

The Story of the COBOL Tombstone

The following is a transcript of COBOL's 25th Anniversary Celebration at The Computer Museum on May 16, 1985.

John L. Jones, Chairman of the CODASYL Committee: The fact is that no one has ever admitted any involvement in the Tombstone. Furthermore, no one has ever explained the meaning, intent, and thought behind the Tombstone.

Let me explain that COBOL and the CODASYL Committee are alive and well and have never had to make use of this tombstone. Both are strictly voluntary committees; in fact all of the work is done by volunteers and always has been done that way. We work on actual language development, refinement and clarification.

One of the key concepts of COBOL was Flowmatic, an idea that was developed by Commodore Grace Hopper. Flowmatic had one other derivative from an Air Force Project, the Air Material Command Compiler, "AIMACO," that was, as far as I'm aware, the first effort to take one language and apply it to efforts on two very different machines, the IBM 705 and the UNIVAC 1105. The compiler ran on the UNIVAC 1 and developed programs for the binary 1105 and the decimal 705. That was another inspiration to begin COBOL.

In 1953-54, most people wanted to program in machine language. The idea of compilers, like the first idea of power steering in automobiles, was intensely resisted: you lost the "feel" of the machine just as you might lose the "feel" of the road. I worked quite a bit with Grace at that time, talking about a compiler "AO" that she had written. In my 1954 Master's thesis I quoted her about using networks of small computers to perform functions that at that time were limited to big computers. Then, this quote about what we now call "distributed processing and micros" was used in the IBM anti-trust case around 1980.

Grace Hopper: When I started, I just went ahead with the idea. I have later learned that it is much easier to apologize than to get permission. In the case of Flowmatic, we discovered that a lot of people hated symbols, even though the mathematicians and engineers loved them. These people used words. We proposed that we should write programs in English statements providing a compiler that would translate to machine

code. I was told that this couldn't happen because computers don't understand words. I said that they didn't have to; they just had to compare bit patterns. "Add" has just as many bit patterns as a plus sign does. But I was getting nowhere. So we acted on the motto: Just go ahead and do it. The lesson that we learned from COBOL is that you must go ahead and do it and make it work, and then get out and sell it.

Donald Nelson, Chairman of the COBOL Committee: The size of specifications of COBOL has grown from a stack of pages three-quarters of an inch high to a stack four inches in thickness. About 60 percent of the programs that exist are written in COBOL, and on mainframes its about 70 percent. The language has evolved over the years to meet many of the criticisms about it. Suggestions and revisions can be made by any group and are then reviewed by the committee.

Jack Jones: Howard Bromberg was very involved in COBOL from the beginning. The first demonstration that Grace's COBOL compiler worked on different machines was done on a UNIVAC 1 and then Howard's on an RCA 501.

We are missing Charlie Phillips, who recognized the idea of COBOL when he was in the Defense Department, and put his energy behind it to make it happen. In 1959, his efforts made COBOL come to life. His untimely recent death was very unfortunate and we sincerely miss him on this occasion that he was looking forward to.

Howard Bromberg: I thought a long time about the Tombstone and whether tonight was the appropriate forum to come clean. Let me set the background.

During the formative days, the COBOL activities represented the primary computer manufacturers of the time. A handful—8 manufacturers—and a double handful of computer users were represented. At that time we were attempting to create a specification for a language that would be understandable by users, translatable by machines and easy to learn. We were also concerned that the language would be acceptable on all computers, even though there weren't that many back then.

Having worked with Grace Hopper, I subsequently worked for RCA carrying her banner and using the techniques that she taught me. I was the corporate representative to the COBOL committee and the manager of the Automatic Pro-

gramming Group. This group at RCA was creating an embodiment of the COBOL language specifications in our hardware. We kept about one week behind the COBOL language committee. When we moved a week ahead of the committee, I got nervous. RCA wanted to commercialize COBOL as a product, to have a marketing edge. The other manufacturers were seeking the same goal. As a result we sometimes became testy with one another, and with the organization running the activity. The Committee would meet every six weeks, with each member having very specific technical assignments. The meetings would last three to four days and then we would return to our companies to scheme and work.

One Friday afternoon about 3 o'clock I had an opportunity to discuss my frustration with the chairman of the CODASYL committee, Charlie Phillips. He was the coordinator of everything, good and bad. As such, he was the recipient of a lot of verbal abuse and, later on, a lot of praise. I discussed with Charlie the speed of specification of COBOL. After I described, in colorful language, how I felt and the problems that this was causing me and my company, suggesting that he do something "with it," I hung up and left work in a fit of pique.

As I drove down the freeway, I saw, to my surprise, a monument company next to an exit. Easy off. Easy on. So I did the easy off.

I went in and said, "I'd like to buy a monument."

The salesman said, "You've come to the right place. What did you have in mind?"

"A serious monument that would show my appropriate respect. Since I have to send it, I would like it to be compact." He stepped back and let me wander around. I chose that tombstone because I liked the sacrificed lamb effect.

Mind you, when you buy a monument, it is blank. So the clerk asked, "And what name do you want inscribed?"

I said, "I'll write it for you." I wrote the name down: COBOL.

"What kind of name is that?"

"Well it's a Polish name. We shortened it and got rid of a lot of unnecessary notation."

"Fine. Give me the money and come back in two weeks."

In two weeks I returned, still in a fit



Howard Bromberg and Commodore Grace Hopper share a gleeful moment by the infamous COBOL Tombstone. (Photo: Lilian Kemp)

of pique, mind you. To my surprise, he had gold leafed the name. Today is the first day that I have seen it in twenty-five years and I am still very pleased. Back then, I took it home, not to my office, which is probably the smartest thing that I've ever done. My neighbors helped me build a crate for it out on the sidewalk because they wanted to get that thing out of the neighborhood. I put my name and home address on it and sent it to Charlie Phillips at the Pentagon and felt better.

Grace wanted me to remind you that I sent it collect.

Now, I have denied this story for years. People would call up and ask me, "Hey, did you send that tombstone?" And I would always respond, "What tombstone?" It appeared in a drawing on the cover of the *ACM Communications*. More phone calls. I would say, "I don't know anything about it." Grace in her travels used to tell the anecdote. And even more phone calls. But still denial, until tonight.

Back to that time. Two weeks thereafter I had still not heard from Charlie. The fit of pique returned. And I said, "He's doing this to me on purpose." So I called him. We chatted about the weather and other nice things. And I thought, he's got me. Finally I said, "By the way, did you receive something in the mail?"

Charlie Phillips said, "I did indeed. I wonder what you meant by that?"

I said, "Thank you, Charlie." And I hung up.

I was then called to the Vice Presidential suite of RCA where I worked. The suite was interesting because all of the

doors were eight feet tall and the ceilings of the room were twelve feet. I always thought that it was to make the vice presidents feel important and it made me feel very unimportant. After waiting the requisite amount of time, I was ushered into the boss's office. He said, "People at the headquarters in Rockefeller Center have heard that you sent a tombstone to somebody at the Department of Defense. They think this may hamper our ability to bid successfully on defense contracts. Did you do that?"

I said, "Yes."

He said, "Would you like to explain to me why?"

How are you going to explain this to a marketing vice president? So I said, "No."

He said, "Thank you." I went back to my office and sort of organized things, just in case. To their great credit I never heard a word about it again. That also helped my denial to this time. It's here. I did it and I'm glad.

I wondered on the flight out here, whether it really means anything—this hunk of marble. Why are we all here? I guess that it means different things to different people. From my standpoint it shows me the humor that we are able to associate with the work that we were and are doing. . . . the ability to make fun of oneself personally and professionally makes us noble.

COBOL was so different. There were no individuals; they were sublimated to the group. The accomplishment was incredible because we flew in the face of tradition not knowing any better. COBOL "created" a standard.

Standards are usually not created; they are recognized and they evolve. In the next twenty-five years I believe that we will continue to profit from the lesson we learned from COBOL: that a language has to help people talk to people. People do not talk to machines. This is the whole assumption on which COBOL has been built.



Participants in COBOL's 25th Anniversary Celebration at The Computer Museum on May 16, 1985, surround the COBOL Tombstone. Left to right: Ron Hamm, current CODASYL Committee Chairman John L. Jones, Dr. Jan Prokop, Oliver Smoot, CODASYL Secretary Thomas Rice, current COBOL Committee Chairman Donald Nelson, Commodore Grace M. Hopper, Michael O'Connell and Howard Bromberg. Also present were Connie Phillips and Nan Wilson, the daughters of Charles A. Phillips. (Photo: Lilian Kemp)