PROFILES OF SWE PIONEERS

ORAL HISTORY PROJECT

Mary McCarthy Interview

March 14, 2006

San Jose, California

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Mary McCarthy

Mary McCarthy joined the Civil Service during World War II, repairing damaged planes and testing aviation communications equipment in San Antonio and Hawaii. After the war, she married, adopted a child, and stayed out of the workforce for more than 20 years. In 1968 at the age of 45, however, McCarthy enrolled in a mathematics course San Francisco City College to better help her daughter with her homework. She transferred to the University of California, Berkeley in 1973 to pursue engineering and completed her degrees in electrical engineering and material science in 1976. She was hired by Lockheed as a reliability engineer for parts control and standardization for military and aerospace projects such as the Hubble Space Telescope, and later became the chairperson of the Parts Control Board. A Fellow of the Society of Women Engineers, McCarthy was active locally and served on the national board of directors as vice president of student services. She developed career guidance and outreach programs with SWE, the American Association of University Women, the International Conference of Women Engineers and Scientists, and 4-H.

In her 2006 Profiles of SWE Pioneers Oral History Project interview, McCarthy discusses her early work in the Civil Service in Texas and Hawaii; returning to school later in life to study engineering; working at Lockheed; her involvement in SWE; and her career guidance and outreach efforts to young women engineers and people returning to school later in life.

- July 2016

MARY MCCARTHY

DR: This is an interview with Mary McCarthy on March 14, 2006. And we're here in Santa Clara, California.

MM: San Jose.

DR: I'm sorry, San Jose — for the Society of Women Engineers Oral History Project. And the interviewer is Deborah Rice.

So I first want do thank you, Mary, especially on such short notice, for agreeing to be interviewed.

MM: Well, that's great. I'm happy to do it.

DR: Well, thank you very much. And I thought we might start talking a little bit about your family background and what your early childhood was like.

MM: Oh, okay. I was born in 1923, so I'm eighty-two now, going on eighty-three. And since that was before the Depression, before the stock market broke, things were pretty nice. But then when the Depression started in '29, I was about seven years old. And it made such a big difference. Of course, kids don't notice what's going on, but it's so hard on parents whenever they can't feed their kids. It's a much more difficult time at that time.

I was born in Enid, Oklahoma, and that's where I grew up. I was born in Drummond, I'm sorry, Drummond, Oklahoma. But that's not far from Enid. And that was also in an area where the dust storms were.

DR: Right. It was called the Dust Bowl, right?

MM: Yeah, it was the Dust Bowl. And a lot of people lost everything, and came to California. (laughs) Some of them went different places, actually. But as a child you don't notice this, because you have your parents, and you're protected. So I had two brothers and two sisters. And so everybody was in the same boat we were, so everybody was — it was hard to making a living.

DR: What did your parents do?

MM: Well, my father, actually, he worked for a construction company. And he had a team of horses, and he actually built roads, because that was the real horsepower then. They didn't have these big things then.

And one day he was building a road in front of the house, and we got to watch him do this. And it was so fascinating (laughs) to see how they graded all that stuff, you know, with the horses. And of course, it was the first time I'd ever seen anything that could dig ditches. They had a ditch digger there, too. And that was so fascinating. Well, of course, what was it, I must have been eight years old.

DR: So this is the first time you realized what your dad really did, then?

MM: Oh, yeah, and I watched him, yeah. Well, I knew he had the horses, because we were always around the horses all the time. Even as kids we'd go in and out from feeding the horses, gets your toes stepped on. (laughs) But they were nice. Horses get used to you, and that was fun, too.

That was my family history, I guess, excepting that my uncle, my dad's brother, was a doctor in town, so we didn't have any health bills.

DR: Well, that's nice.

MM: Yeah. (laughs) And kids are always breaking arms and everything.

DR: So you were in school during this whole time, then, too, right?

MM: Well, yeah.

DR: Did you have any experiences early on with math or science?

MM: Well, I enjoyed math. And the teachers thought I was good. But when we got up through high school, I took chemistry. And the instructor encouraged me a lot. He thought I could do anything I wanted. (laughs)

DR: That's great.

MM: But as far as engineering, I didn't know what engineering was. And like today, I mean, if girls don't know an engineer or have one in the family, then they don't know what's possible, where they can go and what they can do.

DR: Right.

MM: But that was the same thing then as it is now.

DR: So then would you say that math and science were two of your favorite subjects, especially in high school?

MM: Yes.

DR: And you said you had a teacher, then, that really encouraged you?

MM: Oh, he did. Actually, with the math, the teacher asked me if I wanted to join the math club. I don't know whether it was Alpha Beta. And I said, "Well, no." I didn't have a quarter (laughs) so I didn't get to join.

DR: You had to pay to join?

MM: Yeah. They wanted a quarter. (laughter) Quarters were scarce in those days. And I think back, and I think, oh, my gosh, why didn't I scrape it up? But I didn't really know what that meant.

DR: Was it unusual, do you think for a girl to be not only interested in subjects like science, but be good at it in your high school?

MM: No, it was not unusual. No, huh-uh. One of the girls in the class made the best grades in school, and she went to college and she made the best grades there, too. So she was always like that. So, no, it was not unusual. We didn't put as much emphasis on it. I mean, I was raised with brothers, too, and I think that helped a lot.

DR: So your siblings are all older than you, or—

MM: Well, no. I had two brothers and a sister older, and then I had a sister younger.

DR: Oh, okay. So you think that they helped a lot, then?

MM: Oh, yeah, I think they did.

DR: By example, and that type of thing?

MM: Oh, yes, I think so, yeah. If you have an older brother, you're lucky (laughs) because they help you a lot, both in your attitude and your ability to get along with people, too.

DR: Right. Were they very much older, or were they in school at the same time as you?

MM: Well, there's about three years between each one of us. So my younger brother was three years, and then my sister was three years, and then my brother was about nine years older.

DR: Okay. Did any of them go into math or science or technology fields?

MM: No. The war came along.

DR: Right. So when you were in high school, then, you know, you're in your senior year or so, were you always – did you expect to go to college when you graduated from high school?

MM: Well, I didn't have a definite idea that I would. But I had the opportunity. They encouraged me to go to Oklahoma University.

DR: They, being?

MM: Well, everybody around – the teachers and all. But I went to Oklahoma City – I keep saying Stillwater, but that's not true. That's the other... (laughs) And I got real homesick, and so I came back.

DR: How long were you there?

MM: Oh, probably about a week or something like that. But everybody was so strange. (laughs) And I didn't have my friends.

DR: You weren't used to being away from home.

MM: Yeah, right.

DR: So none of your friends went away to college, then, with you?

MM: No, not with me. But then I went back to Enid, and then I went to Tonkawa, which was kind of like a junior college. And I was taking communications. We were doing, oh, the code—

DR: Morse Code?

MM: Morse Code, yeah. And that's when, on December the 7th, the war broke out, so everything scattered and changed. So some of the girls there, I think about six of the girls, took Civil Service Tests and went down to San Antonio to the Duncan Field, I think it was. And we worked on different things there.

DR: So just to back up a little bit, then, how long were you at the junior college? Less than a year, or—

MM: Oh less. Probably not even six months.

DR: Oh, wow, okay.

MM: See, I graduated in that June of '41. And I was seventeen. And I was eighteen when the war broke out. Yeah.

DR: Did you know what you were going to study when you went to Oklahoma University?

MM: No. I knew I was going to study science, but I (Inaudible).

DR: Okay. So why do you think you studied communications when you were at the junior college?

MM: Well, that was just one of the programs they had. And we used to fix the equipment, too. So that was interesting to me. I hadn't done that before.

DR: Okay. So then you volunteered for the Civil Service as well, and went to San Antonio?

MM: Uh-huh.

DR: And I saw the story about how there were six other Marys working with you.

MM: (laughter) Yeah.

DR: Can you talk a little bit about that?

MM: Well, in fact, we lived in the same house! We were all in the same house. And then somebody called for Mary, everybody was quiet until we got the second name. (laughter)

DR: That's pretty unique.

MM: Yeah, it was. It was so funny!

DR: So did you sign up with some girlfriends of yours from your hometown, or—

MM: Well, from Tonkawa, from this junior college, most all of them were from the junior college.

DR: So you kind of all went there together?

MM: But they were all from Oklahoma, yeah.

DR: So what was that like, then, being a part of the war effort and living farther away from home than Oklahoma University.

MM: (laughs) Yeah, than Oklahoma City – but I had friends then. Well, it was very fascinating to be able to do something for the war effort – not only for the war effort, but something that you liked to do. And we did a lot of repair on all the communications equipment.

DR: So your studying then at junior college prepared you for that?

MM: Oh, yeah. Oh, yeah, it did, very much so. And then you actually had to test the equipment in the airplane, and so

we did that also. And when we were down there, there was a P-39 that had been crashed.

DR: Oh, that's a photo of the—

MM: Uh-huh.

DR: Oh, let me get that — you can stay there. I'll just get it on video here, so we can see what we're talking about.

MM: And they decided that girls were only going to repair it, so girls from different places like, you know, the sheet metal, and girls that took care of the motors, and I did the communications on it. And when it came time to fly it, though, the women couldn't fly. We had to have a man pilot. (laughs)

DR: Because there weren't any women pilots, right?

MM: Well, there were women, but they could only taxi the planes around on the runway. They couldn't fly them.

DR: Right. Was that a problem?

MM: (laughs) Well, they just weren't allowed do it! I mean, women couldn't do things like that.

DR: Right. Did the men, though, have a problem that the plane that they were flying on had been repaired—

MM: By all women? (laughter)

DR: Yeah, worked on by women?

MM: I didn't hear any response from them. But they always called us "girls," "the girlies." (laughs)

DR: Right.

MM: But it was a successful flight. It was interesting that women could do that, because a lot of the men, you know, were out fighting the war, so a lot of women went into the

industries then. So that's why women found out they could do things. (laughs)

DR: Yeah. That's how a lot of women started in the workforce.

MM: Yeah. And I enjoyed the job. But one day they promoted this fellow that wasn't very good. He couldn't do very much. I mean, I didn't think he could. So I was discouraged. So then we volunteered to go to Hawaii, so that's—

DR: Oh, so the man who became in charge, your boss, essentially—

MM: Yeah.

DR: — that was the reason for wanting to transfer to Hawaii, then.

MM: Yeah. In those days, they preferred to give jobs to men, especially if they had children. And I think he had two or three children. But he wasn't the easiest person to work for.

DR: Do you think it was because you were a woman, or—

MM: Yes, definitely because I was a woman. And at the time, you know, he had children. He thought we could get somebody else to buy our lunch. (laughs) That was their usual thoughts, you know, that you didn't really need it, and you could get — somebody could take you out the dinner. (laughs)

DR: Well, talk about your transfer to Hawaii, then. I think the trip was a little bit harrowing, wasn't it?

MM: Yes, it was. We went by troop train up from Texas to Seattle. And then we were on a troop ship that went to Hawaii. It took seven days to go there. And also they had submarine

warnings on the trip, as we were going. So I was pretty lucky, I didn't get seasick. But some of the girls (laughs) were seasick from the time they got on until the time they got off.

DR: So what was it like, then, in Hawaii?

MM: Oh, it was like summer, only better. (laughs) We left — well, that was in December, I think, we went. It was in the wintertime when we went. And then when we got there it was, you know, their weather was like summer to us, of course. We enjoyed it. (laughs)

DR: So you were doing the same type of work, then, that you were doing in San Antonio.

MM: Yeah, I did. On that, when we got there, I actually did more of the work on the airplanes. You know, you have to test all the equipment on the airplane before the pilot was allowed to take off. So we had to make sure everything was — all the communications equipment was working.

So one day I went to check out an airplane that was ready to take off. And the pilot (laughs) said he didn't allow any women on his airplane. So I was not allowed to check it out. So I said, "Well, okay. Well, you can't take off unless I check it out. I have to call the tower and say everything is okay." And he says, "No. I don't want any women on my airplane."

DR: So this was like a preflight check that you had to do?

MM: Checkup, yeah, before he could actually take off. And usually they took off from there to go down under, you know, to the war area. And so I said, "Well, okay." But then I went back to the shop. And pretty soon the commander called and

wanted to know how come they didn't get that checked out. And (laughs) I guess he cooled down when he found out what had really happened. So one of the men went out and checked it out.

DR: Oh, I see.

MM: But I didn't tell him that my girlfriend worked on the engine. (laughter) But I thought, well, if he's superstitious — it's his life, so I'm not — it's his plane, so that was the thing to do.

DR: Right. Did that happen very often, or was that—

MM: No. That was only once that that happened. There was a lot of other things that happened while you were there, because everything is in the combat zone — well, considered a combat zone.

And one day I was walking to work and there was, you know, P-38s — I don't know if — this is an airplane, one of the airplanes in that era. And they were playing dog tag, you know, one after another was flying along, and they were playing follow-the-leader. And the last one, one of the wings fell off. And he didn't bail out. And we saw things like that all the time. And then there was another one that I started to check out the equipment — but you have to make sure nobody is on the airways, if you want to talk. And so this young pilot, I could see him through the window, that he was in trouble. And he says, "May Day, May Day." And he wanted an emergency landing. But he ditched in the ocean. He didn't even get as far as the—

DR: The land (Inaudible).

MM: — the landing, yeah. So you see all these—

DR: That must have been hard to see things like that.

MM: Yeah, it was, because you know, he didn't — of course, he was too low to bail out anyway, but he didn't make it, either. So you saw some of those things quite often, because it was — heart rendering, I guess you'd say, because, you know, these kids that were flying were about the same age I was, twenty. I think I had my twenty-first birthday over there. So well, it's just like today, most of the young people are fighting the war, too.

DR: So I wanted to ask you, then — and we talked a little bit about how the classes you took at junior college prepared you to work on some of the communication equipment. Did they not also give you training in the Civil Service? Once you joined, did they give you training for the jobs you were supposed to do, or not?

MM: Oh, yeah. I mean, you did everything.

DR: So you were trained on the job, as well?

MM: Yeah, right. Yeah. But it's always interesting. (laughs)

DR: So it was at Hawaii, then, that your picture appeared in the local newspaper.

MM: Oh! (laughs)

DR: Can you talk about that a little bit?

MM: Yes. One of the politicians from Oklahoma wanted the Army to find out how many people from Oklahoma were working there. And so they took a picture of me in one of the planes. And I was sitting there at the equipment. And I didn't know

that was going to – I didn't hear anything at all about it afterwards. And then my sister said (laughs) – said my dad – it was in the local newspaper, in the Enid newspaper. And she said, "Dad was so surprised he couldn't hardly stand it." (laughter)

DR: So you became somewhat of a local celebrity, huh?

MM: Yeah, actually, that's true, yeah. Everybody noticed it. (laughs)

DR: Well, I'm sure you've heard the term, "Rosie the Riveter."

MM: Oh, yes.

DR: Do you consider yourself a Rosie the Riveter? While you didn't work in factories, you were—

MM: Well, that's the same time, and we were all doing the war effort, yeah.

DR: Exactly.

MM: Yeah. And they actually – I don't know if you know that they had what they called pins. They gave them to some companies, or some people that were really working. They called them "E For Effort." It was just a little tiny pin, and it has red, white and blue on each side. And I was given one of those. Not everybody in the (laughs) shop was given one, but I was given one. It was sort of a little award.

DR: Right. For good service, or—

MM: Yeah. "E" was for effort, effort for the war effort.

DR: Oh, interesting. So what happened, then, when the war was over, in 1945?

MM: Well, I had met my husband, my soldier man, (laughs) in Hawaii. And so after the war, we were married. We were married in San Francisco, in fact. I went back home for a while, and then we were married in San Francisco.

DR: Why San Francisco?

MM: Well, we liked it. (laughs)

DR: Was he from there?

MM: Oh, no, no, no. He was from Boston. No, it's just that he was on duty there for a while.

DR: So he was still in the Army?

MM: Oh, he was in the service. Oh, yeah, he was regular Army, yeah.

DR: And what was his name?

MM: Joseph. (laughs) His mother thought that was nice, Joseph and Mary. (laughter)

DR: I didn't even think about that.

MM: Joseph and Mary. (laughs)

DR: So you went to San Francisco and got married, and you ended up staying there for a while, then.

MM: Yeah, for a while, yeah. Then his first duty was at Pittsburgh, California. There used to be a Camp Stoneman there. And we were there for almost seven years. I was kind of disappointed when he said, "Well, this is just a little fishing village, you will like it." If you've ever been to Pittsburgh, California, you would — (laughs) that's not — you wouldn't describe it as "just a little fishing village." (laughs)

DR: Really? Why is that?

MM: Well, a lot of the – it was near the ammunition – not the ammunition – depot, and there just wasn't – you know, you visualize a little fishing village as a fishing village, but that wasn't what it was at all.

DR: Right. So what were you doing at this time? You had worked during the war, but when you were married, did you keep on working?

MM: No, I didn't. I couldn't find a job. (laughs) No, I didn't really look for a job. I really wanted to go back to school, but there was no opportunity there.

DR: Was it because you were moving with your husband all the time?

MM: Well, it was too far away from any schools or colleges, and it just wasn't easy to find, easy to do. Nothing comfortable there.

And then he went to Korea. And then when he came back from Korea, we were stationed in Louisiana, Fort Polk, I think – yeah, Fort Polk. And then we were there almost seven years. That's where we adopted our daughter. Went to Alabama to pick her up. We got her when she was three days old. (laughs) Kind of scary looking. (laughter)

DR: Yeah, they do look kind of funny when they're first born, don't they? (laughter)

MM: Yeah, yeah. It was really scary. You think they're going to fall apart. (laughter) But she survived. She lives in Daly City now, she and her husband. She's adopted, and he was adopted also.

DR: So you lived in Louisiana for seven years, and then came back to the West Coast?

MM: Uh-huh. My husband retired, and we come up back to San Francisco.

DR: Okay. So this is where – you lived in San Francisco for the next twenty years–

MM: Yeah.

DR: – beginning at that time?

MM: Yeah.

DR: When your husband retired, what did he do for a living?

MM: Well, he worked for a bank for a while. And he got sick. He died from cancer. But down in Louisiana, there was no opportunity to go to school there, either. They didn't have – you know, like now where – computer classes, you can go through the internet. But then you couldn't do anything like that.

DR: Right. You had to be physically located next to a college.

MM: Yeah, we really did live too far. It was a problem. So I went to San Francisco, then when our daughter was in the second grade, the teacher said, "Don't help her with her math. You only confuse her." This was the New Math.

DR: What do you mean by "New Math"?

MM: (laughter) That's what I said. "What's New Math?" (laughter) So she was in school, so I thought, well, I'll go back to the adult school and see what the New Math is. (laughs)

DR: So you took adult education classes, then?

MM: Uh-huh. And then I went to San Francisco City College.

DR: That was a junior college?

MM: Yes. And then I was taking the classes like engineering classes, physics and math, and chemistry. And so the professor says, "Well, you're coming back to school, what do you want to be?" And I said, "I want to be an engineer." And he laughed. (laughs) He laughed.

DR: Really? Well, how did that make you feel?

MM: I thought, "Well, you dummy. I'm not the dumb one, you're the dumb one." But whenever I took all my three years of physics, three years of math, and three years of chemistry, then they told me I couldn't stay there any longer, so I transferred over to Berkeley.

DR: So taking adult ed. classes to learn what your daughter was learning—

MM: Yeah, that's what I started out, but I never did find what the New Math was about.

DR: (laughs) That's funny.

MM: I think that's one of the reasons kids are not very good in math. (laughs) If I can't understand after being a math person... (laughter)

DR: Right. The adult education classes, then, must have really interested you in school—

MM: They didn't have any New Math..

DR: — again, so that's what led you to want to join this City College.

MM: Yeah, yeah, right.

DR: So at that time you knew what engineering was?

MM: Oh, by, then, oh, yeah.

DR: Was that something you learned about during the war?

MM: Oh, yeah, I think so. It finally came it — actually, I had taken classes when I was down at Duncan Field, you know, in San Anton[io]. After work, you know, I took math classes, and I took calculus classes.

DR: Was there a local college there?

MM: Oh, yeah, they have good colleges there, yeah. I also did it when I was in Hawaii, I took some math classes over there. I like math. It almost controls your mind. (laughs)

DR: So why did you decide to go into engineering and not pursue a math degree?

MM: Well, you take the physics, and you take the chemistry — and I liked the math, but I liked the other stuff, too. I liked the learning.

DR: So you liked the combination of the math and the science?

MM: Yeah, yeah.

DR: That's essentially what engineering is.

MM: Yeah. So they always asked me about the difference in ages when I started back to school. But it didn't seem to matter very much, because if I could do the work, then they could respect you for it. I mean, I wasn't there to — you know, like some women go into engineering to find a husband. (laughs)

DR: You already had one.

MM: Well, that, and the fact that I just enjoyed what I was studying, yeah. But the teachers were – there were only about two or three teachers that really wondered why I was there. (laughs) Most of them wondered why I was there, I think.

DR: What, like the one that laughed at you?

MM: (laughs) Yeah. And then also in the junior college there was one – I had to take a lot of subjects. I had to take – what was it – I had to take one course where you studied all your nuts, bolts and screws. And then there was another course where you had to work on all these heavy machines. I don't think that they were necessary for the fact that I wanted to take engineering, I think they just wanted to see if I was serious about it.

DR: Oh, really?

MM: I think so, because none of those things are required for engineering anymore.

DR: But they suggested that you take them.

MM: I had to take mechanical drawing. I don't think that's a required subject anymore. The mechanical drawing instructor informed me – he said, "You're going to have to do this all yourself. You're not going to get any help from anybody. He said I – well, just decide if you're going to be in this class, you had to do it yourself. So I did, and I aced it. (laughs)

DR: Good for you.

MM: And it was really funny, because we had to draw something for a grade to make sure — something that we thought would work, you know, would be good. So I drew a little gadget for the kitchen. And (laughs) he took the original and made a copy. So I don't know whether... (laughs) But anyway, I got an A, so I was satisfied.

DR: So did you have any instructors, then, that were encouraging?

MM: Oh, yeah, I did. There's a couple of them. Actually, the guy that laughed at me for wanting to be an engineer in chemistry, he was encouraging, too.

DR: Oh, he was?

MM: I almost aced that class, but he wrote one of the problems on the back of the page, and I did not turn the paper over to get that page. And I thought that was kind of tricky.

DR: (laughs) So how did your family feel about you going to school?

MM: Oh, they encouraged me. They encouraged me.

DR: How old were you at this time?

MM: Oh, gosh.

DR: In your thirties?

MM: Near fifty.

DR: Oh, okay, that late. So you studied basic math and chemistry and sciences in junior college. Did you get a degree from the junior college?

MM: Well, yes, I did. But I just transferred them over. I don't remember getting a degree, actually.

DR: Okay.

MM: I transferred to Berkeley.

DR: So you'd already decided prior to that that you wanted to go into engineering—

MM: Uh-huh.

DR: — so you transferred over to the engineering school there?

MM: Yeah. And I was accepted there. And it kind of surprised me because Berkeley is such a well-known school. I was happy. (laughs) So I commuted from Berkeley. I just went over during the daytime because of the family.

DR: Right. So how were you able to do that, then? Were you going full time to school?

MM: No. I just took the minimum courses.

DR: So the minimum—

MM: Twelve, I think it is, or fourteen — twelve.

DR: — credits for a semester, right?

MM: Uh-huh.

DR: By this time it was the '70s, so were there many women in your engineering classes? Do you remember?

MM: No. There was only about — well, sometimes one, two, in the classes, yeah. There was more women in the material science classes than there were in the actual straight engineering. And I was in electrical engineering, too. So there were some in mechanical. But there were very few. In fact, the SWE group was only about eight people there. And they were chartered the year that I left.

DR: So you didn't benefit then.

MM: No. But I knew them, and I talked to them.

DR: So what was that like, then, being not only one of the very few women in the program, but probably one of the few older students as well? Was that hard for you?

MM: No, it wasn't hard for me. It was hard for them. (laughs)

DR: Really?

MM: Yeah. And one professor in particular says (laughs) — well, it was sinusoidal steady state analysis. And he says, "As any grandmother can plainly see," and so on and so on. The kids really got mad about that.

DR: So you think he set it up purposely because of you?

MM: Oh, yeah, on purpose because of my age, yeah. (laughs) But when I was over there I didn't think that I could get a job because of my age. What I really wanted to do is just to see if I could do it. And I thought, well, you know, I could go back home and make good cocktail conversation. (laughter)

But some of the professors encouraged me. There were a couple of them, besides this professor that called me a grandmother in class. One of them in particular, he was in material science, and he says, "Well, don't let these people bother you, Mary, you're doing all right." And then one of them in the material science class said, "Your report was really good, Mary. Most men couldn't do that. They wouldn't do that — couldn't do that as good as you did."

So that encouraged me to think that maybe I could work with people that have been working for a long time, engineers that have been working for a long time. So whenever it came time for the people from the companies to come in to interview for jobs, everybody encouraged me to take them, just to see what I could do. And that was really interesting, because I was older than most of the people that were doing the interviewing. (laughter)

DR: Oh, really?

MM: So that was encouraging. There were several people that — General Electric had offered me a job, but it was in Washington State. And my family didn't want to move, even though my daughter was out of high school and all. So that was another thing, my daughter was in high school, and I would have graduated the year she did, but I thought I didn't want to take any attention from her. So I graduated in '76.

DR: A year later?

MM: Uh-huh, a year later. They didn't want to pick up and go to Washington State. So I had to put out some more feelers. And then I worked for one company, it was EDS, but it didn't work out very well, because I was older than the boss. (laughs) And they had another young woman working there, too. What you did was you analyzed all your pipes and everything that was in — wherever you wanted to go. And so I didn't stay there very long. And then Lockheed offered me a job. And I was real happy after that. I was really happy getting the job.

DR: So that was in the area, then, Lockheed.

MM: Yeah. Well, it was forty-five minutes drive from San Francisco to Lockheed, Sunnyvale.

DR: So you graduated with not just one degree, but two. You had a double degree in electrical engineering and material science, correct?

MM: Right. But I couldn't find a job very much in material science. That's really a fascinating subject. And you can see all kinds of different things when you go into the electron microscope. But there just weren't that many jobs open for that. So I was happy that Lockheed offered me a job.

DR: So you said that you hadn't really expected to be able to find a job after graduation, so you were just going to school to prove to yourself or others that you could do it.

MM: Yeah, that's what I always wanted, yeah.

DR: But then you did actively participate in recruitment interviews on campus?

MM: Uh-huh.

DR: Do you remember any particulars about anything?

MM: (laughs)

DR: You had said that you were often older than your—

MM: Yeah. One of the interviewers says, "Well, I've never interviewed anybody older than me. I'm going to go home, and I'm going to tell my wife that she can go work. I'll stay home." (laughter) Well, that was one. And one of them says, "But what does your doctor think about this?" And I says, "My doctor thinks I'm just fine for my age." (laughter) Yeah, that was funny, too. But that was fun funny, interviewing like that.

But some of the interviewers were serious about it. I know HP was very serious about it, and I think that they would have offered me a job, too — in fact, they did offer me a job, too.

DR: Hewlett-Packard?

MM: Hewlett-Packard, uh-huh. But you can imagine being an housewife for forty years — thirty years (laughs) and then going into engineering. People don't believe you. And you have some doubt yourself that you can actually function in an organization where there are people that have worked at it for a long time.

DR: Sure.

MM: But Lockheed was very kind. They let me work with people that were very understanding. If I could do the work, then they were all for it.

DR: So what did they hire you — do you remember what your position was?

MM: I was hired into Reliability, which is — well, the thing that I did was primarily parts control and standardization. And in an organization like that, you're not assigned particularly to any program. I mean, you usually go there for a little while, and then you go back to the base, you know.

The first job, actually, that I worked on was Pelstroggum (phonetic), which was a small plane, unmanned, you could control. And you could see over the hill, what was going on over the hill. That was the first one I'd done.

And then I worked on the Battleship Program, where they were — there was the Reagan years whenever they put the Tomahawk

on the Battleship. I didn't go on the Battleship, but you did all the paperwork and stuff, and made all the requirements.

Let's see, what else did I work on? Outlaw Shark Program, I worked for a while. And the Outlaw Shark Program was a program that you knew where all the ships were at sea, and whose ships were where. And that was just the beginning of that program. But now it's a big program now, because they can know where everything is, all the submarines and everything else. But that was just starting then.

And then, let's see, what else? I worked on the Shuttle for a little while, not very long.

DR: The Space Shuttle?

MM: Uh-huh. And what else did I do? (laughs) I got a list here. I knew I'd forget something.

DR: What about the Hubble Space Telescope?

MM: Yeah, I worked on that for a while.

DR: What did you do for that?

MM: Same thing, parts control and standardization. You have to have every part in the equipment according to what the government regulation is. So if they have something in equipment — it's not now like it used to be. They used to also have military parts on everything. And the mil. part is a very tested and tested and tested almost — to make sure that it will survive something, you know, like in space. But then they don't have mil. parts because they're too expensive to — nobody wants to spend that much time making them. And they have to survive in any environment, like a nuclear environment, or anything like

that. And they have to heat — any environment, they have to stand in. It was a fascinating program.

I used to be the Chairman of the Parts Control Board, which made — you interfaced with about twelve subcontractors. So all the subcontractors had to submit their parts that they have, and we had to approve all of them. It was pretty fascinating, because you quite often had failures on some of these parts. And you had to find out why they failed. It was the strangest thing. (laughs) Yeah, it really was. It turned out to be very interesting. You would think that parts control wasn't very interesting, to make sure every one of those little parts worked.

DR: Well, sure, yeah. So you really enjoyed your job at Lockheed?

MM: Oh, yeah, I loved it. And being Chairman of the Parts Control, I also got to travel to some of the subcontractors and all.

DR: When was it that you worked — you worked for a while in Texas.

MM: Oh, yeah, I did. That was in the '80s. Yeah, I transferred down to Austin. I was offered a promotion (laughs) which didn't come about, though. But I moved there because I was wondering whether I could — that was closer to Oklahoma, and some of my relatives. So I was ready for another adventure, but that was a real adventure. (laughs)

DR: Why is that?

MM: When you're working in an environment like California, and Lockheed in California, they have so many – they have a lot of rules and regulations as to how you can do and what you can do. Now, being in Texas, that's an old boys' country. And that's what it turned out to be, an old boys' country.

DR: So it was hard being–

MM: It was hard to–

DR: – female and working down there.

MM: Well, not necessarily females. I mean, if you were the girlfriend of the manager, or married to the manager, you were sitting pretty.

DR: (laughs) Right. But as far as just being an engineer–

MM: (laughs) Yeah, being an woman engineer.

DR: – on the team–

MM: Yeah, right, on the team, yeah.

DR: – was harder than–

MM: Well, you didn't get the promotions you deserved. But the Lockheed isn't – they lost the program when they went down there. They went down with the Aquila Program, which is an unmanned vehicle, another one. And I think they lost that one. And then they went down with another program, and they lost that one too. The management was not very good.

DR: So how long were you there?

MM: I was there about, let's see, two years – three years. And then I asked to be transferred back here.

DR: So you came back to the same area that you were in before?

MM: Yeah. I had not sold the house. I had rented the house when I went down, which made it easier to come back, because prices started going up by then.

Oh, as far as SWE goes, I was... Oh, I was going to tell you about SWE over at Berkeley.

DR: Sure.

MM: That was the year that it was, you know, given the status of a section.

DR: Right, the year you left.

MM: Yeah. And that was really — I was so excited when I saw all these women that were engineers. You just can't believe—

DR: That was the first time you'd heard of SWE?

MM: That was the first time I'd ever heard of SWE. And so I went down here, down to Lockheed, and I was telling Esther Williams about this great program it was called the Society of Women Engineers. (laughs) And Esther Williams has been in the — (laughs)

DR: She said, "Yeah, I'm a member." (laughter)

MM: She said, "I know, I started it." The one down in Los Angeles, she started it, and the one up here, she did, too. (laughs) But I felt so funny after telling her, "Oh!" — how great this was. I thought maybe she hadn't heard of it. (laughs)

DR: So was it at that point that you decided to join yourself?

MM: Oh, yes.

DR: So you joined, what, the San Francisco section, or—

MM: No. There was a section down here in Sunnyvale. But I did join the one in Berkeley.

DR: Oh, okay, so you joined the student section right before you graduated?

MM: Uh-huh.

DR: And then when you came up to Sunnyvale to work, you joined the professional section here?

MM: Oh, yeah, right. It's so exciting to see so many smart women in one place. It was really exciting. I didn't know there were that many women that was interested in engineering. And then when you see all these accomplished women doing this, you just stand in awe.

DR: And why was that important to you, to see women, in particular?

MM: Well, you get the same treatment (laughs) and you can talk about it to somebody that understands. And then they can encourage you. You know, if you're in a position that you don't like, or somebody is – you're not being treated right, they can give you a lot of advice, this is what to do.

DR: Right. So do you think that is why – that's what attracted you, then, to join SWE?

MM: Well, yeah. I enjoyed the company. And then I got into the career guidance thing, and I enjoyed that, too.

DR: Right. So was your employer – was Lockheed supportive of your involvement in SWE?

MM: Oh, yes. They let me go to all – go everywhere, you know. As long as you're participating in there – they paid the way, paid my way. Usually they say if you're an officer, if you have a responsibility of an officer or anything like that, yeah.

Then when I transferred down to Austin, the SWE section there was almost about to be – I don't know what they call it – not a section anymore.

DR: Disbanded?

MM: Yeah, because they hadn't made any of the reports. So we started that again down there. And that Region C was interesting. And you got to know people from all over that section of the country. And then when I took a national job, you get to know all these women all over the country (laughs) and all over the world. And you were really accomplishing things, something that you could help, in that way.

DR: So do you think that that helped you, then, when you moved to Austin, to know that there was a Society of Women Engineers section there?

MM: Yeah.

DR: And you could just count on that support?

MM: It just needed a little work on it there. Oh, yeah. So I was the president of that section. And then when I transferred back here, I was president of this section.

DR: Right, yeah.

MM: And then I was on the National Board, too.

DR: What did you prefer, do you think, involvement on the local level or national?

MM: I thought that was greatest thing being involved in the local level until you got to be in the national level, and then that was really something. I mean, you really can't imagine what it's like. It's even more exciting. (laughs)

DR: Because you meet more people—

MM: Yeah.

DR: — and you can have an affect on more people as well?

MM: Yeah, uh-huh, yeah, right.

(INTERRUPTION IN RECORDING)

DR: Okay, this is tape two of the interview with Mary McCarthy. And I wanted to just go back and talk a little bit more about your career, because it's so unusual for somebody to enter an engineering career, that is a highly technical field, you know, so much later in life. I just wanted to get your opinion on whether — you kind of touched on the subject when we were talking about your position in Texas, whether you had any problems advancing your career, you know, getting promotions, and things like that.

MM: Oh, okay.

DR: Do you think you encountered—

MM: Some prejudice?

DR: Yeah. If you want look at it that way.

MM: (laughs) I know I did.

MM: Yes. I don't like to think about it, but also some of the women, you know, wanted to sue, but I couldn't really see

suing Lockheed because of some of the people's actions. I took another tact, in that one person that I worked with was – well, what can you say? He was just a little bit different. (laughs) And so one day he said that he wanted to do it one way, and it was my project, and I wanted to do it the other way. And he says to me, "If you don't do it this way, I'll find somebody else to take your place." And one of the men standing by there says, "He shouldn't say that to you." And so it was reported. And he was called on the carpet about it. And they asked me what I wanted to do about it. I was not going to sue. I said, "He can apologize in front of my manager and in front of his manager, and we'll call it done. And so he did, though it was very difficult for him to do that. So I don't think he was on the program very much longer. But he was completely out of line for doing that, because I was going according to the contract, and he wanted to do it another way.

DR: So you think it was because you were a woman, or you were older than him?

MM: No, I think it was because I was a woman.

DR: That's what he had a problem with?

MM: Yeah. I think it was because he thought he could, you know, just make me do what he wanted me – he wanted to see it the way he wanted. But no, the managers were very, very happy that I let it drop at that.

DR: Oh, yeah, I'm sure they were. (laughter) Was that just one isolated incident? Or was it the atmosphere, you know,

working with your colleagues and your superiors at Lockheed for the time you were there mostly positive?

MM: Yes. Most of it was positive. It was very positive. After they found out that I could do the job, then they respected me. And some of the engineers were my age, and they respected me for what I could do. And you know, they asked my opinion. Of course, they had to. (laughs) On parts control, you have to go according to what their contract says.

That was the only time I can really – well, down in Austin, now, the manager that I went down with – and there was a young man that just got out of the Navy. And what I was doing, I was doing the job, and then comes along, down there, he was doing the job. So there was a lot of favoritism there. And also, whenever they were working on a program – it was on the Battleship Program, though I was engineer and did the work, he took his wife, you know, to visit the Battleship.

DR: Instead of you.

MM: She was the secretary. And so I thought that wasn't very nice. (laughs) So it went down from there. There was one person down in Lockheed that really fought for us – for the women, because the women got hardly any raises at all, while they gave the money to other favorites. But he did fight for us, and we did get a raise.

DR: Do you think you would consider him a mentor in your career?

MM: Oh, yeah, I would. He was really nice, yeah. And so was my immediate supervisor, was very good, too.

DR: Is this down in Texas?

MM: Down in Texas, yeah. Ron Varitus (phonetic) was really nice. He respected me for what I could do.

(laughs) It was funny one time – you know, you have to make out all these forms for everything you do, especially with parts control, because you have to say how good they are, and how bad they are, and how efficient they are. And I said something about doing something like that, and he says, "Oh, no." He says, "I don't know that you can do that." And I said, "Who do you think signed that paper you got in front of me?" (laughter) Somebody else had turned it in. I said, "Who do you think signed that?" He said, "Oh, Mary!"

But I was trying to think of any other ones, but I can't think of anything.

DR: So how long were you at Lockheed, then?

MM: It was almost twenty years, nineteen-plus years.

DR: And then you retired from Lockheed?

MM: Yeah.

DR: How were you able – you know, sort of the same question I asked you when you were attending college – but how were you able to balance work with a home life?

MM: Well, living in San Francisco and going against traffic, it was only about thirty to forty-five minutes – that was before all this traffic – all the bad traffic started up, commuter traffic. And it was easy. It was actually easy.

DR: By this time your daughter was – was she at college herself?

MM: She was, yeah.

DR: So that probably made things easier, too?

MM: No, I usually fixed the meals and everything, within the time limit that I had, yeah.

DR: But you didn't see it as any big obstacle, then—

MM: No.

DR: — having both a career and a family?

MM: No, no. No, I didn't.

DR: You mentioned how it was hard for someone to go from being a housewife for thirty-odd years to entering engineering. And in a speech that you gave — I think it was for SWE — you coined a phrase. Do you remember what I mean?

MM: "Going from kitchen-eering to engineering"? Yeah. (laughter) Yeah, everybody marveled at that, but I picked that up from — even my teacher, when I went back home, marveled at that. And I said, "Well that comes from the OGE, the Oklahoma Gas and Electric used to send out these little pamphlets. And they had recipes on them. And they called it "kitchen-eering."

DR: Oh, really?

MM: So she didn't even know that, she didn't remember that. (laughter)

DR: Well, I just found it really apropos to this situation.

MM: (laughs) Yeah, right. I still consider my kitchen by lab. (laughs)

DR: It is, sort of, isn't it?

MM: It really is, yeah. It's just another chemistry class. (laughs)

DR: Well, what would you say you found most satisfying about being an engineer, your work as an engineer?

MM: Actually doing the job, being able to do the job, and being appreciated for it, yeah. Yeah, the customer, which is the military, they have given me several awards for what I had done. Whenever you go to the different meetings, CDR, PDR, that Preliminary Design Review, and Critical Design Review, I always gave the parts control standardization part of it.

DR: So that must have been very rewarding, then, too?

MM: Oh, yeah, it was, because there's other organizations that you have to comply with that – I mean, if you have a failure, then you're told about this failure, and you have to check all your parts in all your equipment to see if you really actually have it in your – and sometimes they have to take it out and change it.

It's fascinating, the way some of these parts would fail, though, and how difficult it was to find out why it failed. Esther Williams was – I worked with Esther Williams, and she did that work, which is incredible. (laughs) She was known worldwide.

DR: That is pretty incredible.

MM: She was known worldwide for her analysis. And she could write a report that – very succinct. (laughs) I always admired her for that, too.

DR: Did you work directly with her?

MM: Well, she was at the main office, main program. And I was usually out on some of the programs. But it was in the same department, yeah. Have you read a lot about Esther Williams?

DR: I know a little bit about her.

MM: She's about like Mary Ross, I mean, they're very well respected by everybody.

DR: Right. Yeah, we have some records and archives on her, yeah.

MM: Yeah. (laughs)

DR: Do you have any regrets about your late entry into the workforce?

MM: I wished I'd have done it earlier. I wished I could have done it earlier because I always thought about things like that, *Popular Mechanics*, those things interested me. I think they interested me since I was young, wondering why and how things worked.

DR: Sure. Do you have any advice for women who might be in the same circumstances, want to go back – you know, have been a housewife for several years and want to go back to school?

MM: Sure. You can do it a lot more than you think you can. Well, you have little issues that come up, but they're not insurmountable. So maybe, you know, something like sickness in the family, that's something else, again. But just try to stick to whatever you like, and whatever you want to do.

MM: Or whatever, you know, what you really like, is the main thing.

DR: Right. Well, good, thank you. Well, let's go back, then – we started talking a little bit about SWE, how you found out about the organization when you were at UC Berkeley. And then you became involved locally here in the Sunnyvale area, and then when you went to Texas. And we were talking about the differences between being active, being an officer in a local section, as opposed to nationally. And you mentioned career guidance. And I'd like to talk a little bit more about your involvement with career guidance, because it sounds like when you began – when you joined SWE it might have been more for the support that you yourself could get as a professional. Is that correct?

MM: When I first joined?

DR: When you first joined, yeah. Is that why you joined?

MM: Oh, yeah. Yes.

DR: And then you became more involved in how you could give back to your community and to girls considering engineering.

MM: Yeah.

DR: You got very involved in career guidance.

MM: Yes, I did. I really enjoyed that. And we used to go out to schools and talk about the different engineering. And the 4-H program I worked with was very, very fascinating.

DR: Yeah, talk about that a little.

MM: We'd go to the different schools. The main schools that we used to go to is the ones on the east – San Jose, there were a lot of immigrants. And so we would go there, and we

would give a program. There are different programs, actually. And of course, the snails was the most fascinating one that they had. And you could compare that with engineering, actually. Well, you could do biology, or any kind of science that you wanted to compare it with. And everybody is repulsed about a snail. (laughter) My friend just wanted to stomp on them. (laughter) But that was fun.

DR: So this was with middle school children you were working with?

MM: Well, we went to — no, they weren't all middle school. Some of them was second — about the third and fourth grades, actually, it went down to that one, because you know, they can work with their hands when they're doing this, and you can talk them as to what — how it applies to engineering. It sounds funny, but it really is good.

I used to have a little piece of — well, I had a couple sticks with a little tightrope on it. And you could see if the snails could climb that, that rope. (laughter) And it's amazing what they can do, yeah. Sometimes they'd have to put a net underneath because they wouldn't want to fall — safety.

DR: Right.

MM: (laughter) Safety engineering comes in, all kinds of engineering.

DR: So you as a SWE section, then, got involved in the 4-H program?

MM: Yeah, we did.

DR: And you yourself were one of the — you spearheaded it?

MM: I don't remember. I think we had other engineers — other engineers would go with us, yeah.

DR: So it wasn't geared just towards young girls?

MM: No, the whole class, the whole class, yeah. It was amazing how the lights lit up in on these little girls' faces — the boys, too — but primarily the girls, you know, they wondered whether they could do something like that.

DR: Sure. So do you think you were ever a mentor? We talked a lot about people throughout your college career and your career at Lockheed that were mentors to you. Do you think of yourself as a mentor? Can you think of any circumstances where you might have been a mentor to somebody else?

MM: Yes. When I was at Lockheed, there was a girl that worked there. She was a secretary. And she had a daughter that wanted to be an engineer, and so I really encouraged her a lot.

DR: Oh, great.

MM: And there's another funny thing about working. There was one engineer, male, used to come by my desk, and he would say, "Women don't belong in engineering." Every time he'd come by, "Women don't belong in engineering."

DR: He'd just blurt it out as he—

MM: Oh, yeah, he just said that every time. Until his daughter wanted to study engineering.

DR: Oh, you're kidding! (laughter)

MM: That was so funny! You never seen anybody to turn about-face in his life as he did. (laughter) And she was doing something, he says she started working. He said, "Oh, they

can't do that to you. They can't do that!" (laughs) Telling her—

DR: Aha!

MM: Women did belong in engineering.

DR: Right.

MM: Especially if it's your daughter. (laughter)

DR: Oh, that's funny.

MM: Yeah. But as far as being a mentor, I think that the program with the AAUW, Tech Excellence—

DR: Would that be American Association of University Women?

MM: Oh, yes. It was called Tech Excellence. And some of the girls in there were — there's one in particular, I know she's going to be an engineer. She just had the tenacity and the assurance that she wanted to study this kind of a thing. And she was really — it was nice to see her be able to know what engineering could offer her. There were several of them in there.

Before I went to Japan, I asked this girl, I said, "What do you think about engineering?" And she says, "Oh, it's all right." Then I said, "Well, I don't want to hear that. I want to hear something more positive." And she says, "Well, I told my father about this program, and he thinks it's a really good program. I think I'll be a scientist." (laughter) They don't really know what they want. Of course, we all change our mind along the way.

But there was another of the little girls I asked – we'd had the pilot come to one of the classes. And then they made airplanes, and flew airplanes. And I said, "Well, did you ever think you could be a pilot?" And she said, "Well not until today." (laughter)

DR: Oh, well, that's good to hear.

MM: Yeah. "Not until today." Yeah, they're very – they say what they think. (laughter) And sometimes they change their mind pretty fast, too. Some of them don't want to be engineers, but at least they're exposed to the fact that it's fun out there, and it's not boring. That's their favorite word, is "boring." (laughs) It's not as boring as they think it is. But there's such a variety of things they could do with the science.

DR: Sure. Now, how did you become involved with the AAUW?

MM: Well, they wanted to start a program, and they went to several schools to see if they could actually start a program in the school during school classes. And there was only one – John Muir (phonetic) was the only one that would offer a space and time during the school day. And so we took it. (laughs) And it was two hours, too. Because you had to do the hands-on, and you had to do the – of course, the speaker doesn't speak very long – ten minutes, maybe, because they get bored. (laughter) But then as soon as they get their hands on, they really pick up.

DR: Sure. So do you think the career guidance, then, is one of the strengths of organizations like SWE?

MM: Yes, I do. I really do. Because most kids don't know anything about engineering or sciences unless they know somebody — I mean, their parents or their uncle, or somebody like that, or a friend is in that job. They don't know what it is, and what you can do with it. We had some of our software people come in. And of course, the thing that they were interested in is how much money you make.

DR: Really? At that age, they're—

MM: Oh, yeah. Of course, money means pretty cars. And so this one young lady, she was really good, and she had a good job. And so they would always ask her how much money she made and what kind of car she drives. I don't know what it was, but it was an Italian car or something. And oh, boy, that got their attention! (laughter) So we always remind them you have to study math and science — math. (laughter)

DR: Right. So you think SWE is still relevant, then, today?

MM: Oh, yeah, very much so. Very much so.

DR: I know we talked just a few minutes ago, off camera, about the fact that women still only make up — what did you say — twenty-percent—

MM: About that. I think that's about the same, uh-huh.

DR: — of the engineering workforce.

MM: If it's that high. You know, when I left — studied it every day, I think it was about that. But it doesn't seem to be changing any. And I've talked to some of the engineers that are still in it, and they say it hasn't changed much. And I don't

know why, and neither does anybody else, or they'd do something about it – but I think maybe the math part of it, because they're not emphasizing math like they should. And everybody thinks that you have to be a genius for math, but no, you don't have to be. You can be a C student, and then get into a type of a math that you like, then you can do a lot better, if you like it. But it's just like problem solving to me. And it is, problem solving.

DR: Right, right. Let's talk a little bit about your involvement with ICWES, the International Conference of Women Engineers and Scientists.

MM: Okay. Well, the first ICWES I'd gone to was in England. And I did the same career guidance presentation there as I have, but it was a little different. I wasn't doing AAUW at that time.

DR: Okay. This was 1991, they had it in England.

MM: Yeah. I just presented the programs that we were doing. It was well received. It's nice to talk to so many people from around the world, especially – everywhere, Africa and China and Russia. And it's nice to see that women can do it. (laughs)

DR: Yeah. Do you find that you have the same type of experiences, even though you might live in a different country?

MM: Well, yes, I think so. The only country that I thought was different was probably Russia, because I don't think there's much distinction between a man and a woman working. In the communist countries, you know, they do it all the time, you

know, they're equal. And I think that that was the only country that surprised me, that there is — but that's understandable if you treat a man and a woman the same.

DR: Sure. So then you also went — you said you were — how many ICWES's did you attend?

MM: Let's see, I think I've gone to three. One was in Japan, one was in Canada.

DR: And you're always involved in some sort of career guidance presentation?

MM: Yes.

DR: So do you think that organizations like SWE, and ICWES, that are geared towards women, and are interdisciplinary; they're not, you know, tied to one technical field, do you think that's their strength?

MM: I think it is, yes. I think so.

DR: Did you ever belong to any technical societies, like IEEE or anything, in your field?

MM: Well, I did for a while, for IEEE, but I didn't stay long. (laughs)

DR: So you feel you got more benefit out of other organizations?

MM: Yeah. I feel like I got more out of SWE than anything.

DR: Okay, sure.

MM: And it's just exciting work that you do. And there's a difference between talking to a woman engineer than most men engineers. You identify with them much more so — I think so,

anyway. I know some people don't believe that. But I really swored about SWE. (laughs)

DR: Do you stay involved, still, today in any capacity?

MM: No. I usually just go to the conferences. I sometimes go to some of the meetings here locally, if they interest me. But most of them are just about the same as they used to be. I mean, they try to help you be more professional. And I don't need that now. (laughter) I need somebody to help me get all my paper out of my house. (laughter) Simplify, simplify.

DR: I think we could all do a little bit of that.

MM: Yeah.

DR: Just so switch gears a little bit, what would you say has been your most important contribution to the field of engineering?

MM: Well, just doing my job, what I got paid for. (laughs) I think that when I did Parts Control Board Chair, is probably the best thing that I did.

DR: Okay. Do you have any—

MM: You know, that takes — you also have to be able to present. And I joined Toastmasters to be able to speak in front of people. And they teach you how to be concise, if you're going to make a speech. And that has been invaluable to me, to be able to do the Toastmaster bit. And up until I had the plumber problem, I was still going to Toastmasters, because I think it helps.

DR: I'm not familiar with Toastmasters. Can you explain what that is?

MM: Well, Toastmasters is an organization that helps you speak in front of people. And they evaluate you every time you give a speech, and tell you how to improve. You know, if you emphasize one thing too much, or if you emphasize another, if you don't make sense when you're talking, they'll tell you that, too. So it's been a wonderful organization for me.

In fact, I didn't even know about Toastmasters when I first went to Lockheed. And the manager says, "Mary, you want to go over to" — I think it was HP had a program on. He said, "If you go over there, they give you lunch. You make a presentation, and they give you lunch, and everything." And so when I came back, he says, "There's no such thing as a free lunch, Mary. You have to make a presentation." (laughter) I want to learn what it was all about.

And so I started talking and talking. (laughs) This engineer said, "You need Toastmasters." (laughter) I said, "What's Toastmasters?" So I joined Toastmasters. I went to this program, this organization, Toastmasters. And he says, "After three visits you're supposed to join." And so I never — they didn't ask me to join after three, and I didn't know that that was just a men's club, they were all men. (laughs) And so they had to change their rules — all of their rules so that I could join.

At that time it was an all-male program. And even then, some of the men didn't like it, so they quit Toastmasters.

(laughs) It's hard to believe that those things existed back then, but they did. Well, there were several of them, actually, that were just men's clubs. But most of them now have men and women both. I don't know of any one that has just men. But anyway, that was funny.

DR: Well, that's progress, right?

MM: (laughter) Yes, it is. All I wanted to do was to improve myself. (laughs)

DR: Sure, yeah. Do you have any advice that you would like to give to women engineers, or women students considering engineering today?

MM: Well, it's a lot of fun. I think it's a lot of fun. It's a lot of work, but it gives you a sense of accomplishment when you can do this. And if anybody is interested in it, I'd say go for it, because there's nothing like it (laughs) that I know of. Of course, my math goes towards that. I know a lot of people don't like math, and they have their own interests. But whatever you want to do, go for it. Or whatever you like, don't let people tell you can't do it. That's the main thing. Even if they laugh at you, just go right ahead.

DR: Do you see yourself as a role model?

MM: I never thought of myself as a role model, no. (laughs) But I'm really interested in women going back to school in whatever they want.

It doesn't have to be engineering. But of course, I like engineering. But you have to have a little faith in yourself, and don't let other people tell you can't do anything, because

you're a lot more capable of doing something a lot more than you think you are. Because I've known a lot of people, and I always encourage them to go back to school. And some people go back to school, you know, to get a different career, and that's good, too. But there's so many, especially women, that don't think that they can do anything. I mean, they don't think that would be possible for them. And it wasn't possible for me until I got back to San Francisco. But even then, it was kind of iffy. (laughs)

DR: But you still went ahead and did it. That's saying something.

MM: Yeah, right, right. Well, I just can't explain how fulfilling it is to do something that you're not quite sure you can do, but just taking the chance and doing it, if it's of any interest to you at all. Or whatever you're in, I mean it, it doesn't necessarily – could be kitchen-eering (laughs) or whatever it is, whatever you want to do. (laughter)

I look back, I kind of marvel at the fact that I was able to do it. But I think anybody could do it. I mean, you're going to have setbacks along the way, but everybody has got a mind, and they should develop it. And that's what I think. (laughter)

DR: Okay. Good.

MM: Even if it's a crossword puzzle. (laughter) And that helps your brain, too.

DR: Oh, sure, yeah. Well, are there any further experiences that we didn't talk about that you'd like to mention?

MM: Well, my immediate family, you know, my brothers and sisters, they were really proud of me. I mean, I know that they were amazed at the fact that I did it. But I think that any one of them could have done it if they would have, you know, had the opportunity. Well, sometimes you have to make your own opportunity, too. You have to just determine to do it. But my whole family was really happy with it.

DR: So they were always supportive of you?

MM: Oh, yeah. And even to this day, they marvel at the fact that I can call myself an engineer. (laughs)

DR: What did your daughter think about it?

MM: Oh, she thought it was great. But math is not her forte.

DR: So she's not an engineer?

MM: Oh, heavens, no. She's not. (laughs) But I've never quite — I've never made her do anything that I thought she didn't want to. You know, I disciplined her. She was disciplined. But I mean, I didn't — because being an adopted child, you don't know what she's thinking. Now, I can talk to my nieces and nephews, and I can tell what they're thinking, you know what their mind is about how they'll respond to everything. But I was never quite certain what she could do.

Well, she did a lot of things, I'm not saying that. But you don't know them quite as well as you know your own blood

relatives, I think. But that doesn't keep me from being proud of her for doing her own thing. And I'm really amazed at her now that she's getting older, how she's imitated me in some ways. You know, if somebody gets her down or something like that, then she'll do what she thinks is best, which I'm glad. (laughs)

But it's a strange thing, we got her when she was three days old. I hope she didn't pick up all my bad habits. (laughter)

DR: Well, you mentioned your brothers and sisters being very supportive of your career.

MM: Yeah.

DR: Were your parents still around when you—

MM: No. No, they weren't. But I know that they would have been proud of me. They would have been surprised, just like opening the paper and seeing my picture there. (laughter)

DR: Right, yeah.

MM: But they were good parents. They kept us all together during the Depression. And I don't say that there wasn't times, but I mean, it was a good family.

DR: Well, is there anything else, then, that you'd like to talk about?

MM: I can't, offhand, think of anything else. I think I've told you all the highlights. I will say that when I make these presentations, you know, to Japan, or anywhere else, women are really interested in that, you know, in being able to communicate with younger people. It's the same problem

everywhere, in every country, I think. I don't know about China. But I think women need a little more encouragement. And talking to people in Africa, though, they were impressed with the program also.

DR: So they feel the same need to reach out to their younger generation as well.

MM: Oh, yeah. I don't know that they would do it strictly for girls, but I think boys shouldn't be left out. But I do think the girls need a little more attention because of the very fact that they don't know that these things are out there, all these jobs, and all this fun.

DR: Do you think the general public knows what engineering is? Do you think they understand what engineering is?

MM: No, I don't think they do. I think that's why you got so many lawyers. You know that when I was studying, that Japan has one lawyer to every eight engineers? United States is just the opposite.

DR: Really? That's interesting.

MM: Yeah. When I was in Japan, they say, "We're not a suing nation." I don't know if they've changed since then or not. But I think half of the lawyers should be engineers. (laughs) And I don't really know what attracts them to the legal profession. It might be because they're more towards, you know, the writing, and editing. I just don't understand why they (Inaudible). (laughs)

DR: Well, I guess we're all done, then. Well, I want to thank you again for participating.

MM: Oh, okay.

DR: It was really enjoyable.

MM: Well, thank you very much. Thank you.

DR: Thank you.

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