

Grady Whitman: Life in the Secret City
(As published in *The Oak Ridger's Historically Speaking* column on April 8, 2013)

This article is brought to us by Carolyn Krause drawing on the Oral Histories found in the Center for Oak Ridge Oral History, a great resource for our history:

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The culture of the Secret City must have been scary for some Oak Ridgers in 1943-45. Counterintelligence people watched other intelligent people suspiciously, and some people mysteriously disappeared.

There's a story that a woman riding with her friend on a bus to their jobs started talking about her geranium garden. The guard on the bus thought she said the forbidden word uranium (code-named tube alloy). He almost arrested her until he found out she was talking about her flowers.

You can learn about what it was like to live with secrecy in Oak Ridge by reading Steve Stow's interview with Grady Whitman on the Center for Oak Ridge Oral History website: <http://www.oakridgetenn.org/departments/Library/Departments-%26-Services/COROH>.

Grady was involved with the uranium-enriching calutrons at Y-12.

He later transferred to Oak Ridge National Laboratory where he headed up a program that determined the effects of extreme pressures and heat on irradiated reactor vessel sections.

"Oak Ridge was the largest collection of reasonably intelligent people ever assembled who didn't know what they were doing -- and boy, I fell right into this category," said Whitman, referring to his introduction to the calutron.

An early member of the Army's Special Engineer Detachment, Whitman enjoyed living in the barracks across from St. Mary's Church, partly because the residents had maid service.

After arriving in a bus from Knoxville and riding around in buses to see Manhattan Project construction in Oak Ridge, he learned the source of many of the 800 buses here. They came from the fleet used during the Chicago World's Fair of 1934.

For two weeks he received training near the administration building in downtown Oak Ridge. "Young man, we're glad to see you," the head of personnel for Tennessee Eastman and Y-12 told him. "We need all the help we can get. I can't tell you what we're doing, but it is extremely important to the war effort. It could be a determining factor."

After he saw his first calutron in the training building, "I learned a new language," said Whitman. "Nothing was called by its generic name. A calutron was a D. A filament was a K. An ion chamber was a J."

A mechanical engineering student in college, he learned how to assemble a calutron, a complex device that used a powerful magnet to separate accelerated ion beams. He did not understand its purpose. Then he was transferred to Y-12's Alpha-1 Building in late March 1944.

"Alpha-1 had started up and had to be shut down because dirt was found in the magnet oil," he said. "The counter-intelligence corps suspected sabotage."

"I got put in the mechanical assembly group, taking parts and putting them together. Y-12 was in a terrible bind back then because of failures right and left, and

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lots of operational difficulties.” For example, bushings in the calutrons designed to handle 50,000 volts at 3.5 amps sometimes failed in a spectacular display of fireworks.

After finding out how to repair calutrons, Whitman, then 24, learned “how to operate these beasts” when he was transferred to operations. “I became a track foreman. I had 48 cubicles that I had to look out for. I supervised 50 teenage girls, five startup men, electricians and maintenance men.”

Did Whitman suspect what was going on at Y-12 by this time? “I was coming back from the Y-12 cafeteria one night and followed two MDs headed towards the dispensary. They were talking about heavy metal poisoning and its effect on kidneys. And they mentioned uranium -- loose lips. It dawned on me that no one had ever mentioned the word uranium before.”

Whitman was impressed by the size of Y-12 (two miles long) and the intensity of the activities as “some 22,500 people scrambled around in there. You were designated to work in a certain area, encouraged to learn everything you need to know to do your job and discouraged from learning anything else.”

General Leslie Groves, head of the Manhattan Project, devised the concept of compartmentalization, which Whitman called “a good idea.” Color-coded work uniforms were a key to the concept’s success.

“Everybody in production, even the building superintendent, wore a uniform,” Whitman said. “If you were in process work, you wore a blue uniform.”

Chemists wore white uniforms; electricians, green uniforms; millwrights and maintenance workers, khaki uniforms. “If you were in supervision,” Whitman said, “you had an epaulet and a ring around your shoulder. If you were a chemist and walked into my area, my first question to you was, ‘What do you need and what are you doing here?’ You stood out like a sore thumb.”

The badges had Roman numerals as codes. “If you had an ‘I,’ you knew where the dispensary and the restroom were,” he said. “If you had a ‘V,’ you knew everything that God created.”

Whitman once asked, “What would happen if I blabbed?” The reply was, “They’ll send you to the Aleutians (a chain of U.S. volcanic islands that extend southwest of the Alaska Peninsula).

“When I was in basic training, the lieutenant in charge of my platoon came from the Aleutians,” Whitman said. “He said it’s a God-awful place. It’s foggy, it’s rocky, it’s cold, there’s nothing there. Don’t ever go to the Aleutians.”

Whitman knew that the calutrons were being used to separate U-235 from U-238. He was told to refer to U-235 as R and U-238 as Q.

Whitman was not supposed to know that the enriched uranium from Y-12 calutrons was intended for use in an atomic bomb. But he was curious.

“I went to the Oak Ridge library and found a textbook on physics by William Pollard [founder of the predecessor of Oak Ridge Associated Universities]. I pulled it out, found the pages with darkened edges, opened it up and there it was -- a statement on the potential for splitting the atom for a weapon and the enormous

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energy that would be released. And, after I read that, the thing that concerned me was, 'How would we ever deliver this weapon?' It would be a suicide mission. It could blow up the world."

He couldn't talk about his concerns with anyone. The culture of secrecy can be scary.

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Thanks Carolyn. A second part to this story will follow. I am pleased to include a photograph of some 10 years ago that Carolyn provided which includes Grady as well as several other fine volunteers who help our community in many ways.



Grady Whitman