



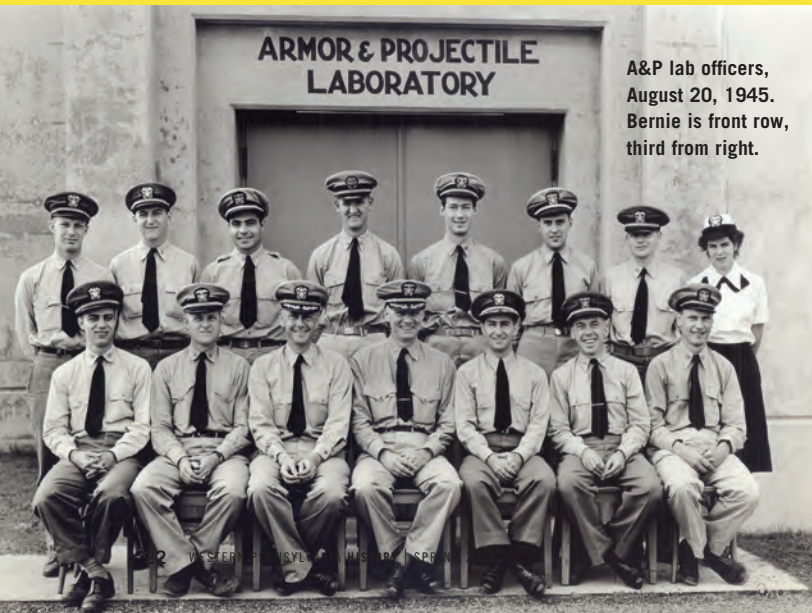
Bernie in uniform, 1945.

Both photos Bernie and Esther Queneau.

BERNIE QUENEAU

METALLURGIST

By Brian Butko



A&P lab officers, August 20, 1945. Bernie is front row, third from right.

When I first interviewed Bernard Queneau (keh-NO) in 1997, we talked about the Lincoln Highway. Bernie was one of four Eagle Scouts to travel the coast-to-coast road in 1928 to promote scouting, safety, and the highway itself. Our meeting was arranged by Esther Oyster, then president of the Lincoln Highway Association. We all stayed in touch, and in June 2014 we met up again, just as Bernie was about to turn 102. In the interim, he and Esther got to know each other and eventually married. Bernie had spent the past 17 years talking a lot about the Lincoln Highway and so he was glad to talk about his work during WWII, which was a much bigger part of his life.

Bernie had gone from the 1928 Lincoln Highway tour straight to Columbia University, despite having just turned 16. In 1936 he earned a Ph.D. in metallurgical engineering from the University of Minnesota. He became a researcher for U.S. Steel, and in 1937, took a position at U. S. Steel's Duquesne Works to learn more about steel-making. The industry was booming; the company hired 1,000 engineers in 1936-37 at \$135 per month.

When a recession forced cutbacks in 1938, he went to Columbia to teach, and joined the Naval Reserves in 1939. Bernie was called to active duty in June 1941, sent to the Armor and Projectile Laboratory at the U.S. Naval Proving Ground in Dahlgren, Virginia. During our meeting last year, he recalled some of the accomplishments he and his colleagues made there:

I think I did my most useful work there because we solved a lot of problems that were involved in the armed forces in service. For instance, the oxygen tanks below the pilots were made of normalized steel and they were strong enough, but if a piece or fragment of a shell or piercing bullet broke into them, they exploded and would kill the pilot and knock the plane out of the air. When it was brought to attention at the lab, I immediately had those steel oxygen tanks normalized so when they were pierced they lost their oxygen but that was it, they didn't break. The pilot could dive down and get themselves some oxygen, so that he lived and the plane lived.

Bernie recalled the Allies' discovery of Japanese defense systems involving sand and palm trees, and the Navy's replication of these defenses to use as practice to win future battles:

When we came across the central Pacific, we first attacked Tarawa and Marines lost 50 percent of their men, it was a terrible blow. We dropped bombs on them for 30 days from B-17s and then our big Navy battleships shelled them for three days with 2700-pound shells from our 16-inch guns, and then we lost 50 percent of our Marines.

So the problem comes back to Dahlgren and how could they be so well prepared with all that bombing and shelling? It turns out they had been in dugouts that were made with palm trees, ten feet of sand, palm trees, ten feet of sand, and palm trees. So shells and bombs would all go off on that first bunch of palm trees and then lose their energy in the sand and they wouldn't even get down to the second palms. So we built the same thing without palm

trees but with wooden logs in Dahlgren and then we tried different ammunition with different explosive timing and we found out that in 5/100th of a second the shell went from the palm tree through the 20 feet—which we calculated, we didn't spend much time experimenting—and sure enough [Bernie makes an explosion noise].

So when we went the next step to Kwajalein, we shelled them three days and we didn't lose anywhere near the manpower. We still had a margin of a fight because you don't know where all these bomb shelters are so that you missed some. Kwajalein is the biggest island in the Pacific and you don't get 100 percent, so we had some heavy losses but nothing like we had in Tarawa. We continued to do that all the way across until we got to Iwo Jima.... Even armor-piercing shells would not get in there and we had a real tough battle for Iwo. So I was daily in contact in effect with the Pacific even though I wasn't there and was not exposed to any gunfire.

Toward the end of the war, Bernie was sent to Europe to evaluate the German steel industry as Allies advanced into Germany “to see what they had and what they knew, what their shells were like, what their armor plates were like...”:

When we were getting ahead in Europe, they wanted a metallurgist over there so they put me in an army uniform and went through a bomb disposal school so that I wouldn't blow myself up too quickly when I got over there. That was kind of scary! And put me on a plane and I got to Paris, which we had conquered by that time, and gave me a Jeep and off I went into the wild blue yonder all by myself and I went from army camp to army camp.

I was driving around Germany, I went up into Holland, they had a tank factory up there and they had a new tank called the Maus. They have a kind of rough humor, the Germans. M-A-U-S is

“mouse” in German. It was the biggest tank ever built, a 200-ton tank. Our tanks were mostly 35-tonners, so you can see how big 200 tons is. When we were able to enter the Ruhr, by the way the Ruhr was a terrible situation. We had bombed it and bombed it and bombed it and talk about bombing civilians. The town there was 90 percent flattened, as far as I was concerned there wasn't anything left, it was terrible.

But we didn't learn very much in the Air Force. We were dropping bombs without any delay on the bombs right up till the end. So the bombs would go off on the steel sheet in the roofing and it was pretty tough on the individuals below, they didn't like it, but it didn't destroy the equipment so they were able to build tanks right up until the end. They put in some Poles and French to run the machinery and if they wanted to eat that night they better turn out a certain amount of stuff that they had to do, and if they actually destroy the equipment they would destroy them and somebody else. So I got a little taste of the war in Europe but I wasn't in any real danger. And I brought back to this country a new development they were doing — magnetic hardening of steel.

Bernie joined U. S. Steel as a chief metallurgist in 1946 and returned to Pittsburgh in 1951. By 1970, he had risen to general manager in charge of quality assurance, when the company was producing 25 million tons of steel annually. He retired in 1977 but remained a consulting engineer and technical editor of *Iron and Steel* magazine.

Bernie remained extremely active, spending many hours per week as a volunteer to multiple organizations. In December 2014, Bernie passed away just hours after receiving the Distinguished Eagle Scout Award. Fewer than 2,200 people have received that distinction since its inception in 1969, ranging from astronaut Neil Armstrong to locals such industrialist William S. Dietrich II, Judge Livingstone M. Johnson, and Westinghouse CEO Robert E. Kirby.

Special thanks to Sarina Johnston and Carrie Hadley for transcribing Bernie's oral history.



Bernie had this piece of steel plating shot with a bullet to test its strength; it passed, stopping the projectile at critical point.

L2015.9.1. Photo by Liz Simpson.

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