

Los Alamos Historical Society

Newsletter

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Manhattan Project

Carrying Material for the Bombs

By Max Gittler

Introduction By Nancy Bartlit

Several years ago, friends in Santa Fe familiar with persons who worked on the Manhattan Project learned that my husband John and I were traveling to visit my mother in the Tampa, FL, area. They suggested that we visit Larry and Evelyne Litz. Larry had worked on plutonium research during World War II. We followed the advice and had a marvelous time learning about Manhattan Project days from the Litzes. Evelyne emphasized

that, along with the hardships, her opinion was that Los Alamos residents felt as if they were “family.” On an official tour of the Y-12 site in Oak Ridge, no one there could tell me how the uranium got to Los Alamos from Oak Ridge. So I asked Larry if he knew.

Larry answered that he did not remember exactly but he knew someone who did. That someone happened to be his golf partner who lived down the street! A phone call to Max brought him. That’s how we
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Good News/Bad News

New Archives Approved; Fuller Lodge Floods

The Los Alamos County Council approved on Dec. 21 a design-build contract for a new municipal building that will include 7,500 square feet for a new historical archives. This purpose-built facility will be a few blocks from the Historical Museum next to the Bradbury Science Museum and will house the museum collection, including documents, photos, and artifacts.

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Wet and damaged boxes and containers from the Jan. 2 flood in the Los Alamos Historical Museum Archives (Photo by Heather McClenahan)

Archives Flood Just After Approval of New Building

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The process is just beginning. Members of the Archives and Collections Committee, chaired by J. Arthur Freed, will continue to meet with county staff and the building contractor to design a space that is usable for researchers and protective of the collection. The new building is expected to be ready for occupancy in December 2013.

In the meantime, the document, book, and photo collections have moved from Fuller Lodge after a flood on Jan. 2. A frozen pipe in the Lodge attic burst, saturating the western section of the building. Carpet and some non-structural walls were destroyed. About 7.5 cubic feet of archived materials, mostly pamphlets from the history of Los Alamos, along with some photographs, were damaged. These items were sent to BMS, a commercial disaster and recovery firm in Fort Worth, TX, where they were freeze dried. Because of the quick response, only four pamphlets were unsalvageable. The salvaged items have safely



In just four days, crews from Delancy Street Movers packed up and moved the documents, books, and photos from the west wing of Fuller Lodge into the Community Building on 20th Street.

returned. Some of the pamphlets are wrinkled and water stained, but they are still usable.

The Los Alamos Historical Archives are now located in the Community Building on 20th Street, next to Ashley Pond. The space is tight, but it will be functional for the next two years until the new facility is constructed.

The Historical Society appreciates all of the support we have received from our membership during the crisis. We are grateful to the staff of Los Alamos County for its quick response to the disaster.



Fuller Lodge custodian Sammy Molina attempts to get water out of the carpet after the flood in Fuller Lodge. (Photos by Heather McClenahan)



Shelves in the 20th Street location reach nine feet, as opposed to the six feet in Fuller Lodge.

Memoir Tells of Moving Radioactive Materials

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met Max Gittler. He told us his story. I asked him if he had written up his experiences and would share them with the Los Alamos Historical Society's membership. He had and he would. That is why you are lucky to hear "the rest of the story."

Dear Children and Grandchildren,

It started with [granddaughter] Alyssa. She needed some material for a paper she had to write, and [daughter] Lynn suggested she call me about my experience with satellites, not the bomb. When I explained the choices to Alyssa, she thought the bomb would be more interesting. Later, when Lynn asked her about the paper, she said she never knew about the trips I took when I was in the Manhattan Project in the Army. She couldn't believe I actually carried a gun!

So now I'm going to make a short story long and fill you in on my history.

As a teenager, I was always fascinated with airplanes. I made many rubber band powered models of current planes, and I decided I wanted to get involved with airplanes. NYU [New York University] had a very advanced aeronautical engineering facility on a campus known as the Heights, just a short trolley ride from where I lived. So, after high school, I applied to NYU, and I was accepted. However, at that time, 1940, all the aircraft companies on the west coast, Lockheed, Douglas, etc., were laying off engineers. I thought there would be no demand, so I switched to mechanical. The Heights campus held 1,200 students in engineering and liberal arts, so it was like a small-town college. I would like to add a note at this point about my parents, who lived in an apartment in a middle class neighborhood. My parents, especially my father, always wanted to own a house. There were houses for sale in the next block, row brick houses with no space between them, a small porch, and a garage

underneath. They made the decision to forego the house because they wanted to ensure that they would have the four-year tuition for me. As I remember, it was \$270 per semester.

Along came the war, and I was drafted. I was in engineering school, and I got my first deferment. I got two more. Then, before my senior year, the deferments ended, and I joined the army. I took the physical and was sent to Camp Croft, South Carolina, for 13 weeks of basic infantry training. I was 21. Camp Croft was the same place my father took his infantry training 25 years before.

The training was very rigorous. We dug foxholes, took target practice with rifles and carbines (which were like short rifles), and I got high scores. What I remember was the initiation into an outfit where you had to take orders from someone you wouldn't spit on in civilian life. If he had two stripes and you had only one, he could tell you when to breathe, and you had to take it. I was very close to rebelling many times. We had no blacks, so they picked on Jews. On one important Jewish holiday, we were excused from duty, but they made all the Jews clean out the latrines.

... I was scheduled to go overseas with an infantry outfit when my orders were changed and I was sent to Oak Ridge, TN, to be part of the Manhattan Project. At the initial meeting of all the new GIs, we weren't told exactly what was going on, but they said if you wake up one day and find half of the U.S. missing, you'll know that somebody found the answer. We got an orientation on the safety and hazards. We were issued standard police revolvers and had an opportunity to fire them on their range. Our duty was to deliver radioactive materials to different research laboratories because they couldn't be sent commercially. There were four men in our crew, from California, Minnesota, Louisiana, and NY. They picked engineering students
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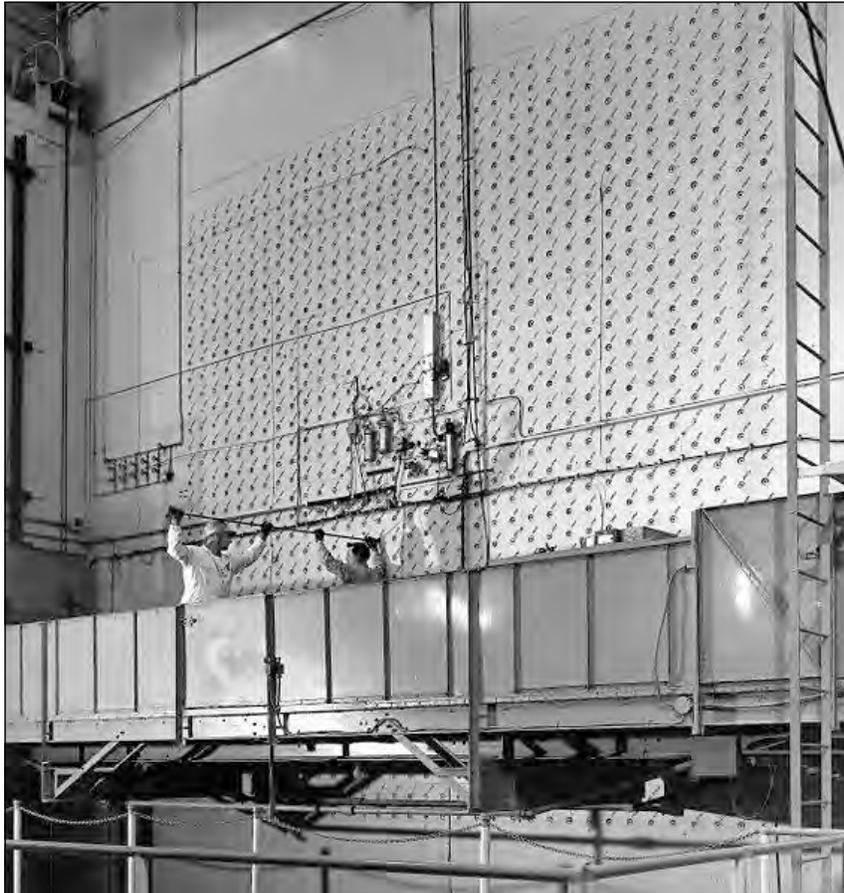
because they thought technical training would be an asset in case of an accident. What we carried was not explosive, but exposure could be damaging to the system. We wore two badges that were sensitive to radiation—one was just photographic film—and we turned them in to be checked every night. On our long trips, we carried instrumentation to monitor the level of radiation we were exposed to, and that's why we traveled with a car and truck. We knew how long we could be exposed to specific levels of radiation, and we would change from the truck to the car, which had no radiation exposure.

The Manhattan Project was a classified program set up by the government specifically to find a way to make materials that could be used to make an atomic bomb. Oak Ridge was picked because a new dam had been built nearby, and it would be able to supply sufficient electric power for the project.

The goal was to find a way to produce quantities of "fissionable" materials. When these atoms were split, the weight of the split material was less than when it was whole. The difference in the weight was the release

of energy. When you realize how many atoms there are in matter, you can see the enormous release of energy—in other words—a bomb.

Uranium seemed a good place to start. It was radioactive but was not fissionable. You could hold a slug of uranium in your hand without danger provided you didn't have any



The X-10 graphite reactor in Oak Ridge was the world's first operational nuclear reactor. It served as the pilot for the larger reactor built in Hanford, WA. It is a National Historic Site. (Photo by Ed Westcott, Oak Ridge official photographer)

cuts or openings. The [Manhattan Project] effort was designed to modify the uranium so that it would become fissionable or able to split and release all that energy. No one knew how to do this, and at Oak Ridge, three major companies, under army control, set up three different plants, apart from each other, to pursue three different approaches in the hope that one of them would work.

I was assigned to a plant called X-10, operated by the DuPont company, under army supervision. In charge at X-10 was a Major Murphy, who taught physics at the NYU campus I attended. The other operations were run by Union Carbide and Tennessee Eastman ...

X-10 contained an experimental unit, which consisted of blocks of graphite forming a cube of about 36 to 40 feet on each side. It was called a "pile." There were holes in the graphite into which uranium slugs, encased in aluminum skin a little smaller than a beer



Max Gittler found the size of the K-25 plant in Oak Ridge to be impressive.

can, were inserted to undergo radiation. The level of radiation could be controlled by inserting or removing rods of material, which absorbed the radiation. When the exposure was completed, the slugs would be pushed out the other side to fall into a tank of water about 20 feet deep. Water was very good insulation. Eventually, when they had “cooled off,” they were removed and processed chemically. The pile was also used to conduct experiments in radioactivity, and some of the output was material we carried to different universities for their research.

At X-10 we could see activity, and we were aware of the tests and experiments going on. We never had contact with the men at the other plants, except once we were privileged to visit the Union Carbide plant. They were running a chemical process in which the advancement in each sequence was very small, so they had to repeat the process over and over again. The building that we saw was on an upper level, with a concrete floor and

instrument panels every 100 yards. Because the process was repetitive, the building was ONE MILE LONG shaped in a U. We saw some GIs riding bicycles to take data from the instrument panels. I would guess that they knew less about what was going on than we did.

Our most frequent trips were to the University of Chicago ... and we ran that a steady once a week. The second most traveled was to Los Alamos, New Mexico. We never got to the gates of Los Alamos. Some officers met us in Santa Fe and took the truck up themselves. They brought the truck back the next day. On all of our trips we were armed ...

On the trip to Los Alamos, we used a 2½-ton flatbed truck and a following car. It was a 2-day trip, and there were four of us so we had to sleep on the way. We started with a station wagon and put two GI beds in it. That didn't work because the springs bounced us, and it was hard to stay in the bed. We
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tried other methods that were better but eventually we used the "Pony Express," one crew would go ahead one day and sleep in a motel in Shreveport, LA. The second crew would deliver the truck to them and sleep in Shreveport, then return.

The container on the truck looked lost on the flatbed, and we didn't cover it. It was about three feet in diameter and three feet tall and was solid lead, except for an opening in the top for inserting material. [The top was sealed] with a cylindrical plug of lead. It weighed almost two tons. When we stopped to get gas, the attendant

looked at how far down the springs on the truck were, and he couldn't believe that little pot was responsible for the load.

We also delivered material to [Ernest] Lawrence at the University of California and then on to the new plant at Hanford, Washington. At X-10, A. H. Compton had the office next to ours, and the civilian graduate students had the opportunity of a

lifetime working with these prominent figures in physics...We had Fermi in Chicago and Oppenheimer in Los Alamos ...

I realize now that we didn't have red flags or warning cones to mark an accident scene, but

fortunately, we never had an accident. The closest we came was on a trip to Chicago in the winter on an icy road, when our van did a 360 and the back doors opened and our cargo flew out the back and slid 20 yards down the road. The container was packaged inside a wooden crate, and, with no traffic, we were able to slide the crate back to the van and, with some difficulty, lifted it into the van.



Max Gittler sits on the hood of a truck that was used to transport radioactive materials from Oak Ridge, TN. His colleague from Minnesota is on his left, a lieutenant who met them is on his right, and his colleague from Louisiana, who had a farm that provided "watermelons for a sloppy and delicious feast" is on the far right. (Photo provided by Max Gittler)

Nothing was damaged. Fortunately, there were no cars behind us. No one wanted to drive those roads ...

One trip we made about two or three times was an undercover operation. We had to become civilians, and we changed out of our uniforms as soon as we left the gates of the project. We also had to change the plates on our van from federal to Tennessee. Our

objective was to deliver material to Dayton, Ohio, to a residential area consisting of comfortable homes. One of these homes had been gutted and was turned into a chemical laboratory doing research on a particular radioactive element. Once we found the house, we looked harmless enough to park in the driveway, but you couldn't tell a thing from the outside.

We got information (scuttlebutt from other GIs) that it took two quantities of fissionable material, a so-called critical mass, or enough weight which, when suddenly combined, would start a chain reaction that would release enormous energy—the bomb. We believed the very high-energy material we carried to Los Alamos was used as a “trigger” to accelerate that chain reaction. We made a delivery there shortly before the first bomb exploded in the desert [at Trinity] and subsequent deliveries near the dates of the Hiroshima and Nagasaki explosions.

The night before we left for Los Alamos, we were spectators in the lab where they were loading the “pot.” We had to wear disposable booties because of the high level of radiation so we wouldn't carry it outside. There were detectors all around, set to give an alarm if radiation levels were exceeded. After only a few minutes in the building, if you pointed the bottom of your foot at a detector, it would go off.

I was told that the amount of material we carried to Los Alamos in the “pot” was as small as the nail on your pinky. It started out slow but increased in radioactivity tremendously during the 48-hour trip. We kept an instrument in the truck that showed the level of radiation and how long we could be exposed to it. The pot was in the middle of the truck about 10 feet from the cab, yet at the end of our trip, we could drive the truck only one hour at a time [before changing] to the car. It was “hot.”

Obviously, we weren't working all the time. We had a GI bowling league ... We made trips to Ashville, NC, to the Vanderbilt

Mansion, where I remember walking into a fireplace, and there was another cavernous fireplace on the other side of the room. We went donkey riding on the trails in the Smokey Mountains, and the donkeys insisted on walking on the very outside of the trail above a big drop. We traveled to the Fontana Dam and the beautiful lake it created. We made friends with a local family and were invited to dinner often. The people treated us royally. In uniform, when you stood at the side of the road, the first car to come along would stop and offer you a ride. On our trips to Los Alamos, when we got to Shreveport, one of our crew had a farm nearby, and he provided the watermelons for a delicious and sloppy feast.

But it was apparent we were in the Old South, and all along on our trips we saw separate signs that said, “white only” and “colored.” I was discharged from the army in March 1946. I went back to NYU on the GI Bill, finished my last year, and graduated with the class of 1947 with a B.S. in mechanical engineering.

I've given you a lot of extraneous information, which may be of questionable interest, but I want to thank Alyssa for the opportunity to be able to talk to you all and to finally release some of my history, which has now cleared my memory bank.

Love,
Dad

New Phone for the Archives

If you are trying to reach the Los Alamos Historical Archives, please call 505-695-5252.

The 505-662-6272 line is now only for the administrative offices. Other phone numbers for the staff are available on Page 12.