of the things that's very important. We want to continue our letter computers and our number computers. I don't know if we can support a third family. I wouldn't mind trying, but that's a marketing problem. To the extent you make it transport, marketing won't care. Those are my choices.

Q: Will the CRAY-3 be equipped with an I/O subsystem like the X and the Y?

A: No, a CRAY-3 has the same I/O structure, namely a single foreground processor. The bandwidth of the I/O channels is higher, but basically structure is the same. We can surely put front end systems on it and an I/O system from a Y-MP or an X-MP, those are all candidates. Again, that's marketing strategy and customer want. We are attempting in the CRAY-3 to interface directly to all existing peripheral equipment with the same electrical interfaces. In other words, we're making all of the gallium arsenide to silicon interfaces in the base of the tank. As we leave the tank we'll plug in exactly the same cable that we're using now for disk files, for low speed and high speed channels, etc., to cause a minimum disruption in system integration. I could say we're stuck with the CRAY-2 I/O, but I wouldn't know how to do it better right now. I think it's in some ways better than an I/O subsystem. It's cleaner from a hardware standpoint.

Q: Do you see any hope of the disks speeding up comparable to the speed of the CRAY-3?

A: Comparable to a CRAY-3, I don't know how to judge that. What you may not know, but you should know, is early this year I thought something had to be done with the disk files. We were building pretty much the same kind of stand alone disk boxes, the DD-40 being somewhat of an exception. I thought we ought to take mass-produced drives and put large numbers together. We're doing that on the CRAY-3 program. We're making an 18 spindle box which has higher capacity, higher band width, lower cost, and most importantly, a redundant spindle which is running on-line. When you have a failure due to either a flaw or a spindle, the controller itself will automatically do the striking correction. The processor doesn't have to intervene until there's a double failure. I think this is our first effort at doing that and I'm hoping this is going to be quite successful. I believe the cost per bit will be significantly better and the floor space will be down because these are small drives. Now we're using 8 inch, we're going to go to 6 inch, so