My Sumitomo Bank Experiences
Part 2 of 4

By Jim Taylor

My second trip to Japan was in August of 1979. The product at that time was the Criterion, and Sumitomo Bank was upgrading their systems from 8570's to 8580's. At the same time we had some issues with the memory subsystems. The test bed in the factory was supposed to test all 8 array boards within one memory subsystem. However, the test bed had an interface card failure and it was unknowingly only testing the first board in the module. These boards were part of the upgrade kits to be used in NCR Japan, therefore they shipped out as kits instead of going into a system where they would have been tested and discovered as being bad. Therefore 7 of 8 boards got shipped as totally untested. Needless to say that NCR-Japan was very unhappy with the quality level they experienced. The good news is that NCR-Japan would frequently test critical parts before they delivered them to the customer, but Sumitomo Bank still ended up with some of these untested boards. This was the main problem dealt with on this trip, but there was another problem that we had just diagnosed and fixed in RB. The change wasn't even released yet. This was a timing problem on the Memory Interface board. As a little background, our Engineering Director always pushed us to run the systems as fast as the design could possibly support. Because of this we had to make the memory cycles asynchronous to the Internal Transfer Bus (ITB). This provided us with slightly more memory bandwidth, but it gave us fits at the front end of the memory cycles because we could not count on having signals stable during the clock periods. In the worst case a latch could end up with both sides active, which is logically impossible. This was called a

"Meta-stable state". We did end up finding ways to fix each timing problem that arose, but it would have been much easier to synchronize the memory cycles to the ITB.

Back to the trip – My first action when I arrived in Tokyo was to meet with the NCR-Japan representatives.   However, they had their own meeting in Japanese.   Although I do not understand the language, I could still pick out the computer terms they discussed. Finally I asked them what they were discussing.   Their approach was from a Marketing perspective which they then explained to me.   At this point I must digress.   I am an American Engineer, and we are quite used to addressing and fixing problems. We don't like that we have them, but we know it is inevitable that a product will not be perfect. In other words we don't have the concept of "losing face".   The discussion taking place was an attempt to generate a response to the customer in a manner that no one would "lose face".   I asked them what their thinking was. They said they were thinking of something like the memory chips being exposed to more radiation than they could accommodate due to the high altitude of the plane flight. Earlier memory devices did have a similar problem, but it had been resolved at the package level.   This approach disturbed me for two reasons: I could not identify a positive corrective action; and I had a solid answer and fix for the actual problem. My input at that time was that I was there to represent Engineering, and if they were going to tell the customer anything other than the actual technical details then I was going to return to the US. I went over the details and they considered my proposal. They went to the Tokyo office of Sumitomo Bank and gave the presentation as I suggested. I asked how it went, and they said it went surprisingly well but the Tokyo representative of Sumitomo Bank was easy compared to what they would face when they presented to the Director in Osaka. So next we traveled to Osaka. I did not attend the presentation in Tokyo, but I did attend the one in Osaka. The Director (Harada-San) was not in the

meeting, but his technical expert was. The tables were in the form of an inverted U with a large number of attendees from the bank. Again I could not understand the language, but I could read the body language and understand the computer terms. The result of the meeting was very positive, with the Bank system expert saying that he appreciated the analysis provided to him, but he was quite surprised that we would present our mistake to them. It went well enough that Harada-San invited us to his office for further discussion. It was just himself and three of us from NCR. Since all of their discussion was in Japanese, I would explain the technical details for translation to the bank representative. I gave as detailed an answer as I could to allow adequate translation of the information to the bank manager. I did not worry about how I worded my input as I assumed the manager did not speak English. I hope I didn't say anything wrong as I later learned that his English was excellent. I explained both the array board problem, and I diagrammed the timing problem we had just discovered and designed a fix for. It must have gone over OK, as everyone seemed to go away happy.

I mentioned in part 1 about the bullet train trip and that it would have some importance in part 2. When I first met with the NCR-Japan representatives on the second trip, they wanted to immediately send me to Osaka.   I reminded them of how difficult my previous trip was, and that this time I had a new Japanese camera and I was looking forward to taking some nice pictures. I think I must have over killed my input. The first night I was treated to a night on the Ginza, and then every time I went somewhere for the rest of the trip I was assigned an escort. Everywhere we went I got the declarative "You take a picture?" I would have liked to be by myself a few times, but I had made such a point of my desire to take pictures that I couldn't possibly turn down the escorts provided. All in all it was a very successful trip for me. The only downside was that the weather wasn't conducive to even seeing Mt. Fuji from the Bullet Train, let alone taking any good pictures of it.

The next story (part 3) will relate to significant quality problems on the 9800 series (particularly the 9800XL, also known as the 9800-2).