

Some Y-12 stories captured by Bill Wilcox

One of the reference books I keep open on my desk is *An Overview of the History of Y-12, 1942–1992—A Chronology of Some Noteworthy Events and Memoirs*, by William J. Wilcox, Jr. This booklet was published by Bill in August 2001, with the help of 26 of the people who were leaders at Y-12 over the years. It is a most valuable resource, and collection of the information was most timely. Many of those 26 individuals are no longer with us, and Bill passed away on Labor Day 2013. I miss him tremendously.

In addition to the many significant and precisely documented facts about Y-12's history, included in the booklet on page 67 begins a section titled, "Some Other Y-12 Stories." Some of these stories, taken from a 1997 draft of Bill's booklet, were also included on pages 124 and 125 in the *Architectural/Historic Evaluation of the Oak Ridge Y-12 Plant, Oak Ridge Reservation, Anderson and Roane Counties, Tennessee*, prepared by Thomason and Associates in October 1999.

So, these are common tales told about incidents in Y-12's early history and best documented in the storytellers' own words. To aid in the widest possible distribution of these favorite tales, I want to include some of them now as published in the last pages of Bill's Y-12 history booklet.

A story about Jack Case

When Jack Case, later to become Y-12's longest tenured plant manager, first came to work at Y-12 as a machinist, the calutrons were still in operation, and extensive experimental work was being carried out to learn how various components could be made to last a little bit longer. Jack's first assignment was to attempt to machine a few ion accelerating slits out of tungsten. Now, this is one miserable material to machine—very hard, very brittle.

The foreman told Jack they had to make five experimental slits, but to just go ahead and be very careful, try to cut just one slit in one of the few tungsten sheets on hand since it would be a very difficult, pretty likely unsuccessful job. Jack said "Okay," but then surprisingly, "But I need to use the telephone first."

Now, because it was wartime, telephones were few and far between, located only in the foreman's office and only rarely to be used by shop workers. Jack got an okay to use the phone, but with the foreman's standard lecture for new employees on just which rare occasions justified telephone use for personal business, so make it snappy.

Jack went into the office and made his call. The foreman out in the shop occasionally glanced at Jack through the glass office window and saw him writing furiously, nodding, and obviously really getting worked up—presumably about whatever this personal business was that Jack had to take care of.

Meanwhile those urgently needed tungsten sheets lay there untouched on Jack's workbench.

When Jack got through talking on the phone, he disappeared out in the shop, and the foreman forgot about him. The next day Jack came to the shop office and handed the foreman all five sheets, each with perfect, long and narrow slits. The foreman couldn't believe his eyes. This was the first try by a brand new man, and some of his experienced machinists had killed several of the tungsten pieces just trying to cut one.

He asked Jack, "How in the hell did you do that?" But then quickly added, "No, I don't think I want to know," and walked off shaking his head.

Jack knew who to go to for answers, and what he had done was to call an old buddy he had worked with somewhere and who knew how to work with tungsten. The answer was not to machine it at all, but to heat up the tungsten sheet and punch out the needed slits. (R. D. Ellingson)

A story about John Googin

Dr. John M. Googin was the virtuoso chemical engineer who devoted his entire career to Y-12. Googin became legendary in solving Y-12's most challenging technical problems. He came to Y-12 in the summer of 1944 as a junior chemist just out of Bates College in Maine.

In his latter days he wrote an interesting technical account of his early days at Y-12. Five chapters covering his recollections were published by the Y-12 Development Division (Kimberly Myers and Jon Bullock, editors) in a Memorial Volume to John, published in 1994 after his death. Reprints of this fine publication are available at the Y-12 History Center or online at: http://www.y12.doe.gov/sites/default/files/history/pdf/info_materials/JohnGooginBooklet.pdf

The first excerpt from these chapters given below describes the major expansion of chemical operations into 9207 and surrounding buildings in 1944–1945, which was made to expand the already hard-pressed facilities in 9202 for recovering the partially enriched uranium from Alpha tank washings, purifying it, and turning it into uranium tetrachloride for Beta calutron feed.

The production rate of the old Bulk Treatment facility was rising, and the 9202 extension was about ready to be used. Buildings 9207, 9208, 9210, 9211, 9769, and others were designed and ready for construction.

This new complex of buildings was designed to use the process with the improved peroxide precipitation procedure, but incorporated the old high-pressure chlorination and the sublimation step for preparation of the UCl_4 feed. The whole process was designed to be critically safe by batch size and controlled with sequence-controlled valving to prevent double-batching.

It also used safe geometry for chlorination and sublimation because it was expected to use 3.5% enriched feed produced by the K-25 gaseous diffusion process. The complex was never finished because K-25 went beyond this assay (isotope enrichment level), but the laboratories were ready for use in the winter of 1944–1945, nine months after they were designed.

These are the buildings that were made available after the war when Oak Ridge National Laboratory desired to start a biology division. They form what has come to be known at Y-12 as the Biology Complex.

Some of the most important work in the field of biological sciences was done there over the years: discovery of the purpose of the “Y” chromosome by Liane Russell, for example!

There are more such stories in Bill's “brief history of Y-12,” which I will bring to you in future columns.