WCMG Computer Measurement Group

ABOUT CMG   MEMBERSHIP   EVENTS AND PROGRAMS   PARTNERS   REGIONS   PUBLICATIONS   BLOG   CAREERS
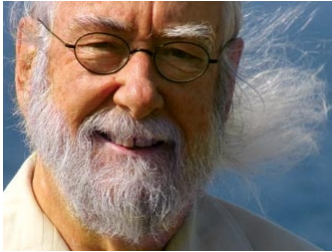
MeasureIT – Issue 7.07 – Barry Merrill: A Class Act

Barry Merrill: A Class Act

July, 2009
by Margaret Greenberg

My introduction to Dr. H.W. Barry Merrill was in an MXG class preceding CMG'05. His three day class was condensed into two and a half days from Saturday morning until Monday noon. Already, travel budgets were getting scarce. Dr. Merrill doubled up and had the class at the conference hotel with breakfast and lunch *paid for by* Merrill Consultants. Great class! Attendees were a mix of MXG customers and CMG registrants interested in MXG. Some of us wrote letters to the Conference Chair in support of continuing the class (and hoping other vendors would follow suit) as a regular feature pre-CMG. We thought that Mondays (and the weekend) were a fine opportunity to use CMG as a chance for vendor education. It's no longer being offered anywhere, but the idly curious may check out the overheads on the Merrill Consultant's website. Dr. Merrill knows that the information is not current and asks that you provide some feedback. Maybe you can coax him to do the class again this December.

He was reared in Tennessee. At age 11, he saw a ham radio display at the annual hobby show. And that got him started with radios. He received his Novice license at the age of 13. "Ham radio of 1954 was the computer geekdom of today. I'm still VERY active in Ham Radio, especially contesting, wherein we operate for 48 hours to talk to as many stations in as many places, with 1,2,3 point for same country, different country, different continent, and each country on each band counting as a "multiplier." The winner might contact over 10,000 stations; if you do really well, you get a piece of paper that says you did really well! That's part of the reason for our vacation home in Ireland, to operate from a "needed multiplier" country where everyone wants to contact YOU!"

"My high school grades were okay-- graduated 80 of 240, because I never did homework, but it was when the very popular mathematics teacher, Joe Elliot, singled me out for submitting the only proof in his 25 years of grading an optional, bonus Solid Geometry problem saying that of the three possible proofs, I had chosen the most complex but most complete, that I began to see myself as college-capable!"

Dr. Merrill chose EE (electrical engineering) because of his interests in math and ham radio, but WHY EE at NOTRE DAME??? Why not start at Purdue, a more obvious choice?

"Not when your father had converted to Catholicism just before his marriage, and was a big Notre Dame Fan. I had no expectation of a big school. Figured I'd end up at East Tennessee, and initially had applied only to Manhattan and Villanova. When I went to fill out the SAT form, Mom suggested that I add Notre Dame, because you got three for free.

In December, we went to NYC and met with the Admissions Director, who shook his head (me thinking he's say No), only to hear him say, "I don't see any problem: with your SAT scores, you can go anywhere you want to!"

 In February the thick letter of acceptance came from Villanova, but I still didn't contemplate Notre Dame. In March, I came home one afternoon at 3 p.m. Dad was there (never before 6 usually). On the kitchen table was the thick letter of acceptance from Notre Dame. Dad said "We know you had not seriously thought about ND. Would it help your decision to see the campus", and when I replied "yes, sure", he said "Great, we'll leave at 6 a.m. tomorrow!" The next afternoon, one look at the ivy walls of the Dome sealed the deal.

In my Sophomore year, my next-door roommate was Carl Yastrzemski, whom I short-sheeted and lived to tell. It started the night before. I was at dinner with Carl, Nick Buoniconti (across the hall) and Dick Musial (Stan's son), all three jocks, and they were discussing practical jokes that had been pulled on them. Carl remarked that nobody had ever had the balls to pull a joke on him.

And jocks they were: Carl became a major league player with the Boston Red Sox *from 1961 - 1983 and a Baseball Hall of Famer.* Nick Buoniconti

So I did.   I was so skinny (140 pounds), that his retribution was only to pour a Nehi Grape drink down my back.

As a Notre Dame sophomore[i] in EE in September, 1959, my first EE lab experiment was to calculate the determinant of a 4x4 matrix. As the ancient Lab

joined the Boston Patriots in 1962 and became a Pro Football Hall of Famer. Dick Musial never played pro baseball.

Instructor finished his directions by stating, "I have to read this. The IBM corporation has donated a Model IBM 610 dig-it-al computer, located in room 240, and students can sign up for hour-long blocks." Putting down the sheet of paper, he said "those digital things will never make it, but next year, as juniors, you can learn to use the Bendix G15 Analog Computer - that's how we engineers solve real problems!"

I went to room 240, looked through the peep hole and saw a large grey box, a table with typewriter, and what I assumed to be a senior. I opened the door to enter. As the door unhinged, so did the student, who shouted "Shut that door!" as he strode across the room to the door, flailing his arms. After he stepped out into the hall he continued shouting, "Didn't you read the damn sign?" He discovered his sign had fallen face down on the floor.

Calming down, he informed me that you must get the operator's attention so he could put the machine in "QUIESCE/STOP" (which took 5-10 seconds), and only

then was it safe to shuffle in -- slowly. The vacuum tube machine was so heat sensitive that the air currents would cause computation to fail, requiring a program restart. He pointed me to the IBM manuals and I began at page 1. Several hours later, I learned to punch paper tapes and print them on the IBM Selectric. Then I could begin to write the program to calculate the determinant on my new toy.

By Saturday, I had punched my program, printed it and was ready to run my first computer program. As I watched the paper tape whir through the reader, the addresses were flickering on the nixie tubes: I crossed my arms and thought, "Wow! It is 1959. I am a sophomore in college and I am running a real program on a digital computer." The paper tape came to its end, the printer came alive and I received my first computer output of four characters: **WOW!**

It took until Sunday to locate the senior, who found that I had sort of missed the difference between "program" and "data". The first punch in the tape was a control character that put the 610 in a scan mode, and in the fifth-from-end position there was a control character to print the tape as machine instructions. What had been printed were the code letters for the last four program instructions.

W　= Carriage Return

O　= Line Feed

W　= Carriage Return

!　 = Print Accumulator!

(Two carriage returns were always used to ensure that the very slow print head was all the way left before printing started on the next line.) I did finally get the determinant computed and (50 years ago now) submitted the first EE lab problem that used a digital computer at Notre Dame, but that was the end of my first computing experience.

After completing four semesters, I withdrew in Fall 1960, returned in Spring 1961, withdrew in Fall 1961, returned in Spring 1962, and finally dropped out of Notre   Dame after that semester (in which I had almost made Dean's List, with a 4.44 (4.5 out of 6 required), and which brought my overall average, finally, above the 2.00 minimum to get off academic probation. With the draft looming in summer 1961, I joined the Navy Reserve in Kingsport. Had I waited to be drafted, the active duty requirement would have been 4 years instead of 2. I knew I could NEVER carry a weapon, wanted to ride the WAVES and see the world, and thought the Navy uniform was more attractive to women. So in May of that last semester at ND, I had decided to go to active duty that summer and serve my required 2 years; I was supposed to attend weekly Naval Reserve meetings, but I skipped many that spring. When I arrived at the Navy Office in May, the Executive Officer was just about to sign an order to have the police pick me up and take me to 45 days in the brig for missing meetings. Fortunately, he was very happy to avoid that step. I reported to active duty in early June in Chicago; then spent two weeks at the US Naval Station, Anacostia, VA, across from Washington before being assigned to the USS Cadmus AR-14[ii] in June, 1962-just in time to participate in the embargo of Cuba. I went on to serve on the Tusk, a diesel submarine.

TUSK went to Puerto Rico for a six-week exercise, but I was able to arrange to live ashore and cover the ship's radio guard. While much of my time in San Juan was ashore, when TUSK was back in port, I would stay onboard (better meals!). One Sunday evening, someone bought watermelons and we were eating them on our after deck. We were the second boat outboard, with USS SAILFISH inboard at the pier, and with USS GRAMPUS outboard us. We noticed that the GRAMPUS topside watch stander never came aft to check that half. So we started throwing our watermelon rinds inside the two "overboard engine exhaust ports", which are big 24 inch holes six feet deep, used when running diesels on the surface. We were very accurate and loaded both ports with mucho rinds. As dusk came, we were never observed by GRAMPUS topside watch. Unbeknownst to us at the time, at 2 a.m. TUSK was hand-moved to be outboard of GRAMPUS, because we were due to get underway first the next morning. At 8 a.m., as we backed out of the slip, we saw the full crew of USS SAILFISH mustering in dress uniforms on their after deck, obviously for a Change of Command ceremony. Just as they were fully formed up, the GRAMPUS, now alongside SAILFISH, started her port engines for a battery charge, and blew watermelon rinds all over those dress white uniforms of the SAILFISH crew. And we never got blamed; the Admiral (who was also now red-splashed) assumed it had been the crew of SAILFISH that had done the dirty deed!"

In 1964 I won a Navy scholarship[iii] to Purdue in EE. At Purdue, I took a one-hour Fortran II course, using a 7090/7094, and was hooked. I worked on Linear

Programs to model power grids for PEREC, got a job in the Tab department wiring plug boards for sorters, collators, and printers, implemented the Fast Fourier Transform from the original Cooley-Tukey paper, worked for LARS, the Laboratory for Agricultural Remote Sensing (pattern recognition of crops from spectral data which led to the Earth Resource Technology Satellite), built the ground-truth data for LARS agronomists, and set fire to our 360/44 Serial #2 (twice!) with a tight loop in the floating point divide unit that lacked a heat sink. I showed one PhD candidate in Psychology how pattern recognition and vector distance could be used to group petroleum engineers that found oil from those that did not, and wrote Fortran programs to reorder fields in data files so they could be analyzed by the primary statistical package of 1967, the BIOMED/BIMD subroutines for another PhD Candidate in Industrial Psychology.

I recall debugging on the IBM 360/44 at LARS, sitting at the console and pushing the single-step button, so your program would execute the next instruction and stop, and you could see (by learning how to read the 16 light bulbs, one for each address bit) where your program was incorrectly branching.

The 7094 at Purdue was entirely visible behind glass windows, across from the keypunch and work room, and its console had a matrix of lights,   8-high by maybe 60-wide. I was one of the few users who had data on tape and that ran in a special class, with a message in your job telling the operator what tape to mount. One evening at the end of the semester, when the keypunch room was filled with scores of students, we submitted a job that told the operator "Please dim the lights and mount tape 1234 because it is an optical tape". The dumbfounded operator had never seen this before, but complied. As soon as those lights went out, all the students looked across the hall to see what was happening, and saw the results of the program: It turned that set of console lights into a billboard with moving text that scrolled from right to left with text slanted 45 degrees to the left, paused, rotated the text to vertical, paused, rotated to 45-degrees to the right, and scrolled off the console lights, the text reading "Fire Fat Jack", for the then-unpopular football coach. (The next week, friends who used the 7094 to program the instructions for each of the end-zone card-section displays were hacked and the same message, with his profile, was displayed during the game for about 10 seconds before the card section manger realized what they were displaying!!)

I finished my BSEE and MSEE in August 1967, but the Navy needed nuclear submarine drivers, not programmers, so again I set computing aside for a second masters in Nuclear Propulsion and sightseeing in the Barents Sea until shore duty when I ran the airline to Guantanamo Bay Cuba, where I taught calculus and ran the overseas extension of Old Dominion University.

In 1972, I joined State Farm. After Dave Vitek had attended the 1971BBUG (Boole and Babbage User Group) meeting, Dave convinced management that it made sense for State Farm to stop relying on the IBM salesman to do capacity planning, and a 10-person unit was established for a feasibility study, the "Measurement Unit". Previously, capacity planning was done by your IBM Salesman, who came to your VP and said "Sign Here. You need a bigger box". Four tool groups were to be evaluated: Accounting Packages, Software Monitors, Hardware Monitors, and Simulation. Some SMF fields were being extracted with a PL/1 program, and Barry had graphed the data with an old Plotting subroutine he had developed in LARS days, when I found this brief announcement in Datamation:

"The Institute of Statistics at North Carolina State University announces the availability of the Statistical Analysis System, a package of 100,000 lines, one third each in Fortran, PL/1

and Assembler, that does printing, analysis and plotting of data."

I wrote for further information and liked what I saw enough to convince State Farm to invest $100 for the product (including SOURCE CODE!) and became SAS first paying customer. At SHARE 43 (February 1974) in a Computer Measurement and Evaluation Project closed session, the use of SAS to process SMF data was first presented, and an open session scheduled by CME for the August meeting. IBM went first, discussing their new product, SGP, the Statistics Gathering Package, an FDP that selected a few fields from a few SMF records. Following him, I showed many example SAS reports of State Farm's analysis, often overprinted with the "three lines of SAS code" that generated it. At the end of the session, one attendee stood up and asked the author of IBM's SGP, "Now that you have seen SAS, is there any reason why you would still recommend your SGP product?" SAS was IN and SGP was OUT.

---He completed his PhD course work from the University of Illinois (at Champaign). State Farm was showing no inclination to move to MVS anytime soon; therefore, Sun Oil Company in Dallas became his new employer. He was able to demonstrate that the analysis of SMF with SAS was valid for VS2 as well.

In 1979 he wrote the dissertation, "A Comprehensive Approach to the Measurement of Large Scale Computer Systems" and received a PhD in EE.

In 1980, he worked with SAS staff to produce documentation with examples that eventually became "Merrill's Guide to Computer Performance Evaluation using the SAS System", the blue book and tape of sample programs, but not supported software.

In **1982**, the Computer Measurement Group gave him its highest award, the A.A. **Michelson Award**, for all his efforts to provide analysis of CPE data.

In 1984 that first book was expanded into the red book, "Merrill's Expanded Guide to CPE", the company, Merrill Consultants, was created by his wife Judith who runs the business so he can writes and support the software. And the MXG Software product was GA in August at SHARE.

IBM recently interviewed him for an article titled A Serendipitous Life... which is modeled on the story about the three princes of Serendip (Sri Lanka). The king decided to send them out to get real world experience. One of their early encounters is with a driver whose camel has gone missing. They ply him with questions such as is the lost camel blind in one eye, missing a tooth and lame. The camel driver was impressed by the accurate description and hurried off to find the camel. Sometime later, he returns empty handed and the princes try to calm him down by saying that the camel carried a load of butter on one side and honey on the other, and was ridden by a pregnant woman. He's convinced that they stole the camel and has them arrested. Only after the missing camel is found, they are released and provide analysis of how they can describe a camel that they have never seen. This much like what Barry Merrill did as a radioman on the USS Gato. He was following something he couldn't see and looking at "tracks" left behind. One might guess that his submarine experience prepared him for analysis of SMF/RMF data using SAS. Additionally, he became a great listener. The following quote sums up the distinction: "Serendipity is jumping into a haystack to search for a needle, and coming up with the farmer's daughter." Dr. Merrill was prepared to analyze and reach correct conclusions. However, his path from young ham radio operator to President and Programmer of MXG has been serendipitous for sure with the common link being communications (radio and EE). Even misadventures have worked to his benefit.

The hopeless romantic: "My later involvement in the Women's Movement (Secretary of the Dallas National Organization for Women in the 70's) was definitely influenced by Katherine Hepburn in African Queen, seeing a strong, smart woman." Luckily for him, he found a strong, smart woman to design and run his company. He signs off his web page **with "*Merrily yours, two children of the 60's, giving away the keys to the kingdom*"** and their names.

"November 4, 1980, I went to vote in the Presidential Election (Carter, Reagan, Anderson); we knew there would be 30 - 45 minute lines because of the old voting machines. I went at 2 p.m. with an IBM System's Journal to read, wearing a blue denim suit and with a full afro (269 pin curlers, but 3 weeks old so it needed a pick-up!). At 2:15, I happened to notice this woman lean over to sign in. She almost caught me looking, but I turned away before she made eye-contact. I waited for what seemed an eternity to look to the back of the line to see where she would be, and she was looking back with a smile that seemed to never-end, a look so deep and beautiful and serious that it took my breath away (and caused me to look at the wall behind me to see if I had missed the mark). I waited for what seemed an eternity before looking. Again and again she returned this never-ending smile. Again, I broke off the look, to try to take stock of what was happening and waited longer. When I looked again I saw she was at the turn of the line that snaked thru the schoolroom chairs and decided to go back and

check this out, figuring that if I had really missed the mark, I would just leave the line and go away. I started back to meet her and this woman with a child spread her elbows to prevent me from going back in the line (I could have understood if I had been moving ahead of her). I remember gently pushing her aside and softly said, "Excuse me, but I am going back in line to meet the woman I'm going to spend the rest of my life with". When I got to Judy, the entire room went silent, and I saw no one but her. And my opening line was, "A smile that beautiful deserves to be acknowledged". We talked about who we were, where we had been, what music/drugs/food we had experienced, etc., but it was only when we were at the head of the line and ready to vote, did we realize that not only was the rest of the world silent to us, the entire room had been silent, listening to our entire conversation.

For the first several weeks, she only identified me to friends as "Mister Precinct 1138". A few weeks later, I called her to tell her that I had known her for as many seconds as was her phone number; her CEO heard the comment, and replied "Geek Love". It has now been 251,111 hours since we met in November, 1980.

We were engaged in April, and married by Reverend Donald Curtis, a former movie star from the 50's (seen in Spellbound, Meet Me in St. Louis, and as Moses' aide in The Ten Commandments, author of "Your Thoughts Can Change Your Life",) along with his wife and co-pastor Dorothy in June, 1981."

Since 1995 we've been visiting my many cousins in Ireland, who've attended our children's weddings and vice versa. In 2005 we were in Miltown Malbay, original home of my brother in law's parents, to enjoy the music at the Willie Clancy Traditional Music School. We found the incredible Cleedagh Cottage on the bluff on the Atlantic and decided to make it our vacation home. We also have a condo in Keystone, Colorado, where we used to provide a day's skiing and dinner for all attendees and their family on Saturday's after the Spring Rocky Mountain CMG Meeting."

There is a story about a grandmother relating all the interesting things that she did in her childhood: skating on a pond, riding her pony, picking berries. Her little granddaughter was sitting and listening and, when her grandma finished, she said, "I sure wish I'd gotten to know you sooner!" That's the same way I hope you feel after learning of Dr. Merrill's adventures. When you see him at CMG09, introduce yourself.

Remember, MXG Software is Raised in Texas,
Where Never Is Heard a Disparaging Word.
Please Be Peaceful in Your Communications.
Peace Be With You.

[i] Some bio information has been taken from his SUGI paper, **Data Mining the Original Data Warehouse: Twenty-Five Years and a Million Lines of SAS Later**

[ii] The USS Cadmus was a repair ship and has been sold to the Chinese (Taiwan) where it is known as the YU TAI repair ship (ex-US AMPHION-class). The Cadmus was in the Caribbean at the time Dr. Merrill was aboard.