EXPLORING THE WHITE OAK CAMPUS

I have a long unofficial association with White Oak. My father, Michael Hennessey, worked there from the early 1950s until the 1970s. When White Oak merged with Dahlgren. the Navy offered early retirement buyouts, and my dad gratefully accepted one. I believe he was a frequent participant at the monthly Alumni Association lunches. Other than my dad's stories, my earliest memories are from the 1964 Open House. I don't remember anything about the Open House, but I still have an aluminum key fob and some plastic letter opener souvenirs.

I have two other artifacts from the early days. First is a promotional cigarette lighter which says SUBROC, Goodyear Aircraft Corporation, and shows a submarine launching a missile. The other is part of the bathroom in my parents' home. I guess I had been doing chin-ups on the shower curtain rod enclosing the bathtub when it succumbed to my weight, the curved connecting piece broke, and I landed on the floor with a bang. My parents were too concerned for my well-being that evening, but I feared a future walloping. My dad took the broken piece to work the next day, and came home with a newly fabricated replacement. NOL saved me from that walloping!

One day my dad came home from work with a mysterious piece of wire. The wire was coiled up on one end, and straight on the other end. He straightened out the coiled end, and plunged it into a cup of hot coffee. Magically, the wire coiled itself back up. Then he coiled the straight end, and plunged it back into the coffee – it immediately straightened itself. This was my introduction to metals with "shape memory" – Nitinol.

I started learning computer programming back in 1966. My school had a teletype connected to a computer somewhere far away, and I learned the BASIC language. Subsequently, I delved into FORTRAN, using some surplus manuals that my mom brought home from her job at the National Institutes of Health. I learned the rudiments of the language, and eagerly wrote some simple programs on paper. Of course, I had no computer on which to actually run the programs.

One day, my dad collected one of my hand-written programs, and took it with him to work. One night about a week later, he came home with the "results" on those green-bar computer printouts. Not surprisingly, the "results" were error messages the computer had generated in response to missing semicolons or some such. Disappointed, but still eager, I made corrections, and my dad took my revised program back to work with him the next day. Another week went by before I got my results – more error messages. It took a few weeks of this "batch processing" before my program ran successfully. Apparently, my dad had convinced someone in the computer department to keypunch my program, and feed it into the Lab's IBM 7090 computer when it was idle. Back then, computer programs took hours or days to run, and there was very little "idle" time. That accounted for the long turnaround times.

OFFICIAL INVOLVEMENT

My official involvement with NOL started in the mid-1990's, when NOL was being dis-established and split up between Dahlgren, Indian Head and Carderock. Carderock wanted to communicate electronically with its new staff at White Oak. I was the computer network manager for Carderock, and I was given the assignment of connecting all the Carderock folks at White Oak to our computer network and thence to the Internet. I was given an E-size drawing of the White Oak campus and buildings. But I was given no money and no people for the job.

I met with Bernie deSavage, Janie Sutton, and various department heads. I outlined my mission, and the challenges I faced. First, I would bridge White Oak and Carderock with a leased telephone circuit, and absorb the cost in my budget (no objections). I would "steal" wire and equipment from Carderock, and use it to connect each Carderock-occupied building at White Oak to the network (no objections there, either). The problem was that I had no people to install the wire and equipment, and no money to hire them. So I would need White Oak personnel to do it. This caused some grumbling. At our next meeting, Bernie provided the solution. Each department would supply the labor to install wiring in their own buildings. I would be given two people to train in the art of network wiring, and they would train the departmental folks. An explosives technician and a polymer chemist, who apparently were unfunded at the time, were assigned to me as my trainers.

About this time, the great payroll fiasco happened. NAVSSES, an engineering group at the Philadelphia Naval Base, had recently been merged into Carderock. We needed a common time and attendance system, and Philadelphia insisted we use their "wonderful" electronic T&A software. It was slowly deployed throughout the Division. But there was a big snag when the Philly folks came to White Oak – White Oak was still using dial-up connections, and the software didn't handle dial-up. Philly quickly revamped their software, and installed a copy in each department at White Oak. When the cut-over day came, the software failed miserably, and every White Oak employee was charged 80 hours annual leave for the pay period. Welcome to the Carderock Division!

Amidst hard feelings from the payroll fiasco, I commenced my wiring project. My two "trainers" were enthusiastic and quick learners. Matt Brown, head of the Radiation Protection branch also became involved and provided much support throughout the project. I trained the trainers, and they trained the department folk, and slowly but surely, my "team" wired each office in each building containing Carderock folks.

The "can do" attitude really struck me, and after I learned some of the history of the Lab, I knew why. White Oak had done a lot of secret stuff over the years, and the nature of the work often precluded outside help. When someone got behind on their project, they had to turn to their co-workers for assistance. If you helped others, they would help you. So people took a timeout from their chemistry, physics, magnetics and energetics, and for a time, busied themselves snaking wires through the walls of their buildings.

Both Carderock and White Oak's campus-wide computer networks were carried on modified cable-TV systems, similar to the Internet service you get today from your favorite cable company, but the technology was much cruder and very problematic. Today, many people still find cable TV to be problematic, so perhaps things really haven't changed all that much.

I had to learn how and where the cable TV network traversed the campus and where it entered each building. It started in the top of building 3 and fanned out across the campus through underground steam tunnels, buried conduit, and was strung on telephone poles in many of the back areas. One example of the craftsmanship of a bygone era were the steam tunnels connecting the central heating plant with the admin buildings, building 90 and various other places – the walls of the concrete tunnels were covered with ceramic tile. Not only that, but directions (arrow "To Bldg 90") were made of tile and inlaid into the walls of the underground tunnels.

I did a lot of exploring using my E-size drawing of the campus. Besides the buildings I needed to explore, there were a number of interesting looking buildings that were not on my list. Some had been abandoned, and the front doors were locked. But when I walked around and tried

every door, I usually found one that was open. It was fun looking at the insides of the buildings and trying to guess what kind of work was formerly done there.

There were a lot of tunnels and underground passageways around the campus, and the cable TV network usually ran through them. Besides the main steam tunnels, there were some large underground walkways connecting buildings, like in the 400 area. And as you approached Building 30 in the tunnel from building 3, a there was a box on the wall which said "Drop matches and lighters here". I pulled a book of matches out of my pocket, and dutifully dropped them in the drop box. I probably was the first person in several decades to do so.

Wandering around the campus by car and by foot, I found many interesting things, like gun turrets sitting in the middle of the woods. I looked around, but I didn't find the rest of the ship.

Perhaps the most intriguing "building" was Building 387 - the centrifuge. A large circle, perhaps 100 feet in diameter, had been dug into the ground. A rotating "wing" was mounted on a large round central hub. The rear axles from a dozen cars were mounted sideways so the tires would spin the central hub. Metal stands for the dozen automobile engines were mounted on the ground next to each rear axle assembly, but the engines were no longer there. I identified the rear axles as Oldsmobile (or perhaps Buick, I forget now). This must have been an interesting requisition.

There were remnants of two control mechanisms – one which controlled the throttles of all the engines, and one which was the "clutch". The clutch would engage all the tires on the central hub simultaneously, or pull them away from the hub. The controls were operated from a small underground building next to the centrifuge. Inside the control room was a periscope, and a mirror was mounted at the top of the periscope's tower. The controls of the periscope rotated the mirror on two axes so the operator could view the centrifuge in operation.

What a contraption! Can you imagine the roar of the engines as all twelve throttles were pulled wide open and the monster wing spun at some incredible speed? I can certainly understand why the control room was underground – I wouldn't have wanted to be near that thing!

I found two old timers who had been around when the centrifuge was built, but neither was willing to tell me what it had been used for. One did volunteer that the centrifuge had been run only a few times, as it tended to suck the surrounding trees into it. Today, in 2010, the centrifuge is still visible on Internet maps – find the far end of Earle Road, and zoom in on the round thing.

Employees tend to stay in their immediate work area, and don't get around their places of employment much. My job as network manager required that I go everywhere. I spent a lot of time at White Oak, exploring the campus and the various buildings, inside, outside, and from beneath. Although I didn't actually work at NOL, I knew the campus better than most of the people who did.

David Hennessey
dave@toyhouse.org
May 2010