

COLD WAR PROJECT

RECORDED INTERVIEW OF GEORGE WALLOT, PART 1  
(Reviewed and revised by George Wallot, September 2, 2015)

CONDUCTED BY KAREN BREWSTER & LESLIE McCARTNEY

IN ANCHORAGE, ALASKA

SEPTEMBER 4, 2014

LESLIE McCARTNEY: Okay. Today's September 4, 2014 and we're with George and his wife, Patricia. My name's Leslie McCartney, and I'm here with Karen Brewster. And we wanted to thank you very much for taking the time to come in and speak to us today about your experiences here in Alaska.

GEORGE WALLOT: Thank you so much for inviting me. I've been wanting to tell this story to someone that perhaps didn't know my part of the story, because my part is a little off of the mainstream. These events happened - - I was in the Army when the Nike Improved Hercules systems were in the latter stage of development here and we had 3 firing batteries with 4 firing systems in the Anchorage area. And it was a very exciting thing preceded by a year of schooling in basic electronics and the Nike track radar system and associated test equipment.

LESLIE McCARTNEY: What year then did you get into the Army? And were you drafted or did you sign up?

GEORGE WALLOT: No. I enlisted in the Army. I had attended Ohio State University for two years. I wasn't going anywhere over there, so I decided to get married and join the Army. And I enlisted with the help of my wife, who was working for the Army at the time in the recruiting center there. Her supervisor was an expert of what were the best schools in the Army, and I had gotten good scores so I was able to go wherever I wanted. And he suggested that I go into this new training with the Nike -- well, it wasn't Nike. He only allowed me to sign up for a one-school basic electronics at Fort Monmouth, New Jersey. And after basic training, I went to Fort Monmouth to start a twelve-week course in basic electronics with an emphasis on radar, and --

KAREN BREWSTER: Where do you -- where were you born? Where were you from originally?

GEORGE WALLOT: I'm from Ohio, the state of Ohio, right in the center of the state -- Mount Vernon, Ohio. And that is a small town. A lot of people I went to school with were country children that their farm -- their parents were farmers. A lot of farming there and some industry. And very close to Ohio State University. But after I -- I did go to Ohio State University for a

couple of years studying engineering. I was not particularly successful at what I did. I wasn't focused on that. But when I got married and joined the Army, things changed. Now it was not just me. It was me and my wife and some children to come.

LESLIE McCARTNEY: How did you get into electronics or was that path selected for you to go into?

GEORGE WALLOT: Electronics was something I had always been interested in. Even in high school, I was always an electrician for the plays and stuff and did wiring and set up sound systems and light systems and stuff like that. That was just a cursory introduction to electricity, but it was something I was interested in. And when I -- by the time I got to enlisting in the Army, I really knew I wanted to -- to get involved in electronics, and they had this -- my sergeant told me it was a really good start -- a school at Fort Monmouth and that I would learn basic electronics there, and then I would probably go to an advanced school, but he couldn't promise me one. And so that's what I did. I went to Fort Monmouth and really applied myself and I did excellent. I was the honor student in that class and it was a big class, I think twenty people. But in any case, I learned an awful lot. And it was very interesting. The instruction was excellent. It just was a great experience. And then after that I -- I went to -- was assigned to take advanced courses at the Redstone Arsenal, Alabama. And I went to Redstone Arsenal, Alabama to study the Nike Hercules system, tracking radar and associated test equipment. This is a lot of stuff for one person to know, and the school would normally be a year-long. And it's eight hours a day five days a week. And if you don't do really well, you have to go extra time. And I did well. I didn't spend any time -- any extra time, and we learned all about the tracking radar system of the Nike Hercules. At that time, there were two tracking radars, and about the time I got out, a third tracking radar was added. It was called a target ranging radar. And I did not get an opportunity to study the target ranging radar in school. There was a lack of personnel in Alaska and so they sent three of us from my class to Anchorage to Fort Richardson where we worked in the ordnance building, which was about half the size of a football field. And it had a -- lots of specialties in -- different kinds of specialties -- there were people involved with launching, with the missiles themselves and the missile hardware and electronics, boosters, and all that kind of stuff. And then there was the Integrated Fire Control. We call ourselves IFC. In IFC, we had people that were specially -- special in -- there were two specialties there. There was tracking radar, which was my specialty, and then there was the people that did the acquisition radar and the -- all the stuff that was in the command -- command center, where the cool guy pushed the button to launch the missile. There was a lot of stuff. These -- these trailers -- I don't remember the exact size of them. They were like twelve, fourteen feet wide and about forty foot long. And they were packed. You could just barely room to walk into them and sit down in front of 'em. And then the rest of it was all electronics. This was all vacuum tube stuff.

Vacuum tube stuff was not inherently unreliable. It required a lot of keeping your eye on and changing the tubes after, you know. It was -- it was the main problem with the system was the tubes. Later it was redesigned after I got out. They changed to a whole new system -- a solid stage system, which was implemented in Europe. But I studied all that good stuff and I really applied myself and did a good job. And I graduated top of my class in that school, too. There were even foreign students in that class. We had a gentleman from France that was learning this. And we had three civilians. And we all studied -- just we all took the same course and it was really interesting. The instruction was excellent, really excellent. Guys from Western Electric were teaching the courses and it was -- it was a great experience. I learned an incredible amount and --

KAREN BREWSTER: What year then did you come to Anchorage?

GEORGE WALLOT: I came to Anchorage in -- in early 1963.

LESLIE McCARTNEY: And did your family come with you?

GEORGE WALLOT: Not initially. My wife was expecting and we waited 'til after the baby. And then I went back and brought them both back to Alaska.

LESLIE McCARTNEY: So tell us what is involved when you're working in ordnance?

GEORGE WALLOT: Okay. Let's talk about all the different stuff and -- and where ordnance fits in there. On a missile site, there's an awful lot of equipment. There's controls, radars, computers, phone systems. A lot of stuff. And outside those -- those two trailers are a lot of antennas. There are three tracking antennas and there are two acquisition antennas, which are used to locate the enemy and identify the enemy. And then once that's accomplished, then the tracking radars lock on the target and track it, so the missile can -- you need to -- to hit something you need to know where is the target and where's the missile. And they are directed to come together. Missile is fired very high. It's extremely fast. It burns -- a booster burns in five seconds and it -- it breaks the sound barrier before it gets off the rail. It's really fast. It's several thousand miles an hour. And it goes really high, like upwards of 120,000 feet. And it comes back down aiming at a point just in front of the aircraft. And when the information from the target tracking radar and missile tracking radar and the target ranging radar all say it's now, where it wants to burst, then the -- from the tracking station the burst command is sent on the -- on the missile tracking radar it tells the missile to go off. And when it does, it -- well, if it's a high-explosive warhead it will kill everything in about a hundred yards of it, and it was easily -- it would easily be within a hundred yards of the target. The accuracy was at least that good. And it wasn't -- the idea wasn't to hit the target. The object was to explode in front of the target and all the stuff would go through the target. There were nuclear warheads. In fact, when I got there we only had nuclear warheads. We didn't have any high-explosive warheads. I didn't know they had nuclear warheads, because I didn't have a need to know so nobody told me. But if you're around something long enough the word gets out. And these -- these missiles

would come into our shop and the missile guys -- launcher guys -- would work on those missiles to maintain them and -- when the Cold War got hot to the point where a treaty was made with Russia, we agreed not to make any more nuclear explosions in the atmosphere, and they did, too. So that meant that if we were going to try to intercept a single target, which was atypical -- the Russians would normally attack in a swarm of bombers -- but if it just be one out there with a high-explosive warhead, they're easy to take out one target. And so we had some -- a few rounds that would be converted. We had to convert them. We didn't have them, so the shop was full of missiles for a while. And then we would convert them over so they could take the high explosive warhead.

KAREN BREWSTER: So can you tell us what you did during -- some of the duties and responsibilities you had.

GEORGE WALLOT: Okay. Initially, I did almost all my work in the shop -- in the ordnance shop. And my job was to test, calibrate, and repair chassis from the Nike sites. The system was very modular so that you could pull a chassis out. A chassis would perhaps be -- the biggest one might be two-foot square, but most of them were smaller than that. And they were easy to remove and easy to put back in. And even the -- some of the people on site had the authority to switch out something that would fail quite commonly that was easily replaced and would usually fix the problem. So they -- they had -- what was it called? First and second initial on the types of responsibilities. And they had spares of things that would commonly fail. These were very unreliable because of the vacuum tubes. But they were quick to fix so they -- they did that. And when more serious failures would occur, we had -- I spent a lot of time at Site Summit on a problem. I'll talk about a specific problem that I worked on. The problem was -- manifest itself in the target tracking radar. And it was a problem that's called arcing. In these -- as you -- as the transmitter fires, if everything is okay there's no arcing and this pulse goes out -- out of the antenna and travels out to a hundred miles and hits the target, bounce, and come back and you -- by measuring the time it took to get there and back, you know how far away it was and you know which way the antennas were pointing. They're pointing right at it, so you know where it is based on its angle to the ground -- that's called azimuth -- and the elevation -- the angle up in the air. And that is information is returned from the target tracking antennas. And then we can -- we can proceed to fire the missile. But I was telling you about the -- working with the big problem that I had. The hardest problem that I ever had to solve when I was in the Army was with the target tracking antenna on the Site Summit. And the problem with it is when you would turn it up to full power, there would be arcs. You could hear them. Snap-snap. You'd hear the arcing in the waveguide. And whenever they did that, the system would shut off. So the method of working around it was to turn the power down a little bit and just don't get it up to where it arced. And they were still able to operate that way. It removes some of their ability to work, but not substantially. And it just kept getting worse.

And I did all the things I could. And the guys that I worked with -- all the people that had any knowledge of this target tracking antenna -- we all put our heads together and tried to figure out what's causing that, and we couldn't figure it out. And so we called the guys in from Western Electric. And two of their engineers went up and we went up on top of that antenna. This -- this antenna is the tallest antenna and when you go up to Site Summit, you -- the really tall one? That's the antenna. That's where it was. Forty-five feet up in the air. And the guys from Western Electric and I, we got our heads together and we tried to eliminate all the things that we thought it could be -- or it wasn't and tried to eliminate the things that it wasn't and hopefully what would be left would be what it was. And we eliminated everything except a portion of the antenna, which was known as a duplexer. Now the duplexer is a thing about foot and a half by a foot wide and a foot tall, and it was very complicated. It looked like a bunch of piping all over the place. We called them waveguides, but it looked like scored pipes to you -- to the average person. And it was very complicated device. And it had to be kept dry and -- or things would go wrong. And that's with the problem turned out to be. The humidifiers -- there was a dehumidifier on every one of these antennas that would keep this waveguide -- inside of the waveguide dry so that things can't happen. And what happened to this particular waveguide is that moss started growing in the waveguide, and as the moss accumulated it made the waveguide malfunction and cause this problem. The solution was to replace the waveguide. Okay. Never had been one ever replaced before. Where -- where do we find one of these? I mean, no one had it. They weren't a spare part. They don't ever fail. Well, this one did. And we found a couple of 'em in Japan. And there was no -- there were no Nikes there, but there was waveguides. So, they shipped us a waveguide and we very tenta -- and methodically put that in there. It took us all day long to do it and put it back online and it worked. And it fixed the problem. It didn't fix the root cause of the problem. The root cause of the problem was the humidifier not working. And we replaced the humidifiers and then the people onsite started to be more careful about the humidifiers working all the time, because if you didn't, then you would have this awful problem. And that's one of the hardest thing I ever had to fix, was the problem I just explained.

LESLIE McCARTNEY: So that was moisture? And the cold didn't seem to --?

GEORGE WALLOT: No, it wasn't the cold. It was the moisture allowed organisms to grow inside the waveguide. They told me later that the waveguide was full of moss -- not full of it -- it had enough to cause it to not work the way it was supposed to. But that was the hardest problem I ever had to solve. But we did a lot of work, and initially I said I did work in the shop. And we had -- we had many consoles. There were three trailers of equipment that we had. And these trailers were about the size of the room we're in here, pretty much. And --

KAREN BREWSTER: Twenty feet long?

GEORGE WALLOT: About twenty feet long and not quite this wide. About fourteen feet wide, I'd say. And it was full of equipment. There were five consoles. There were three in -- in the first van, two in the second van, and then later -- at the time I got here, there was a third van of equipment, which was used to support the high -- what do you call -- the improved Hercules, the last version. Well, it wasn't the last version. The last version up here -- there was a solid-state version after that. But in those -- in those trailers that we had, we actually had taken the equipment out so that we wouldn't -- they'd be easier to work. Our shop was inside, so the equipment was all taken out of the vans. Shop 1 and 2, which were five consoles. And these consoles were big. They were about -- the workbench was about five foot long and the equipment went all the way down in front of you and all the way down the one side. And it's just one piece of test equipment after the another. There was no computers in that equipment. It all required being set up by hand and adjustments and -- tests and adjustments -- and you would read the things and they had to be within these limits, and if they weren't you could adjust them. If you couldn't, then they had to be repaired and then you would try to repair them. And we'd put them aside and then when we weren't so busy we would repair chassis or send them back to the depots sometimes if they weren't repairable. But we had these five consoles. And then another trailer full of equipment came in. It was much more modern than the previous equipment. It was -- it had two consoles. One on the left and one on the right. And they were really big consoles. They went to, like, eight to ten foot long and there was one piece of equipment after the other. And over on the right-hand side, there was a card reader that read Hollerith cards, the original IBM punch cards. And it looked really nice, but that card reader was the biggest piece of junk that was ever made. It never worked right. And I heard that many years later by people, other Nike guys I've talked to, that finally they got a new card reader that did work, but when I was there we almost had to do things by hand and the card reader really didn't help us much. No one was able to fix it. And we had another terrible problem. This -- this system was intended to be -- instead of us having to manually set switches almost all the switches were controlled by stepper motors. A stepper motor would go click-click-click-click and the -- supposedly the card reader would say put this switch in such and such a position and then the system would do that. Well, it didn't do it all the time, but it was supposed to do that. And it wasn't three months after we started using that, we started having trouble with the stepper switches. Holy cow. I replaced one of those -- those stepper switches had like thirty or forty wires on 'em. And the time it took to replace and repair one of those was -- it got me to thinking. I says, "Well, I'm not gonna do that again unless I have to. Maybe I can just replace the stepper motor?" Pull it out of the wafers and put a new one back in. And I would just take the old wafers throw them away and put the -- and it only took me about twenty minutes to change a stepper motor after that. The problem was a mechanical

problem. It wasn't the switch itself. It was the stepper -- the stepper system. And I became the expert at replacing stepper motors. And the -- my goodness, it was -- that was exciting. After about the first year working in the shop with all those kind of fun stuff, I went to working almost completely in the field. And I was the lead guy on the repairing and modifying. We had a lot of changes we had to make -- modifying -- and so I did a lot of -- I wasn't the only guy that did site work, but I did a lot of the site work. There were maybe three of us. And I worked on all the different missile sites solving problems, making new modifications, helping teach the guys -- the misslemen -- how to do that stuff. And it was really interesting. I really enjoyed it, and I learned a lot.

LESLIE McCARTNEY: Why all the modifications? Because things were being upgraded?

GEORGE WALLOT: Upgraded. Upgraded. Always something going on. We can talk about -- one of the greatest problems that we had that was really a serious problem. It wasn't long after I got here. That year in '63, we actually were live firing from Site Summit. Now, if you've never seen a Nike take off, you've missed something. Because they are so fast that -- I was watching from Fort Richardson. I knew what time it was supposed to go, and I was on the alert. And before I heard the blast -- it took a while for the sound to get here -- this rocket was up getting ready to go into the clouds. I almost missed the initial part of the launch because I didn't see it. I heard it. And when I heard it, it was up here. And it went into the clouds and I couldn't see it and then it exploded. It wasn't supposed to explode, but it did. And that was symptomatic of one of the big, big problems that we had to solve. And that problem -- to make it simple, the problem -- the problem was that when the target -- the missile tracking radar would lock onto the missile. The missiles are located always at the same or usually below the radars. And they have to be a long ways away, like a mile to two miles away, otherwise they're so fast that radar can't track it. So here this -- this missile takes off. And when it happened on this particular one is that the -- these missiles use a tracking system different than targets. In a missile, you send a pulse out to the missile. It generates a high power pulse and sends it back. So it's easy to track and it's a much stronger signal than an echo. And we were communicating with the missile and everything was working good. Otherwise, you can't fire it. If you can't talk to it, you can't fire it. So everything seemed to be working good. As soon as the missile took off, it lost the track of the missile. And why it lost the track of the missile is the missile transmitter was transmitting and it was bouncing off the fence, and they were locked on the echo off of the fence. And, of course, as soon as the missile lifted above the fence, there was no more echo and it lost it and BOOM. But it doesn't blow up right away. It blows up -- it has to get up to a certain altitude before it blows, 'cause they didn't want to cause damage on the ground. But that was all programmed into it. It was no accident. It did exactly what it was supposed to do. And after that we were much more careful on how we -- what we actually did

was have somebody up there on the -- on missile tracking antenna with -- there's a scope, a large targeting scope like you would have on a rifle that's used in certain of the maintenance on the thing. So they just put the scope on the side of the -- and then wherever the antenna points, you look through that and that's where it's pointing. You could see -- physically see where it was. So somebody had to -- looks through and makes sure it was looking at a missile not at the fence or something else. And that was the workaround temporarily. But they eventually changed. They took out one of the modifications that had made it too sensitive, and after that we didn't have any -- any more problems with that. But Nike Site Summit was a unique station in that the target -- the antenna -- the missile is so much further below. It's like two thousand feet below the target tracking and the missile tracking antenna. Now that was a really, really sneaky problem that caused a lot of stress in my organization, because between us guys and the Western Electric guys we had to figure out what the problem was. And the missile guys. I mean, everybody had to work together to solve that one. But that was a fun one and it was very interesting.

LESLIE McCARTNEY: You were mentioning before on your hat about different levels of -- different -- there was five different levels in the ordnance?

GEORGE WALLOT: Right.

LESLIE McCARTNEY: Perhaps you could talk about that, because you kind of talked about it without mentioning it.

GEORGE WALLOT: Okay. In the Army -- I don't know if it's true for any other forces, but in the Army, maintenance is performed at different levels. They are called echelons. Echelon 1–5. Echelon 1 is a type of maintenance performed by the operators often, and it's very straightforward and it's something they do in their daily checks and adjustments. And they're trained to do that and they're very good at it. If it's a little more difficult adjustment, they have specialists on the missile sites that are more highly trained than the operators. And they perform the Echelon 2 maintenance. An example of Echelon 2 may be tuning up a transmitter or something. Making some kind of special things and the things operators don't normally do. And they also had the ability to change chassis, because they had spares. and if you could fix the problem by changing the chassis one of the guys onsite would do it. And then if they couldn't fix it, then the ordnance was called. And we did Echelon 3 and 4. These were very sophisticated things that involved making very complicated adjustments and changing -- troubleshooting to the component level. And we had some very interesting things we went out to work on doing Echelon 3 maintenance. And then Echelon 4 maintenance is -- is even more serious. And that involves -- like in the setup of a system. We had -- there were ordnance guys. When the system was first set in, it was installed by ordnance guys like me, except they were trained in installing the system. Getting it up and working the first time. In the -- there's a gentleman, I wish I could remember his name, in some of these reports I have here, it talks about him. I got to know him over the years. I never met him personally,

but he was involved in installation of the original and getting the original system working in Anchorage. In fact, all the systems. He, you know, after the -- it was installed, then they had to get it working. And they had some interesting and unusual problems. And I've talk with him on and off and we've shared stories, and it was very interesting some of the stuff they got into. And that was another thing ordnance does -- is you get the original systems when they're new. And these systems when they came here were new and then after the systems were shut down in the United States, they went to -- all over Europe and -- to those countries, and some Americans went over there. One of my best friends at that time, that I see all the time now worked on -- he was a -- an ordnance guy and he worked in the acquisition and computer portion. Acquisition -- target acquisition and computer. And he told me about a lot of the stuff that they worked on. And it was different -- a little different than what we did in the tracking station, but it was very skilled work and it was -- required a lot of -- you had to know an awful lot. As I say, we spent -- some more than a year, but most of us spent a year to learn what we needed to do this work. And it took about six months before you became familiar and not, you know, before it became second nature. And a lot of it didn't until you could actually test a lot of things and troubleshoot things you get experience. And there's no substitute for experience. You just got to get it.

LESLIE McCARTNEY: You just said something interesting, you said that when the Nike sites were disassembled they went to Europe?

GEORGE WALLOT: Yes, ma'am. These systems that were here went to Europe. Some went to -- in the -- went to White Sands for -- for training, because we had to train the European crews. We were starting to train European crews when I was in school in '63. And all those systems went to Europe, including the nukes.

LESLIE McCARTNEY: Even the nuclear program?

GEORGE WALLOT: Even the nukes.

LESLIE McCARTNEY: And now you mentioned Western Electric as being part of the electronics, so do you know what company built the various components for the actual missiles?

GEORGE WALLOT: Yeah. I didn't have anything to do with the missile, but I believe the missile was made by Northrop Grumman. I'm not sure. Yeah. The missile was made -- I think Boeing had the prime contract for it and Northrop Grumman provided some of the parts. You know, there's quite a few parts to the missile. You have a solid-state booster and then you have the -- you also have -- the whole thing is solid-state and the -- the fuels solid -- solid propellants.

KAREN BREWSTER: So when you did this traveling into the field to do repairs, was that just here in Anchorage or did you go to the Fairbanks sites, as well?

GEORGE WALLOT: No, I didn't go to the Fairbanks -- one of my classmates, however, that I went to high school with did go to Fairbanks. And he had the -- he was an ordnance guy, too, and he was in the acquisition radars

and in the battery control trailer. The other half of the specialty. And I had the opportunity to go up and talk to him -- visit him one time and -- but he was a classmate of mine in high school.

KAREN BREWSTER: So you stayed around Fairbanks -- I mean Anchorage.

GEORGE WALLOT: Uh-huh. Long ways to Fairbanks if you've ever driven there. Like you think you're never going to get there. The sun shining in your eyes the whole way, you can't see anything.

KAREN BREWSTER: So you started here in '63?

GEORGE WALLOT: Yes.

LESLIE McCARTNEY: And '64 was the earthquake.

GEORGE WALLOT: Mm-hm. Yes, I was -- I went to join the Army in March of '62. And I went -- I came up here in -- in January of '63. And I left in -- at the end of the year there -- two years later in '65.

LESLIE McCARTNEY: Can you talk a little bit about the effects of the earthquake on the -- on the Nike Summit Site here in Anchorage?

GEORGE WALLOT: Yes. There was some serious damage. The damage was, from what I could see and the people I've talked to, the worst damage was in the launcher areas where missiles were actually knocked off of their -- off their -- I mean these are -- they're bolted to these things so that can be hauled out and lifted up and all that stuff. Well, they broke -- they broke loose and the missiles fell to the ground and they actually spilled the propellant of the missiles out on the ground. It was a very, very dangerous situation, particularly in Battery A at Site Point. Donald Dukes, a good friend of mine, was the battery commander at Battery A, and he and I talked all day long about it once when we had a chance to meet each other. When I was living in Florida, we were several hours away from -- from him, and I found out who he was and where he was, and I called him up and introduced myself. I went over and we spoke --

LESLIE McCARTNEY: Would you like us to turn off the camera?

GEORGE WALLOT: No, I'll be okay in a minute. It was such an experience.

LESLIE McCARTNEY: Yes.

GEORGE WALLOT: Heart-wrenching.

KAREN BREWSTER: You have a lot of shared experiences.

GEORGE WALLOT: Yeah.

LESLIE McCARTNEY: And you were saying he was quite traumatized.

GEORGE WALLOT: Yes, both of us were. Because Don had never been able to speak to anybody.

LESLIE McCARTNEY: And was that because this was all so top secret? Or was it --?

GEORGE WALLOT: Yeah. He couldn't talk to anybody.

LESLIE McCARTNEY: Yeah.

GEORGE WALLOT: But he and I both had the same clearances, and we knew all about all the stuff. It wasn't -- outside of the incident, there wasn't anything that we couldn't tell each other. We already knew everything. But he was able to tell me the details of what happened. And it was really awful. And the story -- it was something that -- it took them three days

without sleep. And it was a terrible experience, and it was the most dangerous place on earth. One spark and it woulda been all over, not just for those folks, but it would have been all over. Because that would've blown that nuclear material. There wouldn't have been a nuclear explosion. Not likely. But there would've been contamination. And it would've blown wherever the wind was blowin' at the time, and it could've caused -- really could've been a bad deal. And nobody knew about that. The people in Anchorage didn't know. Most -- I don't think anybody knew there were nukes there, let alone the fact that -- the damage that was done there. It was -- it was really bad. I knew about it because I -- even though I didn't work with launchers, a lot of folks did work with launchers. You know, we're all together. We played together and we worked together. And everyone talked about what happened. Now they, of course, didn't know what went on in that bunker. They just knew that it was bad.

But Donald Dukes told me how bad it was. And it was bad.

KAREN BREWSTER: Are you able to share some of those details that he shared, or is that not too hard to talk about?

GEORGE WALLOT: The details -- there are a few points that -- that I can tell. I'll tell you the things that really upset me. You can imagine you put yourself in somebody's place. They -- they couldn't get the doors open to start with, 'cause everything was messed around. Couldn't get the doors opened. And they finally got the door open, and they had to be so careful. You know, one spark and it would've been over.

KAREN BREWSTER: The doors to where the missiles were?

GEORGE WALLOT: Where the missiles were. Right. The missiles were inside of a building on top of the ground. And then they stored, I don't know how many -- five, more or less, missiles per bunker. And there were multiple bunkers. I think at C -- at B -- at A Battery at Site Point -- there were at that time -- I believe there were four bunkers. And at first they couldn't get in, and then when they got in and they -- you know, they had flashlights. They had special flashlights that, when you turn the switch it didn't spark. And they were sealed special flashlights for that kind of a situation that had never occurred before. And there was no training. They -- they -- all the experts came immediately, but nobody had ever -- this had never even happened before! So they told them what they could. And then Don and his team -- I don't know, some thirty, I believe, of them entered those bunkers and restored order to it. I don't remember the details of how they restored the order, but it was -- it was pretty scary. Some -- some of the people actually ran away when they saw that. It just scared them so bad that they just ran away. But most of 'em didn't. Very brave men. And they were able to -- Don said that when they opened the door, there was an eerie sound coming out of there. That sound's caused by -- the way these missiles know where they -- their position, their location -- is through a thing called the gyroscope. If you've ever played with a gyroscope, you know that it -- it will -- you spin it and it stays wherever. You can -- you can put it on your hand and move your hand all around and it just stays right

there -- doesn't move. Well, these -- each one of these missiles had a gyroscope in it, and that gyroscope's job was to tell the controlling system what the rocket was doing. What orientation was it in, so it could control it and guide it to the target. And the gyros don't start until just before a launch. Well, when they got there, all the gyros were spinning. And they were at almost the same frequency and it was eerie. It made a sound that -- Don will never forget that sound. Or any of those people that went in there. And they, of course, shut them down. You can imagine these people, they didn't know -- they didn't know what to do. They really didn't know. They had not been trained for it. So they did the best they could and they were able to get it -- shut off the gyroscopes. And then they had to get the -- get control of the propellant that was out on the ground. They had to -- I don't know what they did. I suppose they put it in bags.

KAREN BREWSTER: Yeah, I was going to say, how did they clean up all the propellant?

GEORGE WALLOT: I don't know how they did it.

LESLIE McCARTNEY: And this is in March -- the end of March.

GEORGE WALLOT: Yeah.

LESLIE McCARTNEY: And you wonder how much soaked into the --

KAREN BREWSTER: But it was inside the building.

GEORGE WALLOT: It was inside the building. Yes. So they're inside the building and then they got it all picked up and straightened up, and eventually all that stuff was taken out of there. You know, that stuff's very dangerous. The warheads were -- the warheads had the ability for radiating contamination, but if there wasn't an explosion they weren't dangerous. Just sitting there. And they're not dangerous until someone sets them off or scatters them. And if you scatter uranium all over the place, that's not good. That didn't happen. That's what -- the beauty of that story is none of that happened. It all went right. And it took a great amount of bravery, courage, skill. Tough job. I'm glad I didn't have to do it.

KAREN BREWSTER: I was going to ask that. Did you -- were you called in to help with any of the repairs out there?

GEORGE WALLOT: Yes. There was damage everywhere. I spent a lot of time up on Site Summit. The target tracking radar fell off the pedestal. These radars are three-legged devices, and they sit on three -- three posts. They sat on posts. Well, it shook it like that and it dropped. Dropped about two feet. Until the top of the radar caught in the top of a hole in the floor -- in the radome, the clamshells. So they had to bring up the tallest thing I ever saw -- was a big -- I forgot what you call those things -- a big lifting device they had. I think it's forty-five foot from the -- off the ground, so it had to reach up and they had to connect to the target tracking antenna and then lift it up.

LESLIE McCARTNEY: Like a big crane?

GEORGE WALLOT: A big crane. And they straightened it around and set it back down on the pedestal again. Now in the process of falling down through the floor, it did some damage to some of the fittings and the oil and grease

fittings and just kind of -- it wasn't serious damage, but it was damage and I had -- I had to fix that. And it was hard gettin' parts because no one had ever fixed one of those before. They never break. Things like that don't break. But anyhow, they got it back up on the thing and once they got it -- the Western Electric people were there -- the engineers from Western Electric would get the thing operational again. And things went kind of back to normal except everyone was on edge because we thought, well, it happened once, could happen again.

LESLIE McCARTNEY: Well, what about the aftershocks? I mean, the aftershocks were quite strong, too. I mean, it must have been terrifying?

GEORGE WALLOT: Well, every day there was a count of the number --

Yesterday we had four-hundred fifty aftershocks. The highest one was 6.0. Now most of the big earthquakes we have other places were 6.0, okay? And this is an aftershock. And it's doing that all the time and it would rattle the windows. And in those days -- I don't know what you do today, but in those days, we just had regular windows, and in the summertime, you know, the light shines in the windows 24/7. And so what we did in the bedrooms, we put foil over the windows and -- aluminum foil, or tin foil it was back in those days, I guess. And when the earthquake would shatter -- or would shake like that, that foil would tch-tch-thc-tch. Earthquake alarm! Oh my. I tell you, it was awful. You would get really good shocks of those. Four or five hundred a day we had there for a while. There would be a few of them that were pretty good shocks.

LESLIE McCARTNEY: So as soon as one hit, was it all hands on deck? Check everything?

GEORGE WALLOT: It was get out of there! Feet, get me out of there! And you didn't -- the last -- the big one, most of the people couldn't get out. My wife and daughter were on the second floor in the apartment building, and she was not able to get out. Nobody could get off the second floor. It was moving -- everything was moving so much that they couldn't get out. I talked to another guy that was outside watching our building. He said our building, which was a long narrow building. It was two apartments wide. It was long. I don't know exactly how long it was. Perhaps fifty yards long and twenty yards wide. He said our building was moving back and forth. He was standing out there watching it, and the top of the building was moving more or less twelve feet from one end of the shake to the other. Back and forth, back and forth. And that's why you couldn't walk. That's why all of our dishes were on the floor and broke. Everything. Everything in the house that was in closets and cabinets and stuff was on the floor. The TV fell on the floor. Everything fell on the floor. And -- except one thing. There was a light in the kitchen above the sink with a globe about that size. That didn't fall off until a couple weeks later, and my wife was standing right under it. And she got beamed by that light. Fortunately, she didn't get hurt. But that was the final blow.

KAREN BREWSTER: Now, were you at work when it happened or you were at home?

GEORGE WALLOT: When that happened, I was at work. Now, at the actual time of the main earthquake, I was -- I was on Fort Richardson on a sleep-out. We had them one night a year as part of our Army regular training. Even though we were ordnance people, we still had to do a sleep-out, which means we had to set up tents and all that stuff associated with that -- and eat in that situation.

LESLIE McCARTNEY: And they like to do it in the colder months so that you were getting the cold weather training?

GEORGE WALLOT: Right. So we were out there and we had set our tents up, and, you know, it happened at what -- about five o'clock in the evening. It was still fairly light. It wasn't -- it was not bright light, but it wasn't dark by any means. You could see -- no problem seeing. And we had just had dinner. We had cooked our food over a fire. And we were standin' talkin' -- some people were in their tents. And it first started as a really weird shaking. It wasn't violent at all. It was tcht -- the ground was shaking. I don't know how to describe it. It was -- and if you were -- if you had something with water in it in front of you, you could see the water jumpin' around from this high-frequency. That is -- the precursors to the big one. And it -- that brought everyone that was in a tent out. Some of the guys were in a truck and they were getting ready to leave. They'd brought us dinner. And then after about three minutes, it started rockin' and rollin'. And now I'm out in an open spot. I can see fifty, a hundred yards, two hundred yards. I can see well. I'm holding on to this tree. I just -- when it started shaking, I just grabbed ahold of this tree. It was right there beside me. I grabbed hold of this tree, and I'm holding on and everybody else is down. Nobody standing, but me. And I'm watching this goin' on and I think, I can't believe this! I really thought it was the end of the world. I just couldn't imagine it could be anything else. I had never been in an earthquake before. And I'm holding on to this tree and I'm watching all these terrible things happening and people falling. I watched the guys fall out of the truck. They were trying to get out of the truck and the truck -- the truck's actually going up off the ground, like two, three feet. When the waves -- We're talkin' about the waves but -- there was a wave motion going on that I could have never imagined possible. This was awful! The waves were about twenty foot high. Twenty foot high, because when I would go down in the bottom of the wave I couldn't see anything except I could look down the trough, but I couldn't see anything in front of me or behind me. I mean, you could see it starting to go up just a few feet from you. And they were nice and smooth waves, but they were running about twenty mile an hour. So they -- maybe ten mile, ten -- twenty mile an hour. It was hard for me to tell. I just know that I could watch them. They were rolling through and I'd go down in -- in the thing and I'd go up and I'd look out and I could see one after the other as far as the eye could see, waves and waves and waves. And it keeps going on and I'm thinking, This is the end of the world. And fortunately after about three or four minutes more of that, it stopped. And there was a deadly quiet. And then we started

hearing fire trucks on Fort Rich, because we were on Fort Rich, but we weren't -- we were out in the woods. And we didn't know what to do, so we decided we'd just pack up everything. There was no -- we didn't have any communication with anybody. We just packed everything and they put us back in the truck and took us back to our shop at Fort Richardson. And we went in the shop and everything -- now imagine this thing half the size of a football field. Everything was on the floor including the florescent lights from the ceiling. These big tubes -- they're, like, six-foot tubes. They all fell out and broke all over the floor. And that stuff is dangerous, with phosphorus in there, and so we had to be careful where we were stepping. Fortunately, we had our combat boots on. It was really messed up and -- and there wasn't any power either for the longest time. You couldn't see worth a darn. And worked our way back to the toolbox. We had flashlights in our toolbox. And we found the flashlight in the dark. I don't know how I found my toolbox, but I did. And I got my flashlight out and was lookin' around and -- holy cow. What has happened? It was awful. And there wasn't much we could do about it, so whoever was in charge said, "Go to your families. Go. You guys, you married men go to your families and the rest of you stay here." And I had ridden in with the -- one of my friends who were living off post, and he took me over to his house then he was afraid to leave. So there I was stranded thirty miles from my house, whatever, and he didn't want to leave his family. And he eventually thought maybe it would be a good thing if he would take me home, and so he took me home. And I got there and couldn't find anybody. And I looked all the places you could look and hollered and I finally found my wife with some neighbors -- and my daughter. And they were okay. So now what do we do? Home? Can't go in there. That's uninhabitable. Maybe my sergeant could help me? I didn't know what to do. I knew where he lived. He lived on Fort Richardson. So my wife and I and the child went to my sergeant's house. He took us in for a couple of weeks. We stayed in the basement and we were glad to have it.

KAREN BREWSTER: And that's what lots of people did for each other in that earthquake.

GEORGE WALLOT: Yeah.

LESLIE McCARTNEY: I'm surprised that you could have driven where you drove to with the roads. I mean --

GEORGE WALLOT: Well, the roads were okay.

LESLIE McCARTNEY: They were okay? Yeah.

GEORGE WALLOT: Between those two points they were okay.

LESLIE McCARTNEY: Right.

GEORGE WALLOT: It was just awful, an awful experience. And then the two hundred aftershocks a day didn't help. That went on forever. We finally got back into our place, and when we got back, there was -- the infrastructure was totally messed up. And I volunteered to -- to go around and open -- they gave me a master key and we went and opened these apartments. There were hundreds of them there and we opened 'em. And some of the

sights we saw were awful. The one that I remember most of all was an apartment similar to mine. And over there -- and I looked over in the kitchen and there was a big red stripe on the wall. What is that? I went over, got closer to it, and I could see. And what had happened -- she was preparing spaghetti and she had spaghetti sauce cooking. And a big can -- one of these big cans fell out of the cabinet right into the middle of the spaghetti sauce! Splashed! Oh, I bet she got burned. But that was awful. I've never seen anything before like that or since then. And it was pretty bad. And you know there was no -- no radio, no telephones, no television, no nothing.

LESLIE McCARTNEY: And then on top of this, your work is so affected by it, too.

GEORGE WALLOT: Oh, well the Nike sites, they're all out of action. They're all pretty well messed up. We had -- first we had to get our ordnance shop back together, and we did that in a couple of days. All of our parts had fallen out, and then we had tens of -- a hundred thousand parts maybe. I don't know. We had a lot of parts there, and they were all in cabinets. And the cabinets all fell down and the parts fell out, and it was in total disarray.

LESLIE McCARTNEY: And then your consoles that you were talking about --

GEORGE WALLOT: The consoles -- one of my consoles was tipped over on its side. It was easy enough to get back on its place.

LESLIE McCARTNEY: But they weren't -- they weren't damaged a lot?

GEORGE WALLOT: No, there wasn't much damage to the consoles.

LESLIE McCARTNEY: Right.

GEORGE WALLOT: The damage was on the sites particularly.

KAREN BREWSTER: So the sites obviously went down. They weren't operational.

GEORGE WALLOT: They were completely inoperational. A Battery couldn't fire any missiles. And B Battery didn't have a target tracking radar. It fell off the pedestal. And I don't know what happened at C Battery. I was too busy trying to get B Battery working again.

KAREN BREWSTER: And so, does that mean that the sites in Fairbanks took over hot status?

GEORGE WALLOT: Yes. But they couldn't protect Anchorage. It's too far away. Missile range was about a hundred miles.

KAREN BREWSTER: Okay.

GEORGE WALLOT: Actually, if fired, it would actually explode. If you -- you picked a target out at maximum range, and locked on it and fired, it would be about sixty miles away when it exploded. If it was coming right at you.

KAREN BREWSTER: So, Fairbanks taking over didn't really cover this --

GEORGE WALLOT: Didn't help us at all. Hun-uh.

LESLIE McCARTNEY: So Anchorage was very vulnerable at that point to an attack?

GEORGE WALLOT: Completely vulnerable. Completely vulnerable.

KAREN BREWSTER: How long before the -- one of the Anchorage sites was back up and operational?

GEORGE WALLOT: I don't know which one came up first. Probably a week.

LESLIE McCARTNEY: And did -- you said earlier that a lot of the local community didn't even know that there were nuclear warheads up there.

GEORGE WALLOT: No, they didn't. They didn't know. It was secret. Nobody was supposed to know. Even I wasn't supposed to know. But I did. But no one knew.

LESLIE McCARTNEY: So nobody here really understood the danger that the place was in?

GEORGE WALLOT: Yeah. The nukes normally don't present a danger. A nuclear weapon's very, very hard to set off. Almost impossible. It's not subject -- I mean you could drop one out of an airplane, it wouldn't go off, if it wasn't told to go off. And it's designed with multiple safety devices, so it's -- it's really hard to set one off by accident. Very hard. But the -- the high-explosive ones, I don't know that they were any more dangerous. The real danger was that rocket fuel. If that would've -- if that would've gone off, there would have been a really bad explosion, because it burned like that. And everything that was in there would just be --

LESLIE McCARTNEY: Incinerated.

GEORGE WALLOT: Thrown around and burned and carried on. I don't know that there was a serious threat that the nuke could have -- could have polluted the air? I suppose it's possible, but I don't believe -- I mean we had nukes fall out -- they've been dropped by accident out of airplanes a few times. And they didn't get into trouble. They didn't go off, and they didn't contaminate anyplace. So, the chances are it was a very low chance. But chance of all those thirty men getting killed was excellent.

KAREN BREWSTER: And people in the surrounding neighborhood perhaps, too?

GEORGE WALLOT: Yes. I don't know how -- I don't know. It's not my area of expertise. But it was a pretty ugly at best.

LESLIE McCARTNEY: Very traumatic.

GEORGE WALLOT: And people didn't know about it. Nobody knew. I don't think anybody knew we had nukes at that time. That was a secret.

LESLIE McCARTNEY: Yeah. Okay, we're just going to change tapes.