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

Interview with Robert Friedrichs

February 25, 2005 Las Vegas, Nevada

Interview Conducted By Mary Palevsky

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Produced by:

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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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Interview with Robert Friedrichs

February 25, 2005 in Las Vegas, NV Conducted by Mary Palevsky

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

Mary Palevsky: So, Robert, as I was just saying, I thought it would be useful if you could talk about some of your reflections about Baneberry. I was mentioning that there are certain events and images of the [Nevada] test site that seem to stand out on the historical timeline, and Baneberry's one of them, and you were involved in that. We have talked about it before, but maybe you can give me some of your reflections on it.

Robert Friedrichs: Let me start with driving towards the front gate and seeing the cloud over the mountain. Absolutely no doubt that something had happened.

You were coming from town?

Yes.

Were you in the car or in the bus?

In private car. In a carpool at that point. And so we knew something had gone on. And we got in to the laboratory about fifteen minutes before eight. And again, at that time, work went from eight to 4:30 and half-hour off for lunch and we worked five days a week. So it wasn't like today where they work ten-hour shifts, four days a week. We got in. We found out immediately that there had been a venting. They were evacuating people from the forward areas. And so we knew we were going to be busy, so we immediately got a shopping list, went over to the warehouse, pulled out all of the disposable-type supplies that we would go through so that we had them there; we wouldn't have to worry about getting them later. Nalgene bottles, various other items that were disposable. Got set up, had everything ready to go, and then essentially just tracked the information as it came through, made sure all of the calibrations were current, all of the

instrumentation was working. And then it took quite a while, but there finally was a bus that arrived full of people that had been contaminated. They had been taken to the control point [CP], decontaminated there, or attempts were made to decontaminate them, and they had not been able to wash everything off, but they had pumped literally hundreds of people through there that day. They had no hot water—they simply overwhelmed the capacity to have or generate hot water and so people were taking ice-cold showers in the middle of the winter, and they weren't very fond of that. So they brought the busload down to the laboratory and we would bring them in, one at a time. They were wearing paper or anti-contamination coveralls and their clothes had already been taken at the control point. We would walk them through, get a urine sample, a thyroid count, a whole body count, and try to capture the amount of activity that remained after they went through another shower in our building where, in every case, with hot water and soap, they were able to get rid of the contamination on their skin—outside contamination. Just to back up a little bit about the day, for this recording, tell me again the name of your group, the name of your division or whatever we call it, so that we have that on this. Well, the popular term was the RADSAFE [Radiological Safety] Group, but we were the Analytical Radiological Laboratory portion of that. And then there were the field monitoring group. We had other smaller groups besides that: a training group, instrumentation group. We had our professionals: our industrial hygienists, our health physicists, that were somewhat autonomous. But we were the Analytical Laboratory group.

Then one other question about the buildup to when people arrive. Are you in radio contact or telephone contact with people out near the accident or at the control point about when people are going to be arriving or are you—?

[00:05:00] We got a series of telephone calls. We did not have radios in the laboratory. They were in Mercury, but we didn't have any, and so we relied on telephone communication to know when people were coming, how many, and what the problem was.

Did they tell you the details of what had happened?

Not really. Not over the phone. But when the people got there, they certainly were providing their impressions. And—

What kinds of things were they saying?

About being caught by surprise, the cloud coming over some of them, the fact that it sheared and it literally went in two different directions. They did not have clear guidance in where to evacuate to. Part of that was driven by the shearing of the cloud, so when they were told to go in one direction and then the cloud sheared towards that, then other people were telling them, No, you've got to go this other way, which was quite roundabout, to get them out. And so that caused confusion, but there was good reason why that occurred during their evacuation.

And so they went through, were decontaminated; we were doing the whole body counting, the thyroid counting, just really doing everything we could to remove the external contamination, make sure we had an accurate handle on the internal deposition. And in many cases, they had to take multiple showers.

So they would take a shower, come out, and then for the whole body count, didn't you tell me before there was a—what was that? How was that done?

Well, they'd come out of the shower, we'd monitor them. If we could still pick up contamination, then they went back into the shower and they stayed there until they either wrinkled up as a prune, but they had to be completely decontaminated so they would not bring contamination into the rest of the laboratory.

How do you do a whole body count, again?

At that time, we had what was referred to as a shadow shield whole body counter. The sophisticated one in the large steel room was added quite a bit later.

Tell me about what you had.

It was essentially like a dolly that a mechanic would use underneath a car, and it would roll from one end, where you could get on it and stretch out and get comfortable. It would then roll through this arch arrangement that had shielding over the detector, and then you'd roll out the other side full-body length, so then could get up and not have to worry about trying to climb around the detector and the shielding.

I see.

A very simple, simple design, not very, very low background, obviously. We jokingly called it the sky shine machine, on occasion.

Sky shine?

You'd see background from cosmic rays, things like that, that had the background up. But then much later, we had the very sophisticated whole body counter where the entire thing was pre-World War II steel. Everything that went in was counted to determine if it had a gamma contribution in the metal. And anything that did simply wasn't used. We'd find another source with a lower background.

Yes, that's what I was remembering, so thank you for clarifying that for me.

And that one, we were able to do lung counting for americium, because of the extremely low background inside the chamber.

But while the people were going through the process, the other individuals remained on the bus. So we'd take them off one at a time until they were through the shower, and then we'd have one in the shower, one in the whole body counter, one getting the thyroid, and then to a conference room where they were held until everybody was done. And so the guys on the bus [00:10:00] opened the windows and started having conversations with others that came by. The next thing you know, there were articles being passed to the people on the bus, and as the night wore on, they got more and more inebriated. And so I mentioned the one incident where the person came in so drunk and they took his wallet and his money and other items and they bagged it. Nye County deputy sheriffs were there, actually, and they would bag the items so they could be counted to see if they were contaminated. And they weren't, so when the people were ready to go to town, they actually received those bags back right then and there. But the one individual came in and he got rather belligerent with the technician that was trying to take the stuff and told him not to steal his money because he knew who had taken the stuff from him. And the technician was irritated by that point and politely informed him that he was so drunk, he wouldn't remember anything tomorrow, so if he gave him any guff, he was going to keep it.

But it was very early in the morning when they were ready to have the bus go into town and actually take these people home. And they're wearing these paper coveralls and paper booties, and carrying a little plastic bag that has their personal items in it. And the bus literally took each one to their home and dropped them off and made sure they got in all right. But I could just imagine the family members scared to death, having no clue what's happened to their loved one, and sitting up all night, and the next thing they know, their husband comes in three sheets to the wind in paper clothing, carrying this little plastic bag. So, [it was] very difficult to explain to the family members what had occurred and how they ended up the way they did. But that was the process that we went through. So I actually was dropped off at my home somewhere between five and six in the morning. Then I had to go back in at noon, and we started working prolonged

shifts where we'd be on twelve, off twelve, on, twelve, off twelve. And when they could, then they would cut that back and we went to a three-shift operation.

And what were you doing? What was the work that you were doing?

We were actually analyzing the samples that the monitors were taking in the forward areas. They had to go through and swipe *everything*: all of the housing, cafeteria, everything that had been in the fallout path, and routinely swipe those to determine the rate of decay of the radionuclides and then know at what point they could finally let people back into the forward areas to resume work. And that went on literally for months. I think the last folks actually got in and started work roughly four months later.

And when you spoke about the families, I just don't know this, was there publicity or information

into Las Vegas immediately, or was there a lag, or did the families have, or your family, if you were still married, have any way of knowing that you were involved in something?

In our case, because we were in the lab, we could call and say, Honey, I don't know when I'm [00:15:00] going to be home. I'm here, and you know, not really saying a lot but to say, there's been an incident and we have to work through till we've got things down to a dull roar. But I'm positive they released press releases that morning, so people were aware there was an event that had occurred at the test site to some level of detail and that there were people that were being decontaminated.

What was the mood like those first days and weeks?

Hectic. We knew that we would have a lot of work, but we never dreamt of the thousands and thousands of samples that would come pouring in. They took swipes and air samples of everything. They really wanted to make sure that there were no hot pockets that people could go into, that they really knew and understood the extent and location of the contamination and when

it was safe. So, as I said, it was a long day and it was stressful, and then to immediately double back into prolonged long days, very difficult. I can remember walking into take over the graveyard shift after we'd gone into the three-shift basis, and in the sample receiving preparation area, the light was out. And I thought that odd but I turned the light on and there was this *pile* of towels on the lab counter top. I walked over to walk by and I realized the person I was relieving was sound asleep in the middle of all these towels, because they could get some padding to the stainless steel lab top and stay warm, because again, it was winter. But that was somewhat bizarre. And you just grabbed some rest whenever you could. You just knew you were going to work hard and long.

Now do you recall, when you're doing these samples, are you getting anything unexpected or do you have any way to gauge what you're expecting?

It was typical short half-life fission products. There was nothing unique about it. The same kind of analyses we had always run. And you could sit there and you could plot it. Without even taking the samples after the first few days, you could tell when it was going to decay out to the point where people could go back in. But they were very concerned and wanted the documentation, and so we continued to analyze the samples that came in.

Now do you have any sense in your lab what the mood is in Mercury and among test site workers more largely, and specifically about what happened? Are people wondering actually what happened at this point and discussing it or—?

What caused it?

Yes.

Oh, that was a subject of serious debate for years afterwards. I don't know that you can get five people that were involved in the same room and get the same answer. But it was clearly a

situation that they were in a formation they were not familiar with. They had large amounts of water that they had put down hole. As I understand the documentation that came out of it, they essentially, instead of dealing with air, they were dealing with the liquid, so you had different pressures and the stemming simply held it but it found every other crack, including the fault that was nearby, and pumped the stuff out.

So you recall specifically at the time what people were speculating about it? Was there awareness there was a fault, things like this, early on?

There was an awareness with the scientific community where the faults were on the test site, but they just simply didn't expect the pressures that occurred to travel the distances they did, because [00:20:00] they had no prior example to draw on. And so that caused the scientific community to go back and totally reassess the way they did containment, and they instituted the Containment [Evaluation] Panel that would review all of the plans prior to approving the event, far more sophisticated level of review than what had gone on before. And quite frankly, as a result of that, they never had a real serious leak again. So it worked, but it was a shocking way to find out that things weren't quite as straightforward as people thought.

And as far as the general population, they weren't working so, you didn't have that source of feedback when you were out there on the job, the people who would have been in the forward area. You had all of the people that were normally in Mercury there, but they simply were not the population affected. So there wasn't a lot of speculation or discussion on it.

Did testing have a delay because of this?

Oh, yes. They had to delay and completely reviewed the incident, and they put in place measures then to head that type of a problem off in the future. And a good example is the Containment Panel. They completely changed the way they did business.

Now you were saying before, was it in reference to this, myths or reflections that you might have, or was there anything else in retrospect when you look back now? That was—

That was one of the key moments in my career, going through that, and of course, those are the things your long-term memory retains. The day-to-day incidents, they fade quickly. So I can give you details about what happened that day. I can't tell you a single thing about what happened the day before.

In a later job that I had, I found that phenomena to be brought home very, very clearly. When I was a Dosimetry Liaison Officer, I handled all of the requests for exposure information, and that covered from the creation of the test site right on through to the current information for anyone that wanted it. It could be an employer that wanted to know the individual's exposure history to know if they could use them as a radiation monitor in a power reactor, typical example, where the limits had to be known and they couldn't be overexposed beyond the guides that were in place; all the way to the grieving widows that wanted to know what the exposure was that caused their husband to pass away twenty years later, who smoked two packs a day, all these other potential causal effects. But invariably, when I was dealing with the widows or individuals that had been out there in the service, they remembered vividly the first time they were involved in an atmospheric shot, exactly where they went, what they did, and they had thought through that information so many times that they would pick various pieces that they felt were the reason why they had developed the various ailments later on. And of course, many of them had absolutely no basis in science, but those were the memories that stood out; therefore, that had to have been the cause of the problem.

[00:25:00] A good example of that is with the Smoky personnel, when Dr. Glyn Caldwell first came out with the fact that there were increased incidents of soldiers with leukemia from the

Smoky shot. Because that's what they remembered. When you went back and looked at the data and actually saw where these people were, I believe there were eight involved and only two or three had been in the forward area. The others had never gone forward for the test. And so the next question is, what do they have in common? Well, they were all in Camp Desert Rock. It wasn't something that was manifest beyond that—so it couldn't be that they were allergic to the dye in the uniforms or anything like that—but it was something unique in Camp Desert Rock that caused that statistical increase, or it was just like a lot of statistical data, just a random spike that occurs. But it wasn't due to the exposure from radiation.

Now that's reminding me, Robert. Is that what that article you wrote was about, that I asked you about?

That one was where a widow wanted to know—she was very specific about her husband having been there flying one of the missions in regards to an experiment associated with a nuclear shot. [She] wanted to know: where her husband was, how far away at the time of the shot—believing that he would be very close and as a result, exposed and no record—therefore the cause of his ailments and the fatality then from that. So I was able to go back and, looking at the historical documentation, know exactly where his aircraft was at the time of detonation and what direction it was heading and the speed, because it was all documented in the experimental records that were generated at the time. And I could respond back to her with assurances that her husband was so many miles away, going in the opposite direction, and that would not have had an exposure from that. Could have had exposures from a dozen other things, but certainly not from that.

And this was something that you did as a liaison officer, then, for DOE [Department of Energy].

Yes.

Do that kind of research.

Yes.

Interesting. I want to go back to something you said at the beginning of this section, to make sure I understand what you're saying. You said that the day of Baneberry was a key day for you in your career, if I understood what you said exactly.

Yes. Key memory.

Key memory in your career.

Is really what it was.

So was there something beyond the fact that it was an unusual and crisis situation that made it key, or was it just that?

That was the primary driver. It was a truly memorable day. You *knew* it was significant. This was not something that was a regular occurrence. It was a once-in-a-lifetime event. And you wanted to make sure you were doing the very best you could, no matter how tired you got. And from day one, I said in previous interviews, *we* felt we were there to help protect the individual. And so we wanted to make darn sure that we got them decontaminated, we got accurate information on the level of their exposure. The appropriate scientists could then do chelation, if appropriate, for thyroid uptake, things like that.

[00:30:00] So what was your response with the lawsuits, the Baneberry lawsuits and those kinds of things? Were you involved? Where were you at that point in time?

I wasn't involved in the lawsuits, but the individual that was in the next office to me later on when I was the liaison officer was heavily involved. And so I had the benefit of his interpretation of the events and the facts. And I was aware of the preparation he went through, working with the attorneys, the Justice Department. Then later on when I was the liaison officer and I had the

responsibility for the communication with various attorneys, others, I had a sense of the potential significance. And there again, I *really* wanted to make sure we had accurate information that we provided out, and if there was something I could go a little further with in the formation, to help clarify, I did that gladly. But it was very frustrating in the sense that in many cases, it was irrelevant what you provided because it didn't resolve the grief that they felt. And so in some cases, I got pen pals where one question would lead to two more. In some cases, I knew that there was nothing I could say that would give them comfort and help them move on. And so after a period of a few years, I literally burned out. I needed to get away from that environment. And so when I had an offer to go to the Department of Energy, ERDA [Energy Research and Development Agency] at that time, I took it.

What were your symptoms of burning out? What started—what—?

Emotional. Feeling dead. Feeling dead emotionally, physically tired. I always like to have challenges in my work and I like to stretch. And I certainly didn't want any of that at that point. I just simply wanted to get out of that environment.

So when you say "emotionally dead," people would tell you stories and it didn't—I'm trying to imagine what that felt like to you.

Usually you'd heard it all in one variation or another before. And so you just simply did not have any kind of a response. No empathy at all. And so I realized I wasn't doing them the justice they needed. And I certainly was not doing myself any good. And so I grabbed the opportunity when it presented itself and moved on. The person before me had had problems in the job.

What kind?

I think some of the same. Just feeling overwhelmed with the correspondence, the inability to help the people through so they have closure. I cannot dream of somebody being a psychologist or psychiatrist now. No way.

I think I asked you this before, but are those kinds of records, is that public record, or is that correspondence private?

No, that's all covered under the Privacy Act.

That makes sense.

Along with the actual written responses, the exposure information, the cumulative exposure information on any given individual, all of that's Privacy Act. Which in some cases is unfortunate because there were some great stories. If I had a fresher, younger point in my time, [00:35:00] that would be worth culling through if one could get permission and not using the individual identification information. But the psychology aspect, I think, would be an interesting study.

I do, too, that's why I was asking you about it. I think that that's an interesting human part of that story of trying to make sense of this scientific information as it impacts health and questions and secrecy. It brings in a lot of, I think, important elements of that world.

Now I can say that we had occasion where Pat Broudy, who is extremely well known amongst the atomic veterans—her husband had been in the service and passed away—she very politically active, and came up to our facility and spent a day. And Martha DeMarre, who is still over the Nuclear Testing Archive, and myself met her in the morning and offered whatever assistance we could provide, and she and her daughter spent the entire day there retrieving documents, looking at documents, explaining them. And when she finished and was ready to leave, she told us that that was the *first* time she felt that she had ever been treated well by *anyone* in the government or

associated with the government. And she felt very comfortable in what we had provided to her in the way of explanations and information. So that made us feel good. You know, here's the classic critic of the inability to get information saying that we had served well. I can't say that everyone we tried to serve felt that way, but that's certainly the way she felt that day.

Do you have anything else you can think of on that subject?

No. Pretty well sums it up, really.

OK. I'm going to go ahead and pause, then.

[00:38:00] End Track 4, Disc 1.

[00:00:00] Begin Track 5, Disc 1.

When Nancy's [Robert's wife] mother—her dad passed away in southern California—her mother then relocated to southern Utah. Along the way Nancy got several of the books that her father had had, one of which is the Northrop history that had been prepared by Northrop and given to the employees or sold to the employees. And in thumbing through it, I saw a photograph of a hangar and two unusual aircraft and I read the caption. During the winter in the forties, they had extensive rains like we have now. And Edwards [AFB], Muroc at that time, was flooded out, so they couldn't flight test there. And so they literally came here to southern Nevada, built this hangar, a very small little storage shed that was probably not even four feet tall, and had these aircraft there in a very unusual place in southern Nevada. But I recognized the lake bed by name because the railroad runs right by there. And my father, having been with the railroad for his entire career, I was very familiar with it, and it wasn't that far from where I lived as a child. In Desert? In [California]—?

It is near Desert, yes. And so I got very intrigued with that because my folks had never talked about that. And so I analyzed the photo and realized there were some key indicators: a power

line, the proximity to the edge of the lake bed, the mountain range in the background. So I pulled old maps, found the power lines, and determined it had to be one of two locations. So the first field trip I went out, it wasn't there. And the next field trip we went out and drove right up to what was left of the foundation, and got out and there were pieces of aircraft laying around, small pieces, bits and pieces. So there was absolutely no question we had the exact spot. The mountains lined up, the power line, everything. I can reproduce the photo except for the hangar, and have done that. I've actually got a PowerPoint slide where I've done that. [Copy provided.] And so then I started trying to find additional information about what went on there. And through a variety of sources, I was able to find that the first all-magnesium aircraft, the—God, I can't remember. They called it the Bullet. I can't remember the designation right now [Northrop XP-56 Black Bullet]. But the second model of that was flown there and reached the altitude record for the aircraft, which wasn't that high. The first time they flew that aircraft was there. The second one. They had the N9M miniature wing, Northrop wing, and it's the one where they changed the various control surfaces. They actually had a total of four built. But they changed the control surfaces and determined the differences in flight characteristics, and then that went into the design of the original full-sized flying wing bomber. One of the N9M aircraft exists today, and they have it at Chino, at the air museum, and I've actually seen it flown, but it's not the one that was there at the facility. Two of them were outright destroyed, and the fourth one, the Smithsonian is reported to have the wing portion but they don't have the wheels and all the rest of it.

[00:05:00] The other aircraft that was flown was the XP-324 or 334, depending on which historical reference you read, and it later became the first rocket-powered aircraft the Air Force

had. It was in essence a giant hang glider, and at the facility, that's how they operated it there.

They would take it up and then release the tow line and it would glide back.

But all three, very unique aircraft. And no one knew that that even occurred here.

This is after the war?

Yes. Shortly after. Forty-seven. The last time that the glider was known to still exist, it was back at Wright-Patterson [Air Force Base, Ohio]. There's a photograph of it with a military officer, Air Force officer, looking at it. And it flat disappeared. The museum has no knowledge of what happened to it. As I say, the four wings, two of them went their way and there's still the one that's been restored and is flying. And the Bullet is at the [Paul E.] Garber facility at the Smithsonian and has not been reassembled, but it's there, all of the pieces are there, and it's available for restoration. But they actually had to develop the technique of heli-arc welding in order to weld magnesium, which is highly flammable. And they thought they'd use magnesium because of the shortage of aluminum.

I never even knew there was such a thing as a magnesium aircraft. I don't know anything about aircraft.

And so I got all the documentation, tracked down photographs, historical photographs, and then sent the appropriate forms in to have it considered for historic preservation. BLM [Bureau of Land Management] got really pissy with me because I removed some of the artifacts and donated them to the [Howard W. Cannon] aviation museum, but between—

This one in Clark County? In Clark County?

Yes. So they have those, and they have the complete package, along with the information on the exact location. And I know DRI [Desert Research Institute] was interested in going down and doing a field investigation, if they ever got any funding to do that, and see what else was there.

An anthropological investigation?

Yes. I wasn't too concerned about what BLM thought because between the first time I went to the site and the second time I went to the site, they had built an additional power line right through it. And they hadn't determined there was anything of historic significance, so why I should I entrust them with anything? They simply were dealing with a large expanse of desert and had no clue that that even *would've* been there. I'm really not faulting them, but that's just not their expertise.

And what's the status of the historic preservation?

They've got it and they'll get to it when they get darn good and ready, but if I really wanted to get nasty, I could go ahead and submit it on my own. I haven't felt that nasty. I don't normally get that nasty. But individuals can submit for listing. I'd just like to see a full field investigation where they can find more artifacts, because the second time I went down, we found a section of skin that was probably, oh, three inches across by about ten inches long. The bare metal was facing up, and when I picked it up and turned it over, you could see the original Northrop yellow paint on it, and scrape marks. And I later found an individual that provided an article to me about [00:10:00] one of the wings having a wheels-up landing, and so they had to do repairs on it. So this piece of metal came off that aircraft.

Oh, that's interesting.

The story of the wheels-up landing is interesting. The Air Force had three officers that came out to observe the testing, and two of the lieutenants, or lieutenant and captain, were arguing as to who was going to go up in it. And the major just stepped back and walked out and climbed in and took off while they continued to argue, not realizing. And so they did not at that point have radio communication with it. And so he came in for his approach and they realized his wheels

were up. And so they're out there waving and he rocks the wings and comes on in and just bellied it in. So they went out. He got out, walked away, and turned around and walked back and flipped the wheel switch. So when they came out and they lifted the whole thing up, because it's fairly small, lifted the whole thing up, the wheels dropped down and locked into position. And then they just towed it back in to repair. But strange. Strange times.

That's very interesting, Robert.

And I was amazed; my parents had never mentioned anything about it.

And it's interesting that it's from your wife's dad, and then you had lived near there. That's also interesting.

Strange connections.

This gives us the sense of your historical activities. So let's pause here.

[00:11:51] End Track 5, Disc 1.

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

Robert, I thought maybe we could spend the last bit of our time together today talking about your research into the phenomenon of Miss Atomic Bomb in the 1950s and how you got involved in it. Well, I mentioned earlier that I'd done the research on the aircraft for the widow. I'd done the research on the flight facility that was Northrop's here in southern Nevada. When I was in the Pacific, I had found a paragraph in a report about a shipwreck on Johnston Atoll, and so I had researched that and found quite a bit of detail, including a photo of the ship that a revenuer had taken off Alaska. And I'd provided that documentation to Dr. Phil Lobel with Woods Hole [Oceanographic Institute]. And not because of what I provided but because of work they were doing, they actually found the remains of the wreck on the atoll about two years later, and he sent me photos of that.

So I enjoyed doing research. As part of my support to the Atomic Testing Museum, I did research into the various types of weapons that were available, the weapon shapes that were available, which ones made the most sense to go into the museum because of their association with the test site. And the popular culture items that were most popular, I had a large part in procuring those for the museum.

Those ones that—some of those you found on eBay and things, is that right?

Yes. eBay was a wonderful source. Not the only source, but a wonderful source.

That's an interesting display.

And reading about the popular culture of the time, some of the items that were the real high points, one being the Lone Ranger atomic bomb ring that Kix Cereal had. So we got an accurate reproduction of the Kix Cereal box, unopened, but we have an actual atomic bomb ring on display in that case. Many of the other things that I was able to track down at a reasonable price that were truly reflective of the period: the atomic bomb salt-and-pepper shakers, the atomic disintegrator cap gun [Hubley Atomic Disintegrator Space Cap Pistol Ray Gun], which is one of the premium Hubley cap guns of all time. Those sell for a couple hundred dollars in good working order. We're really talking about period collectibles, and trying to find good ones at a reasonable price was a real challenge, but eBay came through.

Amazing.

One of the things that came up that I took [as] a real cause was the Miss Atomic Bomb photograph that everyone has seen. It's become a classic for the period. There was a survey a few years ago; *Las Vegas Life Magazine* actually went through and identified key things associated with Las Vegas, and they voted that photograph *the* most popular photograph of Las Vegas, ever. Vicki Goldberg had a book on the power of photography [*The Power of*

Photography: How Photography Changed Our Lives, 1991], and that photograph was in there. So it has come to have a far greater life than its original purpose, which was a publicity stunt to get public interest in Las Vegas. And there are a lot of stories about the beauty contests, the various [00:05:00] activities that went on, that many are interesting publicity stunts. Some are outright fabrication. And some are unusual in other ways. As an example, in doing my research, I found that there were several different contests or types of contests that occurred, if you ever want to use that term. One of them, the very first Miss Atomic Bomb contest, or reference I could find, actually was in a series of documents, one of which was Embracing Defeat: Japan in the Wake of World War II [John W. Dower, 1999], a very scholarly document. It references a Miss Atomic Bomb contest in 1946 in Japan, in Nagasaki.

Is that John Dower? Is that a book?

Yes.

John W. Dower.

That's right. Does he have the picture or he just references the contest?

He referenced it. And so I went back to the source that he referenced and it didn't have the photo. It was the *U.S.-Japan Women's Journal*, the English edition, so it did not have the photo in it. But then with assistance from the head of the DRI libraries, she was able to locate a copy of the original document and then get a scan of the photo. So I've actually now got the scan that is described in the other text, the contest showing the four finalists for Miss Atomic Bomb in their classic Japanese kimonos, the American troops standing behind them smiling, looking happy; then the Japanese gentleman at a table off to the side and not really appearing to be involved in the crowning, as it were, although they really didn't have crowns. But truly an unusual photograph, and bizarre by our standards.

Then I had found a reference to a contest in 1951. The photo that was described is the classic photo from 1957, so I went to the individual who was quoted in the article and he confirmed he was thinking of the 1957 image, not '51 as reported.

But he's talking about a contest, and my understanding from the photographer, Don English, is that there was no contest. It was a publicity shot.

Well, obviously the Japanese—one was a true contest. The '57 photo I'll get into in a moment, but I'd like to talk about its predecessors because that wasn't the first photo from Las Vegas.

In 1952, there was a famous photo that was published, and that was Miss Atomic Blast. And that individual was Candyce King. She was a featured dancer at the Last Frontier Hotel. And when you look at the photo, she has the funny little mushroom cloud cap on, but it's taken at night on a rail outside of the hotel. And so this was a publicity stunt pure and simple. It was no contest. And she was referred to as Miss Atomic Blast. But she was part of a dance team, Candyce and King, although her name is Candyce King. Her partner was named King also. So I have not found if they were married or brother and sister or what the relationship was, but they were an act that appeared in Las Vegas and at the Mapes Hotel in Reno for several years. They'd go back and forth.

[00:10:00] Then in 1952, there was a Helldorado parade and—excuse me, backtrack for a moment. In '52, there is a report that is out on the Internet about Miss Atomic Bomb and the nuclear picnic. It describes a contest in *great* detail, and a beautiful piece of writing. When I spoke to the author, I just didn't feel warm and fuzzy and could get no additional information from him, yet there was a tremendous amount of detail in the article. And so I felt in order to use this article, I needed to validate through independent sources. And so I went through the article and I marked off the key things that could be validated and then started down the list, and lo and

behold, I could not validate a single one. As a classic example, he describes in the article the individual turning on the first sign at the Stardust Hotel, which was shaped like a mushroom cloud, and in fact he's describing the current sign. The first sign at the Stardust was perfectly round. Businesses that she purportedly worked in in the 1950s, I went back to the phone books and they're not listed in the phone books. In some cases, things that were reported in here—that she was a beauty pageant queen, because this reported it as a true beauty contest, but where she was purportedly the beauty queen in various contests—I found documentation with other people's names and descriptions of where they lived that did not match. So it was a beautiful piece of writing. I wish he had been perfectly candid up front and told me that this was a work of fiction. He had written something in the spirit of what people believe happened in Las Vegas at that time. But as another example, where he's talking about her being crowned with the mushroom cloud in the background—the shots that occurred for that series were usually at six o'clock in the morning, while it was still dark, so they could have certain calculations before they had a lot of light, and then the sun would come up and they could then track the cloud. But certainly not people having a picnic for lunch, with the cloud in the background. And the latest shot was nine-something in the morning on that series. So my conclusion is that this was a work of fiction, but enjoyable reading.

Then I found an obituary in one of the local papers. An individual was reported to have been Miss North Las Vegas Atomic Bomb in 1953. Because of the unusual name of one of her children, I was able to contact that individual and he was very pleased that I had interest in what his mother had done and he was very willing to share documentation with me. And as a result, one of the items he gave me was an eight-by-ten black-and-white of her on the float in the Helldorado parade. In looking at the news reports at the time and in the prior year, it became

obvious—and in fact blowing up the banner that she is wearing, it became obvious she was Miss North Las Vegas—but she was Miss North Las Vegas in a true beauty contest put on by the Jaycees and with the intent of riding on the float. That year, all of the floats were based on movie themes. There was a popular movie out called *Atomic City*, about spies in Los Alamos [NM]. It's [00:15:00] an extremely good movie, surprisingly. Well worth watching. But although it has a mushroom cloud on the float, has *Atomic City* on the front, on the side it says "North Las Vegas: As New as the A-Bomb." And so by association, you could say that her nickname was Miss A-Bomb, but not elected as Miss Atomic Blast or Atomic Bomb.

Then there were contests that started to creep in in the early 1950s, one of which was one in Massachusetts where they had a four-year-old girl elected as Miss Junior Atom Bomb. And so we have got photos from the newspaper at that time with the little girls and the caption explaining the contest.

So that was a real contest.

These were real contests that people began having in their communities, but for children, which again I find very odd, but actually happened. The following year, 1954, the Lions' Club annual parade in St. George, Utah had a float with a child, again, on the float, and the mushroom cap was her skirt, and on the side it said, "Our Little A-Bomb." So here you have, instead of real beauty contests, you have these child contests where the A-bomb is a theme that they're using, again because of the popular culture embracing the atomic bomb, and in a variety of ways.

The next one was 1955, and this one was really interesting because the individual later went on to be a recording star and in television and movies, and then quit to raise her children.

And she's still alive today. Her name is Linda Lawson. [It was later determined that Linda Lawson was not Miss Cue]. She was a Copa girl at the Sands Hotel. This is the second occasion

where they took someone in the entertainment business, had a publicity photograph that they then marketed the community with by using. The series of tests that occurred in 1955 had a lot of Civil Defense people associated with them: buildings, vehicles, communications, *et cetera*, to determine the effects on the general public. And one shot in particular was referred to as Operation Cue. That slipped several times, and so the people involved started jokingly referring to it as "Operation Miscue." And so on one occasion, they took a group of the Desert Rock soldiers and they had her by the pool with these soldiers. They took a *series* of photos, not just the one but a series, where they're putting this cotton mushroom cloud on her head and crowning her Miss Cue. And that's the way the reports went out at the time. As I say, she later went on, recorded an album of jazz music. Her name is Linda Lawson. [It was later determined that Linda Lawson was not Miss Cue]. She recorded it on the Chancellor label. There were some other rather famous people, like Frankie Avalon, that recorded under that label at that time. She appeared in [00:20:00] at least one, if not more, Peter Gunn television shows, and made movies, one with Dennis Hopper that is still sold today.

So that's through 1955. You can see what was a legitimate contest, what was *not* a legitimate contest; but the two that received the greatest publicity up to that point were both staged publicity photos and not legitimate contests.

Right. Interesting.

Then we go to—

[Videographer indicates at this point that he needs to pause.]

OK.

[**00:20:47**] End Track 2, Disc 2.

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

All right, so we're on again.

OK. Nineteen fifty-seven, *the* most popular photo of all. No one knew her name, and I found that several people had attempted to find out previously, including Dr. [Frank] Wright who was the curator of the museum in Lorenzi Park. But it was just totally lost. So I felt that the timing was such that if we were going to find out who it was, we needed to move quickly. We were losing the people, the very population that would have that information. And so I began digging in the Sands files at the university [UNLV]. As a result of that, I was turned on to the person who actually took the photo. He couldn't remember very much detail about it. But in doing that, he provided me a couple of other photos.

That's Don English.

Don English. Correct. One of the local newspaper reporters talked to the Special Collections people because they were looking for a story and something, with the Centennial coming up. They wanted to tie in to the history and they suggested that she talk to me. And so the reporter interviewed me. There was a *really* nice article in the paper. One of the documents I had found in going through the collections actually gave a fairly detailed description of three of the Copa showgirls. And I had narrowed down through the Convention Center that it was a photo taken for the Sands Hotel. Based on Don's comments, I knew it was a showgirl, that they had just gone in and literally taken outside and had her do the poses and then sent the photos off for use. But in the article, we named the three people that I knew had been contemporaries, one of which still lived in town, saw the article, and contacted me through the *R-J*, the [Las Vegas] Review-Journal. In turn, I went over, I met with her. Wonderful lady who provided additional photographs and copies of news clippings, one of which had the individual's name printed [Carol Hoffman]. So there was no question. Positive identification.

And that name is—?

Lee Merlin.

Lee Merlin.

I spoke with *another* one of the Copa girls here in town that was able to tell me when she came to work. And the first one I'd talked to confirmed that they had all gone out at the same time in late 1957. Now the photo was taken in May of '57. But they had a major contest in 1957 and again in 1958 where Jack Entratter and many others went to Texas and actually auditioned in several cities and picked what they felt to be the most beautiful and best representatives for the Copa showgirls, brought them back, and all of the prior ones were laid off. Many of them went to other hotels, went to the *Folies [Bergere]*, what have you. Lee Merlin didn't go anywhere. She just flat disappeared.

So she had been a previous one that was not rehired at the Sands, is that what you're saying?

Right. They brought in a whole new group from Texas. And then they turned around and did it again in 1958. So that was the era of the Texas showgirls.

But Lee was not one that transitioned to one of the other hotels. We have gone through all of the records we can conceive of at the university collections, we've gone through all of the electronic files that are available on the Internet, and we've been unable to find any further information to date. But the *LA Times [Los Angeles Times]* picked up on the fact that I was trying to find this individual, and in association with the [Atomic Testing] museum opening, we [00:05:00] were hoping we'd have her identified and, if possible, actually see if she would be interested in coming out. They published an article which was in more depth and actually showed the classic photo in it. That was picked up by AP [Associated Press] and has been printed all over, and we have gotten absolutely no feedback on that. I'm at the point now of

wondering if—well, obviously it was either a stage name or a maiden name and so there are no records surviving with her maiden name on them; or that it was a stage name, because one of the Texas girls that came in as a replacement in 1957 does have a stage name. When you look at her original application and through discussions with her, she's told me, when she walked in and told them her name, they said, No, that won't do. You are—and gave her a name which on her application and for the rest of her career was the name she used. But absolutely nothing like her birth name.

So I'm not sure where we go from here, but I'm going to continue to try to pull the strings as things develop.

Now there's two things. There was a series of photographs that the photographer took, obviously, because they always do that, they never just take one, and that was interesting to see. Well, as I mentioned, the Convention Center News Bureau did allow me to have a copy of the photo but would not let me look at the other photos taken at the same time, and confirmed when it was taken, where it was taken, for whom, that information. Well, in talking to Don English, who took the photographs, he actually produced two other photographs that were taken at the same time. The classic one that I got from the Convention Center, where the individual's mouth is open, making it a little harder to recognize the person, but there are some key things in this photo that one could use. In fact, she has a small bracelet on that has gold and then pearls, pearl and then a section of gold and a pearl, which shows up in a later photograph that she's wearing. *Oh, how interesting, Robert.*

And one of the coworkers indicated that that was a very popular style and they all got them. But there are two others where she is not standing with the arms outward and with the mouth open.

The second one that he provided to me, she's actually got her hands behind her head and her

"zeros."

mouth not wide open. Third one, she's looking straight at the camera, the same thing with the hands behind the head. But in going through the various collections at the university, I found three other photos that I believed were her. Unfortunately, none had a caption, and this is before we were able to find the name. So I showed the first individual, first coworker, these photos and she confirmed that indeed they were the same person. And in fact, two of the photos are a publicity shot that was taken when Jack Entratter had signed the check for one of the showgirls that was—created the total of one million dollars having been paid to Copa showgirls. And the individual that I spoke with identified herself in the photo, Lee Merlin in the photo, and went down and named the other four girls in the photo. Absolutely no doubt about it.

And that's the one where you say he's the "one" and then there are all the—there are the six

The girls all have a costume on where they have tipped the skirt up so they appear to be giant zeros. Yes. And that was actually sent out in the press. She also provided a news clipping where [00:10:00] Lee's name is mentioned in the caption, so there's no doubt about the spelling, and it shows herself and Lee in the photo. Unfortunately, because it's a newspaper clipping, I can't read the information on the newspaper that's in the photo. But it's from the *Houston Chronicle*, and you can read the headline, and if I had access to the microfilms, I could probably go back and figure out the exact date they took the photo.

She in turn gave me a couple of photos. Well, the one I mentioned where she's in the caption. She gave me *another* news article that was published in the Akron, Ohio paper, her home town, that had Lee and herself in, amongst others. And gave me the name of another individual that had been a Copa girl. And when I spoke with her, she provided two other photos, one of which is a group party. They're all sitting at a table and Lee is in the photo and she's

wearing that bracelet. And then she had like an advertising flyer that had gone out and pointed Lee out in a photo that was in that flyer.

So I have the new photos, the additional information, the detail, the confirmation of her name, and I'll keep digging as long as I have leads to follow until I find out other information.

But that's—let me backtrack a moment to number two.

Yes, because that's a lot more than you had when we first talked about this. A ton more.

Oh, yes. Now there were other contests, or not contests but other things that occurred, and one of the names that were mentioned was an individual, Sally McCloskey. People thought it might be Sally. And again, Don English had taken a series of photos that appeared in *Parade* magazine— *I remember those*.

—with the dancer in the foreground and the mushroom cloud in the background. And it's a true mushroom cloud from a shot. They'd gone up to Angel's Peak on Mount Charleston and actually photographed it because they knew the time of the shot in advance. And in looking at the original article and the series of photos, it was very obvious that Sally was not the person in the photo. So it's an interesting series of photos, but it's certainly not the individual I was looking for. *She's up on her toe shoes there. That's amazing.*

Yes. There was a report on Channel 8 dated August 2, 2002 where they mentioned a beauty contest at Nellis Air Force Base where they named Miss Atomic Boom. But in talking to the historian and the Public Affairs Office, they have never heard that before, have *no* clue where that came from. I haven't followed that one up yet. And that's essentially the last entry until very recently. An individual was given the nickname Ms. Mushroom Cloud, and that has appeared in various newspapers, and that's Condoleezza Rice. So it's come back around and people are using that visual image in describing an individual, not in promoting a town.

Very interesting. I hadn't heard that one for Secretary [of State] Rice.

I can give you citations. [Internet searches produce many references to this].

One quick question, though, because when I was at the museum before it opened, and I mentioned this to you the other day at the opening, someone said to me, Oh no, no, we know she died in California, Lee Merlin. But you were telling me that we don't know that. So just finish up with that because that's interesting, too.

[00:15:00] The individual that told the museum staff that in a staff meeting had been talking to the curator for the [Howard W. Cannon] aviation museum. He had made that statement to her. So having worked with him before and provided the documentation on the flight site that Northrop had, I called him, and he said, Yeah, I'm the one that said that. I received a newspaper clipping from a friend of mine in southern California sometime in the last five years that indicated she had passed on. And he said, I have it somewhere in my office but I can't find it. And if you were to see this gentleman's office, you would understand how difficult it would be to find anything. Because I'm sure the stuff I gave him is still stacked up in his office. So he gave me just a couple of details such as, Well, it was published in the L.A. Times, it was published within the last five years. So I have gone out and I have searched their archive using every conceivable combination of terms I could think of: by name, obituary, mushroom cloud, Copa girl, showgirl, Sands Hotel, photo, desert, just everything, and have found no hits. So I need to get back and see if there's any way I can get him to literally take a couple of days and go through his office and find wherever this clipping is so I can see what it really says. But having gone down these paths before, I have found that you often hear things as fact, such as the Miss Atomic Bomb beauty contest winners, that simply cannot be supported by the contemporary documentation. And until

I see that and can have a document from the period that I can trace to whomever makes the claim today, I'm not going to automatically say, Yes, it's true, she passed on.

Well, that's really interesting.

But when I find out, I'll let you know.

Yes, I would appreciate it. I think that's good. Thank you very much.

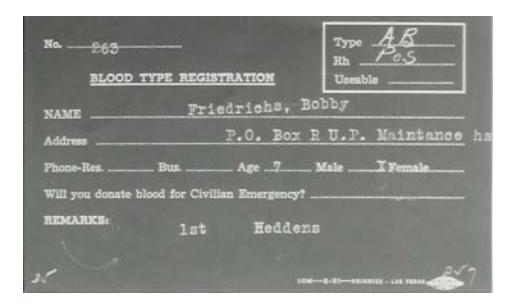
All right.

[00:18:01] End Track 3, Disc 2.

[End of interview]



1. This photo was taken when I was living at Desert, CA. My next older brother Carl is on the left and my oldest brother Bill is on the right. The photo was probably taken near Kelso, CA.



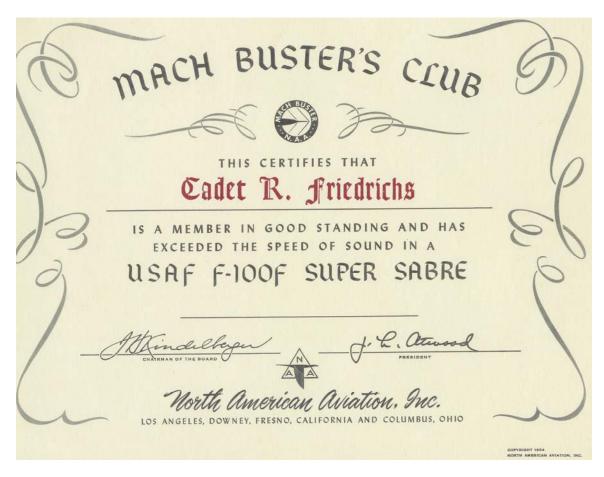
2. This document is the copy of my blood typing that was performed at the direction of the Civil Defense when I was in First Grade. All school children and most (if not all) adults in Southern Nevada were given blood tests as part of the nuclear testing program. Please note that my school grade and teacher's name are listed under the remarks section.



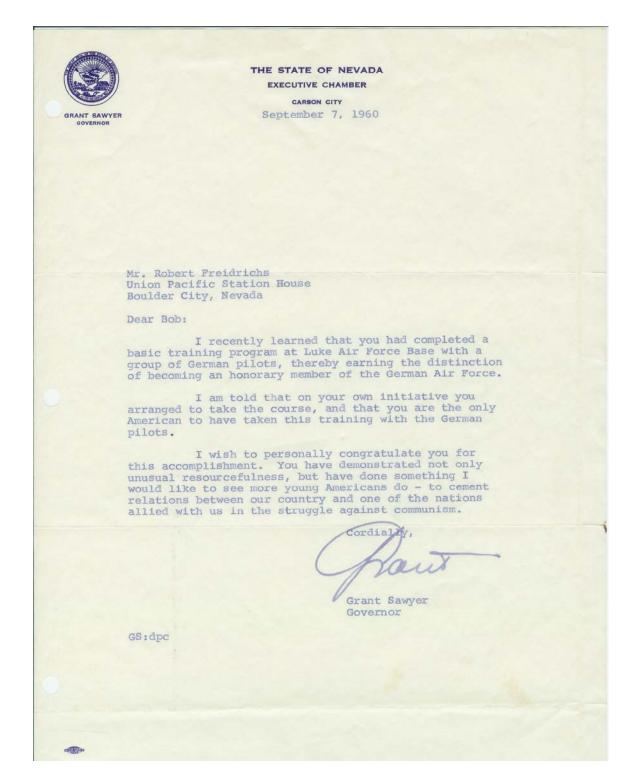
3. This photo was taken when I flew in a T-33 jet in 1959. I was a Civil Air Patrol Cadet at the time.



4. This photo was taken when I flew in an F-100F jet in 1960. I was one of two CAP Cadets that received the first such flights. The photo was taken at Luke Air Force Base, AZ.



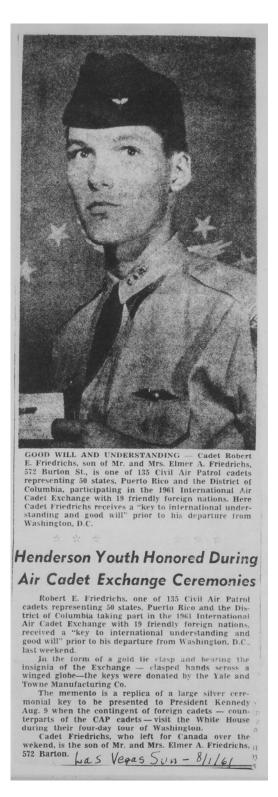
5. The certificate was given to me by the North American Corp. for exceeding the speed of sound in the F-100F.



6. This letter from Nevada Governor Grant Sawyer was the result of my having been a guest of the German Air Force personnel stationed at Luke AFB.



7. This photo was taken when I was on the U.S. Delegation to the International Air Cadet Exchange program. The group of which I was a part went to Eastern Canada. Then Senator Hubert Humphrey is seated in the middle and I am on the top row with my head turned sideways (I think of this as my Forrest Gump Picture).



8. This news clipping was printed upon my return from the IACE trip.

CARL TO SHOW,
CARLED B. RUSSELL, GA.
KENNIS CHAVEZ, N. MIEX.
SALET J. ELLENDER, LA.
JETER HILL, ALA.
JETER HILL, ALA.
WILLIS ROBERTSON, VA.
WARREN G. MAGNUSON, WASH.
SPESSARD L. HOLLAND, FLA.
WILLIS ROBERTSON, WASH.
SPESSARD L. HOLLAND, FLA.
WILLIS ROBERTSON, WASH.
SPESSARD L. HOLLAND, FLA.
WASHINGTENINS, MISS. STYLES BRIDGES, N.H.
LEVERETT BALTONSTALL, MASS.
MILTON R. YOUNG, N. DAK.
KARL E. MUNDT, S. DAK.
MARGARET CHASE SMITH, MAINE
HENRY DWORSHAK, IDAHO
THOMAS N. KUCHEL, CALIF.
RQMÅH L. HRUSKA, KEBR.
GORDON ALLOTT, COLO. United States Senate COMMITTEE ON APPROPRIATIONS January 29, 1962 EVERARD H. SMITH, CLERK THOMAS J. SCOTT, ASST. CLERK Mr. Robert E. Friedrichs 572 Burton Street Henderson, Nevada Dear Robert: I am pleased to advise you I have today sent in my nomination of you to take the examinations for the United States Air Force Academy. As you perhaps know, I use the competitive system to select my candidate, and this means you will be competing with my other ten nominees for my one vacancy. Very shortly now you will receive instructions telling you where and when to report for the examinations. Good luck! Cordially, cc: Mrs. Lura S. Winall

9. This letter from Nevada Senator Allen Bible notified me that I had been nominated to the U.S. Air Force Academy. He routinely nominated 6-8 individuals each year and the one with the highest overall ranking received the appointment. I was nominated because of my activities related to the Civil Air Patrol. I did not receive the final appointment.



10. One of my early NTS assignments involved the analysis of samples from the Kiwi TNT nuclear reactor test. This photo shows the reactor at the time of destruction.



11. This certificate of participation was given to me for my involvement in the Kiwi TNT test. I had worked on loan to Los Alamos National Laboratory during this test.



12. The longest day I ever worked was when the Baneberry test was fired. This photo shows the venting that occurred during that test. I had started work at 7:45 that morning and got off at 5:00 the next morning. I returned to work at noon that day and routinely worked 12 hour days for several weeks thereafter.

Reynolds Electrical & Engineering Co., Inc. MEMORANDUM

Date February 3, 1971

To R. Friedrichs

From L. S. Sygitowicz

Subject COMMENDATION - BANEBERRY SUPPORT

Bob, as you know, during the recent Baneberry event and subsequent cleanup it was necessary for the Environmental Sciences Analysis Branch to go into extended operations. Normally, a work load of 2000 analyses per month is encountered; during the operation 13,900 analyses were performed in a one-month period. The majority of analysis requests required the data to be reported prior to 8:00 o'clock the following morning. In all cases these deadlines were met, if not exceeded. All data reported was accurate, and the incidence of error was less than 0.5%.

I take this opportunity to commend you for your contribution in accomplishing this task. Your extra effort in completing large quantities of work while adapting to changing work assignments is a major factor which led to this success.

Thank you again for your outstanding performance.

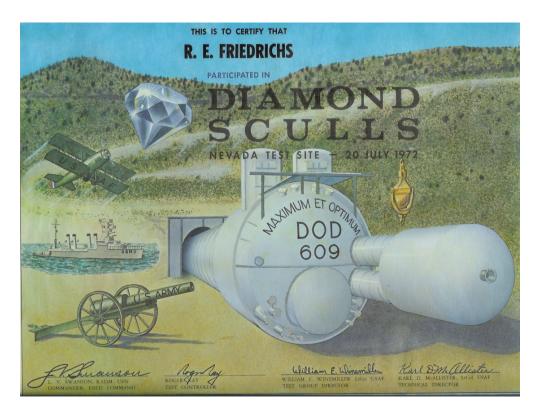
LSS:mam

cc: A. E. Bicker D. E. Engstrom Personnel File

AN A EGE COMPANY

RE-0031 (12/69)

13. This letter of appreciation was given to me after we had wrapped up the sample analyses required for approval of personnel to return to work at the NTS.



14. This certificate of participation was given to me for my involvement in the Diamond Sculls event, the largest nuclear test ever fired at the NTS. I had worked on loan to Sandia National Laboratories during this test.



15. This photo was taken when I worked in the Reynolds Electrical Engineering Company, Inc. (REECo) Sample preparation Laboratory in Mercury, NV.



Department of Energy Washington, D.C. 20545

WEV 1 4 1977

Mr. Robert E. Friedrichs Reynolds Electrical & Engineering Co., Inc. M/S 705 P.O. Box 14400 Las Vegas, NV 89114

Dear Mr. Friedrichs:

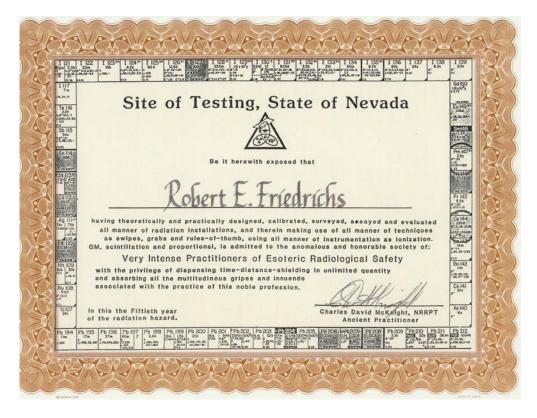
We have been advised by the Department of State that you have been officially nominated as a U.S. participant in the Symposium on National & International Standardization of Radiation Dosimetry, Atlanta, GA, December 5-9, 1977. If your plans change and you are unable to attend, please advise this Office so your nomination can be withdrawn.

Sincerely,

John H. Kane

Special Assistant for Conferences Office of Technical Information

16. This letter was the formal notification that I had been selected to be a U.S. participant in the International Atomic Energy Agency Symposium on the Standardization of Dosimetry that was to be held in Atlanta Georgia.



17. This certificate was one of the less than 10 that Bama McKnight signed for old-timers in the RadSafe Group at NTS. I was honored to have been included.



18. This photo was taken at the luncheon when I received an award for having worked for REECo for 25 years. The photo includes Ed Weintraub, REECo Deputy General Manager, Tom Mehas, head of the Dosimetry Research Project, and Bernie Eubank, Technical Services Supervisor.



19. This photo was taken when I was initially involved in researching the XF-90 aircraft on the NTS during the 1990 time period.



20. This photo was taken as part of the annual EEO program for at risk students in Clark County. The lady in the photo is Marcella Guerra, the head of EEO at the Nevada Operations Office at that time.



21. This photo was taken as part of a ceremony where Nick Aqualina, NV Manager, presented me with an award.



22. This photo was taken upon my arrival at Johnston Atoll where I served as Deputy to the Commander in 1993. I am being presented to the staff by Col. Cornish, the Base Commander.



DEPARTMENT OF ENERGY

Washington, DC 20585

JUL 2 9 1994

MEMORANDUM FOR:

CHARLES E. MCWILLIAM, DIRECTOR, ARMS CONTROL AND NONPROLIFERATION DIVISION, NV

FROM:

GALL T. BRADSHAW, ACTING DIRECTOR, NEGOTIATIONS AND ANALYSIS DIVISION

SUBJECT:

PERFORMANCE OF ROBERT E. FRIEDRICHS

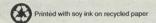
Bob Friedrichs has been detailed to this office for almost one year, and will soon return to the Nevada Operations Office (NV). I deeply regret that he cannot extend another year, but I recognize the undue financial hardship which would result. Robert has been extremely valuable to us and, I believe, to NV during his assignment here.

As we agreed, his primary role would be as liaison for NV and as Action Officer for the Threshold Test Ban Treaty related issues. However, his contribution has gone far beyond that. He has worked on Strategic Arms Reduction Treaty and Intermediate Nuclear Forces Treaty issues, on Comprehensive Test Ban negotiation issues, and a wide variety of fast breaking "crises" where he has been an All Star utility man. In addition, Robert has represented DOE in Nuclear Risk Reduction Center related activities.

He has quietly injected a new perspective on many of the issues related to his primary assignments. His comments have been thoughtful and objective and, as a result, he has established a high level of credibility with other staff members, with me and with Tony Czajkowski. He has developed a similarly high credibility in the interagency. In his work with the interagency, he has looked after DOE interests without creating turmoil or continuing controversy with other agencies, a remarkable achievement in the Washington interagency environment.

Perhaps his most outstanding achievement, though, has been in his role as liaison with NV. In that, I believe he has brought important insights to both organizations in part because he has so often served as a conduit for getting us to talk to each other. His willingness to tackle any assignment, from compiling a video collection with an emphasis on foreign testing of nuclear weapons to coordinating development and presentation of an interagency tutorial on nuclear weapons testing, illustrates a crucial characteristic which has made him such a success in this office; he is a team player and takes initiative and responsibility. Robert is welcome in this Division anytime. Thank you for sending us such an outstanding individual.

cc: N. Aquilina J. Magruder



23. This letter from Carol Bradshaw, Director of the DOE Policy & Technical Analysis Division, was sent to my NV Supervisor to document my performance while serving on her staff at DOE/HQ.



24. This photo was taken of me when I was serving on the U.S. Delegation to the Nuclear Risk Reduction Centers Annual Consultations in Moscow, Russia.



25. This photo shows both the U.S. and Russian delegation members at the Old Ministry of Defense in Moscow.



26. This Photo shows the U.S. Delegation members at the GUM Department Store in Moscow.



27. This photo was taken at a sidewalk café on the Graben in Vienna, Austria while I was part of the U.S. Delegation to the United Nations Consultations on the Comprehensive Test Ban Treaty. Note that, because this is a serious discussion of complex technical issues, all of the drinks are hidden. The photo includes Gordon Macleod, Bechtel Nevada, Al Smith, Lawrence Livermore National Laboratory, Josh Segal, DOE/HQ, and me.



28. This certificate was the one that we prepared for those individuals that had participated in the identification and recovery of the XF-90 that was finally shipped to the U.S. Air Force Museum in Ohio. There were less than 30 that were awarded.



29. This photo was taken during the opening events for the Atomic Testing Museum. The photo includes the following people (going clockwise): Myself: Colleen Beck, Desert Research Institute; John Thorndal, Thorndal Armstrong Delk Balkenbush & Eisinger; Mrs. Thorndal; Ron Kalb, Desert Research Institute; Peter Ross, Desert Research Institute; Frank Tussing (standing left), Nevada Alliance; and my lovely wife Nancy.



30. This photo was taken by the Los Angeles Times for an article that was written about my search for "Miss Atomic Bomb." It was published on January 2, 2005.