

The Kaypro Column

By David Thompson

If you're wondering whether your Kaypro II is really 4, just wait. Kaypro Corp is changing things all around again. Only this time the Kaypro 4 and 10 will share the same processor board and the II will have a 4 board. OK?

The new Kaypro 4 uses the Kaypro 10 board and two non-Tandon half-wide drives. (Rumors are coming in that Tandon was sending its best drives to IBM and everyone else is getting the dregs so Kaypro is looking for a source of dependable units.)

The Kaypro II will have the original Kaypro 4 board and ROM. In fact, the present Kaypro II and 4 systems have a simple monitor sign-on that says "Kaypro" rather than Kaypro II or Kaypro 4. That way they can use the exact same board and ROM. The only thing you have to do to this version of the Kaypro II to turn it into a 4 is change the drives to double sided 48 tpi units.

The new Kaypro 4 will actually have some features that the 10 won't have (at least for a while). It will have a new CTC timer and a modem built in. However, they aren't quite ready to ship the new 4. They are still cleaning up the software and the FCC has not yet certified that they pass the radiation restrictions.

Disk Alignment

I've been getting calls from dealers who have aligned Tandon drives down to a gnat's eyelash only to have them get strange again after they are re-installed in a Kaypro.

As I mentioned in a previous issue, the Tandon drives don't have much metal (mettle) so any stress you put on them when screwing them back into place will put them out of alignment.

Ideally, you would align them in place but that would be more difficult than doing dental work on an ant. So you have to take them out, align them, and then replace them as carefully as possible.

If you don't have a real alignment disk, find a factory distribution disk and then adjust the small concentric screw on the back of the drive until you have maximum output from the heads. Do this on track 13 hex (the middle track). After aligning on track 13, check tracks 0 and 27. If either 0 or 27 alignment is quite different than track 13 then you probably

have a warped frame and you might as well junk the drive.

You can use one of the disk utilities like DU.COM or our Kaypro diagnostic disk to get the the drive to step out to the proper track.

Morrow MD-11

I took a byte out of the Morrow MD-11 in Issue #14, page 21 and immediately got a nibble out of David Block, product manager for the 11.

I mentioned in #14 that their release didn't make sense because it inferred that they were not using a winchester controller. Well, it turns out that the Z80 is the winchester controller and it's the floppy controller (yep, no 1793...). In fact, he mentioned that there were only 3 LSI chips in the system, the Z80, an SIO and a DART (asynchronous version of the SIO).

Well, after he told me that, I was too stunned to speak hardly (so I spoke softly). Everyone else is plugging in a Western Digital floppy controller chip and winchester controller card and calling it good. Not Morrow.

Speed

It turns out that they are using a few TTL chips, a small CRC generator chip (to check for bad disk sectors) and the Z80 to transfer data from disk to memo-

ry. They force the Z80 to execute a NOP instruction (a NOP means No OPeration) which it does very quickly. The Z80 then increments the address lines to point to the next instruction. The Morrow folks force-feed it another NOP, and on and on for the number of bytes being read off the disk.

Meanwhile, the little TTL chips have taken over the data bus and are transferring data into memory at the addresses selected by the Z80. Using this process, it takes 1.6 us per byte (5 Megabits per second) to transfer data into memory. The average disk access time is 80 ms. Since they are running 128 K and CP/M 3.0, they are also buffering the directory in RAM and doing track reads any time they go to the disk.

When you think about the speed they are getting and the bucks they are saving by removing most of the big chips (have you tried to buy a winchester controller card lately?), the system looks mighty interesting.

Wanted Typing Tutor

I've been getting a number of calls from Kaypro folks about a typing training program. Look, they have really great ones for Apples, Commodores, Ataris and Timex's. How about the Kaypro? After all, this would be a perfect project for SBASIC.

Figure 1 - ZCPR Patch for Kaypro

Note <cr> stands for carriage return.

Now enter:

```
A>cntl-C (hit the "C" key while holding down the cntl key)
WARM BOOT
A>sysgen <cr> (it will ask you for source drive, answer A<cr>)
                (it will ask for destination or return, answer <cr>)
                (you have just put a copy of your system tracks into memory)

A>save 34 zcpm.com (now you have put the memory copy into xcpm.com on disk)

A>ddt zcpm.com (now we load it back in under ddt so we can modify it)
  DDT VERS 2.2
  NEXT PC
  2300 0100
-s0c7a<cr> (the "s" lets you directly set the contents of memory)
0C7A 21 00<cr> (the contents were "21" we'll change them to "00")
0C7B 38 .<cr> (enter a period to tell ddt we're through setting bytes here)
-s0c83<cr> (now we're going to set bytes beginning at "0c83")
0C83 18 00<cr> (replace the 18 with 00)
0C84 F3 00<cr> (replace the F3 with 00)
0C85 CD .<cr> (end the set)
-ctrl-C (get out of ddt)

A>sysgen<cr> (it will ask for you source drive, answer <cr> only)
                (it will ask for destination drive, answer A<cr>)
                (then answer <cr> alone to exit system)
```

Probably the best way to start would be to try out a few of the programs on those other systems. I happen to like the Apple program that has ships approaching the star base. Each ship has a word on it and the length of the word and the difficulty of its letters are determined by your level of expertise. If a ship reaches your starbase, you lose. A ship disappears if you enter its word correctly but another ship immediately starts from the left edge of the screen to take its place.

The speed at which the ships move across the screen should be adjustable. The letters that are being typed should show up on the screen (reduces the temptation to look at the keyboard). The backspace key should delete characters and the user must hit the spacebar to end a word.

There are a number of differing views about the order in which people should learn the characters. One study indicates that people should learn all the letters under the index fingers first. Another indicates that they should learn words as soon as possible. So combining the two you would begin with "frtgby" with the left hand and "juyhnm" with the right hand.

That doesn't give you too many words, but once you add the third fingers "edc" and "ik," you have many words to work with, including word endings like "ing" and "ed."

Software Technical Support

If you have questions about any of the Kaypro software (particularly SBASIC), try calling their software technical support group. The direct dial number is 619-481-3920. No guarantees, but they try.

ZCPR Fix

We've received some calls from people who have ZCPR (disk K9) and have found two problems. First, they can't use the numeric keypad and second, when they hit cntl-C (when inside a text editor), they warm-boot out of the editor. (We've fixed the problem on the current disks.)

If you want to fix these problems, make up a disk with ZCPR in the system tracks (follow the instructions with disk K9 if you don't already have ZCPR in

your system), then add DDT.COM and SYSGEN.COM from your original Kaypro system disk. Put this disk in drive A:. (See Figure 1 for the procedure.)

Now hit the reset button on the back of your Kaypro and after the reboot, you should have your keypad back.

Null Program

An empty file can be a lifesaver if you accidentally exited a program before saving the data. What you really want to do is be back in the program without writing over your work. With some programs, re-entering simply resets the data pointers so you don't save your data but it is worth a try. (See C'ing Clearly in this issue for another possible solution if this doesn't work.)

Anyway, if you find yourself back in the operating system when you'd rather be in the program, try this: (assuming you are on drive A:)

```
A>SAVE 0 REPEAT.COMcr>
A>REPEATcr>
```

What you are doing is creating an empty file and then telling CP/M to run that file. Of course, when CPM loads REPEAT, it loads nothing, then it jumps to memory location 100H where it assumes the code for REPEAT begins. Well, of course, the code for your previous program should still begin at 100H so you are off and running.

Shugart Floppy Drives

One of the types of drives that Kaypro particularly likes is the Shugart SA 455. Bill MacDonald has had some of these drives reading and writing for 4 days straight without a single disk error. He also mentioned that Panasonic is making these drives for Shugart.

"When we first tried the Shugart we found that it wasn't practical. You'd find out that it was on track 17 but the track 0 line was being driven true so the computer thought that the head was on track 0 and all kinds of strange things happened. The problem turned out to be a programming error in the drive's microprocessor," Bill said.

He noted that Shugart threw out all

(Kaypro Column continued next page)

COLOR GRAPHICS

BOARD — KayPro II & 4, and Big Board I. Assembled and tested color board has 16 colors, 32 sprites, and 16K of RAM. TMS 9918A color processor, 2 disks of software includes screen dump to disk and printer. Developed by Don Brittain. **\$299⁹⁵**

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(Kaypro Column continued)

the buggy drives and now the little Tandons look great.

However, just lately, someone called him offering him a bunch of Panasonic drives (about 2000 of them). Of course they turned out to be the buggy ones. So, be careful about special offers on Panasonic and Shugart drives. If they are the buggy ones, they will work just fine on systems that ignore the track 0 line but they'll do strange things on a Kaypro.

Bill noted that the quality of mini floppy drives has been improving substantially and that the highest quality drives have been Japanese imports (sounds familiar doesn't it).

Kaypro Publications

The original Kaypro users group magazine is \$12 per year from Kaypro Users' Group, Box 100, Malverne, NY 11565.

People's Computer has started its own national Kaypro users group and if you send them \$8.00, they'll send you their newsletter for a year. You can reach them at Peoples Computer, PO Box 28360, Queens NY, 11428.

NWKug (Northwest Kaypro Users

Group) has really done a good job putting together a newsletter for beginning users. And, they've been publishing as long as the Malverne based newsletter. Send \$10 for a year's subscription to NWKUG, PO Box 11, Portland, Or 97201.

The Spokane MicroComputers Users Group (SMUG) is aimed at CP/M users in general, but they have a very active Kaypro contingent. It's an interesting newsletter for \$12 per year. Contact them at PO Box 1753, Spokane, WA 99210.

"BASIC-K Magazine" is just a disk with a few Microsoft BASIC programs on it. They say you can use the programs as examples when you are doing your own MBASIC programming. However, after one look at the software, it was obvious to me that the programmer didn't want anyone figuring out what he was doing. The programs didn't do anything memorable either. The price is high (\$95 per year). You can contact them at 119 S 10th, Duncan, OK 73533.

And, of course, there is Profiles, the corporate rag from Kaypro. You are supposed to get a free year's subscription when you return your warranty card. This is a very nice looking magazine that

does justice to the system. However, they've had trouble with their mailing list. If you aren't getting it, write to them at PO Box N, Del Mar, CA 92014. (Don't call; writing seems to work better.)

Drives for the PRO-8

I just found out that you can get the TEAC model 55F quad density half-height drives for only \$215 each from National Diskon Corp. Their phone number is 415-490-7150. The TEACs draw about half the power of the Tandons and, like the CDC drives, they are supposed to be much better than Tandons.

I haven't ordered anything from Diskon yet so I can't endorse them, but at this price they might be worth a try. Plus, we are already working on a 4 drive version of the PRO-8 monitor.

Computer Components Unlimited has CDC quad density drives for \$219 each (at least they had about 100 left the last time I talked to them). I ordered a couple from them and they plugged right in. (Short the drive number you want and the M on the shunt.) head load relays so the heads aren't constantly riding on the disk. You can contact them at 1-800-847-1718. ■ ■ ■