

SOME WARTIME RECOLLECTIONS OF A G.I. AT LOS ALAMOS

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By the time I was inducted into the army during World War II, I had completed my Masters degree in mathematics and had started work on a doctorate. Consequently I was registered with the National Roster of Scientific and Specialized Personnel, a federal agency that had, as one of its duties, recommending to the Army, Navy and Marines (there was no Air Force then) men who, when inducted, might be assigned to service jobs which could use their specialized training.

Anyone registered with the National Roster was to notify the government agency responsible for the Roster when induction into service became imminent. This I did, but in the months I was being investigated thoroughly enough to receive clearance to handle top secret material, I was inducted, had completed basic training and was assigned to a desk job at Lemoore Army Air Field at Lemoore, California.

About four months later a strange sounding set of orders came to Lemoore stating that I was to be transferred. I was to be off the base within 48 hours; I would be accompanied or joined by no dependents; travel by private auto was not authorized and I was to go to Santa Fe, New Mexico and call a certain number for instructions. The "no travel by private auto" didn't bother me in the least because I didn't own a car, either in California or at home (Lincoln, Nebraska). However the "accompanied or joined by no dependents" was a bit of a blow, because my wife and son had come from Nebraska to be with me in Lemoore.

When my orders to travel were prepared, I took them to the Assignment Officer at Lemoore to ask him where he thought I was being transferred. He said "The only installation at Santa Fe is Bruns General Hospital, but I doubt very much if you are going there. Frankly, I don't have any idea where you are going. I've never seen orders like yours."

Leaving my family in California, I traveled by train. The Santa Fe Railroad doesn't go to Santa Fe, so one must leave the train at Lamy, New Mexico, and take a bus to Santa Fe.

I arrived in that quaint capital city (or town) about 9:00 p.m. and headed for the LaFonda Hotel to make my telephone call. The first person with whom I spoke questioned me regarding why I had called that number. After telling him that I was coming in on orders and was instructed to make the call, he transferred the call to a second person, who, in like manner, interrogated me. After again explaining my reason for calling, I was put in contact with a third party who said, "Yes, we have your orders. Go to a certain street corner in Santa Fe and be there at 11:00 p.m. You will be picked up."

Obviously this was not the time to discuss where they would be taking me.

Immediately I sat down in the hotel lobby and wrote a letter to my wife, Myrtle. I told her that I still hadn't a clue as to where I'd be stationed, but it was now even more evident to me that there was a high degree of secrecy surrounding my entire assignment procedure. I assured her that even if I didn't answer her questions or tell her what I was doing, and even if my letters sounded strange, I still loved her.

At the designated street corner and at the appointed hour I was picked up. I remember nothing particularly about my conversation with the driver other than chit-chat. He volunteered nothing and I asked nothing.

The ride was about 40 miles, crossing the Rio Grande River at the little town of Espanola and then climbing rather steeply on a narrow, winding, mountainous road. In what seemed to be the middle of nowhere, we came to a well-armed guard gate where my papers were examined. We continued in the darkness, and before any signs of life showed, we came to a second guard gate where my papers were again checked. Shortly after that we arrived at Los Alamos. It was around midnight, and I still had no idea what the installation was or even its name, but I was shown to a barracks and an empty bunk. Although I was very tired, I doubt that I slept at all that night. All I could think about was, "Where am I? Why was I sent? What's going on here?" Actually I couldn't help but wonder if I'd ever see my family again.

My first morning "on the hill"--as Los Alamos was referred to--I started "processing in." This process included listing the names and addresses of all the people I would be writing to and being informed that all my outgoing letters would be posted unsealed so they could be microfilmed and passed by the Army censor. Also, my incoming mail would be opened and filmed.

The very first letter I received from Myrtle in California was a shocker. Among other things, she asked, "By the way, did you end up at Los Alamos, the old boy's school north of Santa Fe? I hear that the Army Engineers have a super-secret project going on up there." I was sure I, or possibly both of us, would be executed for mailing secret information!

How long had Myrtle had what appeared to be the tremendous ability to read my mind at great distances? What other secrets of mine did she know? Actually she hadn't gained this knowledge, which I had been unable to attain while I was still with her in California by reading my mind, but rather by talking with the wife of a tech sergeant whose home was north of Santa Fe, in an Indian village next to Los Alamos.

At Lemoore we spent every evening at the U.S.O. We practically lived there, because our residence was a small room in that small town. When Myrtle and Freddie showed up at the U.S.O. without me, this Indian wife asked Myrtle where I was. When Myrtle explained that I had "shipped out" to Santa Fe under strange sounding orders, the lady said, "I'll bet he is at Los Alamos, right near my home, where the Army Engineers have a secret project."

Although the particular nature of the project was a well-kept secret, it was quite evident to people living between Santa Fe and Los Alamos that there was a constant and unusually large amount of truck traffic over a period of several months. Something was going on up the hill. I often think about how extremely effective was security surrounding work at Los Alamos. While it was well-known by a large number of people that there was something **BIG** going on, very few people on the outside knew any details, and what they knew they pretty well kept to themselves. I don't think this would be the case now, for once it was known that there was military activity going on, members of the news media would engage in relentless prying for information until they were successful, and then they would tell it to the entire world. How different it has been since WW II.

During those first two days of processing at Los Alamos, in addition to information regarding incoming and outgoing mail, I was given an impressive security talk. Some statements made such a strong impression that I remember them even now--more than 40 years later. I was told, for example that I was not to discuss my work with anyone outside the "tech area" which was the well-guarded set of buildings in which our offices and some of the labs were located. This meant that in such places as the mess hall or in our barracks we did not talk about the problems we worked on. We knew that the FBI was "shoulder to shoulder" in Santa Fe, particularly in the bars, and we were told that if we talked improperly to strangers in Santa Fe and were detected, we would be sent somewhere where we could talk all we wanted to and no damage would be done. I never really wanted to find out where that "somewhere" was. One bit of information I was given at this time was "music to my ears." I was told not to make application for a transfer anywhere, including to O.C.S. I would not be going any place else until the war was over. The war wasn't going very well in the Pacific, so I had no desire to go there, where most able bodied G.I.s were being sent. One statement made to me was most impressive, for as yet I had not been told what the mission at Los Alamos was. The remark was, "If our project is successful, the war will end within a month." This was hard to believe.

During my second day on site when my "routine" processing in had been completed, I was interviewed by Dr. Robert Serber from the University of Illinois for assignment to a group in the Theoretical Physics Division. He outlined our task in broad terms and told me the current state of development of "the gadget" -- a term always used instead of "the bomb." He told me to check out of the library the Los Alamos Primer which he had written and which delineated in great detail how the project was to be carried out. I was assigned to the group headed by Dr. Serber whose alternate group leader was Dr. Leonard Schiff from the University of Pennsylvania. At that time in the Theoretical Physics Division, headed by Dr. Hans Bethe, there were eight groups, and in my group, known as GROUP T-2, were 8 persons--half civilians and half soldiers.

We soldiers were members of a unit named "Special Engineer Detachment". I shared an office with T/3 Dieter Kurath, and not long after I joined the group, a young G.I. arrived and was assigned to our group and placed in the office with Kurath and me. This 19 year old soldier was Pvt. Peter Lax who had come from, I believe, an Army Specialized Training and Replacement Program at Texas A. and M. Even at that tender age Peter knew more mathematics than I learned in a lifetime. Already he had published an article in the **Bulletin of the American Mathematical Society** which presented a proof of a conjecture made by a well-known mathematician. Peter Lax was discharged from the Army early in 1946 and returned to college. He received his A.B. degree the next year and Ph.D degree two years later. He had a lengthy tenure as Director of the Courant Institute of Mathematical Sciences of New York University and was elected to serve as President of the American Mathematical Society.

The name Courant brings back another memory of Los Alamos. I recall the night Hans Courant, another G.I. and close friend of Peter's, celebrated his 19th birthday. The Courant and Lax families were friends in New York City. Richard Courant, the mathematician after whom the Mathematical Institute of New York University is named, had a good deal to do with the early recognition of Peter Lax's unusual ability and encouraged him in his pursuit of mathematics.

Richard Bellman was in an office a few doors down the hall. He, too, was a G.I. who, when he was discharged, returned to Princeton and completed his doctorate. In his day, Bellman, inventor of dynamic programming, was a most prolific mathematician. For years, hardly an issue of *Mathematical Reviews* appeared without one or more entries under Bellman's name. I seem to recall that Bellman was married to a WAC at Los Alamos. My most vivid memories of him were when he and Peter Lax got into heated and loud mathematical discussions.

Another young G.I. at Los Alamos who returned to Princeton on discharge, served as an assistant to Einstein and earned his doctorate was John Kemeny. Kemeny, co-inventor of BASIC, built a strong mathematics department at Dartmouth College while serving as its chairman and later became president of Dartmouth. Kemeny, like both Courant and Lax, came from Hungary.

Recently I read the book *Surely You're Joking Mr. Feynman*. That brought back memories of a brilliant, young, nutty (by his own admission, even the army didn't want him) physicist, Dr. Richard Feynman, who served as Group T-4 Leader. I recall particularly two incidents about him: one day as I was walking down the hall, I glanced in his office, and there he was squatting on his haunches **on top** of his desk, apparently in deep concentration. What an unusual position, I thought; what an unusual person! The other thing I recall is an incident which occurred in the building where we had our offices. The hallways must have been nearly a block long. Feynman had a dog chasing a ball down the corridor and bringing it back to him. He'd throw the ball as far as he could and the loudly barking dog, with encouraging shouts from Feynman, would chase and retrieve the ball. I suppose there were at least 50 people along the corridor trying to work, but Feynman was oblivious of this. Of course he could (and did) get away with things nobody else would dare to try. Come to think of it, I also remember hearing Feynman give a mathematical lecture, the title of which was "Some Operators I Know."

To this list of people about whom I've written and who I admire a great deal, I must add the name of Dr. J. Robert Oppenheimer, scientific director of the entire project. (General Leslie Groves was the military director). I remember seeing, at the special ceremony when we received, I think it was the Army-Navy E Award, Oppenheimer and Groves standing together on the platform. What a contrasting pair -- Oppenheimer was a slightly built man, while the general was huge. Oppenheimer had to be a master at working with people, for he had to deal with all kinds, both civilian and military. That he did his job well is evidenced by the success of the project. One of my prize possessions is a letter of commendation (which I suspect Dr. Schiff wrote) signed by J. R. Oppenheimer.

There were others at Los Alamos I remember, but not with admiration. Klaus Fuchs, for example, of Group T-1, Theoretical Physics Division, a scientist from Great Britain, turned out to be a spy for Russia. The espionage activities of another Los Alamos participant, Sgt. Greenglass, resulted in the last two executions for spying our country has carried out. When I was commuting between Los Alamos and Albuquerque on weekends, usually hitchhiking, to be with my wife and son, Greenglass was making the same trips. However, he was carrying classified information to his sister and brother-in-law, Ethel and Julius Rosenberg, who in turn passed it along to agents of the Soviet Union. For their involvement, the Rosenbergs were executed. They were the last spies United States executed. There is little doubt that Julius was guilty, but his wife probably would not have been found guilty had it not been for the false testimony of her brother.

While the war was still going on, we soldiers who wanted to have our families near us were restricted to keeping them outside a radius of 100 miles from Los Alamos. By road, Albuquerque was 105 miles.

As an Army private my monthly take-home pay was, in cash and as regular as a clock, \$12.30. Myrtle's allotment, with a child, was \$80. In order to get ahead enough money for Myrtle and Freddy to travel from California to New Mexico, she took a private duty nursing job, and in about a month they came to Albuquerque. There, after several days of walking the streets searching for a place to stay, we located a room. Most of my week ends were spent with my family in Albuquerque.

Before daylight on the morning of July 16, 1945, as I was returning to Los Alamos from Albuquerque, I saw what looked like the sun being turned on and almost immediately turned off. I knew that the test at Alamogordo (code name Trinity) had been successful. So if the officer who briefed me when I came to Los Alamos was telling the truth, this should mark the time from which the one month should be measured, and the war should be over by August 16. Indeed, it was!

By early August we had two bombs on the Island of Tinian. To assemble the bombs and prepare them for delivery to Japan, some fellows from our Special Engineer Detachment were sent to Tinian. A problem was that they were all enlisted men. It was decided that one should be commissioned so the group would have someone with a little authority. And little it was, because he was only a second lieutenant. I felt that the right person to commission was selected from the group. He was a resident of my barracks, and he was the one who even on inspection day left his bunk unmade, with litter around it. Unless we cleaned up his messy area, the entire barracks suffered, so he wasn't exactly popular with many of us. Excellent officer material, I thought. My thoughts were confirmed when, after the men returned from Tinian, our newly created second lieutenant was inspecting officer for our barracks, and because we weren't neat enough to suit him, he "gigged" us!

Did those fellows who went to Tinian hit it lucky! The Battle of Tinian had been fought long before our men arrived to assemble the bomb. On Tinian they were assigned to the outfit who had fought in the battle, and when finally the battle stars were awarded to the members of the outfit, our men weren't above accepting **their** battle stars. Also, on their return to Los Alamos, they were awarded credit for overseas duty, so when it came to counting points for discharge (including points for earned battle stars and for overseas duty), they got out early.

Thinking about the barracks reminds me of an event that would happen every now and then. During war time soldiers were allowed to have in possession only G.I. clothes. Civilian garb was all sent home (or given to the Salvation Army) while still at the Army Reception Center. At Los Alamos, a G.I. was occasionally sent on a mission to Oak Ridge, Hanford, Washington, D.C. or some other place. On the morning he was to leave, he would dress in a brand new civilian suit, shirt, tie--the works. Of course we didn't ask him, "What's Up?" We knew he was off on a mission of some sort.

Another memory. The G.I.'s whose work involved possible exposure to radiation were monitored very carefully. Every so often they were given special passes following a short stay in the hospital for checking. While they were in the hospital, a part of the exam involved collecting their

urine for a period of time. Hence, the pass they got following the hospital stay was referred to as a "P-pass."

As soon as the war ended we could have our families live in Santa Fe -- if we could find a place for them to live. Of course by this time I had two raises in rank with corresponding raises in pay: \$4 a month on becoming a PFC, and an additional \$12 for T/5 (corporal). Not what one could call big money, but it more than doubled my take-home pay! After living out of a suitcase in a room (without a closet) in Santa Fe, we finally were able to rent a tiny adobe house -- one room with path -- at 819 Ninita Street.

In mid-September 1945, with the war over and not much for us to do other than to wait to be discharged, a university was established at Los Alamos with credit awarded by the University of California. The twenty or so courses offered in chemistry, physics and mathematics were at the junior-senior and graduate levels. I took a course in Electricity and Magnetism taught by R. Brode. The "heady" staff included such persons as H. Bethe, E. Fermi and E. Teller. Fermi used no text in his Neutron Physics course, and since much of the material he presented was classified, I was told that the notes taken from his classroom were stamped **SECRET** and were required to be kept under lock. Another well-known person who was in and out the laboratory was Niels Bohr. We knew when he was around because we'd hear over the intercom system, "Mr. Nicholas Baker, Mr. Nicholas Baker, please report to room --."

Finally my time for discharge from the Army arrived, and like all other G.I.s at Los Alamos I was sent to Fort Bliss, El Paso, Texas, for separation. We were all sent to the same Separation Center so only one such establishment had to be briefed, in a general way, on the nature of the assignments we had held. We were to refrain from talking in specific terms about our work, and they, at Fort Bliss, knew they were not to insist on answers we refused to give. Oh Happy Day -- February 16, 1946!

Immediately after clearing Fort Bliss, I got a ride by car, and what a car -- a 1936 Cord, from El Paso to Santa Fe where my pregnant wife and my son were sitting on our bags, in our little adobe hacienda, waiting for me to arrive so we could head for home, Lincoln, Nebraska. This truly was a most happy day!