Nevada Test Site Oral History Project
University of Nevada, Las Vegas

Interview with Elmer Sowder

April 29, 2004
Las Vegas, Nevada

Interview Conducted By
Mary Palevsky

Oral history is a method of collecting historical information through recorded interviews conducted by an interviewer/researcher with an interviewee/narrator who possesses firsthand knowledge of historically significant events. The goal is to create an archive which adds relevant material to the existing historical record. Oral history recordings and transcripts are primary source material and do not represent the final, verified, or complete narrative of the events under discussion. Rather, oral history is a spoken remembrance or dialogue, reflecting the interviewee's memories, points of view and personal opinions about events in response to the interviewer's specific questions. Oral history interviews document each interviewee's personal engagement with the history in question. They are unique records, reflecting the particular meaning the interviewee draws from her/his individual life experience.

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The material in the *Nevada Test Site Oral History Project* archive is based upon work supported by the U.S. Dept. of Energy under award number DEFG52-03NV99203 and the U.S. Dept. of Education under award number P116Z040093.

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[00:00:00] Begin Track 2, Disk 1.

Elmer Sowder: Where do you want me to start?

Mary Palevsky: *What I thought we would start so people listen to it in the future will get a sense of who you are, maybe you could start by just telling me a little bit about your background. You could say your name, where you were born and when you were born, and then maybe ten, fifteen minutes of how you ended up being in a position that you would be working—where you first were working connected with the test site.*

OK, I'll see what I can do. If I get off track—

I promise I'll get you back on track.

—get me back on track.

And then every once in a while I might interrupt you to make sure I got a name right or a spelling right, ask for some kind of clarification.

OK.

All right?

Very good. You ready for me to start?

I'm ready for you to start.

My name is Elmer Sowder. I'm a retired test director from the Los Alamos National Laboratory. I was born and raised in Amarillo, Texas, born January 4, 1923, and I'm not one of those abused kids. I had a wonderful home life. My parents were the greatest. My father worked for the Santa Fe Railroad as a right-of-way agent, so I heard a lot about railroad work. And when I graduated

high school in 1940 I immediately enrolled in the Amarillo Junior College, a two-year college there in Amarillo. And I stayed there for about a year and decided that I wanted to go elsewhere. My father had attended Texas A&M College, but he didn't push me. He said, `You just go wherever you want to`. But I enrolled in Texas A&M and attended for two years until 1942 and then I got a draft notice.

OK, I'm going to stop you right here because I need to understand, what is a right-of-way agent?

They go and procure the land that the railroad needs to run their tracks through.

Ohhh, OK. And what was your dad's name?

Elmer Sowder. I'm junior.

Oh, Elmer Sowder. You're junior. And your mom's name was?

Dennie Dodd Anderson Sowder.

OK. And just before we get—we'll flip back right up to '42, but did you have brothers and sisters?

No. I'm an only child. And I was spoiled rotten, but I didn't realize it until later.

Yes. So Amarillo was a place where the railroad, the Santa Fe Railroad, had a—

That was one of the main offices of the Santa Fe Railroad. They had a big depot there. They had a big office building. In fact, when the Santa Fe office building was built it was the tallest building in Amarillo, Texas. It was only twelve stories tall but it was the tallest one at that time.

OK. Now I'll let you go back to '42, and you got drafted.

Well, I—are we ready to go now?

Yes.

I made up my mind that I didn't want to be drafted as a foot soldier because I didn't relish slogging through the mud. And I wanted [to be] in the Air Force. I wanted to fly. So right after

Pearl Harbor I decided well, I'm going to go apply for the Air Force, which I did. They had a recruiting office there right downtown, and I went in and applied. And they gave me a physical exam and all that stuff, and I thought well, good, maybe I'm going to get to fly. But then they called me back in a couple or three weeks and they said, Young man, this doctor that I was talking to, or the recruiter, he says, Young man, you're in good physical condition but you have one problem: your depth perception is extremely poor and we don't want you landing a plane fifty feet in the air. So I got turned down.

Wow! You were disappointed, I imagine.

[00:05:00] Well, I was unhappy but I went on and the Marine recruiting office was not too far away, so this buddy of mine that I had known some time, he and I went to the Marine office and in the same office they had the Navy recruiter and the Marine recruiter. Well, I decided I don't want anything to do with all those white uniforms with all of the buttons that the sailors seemed to have to handle, so I went over to the Marine desk and signed up for the Marines. Three of us, signed up for the Marines, and then the next thing they sent us to El Paso to sign up or to get formally accepted, which we did, and then they told us when we had to report to San Diego to boot camp.

OK. All right, so you're going to go from El Paso over to San Diego?

Well, I went back to Amarillo because they gave me some time. I don't remember how much time but they gave me some time, and they gave me a train ticket to get there. So the next thing I knew, I was on a train heading to San Diego. And we were met in San Diego and they took us out to the Marine base or the boot camp area and signed us up and gave us uniforms and all that good stuff and showed us where we were going to sleep. And under each double bunk was two buckets. And of course I was curious as to what the in the world were those buckets for. Well, one of the first assignments that I had was to go fill those buckets with water and put them back

under the bunks. It was supposedly for fire protection in case something happened. Well, the first morning, the first night, the drilling instructor we had, he told us, he says, Reveille is at five-thirty and you're expected to be out in formation in front of the barracks at six o'clock, ready to go to breakfast or ready to start the day. Well, they sounded the bugle—they had a speaker system right outside the bunk and that thing went off at five-thirty and I thought, it's too early to get up, so I didn't get up. And the next thing I knew I got hit in the face with a bucket of water. I found out what those buckets of water were for.

OK. OK. [laughter] You just got it. That's hilarious.

So from then on, when they told me to do something, most of us were much more willing to do it because they—well, if you've never cleaned a tile floor with a toothbrush, you really haven't lived, because that was one of the punishments. If you got out of line, if your rifle didn't pass inspection, or if your uniform wasn't proper, buttoned and all that, one of the punishments was to clean the latrine floor, or the bathroom floor, with a toothbrush.

With a toothbrush.

That was the ultimate. Otherwise it was just clean it. I got an education right quick. But that six weeks that I spent in boot camp was probably the best six weeks of my life. They turned a boy into a man. When I went in, I weighed a 155 pounds and was about as tall as I am right now, and when I came out of boot camp six weeks later, a 180 pounds. And it was not fat; it was muscle. Because they fed you good, but then they went and worked your tail off during the day. But it was the best experience. In fact, I have told some of my grandsons, I said, If you ever get involved in the draft, go sign up for the Marines. It's the best you could ever do.

[00:10:00] *Now let me ask you about that because one thing, so you go into the Marines, at boot camp everyone's so hard on you, but somehow you felt that they—when you say they made a man out of a boy, that you, what, came to know yourself in a different way or understand your strength or understand—what is that? I need to understand that.*

I think you've hit on it pretty well. Just recognize what you could do, that you were not a boy anymore that just went out and did fun things or what you thought was fun things. You said you enjoyed other things or you recognized that there were other things in the world besides your own pleasures.

OK.

So in boot camp, the three of us that had signed up in Amarillo, of course they gave us a choice during boot camp. They gave us a little questionnaire to fill out:

> What would you like to do when you leave boot camp?
>
> What branch of the service would you like to be in?

Well, I said I wanted to go in the air corps. The Marines had an air corps at the Air Force at that time. I said, I want to go in the Air Force, knowing that I couldn't fly but—I mean, couldn't pilot. And one of my buddies had been a bank teller before he went into the Marines, and he was a little overweight and a little—in not very good shape. In boot camp they worked the heck out of him. They didn't take any bones about being easy on him or anything like that. And he signed up for guard duty. And this other fellow, the third one, he was a bigger man than I was, but I think he signed up for the foot soldier. Well, when the assignments came out, I was assigned to ordnance training school in Norman, Oklahoma. Then the old bank teller or the ex-bank teller, he got the infantry and was sent overseas immediately. This was '43. And the other fellow that had signed up for the infantry, I think he got guard duty or something that he didn't really want.

But I went to ordnance school in Norman, Oklahoma. And when I left there they were setting up a training program in Cherry Point, North Carolina, setting to train B-25 bomber crews. They needed ordnance mechanics, so they sent me to Cherry Point, which I stayed for a year-and-a-half or so, two years. And during that time, due to a stupid accident, because I had my right hand crushed under a ladder and when they pulled the ladder off the finger was bent out this way [demonstrating], not at the joint or anything, so they took me to the hospital and it took them about, what was it, ten weeks to get that finger. And the doctor told me at the time, he went in there with a—of course this you must realize, '43, he had a fluoroscope and he put the hand under the fluoroscope and he went in there with what looked like a little crochet needle and put the bones back together in like a jigsaw puzzle. And he said, I don't know whether you'll ever have use of that finger or not, but at least you're going to have the finger.

Right. Look at that. Perfect.

But while I was in the hospital, the unit I was with was set up to ship to the West Coast to go overseas. Well, the doctor on the troop train would not accept me because it was too much—so I didn't go. Well, as it turns out, it was probably a good thing for me. I think it was an angel looking after me or something, because the people that I was to go with went on the aircraft **[00:15:00]** carrier *Franklin*, which was hit by kamikaze out in the Pacific and was gutted. They got it back to Pearl Harbor, but most of the crew, including the Marine crew, was killed. So I figured well, my finger saved me.

Yes, really. That's amazing.

So then after that, the next thing I remember I was on a troop train to the West Coast—and there's a little story to that one too—to the West Coast to be shipped overseas. Well, on the way we went through the little town of Raton, New Mexico. You obviously know where that is.

Yes, I do.

Well, they didn't have any food on the troop train, so what they were doing, they'd stop at a place like Raton or some place and we'd go in and get something to eat. I stepped off the steps at that depot. There was my father standing there. He had no idea that I was on that train. He knew there was a troop train coming through, but he had no idea that I was part of it. So I stepped off the train and there was my dad. So we had a little meeting for a while, ate a sandwich or whatever, and I got back on the train and went to the West Coast and then shipped overseas to Okinawa. Now this was 1945.

OK. So you're close to the end of the war.

I ended up on Okinawa, and I never did fly except in the B-25s, which required a co-pilot. There was sometimes they'd be flying and there wasn't a co-pilot on board, so I'd go sit up in the co-pilot's seat. And every once in a while a pilot—we'd be flying along smooth and straight and he'd say, `Do you want to try this?` I said, `Sure`. So I'd fly the plane. I never did any turns or any fancy maneuvers and never did land or take off with one, but I did fly the B-25.

Well, when I got over to Okinawa, I ended up in a Corsair fighter squadron. Of course my job was ordnance, to keep the guns and the bombs working. So all I did, we'd deal with the pilots when they came in from a mission. And I always knew when that plane landed, if the guns hadn't worked, the pilot was shaking his fist. Something in the ordnance had not worked, or something had gone wrong.

So you weren't actually on the plane. You were on the ground, making sure that the ordnance was in shape for each flight. OK.

Oh no, I was on the ground, listening to them when they came in and complained that this didn't work and that didn't work. That's a gull wing on that plane [indicating model]. And I spent an

awful lot of time laying in the crease there over that gull wing because that's how we would get to the ordnance, to the guns, to maintain the guns and to be sure there was plenty of ammunition in there.

OK, so because I don't really understand the mechanics of that, so a gull wing means what exactly?

Let me show it to you. I've got the model back here.

Oh, that's what I thought you meant. And that's a little crease there.

This little crease [showing on model] is where I spent a lot of time, laying in there fixing, working on the guns or loading ammunition. Excuse me just a minute.

OK. Sure, I'm just going to pause this.

[00:19:28] End Track 2, Disk 1.

[00:00:00] Begin Track 3, Disk 1.

Now, where was I?

OK, so you were on Okinawa and you were repairing this ordnance on these planes.

Yes, taking care—and of course every once in a while the infantry would come through and the guys in the air corps part of it, the infantry would need some help. They'd say, `We don't have enough people today.` Well, some of the guys would object. We weren't trained to be foot soldiers or infantry, and the lieutenant or captain or whatever it was, or the sergeant, he'd say, `You got the same training we did, so go along.` Well, that's how I lost my buddy. We were on a patrol one time and they got him, and he could have just as easily got me because I was in plain sight. But anyway, so much for that.

And that's when you got the rifle and the sword off the—

Yes, that's when I got the rifle and the sword. And then later, in another infantry patrol, I wasn't paying attention. I was being careless, and I got caught with a Japanese bayonet right across the forehead and right down the side of my face, and I was bleeding like a stuck pig. And this big buddy of mine, who I did not know before but he was in the same squad I was in, he picked me up, threw me over his shoulder, and carried me to the aid station. And on the way, I still remember this, I was bouncing on his shoulder, spreading blood, and I said, Jim, do I still have an eye? Because I wasn't sure. And he says, Yes, you still got your eye. Now shut up!

So he took me to the aid station and they kept me there, and they had nurses and doctors that they had brought over from hospital ships out in the harbor. And of course the nurse cleaned me up and the doctor came in and he said, Well, he said, you're not too bad. I was completely bandaged, head was completely bandaged, both eyes. And while I was laying there on a cot in the aid station, one day this colonel came in. So I didn't know he was a colonel. One of the nurses called his name or something. And he said—I was a sergeant at that time, so he says, Sergeant, I've got something here for you. He said, I know you can't see it but, I'm going to lay it by your pillow and when you can see it, you'll know what I brought you.

Well, in the meantime the unit I was with, the commanding officer had volunteered us for duty in China. And there I was. I couldn't—so I didn't ever—when they finally took the bandages off of me and I could see, there wasn't anything laying on my bunk by the pillow. And I thought, well, somebody picked it up, whatever it was. But as it turns out, what they had done is some of my squad or some of my unit, they had packed up my duffel bag and my footlocker for me, and I didn't know what had gone into it.

When I came back home out of the service, the footlocker and the duffel bag ended up at my parents' house, which is where my wife at that time was living, and they ended up in the **[00:05:00]** basement. I never went into it. So then one time I went into the footlocker to try on my old uniform, my green uniform, and it wouldn't fit. I couldn't button the pants and I couldn't button the jacket. But I never did go into the duffel bag.

And finally when I moved out here, I moved the stuff from Amarillo to Los Alamos, New Mexico first, and then when I came out here I put it in a U-Haul and came out here with my duffel bag and my footlocker. And one day Jeanie [Sowder], we had been here for quite a while, and Jeanie says, Aren't you going to find out what's in that locker of yours? I said, Well, you think I should? [And she said] Yes, we ought to know what you got in there. So I went out there and opened it. Well, down in that footlocker was a package wrapped in newspaper and plastic. My mother had gotten into that box and she had wrapped it all up. I unwrapped it and it was my Purple Heart, in its proper container, and a China Service Medal. But my buddies had packed things for me but they hadn't told me.

They hadn't told you. And this is amazing. So how many years later is this? This is—?

Oh, this was years later. Let's see, must've been, oh, forty years later.

So you're telling me you didn't know that you had a Purple Heart until forty years later?

No, I didn't know. I didn't know I had a Purple Heart.

That's an amazing story.

When I opened that package—

Well, what was your reaction? Were you—?

Shock. Surprise. Well, then I got to thinking about it, and then I remembered what he had said. He said, You won't know what it is until you're able to see and can find it.

Well, by that time my buddies had packed it away and I didn't—nobody told me anything about it. But anyway.

Why they didn't tell you, you think that's just because that's the way it was there? You just—?

That's the way it was. They were more interested in packing me up so I could go to China with them, I guess.

Right. And they probably figured you knew.

I don't know; they may have. Yes.

Yes. I mean, what an amazing story because at any point along the line the colonel could have said to you, I'm giving you a Purple Heart, but he figured you're going to be nice and surprised when you get your bandages off and see it there, and then they pack it up, probably thinking you knew you got it. Amazing.

Yes. But anyway. Jeanie and I both were surprised when I opened it. Of course, she had heard the story about the rifle, but she hadn't heard the story about—

I wanted to ask you something else about that too because—you're on patrol?

Yes.

And you're sort of ambushed. Or are you seeing that they're Japanese soldiers, or were you surprised?

Oh, this was just a lone sniper up in a tree, up in front of us. He could've picked off any one of a dozen men. He happened to get my buddy who was right in front of me, [a] fellow named Philip Lester Flowers. He was a good shot. He got him right in the heart. And Les was dead before he hit the ground. But could've just as easily been me or one of another eight or ten.

Yes. I hope you don't mind me asking you this question, but when something like that happens and you're a young man and this is your buddy, I mean, what kind of feelings—do you just feel? I would imagine that you would just feel overwhelming rage.

Devastated.

Devastation.

Devastated. Yes.

But does that then turn into anger, or do you just—?

Oh yes, it does. And then the other night I made a mistake. I saw firsthand some of the atrocities on Okinawa, not that they'd done necessarily to Americans but to Okinawans. And then I got a Smithsonian book the other day that went back and retraced the route of the Bataan Death March, and that didn't help my feelings about Japanese at all. That was terrible. But some of the **[00:10:00]** things they did on Okinawa were horrendous. Of course, the Americans did their share of some things, but nothing like that.

So it took me an awful long time to even soften up a little bit. There's a restaurant down here which you may or may not know about. It's called the Redwood Bar and Grill in the California Club. It became a favorite eating place of ours, you know, once a month or once every two or three months. But it was a hangout for Orientals. Every time we'd go in there to have dinner, there was one particular table which would hold ten or twelve people off on the side, and we had a booth kind of out in the middle, and it would be loaded with Japanese. And there was one time—this is trivia, but it was one time we were sitting there eating, and they had good food and it was a good place to eat.

But I'd say, `Jeanie, see that fellow sitting at the end of that long table over there?`

She said, `Yes, I see him.`

I said, I killed him forty years ago.

He looked so much—of course they all look pretty much alike to me.

But I've mellowed some. I've mellowed some. I take my unhappiness now out with the mayor.

Yes. But that's why I asked you about it and as I said, I hope you didn't mind, because I'm just trying to imagine myself in a similar situation where you see someone that you're close to and then the person that's killed him and could kill you is there, and all that must, you know, go on, but it happened so quickly at the same time, right?

Well, I had a guilt complex for some time because at the time this happened I had a thirty caliber carbine in my hand, and when I first saw the sniper up in the tree I put it to my shoulder to fire and it jammed. I mean, there was a shell jammed in there. So I had to clear it before I could use it, and by that time he had killed my friend. So I felt guilty. If I had of taken better care of my weapon, I could've probably saved his life. But so be it.

Yes. I think that—and this is easy for me to say because I'm standing way outside of the situation, but I think that in situations like that in war, you know, you're in a war so you're put in this terrible position of having to act really quickly to save someone's life. So yes, you're right at some level, but at another level it's just you're in a horrible situation that you didn't create that puts you in a position where a split second is going to make a difference. You know what I'm saying?

Yes, I understand.

Yes. And as I said, it's easy for me to say. I would feel probably, you know, similar feelings but—

It took me a long time to get to the point I am now, which is essentially, I haven't forgotten it but it's way back in the background now. I used to drive Jeanie nuts. Every once in a while at night,

she'd reach over and shake me: Elmer, wake up. You're having a nightmare. And that would be part of it. And the day I got cut, I would dream about that once in a while.

Yes. How much more traumatic can human experience get than something like that? I don't know.

But she commented, oh, it's been a couple of years or so ago, she commented, she says,

You know, you haven't had any nightmares lately.

I said, No. It must be fading away, must be getting in the back of mind where it's going away."

She said, Well, you used to scare the heck out of me because you'd be yelling.

But anyway, that's beside the point. It's trivia.

Well, I don't think it's trivia because I think, you know, World War II was a part of so many people's lives and in a very immediate way that my generation—I was born in '49—I had **[00:15:00]** *someone, a Manhattan Project scientist say to me, people who weren't of the thinking age during World War II do not understand what World War II was about. They just cannot possibly understand how terrible a time it was, basically, he said. So….*

It was even—yes. But I have felt since then that it was even worse in Vietnam and Korea. At least on Okinawa we knew who the enemy was. We could recognize the enemy. In Vietnam and—this good friend of mine who is the president of this homeowner's association, he's a retired Marine major, and he got wounded twice in Vietnam, and he agreed with me. He said, You know, we never knew who the enemy was. Men might be going through a village but you didn't know whether those people were civilian or whether they were part of the enemy. And I said, Well, at least in World War II we could recognize the enemy.

Yes. Yes. Now when you said the—we won't—I just wanted to ask you this, and again tell me if this—I just—it seems so amazing. When you were bayoneted, was that also a surprise or were you actually engaged in some kind of struggle originally?

We were out on patrol, and I should've been paying closer attention. I didn't.

How can anybody pay close attention enough to—you know, it's war….

He slipped in on my right side and he caught me with the side of his bayonet, and I still have a hairline scar up here, and I've got a scar down here but you can't see it. Well, I went to a dermatologist some years ago and I asked him, I said, Do you see any scars down on the side of my face? And he put me under some kind of an instrument. He's says, You don't have any external scars but, there are scars in the inner skin tissue. He said, There is a scar inside but, it doesn't show on the exterior. He said, You had a good doctor. I said, Well, to my knowledge, he never used any staples, he never used any stitches. Well, what this dermatologist told me, he says, Well, probably what he did was ahead of his time. He probably used glue of some sort to glue it together. So they've got now what they call new skin or—

Correct. Yes.

I know the manicurist that Jeanie went to, she uses glue to patch up—

That's right. Patch up the nails and stuff.

So this dermatologist told me, he said, Well, he must've been ahead of his time, because he sure got you back together without any scarring. And I don't even know his name. I don't even have his name. Don't know the nurses' names. I don't remember.

And these are people that basically saved your life.

Oh, they sure did a whole lot toward that, yes.

And when you were bandaged up, did you know whether you were going to be able to see again or not or—?

No. I didn't. No, they had me completely covered up. I guess maybe that's one reason that Jeanie and I got along so well as we did. She was willing to listen. My first wife would not listen to anything. She didn't want to hear anything about any experiences outside of the front yard of the house. Now my son, he's become very interested in some of the things. But Jeanie was interested, and then of course her first husband, Bob Bowman, he served in Korea. And she used to tell me, she says, when she'd wake me up, you know, `Wake up, you're having a dream, or a nightmare or something,` she'd say, `I didn't dare do that to Bo when he came back home. He would come up fighting if I even disturbed his sleep.` But I can understand that. But anyway, so much for the war stories.

[00:20:00] *OK, but just one detail, and this isn't a war detail. So you're married at some point before you go overseas, to your first wife?*

Nineteen forty-three, I got married. On January the twenty-fourth, the day after my first wife's birthday, January 23.

OK. And just to remind me, this was before you go into basic training or—?

Yes. Yes. I was still in school.

All right. But the war had started and—

Yes.

Yes. Well, the war was well underway. Yes. I just don't think that, you know, speaking of your experiences, I said it and I mean it, I can't imagine, you know, in human experience what could be more traumatic than the kinds of things that go on in the battlefield, especially when you're

talking about killing other human beings, and right face-to-face. I mean, my God, that's got to be one of the scariest things you can experience.

So where were you when the war ended? When Hiroshima and Nagasaki were bombed?

Oh, I was on Okinawa. We were getting ready to invade Japan.

OK, so you stayed there—

I stayed on Okinawa.

So they didn't send you home after this injury.

No.

OK.

I went to China.

That's right. That's right. And then back to Okinawa.

No, I never went back to Okinawa. I was on Okinawa when the war was over, but in the meantime as I said, our commanding officer had volunteered us for occupation duty in China, and another little sidelight to that. I'm going to bore you to tears if you don't stop me.

No, I don't think it's boring. Look, this is important history.

One day when the mail came in there on Okinawa, I got a letter from my first wife. She was madder than hell because there had been an article come out in the paper that my squadron that I was associated with had volunteered to go to China. And she was madder than hell. She says, `I know you've got enough points to come home.` She says, `What are you doing volunteering to go to China?` Well, I had to smooth that out a little bit and tell her it wasn't me; it was the commanding officer. So anyway.

Right. So you're on Okinawa—we're going back a little bit—preparing to invade Japan, is this what you're telling me?

Yes.

And you thought that that was really going to happen?

Well, there was every indication that that was going to happen. Nineteen forty-five. August of 1945. We didn't even know when the bombs were dropped on Japan. We didn't know that. First thing we knew was we got the word through there that Japan had surrendered. The war was over.

And you didn't know why.

We didn't know the real reason, no. In fact, when we went into China, my first trip into China from Okinawa was on a troop plane and we landed at the airstrip. This airstrip in China was a few miles outside of Peking, China. And we landed. There was a half-a-dozen of us, I guess, to go look the situation over and see what was there. And when we taxied in to park, the Japanese were surrounding the plane with their rifles. They didn't even know the war was over, or they weren't willing to admit it anyway. But we got off the plane and the captain or major, whatever he was, that was in charge of our trip, he stepped off the plane, went over, and conversed with the Japanese in authority. Everything was fine. The Japs [Japanese] dropped their weapons, they put their weapons down, we came off the plane, and everything was hunky-dory.

Wow. And is this still August, now, of '45, or is this—?

No, this was more like October.

October. Amazing. Amazing.

I spent—well, we all, it wasn't just me—we spent six weeks in China before we were ever **[00:25:00]** allowed to take a shower, take a bath, because out on the base, this little air base which originally was a Chinese air base which had been taken over by the Japanese when they invaded, and there weren't any sanitary facilities there at all. And so we could go into Peking but we were told, `Do not go into the bathhouses in Peking, and don't drink any`

water, don't *use* the water, period, unless you can boil it. Well, we had to do that out on the little air base we were at, had to boil it before we could use it.

But it was six weeks before any of us could get in and go in and take a shower. And we were sleeping on cots in a hangar, an old hangar that the Japs had been—and the Chinese, I'm sure too, had used. Just row on row of cots. My uniform was long-handle underwear, khaki pants and shirt, and then that was what we went to bed with. That was our sleeping gear. And when we'd go outside during the day, because the temperature was getting down in the range of thirty degrees below zero, and we'd throw on the insulated coveralls and that kind of thing, but that was what we wore outside. But when we come in to go to bed, all we stripped down to was our khakis.

So all of us were pretty eager to get a bath. And we'd go into Peking, into a Chinese bathhouse, of course they have three or four what I call swimming pools, bathing pools, and then around the walls were the showers. No stalls, no nothing, just shower heads and water faucets. And there was several of us, and when we first went in there, here comes a little Chinese girl—I say "little"—a grown Chinese woman to help us get ready to go in and shower. They would help us take our uniforms off, help us strip down, hand us a towel, and we'd walk through a door and there would be this row of shower heads around there, with the faucets, and then off on the side was three or four of these big pools with males and females in there all together, co-ed. And of course a few of us were kind of shy, but after the first experience I decided that I needed a shower worse than I needed to be shy. So we went in and we could take a shower. And then we'd come out and these Chinese women, young women, would help you dry off.

Yes. Different culture, for sure.

Oh, you bet.

Yes. But this is something you were told you weren't supposed to do.

No, this was after they had cleared us to do it. If we had done it before they authorized it, we'd have gotten a court-martial.

You would have, for real. Wow.

Yes, we'd have been violating a rule. But no, this was after they cleared us. Well, in the meantime, we had taken the Japanese that had in essence surrendered to us when we came out there, and we used them as laborers to do some of the work around there, and we ended up building our own restroom, shower facility, and all right there by the air base. So we ended up having our own facilities, but before that it was—if you wanted to get clean, you had to go into town.

Interesting. So you're there through when in China? When do you come back to the States?

Forty-nine.

Oh my gosh! Wow. And then once you get back, you're still with your wife?

Yes, we were still married.**[00:30:00]** Then I went back to school, living on what they called the GI Bill at that time. We were living on $125 a month, and that was for housing, food, transportation, that was everything; it covered everything. And I remember we used to save nickels and dimes in order to be able to go to a movie. Twenty-five cents to go to a movie, as I remember. But we survived.

Sure. This is back in Amarillo now.

No, down at College Station, Texas.

Oh, because you're at school. OK.

Yes. College Station, Texas. Good old Texas A&M.

And were you studying engineering there, is that right?

Yes. I had got a Bachelor of Science degree in civil engineering.

Wow. And that's what you were saying before about how your father—in the laying of the tracks and you had a sense of that kind of engineering from him?

Well, partly. Well, no.

OK, I got that wrong.

When I signed up first in Amarillo Junior College in 1940 or 1941, that's what I'd put down as my major interest, was civil engineering. I wanted to be a bridge designer. So when I got into A&M, I went the same route. Of course, I was getting some engineering experience with the railroad in the summers and all that I was working for them. I'll stretch it out a little bit. When I came out here, my first job out at the test site was over in Area 25 with the nuclear reactor testing program, and one of the things we were doing was building a railroad track between the MAD [maintenance, assembly and disassembly] building and the test cells. And I remember Bob Campbell. Of course, that's another story in itself. I came out here in 1951, working for Silas Mason Company.

That's what you said on the telephone. Now remind me again what Silas Mason was. That was—

Architect/engineering firm. It's now known as Mason & Hanger-Silas Mason, I think, but at that time it was just Silas Mason. And I got my start with Silas Mason Company at the Pantex Ordnance Plant in Amarillo, Texas. Because when I came out of school in '50, out of college, of course my father thought I would just automatically go back to the railroad full time. But Pantex was out there and I knew about it. So I applied for a job with Silas Mason and they offered me more money, a better salary, than the railroad did going back to work for them full time, so I went to Silas Mason and worked at Pantex.

Now what was Silas Mason doing out at Pantex? Were they—?

They were designing the new Pantex. See, Pantex Ordnance Plant had built 500-pound bombs during World War II. And so their contract was to remodel the plant to do whatever it was they wanted it to do. Of course nobody knew, I don't think, but there was all kinds of speculation that it might be the cups for flying saucers, you know, all kinds of stuff.

So they were building the atomic weapons there, weren't they?

No. No. I never did know what they were doing. I was just in the engineering part of it, designing facilities. When somebody came in and said, I need a building and here's what we'd like for it to look like, I was in the design group and we would design a facility. And along in **[00:35:00]** 1951, my boss at that time, he came in one day and he said, We'd like for you to go to Las Vegas, Nevada for a while. He said, We're opening an office at the Nevada Test Site, or Proving Ground, whatever they called it at the time, and he said, We want to set up an office out there.

And he said, I'd like for you to go out.

And I said, OK, how long?

He said, Oh, maybe six months.

That was in 1951 and I'm still around! But that's where I first got involved with the nuclear business, was when I came out here in '51 with Silas Mason, and saw one of the early tests.

Oh really?

Yes, in late '51. I missed the first one in January, but I saw one of the later one in September or October, whenever. And that was my first experience with nuclear. Well, I was with Silas Mason from 1951 to 1955.

Well, let me back up a little bit to one other personal note. Are you still married to your wife then? Just so I know.

Yes. Yes.

OK, so she comes with you.

Well, eventually.

To Nevada. When you came, and you said you saw your first test, so at some point you know that in Nevada you're working on atomic weapons at that point.

Yes.

Well, how do you find this out? Do they just tell you this is what you're doing or—?

Well, we had enough information that we found out fairly quickly what they were doing.

And did you need to—?

It had nothing to do with the laboratory. I didn't have anything to do with the laboratory at that time.

I understand. And did you have to get clearance and go through things like that at that point?

Oh yes. I got my clearance at Pantex.

Oh, of course. Yes. Right.

I got my clearance at Pantex, my first secret Q-clearance. And of course it was transferred out here.

Now when you saw the first test, where were you on the test site?

The first atmospheric test that I saw, I was standing on the slope of the hill just north of the control point. Several of us newcomers, we were standing out there, and this was one of the first air drops, I think, or maybe it was a tower shot. I'm not sure. But we were standing there, and of course we had been told to protect our eyes with the glasses. Of course in the early days we used old X-ray film. But we were standing on the slope of the hill when that thing went off, and it felt like a blast furnace door had opened right in front of you. It was terrifically hot. And then while

we were still standing there, a few minutes later here comes the shock wave. We all sat down, involuntarily. I mean, it just set us down.

Out of all of the atmospheric tests that were done in the fifties, I suspect I was at least around probably seventy-five percent of them. And I remember at times, of course we'd know when the test was and I'd take the family out to Mount Charleston and we'd go up there on Mount Charleston, maybe for a picnic or intending to have a picnic later in the day, but to watch the shot.

Wow. Now the first time you see it, that must be something amazing, to see it and feel it and the whole bit.

The mushroom. Yes.

Do you make connections in your minds about this—I'm just curious—about this being the kind of weapon that was used on Japan, or are you thinking about the future or the Russians, or what kinds of—?

My first recognition was that I realized what a terrific shock and surprise and devastation that must have created in Japan, because you got to see one of those things in person to really understand the force and all. And at that time, or in the early fifties, a lot of us began to be **[00:40:00]** concerned that there was no leader of any major country that had ever witnessed it.

Really?

Yes. The president of the United States had never witnessed one in the early days of the fifties.

Yes. So what is the concern based on?

They don't understand what it can do, so they might become dangerous with it. They might get reckless. That was my concern. We used to have bull sessions on this at times.

OK. So that was my question. Was it that you were concerned that our own leaders might be sort of cavalier, not understanding that it's a totally different quality of weapon than it had ever—

I think our leaders at that time, which Truman was gone, I think, by that time. Yes, he died not too long after the bomb went off in Japan, I think, but I don't remember dates.

No. Yes, it was Truman—no, Truman survived but when did Eisenhower come in? I

Well, he came in in '52.

OK. So you were talking about the Eisenhower era then.

Well, I don't think, at least in my mind I don't think any of us had any concern that the American president didn't know what it was because they had had all of the reports back on Hiroshima and Nagasaki and they had seen the damage reports, they had see all of the information that came in, so I felt—but the Russians. At that time the Russian, he had never witnessed a nuclear bomb.

OK, so that's what you're saying. So you're saying that in the Cold War, this is the early Cold War, that the Russians may not understand what they—

They didn't really realize what a devastating device it was, so they might get reckless with it. Well, now their concern nowadays is somewhat similar except that it's the rogue nations that you're concerned with. The Russians I think know what it'll do, but some of these other nations maybe don't understand.

This is interesting to me. So a parallel would be now we're saying the United States understands what a nuclear weapon is and what it does, but a rogue nation might decide to use it without really comprehending its—

Yes. Get reckless with it, yes.

And you had that same concern about the Soviets then.

Not anymore.

No, then.

Yes, then.

OK. OK. Interesting.

You've probably heard this before, but the test site turned into what a lot of us considered was a can-do organization. For a variety of different crafts, different educations, different people, different jobs, but everybody seemed to work together. Even Los Alamos worked well with Livermore. Friendly competition. Sometimes it wasn't so friendly, but so be it.

I've heard, yes. And do you think that this was this sense of concerns about the Russians? I mean, to what degree are you thinking in terms of this is an exciting, interesting thing to do and it's new science and it's a big place and we can do building on" and how much are you day-to-day sort of thinking about the politics behind it or the defense issues behind it? Is that a clear question?

I think so, and I think maybe I can answer it, maybe not as clearly. I think, and I have felt strongly for years, ever since I really got first involved with this, particularly after I went to the laboratory, but even in the days before I went to the laboratory, is that the activities out here, the things that we did out on the test site kept us out of a war. It was a deterrent, because as long as—well, in those days it was primarily the Russians, but then the Chinese came into it, but they all knew as long as we had the stockpile of weapons that we had and that we would use them like **[00:45:00]** we did on Japan. It kept us out of war, as far as I was concerned. I guess I still feel that way. My feelings are that what went on from the early fifties to the nineties was really the best deterrent there could've been to a major war. It doesn't do anything about the little conflicts like in Bosnia and Haiti and other places like that, but it kept us out of a major conflict because

they knew that we had as big a stick as they did to hit them with, so they didn't want to start anything.

Yes. With us.

With us.

Right. One of the reasons I ask is because we were at the test site last Friday, as I said, with students that are even a lot younger than I am, and we're seeing the remains in that, you know, that area where there are all those old drills, and they're seeing Icecap, and they're seeing the remains of the Cold War in a lot of ways, and the scale of it and the amounts of money that went into it are just so apparent from when you see it. And sometimes they have a hard time comprehending why all this was done because to them, you know, the Russians and the Soviets, it's a distant thing; it's not immediate in the way it was for you all. I think from what you're saying. The other immediate thing that's not so immediate to any of us today, and you can tell me if I'm right on this, is having seen what a world war was like. I mean, is that in your mind when you're working at the test site?

Yes, I don't want anybody to go through another world war. No way.

OK. So that's something that you are conscious of.

Oh yes, I'm conscious of that. Every time I see a story about Iraq and what the military is doing, going through over there, it really gets to me at times, knowing that they're over there. They're in danger, and there's not a whole lot—well, I have been, you might say, at some time I developed an anti-government attitude. I look at what happened in—World War II was pretty much a military operation. I mean, the military took care of World War II, but then you get into Vietnam. That was political. The politicians managed Vietnam which is, in my opinion at least, why it was such a failure. Korea was much the same way; it was a political war. It was not a

military war, because the politicians were calling the shots. Now we're in Iraq and I have to have the feeling right now that maybe we're in the same situation with Iraq; maybe not as serious, but the shots are somewhat being called by the politicians. If they'd leave the military and let them go, just like my father always told me, he said, `If you get in a scrap, get in the first blow and the fight'll be over.` And I think that's the way we are. See, I have a very bad attitude, I think. When I hear these stories about the soldiers being killed in Iraq because they're being ambushed and all this, that, and the other, and they're going through these towns which supposedly are civilians, they're not civilians any more than they were in the Vietnam era. Some of them are civilians, right, but some of them are carrying weapons. If it was me, I would go in there and I would just clean out that city, Fallujah, whatever they call it, I would clean it out and I wouldn't worry about how many civilians I killed. But that's what the military is concerned about; they're afraid of the bad publicity. But I'd go—most of them are not civilians; most of them are antagonists. Of course, this is an opinion of somebody that's ten thousand, twenty thousand miles away. But I get tired of hearing about soldiers getting killed by **[00:50:00]** being ambushed. Wipe them out! In fact, I still think Truman made a big mistake.

Where?

He and Eisenhower, when the Chinese invaded Korea. That's when we should've dropped another atomic bomb on Peking, China.

Really?

If we'd have done that, we wouldn't have the Korean problem we had, and we probably would not have had all the problems in Vietnam. If they'd have recognized the United States is not going to put up with this nonsense, so we better shape up or ship out. No, I have a very negative attitude about that. Peking should've been the next target for an atomic bomb, in my opinion.

Wow. Because you think that—

Right after the Chinese went over the border and went in and started killing our troops, we should've gotten their attention. Of course, that's a layman's one-sided opinion.

Yes. Yes. But somehow the logic in your mind is that that kind of really huge stick is the way to just stop things and that the damage to what, the damage done later is less because of that than it—?

I think so. I think the damage, it's too bad. I feel badly about the hundred thousand people or whatever it was, the Japanese that were killed. But then I get to thinking about how many hundreds of thousands of Americans would've died if we'd have invaded Japan. So yes. Of course, I am not a politician.

No, but this is what you think, and so it sounds to me from what you're saying that this kind of thinking is going on postwar for you when you begin to work at the test site. Am I drawing a conclusion here?

I think you're getting close, yes. As I mentioned to you, I think, I enjoyed my time at the test site with the laboratory [Los Alamos]. The laboratory treated me very well. I think I did a good job for them. And I enjoyed doing the job for the laboratory.

Now tell me, you're at the test site with Silas Mason, and so how does the laboratory piece come in? What's the story there? But you know what? This might actually be a good time to change the disk because we'll probably be getting to another story.

OK.

[00:52:54] End Track 3, Disk 1.

[00:00:00] Begin Track 2, Disk 2.

OK, so I asked you about the transition to the Los Alamos laboratory.

Well, I'll repeat a little bit. Came out here with Silas Mason to the test site in 1951, and I came out here with what at that time was a friend of mine. We had both been to high school together, and his name was Ray Blossom, and he and I came out here and worked for Silas Mason together and we had an office in Mercury. And during the early atmospheric days, when they were building towers out there, they were hanging balloons with nuclear weapons on them. And it was our job at Silas Mason to design and have built all the towers, all of the supporting equipment that went through it, which was line-of-sight pipes and all that and the other. Multimillion dollar contracts in those days. And Ray Blossom was the estimator. The facilities were designed in Las Vegas by the Silas Mason engineers. And then Ray Blossom and I were out at Mercury, and he would take these plans that had been designed, he'd make what they called a "government estimate" of what it should cost to build this tower and all this stuff. And then they'd send it out for bids to the various contractors, generally only one or two that were interested in building towers out there. But we'd send them out, and the bids would come back. Then it turns out it became my job to take Blossom's government estimate and go deal with the contractors, select the contractor to do the job. And Blossom and I both decided at that time, hey, with this job we've got, this is no time for our wives to come up with fur coats and we start driving Cadillacs, because they'll have us for embezzling money. But we were in a position where I could've dealt with the contractor. I'd say, `Oh, if you'll lower your bid this much and give me fifty percent of it, you can have the job.` It was my job to decide who was the successful contractor. But both of us were too chicken to even do that, even think about it very seriously.

But in 1955, Silas Mason lost their contract out here and Holmes and Narver came in. No, I'm ahead of myself, because first in '55 Reynolds Electrical and Engineering Company

[REECo], they formed an engineering group and Silas Mason lost the contract. And before the government hired another **[00:03:25]** A&E [architect engineer], REECo took it over with their engineering department. Well, I had been out here for several years and I decided I didn't really want to leave, so I put in to join REECo engineering. I was a charter member of the REECo engineering department in 1955, '56 and in the meantime Ray Blossom had gone to work for the laboratory. He had been hired by the laboratory, so in '57 I got a call one day. I was still working for REECo. I got a call one day from Blossom and he said,

Hey, would you like to go to work for the Los Alamos laboratory?

I said, Sure, what are you offering?

He said, Well, Bob Newman, the group leader, wants you to come to Los Alamos so we can talk about it.

Well, they paid my way and I went to Los Alamos for an interview, and Newman offered me a job at much better salary than I was making with REECo. So in '57—my family was still here, and Newman called me and hired me. He says, Come to work. But he says, Normally we **[00:05:00]** would move your family back. We'd move all your furniture and all, but I don't want you to move yet. He said, I'm going to send you right back to the test site when you come to work for us. So he said, Just leave your family there.

So what kind of position is this that you're getting at the lab? What are you called?

Just a staff member in group J-6, the engineering and construction group. And I went to work. And another piece of trivia is when I finally went in to J-6 office there in Los Alamos, the first person I saw was Bob Campbell. Previously he had been the group leader of J-6, and then he became a test director before I showed up, and when I showed up he came in the office. Well, I had known Campbell from working with Silas Mason because he and some of his people would

come out and tell Silas Mason what facilities they needed out there for some of the tests. So I knew Campbell. And I walked in there and there Campbell was standing there big as life in the office. And he looked at me and he said, Sowder, I don't feel sorry for you. You know what you're getting into. So we went from there.

But they treated me very well. I went from—this was '57, and my family was still living here, so Newman, our group leader, he immediately sent me back to the test site to work out in the reactor test area in Area 25. Rover. So I worked there from '57 to '59, living at home, commuting almost every day—

Did you drive or did you go in one of those buses that they talk about?

Oh, we didn't have buses in those days.

Oh, it was too early for the buses.

This was driving back and forth on "the Widowmaker," the two-lane highway. And well, somewhere in there, I'm getting mixed up to a certain extent.

That's all right.

But anyway I was living at home, working out at Area 25 on a fifty-four-hour week, which was overtime. And Bill Ogle, you've probably heard the name if you didn't know him, he was the division leader of J-Division, which was the test division of the laboratory. And he discovered one day that I was working for the laboratory, working at Area 25, which was one of his pets, but I was on an overtime, fifty-four-hour week, getting *per diem*, getting all kind of extras, and living at home, and he told Bob Newman, he says, You've got to get him out of there. He said, We can't pay this overtime and *per diem* for somebody that's living at home; which he was exactly right but he just discovered it. So they moved me to Los Alamos. They moved me and my family, paid all the bills to move, and put me in a government duplex. So that's how I got to Los Alamos.

Wow. So when you're working these fifty-four-hour weeks, what are the kinds of things you're doing out there?

Getting the test facility ready to test reactors.

OK. That must have been something.

Yes. There's a lot of little interesting sidelights to that too. And I was sitting here trying to think of the contractor that we had that designed that area out there. This was before the days of the engine test stand.

Yes. We can look that up. That's something that we can find in a book, so we don't have to worry about it.

We tested reactors out there, and that's where I got my biggest radiation exposure. It was out in Area 25.

Oh. What happened?

Well, one day a reactor went wild and blew the control rods, blew the rods out of it, and scattered **[00:10:00]** them all around the test settle area, in pieces. I mean, they were small pieces but they were hotter than a two-dollar pistol, as the old saying goes. So the fellow that was really running the show—Campbell was the test director but they had a scientific man out there named Keith Boyer, and he got everybody that he could get his hands on to go out there in the middle of the night, picking up those little radioactive pieces to get them out of the way. Well, we had tongs. It wasn't barehanded work. But that's where I got most of my radiation exposure, as opposed to working on weapons. And a little sidelight to that: just about two or three months before I retired from the laboratory, I told one of the health physics fellows that I knew pretty well, I said, `Hey Dick, get me my radiation exposure record.` So he did. I've got it in here in the file somewhere. And when he handed it to me, I said,

Dick, thank you, I said, this is going to be the grounds for my lawsuit against the laboratory when I retire.

And he shook his head and he said, What are you going to do to me?

I said, You know I'm kidding.

Hell, it didn't amount to much anyway. It was routine; more routine than not. But anyway I scared the heck out of that health physics guy.

I guess you did. But speaking of health physics, at the time that it happens, what kinds of things do they do? How do they sort of figure out what your exposure is, and is there a concern, or what happens?

Everybody wore what they called a film badge, which was a dosimeter, supposedly would let you know what kind of exposure you had. And you'd turn those in every week, or at least once a month, and then they would analyze them and come back with a report of how much exposure you had. Well, I discovered in the early fifties during atmospheric days, working for a contractor, and the construction crafts out there, I discovered right quick that one of the things they were doing was after a test when they'd blown a tower down or whatever and steel was radioactive, some of those construction hands would go out there and put their dosimeter on a hot piece of steel and then pick it up so they thought maybe they could get some benefit out of being overexposed. Maybe they wouldn't have to come to work tomorrow or something.

Really?

Yes, that was done. Now to what extent that it affects some of these people that are now saying they were overexposed, I don't know. But I do know that it happened.

Yes. Interesting. So after the reactor accident—I guess you'd have to call it an accident—

Oh yes.

What was with your dosimetry? Did it register higher and—?

No. There was not enough to be alarmed about. Whatever the daily dose or the monthly dose through the week was not anything to be alarmed about. The report I got before I retired was just an accumulation of all of the monthly, yearly reports that had been put together. Still didn't amount to a hill of beans.

Yes. So once you moved to Los Alamos, then you're what? You're commuting back and forth to the test site, is that how that worked?

Right. Right. Yes.

And you're still dong the same thing: engineering, the buildings, and the facilities for all the—

Right. Right. Except after the Rover, after the reactor business, it was then we started being concerned about getting facilities ready to do underground tests, because by that time the treaty had been agreed to and we were going underground. No more atmospheric.

Right. What was the sort of feeling about that, about the politics of that? Was there a general consensus that it was good or bad, or did people have an opinion about it?

Well, it was a little bit frustrating to some of the scientists, and I'm not a scientist, that they had to figure out ways to get the data out of a test that they used to get but directly from atmospheric days, and now they had to figure out how to do it underground. So they sometimes would come **[00:15:00]** up with some oddball things that they wanted to do underground, so it was J-6's job to do the design and figure out how to accomplish some of these things that the scientists wanted.

So let me just see if I'm getting this right. A scientist wants to make a certain kind of measurement of the device when it explodes, and they say, `This is the kind we want`, and you all have to think about how you can engineer something to yield that information.

How you can do that. Right. Right.

Wow. You see those pictures of all those cables going into those holes and that whole bit. That's what that's about?

That's the data collection cables, yes. Goes back to the data recording equipment back in the trailers. And of course we learned fairly quickly—well, it was an experiment, all the way through the early days of underground testing, to be sure that we could contain the explosive underground.

Right.

And now I have to say this, both laboratories at least ninety, ninety-five percent of the time, they contained the explosive underground. Occasionally one would get through, get loose, and then you'd go back and figure out what went wrong. Why did it do that? So it was a learning experience all the way through.

So when there was a test going to be happening, then you'd come for a certain period of time and stay out at the test site, or how would that work? Between Los Alamos and the site?

I'll go back, sidetrack a little bit. In the early days of underground testing J-6 did not have anybody personally stationed, so a half-a-dozen of us in J-6, Los Alamos would take turns coming out here to man the site and see that the contractors were doing what we needed for them to do. So we kind of rotated. Well, that wasn't too successful, so finally, well, let's see, '57, I guess in '62, '63, '64, I think I left Rover in '65 was my last to do with the reactor business, and I was made what they call associate group leader. We had a group leader, a deputy group leader, and at that time I think we had two associate group leaders.

So when you were made the associate, who's the group leader at that point? Do you remember?

Ray Blossom.

OK. All right.

And Bob Newman, he's the one that hired me when he was group leader, but after that he became test director. He was a test director. So then Ray Blossom became the group leader, and I was one of the grunts, associate group leader. And I was given the responsibility to take care of the test site as far as J-6 was concerned, to be sure that the contractors were doing what they were supposed to do and what we were asking them to do, and within a budget. Because the way the budgets were set up is that the DOE [Department of Energy] or the AEC [Atomic Energy Commission], they got a budget of so many dollars to manage the test site. Well, their management consisted of supporting the laboratories. So a budget period would come up and we'd have so many millions that was assigned or designated to Los Alamos to support their testing operations, and so many dollars for Livermore and Sandia and DoD [Department of Defense] and all that good stuff. So that became part of my responsibility, was not only to see that the facilities were done like the lab wanted them, but that it was within the budget that we'd been allocated.

[00:20:00] *And so there's other budget money that goes directly to the test site administration to support you all, so it's both ways?*

Well, yes, it's both ways.

OK. All right. Yes, the organization of how the labs and the site and everything worked together is sort of this interesting puzzle.

Well, there's one thing that people didn't recognize out here, particularly the AEC, ERDA [Energy Research and Development Administration], DOE people didn't recognize. Their primary purpose out here was to support the laboratories and the testing operations. They didn't readily accept that, some of them didn't.

And how would that manifest itself? In what sense?

Well, we would go in with a request to do this, that, and the other: drill a hole or mine a shaft or whatever, and some of the people out here thought that the labs don't need that. So finally we had to get to the point where it got to be kind of funny. I had one of the AEC engineers one time. In a conversation he and I and others were having, he made the statement, he said, I have learned, don't turn the labs down on anything they ask for because they're going to get it regardless. Because that had happened on occasion where the immediate guy that was supposed to rubberstamp or agree to something didn't do it. So what do we do? We go to the boss. We go to his boss and say, Hey, we've got to have this if we're going to do this test. So he'd go back down to the guy that had turned us down and tell him, Give them what they want. Of course that's the reason there's a new contractor out here. That's exactly the reason that Bechtel has got the contract out there now.

Why? I mean, explain a little bit more what you mean by "that's the reason."

Well, the DOE in Washington, the Washington headquarters of the DOE, became convinced that the DOE was no longer running the test site, that the laboratories are running the test site. In essence, they were right but not in the way they envisioned it. So when REECo lost their contract and EG&G [Edgerton, Germeshausen, and Grier], their contract expired, and Holmes and Narver expired, or Raytheon, whichever it was at the time, is when they went out to get new proposals for a new contractor out here. One of the conditions, under the table or maybe official, but one of the conditions is *you* are to run the test site. The laboratories are no longer to run the test site. So Bechtel took that as meaning that they can do anything they want to, and they just about try. The DOE, or the management of what used to be the Nevada Operations Office [NVOO], has essentially nothing to say about the test site. Bechtel is running the test site.

Amazing.

That's a biased opinion, you realize.

No, but it's clarifying, I think, for all of us who aren't in that world and don't understand the history, and us regular old American citizens who aren't in all this stuff. I'll tell you a little bit about myself, setting up a test site tour: I think I'm working with the DOE but I'm actually working with Bechtel. And it's confusing to understand the relationships between the DOE, the contractors, and the lab. Historically it's difficult to understand. What's really useful about what you just said to me is I have to be careful not to assume that the relationship that Bechtel and the DOE now have is what the relationships between the contractors and the AEC and the labs used to be. Because you're saying it used to be a different balance than it is now, and see, I'm looking at it now and thinking, wow, that contractor sure has a lot of power.

He has way too much power right now, as far as I'm concerned.

Right. So you're saying in the earlier era, at least as it was set up, and I'm asking if I'm correct on this, you have the labs. Clearly they're doing the tests. They need support for the tests, and obviously they're not going to have big architectural/engineering firms, so they contract out to support the tests. But it sounds to me like also historically through time the bureaucracy of the **[00:25:00]** *test site itself grows. So you've got that bureaucracy and then the lab bureaucracy and you're having to all deal with each other. Is that correct?*

I think you're very close, yes.

I'm close. So clarify as you will.

Well, I may have given the wrong impression, that the labs ran the test site. That is in essence a true statement. However, it was not a dictatorship. If the labs, either one of them, any of them, came out and said—you know, their management, the labs' management, decides what kind of a test they want to do and what information they want out of it. So then from there on that information is provided to groups like J-6 in Los Alamos and then they go and tell the

contractors out here, like REECo, here's what we need. We need this kind of an underground facility, or above ground, or series of this, that, and the other. And then submit this through AEC, ERDA, DOE, whatever, for their approval. Now that's where sometimes we ran into one of these where some particular engineer or whatever with the DOE would say, Hey, they really don't need that, but he didn't know the background. He didn't know really what the lab was trying to do. And the labs, Los Alamos and Livermore, in spite of the fact that they were considered friendly competitors, they were also friendly associates. I mean, information gained by one laboratory was in most cases generally handed or passed on or shared with the other laboratory.

Do you think there was ever a situation, because one hears a lot about the competition between the two labs, that you all were doing sort of a similar test because you didn't know that the other was doing it, or—?

No, the real competition was with the military. The military would decide that, OK, we need a weapon that we can fire off a ship, certain size, they would specify the size of the shell and what they wanted it to do, and then they would go out to the laboratories to design such a nuclear weapon that was the proper size, proper configuration, that would fit their requirements for whatever they wanted to do. Hell, they even came to Los Alamos one time wanting a nuclear hand grenade.

For real? Oh my gosh!

Well, that was the talk. It never went anywhere. But the military is what decided what kind of weapons—what they wanted the nuclear weapons to do, and they put it out to both Livermore and Los Alamos, and the two labs would come up with a design of how they thought this problem could be solved the best. And then somebody in Washington, in the Department of

Military Application or whatever, would decide which laboratory had the best design and they'd hand that problem to that laboratory. So then the laboratory would proceed to build up a test sequence to test and see that they could get this device to do what the military wanted it to. And that was the competition. Sometimes both laboratories would have designs for meeting the same requirements, and somebody in the military would make a decision that We like this one the best, or Let's go with this one, or whatever.

OK, that really answers my question well, but I have to back up one second on this nuclear hand grenade. Just how far along did this get? I mean, did this—?

Just in people's minds. Far as I know, it never went any further than that.

Yes, you wonder what a scientist would say if he was thinking about designing a nuclear hand grenade. My goodness. You'd have to have a really good arm to throw that thing very far.

It's incomprehensible to me.

Yes. Oh good, because it was incomprehensible to me, and I just wanted to make sure I wasn't—

It's just not a fact that something like that would be useful.

Yes. OK.

[00:30:00] But see, the missiles that they fire off of these submarines. That was initially a competition between Los Alamos and Livermore, to design a weapon of the proper size, proper configuration, proper explosive power that the military wanted, that they could put into a tube and fire it off a submarine. The labs had nothing to do with the design of the submarine or its firing mechanism. It was the weapon that the Navy wanted. So the labs competed with their designs. And of course, if the labs—well, in the case of Los Alamos particularly, and I'm sure it was the same with Livermore, if the lab in starting their test series, and it wasn't a matter of testing one time, it was a series of tests. And if the labs were not getting the support that they

thought they needed to do exactly what they were trying to do, that's when they complained to the DOE, We're not getting the help. But at least in my tour of duty out there, I'm not ever aware of the fact that the labs didn't end up with what they really needed. I don't think the DOE ever kept them from getting it. But DOE Washington was a different story. Now DOE Washington, as I said earlier, they felt strongly that DOE was not running the test site. The laboratories were. Well, that's true. The laboratories were, because that's what the DOE was supposed to do out here, was just support the laboratories. They knew that. That was their charter. But they weren't willing to accept it all the time.

Right. And it just sounds like it's what always happens when big bureaucracies are needed to run things. Then you get these power centers, I imagine. And, you know, you go talking about huge amounts of money; you know better than I the amounts that we're talking about here, so….

Yes. Somewhere back in my archives I've got some records of what it would cost a year just for Los Alamos to do a series of tests. But I know that the Los Alamos support budget for their part of activities at the test site would run into fifty, sixty million dollars. That's just Los Alamos. We used to sit down—this was NVOO would have their people sit down with my peers in Livermore—and we'd sit down and say, Well, here's how much money we've got to split up. Now each one of us—Los Alamos, Livermore, DoD, Sandia, EG&G, every one of them—come in and say, Well, we need this much. Well, you can't have this much because Los Alamos needs fifty million and you can only have one million, maybe, or some silly number. But we used to have some interesting budget discussions even at our level. But it generally came out, nobody—well, DoD would come in, for instance, and say, I need so many millions of dollars to build some housing in Area 12, which is where their operation was based. But in the meantime maybe Los Alamos wanted to drill another hole out in Area 3 to do another underground test, so you'd have to sit there with DoD people

and Sandia people and negotiate, you know, OK, you can have your new housing, new dormitory, but we've got to have this hole. We've got to drill this hole.

And I got a reputation at one time because Bill Ogle—we were drilling vertical shafts out there to do some testing in and putting elevators in them because it was not feasible to have people climbing up and down ladders all the time. So Bill, well, he had some test in mind of his own. So we had another shaft out there that was not being used, so he one time came to J-6 and he said, I need to put an elevator in shaft so-and-so, 3-E or 6-A or whatever, he said, There's **[00:35:00]** a test I want to do in that shaft some one of these days and I need an elevator in it. So the elevator may have been twenty million dollars or something, just to put an elevator up and down that shaft. So I kind of held that in my hip pocket. When we'd sit down and have our individual budget meetings within Los Alamos organization, like REECo, Holmes and Narver, EG&G, DoD, you name it, Well, we don't have enough money to do all of this stuff. I said, Well, you seem to forget, I have a million dollars in my pocket which we had budgeted but we aren't going to use this year, so I've got a million dollars in my pocket that we can use for something else. And I got the reputation. I didn't any more have a million dollars than anybody else.

But REECo had a superintendent or a manager out there at one time named Wally Lloyd. And we used to sit in these little meetings and something would come up and Wally or somebody would say

We need some money to do this, that, or the other.

And other people'd say, But we don't have it in the budget.

And Wally Lloyd would speak up and say, Hey, Sowder's got a million dollars in his pocket. We'll use that.

Ogle never did get his elevator, but he never did really need it. If he had needed it, he'd have gotten it. Because in the atmospheric days, talk about the laboratories running the show, Bill Ogle ran the show out here in the atmospheric days, in the fifties.

Yes. Just from talking to people who mention his name, you've confirmed something that—

Well, there was one test, and I have not dug around far enough to be able to name the test, but in the 1955 era, I think. At that time I was still with Silas Mason and part of my job, they had their readiness briefings in Mercury, in what at that time was an AEC office there in one of the buildings there in Mercury. And I got assigned the task to document the readiness briefings, so I'd go into the readiness briefing. I was a contractor; I was not—and I'd take pictures of the charts that the weather people were putting up and all this, that, and the other. I'd take pictures of it and then I would get in a car—this would be in the afternoon—and I would get in a car and I'd drive to Las Vegas to get the pictures developed and get prints of them, and then get them back to the test site by the time of the weather briefing or the readiness briefing the next morning. So that was the initial readiness business.

Wow! How times have changed.

Oh yes. All done by computer now.

Right. Well, speaking of photographs, that's one thing that Bob Campbell was talking to me about, how important photography of things were, not just like with your talking about in the meeting but actually photography of the devices and of the engineering on them, so you could figure out if something had gone wrong, you'd have that documentation. That was interesting to me.

Oh yes. We discovered one thing which I think is going in the same direction, is we, Los Alamos, had an underground test out there one time in Area 3, Area 4, I don't remember which

one, but counted down to zero and nothing happened. Nothing! Dead silence. So then there was a mad scramble to try to figure out—you got a multimillion dollar nuclear device down hole that you can't explode and you don't want to leave it for posterity because you—well, there's never the hundred percent sure that it might not go off sometime, because it had been armed and fired, just something went wrong. And it's a little hard to go underground and find out, although we've **[00:40:00]** done it a time or two. But that, I think, was what Campbell was maybe referring to, was they went back, when this thing didn't work. They went back and they checked all the photographs they had of when they assembled the device, when they assembled it in the rack before putting it down hole, checking for wiring, connections, and this, that, and the other. And I don't remember specifically what it was, but they found enough to satisfy them that it was a wiring or a switching problem that must've happened to keep it from firing down hole. So what did we do? They knew what the problem was. They had satisfied themselves of what the problem was. So then we made a scramble to figure out, How are we going to destroy that device? We can't leave it down there for posterity. So they came up with the idea of drilling a hole as close alongside as they could, putting another device down hole, so that the old device would be within the destruction area of the new one, and get rid of it. Well, that's exactly what we did. It was only one nuclear explosion but it destroyed the old one. But that's how they—well, if they hadn't become convinced that they knew what had caused the problem, they'd have probably gone at it in a different way. We'd have probably drilled another hole down and then mined over to the one that didn't work to see if we could recover it. That would've been one possibility. Nobody wanted to do it.

Oh, I see. Yes. So when the one goes off that's the one to get rid of the other one, does it cause the other one to be a nuclear explosion also?

No. No, no. It just destroyed it. The force of the nuclear explosion destroyed the other one.

OK. So then it was gone and there was nothing to—

It was gone. Nothing to worry about.

[Sound of pages turning]

I'm sure you must've seen this book.

Yes, I read that book.

And I'm sure you must've heard about the time that they had a shot mounted on the top of a 300-foot tower out there?

And that it didn't go off.

They had taken the elevator and all off, and when they counted down to zero it didn't go off?

Right.

You heard about that one.

I did. Well, so were you there when that happened?

No, no. No. If I was there, I didn't know about it. I mean, I wasn't on the inside there. But I heard about it later. Well, I heard enough to know that the thing didn't go off and that the test director for Los Alamos at that time, a fellow named Jack Clark, he and one of his timing and firing engineers climbed the tower to go up to the device to see if they could find out what was wrong. Now that took a lot of guts.

That takes guts. And did they figure it out?

Oh yes, they got it solved. In fact, I think the end of that story is that they patched up the wiring or whatever was there enough that they eventually fired it. But I can't swear to that end of the story.

Yes, I've heard someone talk about it and then I know that I've read it too, but—

And of course then they built forests out there.

Yes, Harold Cunningham told me about going and getting those trees from Mount Charleston. It's getting close to one [o'clock] so I don't want to take too much of your time.

Hey, don't worry about my time. It's your time.

[00:44:15] End Track 2, Disk 2.

[00:00:00] Begin Track 3, Disk 2.

Initially, of course, in the laboratories' determining what the yield of their device was, atmospherically was pretty easy to do. But when they went underground—so they developed what they called a radiochemistry method, which meant that we as an engineering contractor had to drill a hole down into the debris from the bomb blast and bring samples up to the surface and then the radio chemist would take those samples down to Los Alamos and figure out what the yield of the device was, based on those samples. Well, we went through several exercises in trying to find another way to get the yield of a device, or to get samples of the device. And at one time we came up with a scheme to run a cable down the hole, after we'd put the device down, but put this cable with a little catcher of some kind, a little metal catcher, down there to maybe catch some of the debris of the device when it exploded. Then we would pull that cable back to the surface. Well, in theory it was a great system, but in reality it didn't work too well. In the first place, after you bury that cable in there and put all the stemming sand and gravel and all around the cable, it becomes bound in there pretty well, and we had the heaviest winch pulling on it that we could, that we thought we could come up with. And then we'd sit up there in the CP [control point] and watch closed circuit TV, watching that sled with the cable on it, pulling, and after a while, first few times we tried it, all that happened was the cable would snap and go flying. Never could get the sample out of the hole. But eventually we got clever enough that we

managed to get a sample to the surface. Pull the whole thing through all of that sand and gravel and epoxy and whatever was down there and pull it to the surface. And I think there was once or twice maybe that the radiochemist got a sample out of it, good enough to do something with. But it all boiled out to the samples had to be done by post-shot drilling, as it was called.

Right. So you had to get that thing out quickly, right, or wouldn't it be—would the stuff that it was on to pull it out be destroyed?

No. It was above that.

It was above that. OK. So it wasn't a matter of speed; it was matter of physically getting it out.

Physically getting it out. Having enough strength and enough strength in the cable that it wouldn't break, fall apart, and a strong enough winch to pull on it. We had some fun times out there, playing games, but they were exercises in trying to learn something.

Right. What was the first underground test that Los Alamos did? I could probably look in the book, so let me ask it a different way. What was the first underground test that you were involved in? Do you remember what it looked like? What happened? We saw some of those craters when we were out there the other day.

Yes. There's some pictures of them.

Yes. Yes. I mean, when you see the film of it, some of it, it's quite striking, that all of a sudden the earth just caves in.

It was quite an exciting experience to be standing on the surface. We finally got to the point where we could pretty much estimate about how long it was going to take before it cratered to the surface. And we could, in the type of soil it was in and the expected yield of the device, we could pretty well anticipate sometimes about when it might crater to the surface. Not always,

because a lot of the times it would fool us. Some out there, I suspect there's still some out there, that have not ever cratered.

Really.

I think. But I wouldn't swear to that either, but I wouldn't be surprised but what there are some out there that has never cratered.

[Sound of pages turning]

[00:05:00] That tower [showing photograph] was an operation in itself. Thirty-foot sections stacked on top of one another—

That's Icecap, right?

Well, it's one like Icecap. This may be Icecap.

OK. So you're saying that type of tower.

Yes. That's Icecap, ground zero. But that's the tower that we reused from one shot to the next. Thirty-foot sections picked up and stacked up.

Wow. Now where were those sections constructed? Were they constructed out there?

Yes. Well, I say that, and I shouldn't say it quite that blindly. That particular tower, the Icecap tower, was built by a contractor in Utah and shipped over here. But the first ones, the other ones we had, which were very much like it, but this one was built based on some experience that they needed a little more space in various areas of the tower to do various things. So this one was specially built by a contractor in Utah, I think it was. And it was first erected in Mercury to test it, test it out and see if it would work.

Now a tunnel is something they don't let us go into on the tour, so I've never seen the inside of a tunnel.

You probably wouldn't want to.

Why not?

Well, it's not unsafe but there's a lot of little hazards in there that tourists might stumble around on. Of course, this is Climax Mine [showing photo]. This is where they first stored the spent fuel from the reactor tests.

Oh, that's what that is. OK.

See, they stored them in these buried cylinders. Of course that was one that was exposed to a nuclear test out there, and then years later some guys came out, put it back together, and flew it off the test site.

That plane. Yes, someone told me that story, besides seeing it here, yes.

Yes, these are all the diagnostic cables [showing photo].

Right. Right.

[Sound of pages turning]

And the sequence in creating a crater [showing photos].

Yes.

But at one time of course the area, after the test, the area was kept controlled. Nobody could get into it until the test director for that particular test gave the Wackenhut security— well, of course, they worked through DOE there in the CP area. But they gave clearance that, OK, it's OK to go through, but if it hadn't cratered at the surface, people were very reluctant to give an OK to go back into the area.

But if you were standing—I remember the first time I experienced this was we had fired one out there in the middle of Area 3 and we were expecting it to crater in maybe two hours or something like that. So myself and some others went out there and sat in a truck or a car outside the perimeter fence that we had put up, which again was based on the yield of the experiment

and the depth it was buried, was how big a crater you might get. And we were out there in a car **[00:10:00]** and we had seismic equipment out there to tell us when things started shaking. So when it was getting to where I thought it was going to be close, I went outside and leaned on the fender of the car when the thing cratered. And you'd have thought an explosion had gone off, because it shook that ground like nobody's business. So that's the reason we had to be careful about cleared areas, to be sure that we had our fence out far enough that nobody would get into an area where it might crater and take them with it. Again, it was a learning experience. I remember I had some formulas which were much more simpler than the scientists' but they worked out pretty well. They were always conservative. I don't think I ever got surprised that it cratered bigger than I thought it would.

But that's another thing that some people didn't readily accept, was this whole business of testing was a learning experience. To get enough to do what they call a proper stemming operation to contain the explosion in the ground. Stemming design. That was a learning experience. And Livermore and Los Alamos did it differently. We had different stemming designs and one worked about as well as the other, but they were different.

Well, I think this is a good stopping point, because it's getting to be lunchtime, and we can continue later.

OK. OK.

[00:12:05] End Track 3, Disk 2.

[End of interview]