

# The Leaf

VOLUME XII ISSUE III

PROUD MEMORIES

Summer 2010

- **Events** \*  
\*NOL Lunch 2nd Mon  
@Golden Bull in Adelphi  
\*Holiday Luncheon @  
Argyle CC, Fri. 10Dec,  
2010 @ 1130  
\*WOLAA Night @  
Strathmore. Details TBD  
\*Dedication Proud  
Memory Garden, Spring  
2011

*11 September 2001.....GOD BLESS AMERICA!*

WOLAA Web Site: [www.wolaa.org](http://www.wolaa.org)

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## *Proud Memory Garden*

- The LEAF is published quarterly by the WOLAA, Inc. for its members.

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The picture above shows the area the Proud Memory Garden will be located. Notice the curved path going from the new FDA conference center to Bldg 1. The plaques will be located along the path, and will be positioned to tell the Legacy of the WOL. The stone seats next to the FDA building are from stone saved from the WOL buildings. The landscaping is essentially done; but more may be place near Bldg 1.

GSA is now contracted with Quatrefoil to do the plaques for the garden, the Bennett plaque, and the interactive display—40+ inch flatscreen—in the lobby of the conference center. The display will tell the story of the people and products of the WOL. The contractor has developed a set of tasks and milestone chart showing completion by Mid-April 2011...We had an initial meeting with GSA and the contractors on 27 May. We toured the garden and lobby so contractors could discuss the location of the display and plaques. We were very pleased with their ideas and interest in their tasks. GSA is hiring a “stone” expert to determine the best approach for installing a WOL fireplace in the lobby.

There had been discussion to have an R&D sculpture developed for the garden. This has been dropped and now GSA is discussing using prototype benches which were developed for elsewhere in the FDA courtyards to be placed in our garden along the pathway. There had also been discussion to use a Mk 6 mine display unit as the basis for a fountain; this is still under discussion. Finally, the Jim Proctor idea of large aerial pictures showing the NOL and now FDA campus being mounted on the wall of the conference center is still being considered. Hopefully the Bennett plaque and plaque describing his career will go next to the fireplace.

## News from WOLAA.

**Board Members.** At the May luncheon, Jim Proctor, Bill Ryan, and Marie McLean were elected to a new three year term. A WOLAA congratulations to each of them. The Board also filled one of two Board vacancies with George Hamlin. Our thanks to George for volunteering to serve on the WOLAA Board. He has been active in WOLAA and has helped prepare and edit text for the plaques.

**Dedication.** We had hoped to dedicate the Garden and Displays this Fall. But, it is clear from the contractor schedule that the dedication will be next Spring. The thought is the dedication will be late April or early May and would replace our Annual Luncheon. We will keep you informed on the contractor progress by the LEAF, website and facebook.

**Holiday Luncheon.** Dee has arranged with Argyle Country Club to have our Holiday Luncheon. It will be on Friday, 10 December 2010 at 1130. Hopefully, Santa will visit as we enjoy a great lunch with the world famous WOLAA cookies as a special treat.

**May Annual Luncheon.** Our Annual Luncheon was held on Friday, 14 May 2010 at Argyle Country Club. We had 101 attend the luncheon. It was a beautiful day and the landscaping and views at Argyle were great. Lots of good conversation and people stayed to share memories long after the lunch and business meeting were complete. All the feedback we had was very positive re the location; so we will continue to hold luncheons at Argyle.

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## Oral History.

**The German Supersonic Wind Tunnel.** Bill Chute provided a follow-up to his memories of working on the Tunnels at White Oak. The oral history is in Supplement 1. He wrote, "Sorry it took so long to get this material back to you. With age, time slips by without realizing it. This was about all that I could remember. I do remember that Bernie Gilbert had long and frequent telephone conversations. Hope this is of interest."

**Exploring the White Oak Campus.** Dave Hennessey provided this to WOLAA. His Father worked at the WOL and he now works for Carderock. His oral history is Supplement 2. He wrote, "Here is an "oral history" story for the Leaf, or your website, or whatever you'd like to do with it. I wrote most of the article on NOL on Wikipedia. It was a one-paragraph article when I found it. I organized the article, and provided a lot of the basic information, drawing heavily on the "On The Surface" article. Subsequently, many other folks have added to it. Perhaps some WOLAA members could add more to it. [http://en.wikipedia.org/wiki/Naval\\_Ordnance\\_Laboratory](http://en.wikipedia.org/wiki/Naval_Ordnance_Laboratory)."

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## Book Review Johnny Gram

Mjt

**Brother and Father.** Summer and beach reading time. So, will focus on two authors. First the Sister of Bill Grimes, Martha Grimes. Her new book, "The Blackcat" (2010) is a very good mystery and the best of her books that I have read. Next, the Daughter of James Lee Burke, Alafair Burke. Just found her and her new book "212" (2010) is very good. The 212 is the area code of New York City so gives you an idea of the location of the book. I just finished her book, "Missing Justice," and it was very good also. So, she is now in my category of authors where I just grab one of her books and know it will be good reading.

## Ramblings of a Senior

Mjt

**Patriot's Vacation.** For two weeks before our Independence Day, we took our 12 year old Grand-daughter Emily on a vacation in our local area. As I reflect on it, it was a Patriot's Vacation. We began with our Nation's Capital. The new underground Visitor Center is great. Our guide was superb as she told us the history of our Capital and the men and women who served in our Legislative Branch. She ended by describing her fear as she ran from our Capital on 9/11, beginning a new phase of our history. Emily then elected to visit the WW II Memorial. The memory of the "Greatest Generation" is easy as you view the columns honoring the veterans from each state. As you swing to the East and West to view the Washington Monument and Lincoln Memorial, the greatest of our country and its leaders can easily make you proud. Next, we toured Mt. Vernon and the new museum. History does not do enough to teach the sacrifice and strong leadership of George Washington. For example, over the eight year war, he returned to Mt. Vernon and home only once and then to meet with his Staff to plan the next battle. Emily added the Holocaust Museum. She quickly learned the true meaning of evil and hate. We were amazed at her grasp of what happened. She is now reading the Diary of Ann Frank. She wanted to go to the Spy Museum, mainly to repeat the crawling through the HVAC ducts. But, she also learned of the sacrifice and dedication of our intelligence community. I was amazed at how many of our OSS people were caught and killed in WW II. We concluded the Patriot's Vacation by watching a movie titled, "Taking Chance Home to His Parents." It is a story of a marine Lt. Col who travels with the body of Marine PFC Chance Phelps from Dover, DE to Phelps's family home. It was such a good example of the sacrifice our military and their families make to keep us safe and free. By chance all of these events gave us the true meaning of celebrating our Independence Day.

**Fireworks.** Our Grand-children talked us into buying them fireworks at a stand on the way to OC. We did light some sparklers on 7/4; but the rest traveled home to NJ. However, I took them to the Park in OC to see a concert and the fireworks. The fireworks were great and the finale was the best I have ever seen. BUT, the concert! It was a 50's band playing 50's music. So, I enjoyed it all including the twist. However, Emily described it as yuk music played by guys in sparkly suits. I was crushed. Another example of a generation gap—a huge one. Both wished they had their IPODS with them to hear real music.

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## Features.

### Emails from Alumni.

\***George Daniello.** The first Email it to Art Delagrange and the second it to John Tino. "I always enjoy reading your articles in The Bent and after reading your article in the Spring Bent (Engineering Aspects of War II), it occurred to me that it would be great if John Tino could provide your articles to WOLAA members from time to time as part of The Leaf publication. I wanted to discuss this with you at the Spring WOLAA luncheon, but you were not there. However, I did discuss this with John Tino and he agreed that he could provide your articles as attachments to editions of The Leaf as long as they are available with no copyright issues. Bill Reams told me how to find The Bent articles on the web and also provided these two email addresses for you (I hope one or both of them gets this email to you). Perhaps by "reply all" you could let John (and Bill and me) know if there are any copyright issues associated with downloading your articles from the Tau Beta Pi web site and reprinting with The Leaf.

John, You can find all The Bent articles at <http://www.tbp.org/>. Once there, click on "publications", then follow drop down menus for "The Bent" and then "Features". A list of all The Bent articles comes up. You can click on the top of the "Author" column to get the articles listed by author. Art has ten articles listed there. I hope this works out. I love reading Art's articles and I'm sure many other WOLAA members will also." **Ed. Note:** It did work out and we have permission to display them. Two of my favorites are articles on the B&O Railroad and on the cars Art has owned. I will post these two on our web site and will add another in the Fall LEAF.

**\*Janet (Parsley) Johnson.** “Hello John, Hope you are well. I wanted to let you know that I have in my possession a good number of the old NOL Oak Leaf Newsletters, as well as some NSWC On the Surface papers. I have begun to scan them as I would like to make them available to NOL alumni and thought via WOLAA might be a good source. Attached is my first scan, Oak Leaf for May 1965, which highlights the start of the construction of the Hydrotank” **Ed Note:** I have downloaded the May 1965 Oak Leaf, and will post it on our web site. As Janet does other Oak Leaf’s I will post them on the web site. In future, LEAF’s, I will use articles from the Oak Leaf as supplements to the LEAF.

**\*Dan Marren.** “Betsy, as promised I'm forwarding two interesting activities from our Wind Tunnel. This week, we were featured in both Aerospace America (our industries most read periodical) and the Pentagon Channel (a short video documentary) I've attached both for LABQUEST folks interested. They are especially interesting in that the article highlights our tunnels noteworthy advances in science and engineering advancements. If you can't see the Pentagon Channel, go to [www.pentagonchannel.mil](http://www.pentagonchannel.mil), and you can see it stream live. Also, the show will be posted on the web site, under "Around the Services". Search for "tunnel 9”.” **Ed. Note:** Dan sent this to Betsy Bretz, chairperson of LABQUEST. I have downloaded the article and will post on our web site.

**\*George Hamlin.** “Last night (7 April) CSI:NY aired an episode that had the intrepid crew trying to establish that what looked like a suicide was actually a murder. Standard stuff, until about minute 40, when they came across a piece of fabric that changed shape when it was hit by a heat blast.

"Nitinol," said I. "It's an alloy of nickel and tin," said they. "It's Nitinol." Now this was easily the most contrived clue I've ever seen on a television whodunit; it purportedly led the investigative team straight to the perp. I couldn't quite see how, but maybe I need to watch it again.”

**Ed Note:** So, NITINOL makes it to TV on CSI:NY to help solve their crime George implied that CBS doesn't keep old shows on line very long so probably can't find it. Did anyone else see the show and catch the mention of NITINOL.

**\*George Stathopoulos.** “John, No question about it, the one who possesses the information has the advantage; however, we should be careful to apply common sense in interpreting the information. I am reminded of a time when we got a new testing machine that allowed us to measure the tensile strength of metal specimens John New, who was sponsoring the machine, proudly pointed to the metal tag that came with the machine. It said that one test is worth a thousand expert opinions. Don Sullivan quickly replied that he agreed, but added that one good thought is worth a thousand tests. Dead silence.” **Ed Note:** This is George responding to article in Winter LEAF on expanding technology and information.

**\*Dave Hennessey.** “It was about 2-3 years ago when I wrote the Wikipedia article. Other people added details in almost every section - particularly the 50 Pound Bombproof Facility, lots of details about the wind tunnels, and the entire Projects and People sections - and the postcard.

I now wonder if David Taylor's big wind tunnel really came from Peenemünde. It was reputed to have come from Germany, and that was supposedly the reason for the extremely high cost to fix it after it blew up. One of the fan blades came loose, and it tore through the metal casing, tore through the concrete surrounding it, sucked all the windows into the building, and generally caused a big mess. They abandoned it, and last I heard, White Oak's Positive Ion thingie went in that building. Anyway, I have no evidence that it actually did come from Peenemünde. But whatever.

Adventures of a network manager continued - at David Taylor, we were checking out the network cable entry into the Maneuvering and Seakeeping Basin building, and were down in the foundations of the building - kinda like a crawl space under a house. We found a number of ropes and pulleys attached to the "ceiling". We scratched our heads for awhile, and then realized that people had been using it as a pistol range - the ropes and pulleys were for carrying the targets back and forth to the other end of the space. We laughed and went about our business, A few years later, I heard that some outside group had been doing safety inspections on some of the buildings, and had come across the target range.

**\*Dave Hennessey (Cont.)** The Public Works people were quite embarrassed, and of course, that was the end of that”

**\*Dr. Ed Baker. Ed. Note.** Pat and I attended the ordination of Ed as Roman Catholic Deacon at the Shrine in Washington D.C. It was a very impressive ceremony.

John and Pat -- I was honored with your presence at the Shrine and reception. Thank you very much. you have impacted my Life greatly. John, you may put something in the LEAF to let the folks know that I am available to help them in anyway that I can. For assistance, they can call me at 410-474-1204 (cell) or send an e-mail to febakerjr@aol.com .

I was assigned to Saint Anthony Parish, North Beach. My Assigned Ministry of Charity and Justice will be serving the seriously ill and dying through Calvert Hospice. God Bless.”

**\*Bill Mebane. Ed. Note.** Bill forwarded me a set of pictures taken at a recent luncheon of the Bldg 20 folks. It is mostly the people who worked for George in the Environmental Branch. At this luncheon, Paul Fennell was visiting from Oregon. Their group picture is shown below.

If any other group is meeting for lunch, please send WOLAA a picture so we can put it in LEAF.

Note: Sorry the quality of pictures not better; my fault and not the photographers.

**\*Dave Hennessey. Ed. Note.** Dave sent me a section of a book he is writing. It has a neat story on the use of the Chemistry Lab at the WOL. It was told to him by his college professor who was also head of the "Chemistry Lab at the WOL. After you read the story which is in Supplement 3, does any one know who the WOL employee is. Let the LEAF know.

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## Correspondence To WOLAA.

**\*Betty Morgan.** Periodically, I visit Bill Rhoads at Renaissance Gardens and occasionally meet him for lunch in one of our dining rooms. Last week, as a surprise, Maggie Howard joined us. Bill was thrilled to see her and they had a great time sharing memories.

During our conversations, Bill shows a lot of interest in the lab. He has asked me about the luncheon. Since my driving is limited, have not offered to do this and wonder if you know anyone who could conveniently pick him up. He gets around very well with his walker. I also think he would love to hear from any NOLers. He is a little hard of hearing; but loves company. His phone is (301) 890-2101. **Ed. Note.** Maggie Howard was a neighbor of Bill's in Knollwood. Betty also noted that, "Bill carries the NOL book with him everywhere!" Betty's husband was Bill Morgan who worked at the WOL.

**\*Margarie Hall.** Hi Folks, Happy New Year. It's now been ten years since Donald's stroke that left him paralyzed on his left side and blind in his left eye. I do get 30 days a year from Veterans Administration; but I can only take ten days at a time. Donald will be going to Arcola Nursing Home from 15-24 February 2010. His dementia is getting worse, and he doesn't know me sometimes. I enjoy reading the LEAF 28 January 2010".

**\*Dr. Jack Dixon. Ed Note.** Jack's note was attached to his application form. He wrote, "Dear John, Seeing your name on the bottom of this application brought back happy memories of our association at NOL. Thanks for all your efforts for the Alumni Association. The accomplishments of the Group are truly impressive. 1 December 2009"

**\*Sarah Bennett Reichart. Ed Note:** "Sally" is Dr. Bennett's Grand daughter and lives near my son in Princeton, NJ. She wrote, "Hi John, I've been thinking of writing up my early memories of the Lab at the Navy Yard and NOL. I'll try and get them to you soon. Sorry not to have contacted your son in Lawrenceville yet. Life after retirement is busier than ever. 1 February 2010".

**\*Al Thalhamer.** "Dear John, Just a short note on a recent event. About 8 years ago my wife, Omega, was diagnosed with a type of dementia. Fortunately, the disease progressed slowly. However, 2 1/2 years ago, it was time to move closer to family; fortunately two of our children lived close to the Assisted living Facility in Exton, PA. We were able to live together until Christmas of 2009. As a result of the final steps of dementia and a severe infection, Omega passed away on 6 January 2010.

During my working days I spent more than a few sleepless nights worrying about the next day's briefing, meeting, test, or other major event. However, nothing was as hard as learning to live without Omega.

I enjoy the LEAF; but still regret that I am unable to participate in any WOLAA activities. Wish you luck in all your endeavors, and hope this finds you and your family in good health. 30 January 2010.

**\*Jane Hobart.** "Dear Mr. Tino, The Bowersett family was so pleased to have you and the others at Daddy's graveside service last month. It meant a great deal to us to know that he was remembered kindly by fellow retirees. I'm so sorry that I cannot remember the names of the other two gentlemen who were with you. If you can remind me, I'd like to add your names to the remembrance book that we had at the church. Mom asked me to let you know that her address has changed again. She's still at 1217 Alliance Drive, but she is in a different apartment. Over the weekend, my brothers came and we moved Mom down the hall to the unit she had been waiting for. We even got pictures and window treatments hung, so she feels very settled now. We had a very lovely note from Houston Cole, who knew Daddy from church as well as work. Thank you all for your continued interest and concern. **Ed Note:** Jane is Charlie's Daughter. The other two WOLers were Herb Jones and Art Johnson.

**Susan Goderstad.** “Dear Friends and Family, This letter shares with you the sad news that Rolf Goderstad passed away quietly at home in Silver Spring, MD on Saturday, 17 April 2010. He had some health issues over the past several years but declined quickly after diagnosis in early December of cancer. During these past months he was able to live in the moment and enjoy simple pleasures like a good meal and a good joke.

During his life Rolf cared most about people and he had an impact in his own quiet way on us through his everyday kindnesses, patience, caring and optimism. I was very fortunate to have such a loving, supportive and involved father and will miss him deeply. You will have your own memories of him as you grew up with him in Brooklyn, NY, or served with him in the Army during WWII, or learned with him as he earned his ME degree at Brooklyn Polytechnic Institute under the GI Bill, or worked with him during his long career at the WOL, or became his extended family through 49 years of marriage to Rosemary Phegley, or were a neighbor in the Glenmore Drive neighborhood, where I grew up, or were a neighbor in Leisure World that was his final home. Warm Regards, Susan 22 April 2010”

**Ed Note.** Susan penned the following to Houston Cole. “Thank you so much for the kind note you sent. WOL was an important part of Dad’s life due to the value of his work and knowing folks such as you. I would like to retain my father’s membership in WOLAA.”

## Deceased Alumni.

Please inform Houston Cole of any information about deceased alumni: phone is (410) 489-2977. Or, please write or email WOLAA. The WOLAA is pleased to print a tribute to our deceased alumni; prepare and email to WOLAA.

\***Omega Thalhamer.** Omega died on 6 January 2010. See letter from Al Thalhamer on page 6.

\***Marion Calem Dean.** He died on 11 April 2010 at age 91 at his home in Locust Grove, VA. He was founder of M.C. Dean, Inc. He served in the US Navy in WW II. Marion was preceded in death by his wives, and is survived by his sons Herbert and Marion and his daughter Diane Palermo; five grandchildren, and four great-grandchildren. Diane worked at WOL as Head of PAO and is a member of the WOLAA Board.

\***Rolf Goderstad.** Rolf died on 17 April 2010. See letter above from his Daughter Susan Goderstad.

\***Charlie Bowersett.** Charles F. Bowersett, 92, of Atlantic Shores Retirement Center, passed away May 6, 2010 in Sentara Virginia Beach General Hospital. Born Sept. 21, 1917, he was raised on a small farm in Rappahannock County, Virginia where he attended a one-room schoolhouse and went on to graduate valedictorian from Rappahannock High School. A graduate of the Virginia Polytechnic Institute Class of 1940, he received a degree in mechanical engineering. He enjoyed a 33-year career with the Navy, retiring in 1974 as the director of the Mechanical Engineering Division at the Naval Ordnance Laboratory in White Oak, Md. Along with his wife, Mary Minor, he enjoyed many happy years of retirement, traveling and vacationing at his beloved Owl Island in Maine. After moving to Virginia Beach in 1996, he remained active, serving as a docent at The Virginia Aquarium and Marine Science Center and helping to provide bikes for the homeless through the Urban Ministries committee of his church. He also enjoyed golfing, fishing, woodworking and family gatherings. He is survived by his wife of 66 years, Mary Minor Settle; son, James and spouse Sue; daughter, Jane Hobart and spouse Bruce; son, John and spouse Dianne Goldian; daughter, Julie and spouse Kirby Griffis; as well as seven grandchildren and six great-grandchildren.

\***Michael P. Ieradi.** Michael died on 15 June 2010. He is survived by his wife, Mary; children, Robert, Michael, and John; and six Grandchildren. He worked in R12—Explosives; enjoyed golf at WO; and was a member of the WO Chapter of NARFE.

\***Dr. John Malloy.** John died the first week in July at his home of a heart attack. John headed the Nuclear Simulation Division at WOL. His daughter is Ellen Malloy Reich and she worked at the WOL in the PAO. A more detailed obituary will appear on the WOLAA web site.

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by Dave Hennessey**
  
- \*Better Living Through Chemistry, page S6  
by Dave Hennessey.**

## 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, 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.

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## ***14 – Better Living Through Chemistry***

**A**fter barely managing to secure a high school diploma, I started my college career, which would ultimately take twenty-three years to complete.

I attended Montgomery College, the local 2-year community college in 1970. I made the Dean's List first semester. By the end of the second semester, I was getting "C"s and "D"s and "F"s. I guess college wasn't ready for me, so I gave them some time to prepare themselves.

A few years later, I realized that I really should get me some college education, so I went back to Montgomery College, and in the evenings, took some classes which interested me - Economics, Electricity, Photography, Physics. But my real love was chemistry.

Many of the faculty members at Montgomery College were retired professionals. They had spent their lives working in their chosen fields, and then brought their experience into the classroom.

My first college chemistry class was General Chemistry 101. I don't remember much about this class except for two amazing occurrences. First, the teacher had spent his career working at the U.S. Navy's Naval Ordnance Laboratory (NOL) in Silver Spring, Maryland. About halfway through the semester, he told us a story about one of his projects.

The 1971 movie, *The French Connection*, starring Gene Hackman, told the story of how opium, grown in Turkey was smuggled into France, where it was refined into heroin in clandestine laboratories in Marseille. The heroin was then smuggled into the United States. This went on from the late 1930s into the early 1970s, when drug agents from France, Italy, Canada

and the United States finally broke the mafia-based organization and shut down the illegal labs in Marseille.

The Bureau of Narcotics and Dangerous Drugs (forerunner of the modern Drug Enforcement Administration) needed a way to detect the illegal heroin labs. They developed “sniffers” that could be mounted in helicopters and used to discover the clandestine labs in buildings below. The problem was that they had no actual heroin labs to test the sniffers on. So they contacted the Naval Ordnance Laboratory.

Our professor, head of the chemistry department there, had a new project. The BNDD supplied raw opium, and NOL processed it into heroin. BNDD flew their helicopters over NOL’s little heroin lab, and calibrated their sniffers. Once perfected, the sniffers were sent to France, where they were flown over suspect areas of Marseilles, and the hidden labs discovered.

Our professor reported that he had a major productivity problem. The heroin they produced was a fine powder, and any disturbance would cause the powder to float in the air around the room. The scientists were falling asleep on the job!

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General Chemistry 101 also produced a major effect on my life. There were two really cute girls in the class. I got up the nerve to ask the cutest one out on a date, but she said no. Then I asked the second-cutest girl out, and she said yes. I took Barbara out to a party on Christmas Eve, and didn’t bring her back home until about 4am on Christmas Day. Although we didn’t start dating seriously for several years, I had set the hook, and Barbara would eventually become my wife.

My first semester Organic Chemistry teacher had been in the ivory tower way too long. One experiment involved hooking up a vacuum pump and a bunch of rubber tubes to a variety of glassware. This was so complex that the teacher decided to oversee setup of the apparatus at one student station. Once that was successful, the other students could then copy the setup.

Of course, Mr. Ivory Tower hooked up the rubber tubes wrong, and the vacuum pump was sucking the liquid chemicals out of the glassware instead of removing the air and distillation by-products like it was supposed to. Mr. Ivory Tower was scratching his chin and examining the situation. I quickly realized what he had done

wrong, so I spoke up “If you take this tube off and attach it here, that tube there, and this other one where the first one was, it will all work”. The teacher replied, “An interesting theory, Mr. Hennessey. Let us consider the situation”. He kept scratching his chin and considering. I got exasperated after awhile, and left the room to go smoke a cigarette or something. I returned almost a half-hour later, and he was just getting around to making the changes I had suggested. He was a good teacher of theory though – things like the electron orbitals s,p,d, and f still rattle around in my brain.

My second semester Organic Chemistry teacher had spent his career as a research chemist at the National Institutes of Health before he retired. This was a bird of a different feather. We started one experiment, but no one could get it to work. The teacher told us that we were doomed to failure because our apparati were losing too much heat. He told us to shut down our experiments and gather around one station where we would try to make it work. First, he got four students holding Bunsen burners to “heat the heck out of the thing”, and we did. Still, it wouldn’t work. He got more students to get wet paper towels, and wrap them around the distillation column with rubber bands. The experiment was starting to “go”. But the wet paper towels dried out from the heat of the four Bunsen burners, and soon burst into flame.

One student ran and grabbed a fire extinguisher. The teacher rebuked him sharply for his efforts, “Get that thing away from here – do you want to ruin the experiment?” We snuffed out the flames with wet rags, and re-wrapped the columns with new wet paper towels. But this time, he had us wrap the towels with aluminum foil so they wouldn’t catch flame. Of course the towels did catch fire, but he instructed us to just “blow out the flames” with our breaths. “More heat”, he cried. “More wet towels”. “More foil”. Flames shot out of the apparatus. Smoke filled the room. Students scrambled to blow out the flames and replace the burning towels. Finally, a wondrous sight appeared amidst this conflagration - the distillate started fractioning. An ounce of whatever chemical dripped down into the receiving beaker. Victory was ours.

During another lab session, we had a particularly boring experiment. I noticed there was a big jar full of cinnamic acid in the room, so I decided to invent my own experiment. In my lab notes, I wrote up the reduction reaction I would attempt to achieve,

assembled the apparatus and required reagents, and began my experiment. It took a couple hours, but I succeeded in reducing cinnamic acid to cinnamaldehyde. I washed off a glass rod, stuck it in my beaker, and touched it to my tongue. Yummy! I tried to convince other students to give my experiment the taste test, but for some reason, they were reluctant to do so.

The professor noticed all this activity, and asked me what I was doing. I showed him my lab notes. After reviewing my notes, he picked up the glass rod and touched it to his tongue. "Excellent," he agreed. Soon, the other students were sampling the fruits of my labors.

What do cinnamon buns, BigRed<sup>®</sup> gum and French toast have in common? Cinnamaldehyde. Oil of cinnamon is about 90% cinnamaldehyde, which gives cinnamon its characteristic flavor and odor.

The professor informed me that since this was not the assigned experiment, I would have to do an extraordinary job of writing up my lab notes if I wanted to get credit. I received an A+.