

# **“Dropping the A-bomb on cities was mistake”—Father of Health Physics**

(As published in The Oak Ridger's Historically Speaking column the week of June 29, 2020)

A friend and fellow historian, Alex Wellerstein, has just written in his blog, *Restricted Data, The Nuclear Secrecy Blog*, an entry entitled, *What journalists should know about the atomic bombings*. In this blog entry he notes that as we approach the 75<sup>th</sup> anniversary of the atomic bombings of Hiroshima and Nagasaki we will surely see increased emphasis in the news regarding the atomic bombs.

This is understandable and especially so in Oak Ridge, Los Alamos and Hanford. While my focus on Oak Ridge history in *Historically Speaking* may vary from time to time, the atomic bombs and what has resulted from the nuclear age over the years is never far from my mind.

In these articles researched and written by Carolyn Krause, I am attempting to bring *Historically Speaking* readers perspectives that might well not normally be expressed. Not that I intend to alter your thinking regarding the use of the atomic bombs, as generally each of us have made our decision already.

However, seeing the issue from different perspectives is worthwhile. For example, this particular article features comments and perspectives of Karl Z. Morgan. Some of you may even have known him. If that is the case, you likely already know his opinions. If you are being introduced to him for the first time reading this, it will be good for you to appreciate his perspective, even if you disagree with his conclusions.

I have also recently found online copies of the letters written to President Truman (although never reaching him prior to the dropping of the bombs) seeking a demonstration rather than an actual bombing of the enemy. Scientists in Oak Ridge were among those signing these letters.

As you read Carolyn's research into the perspective held by Karl Morgan, please use it to help broaden your knowledge of the continuing controversies of the dropping of the atomic bombs. It is not likely to stop soon, rather, I expect to see the debate grow more intense

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If the United States had demonstrated the atomic bomb in an unpopulated area and convinced the Japanese government to surrender in late July or early August 1945, half a million Japanese lives would have been saved (between the war's end and 1950). Or, was military use of the A-bomb on two cities in Japan absolutely necessary to bring World War II to an end? The debate continues even today.

In his 1999 memoir, the late Karl Z. Morgan, the “Father of Health Physics” and former Oak Ridger, wrote: “I remain firmly convinced that President Harry S. Truman and Major General Leslie R. Groves blundered in their decision to order atomic bombs to be dropped on Hiroshima and Nagasaki.”

In “The Angry Genie: One Man's Walk through the Nuclear Age,” Morgan cited documents that show that the Japanese emperor wanted peace even before July 16, 1945. That's when the U.S. secretly conducted the Trinity Test of a plutonium nuclear weapon at Alamogordo, N.M.

Morgan further stated that a poll of 150 Manhattan Project scientists in Chicago (including him) showed that most scientists preferred a demonstration of the A-bomb rather than military use of the new weapon against Japanese civilians.

Morgan was the first director of the Health Physics Division at Oak Ridge National Laboratory. A native of North Carolina and son of a Lutheran minister, he was one of the first five American “health physicists.” Physicists in this new field were tasked with preventing radiation injuries to the personnel who produced the world's first uranium and plutonium atomic bombs.

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They invented instruments to survey work areas for radioactivity, monitored worker exposure, developed safe means to dispose of radioactive waste and set levels of acceptable concentrations in air, water and food for many new radioisotopes.

For five months before coming to Oak Ridge in September 1943, Morgan worked at the University of Chicago with two Nobel Laureates in physics—Arthur Compton, director of the Metallurgical Laboratory there, and Enrico Fermi, who led the Dec. 7, 1942, demonstration in Chicago of the first use of uranium to achieve self-sustaining fission at a constant power level.

Fermi later directed the design and construction of the world’s first continuously operated reactor – the Graphite Reactor in Oak Ridge, which played a key role in the development of the plutonium bomb.

In his book’s second chapter, “The Genie’s Anger Unleashed,” Morgan noted that part of the problem was that Groves, the military leader of the Manhattan Project, was offended by Leo Szilard, the Hungarian scientist who discovered neutron emission from uranium. Groves did not trust him and found him to be pushy and arrogant.

Szilard wrote the letter that fellow Hungarian Eugene Wigner translated into English and that Albert Einstein signed and sent to President Franklin D. Roosevelt in 1939. The famous letter helped convince FDR to enter the U.S. in the race to beat Germany in building the first atomic bomb. Ironically, Szilard, who had vigorously argued that the U.S. should develop the A-bomb, made three futile efforts to stop the military deployment of the world’s most terrifying and destructive weapon.

Morgan gave a chronology with footnotes to various documents. In 1944 and after June 26, 1945, high officials close to the Japanese emperor tried unsuccessfully to persuade the Soviet Union to intercede with the U.S. government to bring the war to a close.

On Sept. 18, 1944, FDR and British Prime Minister Winston Churchill secretly initialed an aide-memoire at Hyde Park, N.Y. They agreed that when the nuclear weapon is ready to be deployed, “it might perhaps, after mature consideration, be used against the Japanese, who should be warned that this bombardment will be repeated until they surrender.”

“There is no evidence,” Morgan wrote, “that the joint memo by two of the twentieth century’s greatest leaders is shown to Truman before he orders the bombing of Hiroshima and Nagasaki.”

On March 25, 1945, Einstein wrote Roosevelt to introduce and vouch for Szilard: “He is greatly concerned about the lack of adequate contact between scientists who are doing this work and those members of your cabinet who are responsible for formulating policy.” Szilard worried about a potential nuclear arms race between the U.S. and the Soviet Union if the U.S. dropped the atomic bomb on Japan.

On April 12, FDR died. He never met with Szilard. President Truman was immediately told by Secretary of War Henry Stimson about the Manhattan Project and the fission bomb that is potentially “the most terrible weapon ever known in human history.”

Truman ordered Stimson to form an interim committee to advise him on the use of the atomic bomb in wartime. The interim committee appointed a scientific advisory panel headed by J. Robert Oppenheimer, nuclear physicist at Los Alamos, N.M., and scientific leader of the Manhattan Project. The panel members included Compton, Fermi and E. O. Lawrence, inventor of the “calutrons” used in Oak Ridge to enrich uranium in fissionable U-235 for the first A-bomb.

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On April 30, Adolf Hitler, chancellor of Germany, committed suicide. On May 8, or Victory in Europe (V-E) Day, Germany unconditionally surrendered to the Allies. “Germany no longer presents the threat of development of an atomic bomb,” Morgan wrote.

On May 30, when Oppenheimer was in Washington, D.C., Szilard managed to meet with him. Oppie, who considered Szilard a meddler, told him that the A-bomb “is a weapon which has no military significance. It will make a big bang but it is not a weapon which is useful in war.” (“American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer” by Kai Bird and Martin J. Sherwin)

The interim committee met on May 31. Stimson “expressed the conclusion, on which there was general agreement, that we could not give the Japanese any warning” and agreed that the target should be “a vital Japanese war plant surrounded by workers’ houses” (a proposal by Harvard University President James Conant).

On June 16, Oppenheimer’s panel rejected several physicists’ recommendations (based on moral reasons) that the A-bomb be demonstrated to Japan before use against its civilians. According to “American Prometheus”: “Although Oppenheimer surely sensed that most of his colleagues at Los Alamos and Chicago’s Met Lab favored such a demonstration, he now weighed in on the side of those who ‘emphasize the opportunity of saving American lives by immediate military use.’ ”

“On July 13,” Morgan wrote, “the results of a poll of 150 scientists on the Manhattan Project are made known to Compton, who suggested the poll. He is informed that 83 percent (including me) favor some type of ‘demonstration’ of the enormous power of the bomb, which would serve as an inducement to Japanese to surrender and avoid countless unnecessary deaths.”

On July 17, Szilard drafted a petition signed by 67 scientists that asked President Truman not to use the atomic bomb unless Japan refused to surrender after the terms to be imposed on it were made public. Compton forwarded the petition and opinion poll to Colonel Kenneth D. Nichols, Groves’ assistant who worked mostly in Oak Ridge.

Compton wrote to Nichols: “You will note that the strongly favored procedure is to ‘give a military demonstration in Japan to be followed by a renewed opportunity for surrender before full use of the weapons is employed.’ This coincides with my own preference, and is, as nearly as I can judge, the procedure that was found most favored in all informed groups where the subject has been discussed.”

On July 25, Nichols recommended in a memo dispatched by military police courier to Groves that Szilard’s petition and Compton’s memo on the scientists’ poll “be forwarded to the President of the United States.”

Groves did not immediately follow Nichols’ advice, and on July 30, Stimson sent an urgent message to Truman asking permission to drop the first atomic bomb.

Truman, who approved the request, had not received the scientists’ views that a demonstration should precede military use until after he gave the order to drop the two bombs (the Aug. 9 date for the dropping of the second bomb, on Nagasaki, was chosen by Groves).

“Szilard, the most enterprising and persistent of those urging that we not let Hitler develop the first atomic bomb, thus became the wrong champion for a noble cause,” wrote Morgan.

Morgan noted that Truman ordered the dropping of pamphlets over Japanese cities after he issued an ultimatum for unconditional surrender. “But the pamphlets gave no indication of the unprecedented horror of the threat,” Morgan wrote. “The Japanese quite reasonably interpreted the threat as meaning that they

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could expect a continuation of conventional bombing.” (Hundreds of thousands of Japanese were killed by the U.S. firebombing of Tokyo, Japan's capital.)

Some scholars believe that the \$2 billion Manhattan Project had such a momentum that the dropping of the bombs on Japanese cities was inevitable and unstoppable despite the deaths of FDR and Hitler and the defeat of Germany.

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Thanks, Carolyn. It is my hope that this series of articles helps you appreciate the many and varied perceptions that exist regarding the atomic bombs and Oak Ridge's several roles in the Manhattan Project and the Nuclear Age. While many positive scientific advances have resulted, the origin of the age remains the atomic bombs dropped on Hiroshima and Nagasaki!

Next, Carolyn will address the question, was the dropping of the atomic bomb on two cities the only reason why Japan surrendered in 1945, ending World War II?



Karl Morgan

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Leo Szilard



Kenneth Nichols