainer. This meeting promises to be quite an event. If nothing else, I'm looking forward to seeing a terminal running at 38,400 — something I've never seen before!

The financial backers behind this computer have enough faith in this new CP/M-Z-System machine that Mr. De Wolf estimates they will spend a preliminary \$40 million to market it. Any success it generates will undoubtedly redound to the benefit of all of us in the Z-System-CP/M community.

Speaking of events, we have a very hot line-up for our next meeting as well. Our guest speaker will be Leon Williams, President and Chief Executive Officer of MicroPro in San Rafael. MicroPro of course will go down in our hearts and CP/M history as one of the companies that helped get us all where we are today; the makers of WordStar. The big news now is that after purchasing their erstwhile little cousin NewStar Software (NewWord) they now have plans to release - for the first time since 1983 - a new CP/M version of Wordstar, WS 4.0! To speak about this Mr. Williams has graciously consented to our invitation, and he has promised to bring other top MicroPro executives. This is a wonderful opportunity for us to be involved in the development of a new CP/M product. Rumors abound about MicroPro's interest in developing a special ZCPR3 version as well.

This June 6 extravaganza will also be a kick-off for our new meeting location, the Chabot Science Center and Observatory in Oakland. We are most pleased that this room has been made available to us. The special attraction for the star-gazers amongst us is that after the BAMDUA meeting we have all been formally invited by the East Bay Astronomical Society to step outside and join the public viewings of the heavens through the magnificent large telescopes on site. The Chabot Observatory is considered one of the top institutions of its kind on the West Coast. I remember seeing the Orion Nebula through their 20-incher during the Comet Halley days; it was a spectacular sight.

Our relationship with the East Bay Astronomical Society at Chabot promises to be a fruitful one, as they have asked us to participate in their burgeoning computer program. (I will most probably be teaching a course in ZCPR3/Z-System there, please call 531-4560 and leave your name for information.) The combination of computers and astronomy is a - oh, why not - a marriage made in heaven. We are excited to be part of it. Any hackers interested in playing around on a couple of classic PDP-11's are urged to contact Chabot.

There will be no May meeting; consider this sort of a "late May" meeting. The unusual thing about this June 6 meeting is that it is on a Saturday night. This is the night most convenient for both Chabot and Mr. Williams and we are counting on the attraction of the optional post-meeting sky viewing to make it interesting enough to pull folks away from those Saturday night movies. We will for the foreseeable future be alternating Tuesday nights at West Berkeley Library with Saturday nights at Chabot. And now to announce our "official" June meeting, to be held Tuesday the 30th at West Berkeley Public: our speaker will be none other than the inimitable Howard Fullmer, former Morrow Designs Inc. chief engineer and one of the real driving forces of the company. Mr. Fullmer will speak about his experiences at Morrow, and I'm sure we can persuade him to talk about any number of other topics. An electrical engineering student at UC Berkeley in the late 50's, Mr. Fullmer was among the original industry pioneers. Come hear the "inside story" from one of the real oldtimers in the field.

It seems new developments in the CP/M-compatible world just keep on happening. On top of the announcement of the CP/M-compatible Hitachi HD64180 chip (February BAMDUA newsletter) now comes word of one even more powerful, the Zilog Z280. This chip is fully compatible with all CP/M programs yet is capable of addressing 1 megabyte of memory and beyond, up to 16 megs. (Compare that to the 64 kilobytes we have now!) It runs at a 10 Mhz clock speed in comparison to our 4 Mhz. In short, it is a speed and memory demon. It seriously rivals the top of the IBM product line, the 80286 machines. Well, High Tech Research in Redding, California is developing a Z280 add-on board or Kaypro computers called the Ultraboard. Who knows what lies ahead for our trusty Morrows...

I'd like to make a public gesture of gratitude and thanks to Philip Hess in Indiana, whose excellent and prolific contributions to the BAMDUA newsletter month after month have been so valuable to us all. Phil, your work is very much appreciated. Thanks much.

We are still continuing negotiations with BAKUP, the Kaypro users group, regarding a possible merger. In the meantime all are urged to subscribe to their excellent newsletter by writing P.O. Box 20181, Oakland 94620. Their new BBS is also doing quite well - give them a call at 849-9389.

We are now settling in to the various routines of running as a completely volunteer operation. As such we of course are always

looking for members interested in helping out with all the various tasks that keep our club going. It's very rewarding work, if not simply for the simple human camaraderie involved. And how better to get your technical questions answered than by the various BAMDUA experts in the field than helping mail out library volumes on a pleasant Saturday afternoon? Our phone is still taking messages, so please do give us a call. As always, we look for input of whatever nature from you, the members. See you in June... ###

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## LIBRARY NEWS

by Rick Charnes

### -BAMDUA.047

This has to be one of the finest collection of CP/M utilities ever assembled under one roof. Extracted from a library by the name of EGUTIL51.LBR. All by the inimitable Professor of French Eric Gans, assembly language programmer par extraordinaire. Look through this assortment and you're bound to find something useful. All these programs run VERY fast.

The "z" as the middle letter of the filetype indicates that the file has been compressed with the latest and most advanced method used in CP/M, crunching. These files couldn't possibly fit on the disk in uncrunched form. You'll need CRUNCH.COM from BAMDUA disk #44 to uncrunch these.

I've eliminated the documentation (\*.DOC) and some other files from this listing to save space on the page, but each of these programs has a doc file included on the disk or inside EGUTIL51.DOC, the overall doc file for the whole library.

Some of my favorites on this disk: the GSUB, IFG, GOTOG series which do what EX14 does, only 3 times better. If you've ever tried to get EX14 or SUBMIT to do something but it wouldn't, chances are GSUB will do it. WINDEX is probably the best CP/M public domain indexer there is. FINREP, which will change a character to any other in the wink of an eye, I use on an almost daily basis. GKEY2 is an extraordinary key redefinition program that takes up about 1/4 of the memory space that Smartkey does. Lastly, BBACK and BBCAT are classic CP/M backing-up and cataloging programs.

-BAMDUA .047	2k	You are reading it now.
ABUSER84.CZM	2k	Changes a file's user area without copying it.
ARCH .ZZZ	4k	Patch to CP/M 2.2 to use the archive bit!
BBACK622.CZM	4k	Excellent hard disk backing up program.
BBCAT113.CZM	4k	Cataloguer goes with the above.
BBDF12 .CZM	2k	Ditto.
CALL14 .CZM	2k	A phone list program.
DBACK21 .CZM	2k	Backs up file directories.
DMAP .CZM	2k	Maps out disk blocks, shows which are in use.
DR23 .CZM	4k	Directory program.
DREST21 .CZM	2k	Resets disk.

EGUTIL51.DZC	8k	Overall doc file for this library.
ELSEG .COM	2k	"ELSE"
ENDIFG .COM	2k	"ENDIF"
ERAX12 .CZM	2k	erase files in any user area.
FINREP24.CZM	4k	FINd and REPlace - fast!. A SUPERB program.
GKEY2 .CZM	2k	Fine public domain key redefinition program.
GOTOG .COM	2k	"GOTO"
GSUB20 .CZM	2k	Top-notch EX14 or SUBMIT substitute. The best.
GTXT11 .COM	2k	Makes a COM file out of a text file. Neat.
IFG .COM	2k	"IF"
LC22 .COM	2k	Converts text files to lower case.
M22 .COM	2k	Dumps a page of memory to screen. Nice.
OUTLN11 .COM	2k	Makes and formats outlines.
PAIRX131.CZM	2k	Checks unmatched control chars in WS files.
PASS .CZM	2k	Password protects access to hard disk.
PHN21 .CZM	4k	Phone list program.
RN21 .CZM	2k	Renaming program.
SRW143 .CZM	4k	Disk/memory utility.
SWITCH11.COM	2k	Hides files in user 16.
SYN .COM	2k	Makes a synonym for a long command line.
U3 .COM	2k	Change user without typing "USER" or ":"
WINDEX30.CZM	4k	Superb indexing program.
XRASE33 .CZM	2k	Extended "unerase" program.

## -BAMDUA.048

Two major programs and auxiliary files hot off the presses in March 1987. VDE25 is what will probably be the last in the VDE series. Superb CP/M programmer Eric Meyer has been working on this public domain word processor for years and has honed it into a razor-sharp tool. It is entirely memory-based. Which means: NO DISK ACCESSES of any kind while your program is loaded. Most of its commands are exactly like WS/NW, yet it operates MUCH faster. You can fit a 55-60k file in it and still have no disk access for any editing; it's quite incredible to see in operation. Kind of like having a RAM disk. Say goodbye to disk slowness and grinding.

For those who have believed the propaganda that we CP/M-ers can't do graphics with straight-line boxes and full pull-down windows and menus, try WDEMO and think again. Along with this demo file come a library of routines for complete terminal video management for CP/M computers and terminals: blink, reverse video, windows, etc. Written in the hottest new language for CP/M computers, Turbo Modula 2, available from Echelon Inc., 885 N. San Antonio, Los Altos, CA 94022. Write BAMDUA if you're interested in a group discount on TM2. This language is hot, and after you see these pop-up and pull-down windows you'll be scorching. Since these routines were written for the Wyse terminal, they require the TM2 compiler for a full adaptation to our Morrow terminals. These will give you a taste of what's to come as this language spreads amongst our ranks.

As a final treat, BBBASHER utters as many derogatory expletives about International Business Machines company as is humanly - I mean

computerly - possible.

-BAMDUA	.048	2k	You are reading it now
VDE25	.COM	12k	The program itself. VERY fast word processor.
VDE25	.DOC	52k	Very comprehensive documentation.
VDE25	.QRF	4k	Quick reference chart; almost like Wordstar.
VDM25	.COM	12k	For "memory-mapped video" machines; not ours.
VINST25	.COM	10k	"Installs" it to your terminal
WDEMO	.COM	18k	The demo program - beautiful.
WDEMO	.MOD	6k	Source code for demo program.
TERMATT	.DEF	2k	Defines the terminal video procedures.
TERMATT	.MOD	8k	Your terminal information goes in here.
WINDOWS	.DEF	10k	Defines procedures for window routinef.
WINDOWS	.INF	4k	Information.
WINDOWS	.MOD	20k	Source code for windowing routines.
WINDOWS	.RMF	2k	<-- Read me first.
BBASHER	.COM	16k	puts down IBM in 1001 different ways.

## -BAMDUA.049

This is a demonstration version of one of the most revolutionary new pieces of software to hit the CP/M world in quite some time. Backgrounder ii is a "task swapping" program. Suppose you're editing a file in NewWord and you realize you need some information from a SuperCalc spreadsheet. Without exiting NW, you hit a special "suspend" key and swap to SC. When you're finished with SuperCalc, hit your key again and you're back to NewWord, exactly where you left off. You're also provided with 38 resident commands accessible from WITHIN any CP/M program, again with this special key.

BGii works by temporarily saving your first program on a disk file called a "swap file." This demo version will not allow you to access anything but the A: drive. The full version is available through a BAMDUA group discount if 5 people are interested, for \$52.50. Best on a hard or RAM disk but running it on a floppy will give you a flavor of what it's all about. Not for CP/M 3.0 machines.

-BAMDUA	.049	2k	You are reading it now.
-READ	.ME	10k	Description of the program.
BG	.HQP	10k	Help file.
BG	.REL	44k	The "swap file".
BGINFO	.HQP	8k	More help.
DINSTALL	.PQN	14k	Manual to help you install it.
EX	.COM	4k	Special version of EX14 to run with BGii.
LOADBG	.COM	16k	Loads BGii.
PUTBG	.COM	18k	Puts BG.REL on your disk.
SETBG	.COM	16k	Configures the program to options you want.
SETTERM	.COM	20k	Configures it to your terminal.
TERMBASE	.DAT	8k	Database of terminal definitions.
TVI	.DRV	2k	A "screen driver" for Televideo 955 machines.
WS30DRW	.HEX	2k	"Redraws" your screen with WS 3.0.
WS33DRW	.HEX	2k	For WS 3.3.

## EVENTS CALENDAR

BAY AREA COMPUTER SWAP - Cow Palace, San Francisco; May 23, 1987.  
Again, at Santa Clara County Fairgrounds in San Jose, June 13, 1987.  
Both events are on Saturdays, from 10 - 5. Admission: \$5. For  
information, call 415/340-9113.

COMPUTER SUPERMARKET SHOW AND SALE - Saturday and Sunday, June 6 &  
7, 1987; San Mateo County Fairgrounds, San Mateo; from 10-5, Sat;  
from 10-4, Sun. Admisson: \$6. For information, call 415/340-9113.

### LOCAL MORROW USER'S MEETINGS:

The CP/M Users of Santa Cruz County (formerly SCMDUG) will meet  
on the 2nd Tuesday of the month at 7 p.m. at the Branciforte Branch  
of the Public Library, 230 Gault St., Santa Cruz. Written inquiries  
should be sent to 376 Lucinda St., Scotts Valley, CA 95066. For  
information call 408/438-0662 or 408/423-1462.

Stanford Morrow Users' Group, (S.M.U.G.) meets on the 2nd  
Wednesday of the month at 7:30 PM, Stanford campus: Polya Hall, Room  
111. Info: Ed Gallaher (408) 749-9285 (H)

PETMUG (Petaluma Users' Group) meets on the 4th Thursday of  
each month at Advanced Information Management, 245 North  
McDowell Blvd. (in Petaluma Plaza), Petaluma, CA. For info.  
contact: Don Waite, 707/763-6891 or Dick Hoffman, 707/762-8286  
or mailing address: P.O. Box 948, Petaluma, CA. 94953.

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## HELP IS AVAILABLE

The following people have kindly offered their help to BAMDUA  
members:

George Borys: CP/M operating system; hardware-related problems.  
Call between 7-11 p.m., 415-582-7615.

Peter Campbell: General questions, including NewWord and dBase.  
Call during day or after 7 (up to 10) p.m., 415-527-3387.

Rick Charness: General questions, also specific ones about  
modem communications, ZCPR, Word Processing. Call in the mornings  
up to 11 a.m., or evenings and weekends, 415-826-9448.

Gene Korte: General questions, and ZCPR. Call 7-10 p.m. or  
weekends, 415-525-8944.

Lee McKusick: Turbo Pascal. Call a.m. only, 415-849-9053.

Stan Naparst: WordStar. Call 415-525-2086 (may leave msg.).

Frank Oechsli: General questions. Call evenings, 415-527-6089.

# RE-INVENTING YOUR MORROW MICRODECISION

by Phil Hess

## Part VIII -- Upgrading to a revision 2 motherboard

Of all the shortcomings in the early Micro Decisions, probably none is as nagging these days as the lack of a parallel port. All the cheap new dot matrix printers come with standard parallel interfaces. The optional serial interface for these printers usually involves not only a special order, but another \$100 or so, plus occasional problems getting it to work with your system. Wouldn't it be nice if you could just buy one of the new printers off the shelf?

Well now you too can use these nifty parallel printers from manufacturers like Star and Panasonic. All you have to do is replace the motherboard in your revision 1 Micro Decision with a revision 2 board, which adds a parallel port to your system. While at one time a rather expensive upgrade, this can now be done for about \$75 and one evening's work. Furthermore, no soldering is required.

All the parts you'll need can be ordered from the same source: Silicon Valley Surplus (415-261-4662). The motherboard itself is only \$45. However, you'll also want the latest ROM and BIOS revision (\$16.50) and a new pair of data cables (\$12) for the disk drives since the old ones are probably glued down to the old motherboard (removing the old cables could damage them). Plus, if you're ordering via UPS, there will be a shipping and COD charge. All in all, around \$75.

Also note that you'll need double-sided drives with the new board. If you didn't follow through on Part III and upgrade your system to double-sided operation, you'll need to purchase a couple of drives. These can be obtained from any number of sources. SVS quoted me a good price of about \$75 apiece for Shugart 455 drives. Absolutely no BIOS modifications need to be made to use these drives with the revision 2 board. Hence, if you spent a lot of time patching your old BIOS for double-sided drives, you won't need to go through all of that again. Just plug in the drives and go.

In addition, you may want to obtain the Micro Decision maintenance manual, \$12.50 from SVS. This reference contains a lot of sketches and schematics, and attempts to describe some of the differences between the revision 1 and 2 motherboards. This manual can also be ordered from the Morrow Owners' Review, as can the latest ROM and BIOS.

### Why upgrade?

Let me run through everything that the revision 2 motherboard

adds to your system:

- Parallel port.
- Simple conversion to double-sided drives.
- Latest ROM and BIOS revision (3.1).
- All new board.
- BIOS function key support for any terminal, even the MDT-20.
- IMS (In-Memory Submit).
- Better support for a hard disk or co-processor.
- Ability to run bootable Z-System (from Morrow Owners' Review or Echelon).
- Software-selectable baud rates for serial ports.
- ROM diagnostics for troubleshooting hardware problems.
- Drives only stay on for 10 seconds after the last access rather than 30 seconds as with the revision 1 board.
- My special patches and programs for the revision 3.1 BIOS.
- Using your old board and single-sided drives, you can build another computer for about \$100 more. (You'll need another chassis and case, power supply, reset switch and wire, and power cables for the drives if not included with the power supply: all available from SVS.)

The only drawbacks I can think of are as follows:

- Previous hardware or software modifications may no longer work with the new board, meaning additional work.
- The plastic stand-offs which support and anchor the motherboard to the chassis may need to be broken to remove them since they're probably glued to the board.
- The maximum terminal baud rate is only 9600 with the revision 2 board, versus 19,200 for the revision 1 board.

#### **Assumptions and cautionary notes**

While the revision 1 board was phased out way back in May 1983, it was around long enough for there to be differences in the various revision 1 systems. This article pertains most directly to the revision 1 configuration which I understand was the most common: single-sided drives in a revision A chassis (the one with the cord pan at the back). However, if the Morrow maintenance manual is to be believed, some revision 1 systems were sold with double-sided

drives and revision B chassis. Keep this in mind if your system differs in some respects from what is described in this article.

The maintenance manual recommends that you wear a grounded wrist strap which has been connected to the Micro Decision chassis while handling the motherboard. This is to prevent static electricity from damaging the board's components. If you don't have access to such a contraption, you may want to rig your own or simply be careful when handling the old and new motherboards. Only touch the edges of the boards. Discharge yourself periodically by touching the chassis.

No soldering is required for this conversion. Ordinary hand tools, including a number 2 Phillips head screwdriver, should be the only equipment necessary. If you have problems, a digital voltmeter might be useful for checking voltage levels and performing continuity tests.

### **Disassembly**

Once you have acquired the items mentioned earlier, you can get to work. First disassemble your Micro Decision as follows:

- Unplug everything and disconnect your terminal and printer.
- Remove the case from the system unit.
- Remove the cord pan from inside the back of the chassis if present.
- Disconnect the data and power cables from the disk drives.
- Remove the drives. If you still have the old single-sided SA-200 drives, this means removing the frames with the drives inside them. You don't need to remove the drives from the frames.
- Disconnect the reset wire from the left side (opposite the power supply) of the motherboard.
- Disconnect the power supply from the reset switch.
- Remove the reset switch from the front of the chassis. Use some gentle prying to loosen the switch. The switch comes out the front of the chassis, trailing its wire behind it through the hole.
- Remove the four screws which anchor the power supply to the chassis.
- With the power supply still connected to the motherboard, move it outside the chassis so you can get at the motherboard connections easier.
- Disconnect the power supply wires from the motherboard by prying the connectors from their posts. This may be difficult to do as the

connectors are really jammed down onto the posts. Use a small screwdriver to pry between the connector and the base of the posts. Try not to damage the motherboard or the connectors. Don't pull on the wires. Be patient and slowly work each connector free. Once the power supply is disconnected, move it aside.

- You should now have a chassis with a motherboard inside and nothing else. Turn the chassis on its side and remove the four screws which anchor the motherboard to the chassis. Reach inside and gently support the motherboard as it comes free. Note: Each screw is threaded into a small plastic stand-off which in turn is connected to the motherboard through a hole at each corner of the board. These stand-offs are probably glued to the board. However, some of the stand-offs may "turn" inside their holes and it may be necessary to grasp each stand-off with a pair of needle nose pliers (careful) to remove the screw. The stand-offs may break under the force, but this can't be helped. You can probably repair them later with Krazy Glue.

- Turn the chassis right side up again and carefully remove the motherboard by pushing it toward the front of the system unit until the port connectors are free of the chassis, then lift the board out and set it aside.

### Reassembly

- Find the ROM on the new motherboard. It should be marked with a white sticker with "Rev. 2.3" or some such typed on it. Note which side of the ROM the notch is. On mine the notch was on the side away from the power supply. Remove the ROM from its socket by prying carefully under each end with a tiny screwdriver or knife. Use a chip puller if you have one. Try not to bend the ROM's pins.

- Carefully insert the new ROM into the socket, with its notch on the same side as the old ROM. Press the ROM firmly home. It may be necessary to gently bend one row of pins a little bit for the ROM to fit into the socket easily.

- Remove the plastic stand-offs from the old board and insert them into the corner holes on the new board. If the stand-offs can't be removed without breaking them, you may want to: 1) improvise them for the new board, or 2) break them anyway like I did and use Krazy Glue, or 3) find replacements. (If you locate a source of these stand-offs somewhere, let me know. I've had no luck.)

- Attach the new data cables (broad, flat, gray) to the new board. Note how the cables are attached to the old board.

- Carefully install the new board in the chassis and secure it.

- Install the reset switch and run the wire across the top of the board.

- Attach the reset wire to the new board. On the Korean-made

board, the wire connects to the same place as on the old board. On the Japanese-made board (I understand), the wire attaches to the top of the board.

- Connect the power supply cables to the posts on the new board and to the reset switch.

- Install the power supply.

- Install the drives. The drives must be double-sided. If you're installing double-sided drives for the first time, note that drives such as Shugart SA-455's are half-height, whereas the old single-sided Shugart SA-200's you're probably replacing are two-thirds height. As a result, there will be a gap below each drive. You may want to put some mesh or tape over the gap to keep dust and objects out of the chassis. (Alternatively, you may want to stack the new drives over and under on the left instead of side by side. However, you'll need a special strap or bracket to bolt the drives together since you won't be able to use the old frames anymore. Check with SVS for this miscellaneous hardware.)

- Connect the data and power cables to the drives.

- Install the cord pan if you want.

- Make sure everything is the way you want it. For example, check that the data cables aren't brushing up against the bottom of the drives since they're no longer glued down. Check the reset wire too. Make sure all connections are tight. Connectors on correctly?

- Put the case back on if you want.

- Connect the terminal and plug everything in. If you were operating your terminal at 19,200 baud with the old board, set it back to 9600 since this is the maximum transmission rate of the revision 2 board's terminal port.

- Power up. You should see the familiar log-on message, but this time with a newer ROM revision (3.1). In a few seconds the ROM will attempt to boot CP/M from the A drive. Insert the revision 3.1 CP/M system disk that came with the ROM.

- Check out the new CP/M. Install it for your terminal and make back-up copies of the distribution disks.

- Connect your serial printer to the printer/modem port and check out its operation. Use the SETUP program included with the new CP/M to switch the standard CP/M LST device from the parallel to the serial port (the parallel port is the default, but this can be changed by SETUP). Make sure the baud rate is correct. Test the parallel port too. If you don't have a parallel printer yet, borrow one for long enough to make sure the parallel port works. Remember that a special connector is required on the printer cable for the Micro Decision parallel port's card edge connector.

## What if it doesn't fly?

- Review the reassembly steps.
- If you have the Micro Decision maintenance manual, review the section on troubleshooting procedures. You may pick up some ideas about what's wrong. For example, is the AC cord plugged in?
- You could have a dud motherboard or ROM. If this is the case, nothing much short of replacing them will help. You might try putting the ROM which came with the new board back in and see if this helps. Note that if the board works with the old ROM, you'll still want to obtain the latest ROM to ensure that the latest revision of CP/M will work properly.
- Consider the power supply. The revision 2 board shouldn't draw much more power than the revision 1 board. However, double-sided drives do draw somewhat more power than single-sided drives (according to the Shugart SA-455 manual), but even this shouldn't be enough to prevent the log-on message from being displayed.
- Try putting the old system back together again. If it still works, you can be fairly certain that you didn't damage the power supply or cables.
- If all else fails, seek knowledgeable help.

## Options

There are a lot of options you can choose for this project. Most of them involve buying additional hardware from SVS.

When I ordered my revision 2 board, there were two different boards available: the Korean-made board and the Japanese-made (Kohjinsha) board. If you have a real-time clock such as the Z-Time discussed in Part V or other piggy-back add-ons, you'll want the Korean board if it's available. This is because the Koreans socketed the Z80 on their board and the Japanese (incredibly) soldered the Z80 to the board. As of September 1986, however, the Korean boards were in short supply at SVS and you may have to settle for the Japanese board. If so, the Z80 will have to be removed and replaced with a socketed one in order to install any piggy-back add-ons such as a hard disk. The cost is low (about \$2.00 for a socket and a new Z80), but a lot of delicate desoldering and resoldering is required.

I also prefer the Korean board because of the location of the Z80. It's in the lower right corner by the power supply. With drives mounted over and under on the left side, this leaves a lot of space on the right side for add-ons which jut up from the motherboard. With the Japanese board, the Z80 is in the center of the board, rather close to the drives.

I had a little trouble mounting my Shugart SA455 drives over and under, even with the drive mounting kit from SVS. The brackets do not fit the revision A chassis that came with early Micro Decisions. One solution is to screw the lower drive directly to the chassis, using the counter-sunk holes on the bottom of the chassis to get at the drives' holes. Then use the brackets to secure the upper drive to the lower one. This is not a perfect fit, but it does work. Note that it is not necessary to mount the drives this way. However, it does get them out of the way and only requires that you fill one open space on the right rather than a gap below each drive.

Another solution for mounting the drives properly is to order a new chassis. The revision B chassis is what was used with many MD3's and the revision C chassis was used with most of the hard disk Micro Decisions as well as some later MD3's. The revision C chassis differs from earlier chassis in that it has a punch out for a fan should you care to add one and the motherboard can be removed from the back without necessarily removing the disk drives.

There are a couple of minor problems with the revision C chassis (which may be true of the revision B chassis as well). The drive brackets don't fit quite right here either. Maybe it's just the brackets. However, there's a panel on the left side to which the drives can be attached using the plastic straps included in the bracket kit. This is a satisfactory solution.

On a related note, I might mention that the sketches in the maintenance manual are not completely accurate for the revision C chassis. Don't let this confuse you. Keep in mind that there are a lot of variations in the Micro Decision hardware.

Another little problem with the revision C chassis is that there is a support on the left side which is so close to the board that the reset wire connector which sticks out slightly from the board jams up against the support, preventing the board from aligning with its chassis holes. The solution is to get a new reset wire. The newer wire's connector is shorter. Note that this is a problem only with the Korean board. On the Japanese board, the reset wire connects to the top of the board.

While your old power supply should be able to power double-sided drives and the revision 2 board, it won't be enough for an add-on such as the SWP Co-Power co-processor board. If you plan on adding one of these boards, you may want to order a larger power supply. The MD11 power supply, \$45 from SVS, fits nicely into all chassis and is powerful enough for this purpose. It also has cables which connect directly to the drives, making for much easier connection.

### Parts list

Here is a list of all parts mentioned in this article. All parts can be ordered from Silicon Valley Surplus. Prices given were

current in September 1986. Check with SVS for latest prices and availability.

<u>Item</u>	<u>Price</u>
Revision 2 motherboard	\$45.00
Latest ROM and BIOS revision	16.50
Drive data cables	11.98 for 2
<u>Optional item</u>	<u>Price</u>
MD3 maintenance manual	12.50
Shugart 455 double-sided drives	150.00 for 2
Drive mounting kit	2.98
Revision C chassis	12.00
Case for chassis (top and front panel)	21.00
(note: old case should fit any chassis)	
Back plate for revision C chassis	4.99
Mounting hardware for back plate	5.98 for 2
Rubber feet for chassis	1.99 for 4
Reset switch with LED and wire	5.99
MD-11 power supply	45.00
AC power cord for power supply	1.99

(To be continued -- see Editor's note)

### **Conclusion**

As noted earlier, once you have completed this project you can build another MD2 with the leftover parts and a few additional items ordered from SVS. Or you could have simply started from scratch and built a brand-new MD3 for less than \$200 plus the cost of double-sided drives and a terminal (also available from SVS, as are manuals and software). Consider that this is the same system that sold for 2000-odd bucks a few years back.

The revision 2 MD3 is really a much nicer system than the revision 1 MD2. It adds a lot without reducing the amount of memory available to programs (TPA). Disk drive times are also the same, if not a little faster. Making this conversion creates the system Morrow should have sold you in the first place.

###

(Editor's Note: Phil has provided additional information about software and hardware incompatibilities, some solutions, and some programs. Due to the shortage of space, those parts of this article will be published in the next Newsletter. All the essential information about the upgrade appear in this section of the article in this issue of the Newsletter).

# SOFTWARE REVIEW: STATPAC

by Georgia Babladelis

Program: **StatPac** - a Statistical Analysis Package  
System Requirements: CP/M; IBM PC, XT, AT or compatibles  
(with min. 192K memory); 2 drives; any printer  
Company: Walonick Associates  
6500 Nicollet Avenue South  
Minneapolis, MN 55423  
612/866-9022; 1-800-328-4907  
Price: \$495 (Special 20% discount available to BAMDUA members)

I have been pleasantly surprised to find powerful statistical analysis programs for CP/M. **StatPac** is a well-planned, powerful statistical package that runs beautifully on my MD3, dual disk drive system, with 64K RAM. (The company has other programs that address statistical and data management problems that run on CP/M also. An even more powerful statistical analysis program is available for MS-DOS, but not for CP/M). **StatPac** can be installed for a hard disk, but does not require it.

The programs use about one megabyte of disk space, so some disk swapping is inevitable unless you are using a hard disk. The data file limits of **StatPac** are 5,000 records, 254 variables and a maximum of 254 bytes of information per record. Only one- and two-way designs for Analysis of Variance (ANOVA) are permitted and some nice features are missing, such as interactive prediction capabilities for regression analyses.

**StatPac** runs in the batch mode, requiring you to specify a series of analyses to perform and then submit them for processing. As you can see, this makes it ideal for survey and marketing analyses when you need to crunch a lot of data and perform several analyses in the same run. There is a minimum of user interaction, so it is not a simple procedure to use the same data, change the parameters, and run it again. **StatPac** does contain low-resolution character graphics so you can print out some charts of your data, such as frequency distributions and correlation plots. The program is easy to learn and the manual is clear and well written.

The programs are on three disks, accompanied by a handsomely bound manual in a 3-ring notebook. The manual is superbly organized and very clear, with appropriate examples throughout. Truly, it lives up to the claims of being easy to learn. The three program disks which comprise the package are called: MAIN SYSTEM DISK (286K, 24 files); EXECUTION DISK (322K, 26 files); UTILITY DISK (84K, 10 files). Obviously, with a hard disk drive, you can copy all the files to your hard disk and no disk swapping will be necessary; with two dual density floppy disk drives, some swapping is necessary but not onerously so and the program does inform you when a swap is needed. By copying selected programs, you can create one double sided disk as a minimum **StatPac** program disk so that no swapping of disks is necessary. You can run the program with a single disk

drive, but I am not sure you would want to.

The MAIN SYSTEM DISK contains all the file management programs. There is a main system menu available on this disk which allows you to choose all the functions you will be performing. It is the programs on this disk which permit you to enter and edit your data, create and edit the codebook for the data, create and edit a control file for the analysis of your data, and to print any of those that you want to print.

The EXECUTION DISK contains all the analysis modules. There is a control program for all the analyses. The choice to evoke the execution control program is made from the menu on the MAIN SYSTEM DISK. The analyses you may perform are: frequency distribution, descriptive statistics, a breakdown of the data, crosstabs and chi-square, banner crosstabs, correlation and linear regression, matched pairs and independent groups t-test, stepwise multiple regression (with a graphics option for the stepwise regression), probit regression, principal components analysis, one-way analysis of variance for repeated measures or for independent groups, two-way analysis of variance, multiple variable response by variable labels or by value labels, and a procedure to sort cases or to list cases. Error trapping is good, and you can chain back to the main system menu after an abort.

If that weren't enough, the UTILITY DISK provides you with a menu of utility programs which enhance your ability to manipulate the data. With these utilities, one may restructure or merge codebooks and data files, check the integrity of codebook and data files, create an aggregate data file, generate sample size or random numbers, concatenate records downloaded from a mainframe, select cases by record number range, create a weighted data file, and change the format of a codebook and data file.

I have run all of the statistical analyses available and all of the utilities except one (down loads from a mainframe) and found every program worked smoothly and speedily. I was impressed with the "extra" analyses provided; for example, when running a descriptive statistical analysis one not only gets the usual information about range, all measures of central tendency, and all measures of variance (e.g., standard deviation and standard error of the mean) but also unbiased estimates of the population, the distribution of coefficients (e.g., skewness and kurtosis) and the Kolmogorov-Smirnov statistic for normality. When running a correlation, one gets all the information about the mean and standard deviation of the sample variables, degrees of freedom, slope of the regression line, the correlation coefficient and the Spearman rank-order correlation coefficient (and a graphic print out if you want it). A t-test of differences between two samples will not only give you the t-statistic, but information about the means and standard deviations of your samples, standard error of the mean, the probability of a one-tailed and of a two-tailed test, the correlation coefficient, and the Wilcoxon test statistic. I trust that those examples give you an idea of the wealth of information

about your data that is available quickly and easily with this program. I might add that I found it a nice bonus to be able to generate random numbers and compute sample sizes at will.

There are several steps involved in preparing your data for statistical manipulation by this program. First, you must begin by creating a CODEBOOK. This codebook contains a description of the data file format and all the labels to be used on a printout. The program for creating and maintaining such a codebook is on the MAIN SYSTEM DISK. Next, you must create a data base of information that is to be analyzed. This raw data can be test scores, questionnaire responses, etc. The DATA MANAGEMENT PROGRAMS which enable you to create and maintain data files are on the MAIN SYSTEM DISK. You are given a choice of 3 data entry formats so that you may choose that which is most comfortable for you. The easiest is a format that queries you for each data item. I found using the one that emulates keypunch entering of data the quickest for me to use. I never mastered the third choice, which involved creating a screen template but I think it is because I lost interest in doing that. Third, you must create a TASK CONTROL FILE. With this file you will be able to describe all the different analyses you want and then submit them to be processed sequentially. Recall that StatPac is designed primarily for BATCH processing. The programs to create and maintain a control file are on the MAIN SYSTEM DISK also.

The files described above (Codebook, Data File, Task Control File) **MUST** be created before you can run an analysis. These three separate files must be given different file names when created and can be stored on the B drive in a two drive system. The master program called EXECUTE controls the sequencing of tasks and performs any options you request; the actual analyses are carried out by the individual statistics modules on the EXECUTION DISK. All StatPac files are stored in sequential ASCII format, so you will be able to use data created by other programs and/or to use data downloaded from a mainframe to your computer if it is stored in sequential ASCII format.

To recapitulate, there are four steps required to run an analysis with StatPac. They are:

1. Create a codebook
2. Create a data file
3. Create a task control file
4. Execute (submit) the task control file for processing

I did every step and used every analysis and utility (except downloading). Everything works well and fast. I did not do time tests, but will try to do so in the future. The manual is clear and well written. Examples are plentiful. There is even a nice section at the end of the manual about types of data and other important information for persons engaged in doing statistics. An informative appendix gives you sources for formulas, critical values for many of the tests used, and a good list of BASIC error messages. There is also a summary of editing functions and of analysis options. All in

all, it is a well-assembled and informative manual. As I said at the beginning, the total package is a handsome one.

Here is a list of the things I did not like:

1. There is no provision for a higher order ANOVA, such as a 3-way or 4-way analysis of variance. It is clearly stated in the description that this is not available in StatPac but in my work I find that I need such capability and so this is a drawback to me.

2. There is no provision for choosing a screen display only (no print out) that I could find. This is probably not a serious drawback to others, but frequently I like to look at my results prior to printing them, and sometimes I merely want to "see" them.

3. One must always set up a control file. There is no provision for opting to run merely one analysis, without setting up a control file. Again, this lack is clearly stated in the description of the package, but it annoyed me not to be able to just "ask for" an analysis of variance (or whatever) of some data file. In short, for a simple, "one-shot" analyses, I found it a cumbersome procedure.

4. I could find no simple way to use the same control file for a different set of data and codebook. For example, if one has a series of analyses one routinely wants run on all data, there is no easy way to do it, such as merely inserting the name of the new codebook and new data file when instructing the control file. I found that an irritating and unnecessary drawback, even given the limitations of this package as described. I am assured that it can be done by naming the new data file you want to analyze the same as the data file that was specified during the creation of the control file; that doesn't quite meet the need I as I see it.

5. The only obscurity I encountered using the manual was with data entry. I had no difficulty with line entry and keypunch emulator, but I could not master "defined screen entry." I simply could not get the template, etc. at all. I tried it on several occasions, thinking I was just not following directions correctly, but still could not. Perhaps some additional clarity is needed in that section. A good step-by-step example would help a great deal.

As you can see, some of these problems are person-specific. If your needs for statistical analysis center around a lot of data crunching particularly suited to batch analyses, then most of my gripes will not be yours.

The cost for the total StatPac package is \$495. Bamdua members are eligible for a 20% discount, bringing the cost to \$396, plus \$3.50 for shipping. You must reference this Newsletter (or BAMDUA membership) to qualify for the discount. You may order directly from Walonick Associates, whose address and telephone number are provided at the beginning of this review.

#####

# SOFTWARE REVIEW: POOR MAN'S NETWORK

Product: **Poor Man's Network**  
Company: Anderson Techno-Products  
947 Richmond Road  
Ottawa, Ontario, Canada K2B 6R1  
Requires: Two CP/M 2.2 computers  
Cost: \$69

by Greg Smith

## What is Networking?

Networking allows a number of computers to share resources, such as data files or printers. In other words, a database (or any other file or even a printer or similar device) on one computer can be accessed from a number of other computers. Normally, this is done with special cables and interface boards and a hard disk and a lot of things, all of which adds up to a whole lot of money! **Poor Man's Network** allows two CP/M computers to enjoy many of the capabilities of networking without the hardware changes and the program does it for only \$69 (plus cost of a cable, if you don't already have one).

## What's the catch?

Currently, only CP/M 2.2 is supported. This means that people with Morrow hard disk machines can't use it. [At the time of publication, Version 2 of this product is being released. Apparently, through the use of an RSX file, the program will run under CP/M 3.0. Keep your eyes open for an update review of these revisions in a forthcoming newsletter]. Also at this time, only two computers can be supported. The two computers, however, need not be identical. If you have an MD2 and a Kaypro II, for example, they will network. The only stipulation is that both computers run under CP/M.

Speed of operation can be a drawback. At 19,200 baud (or bits per second), the time it takes to log into a remote drive is little more than logging into a drive on your own computer. Unfortunately, MD's with a Rev. 2 board can be set to only one-half that speed (9600 baud). I tested the product at 9600 baud and found the delays to be noticeable, but by all means acceptable.

## How does it work?

When you first receive **Poor Man's Network**, you will need to install it. Following the clear documentation, you should have the program running in 15-30 minutes. Only a rudimentary understanding of WordStar or NewWord and the ability to follow recipe-style instructions verbatim are required to successfully install the program. You will also need a cable very much like a cable used for a modem to connect the serial ports of the two computers. I used my modem cable and it worked perfectly.

In order to connect the serial ports of my two MDS, I had to disconnect my serial printer. A parallel printer would be ideal for use with this program; a serial printer meant I could not print while the networking computers were connected. Using other

computers that have two serial ports in addition to the terminal port (e.g., the hard disk Morrrows), would present no conflict. What it meant, in my case, was that I could use only my parallel printer while the NETWORK was active.

Each time you activate the NETWORK (by entering a very simple command on both computers), you must decide which disk drives (or printers) you are willing to share; normally, this would be your B drive or perhaps a hard disk or RAM disk. When a drive is shared, both users may have the ability to read from the disk, but not write to it; or one user may be assigned both read and write access and the other user would have no access to it.

Using one command, you establish the NETWORK with all of the options regarding what drives to share. Once established, the NETWORK is completely transparent. You can use WordStar, Personal Pearl, etc., or even copy a file or get a directory using the programs that you always have used. The only difference from your normal operation now when you are accessing a remote drive is that you refer to files not on the A or B drive, but instead on the F drive (or any other drive name through the letter P). When you need to disengage the NETWORK you simply enter SIGNOFF on both computers. That's it: one command to turn it on; one command to turn it off.

I used NETWORK to allow two computers at opposite ends of the office to have read-only access. Then I set up my Personal Pearl to share a customer database. Both computers could access the database to find addresses, phone numbers and the like. Once a day the NETWORK was disabled and any updating that was necessary was performed. It worked out fine.

On that same system, I have a dot matrix printer on one of the computers and a letter quality printer on the other. When the NETWORK was engaged, I specified that I wanted to swap printers. Now when I print out from WordStar on the computer with the dot matrix printer, the output is automatically diverted to the letter quality printer. The NETWORK will continue to swap printers until it is disengaged. The only limitation is that both machines can not be set up to access the same printer at the same time.

An additional drive is available on another Morrow. On this drive I placed all of the files that needed to be shared. If I needed to alter a file, I simply copied that file to a drive on which I had write access, made any changes that were needed, and later returned the file to the common drive.

The NETWORK has a built in message feature. No matter what you are in the middle of, even in the middle of a WordStar file, you can send a one-line message to the remote computer and then simply continue with your work. The feature is delightfully simple. Just press one control character, enter your message and away it goes. The message facility is handy enough that apparently one user of the NETWORK bought the program solely to send messages.

The program does have a number of limitations, which I have attempted to specify. Within the boundaries of these limitations, however, there are scores of applications. My recommendation is this: If you have an application or can imagine an application for the program knowing its limitations, buy it! The program runs flawlessly. The company that makes the program is still endeavoring to add more features to the program and is offering updates at a reduced price [the update from Ver. 1, which I tested, to Ver. 2, just released, was only \$25]. If you need to share a database or a hard disk, if you need to share a printer, if you need to swap information between CP/M computers with incompatible disk formats or even different diskette sizes, if you need a one-line message facility, or if you can dream up another use, **Poor Mans Network** is a good buy. ###

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## UPDATE: PSYCHOSTAT-3

Georgia Babladelis

The revised, greatly improved manual is ready. This program was reviewed in the January 1987 issue of the Newsletter. Additional information requested by members follows:

The DATA EDITOR creates STATSOFT system files by default. It also contains an option for converting STATSOFT system files into NON STATSOFT files for use with other programs (e.g., spreadsheets), as well as an option for converting NON STATSOFT files into STATSOFT system files. However, it is not necessary that your data files be STATSOFT system files; all programs and subprograms will accept standard ASCII code files.

The minimum system configuration required to run PSYCHOSTAT-3 is a one disk drive computer with interpreted BASIC, 80 column display, and at least 20K RAM available after loading BASIC. No graphics screen or graphics printer is required (all printers are supported).

The size of a single maximum data file that can be loaded by the PSYCHOSTAT-3 main program is limited only by the amount of RAM that is available after loading BASIC. Generally, PSYCHOSTAT-3 occupies about 18K of memory and uses 4K for every 1000 data points. If you have 60K of RAM available after loading BASIC, you can analyze data files with statistics available in the main program containing approximately 10,000 data points. There are no restrictions regarding the number of variables. Only the amount of memory (RAM) limits the overall size of data files that can be processed with this program. For example, if your computer's memory can handle 10,000 datapoints, you may analyze datasets (data files) with 1 variable and 10,000 cases, 2 variables and 5,000 cases, 4 variables and 2500 cases, 1000 variables and 10 cases, or 10,000 variables and 1 case.

If you are interested in this program, send a check for \$55 to BAMDUA (covers shipping): BAMDUA, Attention: Special Deals, P.O. Box 5152, Berkeley, CA 94705 (or mail it directly to me--G.B.). We are preparing the group order so act promptly if interested. ###

## WHAT'S AVAILABLE

The public domain software library contains 49 volumes. They are available at meetings for \$5.00 each, or through the mail for \$8.00 each. Write a check to BAMDUA, Box 5152, Berkeley, CA 94705. Allow up to one month for delivery.

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Back issues of BAMDUA Newsletter cost \$1.00 for issues 1-3, and \$2.00 for each issue after that. They are also available at BAMDUA meetings or through the mail. The price is the same either way. Make your check out to BAMDUA. Allow up to one month for delivery. A special price is available for back issues of the BAMDUA Newsletter if you order complete volumes; thus, volumes 3 & 4 (1984 & 1985) can be had for half price (i.e., for \$22 rather than the \$44 it would cost to purchase each issue separately).

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A disk containing a list and description of all BAMDUA library volumes to date, plus a list (names, addresses, telephone #) of about 40 outlets for CP/M software is available "for cost of disk" at BAMDUA meetings.

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A directory of approximately 300 BAMDUA members is available for \$1.50. Get your copy now so you will be able to know who to call when you need help or want to exchange information. Make your check out to BAMDUA.

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NOTE: Please refer to your January issue for CLASSIFIEDS.

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## SPECIAL DEALS

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\*\*\*If you are interested in any of the following special deals, please refer to earlier Newsletters for descriptive information about the program, its cost, and how to order it. Check your September REFERENCE issue for specific references.\*\*\*

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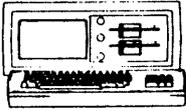
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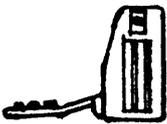
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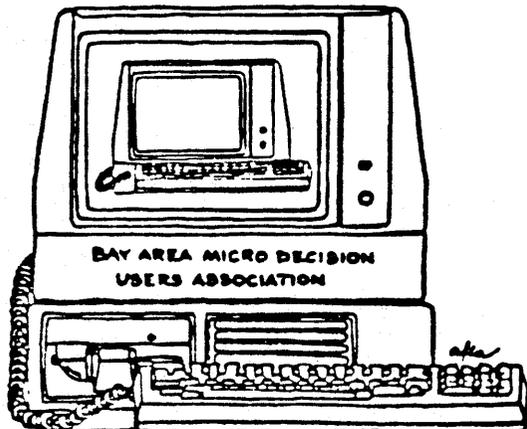
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