

BAMDUA-BAKUP NEWS is published bimonthly by **Bay Area Micro Decision Users Assn.** in cooperation with **Bay Area Kaypro Users & Programmers**, both Cal. non-profit corps., for their members. Membership fee to join, renew, or extend is \$20/yr-BAMDUA, \$20/yr-BAKUP. Both organizations founded in early 1980's to support users of Morrow MD & Kaypro CP/M computers, respectively. Both now have many users of other systems including MS-DOS. Both maintain libraries of CP/M-compatible public domain software & 24 hr. remote bulletin board systems. For information, send self-addressed stamped envelope to mail address. For BBS registration see online bulletin. Since ceasing publication, **Morrow Owners Review (MOR)** provides some material for publication, & to fulfill outstanding subscriptions, it purchases & separately mails copies of each issue, also continuing its own BBS.

USER GROUP MAIL ADDRESSES

BAMDUA	BAKUP
P.O. Box 5152	P.O. Box 8537
Berkeley, CA 94705	Berkeley CA 94620
415-654-3882 BBS	415-849-9389 BBS
534-4257 voice	
answer machine	

PUBLIC MEETINGS

Albany Senior Center
 846 Masonic Avenue
 Albany, CA
3d Tues. each month
7:30 pm - near
corner Solano Av.

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Treasurer	Robert Dupuy
Secretary	George Borys
Programs	Rick Charnes
Newsletter	Ilbert Butler
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BAMDUA PBBS/RCPM (& similar MOR PBBS/RCPM)

Phones: (415) 654-3882 BAMDUA	Sysops: Steven Wartofsky
654-3798 MOR	Sypko Andreae
Baud: 300/1200/2400	Free: BAMDUA & BAKUP
Hardware: Morrow MD Hard Disk - CP/M 3.0 - 2 X 22 Mg	
Software: PBBS, BYE, KMD, ZFILE, LUX, MAP, also PRACSA Member	

BAKUP BBS/RCPM

Phone: (415) 849-9389	Sysop: Woody McPheeters
Baud: 300/1200	Free: BAMDUA & BAKUP
Hardware: Kaypro 10 - CP/M 2.2 - 11 Mg	
Software: PICS (Pascal Integrated Communications System)	

The Way It Is - 1) Mail Orders & Phone Contacts: Your check not cashed? Your order not filled? Welcome to the world of unpaid vol-unteers. There is ONE key to the post office box, & new ones have not been authorized. When two people had pressing personal & business reasons to do something other than work for the user group, over a three-month period no checks were deposited, & no new orders were filled. ONE person picks up answering machine messages & fills mail orders, provided the mail is picked up & delivered to the office (George Borys, BAMDUA only; recent BAKUP librarians have declined to handle mail orders). ONE person has a phone No. mentioned on the answering machine & takes voice calls of any kind over the phone (me). Want it better? Volunteer!

The Way It Is - 2) Disk Sales: The previous policy was disks were \$5 at meetings, an additional \$3 by mail, due to the expense & trouble of mailers, stamps, etc. Absent board action, the only ones responding (I am joining George) have unilaterally decided that the \$3 will only be charged once every four disks. So it is cheaper to buy 4 disks at a time by mail. If anyone has already sent too much money, they will get new disks being issued as a bonus & have large excesses credited to their membership. There is a feeling that reduced prices sell more disks & help revenue.

You Must Specify Your Disk Format: The sale of quad-density disk drives by Silicon Valley Surplus, & George Borys's FORMAT26 program, which allows formatting of numerous kinds of drives, with extra cylinders on otherwise standard hardware types, has resulted in a proliferation of disk formats, & computers with only quad or 3-1/2" disks in them. ALL disk orders are filled with standard Morrow single-sided double density disks. Kaypro II format & any format that FORMAT26 supports can be supplied, but only if you specify in writing in your order.

The Way It Is - 3) Public Domain Modem Programs: Despite a diligent search, I have been unable to find ANY public domain modem program that works at all baud rates, which the operating system is capable of, on all Morrow MDs. Apparently no such collection of files has ever been issued. We are working on issuing IMP 245 by Irv Hoff in such form, for both Morrow & Kaypro, which hopefully will be out by the time you read this. In the meantime, there is a "Catch 22" on all modem programs. First, if you want a modem program to call the BBS, call the BBS & download one. Second, even if you do call, what you will get will be a bunch of Morrow overlays to assemble by yourself into the main public domain generic program, most with nonstandard names & version numbering. Many of these do not work, since the authors of them jiggered the code for their own specific system hardware & software, but put out a version for other MDs, without adequate documentation explaining that fact. I have actually seen versions, in which the authors ruined good code in a previous version for a computer model they did not own & were not testing.

In addition, a plethora of false & misleading information has been published & spread by word of mouth & BBS message about

null adapters to use with the Morrow MD nonstandard DCE serial port. For the time being, download & read the docs in MDPORTSx.-ARK/LBR. Correct information will accompany the IMP issue.

Software Notes - NSWP Documentation: Apparently many people are unaware complete, correct, authorized documentation exists for NSWP207, the highest version of the most useful public domain program for CP/M. For a long time, the highest version available was NSWP206.DOC, & any NSWP207.DOC was either programmer's upgrade version notes, or a combination of 206.DOC with those notes, or a number of 3d-party articles or edited revisions of earlier docs. The correct documentation is called "NSWP2.WS." You are most likely to find it inside an IBM-PC .ARC file, where it is half the documentation for the MSDOS version. Most old public domain disks & ARK/LBR collections on BBSs have not been updated with the new documentation. For those not familiar with the program, NSWP copies, renames, deletes, sets at-tributes of files & much more. It is free & the author no longer takes donations.

Software Notes - Two NULU152 Versions: There are two different versions of NULU152 by different authors: 1) Those made by patching NULU151 per NULUPAT.LBR/ARK by C.B. Falconer, some COM versions assembled with terminal-specific video attributes. 2) Assembled version in NULU152.LBR/ARK by Mick Waters, no video attributes. Both versions: work; are unofficial, unapproved by original NULU author Martin Murray; are documented as to changes only, still need NULU151 DOCs. For those not familiar with the program, this is one of the best ways to make & change LBR files. There are more recent programs, such as LT, QL & TYPELZ to look inside libraries, read text files, extract & simultaneously un-crunch or -squeeze files. And you need UNARC for ARK/ARC files.

Software Notes - Two ZAP35 Versions: There are two different versions of ZAP35 by different authors: 1) ZAP35.LBR/ARK by original UK & Australia authors based on .MAC source code, video ESC-29/28 bright/dim, string searches in files or whole disk. 2) ZAP35MD.LBR/ARK other authors, based on .Z80 source code, optimized video for Morrow & ANSI terminals, string searches in files only. Neither version addresses hard disk tracks-sectors-blocks above approximately 8.1 Mg. For later versions, help with modification, etc, inquire WLA BBS, Sysop Gary Inman, 213-838-9229. For those not familiar with the program, it is the user-friendly patcher for CP/M, something most people can use with only onscreen menu help, without reading the DOC.

The Way It Is - I Quit as Newsletter Editor: I have quit as news-letter editor, & all official positions, for the single reason that I am unwilling to work FOR those members of the Board, who are all "chief" & no "indian." It is simply tiresome to be issued orders & have my personal schedules inquired into & in-terfered with by "old boy" types, who in my opinion do not put in their fair share of plain old drudge work. I will shift my focus to answering the mail & continue with other projects, such as the IMP issue, the SIG (special interest group) that built realtime clocks, computers for convalescent homes, etc. I will continue to write a column, as long as it is printed without face-saving censorship by the aforementioned types.

Copyright (1988) by Robert D. Athey Jr.

The Peace Corps recently presented the Leadership in Peace Award to the KayPro Corporation. The award recognizes people and companies who develop innovative programs to find peaceful solutions to global problems. KayPro donated computers to many third world countries, such as Haiti, Kenya and Thailand. One of the goals of the Thailand project is to introduce people of developing countries to personal computers. Another kudo for KayPro.

The KayPro overseas is not a new idea. The Bay Area Kaypro Users and Programmers (BAKUP) has had members from as far away as Isreal, South Africa and Australia. The newsletter was what these users wanted, as it had tips on how to use the software, and news of new software or other delights. One user wrote (writes) regularly for *MicroCornucopia* (an interesting small computer magazine for the dedicated) from Turkey, with many tales of converting small printing plants and editorial offices there to the use of personal computers. As you might imagine, he has lots to say about the problems of compatibility, and software/hardware glitches are a real headache. Calling customer service from Turkey is a real nightmare, and the companies don't necessarily make it easy on him.

Other good guys are worthy of mention, too. Repair technicians are hard to find for any computer, and those worthy of mention must not only have skill in their art, but compassion for the novice non-techy user. This day and age has many second and third hand computers being used with no concept of what dealer support is and what or where a good repairist is. I've mentioned **John Gordon**, who used to teach a computer repair course at Contra Costa College, as a real winner. He's now working at MicroWorld in Berkeley, near 1500 University Ave. according to the latest contact. The emphasis at MicroWorld is Atari and Amstrad, with low cost guaranteed repair as a prime concern. The new Amstrad Word Processor is really a computer, and he will be setting up their 3-inch disks with public domain CP/M software with the help of the BAKUP and BAMDUA disk librarians. He still will take on those really difficult KayPro problems, but usually refers the normal repair/upgrade/tune-up work to Berkeley Computer. He trained **Ken Furlough**, the Berkeley Computer repairist, and John thinks Ken is among the best in the business.

There's a special problem in caring for "orphan" computers, in that many of the shops don't have the special bulletins sent out by the manufacturers while they were manufacturing and supporting the dealers. Those upgrade/how-to-fix notices are crucial to getting response from the unusually complex computer. However, Berkeley Computer's new owners, **Bill and Wallace Gong**, are dedicated to service, and invite users to have mini-user meetings there on weekends. They also are setting up rental programs, and a broader spectrum of computers available - Macs, MS.DOS compatibles, Morrows, Kaypros, ...

Another repairist winner is **Roger Laurel** at the El Cerrito Heath Zenith store. He's available on a private aid basis after work, on occasion, and helped me install and test my Saba Page-Reader and debug a modem wiring problem one evening. The Saba customer service people are also winners, as I've had to call them with my problems on several occasions. Some of my Saba problems lay in my misreading the manual, but others lay in computer capability, and the return calls always gave the aid or advice I needed. The modem problem Roger Laurel helped me on was only just solved when the transformer power supply burned out. A call to Brad McMillan of Visionary Electronics got me a replacement within quick mailing, so Brad should be on the list of good guys, too.

Good guys offer good buys, too. You know I've moved my office recently, and the last thing I did before signing the lease on the new office was to test the three prong outlets to make sure they were all installed correctly. There's a little tester I've had for five years I bought for \$20+ in a local superhardware store. I just saw a similar device (called an "outlet polarity tester") offered in a catalog for less than \$10 from 800-543-8633. Another good buy is 5 1/4-inch DSDD or SSDD disks for 25 cents apiece (lots of 200) from 800-634-3478. I seldom buy in that quantity, but so many people have called me for disks lately that I keep a stock of empties so I can sell 10 or 25 on a Saturday afternoon when a neighbor wants some.

Good guys can burn out, in time, too. One of the problems user groups have is that the volunteers of time and effort to run RBBs, bulk buying, or disk libraries are tigers for a few years, and then just drop out of sight. I miss them after they leave, as they were so much aid and comfort to me in my beginning period. These winners lost to the new users are **Ken Fowler, Nancy Mulvany, Steve Willett, Dave Bortin, Brent Morrison, George Van Sickle** and many others. I hope those of us who stay can be as much help to the new user as these people were to me in the past.

Bad guys? I can only report on one, for the moment. I got a survey form in the mail a few months ago. It was a query on my needs for static protection for disks, tapes and for a cleaner for my CRT. I could win a radio, too! I filled it out, seeing no need for antistats in my office, but a CRT cleaner might be useful. I forgot about it, using facial tissue and isopropyl (rubbing) alcohol to get the dust and condensed cigarette smoke off my screens. I got a call two days ago from a fast talkin' brassy lady from New Jersey. I won my radio, and what did I want to order? I explained that I didn't need antistats, and with four computers, my screen cleaning needs would be minimal. It occurred to me to ask about the composition of the cleaner, and would it hurt the soft film of my liquid crystal Z-181 CRT screen. She didn't know, didn't have a label in front of her and didn't think it would hurt. Why don't I buy a case - four boxes with six spray cans to a box? Too many, she'll deal and send me a half case - two boxes. Well, all right, put it on my Visa card and ship. \$300 for the 12 cans? Forget it! I had the feeling I was being hustled, and didn't like it a bit. I suppose part of it is being a chemist and knowing that's probably a 20-

fold mark up, but I didn't tell her that. Worse, I've forgotten what the company's name is... Be wary on those helpful telephone sales!

While I'm being cantankerous, let's lay the flat of the sword on the derriere of the T.H.E. JOURNAL. First of all, I started receiving it as a freebie, though I am certainly not part of their targetted audience, the teacher of college/high school implementing computers in training the students. Since I'm a voracious reader, I scan this glossy coated paper magazine-like journal and pull out things that apply to my friends, and pitch it out. I grumble a bit at the fact that it is 80 pages of ads and news releases, with four or five 2-4 page articles written by academics as the meat (mostly case studies on student successes with computers). However, in the academic tradition, or pseudo-academic simulation thereof, I have a more serious objection to this magazine - GENERATION OF NEW JARGON (!). One thing we poor stuffed memory older types don't need is more jargon. In one paragraph, there appears "remediation," "courseware" and "authoring." Now, I am one foolish enough to use "use" instead of "utilize," and got in trouble in the Army for correcting "orientate" to "orient" in a sargeant's talk. So, be kind enough to tell me how "remedy" is not equivalent to or better than "remediation," how "software" is improved upon because it is now "courseware," and how "authoring" is not "writing." Hmmm... There's a rule of the English language that says you can't make a verb by gerunding a noun, isn't there?

Now, have I earned the label we lead this column with?

MOR'S CORNER

by Sytko Andreae

First an announcement about a new program: ZCPR3 PLUS, the ZCPR34 for Morrow Hard Disk Machines (MD11, etc.) and other computers running CP/M Plus (also called CP/M 3.0). Some of us have been waiting for this one quite some time. Mike Allen is a beta tester for ZCPR3 PLUS and tells about it in his column in this issue. You can now purchase the program and manual directly from the author Bridger Mitchell for \$69.95 + 6.5% CA tax + \$3 s/h at: **Plu*Perfect Systems, 410 23rd St., Santa Monica CA 90402.**

Now let me tell you something about my experiences with PC-FILE 80, the database program that just came out for CP/M which I mentioned last issue. I have been using it for four different databases, both small and large, and generally I am pleased. But, as it often goes when you use a program for a while, you start hitting the limitations more often as you gain experience. So it is with this program.

The manual has 63 pages of concise prose and is quite good. The complete text is divided in tiny numbered sections so it's easy to find things with the help of the extensive table of contents and/or the eleven page index. I would rate it a as good job that could possibly be improved a little in the way it is organized, but not by much.

A summary of the features is honestly put forward on page 54 and shows the most obvious limitations right away: No more than 40 fields, up to 65 characters per field but that shrinks

back to 25 if you have more than 18 fields. I find that a field of 25 characters is too short for something like an address or a company name. But one of the severest limitations is that the total number of characters in all fields of one record is only 254! That hurts for all but the simplest databases. Why so little is not quite clear to me. In the manual it says, "We hope to raise that limitation in a future release." But elsewhere the authors state that any more work on PC-FILE 80 will depend on the sales figures of the current version.

PC-FILE 80 is easy to learn and any novice should have a simple database going within an hour. Then, if you want to elaborate on the database, several nice features help you do that. The most powerful one is "cloning" whereby you basically make a complete copy of your current database (including all the data) while making changes in fieldlengths, adding or deleting fields, even re-arranging fields. After you are through with the cloning process you wind up in the main menu with the newly cloned database in attendance.

All the databases I use with PC-FILE 80 were created by importing the data from other databases (Personal Pearl, Perfect Filer or dBase II). That went very smoothly. I also had very little trouble with some exporting experiments, and the trouble was mainly on the other (receiving) end. The main work in importing from another database was in creating the proper report in that other database.

I was a little disappointed in the speed of PC-FILE 80. For instance, searching for a record by the content of a field is a bit slow. It isn't too bad for a small database of 200 records or so, but one database of 3,000 records gave me search times of over a minute. Personal Pearl and Filer do this much faster, but on the other hand they allow you only to search on a few indexed fields, while PC-FILE 80 lets you search on any field, and that is real nice. Moreover, you can search on a substring (scanning across a field), or use a wildcard. You can also use Soundex, where you enter something that sounds like what you are looking for. Great for vaguely remembered last name searches. The only search that is really fast is the one by record number, but the record is assigned by the database program itself and changes after every different sort, so this is not so useful.

If you want to get a report sorted in a certain way you have to first sort the whole database that way, and then execute the report. Sorting times can really add up: sorting a 3,000 record database with more than 20 fields and sorted in three levels can take most of an hour -- a long time but still a bit faster than Pearl, and a bit slower than Perfect Filer. If you have a relatively small subset, say 100 records out of a database of 3,000, and you need several sorts for that subset only, then it is really much more convenient to clone the subset and then sort it quickly in the various ways you want for your reports.

The other feature you need for reports is subset selection. Example: Make a report of all records with zipcode from 90000 to 99999 of which the last names start with an A or an L. This you couldn't do with Pearl which has a very weak subset selection

system. With Filer you couldn't do it either, but with PC-FILE it's a snap. You can make up to 10 logical selection criteria (10 simple Boolean expressions) that you string together with logical "AND" and "OR". But you can't save your Boolean composition in any way (as you can in Pearl and Filer), so every time you need the same subset selection of up to ten "Booleans" you have to enter it all over again. That is a drawback.

Designing reports is very easy and can be done in two ways: by following a menu or by editing a file with WS in "N" mode. The latter feature makes it really easy to change a report or to create a new report out of an old one. The reports are quite easy to read because you only have to remember about five symbols to make sense out of them.

There is much more to tell about PC-FILE 80 which has lots of neat and easy-to-learn features -- like numerical fields for making invoices or checkbook registers -- but space is running out. I will come back to it later. In conclusion I would recommend this program for small databases that have small records and don't have a lot of fancy subset selections for reports. It runs equally fine on an MD3 or MD11. On an MD2 or Kaypro II it will get a little crowded but it should run fine too. You can buy it for about \$49 (plus shipping etc.) from **KaftorWare Corporation, P.O. Box 1674, Chicago, IL 60690**. Even with me rubbing up against its limitations, I still like PC-FILE 80. ■■■■

<p>Subscriptions</p> <p>■</p> <p>Renewals</p> <p>■</p> <p>Correspondence</p> <p>■</p> <p>Submissions</p> <p>■</p> <p>& Etc.</p>	<p>For Kaypro-related articles, advertisements, or memberships in BAKUP (\$20/yr), write to P.O. Box 8537, Berkeley, CA 94707-8537; or call Bob Athey at 415-526-3541.</p> <p>For Morrow-related articles, ads, or memberships (\$20/yr) in BAMDUA, write to P.O. Box 5152, Berkeley, CA 94705, or I. Butler at 415-526-8655.</p>
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Cover Art Wanted: Interesting art desperately needed for cover of this newsletter relating to computers or produced on computers. Must be black & white, 8-1/2x11 or smaller. Art cannot be returned to you so do not send valuable originals (clean, sharp Xeroxes OK).

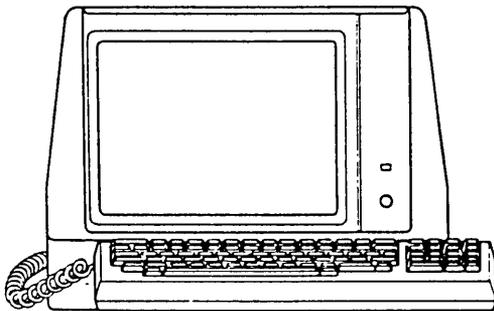
Wake Up and Smell the Coffee

"The idea that objects exist apart from events is part of the epistemological net with which we snare our particular form of experience. This idea is dear to us because we have accepted it, without question, as the basis of our reality. It profoundly influences how we see ourselves. It is the root of our inescapable sense of separateness from others and environment."

The Dancing Wu Li Masters, An Overview of the New Physics
by Gary Zukav (Wm. Morrow and Co., Inc., 1979)

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CUT AND TAPE TO YOUR COMPUTER

BAKUP has a new post office box number. The reason for changing was that George VanSickle, who used to pick up our mail for us on his way home from work, decided to retire from the workaday world and concentrate on play and computers. As those willing to "do the box" live in Berkeley, it was decided to bring the mountain to Mohammad. Our new home is P.O. Box 8537, Berkeley, 94707-8537. Someone will still wander over to Oakland to clean out the old box for a while.

Received the March 18 copy of The Computer Alliance Newsletter. It seemed interesting. I called up and spoke to the Project Director Sarah Cameron. It is a spinoff of the Media Alliance, and its goal is to assist non-profit organizations starting with computers. (415)771-7133 San Francisco CA

Grever Publishing (P.O. Box 270067, Tampa, FL 33688-0067), is looking for contributing editors to review IBM-PC entertainment software. It seems what is reviewed is not as important as writing style. There will be no specific compensation at this time other than a byline.

We also received the newsletter of the **Computer Using Educators**, a teacher's interest group. They like primarily educational software (P.O. Box 2087, Menlo Park, Ca. 94026; membership is \$22/year). **EQUALS** is another group out of the Lawrence Hall of Science in Berkeley that encourages women and minorities to study math and computers. They offer teacher training nationally.

MicroPro sent an announcement that Wordstar Professional has been renamed Wordstar Classic Release 5, and promises great things. Wordstar 2000 is now referred to as a "Word Publisher." Wordstar 2000/H will be available for use by the handicapped and will support mouth-sticks. A Wordstar 2000 is scheduled to appear for the Apple Macintosh and OS/2 computers. There exists a **Wordstar Users Group** at P.O. Box 144, Malverne, NY 11565. They want \$18/year. We also received a review copy of the new WordStar 2000+, which Bob Athey is reviewing.

Explained in only 64 pages, **our bulk mailing rates** jumped up to \$0.167 each. If you have not received your newsletter as of late, check your address carefully. The post office wants 30 cents for an address correction fee on 3rd class mail and they don't forward bulk mail.

I saw an ad for a favorite processor. **Inmos** has been making a microprocessor chip called the Transputer, designed primarily for parallel processing. Micro Way puts four of these on a plug-in board for the IBM-PC giving 40 million instructions per second speed. Multiple boards can be added together for more speed. Zounds! The catch is that you will need their cross-compiler to generate code for these machines. A short article appears in June 1988 issue of Byte.

I bought a copy of **QUBECALC** from the writer a month ago. I was intrigued by the three dimensional Lotus 123-ish spreadsheet (yes, it can be viewed from all six sides). It has unique applications. What was also inspirational was that the programmer quit his job, moved to a small town, and writes and sells his own quality software: FormalSoft, P.O. Box 1913, Sandy, Utah

84091-1913.

If you have decided that the 3+ inch floppy disk is the wave of the future, you are almost correct. The 5-inch floppy disk sales peaked last year and now are dropping. It is expected that 3+ inch disk sales will peak about year 1993 to be replaced by IC memory cards. These cards are about the size and thickness of a credit card and come in four forms: static ram version with battery, read only version, an erasable ROM version and a one-time programable version. Expect to start seeing more of these.

The hottest thing in mass storage these days is **optical disks**. Until recently optical disks were read only. Maxtor Corp. is showing off its new **erasable magneto-optic disk drive**. Its read/write speeds are good enough to replace Winchester drives and it holds 1000 megabytes. A lot of big name players are putting a lot of research in this technology. They should be affordable to small business and rich hobbyists in a couple of years.

Masatoshi Shima, the developer of the Intel 4004, 8080, Zilog Z80 and Z8000, has developed a new 32-bit microprocessor, the VM8600S and 16-bit VM860S. They are reported to substitute Intel's 8086 computers and NEC's enhanced "v" series versions of Intel's computers. The VM8600S is about 75 percent the speed of the 80836.

Simple-Net Systems is delivering a 25 MHZ, 6 million instructions per second version of the IBM AT computer. The NetPro 386/25 comes with lots of goodies and is not cheap, but it is the fastest PC-AT out as of yet. Most 386/AT computers run at about 16 MHZ.



**GETTING PERSONAL WITH PEARL: The Case Where
Nothing Multiplied Well**

Bruce M. Gowens

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[**Editor's Note:** Bruce Gowens is MOR's former Personal Pearl columnist and a computer consultant. He hangs out on the MOR BBS (415-654-3798) where he offers help with Pearl, and gets his mail at P.O. Box 5367, Berkeley, CA 94705. If this method is useful to you Bruce will run the verification program with your parameters.]

I told the client to take three aspirins and I'd call him in the morning. It was a typical case--one where Pearl can't give a subtotal on any but the first sort level. I felt like cussing out the bozo that had set up the data structure, but couldn't -- I was the bozo.

As I mulled over the problem, other thoughts came to mind. Was it really true that Dolphins tolerate Humans because we are cute, but not much longer since the Neanderthal were cuter? Would mutations from the Adam bomb produce Eve? Is there enough Jack Daniels in the house to finish this job?

The problem, like most problems, came from a previous solution. I dug the trench, and now I had to make a coat of it. (A common problem for consultants.)

The client sells eye glasses, with a limited number of frame

styles, colors, bridge widths and temple lengths (temples are the part that go around your ears, if you are smart enough to have ears). The previous problem was that we had to get a single field per frame input into the ORDERS data base. So we made one out of the style, color and bridge-size by encoding it (i.e., 5400GR34 for style 5400, grey, bridge size 34). The "feeder" form FRAMES supplied cost, inventory number and other stuff, and prevented (with the terrible "NOT FOUND" message) entry of a non-existent combination (although a swift ^Z or ^W would usually pop the right entry up). At that time I thought it was neat-o, and it has worked for the last 20 months.

Of course, when I set it up, there was no problem with temples. "No sir. We just want to get this order process under control, and that other stuff is far in the future. So don't worry about the temples."

"Alright," sez I to meself, "I sell what they buy. And I will ignore this thing about temples." (I always talk formal to meself.)

So comes the zap: "This program has been so good at getting our frame inventory in order, we'd like a report from it on the temples used."

Now, temples are the weird wildcard oddball strange kind of reality that simple programmers and data base designers hate to deal with. Temples are from four to six lengths expressed in fractional inches or millimeters; and have to match the color or style of the frame (but not the bridge size that is neatly [?] encoded in our database). Our data has the temple length; and the frame data is coded (style, color, bridge size). I paused to mull over the idea that before glasses, bridge size was on entirely another scale.

While my client is taking his three aspirins, I am taking five and lots of caffeine (Jack Daniels has lots of caffeine—or something) to cater to his latest whim (not to knock it—cutting temple inventory is a real cash release). I come up with a hacker's kind of answer. A case where Pearl produces a meaningless number.

The problem is that although I can make a report that counts on the first sort level (using a subtotal report field that counts itself), a subtotal won't count on a second sort level. So that if I count when sorted for the frame it will not consider the temple length and will consider the bridge size, while if I first sort on temple length it will not consider the style or color. And length, style, and color is how temples define themselves.

What I need is a single field that is unique for each temple style/color/length. Then I can make a report that will sort on that field.

But how to create or produce such a field in ORDERS? My answer is to create a field in FRAMES that will hold some kind of irrelevant numerical value. Irrelevant, that is, to humans. For identification, I'm going to call this my "Funny Number" and name the FRAMES field "FUNNY". Then FUNNY will be mathematically combined with the temple length in ORDERS to fill in a calculated field in ORDERS (we'll call it "RESULT") with strange and meaningless results. The main requirement for RESULT is that it must be unique for each temple length/style/color combination.

Given such, it becomes a snap to make a report that sorts by RESULT and counts itself, giving the total of each temple sold (and the report need not show RESULT--just style, color and length).

So what might that weird Funny Number in FRAMES be, and what kind of Mathemagick do we apply?

First let's look at the data to see the range. Length can be 5, 5.25, 5.50, 5.75, 6.00 and 6.25 (inches) or 125, 130, 135, 140, 145, 150. 155 (mm). The two different measuring systems could be a real mess, but since each brand uses its own system we really don't care about the actual value of the result. The measuring system doesn't matter except it might cause results to be duplicated. All we ask is that each temple combination produce a result uniquely it's own.

Oh yes, and when no temple is sold, we don't want a result (or at least let us have a single result for no-sales that we can select out or ignore). When no temple was sold, the very nice secretary has been entering 0 (zero) for temple size. And nothing multiplies very well when you want nothing. Zero times any number is zero so style or color doesn't matter. That's why we don't just add to get the result--we multiply. I guess by now you've figured out how I came to name this case.

So we make FUNNY in FRAMES and we make RESULT in ORDERS that will be the result of multiplying it by the length (the exist-ing TEMPLEN). That give us our result, BUT -- how do we insure that no two combinations of Funny Numbers and lengths will create the same result? In planning this we have to PROVE that there will be no accidentally equal results between inches and millimeters, as well as between inch lengths. And I'm not a mathematician enough to do that.

Thus the "hacker" approach. I whipped out my trusty Turbo Pascal 4.0 caliber and aimed it at the guts of the problem. 4.0 is MS-DOS; which I selected since I knew there was going to be a lot of type real number crunching, 4.0 runs faster than 3.0, and the MS-DOS beast where I work (sometimes) runs a 80287 math co-processor at 12 MHz. Even then, one run would have taken 48 hours had I not seen the pattern and aborted. You can translate "hacker" to mean "brute force." The program looped to increment a Funny Number, multiplied by all possible temple lengths and loaded them into an array, then compared the results in the array to find matches. If there was a match the program jumped to the next loop. In order to cover all possible combinations the array had 900 results. To compare all would be 900 factorial comparisons. That's a BIG number! (900 x 899 x 898 x 897.....)

After several hours of running (dawn was delicately painting pink the dirt-encrusted window panes of my ramshackle office -- so I went to breakfast leaving the program to crunch on its own), I realized that if any two numbers were factors of the result then there WOULD be duplication. No matter what increment was used to make the Funny Number.

So I tried using a real number with a fractional part. Same result.

Impossible? No -- there is a way: uneven incrementation. Instead of incrementing by, say 2.3, increment by 2 starting at 2.3. The series of Funny Numbers is then 2.3, 4.3, 6.3 and so on. In my case a 3 increment (3.3, 6.3 ...) found duplication,

but 4, 5, 6, 7 and 10 worked. I selected incrementation by 2 since the final results would be smaller, and it's about as easy for a human to count by 2 as it is by 10 (for ease in assigning the Funny Numbers).

I also had the program print out the largest result so I would know how large the result field needed to be. The calculation for the new result field in ORDERS is "TEMPLEN * FRAMES.FUNNY" and the field is formatted "99999.99".

I twisted the Jack Daniels bottle to squeeze out the last drop, closed the file, and checked that my trusty 4.0 wasn't loaded. Once we'd stuffed the Funny Numbers into the fifty or so FRAME records, Pearl automatically calculates and loads RESULT without one extra data-entry keystroke. I suppose I'll think it's pretty neat-o, until the next problem comes along.

Just goes to show that you don't have to be smart if you can hack. Funny how light the trench coat feels. ■



FROM THE MAILBOX by Bill Steele

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I've only had a couple of letters since this column appeared for the first time in the Bamdua-Bakup and MOR-Atlanta Newsletters. It would be nice to think that no one has problems (or gripes) any more, but for now I'll attribute it to the fact that I've been out of print for several months and everyone is out of the habit. We'll fill out this time with a few questions from the BBS's

of both clubs, hoping some of you without modems can supply answers. (I've always said this column was just a printed BBS any-way.) Most important: don't think your question is too naive to ask. We've all been there, especially me.

A while back **Gordon Northrup** asked about some sort of "Rol-o-dex" program from which he could call up addresses while working in NewWord. I suggested Write Hand Man or Presto. Now he writes to tell me that Write Hand Man won't work, nor will LBRDISK; he contacted Poor Person Software to ask why and they responded: "Your real problem is with NewWord. [It] barely works when WHM is loaded and never works when WHM is combined with any other resident program." Mr. Northrup insists that "There is enough room in ROM for both. Can I relocate LBRDISK, WHM (and/or) Smartkey?" It should be possible, but I don't know how. And I suspect you would need the source code for the program you're changing. How about it, hackers?

Several questions, in various formats, about upgrading an MD3 by adding a hard disk. You can add 21 Mb Seagate drives to an MD5 or MD11, boosting capacity to 42 Mb. MOR sells a kit to do this. But alas, although the Seagate drives will fit in an MD3 case, the disk controller in that machine is only capable of

handling floppies. You would have to replace the MD3 board with an MD5 or MD11 board. But then the MD3 power supply wouldn't be adequate, and in about half of the MD3's, according to Sytko Andreae, the case would also have to be replaced. "All you'd have left is the rubber feet," Sytko says. And probably cheaper to buy a second-hand hard disk MD. You can, however, add an external hard disk to an MD2 or MD3. Advanced Concepts Engineering and Consulting, 8926 S.W. 17th St., Boca Raton, FL, 33433, 305-482-7302, offers 5Mb, 10Mb and 20Mb units starting at \$465, and mentions club discounts. Westwind Computer, 1690 65th St., Emeryville, CA 94608, 415-652-3222, used to offer hard disk upgrades along with a neat RAMdisk/printer buffer, but we're not sure if they still support Morrow products.

Carl Holub asks if there is a program like NULU that will extract both crunched and squeezed files from a LBR. Current versions of NULU will read squeezed files, but not crunched ones. It seems like a logical addition to a later version of NULU, but has anybody written it yet?

Ralph Valloton is looking for a cheap communications program for a friend's Sanyo computer and modem, which he's been told has a "non-standard" RS-232 port. Public domain programs like XMODEM and MEX can be installed to run on almost any computer. As for "non-standard," there's probably no such thing as a standard RS-232 port, but the few lines that are used for modem connections are almost always the same. (I wait to be corrected!)

Wayne Siebel says he's having trouble copying from a foreign disk format. UNIFORM, READIT and Morrow's own FOREIGN-COM have all failed. "Either the machine locks up or the drives start banging whenever I've tried transferring the file." This is an example of a question that's hard to answer because he doesn't say what foreign format he's working with, but has anyone else experienced a problem like this?

Finally, **John William Johnson** adds a footnote to a long discussion we had after he complained that he couldn't update the Correct-It master dictionary from AUXDICT.TXT. It developed that Correct-It was listing words with the last letter missing, because it can't handle files prepared in the document mode of WS/NW. The solution, if you must edit the dictionary, is to use the non-document mode. "I was relisting all the words horizontally instead of leaving them in a vertical list, thinking I could save K space," he explains. A good time to point out that most programs treat commas and carriage returns exactly alike as record separators. And when you look at a WS/NW file and see all that empty space between the end of the text and the little "<" symbol at the right of the screen, remember that none of that space is in the file (unless you've typed spaces or tabs to fill it). To prove it to yourself, move the cursor along the line with CTRL-D and watch how it jumps to the next line.

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Send letters to:
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Las Cruces, NM 88001

One of the fringe benefits of writing a column is that every once in a while you get invited to "beta" test a new piece of software. What is beta testing? When a company develops a piece of software they normally go through an in-house testing routine called "alpha" testing. They try to find out if the software is working the way they think it should. This normally finds all the major bugs and many of the minor ones. But before they release it to the general public they try to get it tested by people not directly involved with its development. This is called beta testing.

There are a lot of reasons for beta testing. One of the reasons is that they can get some free favorable publicity if the beta tester happens to have some access to the general public. Notice all the stuff Jerry Pournelle gets to check out for Byte.

There are more direct reasons for beta testing. The most obvious is the old "get someone else to check your work" syndrome. When you are overly familiar with your own work it becomes very easy to make the same mistake over and over. A disinterested party can often find the error you've been chasing for months with a quick glance. A beta tester may also exercise the software in some manner that the designers never envisioned. Sometimes the developers may find that the software in its present form is not really what was desired by the users. As you can see, beta testing performs a very useful and desirable step in software development.

Anyhoo, Echelon, purveyors of ZCPR33 and 34 for the CP/M 2.2 world, decided to answer the pleas of the CP/M+ (otherwise known as CP/M 3.0) world and come out with a version for ZCPR34 for it. I suspect that the fact that there are between 600,000 and 1,200,000 (depending on whose figures you believe) Commodore C128s out there which run CP/M+ in the Z80 mode helped. I heard from Rick Charnes of Forever Z fame that Echelon was looking for beta testers for Z3PLUS. Since I have an MD5, which uses CP/M+, as do almost all of the Morrow HD machines, I gave them a buzz and soon was into beta testing of Z3PLUS.

Let me tell you beta testing is fun. You get to talk to the software developers, get the latest versions of what they are doing and best of all get to try to poke holes in it without people getting mad! The fact that Z3PLUS went from version 1.6 to 2.2 during a couple of months of beta testing should let you know how effective beta testing is.

Now I must admit that I am not up on the ZCPR3 world. I read with interest whatever is written about it and check out a



lot of the new Z specific stuff that comes along. I installed the very first version of ZCPR3 that Richard Conn released on a Zenith Z89 that we used at work but have never installed it on my Morrow MD3. I'm not really sure why. I see all the neat things that can be done with it and Rick keeps extolling its virtues but it just wasn't for me. Depending which disk I grab to boot up on I use either ZCPR1 with the vanilla CP/M 2.2 BDOS or CCP+ with DOS+25 BDOS. I keep telling myself to standardize, probably with Carson Wilson's Z80DOS BDOS and ZCPR34 but I never seem to get around to it. As Dr. Pournelle is fond of saying, "Real Soon Now."

As it turns out it may be a blessing in disguise that I wasn't all that up on ZCPR3. Ilbert Butler made the observation that ZCPR3 is probably going to be a totally new experience to CP/M+ users whereas CP/M 2.2 users have probably grown with ZCPR3 through its various incarnations. This is a point that is obvious in retrospect but probably not so obvious to the designers at the onset of their Z3PLUS effort. One thing for sure is that Z3PLUS is going to have to have very good, extensive documentation especially for all those C128 users out there who may have never put their machines in the Z80 mode.

Given those thoughts I decided that I would concentrate my on the non-Z stuff especially the software that was distributed with the MD5.

OK, what is the obvious stuff that I get with Z3PLUS? Well, what you notice first is the reversal of the user/disk prompt to disk/user (A2> instead of 2A>). This has been the de facto standard in the CP/M 2.2 world for years. I always wondered why DRI chose to do it backwards. Next you'll notice that you have named directories. If you have a MACK and use the proper option you will also see the time so your prompt looks like this: [22:44] A0:COMMAND>

One of the nice things about ZCPR3 is the TCAP facility. What this means is that ZCPR3 knows what kind of a terminal you have and because it does, the applications software doesn't have to. Most of the Z specific software takes advantage of the TCAP. There are all sorts of screen oriented utilities that would require separate installation for each kind of a terminal under vanilla CP/M. The MDT-20, 60 and 70 are known by ZCPR3 and can be installed easily. You only need to do it once!

Way back when I talked about resident commands. Z3PLUS gives you the option of installing various commands as resident. You can even change them during a session with your computer. This is called an RCP (Resident Command Package). The standard one that comes with Z3PLUS includes ERA and TYPE from the normal CP/M set and a bunch of new ones like CLS (clear screen), ECHO (echo a string to the terminal), H (what is presently installed), SP (how much room left on the disk) and so forth. I must admit that I don't yet know what some of them do!

There is also a thing called a Flow Control Package (FCP) which is almost like a programming language. It allows you to control a series of actions on your computer. It has IFs, ANDs, ORs and ELSEs to check and act on different things. For instance, you can check on the existence of a file and then if it is there erase it. Lots of possibilities as Rick Charnes will tell you.

There are also things that were always in CP/M+ but that weren't in CP/M 2.2 like search path. A big advantage is that CP/M+ and CP/M 2.2 look and act very much like each other when using ZCPR34 or Z3PLUS. A user will have a much easier time switching back and forth than he/she used to once he/she is familiar with ZCPR.

Installation. How easy is it? Pretty damn easy. You get a basic package which consists of Z3PLUS.LBR and Z3PLUS.COM. You also need TCSELECT.COM. You run TCSELECT and pick your terminal from the menu. This will create a Z3TCAP.TCP file which is then moved into Z3PLUS.LBR. Put both the Z3PLUS files in user 0 of the HD and declare them as system files. Then just run Z3PLUS and ZCPR34 is up and running on you CP/M+ machine. Type "Z3PLUS OFF" to get back to your original system. How easy can it be?

I take a little pride in the fact that some of the revisions were due to my inputs. But I can say that all of the distributed software, including Morrow Pilot and the Co-Pilot Menu System run under Z3PLUS. One exception is Quest. I never paid to unlock my Quest so I don't know if it works.

My favorite PD programs NSWP, NULU, SD (version 13.0) CRUNCH/UNCR, ARK/UNARC and almost every other one I tried worked just fine. Some of these programs even have Z specific versions that makes for some flashy displays and nice interfaces using the FCP.

Now what do we lose with Z3PLUS? The most noticeable thing is TPA. A standard CP/M+ Morrow has 62k of TPA. Under Z3PLUS the TPA is reduced to 55-1/4k. To me this is a pretty huge loss of TPA, but the people who have been running ZCPR34 under CP/M 2.2 tell me that they run with less than 50k TPA and have very few problems. Maybe the 16 bitters with their huge amounts of memory have made me self-conscious about my limited memory and I am more sensitive to TPA loss than I should be.

I understand why Echelon chose this path. Z3PLUS is installed as an RSX (Resident System eXtension). This makes for super easy, machine independent installation. Of course they figured that if CP/M 2.2 users were happy with less than 50k why should CP/M+ users gripe with 55k. It is a smart economic move even if it does offend some purists. (I think I fall in that category, but the jury is still out.)

The other thing that I know for sure that it lost is passwording of individual files. I don't know how much of a big deal this is. I know that I don't use it.

Well, that's my preliminary look at Z3PLUS. I plan on doing a lot more investigation especially with the Z specific stuff that Rick so dearly loves. There are at least three other MDHD users doing beta testing on Z3PLUS and hopefully we can give you a collective review in the near future. My gut feel is that Z3PLUS should make it **IF** the documentation is good and the price reasonable. No matter what, thanks to Echelon for not forgetting the CP/M community!

Another thing I have been playing with lately is adding/changing disk drives on my MD3. Quite a while ago George Borys disassembled the Morrow FORMAT program and rewrote it to add formatting of DSQD disks. Quad density is kind of a misnomer. All that was done was space the tracks closer together and increase the number of tracks. A normal drive (SD or DD, SS or DS)

has 48 tracks per inch (tpi). Most drives have 40 cylinders. (Some of the early drives had 35.) Single sided drives had 1 track per cylinder and double sided drives had 2 tracks per cylinder, 1 on top and the other on the bottom. The difference between double density and single density has to do with the method used to record the data on the tracks. DD has twice the capacity of SD. QD, on the other hand, actually doubles the number of cylinders to 80. They do this by increasing the tpi to 96. You would expect that you would need a better grade of disk for the 96tpi drives than the 48tpi drives, but both George and I find that the plain old DSDD disks work fine almost all of the time. Even if there are a few bad sectors, they can be locked out with FINDBAD and it's still a bunch cheaper than buying DSQD disks if you can even find them.

Getting back to my subject I bought a couple of DSQD drives and installed them as my A and B drives, mounting my old DSDD drives in an external case and power supply as my C and D drives. Installation was a royal pain in the a** entailing re-assembly of the BIOS. Since those days George has made it super simple. He first has a program called CONFIG53.BAS. This allows you to modify the operating system to recognize the various types of drives and change the various drive parameters. (Remember the big hooahaa about quieting the MD3 drives by changing the step rate to 6 ms.? It's a snap with George's program.) George has also written a matching format program, FORMAT26.COM, which handles a bunch of possible formats for the MDs. George has discovered that most drives can hit one or two more tracks than their advertised number. This can add up to 10k or more of extra disk space. He includes these formats in his programs. George's programs are available on the MOR, BAMDUA and MOR ATLANTA BBSs.

The obvious use of George's programs is either changing existing drives to DSQD or adding DSQD drives. There is another little aside at this point. The 3-1/2 inch drives that are advertised as 720k look electrically like DSQD drives. They have 135tpi, but have 80 cylinders and are double sided. The disks are quite a bit more expensive (I pay \$5/10 for DSDD 5-1/4 disks and \$15/11 for the DS 3-1/2 inchers locally) but they protect the media much more completely than the 5-1/4 disks and are much more rugged. The 3-1/2 inch drives are fast and quiet. The big plus to me is that they use much, much less power (hence less heat) and I figure I can mount 3 of the 3-1/2 inchers and one DSDD inside the MD3 cabinet using the MD3 power supply. So long outboard drives!

The procedure for installing the new drive using George's programs is easy but a little tedious. I will go through the process of changing your A drive to a DSQD. It should give you an idea.

The first step is to make a new disk just for the purpose of installing the disks. On this disk (SYSGENed) put MBASIC.COM, SYSGEN.COM and George's programs. Turn off the power on the MD, open it up and replace the B drive with your new drive. Bring up the MD and boot up the new disk. Run SYSGEN with the source A, but just <CR> when asked for destination. This will exit SYSGEN. Then type "SAVE 46 CPM.SYS" to put a copy of the operating system on the disk. You should have a 12k file called CPM.SYS on

the disk. Then run the CONFIG program. It will ask you the file to use. Answer "CPM.SYS." Then it will come up and tell you what the drives you presently have installed look like. Just answer most of the questions with a <CR> to take the default. The exception is when you get to the B drive. Tell it 80 or 81 cylinders (your choice) when it asks for the number of cylinders. Answer the rest with the <cr> to take defaults. The possible exception is the step rate. Most of the DSQD and 3-1/2 inch drives I have run into work fine at 2 ms. Faster and quieter. When you finish the program you will have a modified CPM.SYS file on your disk.

Now type SYSGEN CPM.SYS. You won't get a "SOURCE DRIVE" question but you will get the "DESTINATION DRIVE." Answer "A" then <CR> to exit. Punch the reset button to reboot. Run George's FORMAT program on the B drive. It should now format to whatever format you selected in the CONFIG program. Now if you are just changing the B drive to high density you are done. Just reSYSGEN all your bootable disks using the image from the disk you built on the A drive. If you are changing the A disk only, you have to go through another iteration. Again call up CONFIG.BAS and use the CPM.SYS file that is presently on the disk. Change the A drive to the parameters of your new drive and the B drive back to the original parameters. Again run SYSGEN CPM.SYS but this time the destination will be the formatted disk in the B drive. Now power down the MD and swap the A and B drives. You should be able to boot off the disk that we just formatted.

As you can see it is pretty easy if you aren't changing the A drive. Actually it's pretty easy if you are changing the A drive, just a little more time consuming. Don't make the mistake of changing all your drives to the new drives before you have transferred all your files to the new format. That is embarrassing!

As a closing note there is a source of reasonably priced 3-1/2 inch disk drives. I'm presently using one as my A drive. They are Mitsumi and complete with a 5-1/4 mounting kit including connector adapters. Unplug the old drive, remove 4 screws, pull out the old one and put in the 3-1/2 inch. The price is \$85 + \$4 shipping (Texans add sales tax). The part number is 450350 and they are available from: **Lolir Main Computer, 2741 Beltline Rd., Suite 111, Carrollton, TX 75006; (214) 416-5155.**

I'm not really pushing this bunch, but that is the best price I found and the one I have works great.

Still looking for topics. (Willis jokes just won't hack it!) 'Til next time.

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