

Meet Kenneth D. Nichols, the Father of Oak Ridge - Honing Engineer Qualifications (1932-1939)

(As published in The Oak Ridger's Historically Speaking column the week of September 16, 2024)

Barbara Scollin, grandniece of Major General Kenneth D. Nichols continues her series on his life. This column gives insight into his early career. We learn more about his engineering background and exposure to the German military build-up eventually leading to his assignment to the Manhattan Engineer District.

Ample reasons, most notably leadership skills, personality traits and qualifications, led to choosing General (then Colonel) Kenneth D. Nichols as Deputy District Engineer and subsequently as District Engineer of the Manhattan Engineer District (MED). In this capacity he had supervision of the research and development connected with, and the design, construction and operation of all plants required to produce plutonium-239 and uranium-235, including the construction of the towns of Oak Ridge, Tennessee, and Richland, Washington.

The responsibility of his position was massive as he oversaw a workforce of both military and civilian personnel of approximately 125,000; his Oak Ridge office became the center of the wartime atomic energy's activities. He also was responsible for internal security operations in the production facilities that helped keep the development of the atomic bomb secret.

In 1932 Kenneth "Nick" Nichols earned his Civil Engineering degree at Cornell University and married Jacqueline Darrieulat. In 1933, returning to Cornell, he earned his Master of Civil Engineering. When not earning degrees, he was assigned duty at the Vicksburg U.S. Waterways Experiment Station under director General (then Lieutenant) Herbert D. Vogel eventually working as Vogel's Assistant Director.

Nick credited Vogel of having "more influence than any other one individual on my career." General Vogel and his wife became lifelong friends to Nick and Jackie; Nick and Vog worked together as late as the 1980s.

Flood control was Nick's primary focus in Vicksburg as he explained, "We could reproduce either the 1927 or 1929 [Mississippi River] flood by feeding all the information into a model, then we would try to change the model to find new ways of controlling flooding."

On one project, Nick worked directly with General Ferguson, sometimes meeting at 2 a.m., watching the models create Ferguson's planned changes to prevent flooding. He witnessed firsthand how to finesse awkward situations between military commanders when one was on site dealing with the work at hand and the other was miles away (a skill Nichols would perfect).

At Vicksburg Nick developed another of his characteristic skills – diplomacy. He recalled, "The District Engineer, Major John C.H. Lee, was a rare character with a unique stature and temperament. We realized it would be a delicate matter to tell him that his staff had made a serious error, but we found a way to do it diplomatically. We advised him that we couldn't get our model to behave properly using his plans and asked him to come to Vicksburg to help us. Once he saw the model in operation he said: 'Well, let's reverse the location of the dikes; they're obviously on the wrong side.' At times we research lieutenants discovered ways to cooperate and yet influence our superiors."

Vog advised Nick to study hydraulics at the Technische Hochschule and the Prussian Experimental Station in Germany. The European models for open-channel hydraulics, specifically how to operate a tidal machine, was unknown to American engineers at that time. So, off Nick and Jackie went to Germany in the fall of 1934. What an experience!

To Germany, Nick brought: "a most interesting document ... dated June 30, 1934, the night of the Big Purge, and it awards me the fellowship ... There's a PS: 'Due to an unforeseen circumstance, Herr Dr. Von Morsebach [Director of the Deutscher Akademischer Austauschdienst] was unable to sign this letter'

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with his secretary's initials. He wasn't killed, but he came damned close to it. He was locked up in a concentration camp for six months.... He finally sent word to me, 'Don't try to see me. I came close enough. I don't want any contact with any foreigners.'"

By the time of their arrival, Hitler had consolidated his power, and a police state existed. Nick recalled: "Our German hausfrau asked, 'Why do you buy your ice cream at that Jewish place?' My wife replied, 'Just because they've got the best ice cream.' She said 'Well, you may get a brick thrown at you sometime.'"

Nick and Jackie took a crash course in German at the University of Berlin. Although some German was spoken in Nick's childhood home, he never became fluent. He concentrated on technical German to understand lectures and actually gave a lecture in German to fellow students. Impressively, Nick's Ph.D., Doctor of Engineering dissertation was written in German and covered 'The Observed Effect of Geometric Distortion in Hydraulic Models'. (Circumstances led to no award of a doctorate in Germany. More on that later.) Undoubtedly, his ability to understand German and other foreign languages helped when communicating with many scientists in the Manhattan Project who had fled Nazi Germany.

Nick witnessed firsthand the military build-up in Germany and was convinced America had to stop Hitler. He recalled, "I took a trip along the entire North Sea coastline of Germany with 30 German fellow students. At one site, as we were looking down into a gun emplacement under construction, a German Captain of Engineers frankly admitted they were anticipating war, although Hitler was publicly declaring 'there will be no war'... I turned in a report to the military attaché [Percy Black in Berlin] and also the Chief of Engineers on what I had observed. I wrote it after I left Germany...

"The [German]military was not ardent for war, but they were ardent for violating the Versailles Treaty and rebuilding an Army...

"I had free access to the Versuchsanstalt to work with tidal models. Only at the ship model testing channel did I have to give advance notice where I knew they were testing submarine models and cruiser models, and they'd always have them covered up when I came in...

"I wasn't allowed to visit the submarine base at Kiel. The professor told me: 'We don't ever want you to hear a German official reveal that we are violating the Versailles Treaty.'"

By 1936 Nick's tours of duty at Vicksburg and Germany ended; he was promoted to First Lieutenant. West Point wanted Nichols to study concrete for their new laboratory, so he attended classes at Iowa to become an expert. His doctoral thesis, accepted by the University of Iowa, led to an American Society of Civil Engineers Collingwood Award. Earning his Doctor of Philosophy in Hydraulic Engineering, he also graduated first in his class for the Engineer Company Officer's Course at Fort Belvoir, VA, both in 1937.

Nick returned to West Point to teach military history, engineering and advanced civil engineering for two years. A complete new set of maps particularly dealing with the Napoleonic battles were developed and no doubt prepared cadets for the upcoming 'moving' warfare.

Vacationing in Europe in 1939, Nick was interested in visiting all of Napoleon's battlefields to see the terrain for his military history classes and developing an entire lecture on the problems with the Maginot Line. Carrying a private letter from West Point Librarian, Colonel Farman, Nick unofficially was allowed privileged access to the Maginot Line.

Nichols recalled, "I was able to visit a fort just out at the angle in front of the Metz [sector of the Maginot Line] ... I was able to talk with General Brousseau and other French officers about the military situation

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and their strategy. General Brousseau outlined to me the major political problem France had in extending the Maginot Line to the sea.

"If France put the line along the French-Belgian border, then France would be relinquishing Belgium to the Germans, whereas placing the line along the Belgium-German border definitely committed Belgium and required their agreement. Consideration of Holland further complicated matters. The various governments never did resolve these political problems...

"I went to the [Paris] military attaché ...and said that I had been in the [underground] fort and wanted to know what he knew about the surface so I could locate where I'd been. ...At first, he was not too cooperative because he didn't see how anybody could get in. He said he's been trying to get people in there for the last two years.

"So, I told him how I'd arrived at it, and he said, well, he would give me the data...that I needed to make the report better. And I sent him a copy. And also, I reported it to the Chief of Engineers. ... Nobody except Colonel Farman at West Point knew I was even going to try... Anything I observed was solely in my head until I revealed it to the military attaché in Berlin."

The military attaché in Paris assured Nick, "You're perfectly safe [to leave Europe] ... The war won't start until the 31st of August." Traveling from France to Germany via Switzerland, Nick was asked by Percy Black, military attaché in Berlin, to "watch all the black trucks. ... 'I'm trying to diagnose whether they're going to hit Poland or France ... notice the loaded trucks. Look at their springs and count 'em, keep a mental note of it, but not written. And when you get to Berlin, I want you to tell me how many empties going each way and how many trucks going each way'... By the time I got there he said '... you're just confirming what conclusion I have. It's Poland.'"

The day after Nick returned to West Point from Berlin, Hitler's war machine invaded Poland. Nick's comprehensive post-graduate studies as well as exposure to the Nazi military rise and German mindset prepared him for the engineering challenges he would soon face as well as a world headed for war.

Grateful acknowledgements to K. David Nichols, Jr.; Ray Smith; Sandy Fye; Dr. Bianka J. Adams, Alisa Whitley, Douglas J. Wilson and the U.S. Army Corps of Engineers Office of History; Emily (Westcott) and Don Hunnicutt; Diane Gulley; Gerald A. Potts; and Bruce W. Scollin for their assistance with this article.

Thanks to Barbara Rogers Scollin, grandniece of General Kenneth D. Nichols, for a most informative insight into some aspects of his life that I have never known. This series is providing details about our "Colonel Nichols" that I am sure is not widely known. Next Barbara will bring us a column titled, Manhattan Engineer District Formation. I am sure looking forward to that one!

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2nd Lieutenant Kenneth D. Nichols Student Officer identification card, University of Berlin Germany 1934-1935 (Courtesy U.S. Army Corps of Engineers, Office of History)

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Nichols maintained close relations with West Point his entire life.

L>R: Brig General Nichols, Maj General Maxwell D. Taylor, Superintendent USMA at West Point, and Maj General Leslie R Groves. Press Conference, MED Administration Building, October 1, 1946.

(Photo by Ed Westcott. Courtesy Emily (Westcott) and Don Hunnicutt)