PROFILES OF SWE PIONEERS

ORAL HISTORY PROJECT

Lois Cooper Interview

November 5, 2005

Anaheim, California

Reuther Library Oral History ID: LOH001952.7

Lois Cooper

Lois Cooper graduated with a degree in mathematics from Los Angeles State College in 1954 after first studying law at Tougaloo College in Mississippi. In 1953 she became the first African-American woman to work for the California Department of Transportation (CALTRANS). She began her career at CALTRANS as an engineering aide and progressed in her career to become a transportation engineer and project manager for major transportation projects, as well as heading the public information and civil rights departments in the 1970s. Cooper was a Fellow of the Society of Women Engineers and became the first woman president of the Los Angeles Council of Black Professional Engineers in 1971. In her retirement, she worked with the Council to encourage African-Americans to pursue engineering and continued to offer math and science tutoring on the weekends. Cooper passed away in 2014.

In her 2005 Profiles of SWE Pioneers Oral History Project interview, Cooper explained how she became involved in engineering; her high school and college experiences; her involvement in design, Public Information, and the Civil Rights Branch at CALTRANS; her experiences as a minority woman in engineering; and her involvement in SWE and LACBPE.

- July 2016

LOIS COOPER

DR: Okay. This is an interview for the Society of Women Engineers, on November 5th, 2005, in Anaheim, California. And the interviewer is Deborah Rice.

And I'm wondering, Lois, if we can start by you describing your family background a little bit and your childhood experiences, growing up in the South.

LC: Okay. My family makeup consisted of my mother, my grandmother, a male cousin, and my sister, and that was our family. I was born and raised in Vicksburg, Mississippi. We lived in a shotgun house. And my sister said I tried to go to school when I was age four. (laughter) So I guess I've always been a learner. And I've always been a reader. I read a lot. I've always belonged to book clubs, even when I was poor. But I've worked for most of my life, I guess.

My mother did domestic work, my grandmother took in washing. And after I was big enough, I did domestic work. So whatever the people that I worked for read, then I read. Now, I would read their magazines and books, and things like that. So I've always been a reader. My mother only went to the eighth grade in education, my grandmother the sixth grade. But my mother was also a reader, and I guess I picked that up from her.

DR: Were you the youngest? Your sister was older than you?

LC: Yes. My sister is two and a half years older.

DR: Okay. Let me just stop for one minute, here.

(INTERRUPTION IN RECORDING)

DR: Okay. We were talking about your childhood and growing up and how you were an avid reader. So your mother definitely had an influence on you.

LC: Right, right. And of course, this is pre-television, so we listened to the radio a lot. So I'd listen to stories on the radio, the cowboys on the radio and... And all of the comic strips were on the radio, so you'd have to visualize when the horses — the long ranges they was riding, you visualize the horses running, and all that kind of stuff. So that was kind of fun.

In recent years they used to have them on the radio — then all of a sudden they took them off — at nighttime. But it's kind of fun. You're listening to them, and they're talking about the gangsters and everything, and all of a sudden you hear the horses, you know, the "clop, clop" that sounds like horses racing. And it gives you a chance to visualize what's going.

DR: Yeah, so you could use your imagination.

LC: Right, right. And so I think that was a good thing. Now with the television, of course, you see everything, and you don't have to visualize. Even with the movies. By reading a lot, you visualized what was going on. And I remember reading Lorna Doone. I couldn't tell you what it was about, but it took place in England someplace.

DR: I read her too, when I was a kid.

LC: Oh, you did! How about that, how about that. But you could visualize what was taking place in those ways (Inaudible).

DR: So when you finally entered school, then, do you remember having any early experiences in math and science? Do you remember liking those subjects?

LC: Well, I liked the math, and I guess I was always good in math. But before I went to — in our school, our grades went up to the fifth grade, kindergarten to the — I skipped the first grade — went to the fifth grade. Then we changed schools to go to junior high for sixth, seventh and eighth, then you switched back to the same school for the high school.

Well, I can recall when I was getting ready to go to high school the kids would say, "Don't take algebra. Take business arithmetic." So because I guess they had trouble with algebra, so they were just trying to discourage anyone from taking any algebra if you're not familiar with it. And so the class was filled, and I took algebra, and I'm glad I did. I took two years of algebra. And we didn't have trigonometry. We did have geometry and chemistry and physics. I took all those in high school.

And of course, in junior high, we had a teacher who believed that when you're adding numbers together, for instance, you're not just adding numbers together, you were either going to have so many dogs or so many cats, or so many apples, or so many oranges. The numbers always had some kind of unit beside it. She was always concentrating on adding the units together. And so little things that teachers talk to you about sometimes kind of stick with you. And so maybe that was one of the reasons

why I liked math so much, because they were very conscientious about making sure you understood.

DR: So you were the first member of your family, correct, to graduate from high school?

LC: Right, right.

DR: How did that make you feel?

LC: Well, to me it wasn't even an issue, it was automatic that you're going to graduate. My sister — well, even though she was older, I graduated first. She graduated the next year.

DR: Is that because you skipped a grade?

LC: No — well, yeah. (laughs) So anyway, but she did graduate. And so when I was in high school — oh, one of the things that we did in high school that the kids nowadays don't do is we sort of policed ourselves. You know, this is a small town, segregated school, all black school. But we had our own policing efforts. We had what we called a student council. And someone would be the president, and they had the different officers. And our goal was to maintain order in the school.

So if somebody did something that they weren't supposed to do, then we would take them to the student council meeting, you know, like our own little court system. So we kind of policed ourselves, as far as the... And I see these kids nowadays and, I'm saying, apparently they don't have any qualms about kids messing up. We were concerned about ourselves messing up, you know, so we kept law and order on our own.

DR: And this was in high school, right?

LC: Uh-huh.

DR: So you were part of the student council?

LC: I was part of the student council.

DR: Do you think that's what gave you an interest in then going to college to study law?

LC: Well, it could have been. I guess so, because I liked law. And I don't know, it just seems like you had a clout with being a lawyer. And I don't know, what was I listening to on the radio that – was it Perry Mason or something? But I liked the law. And I guess there's logic to law, and math is logic. And so I think that's another reason why I wanted to be a lawyer when I went to college. The only problem is (laughs) when I got to college, I went to Tougaloo College my first year. It was a private school. At that time my mother was out here, by this time.

DR: Out here in California?

LC: Right. She came out right after the war, in 1943. She had a friend out here, so she came out here to work during the war efforts. And so she told me I could go to any of the local colleges. And at the time I didn't want to go to – Alcorn was a state school, so it was cheaper, but you know how girls have reputations, so I thought, well, I didn't want to go there because of the reputations of the girls. And so I went to Tougaloo, which is a private school.

DR: And this was in Mississippi?

LC: In Mississippi. And so when I got there, the minister, Reverend Bender (phonetic) was our chaplain. And when he found out I wanted to be a lawyer, you know – everybody just

kind of took me under their wings, because I'm going to be a lawyer – first black woman lawyer, and all this kind of stuff. Well, they gave us an entry exam at Tougaloo. And so here I was already in my classes.

I was taking this science – oh, I forgot which science class it was – chemical – anyway, I was taking this class. And my schedule was already set up. So I was in this class, and the teacher was doing – we were doing problems in the class. And he put a problem on the board on calculating the square footage of a piece of rug, a carpet. And he put the problem on the board.

So I looked at the problem, and looked at the problem. And I lived in the dormitory because I couldn't afford to stay in the (Inaudible). So I was working, and I worked in the library, and I lived in the dormitory. So I went back to the room, and I looked at that problem, and I looked at that problem. And I said, "That's not right." (laughter)

So I worked the problem, and the next day when I went to class I told the instructor that the problem was not right. And so he said, "Well, put it on the board." So now I guess he's going to shame me by having me put the problem on the board. So when I put the problem on the board, it turned out that I was right and he was wrong. (laughter) And it was after that – and of course, now, by this time, because the college is kind of small – by this time–

DR: It's a historically black college, right?

LC: Right, right, right. And so then everything is getting – you know, the word is getting across campus what I had

done. And fortunately, Tougaloo gave us an entrance exam, and my algebra — I had done so well on the algebra part of the exam that they said that I should not take freshman algebra, I should go to the next algebra class. So I took college algebra. And by doing that, they reworked my schedule such that I didn't have to stay in his class. (laughter) So that was good. But I really wasn't trying to embarrass him or anything, because I went to him personally and said that the problem wasn't right. But I guess he figured I was wrong, so I would embarrass myself by putting it... And that was really the beginning of my actively participating in math.

And of course, I went to the college algebra class. And I was taking classes with juniors and seniors.

DR: Now, were you the only woman in most of your classes?

LC: No. There were a couple other women. But in this particular case, I was the only freshman. And so I took classes with the freshmen in biology, because — this teacher was teaching biological science, that's what it was. And so then I had to switch to biology, so now I was taking classes with the juniors and seniors. And this is my freshmen year in college.

So then the reputation gets around, you know, that I — I wasn't trying to be smart. I mean, it's just the way I was. So that was kind of fun.

But then also you had to take Western Civilization, was the history class. And this instructor lectured for fifty minutes. And when he gave a test, he wanted you to write for fifty minutes. Well, see, now, there's a big difference between

writing in history and doing a math problem. I can work on a math problem all day long, but to sit down and write history, that was not my thing. So I was thinking, if you're going to be a lawyer, you have to major in history – that was the old adage, that you had to major in history. I thought, nah, this'll never do. (laughs)

And of course, as I said, we didn't have much money. My mother couldn't afford to keep me there. I worked in the library part time. And then the next semester I also worked in the nursery, cleaning up the nursery. And at the end of the year – and you know, the thing is, even though I enjoyed my experience at Tougaloo, I really – in one aspect I liked it, and then in another way, I did not like it. In Vicksburg – Vicksburg was a small town, what, about 27,000 I think, at the time. And as I said, my mother was out here and my grandmother was there. My grandmother took in washing, so she didn't make that much money. And I used to pick figs and do domestic work, and stuff.

So my grandmother said – every weekend we'd go to the movies. And we'd go to the movies on Sunday, except the day we had church services on Sunday. And so my grandmother used to say, "Well, you can go to the movies if you've got the money." And so a couple of us would get together and we'd go to the movies.

Well, when I got to Tougaloo, you couldn't go to the movies. Tougaloo was outside of Jackson, so to speak. And so in order to go to the movies – now, we went to the movies every

weekend in Vicksburg. When I went to Tougaloo, in order to go to Jackson to the movie, you had to get a carload of folks, because they just had the station wagon, a couple other cars. And so rather than taking one person to the movies in Jackson, you had to have six people to go. And so me that was – you know, that's not me. I don't have to beg somebody else to go someplace with me. If I want to go, I just go. And so I didn't like that part.

DR: So it was a little too remote for you.

LC: Right, right. I guess I'm more independent than that. Like when I walk around here, I can walk around this place by myself, and I have no problems with that. (laughter) You know? But some people just to have somebody always with them. And so I didn't really like that part of Tougaloo. It was kind of isolated. And this was back in the days when people didn't have that many cars.

But since my mother said that she couldn't afford to pay for me to stay there, my sister – when I went to Tougaloo, my sister came out here. And so my sister went back to Mississippi on a round-trip ticket after my first year at Tougaloo, so she stayed in Vicksburg, and I took her ticket and came back.

And that was another experience. This was riding the train. The train trip was through Chicago. My father was in Chicago. And I knew a little bit about him, but I didn't know he had nine children besides us, you know, under us. He was married and had nine children. He was not married to my mother.

So I took the train to Chicago. And in Chicago you had to change train stations. So when I got off the train station, I told — this white cabbie came up, and he says, "Oh, you'll probably feel better going" — now, this is 1950 — "riding with a black cabbie." So I went over to the black cabbie. And I told him, I said, "I've only got a dollar and a half." And I said, "My father lives in Chicago someplace, and if you wanted to take me to my father's house to see if he's there, if he would pay for my trip to the train station. Otherwise, if you take me there and he doesn't pay, you still have to take me to the other train station." (laughs)

So fortunately, he took me to my father's house. And I spent the night with my father, and my half sisters and brothers. And then the next day he took me to the train. So that was my trip to California. And I don't know if you want all this detail. (laughs)

But I came out here through Chicago, and I went to LA City College. And this is 1950, and the LA State College was on the campus with LA City College at that time. They were in bungalows, mostly, out there on — oh, you're not familiar with the city. But LA City College is still there, but LA State moved. But that's where I went to college.

And I did a lot of different types of jobs trying to make money. I even worked for Alexis Smith, the movie star, one time. And I got cheated on that (laughter) because I was working in her maid's place. I think her maid had asked me to work, somehow or another. And so I worked for, what, about a

week and a half, or so. But Alexis paid the maid. And the maid didn't pay me what she paid. You know, that was kind of...

So I did some domestic work. And then I finally – I guess I talk too much, because I remember working in a restaurant one time. (laughs) And people always seemed to talk to me. And so somebody – you know, the people would come in to buy stuff, and they'd end up talking to me, so you know, I wasn't working too much because I was talking. (laughter)

But by my third year when I went from LA City College to LA State College, I started working in the library at LA State College. I used to go to the library a lot in my high school. We had a library in the building, because we couldn't use the public library. And so I started working in the State College Library. And so that was the end of – then I could afford it.

But one of the other things in my childhood – I told you I liked to read. And I used to buy comic books, and read comic books. And I'd buy songbooks. I love to sing. And so I used to buy the songbooks. And now, you know, you got shotgun house with five people in the house, and it would take me two hours to wash dishes, because I'd put my songbook – I'd prop up a songbook and sing every song in the songbook. (laughter)

So when I went to Tougaloo, I sang in the choir. And then when I came out here, I participated in the A Cappella Choir at LA State College. And then I sang in the Madrigal Choir.

DR: So when you came out to California and went to college out here, it was at that point that you decided you were going to switch from studying law to getting a math degree?

LC: Uh-huh, huh-uh, because I did like math, so I switched to the math. But then that's another experience (laughs) because, again, this is 1950, 1951. When I was taking the math classes there was nothing but boys in the class, you know, only girl in the class. And actually, for the most part, the fellows weren't too bad. But I do recall we had one instructor teaching one of the classes — I don't recall which one it was — but he told us, he said he didn't give A's. You know, he tells the whole class, "I don't give A's." So that just means the top grade is going to be a "B." (laughs)

And as I said, I was the only woman in the class, I was the only black person in the class. There was more — the fellows would ask me, "Lois, how did you work the problems?" You know, so we'd review how I worked the problems. But it was never reciprocal. I didn't see how they were working problems. So after a while you learn that they're doing more taking than they're giving, and so you learn to get over that.

DR: Cal State was, then, fully integrated at that time?

LC: Integrated?

DR: They accepted both—

LC: Males and females?

DR: Yeah, and minorities, as well.

LC: Oh, this was out here.

DR: Yeah.

LC: Oh, yeah.

DR: Because you mentioned that you were the only African American in your class.

LC: In the math class – no, only in the math class, not in all the other classes. But don't forget, even now, you're not going to find that many – well, I don't know about now in classes, but when I went back to school, a lot of times there weren't that many African Americans in the science – in my classes.

DR: Right, in those science classes.

LC: Right, right. And even females, they were... Well, there was a lot of discouraging from the males about the females in the science fields. But since I'd never paid any attention to that, this–

DR: So it didn't really bother you?

LC: Huh-uh, huh-uh. I guess I've always been independent. And as I said, I was a reader. I used to read everything I could get my hands on. And I can recall reading this one book, and I read *God's Little Acre*, and *Tobacco Road*, and all – have you read those books?

DR: No, I haven't.

LC: You never heard of those books? (gasps) In fact, I just saw something in the paper the other day that they said this is in Erskine Caldwell's hometown. He wrote *God's Little Acre* and *Tobacco Road*.

DR: I've heard of the author, yes.

LC: Okay. These are books on incest, and you know, people don't talk about incest. But that's what basically – and on sex. There was a lot of sex and incest in the book. But that was the going thing, and whatever was going around, I read it.

(laughter) But and then of course as I said, I read everything. And then one time I got a hold of this book. The guys told me, "Lois, don't read that." (laughs) It was too filthy, they said. So I didn't read it.

Most of my friends in high school were guys. I guess I'm really not a typical female type female, whatever that means.

DR: Like a girl's girl?

LC: Yeah, yeah. I'm not a doll person. I'll play baseball, run with the guys. And a lot of times in high school I'd just go — our school was on three tiers, so the school was up here, and the football team was down there and stuff. But I'd just stand on the side of the hill just looking down, and invariably some guy would come over and stand, and we'd talk.

And even within the last couple of years I've gone back, and one of the kids that grew up with us was there. And he says, "Lois, you don't talk like the other girls around here." Because I guess a lot of women are into female stuff, and I'm not into female stuff. I'm into concept — you know, other things.

But I forgot where I was going with that. (laughs)

DR: Well, were talking about you being the only female in a lot of your classes, whether or not that was—

LC: Right, yeah. And of course, that didn't bother me, because I was there to learn, and not necessarily to socialize or anything.

DR: So your professors, then — you never really felt that they might be—

LC: Prejudice?

DR: — see you different? Yeah, exactly.

LC: Well, this professor said he didn't give A's, I guess, but he was — oh, that was the other thing. I was the only black — at that time, we were "Negroes." I was the only Negro in the class. And so when the black guys — you know, they were kind of impressed with that, but a lot of the other guys — we had a lot of Asians in the class and Caucasians. But they really don't want you there. But then I didn't pay — that didn't bother me. I go where I want to go, do what I want to do. And even here, I don't hook up with anybody. Most times when I — like at the banquet, I'll go down, and I'll sit at an empty table. And then the table fills up. (laughs)

DR: And that way you meet new people, right?

LC: Yes, yes, yes. I don't particularly — I mean, and see, sometimes I — on the first day, one of the members — we were looking at the menu and she said, "You want to sit together?" And I said, "Fine." Then later I got to thinking, I said, "I think I talk too much for her" (laughs) — because I talk — I will talk about anything! And of course, I'm a breast cancer survivor, so I may end up talking about cancer, because I'll say, "We've got too many cases of cancer, and nobody is talking about it."

I mean, it won't go away just because you don't talk about it. (laughs) And so I will talk about just about anything. I have a book on just about any subject. My house is a mess. (laughs) But I have, in my den — which was originally my living

room, I have a wall-to-wall bookshelf. And then my husband died, and my kids got grown, so one of the other bedrooms, I have wall-to-wall books. And I have books on every subject.

Right now I'm a member of the Literary Book Club. I used to be a member of the McGraw-Hill Book Club. And I would buy a lot of technical books because I wanted to go up and Caltrans—and see, I'm going around on a tangent here. (laughs)

DR: That's all right. We'll get back to it.

LC: But in order to move up in Caltrans, you had to pass the EIT, Engineer in Training Exam. And I had not had the engineering classes. I had the math classes, but I hadn't had the engineering classes.

DR: Did you know when you were in college taking math classes — did you know that engineering was an option as a career?

LC: No, no.

DR: Okay. So when you graduated and were interviewing for jobs, then you were looking for what type of position?

LC: Okay. As I was working and going to school — and I think I told you I worked in a library — all the job notices used to be posted on the administration wall. And so I'd always go over and read the job notices on the wall. And so there was this job notice for an engineering aide, and the only requirement was high school math. And I applied for the job, and I got a call. I went down to the interview for the job. And they told me, "Oh, I thought you were a man." So of course I didn't get the job. (laughs)

DR: Was this with Caltrans or —

LC: No. This is with the Department of Architecture. And so I didn't get the job.

DR: So they said that to you straight up.

LC: Oh, yeah. Oh, they didn't have any problems with being obvious back in those days, yeah.

DR: So how did that make you feel, that you were perfectly qualified for this job and they weren't going to give it to you because you were a woman?

LC: Well, of course, you're angry. But what do you do? By this time I guess I had filled out an application — oh, yeah, the job announcement said "engineering aide." It was a state job. So I filled out the application and mailed it into the State — to Sacramento, you know. And so that was my first interview. So the next interview — the next job offer that they sent me — this is all for engineering aide, that's the title — they sent me to Caltrans.

DR: So it was all for government jobs, then.

LC: Right, right, right.

DR: Caltrans is the California Transit Authority?

LC: Well, at that time, it was called Division of Highways, which was a precursor to the California Department of Transportation, right.

DR: How did that interview go?

LC: That one went much better. Let's see, I got the job. Did I have any flak with that? No. Personnel, there, they were pretty fair with me in personnel, so they gave me the job. But

it wasn't personnel that you're going to work with. (laughter) So they sent me to Design B. And that's where, you know, they really weren't expecting a girl. I don't know what they thought my name was, you know, it Lois, L-o-i-s. But I went up to personnel, and of course — I think there may have been — I think there was one black guy up there, but you didn't really know he was black, you know, he could have been something else. But otherwise, I was the first black — I think I was — yeah, I was the first black hired off the first floor, that's the way I used to look at it. The first floor had an accounting department, so there was some blacks in accounting. But the second floor was right(?) away, and then the fifth floor was the Engineering Department. So I was the first black person hired in the Engineering Department.

DR: And the first woman, or—

LC: No, no, not the first woman. There were some other women up there. Marilyn Reece (phonetic) was there by that time. And there were other women there. But I was the first black woman hired in there. And of course, that was an experience, too. You know, a couple years ago, SWE did an article on me about the prejudices and things. Did you read that?

DR: I did.

LC: Oh, okay, yeah. Because that was interesting. (laughs)

DR: It was in a 2000 issue.

LC: Okay, yeah. Because when your life has been black and white — this is 1953, and I came from the South where everything is black and white, you don't try on shoes, you don't try on clothes downtown. You can go buy them, but you can't try them on. You have separate faucets to drink from and things like that. So it was kind of interesting when I went to Caltrans.

And maybe it's my misperception — I mean, it was just my perception of things, but when you go to the bathroom, I was the only black person in there in the bathroom. And it just seems like people are looking at you differently, because you didn't share bathrooms back in those days. (laughs) So that could have been my imagination. But I would just ignore things. And it got to the place where we got along.

And because I have a degree in mathematics — and the other guys, some had degrees in engineering, and some had worked their way up also. But this is before calculators, before computers. To design and build a freeway, you have to calculate the alignment. And everything is based on coordinates, sines and cosines. And so the world is divided up into this coordinate system. And so you when you're building a freeway, or designing a freeway, you may draw a long line, or a tangent, and then you're going to put a curve in the road, and then another tangent, and maybe a curve going the other way.

Well, in order to calculate this alignment, you know, you start out with this point and it has coordinates on this point, and the lines have bearings on them — north, eighty-five degrees in fifteen minutes and ten seconds — or something like that,

east. And so you have the bearings on the line. And then you'd go up and you'd go into the center of the curve, and out to the EC of the curve, and you know, things like that.

So you're doing all this calculating, and you have to close — you know, you're putting all these curves and triangles in between, from this point to that point — well, you know, the coordinates of this point and the coordinates of that point, and you've got to calculate the coordinates in between.

And so because I had a math degree, and in math you have to pay attention to numbers, and so it, to me, was fun to calculate the alignments of the road. So the guys were doing calculations before I got there, and sometimes they'd calculate and the traverse wouldn't close — we called them "traverses" — the traverse wouldn't close. So then you have to go back and figure out where you made a mistake.

And so after awhile they started giving the problems to me. And I would go through it meticulously and then find out where they made the mistake, and then I'd close the traverse. And it got to the place where they just started giving me all the calculations, (laughs) so they didn't even do them anymore. They just gave them to me, because my degree was in mathematics. And of course, what you'd use is the old ten-key adding machine. The calculations were based on sines and cosines and logarithms, and a ten-key adding machine. So that was fun.

So even though you have, with this one aspect, they may not want a woman, let alone a black woman, but then here I'm calculating all this, the alignments with the freeways and

closing them, so then your reputation gets better. Things get better and better.

So there were other women there who were delineators, too. And a delineator is a draftsperson. But we did have some other engineers there.

DR: So you had some women engineers (Inaudible).

LC: Yeah. Carolyn [Marilyn] Reece was there when I got there. She's in this book that Sybil [Hatch] was writing.

And Carol [Schumaker] was there when I got there. And I think there were a couple of other women engineers.

DR: Did that help, having other women (Inaudible) or—

LC: In a way, yeah. But you still had to get across the race issue. You know, that's always the first thing, is the race issue.

DR: So you think that comes before—

LC: Yes, before your knowledge, yeah. Because I mean, you could be the smartest person in the world, if you were black, you're black. And more times than not, a lot of times they never find out if you're smart, they've already defined you because you're black. So there are a lot of things that you have to go through.

And you look at things different. I could go to coffee break — we had coffee breaks. I'd go to coffee break by myself. I had no problems with that. And then after a while the women started taking me with them to coffee breaks, so that was okay.

DR: Was there anybody at that time, or up until this time, that you considered somewhat of a mentor or a role model, either

in college or when you began your job at Caltrans? Is there anybody that would fit that role?

LC: I guess my grandmother. (laughs) My grandmother was feisty. I didn't have a grandfather. (laughs) I didn't have a grandfather, and didn't have a father – you know, in the house. I had this male cousin. But my folks were quite – you don't mess with my folks. (laughs) My grandmother would dare people to come down the street, you know. (laughs) She was the daughter of a preacher. But she was just stern. And I think I've picked that up from them.

DR: What about in your professional life? There wasn't anybody professionally that kind of helped you along, maybe in your early career? Or did you feel that you really were on your own?

LC: I kind of think I was on my own, yeah. And see, I guess it doesn't bother me much. It didn't really. There were some things that would bother you, for instance, if the guys were doing things, and they wouldn't let – like I couldn't go to construction. Women couldn't go to construction.

DR: So you couldn't go offsite.

LC: Right.

DR: You had basically an office job.

LC: Right. But all of the positions at Caltrans were based on an examination. The first exam, of course, was on math, so I didn't have any problems with that. The next exam was math and some of the technical stuff around Caltrans. Then the third exam, the Senior Engineering Aide, had the most

construction in it. Well, Caltrans' system was that when a person is hired on as an engineer out of college, they would go on the rotation program. Rotation meant that you'd work in design for six months, you'd work in materials for six months, work in construction for six to nine months, and you'd work in some of the other departments. Women couldn't do that. Women could not go to construction. And so the senior exam was based a lot on construction.

DR: Because you needed to pass the exams in order to advance.

LC: Yes.

DR: So how did you get around that?

LC: Studying the — fortunately the guys would save old exams. And that's all you could do is just save — study the old exams.

DR: So you had to take the exams without ever having practical experience.

LC: Exactly, right, right. I've never gone out to do any sanding. You know, they want to know how much moisture is in the soil, and all that kind of stuff. All that has to be done on paper, not in reality. And then of course down the road — and you know, the funniest thing — oh, we'd have these drafting tables. And so you'd sit at the drafting table. And of course, I used to — you know, I'd do my work, and I'd clean off my table.

And so when I'd run out of work I'd ask my supervisor, I said, "Do you have anything else for me to do?" And so he'd

have to find something else for me to do. So one time he got to the point — I said, "Do you have anything else for me?" He said, "Why don't you" — I forgot how he put it, but in other words, he didn't want me to disturb him to find — in other words, he was having trouble keeping me busy, is what it amounted to.

So after that — this is kind of odd how things happened — after that I decided, I said, "I'll never have a clean desk." And for a fact, I never had a clean desk after that, because I figured whenever I run out of work, I'll clean off my desk, I'll straighten up the desk." So you're really not out of work, you've always got something to do. I guess because I could do the calculations fast, then you'd run out of work.

And also one of the things they used to do is — this is really going back — when in order to calculate how much material will be used to build the freeway, we did cross-sections, so you'd take a cross-section of a freeway, and you'd plot it to grade — to elevation. So you'd have the top layer of the freeway, and then you'd have — they have a two-foot structure section out of the bottom layer. And then down here somebody would have calculated the ground elevations. So you have a ground level down here, and so you've got ground here, and the bottom of the freeway up here. So you had to calculate how much dirt you were going to take — you were going to have to fill in order to put the freeway up here. And so that was another one of my jobs is to plot — either plot the cross-sections or to

calculate the material that would be used to go into building the freeway.

So it was fun going – back in the old days. You're doing things the long way, but you learned a lot.

DR: Now, you designed the first bike path in the area, didn't you?

LC: Yes.

DR: Was that your assignment, you were assigned to that?

LC: Yes, yes. That was the one off the 91 Freeway. I think it's still down there. One of my jobs – I think that was my last design job, working on the 91 Freeway from Eucalyptus to the Orange/Riverside County line; those with the limits. And I was just talking to somebody about that the other day. And it kind of irks me. We built this freeway – then we'll get to the bike paths. We built this freeway with a hundred-foot median. The side of the freeway was steep. And on that side was the Santa Ana River, and on this side we've got this steep cliff.

But we also wanted to have a scenic freeway. And so we had this hundred-foot median. And one of the things I was asked to do is to calculate the grades on the eastbound lanes such that if you're driving on the eastbound side you can see over the westbound side, and see the scenic beauty of the area. Well, we did that – you know, I did that. And since I've been retired, they took away the scenic beauty part – in Sacramento. It was no longer a scenic freeway, and they put a transit-way down the median. (laughs) And when you look out over on the north side, you see houses all over the place.

And there's a river down there. I know, and they knew, on the 100 year flood, the freeway is going to flood. I mean, the 100 year storm, the freeway will flood. Oh, don't put that on the air. (laughs) But now they got houses all over there. But it gets to be political, a lot of times, with what goes on. Actually, we could have built the freeway wider if it hadn't been for the scenic route and stuff.

And now they're complaining. Almost every morning when I listen to the radio there's an accident down there.

DR: Really?

LC: Right.

DR: And when was it that you worked on it?

LC: This is the '80s, I think, that was finished.

DR: So you were saying one of your last assignments before you retired?

LC: In design. No, no, no, not before I retired. No, in design. Because that was when I worked on [Highway] 91, I was actually still an assistant transportation engineer. From there I went to — I made associate transportation engineer. And I was assigned to work in the design — we had different design sections — in Design A Section. And Design A was the section that was in charge of the Century Freeway. Have you heard anything about the Century Freeway?

DR: A little bit, yeah I've read a little bit about it.

LC: Yeah. It was under court injunction. And the freeway was a design — or started back in the '60s I think. But there was a court injunction. Some of the homeowners on the west side

didn't want the freeway coming through their path, so they filed a lawsuit against Caltrans. And the NAACP got involved because of the Watts area, it was going through the Watts area. So when I was made associate, I was put in charge of responding to the courts a lot. So we'd have to write a report to the judge every three months or so. And that was kind of fun.

I used to give presentations all the time. I used to give tours anytime somebody came in. We had a Japanese group that came in, and I would take them on the tours, mostly of the Century Freeway, is what it was. And they went back and wrote a book, and they've got my name in it. Everything else is Japanese but my name. (laughs) But anybody who came to town who wanted a tour, I was the tour guide. I guess it's because I talk so much. (laughs) But that was fun, that was fun taking people on tours.

So I was in that section. Oh, I worked in Public Information for a while.

DR: Is that when you gave the tours?

LC: No. I think that's how it started, when I was in Public Information. I was just telling someone the other day, when I was there, this was during the Gianturco time. Have you heard of Adriana Gianturco? She was the woman put in charge of the Department of Transportation, and there was a lot of flak about that because she was a woman.

DR: What year was this, approximately?

LC: Around '75, somewhere around there.

DR: Mid '70s.

LC: They just didn't want her to be there. So when I was in Public Information – that was another job I had to fight to get. I had to fight to get a lot of jobs. That one I – I'm going rambling, I'm just rambling. But I had – okay, I was in Design B, and I went from Design B – okay, after I'd been in Design B for a long time, I wanted to go to someplace else, so I went to Hydraulics. And let's see, did I have to fight to get in there? Well, anyway, I got over to Hydraulics.

And also, one of the things that I started doing was to talk to school kids, mentoring. And so when I went to Hydraulics, it so happens I knew the head of the department. Rather than going to my immediate supervisor or to his supervisor, I went to the head of the department, and I told him, I said, "I go to talk to schools on career days, and act as a role model for the kids." And I said, "Well, when somebody calls, I'm going." (laughs) And so he said, "It's no problem." So I didn't have to worry about my immediate boss. I just told him I said, "So-and-so – Fremont(?) called, they wanted someone to talk, so I'm going out." And I'd take a State car, and I'd go out. So I think that's how I became a fellow of SWE. I've talked to over 100 school classes, and school kids.

But anyways, so I went from Design to Hydraulics. Then while I was in Hydraulics, I decided I wanted – I guess I was making my own little rotation program – I wanted to go to Public Information. Now, okay, I was – one of the things that I used to – well, you know, I'd go to the bathroom – before I'd go to

the bathroom, I'd always go to the faucet and drink water, then I'd go to the bathroom.

Well, a lot of times when I'd go to the faucet to drink water, Bill Sorley (phonetic) would come, and so we'd meet at the water faucet sometimes. Bill Sorley was a senior at that time. And so we'd meet at the water – you know, I'd go get water, and he may be there. And I'd go get – you know, and vice versa. So after I finished in Hydraulics and I was ready to go to Public Information, I talked to the fellow that was in charge of – you know, my immediate supervisor and asked him about me transferring down. And he told me no. So I said, "Okay."

So Bill Sorley and I had been meeting at the water faucet. So I told Bill Sorley, I said, "Bill, I'd like to come to Public Information." And he says, "Come on down." Now, he was his boss. He was the boss of the fellow who wouldn't let me come. (laughs) So I did go to Public Information. And then once I was down there for two years, they didn't want to let me go. (laughter) But anyways, this is during the '75, '76 era. And at that time Adriana Gianturco was our director. And we had started building diamond lanes. You've heard of the diamond lanes? Okay, well, the diamond lane was the forerunner to carpooling. And so we started redesigning the freeway, or regurgitating the freeway, so to speak, such that you could have a lane in the median with a diamond in it for carpools. And then you'd still have the four lanes over there. So in essence, we're not taking anything away from anybody, but we're adding the carpool lane, the diamond lane.

And I used to get calls, "That's my lane. I paid for that lane. I want to drive that lane!"

DR: You're kidding!

LC: Oh, oh, people were furious. They were furious. They were furious! And I guess I had — I'd just calm them down on the telephone. (laughs) But they'd call — "And it's her fault!" You know, because this Adriana was there. Oh, they gave — Caltrans was getting a reputation because of Adriana. For one thing, she's female and — was that during Reagan's time? I forgot who was the governor. But they appointed her the State Director. And so the people didn't like that because she's female. (laughs) And then here you're putting in this diamond lane, and, "You're taking a lane away from me!" In essence, that's what they did. And so I used to take the calls, and I'd have to calm — I mean, people would be furious. And so I calmed them down. And so I got a reputation (laughs) that anytime there's somebody who's hostile, then they give it to me.

And whenever people would call Caltrans and ask anything — see, the purpose of being in Public Information was you had to know a little bit about everything. And so any freeway that was in the district, I knew about. No matter where it was, I had to learn a little bit about it. So I enjoyed that part.

And even when I left Public Information, when people would call and ask for — one of the things that I — reputations that I — things that I liked is: If somebody calls and asks me a question, if I don't know the answer, I will take their name and telephone number and get back to them. A lot of people don't do

that. A lot of people say, "I don't know," and that's the end of the thing. And so I guess I built a reputation that if somebody wanted to know something they'd call me, and I'd write the — and we used — they taught us to do it on a steno pad, so I still do that, do things on a steno pad. And so I'd call them back and give them the answer. But it got to the place where some people would call just to talk. (laughs)

So it was during that time that I passed the — I had been trying to pass the EIT for a long time, and I couldn't pass it.

DR: And that's the—

LC: Engineer in Training exam.

DR: You wanted to move up to the next level?

LC: Right, right. And you had to get a license in order to move up. But first you got to pass the EIT exam, and then you'd take the license exam. So even though I'd had the degree in mathematics, I didn't have the subjects — I had not taken the classes. So it's sometimes a little difficult to work a problem if you're not familiar with the concept. So I took the EIT, I think, about sixteen, seventeen times — it seems like, I don't know. It's an eight-hour exam, and you're working problems that you haven't got the foggiest idea... So I enrolled back in college, in Cal State.

DR: Which used to be—

LC: LA—

DR: LA State.

LC: Yeah, yeah.

DR: Same college, just a different name.

LC: Right. And by this time they'd moved. And so I went up there and signed up as an engineering student.

DR: Civil engineering?

LC: Civil engineering student. And I took all of the classes that I needed. In the meantime, I developed gallstones, I had to have my gallbladder removed. My husband had an aneurysm in his stomach — an aneurysm that they couldn't find, see. And it turned out it was in his stomach. And he was in constant pain on that.

And so I'm taking these classes, going to work—

DR: Working full time and going—

LC: Working full time, had two children, and sometimes my husband would be in the hospital. And so it was a rough time during that time. But I managed. Oh, before that (gasps) I had medical problems, too. I have — besides the varicose veins — I've had them removed — but I developed chondromalacia of the patellae, both knees.

And the first time the doctor — the surgeon of Kaiser, he put — most of the problems started with my right knee. So he was going to put a cast on my leg. I said, "No, don't. I drove down here." So he put a cast on my left knee. I had a cast from here down to there on my left knee. So I drove back to work with a cast on. And then we had the cast on this leg for two months, and then after we took this cast off, we put a cast on this leg. So I had a cast on this leg for two months. So then by this time this leg is too weak to walk. (laughs) And then after the two hard casts, then they gave me portable casts.

And by 1971, I had surgery on my right knee. They finally tore a cartilage, and they took that—

DR: So this was all during — you know, you're working full time, you're going to school, your husband is ill, and you have to take care of two kids, and now you have medical problems on top of it.

LC: Yes. Actually, I was having medical problems all along, because in '75, I think, is when I had gallstones. And I was in school. And we discovered it in — I think in the spring of the year that I had gallstones. Ooh, I was having terrible pain. So I said, "But I'm in school." You know, Cal State LA is on a quarter system. And so they said, "Okay, well, we can wait until the summertime." So that's what we did, we waited until summertime, and I had my gallbladder removed.

And then, boy (laughs) — so I've gone through quite a few things. And then, of course, after the casts, I told you I had portable casts. So I'd go to work with a portable cast on this leg, and once I got there and parked I'd put a portable cast on this leg. And I'd walk around with two stiff legs. (laughs)

DR: Oh, my gosh, that doesn't sound comfortable.

LC: But then I kept going to work. But anyway, so actually I've had a lot of trials at work. And a lot of times the guys would talk to me more so than I would talk to them. You know, I could be at my desk doing things, and invariably somebody is going to come over and talk to me.

DR: Let's stop there for a while.

(INTERRUPTION IN RECORDING)

DR: This is tape 2 of the interview with Lois Cooper. And I'd like to ask you now: What organizations you were involved with in your early career?

LC: The Los Angeles Council of Black Professional Engineers.

DR: Right. You joined that in the early '70s.

LC: Right, right.

DR: As the only female.

LC: Right. And then I worked my way up to treasurer, secretary, vice president, and then the president. And when I became president, then Caltrans did a press release on me, and there was an article in the paper about me being the first female president of an engineering organization. And when it came out, some of the guys at Caltrans, some of the guys in the Right of Way Department, especially, they – people would catch me and say, "Lois, how does that female organization that you're president of" – I'd say, "I'm the only female in there." (laughter) But I guess they assumed that I couldn't be the president of a male organization, so to speak. But that was fun. And of course – and I'm still a member of that organization. (INTERRUPTION IN RECORDING)

DR: Okay. So you were talking about the LA Council–

LC: The Council of Black Professional Engineers, yes. One of the things that we were involved in was trying to get more black students to go into engineering. So we'd go to the various schools and present ourselves and talk about engineering and things.

DR: So was that your first experience with that sort of career guidance and mentoring relationship?

LC: Right, uh-huh. One of the things that we found that there weren't that many blacks in college. Even if they qualified to go into engineering, they weren't being accepted in the college. So we got involve with the colleges, the deans of engineering of the colleges, and worked with them to try to find the students who were qualified to major in engineering. So we'd go to the schools to talk to find out. If the kids had the right GPAs and things, we'd try to get them enrolled in the various colleges. Cal State [California State University] – the state system and the Cal Poly [California Polytechnic State University] system. We were involved with Cal Poly, and we just got to meet all of the deans. I mean, I could call up a dean at the college and say, "This is Lois Cooper of the Los Angeles Council of Black Professional Engineers," even though I was sitting in the Caltrans desk. But you're identifying yourself. And so we would try to get the students enrolled in college, because we were...

In fact, this NSBE that was there—

DR: National Society of Black Engineers?

LC: Right. They started – when I was the president of the Council, they formed that group.

DR: Were you involved with them at all?

LC: No. And that's kind of – that disturbs me a lot.

DR: That you never joined?

LC: No, that they didn't get involved with us. See, our goal as an organization was to get more blacks to go into engineering, so to speak, and to try to find them jobs and things like that. Well, once somebody gets into college and moves up the ladder, then theoretically they should come over and be a part of us. But that's not the way it went. They're part of themselves, and so...

And so we'd teach math and science on Saturdays — in fact, they're there now, at Cal State Dominguez Hills.

DR: That's something you still do?

LC: Yes, yes. We teach math and science for grades two through twelve. And this session, I think we have over ninety-some-odd kids. We've had as many as 160 some-odd kids, for grades two to twelve, see, so... So we still feel there's a need for the engineers to be out there in the community. And I don't think we have enough that are participating. Even SWE could get involved in — it doesn't have to be with the minority students, it could just be with students in general, especially on Saturdays.

Because, I don't know, when I hear or see that we're going to other countries for engineering work, what's happening to our own students? To me, that's a disgrace not to be able to hire engineers for our own companies — nothing wrong with bringing some people from other countries, but don't make that your total focus. You should put more effort into creating your own engineers. I mean, we've got enough students here who could major in engineering, so—

DR: Yeah. That's a big question today.

LC: Yeah, we're not putting in enough effort to get them. So I don't know where you'd have to go. As I said, with our organization, we've got surgeons teaching, we've got people of all disciplines teaching the students. So that's kind of a love to be there with the kids. And sometimes we'll get on — I was on the board with a problem a couple weeks ago. And you know, you put this problem on the board, and it's kind of fun to get back to doing problems on the board, yeah.

DR: Sure. And you were saying that shortly after you became president the organization at Caltrans did a—

LC: Oh, yes. They did a press release on me. And so the Right of Way guys, you know, they just assumed — a lot of times at Caltrans, nobody knew what my position was. They'd just see me walking around, and they didn't know. And even when — sometimes I would get into trouble — people talk about me talking too much. But it wasn't because I was talking, it was because somebody was coming to my desk to talk to me. (laughs) I guess a lot of people have not really communicated that much with a black person, per se. And so I'd get in trouble. I'd say, "Wait a minute. I didn't start this conversation. They came to my desk." And I've had a lot of squabbles. I will take up for myself. (laughs)

DR: So did anything change after they did this press release, and your colleagues understood exactly what it was that you did?

LC: Change how? What do you mean?

DR: In your relationship with your colleagues (Inaudible)—

LC: Well, the ones that I worked with — the ones that didn't know, I didn't care, didn't care. In fact, I don't really know why the Right of Way guys didn't know, because one of my jobs used to be — you know, in order to build the freeway, you have to buy right-of-way. And you designate where you're going to build the freeway, and how many houses you're going to take. And so one of my jobs was to find out the status of the right-of-way, of the parcels that we were going to acquire. So I used to go to the Right of Way Department a lot. But as far as they're concerned, I guess I was a clerical — you know, woman/secretary. So it didn't bother me. And I'd always go down and get the information.

DR: But Caltrans as a whole was supportive of your involvement with the LA Council?

LC: Yes. I don't remember who I talked to first. I think it started when I was in Public Information, and it just kind of went wherever I went. I would tell the people ahead of time, I'd say, "Well, sometimes I go to schools to talk." And see, the thing is, most people didn't want to do it. So if I volunteered, they're glad somebody is going. And see, I'm Caltrans. When I'm out at a school, I'm Caltrans. And so it gives them a good reputation. And I would always go to somebody high enough to let them know that, hey, this is something that I'd like to do, and I don't mind doing it. And to me, ultimately, it benefits them, down the road.

DR: Yeah. So when was it that you first heard about SWE?

LC: When I went back to college.

DR: So in the early ‘70s.

LC: In the ‘70s, yes, yes.

DR: So while you were a student—

(INTERRUPTION IN RECORDING)

LC: I probably knew about SWE before I joined. But don’t forget, I came from the South, and I’m black. (laughs) And SWE was white. So this trip here — well, the last couple trips — I have gone to some SWE — I remember going to one of the SWE conferences, and I was looking for a black person to talk to because I felt so uncomfortable around the white students.

DR: So this was in (Inaudible)—

LC: At a SWE conference. I don’t remember which one it was. But I don’t think they felt comfortable communicating with me. I have no problems talking to anybody. But I just felt out of place, so to speak.

DR: Now, did you know of Yvonne Clark or Irene Sharpe at that time, who were very early African American members of SWE?

LC: Huh-uh.

DR: Have you ever met them?

LC: Huh-uh. And as I said, I think when I really started getting involved with SWE was back when I re-enrolled at Cal State LA. And see, now, by this time — this is ‘75, I think, and I joined the Council in about ‘71.

DR: ‘71, yeah, right.

LC: And so by this time I had already been talking to the various colleges and getting to know the deans and some of the

students. So on Cal State LA (Inaudible) I knew Dean Cromwell (phonetic) at Cal State LA, because he used to participate with us. So in order to – I don't know, somehow or another we got involved in – I was involved in lots of things. We got involved with the NACME Project, National Association of – oh, shoot, I forgot. [National Action Council for Minorities in Engineering] This was a project – this was a group that was involved in trying to get more minorities in college. And of course the deans were working with them.

And by this time the NSBE had formed. So on campus you're having the same students being involved in whatever. If you've got a SWE on campus, you've got females. If you've got an NSBE on campus, and a female is black, then she's involved in NSBE. And then (Inaudible) SHPE [Society of Hispanic Professional Engineers] came along. So that's kind of how we went around.

Actually, I purposely did not get involved and join SWE for a long time, I think because I didn't feel comfortable, or I was so involved with the Council, and there's just so much you can do.

DR: So what made you finally decide to join SWE?

LC: I think because somebody needed a sponsor when I was on campus. I think we were all – you know, you didn't have that many women that didn't – and so it was just kind of we were getting together with the students. And somehow – I don't remember what happened, but I think somebody needed a sponsor for something, and I think that's when I joined, because I was a professional, and so then I think–

DR: The students needed somebody to sponsor a section.

LC: Right, right. And I think that's right. But prior to that, I really had not been that comfortable with SWE. And back in those days, you could sit at a table and nobody would come.

DR: At a conference or something?

LC: Yeah, I mean, you're black. And even now, as I said, I sit at the table, and then people come. "May I sit with you?" "Fine." And that's good. But there's still that apprehension about going to sit at a table full of — I will do it, but when you see a table full of white folks (laughs) and you go over and sit down, there's still that little apprehension, you know, because I came from the South. You can't erase that.

And people have had problems. And the people that you see, their backgrounds could be different, too. You really don't know how they're going to accept you. And I think I tend to talk too much sometimes, too. (laughs)

DR: So what has SWE, then, meant to you, over the years, being as how you're still a member—

LC: Yes.

DR: — for thirty-five years?

LC: Yes, yes, yes. Well, I enjoy communicating with other folks. And as you can see, I like to get on soapboxes, you know. (laughs) And to me, this educational effort should be everybody's effort. It's not a black and white thing, it's not a Hispanic thing, it's an American thing. And we all need to get on the bandwagon and find out why we don't have more kids going into engineering in school. Why are we having kids

failing? Why are they dropping out in the seventh, eighth grade, ninth grade, tenth grade? Why are they getting pregnant?

There's an article on TV, this parent is complaining because this survey is going to her elementary school kids about sex. And there's a time delay on this story. I've got to get the background for that. But apparently the child was in elementary school, and this questionnaire was going around, "How often do you masturbate," and blah blah blah, and just things on sex. And I'm saying, you know, we — the kids — all they have to do is turn on the television. There's sex on the television! Why is she all up in arms about the piece of paper that's got sex on it when it's right there in front of them on the television? Even the cartoons get involved in sex!

So sometimes I think we're putting our priorities in the wrong place, as far as trying to develop our country. I don't think we're putting enough emphasis on school. Why are we having so much — like the gang problems? Why do we have so many gangs? Why is a kid in a gang? What's he trying to do? He's looking for recognition from somebody. If you give a child a book — you know, I don't need you, just give me a book. I'm content reading a book by myself. But these kids feel that they have to be in a gang, for some reason or another. And of course, once they get in a gang, then there's a lot of fighting and shooting, and then everybody ends up in jail. And just the other — oh, I get carried away when I... (laughs)

Because I was thinking the other day, for some reason, with this stuff that's going on in Washington. And I said, now — a

lot of times I'll say if it's a black kid – if a black kid steals a dollar, he'll get put in jail, and then of course, he gets out. Okay. He steals another dollar, then he goes to jail again. Then he steals the third dollar. So now they're saying "three strikes and you're out." So you go to jail for life. This man back east steals a million dollars. He had a party and wasted a million dollars, and what – well, I think he is going for twenty-six years. But our priorities are wrong.

DR: What do you think about in engineering, in particular. I wanted to ask you your opinion about SWE's new partnership, so to speak, with NSBE and –

LC: With the NSBE and the SHPE?

DR: – SHPE.

LC: Yeah.

DR: Do you think that that's a good advancement for reaching a larger audience, to have these three come together.

LC: I think so, I think so. It could be – well, for one things it gives all students a chance to commingle with other students, instead of the blacks having their thing over here, the Hispanics over there, and SWE over there. Of course, you've got women in both of these little groups. But then the SWE group, who may not have minorities in it, may not have contact with the women in the Hispanic [SHPE] and NSBE. So they all can get together, and they can still participate in their own groups. And I think the people can feel more comfortable sitting with someone of a different race.

DR: So you think it's a good thing.

LC: Yes, yes, yes. The day before yesterday I went to the Afro-American seminar. They had one with Hispanics and one with the Asians, and I went to the one with Afro-American. And I was supposed to have gone someplace else, and I said, no, I think I need to go in there. So I went in. And they raised their — they had questions and things. So before it was over, I identified myself.

And a lot of people were glad that I had done that — but to let them know that I — some of them, they're still trying to get in the workforce, and they're still having problems — name problems. Companies are complaining because their name sounds African, and so they won't get a return invitation because the name is an African name.

So I just identified myself. I said, "I've worked for these many years, and I've been retired these many years." (laughs) And some of them came up to me and they thanked me for doing that. So I kind of felt I'm a role model to them because I've already gone through all these loops. But they're still having trouble getting the jobs and staying there. But I was glad they had those sessions.

Now, somebody else mentioned they should have a session with the Afro-Americans and the Hispanics, because sometimes they have the same problems.

DR: Sure. Maybe that's something for future conferences that they could work on.

LC: Uh-huh. And it's amazing, there — now, they had the one with the Asians. The Asians have their problems, but their

problems are totally different than the problems with the Hispanics and the Afro-Americans, because Asians are assumed to be smart. African-Americans and Hispanics are assumed to be lazy. You know, that's the way things... (laughs) So the problems in each ethnic group that may or may not be the same. There are times when they have the same problems, and they could commingle. And when they don't, but...

DR: This kind of relates to it – I wanted to make sure to ask you about your assignment, when you worked at Caltrans, to the Civil Rights Branch.

LC: I was only in the Civil Rights Branch after it was formed. I purposely went – I pretty much made my own path at Caltrans. I was in Design B the longest. That's what I really liked. But then in order to get promotions, you know, you have to do things. So when the Civil Rights Section was formed, I chose to go over there, because they still needed an engineer. And one of the things – the goals of the Civil Rights Unit was to – now, this was after the court injunction on the Century Freeway. A lot–

DR: In the '60s at some point, or '70s?

LC: '70s.

DR: Because you were saying the NAACP got involved.

LC: Right, because the freeway was going through the Watts area. And by rights, that was the best thing that could have happened to the Watts area is to put the freeway there, because then they gave you a means to get out of the area faster.

So they used to have talks around. And where was I going? Oh, the Civil Rights... And so one of the goals of the – the final results of the consent decree was that we would hire minorities in the construction of the freeway, especially since you're through a minority neighborhood, you must have minorities.

So they needed someone to calculate goals in order to hire minorities. You can't just have a contract and say, "I'm going to hire fifty percent minorities," if you don't know what's out there, what the availability is. And so the court decree said they must – CFAAC, Century Freeway Affirmative Action Committee was formed. The federal government had a member on the board, and different people were on this board. And then Caltrans was supposed to develop the minority participation goals; CFAAC concurred or not concurred.

Now, this is something we had never done before. We let contracts back in those –you design a freeway. This is going to cost this much, it's going in this location, and y'all bid. Okay? But now we're saying, "This is where we're going to build. This is how much it's going to cost. This is how long it's going to take. But we want a certain percentage of the jobs going to minorities."

The first contract was the Wilco Dump Truck Contract. And I was asked to set the goals. Of course, anybody on the outside, they can say, "Well, make it 100 percent minorities" – you know, something like that. And so it was my job to set the

goals. Now, nobody gave me a guideline for setting goals. (gasps)

DR: And you were in charge of the whole thing?

LC: Of this contract. This was a contract just to excavate the materials. It was a waste dump site, so there was going to be a lot of hazardous waste down there. Now, CFAAC, this organization that was supposed to watch Caltrans, you know, they can say, "Okay, let's put ninety percent minorities." Most of the work was going to be truck hauling, hauling dirt.

So CFAAC is the watchdog, so they can say what they want. It's up to Caltrans to prove that that's not right. So it was up to me to calculate about how much of the contract could go to minorities. And I had never done that before, and nobody else had ever done that before. And so then I'm trying to figure out...

Oh, in the meantime, we had developed a roster of minorities who could do different types of work. We had truck haulers, electricians — for the different disciplines, we had identified them — CFAAC — that was one of the things — to tabulate that. So since this contract was mostly truck hauling, then I think I set a goal — or we set a goal of sixty-some-odd percent. And of course, you know, that's sixty percent of a contract going to minorities, that's outlandish. But then when it's just truck hauling, you can do that. That's all -

DR: So you set the goal.

LC: So we set the goal, and CFAAC concurred, and everybody concurred. So that was the first one. And then, of course, as

the jobs got more intricate then the goals went down because of the availability, you may not have people available to do that type of work. But truck hauling was no big deal. You dig the dirt and dump it in the truck and tell them where to take it.

So that was interesting, trying to set goals. And so here I am, I'm given this job to set minority goals. Ha! That was really something. In fact, it got really stressful sometimes, because the jobs were coming out of the design section — we had three design sections — but no, it was just one design section working on Century Freeway. But the design — set up the contract, and maybe they're building a bridge or something. But they give you the quantities of the different items of work — everything was bid — you know, you have so much concrete, so much aggregate, so much dirt, so much whatever. And then you have the total cost of the contract.

So what I was doing was to try to calculate how much was — okay, and then you needed to know how many minorities could actually do the types of works that are available. But most of it boiled down to dirt hauling. If there's a lot of dirt hauling on a job, you know you can have — but it's not going to be the predominance of the job — except for the Wilco Dump. And so then you develop the goals based on... And of course, we did finally get some that could be paving, asphalt paving, and small things. But that was quite a job. (laughs)

DR: Well, I just have a few more questions for you. This might be — you know, it's kind of a huge question, but what

would you consider, then, to be your most important contribution to the engineering field?

LC: Acting as a role model has been one. Oh, my most important contribution, that's a good question. I think acting as a role model. I enjoyed that. Because a lot of times — especially, oh, after I passed the license, you know. This was in — I forgot what year I passed the license.

DR: This was your Professional Engineering—

LC: Right, right. Okay, after I went back to school, I finally passed the EIT. And then once I passed the EIT, then it's just a matter of filing for the license. And so I filed for the license, and took the license, I passed it the first time. And then of course, everybody — you know, a lot of folks don't pass it the first time, and I passed it the first time.

And of course, Caltrans did another press release. The way the press release read, it said I was the first black woman to be licensed in Civil Engineering in Caltrans. But we think I was the first one in the state, but we don't know that for a fact. I tried to call them to find out, and they said they couldn't tell. But I forgot where I was going with that. Oh, my most important — so, yeah, I think that was...

And see, actually, I was a role model for the guys, too, because you know, if I can do it the first time and pass, this is — she's a black sister, you know — I mean, she's a sister, so to speak. So I think being a role model was one of the things I enjoyed being.

So even with this little presentation the other day, a couple women came up to me and thanked me for saying something. And I tell them, "I've been retired since '91. So I didn't just come off the workforce, I was around for a long – before half these folks were born." (laughter) Isn't that a shame? That's terrible.

But actually, I enjoyed my work. I really enjoyed working – even the fights. I used to fight. I mean, we'd have some serious fights. But I guess I just don't take no for an answer. If you don't give me the right answer, I'll go to somebody higher than you. I have no problems doing that, if I want to get something done.

DR: Sure. Well, looking back, is there anything that you wish you could have done differently?

LC: It's kind of hard to say. Not really. You mean, by going into engineering or not going into engineering, or – oh, no, I just–

DR: Or even trying to balance your career with your personal life, and how that all came about?

LC: Oh, yeah. Oh, yeah, I like to sing, too. In fact, I used to sing at weddings. And I've always been a singer. So that was another side job. I guess I've had a lot of side jobs. (laughs)

But engineering, I really enjoyed working with the guys that I worked with. There have only been two guys that – I remember one, I can't think of the other one – who I didn't get

along with. And for some reason, I don't know why he didn't get along with me, because I had no problems getting along with...

But basically, I got along with everybody, the guys. I would not try to shame anybody. If you don't know something, and I do, I will try to help you without shaming you. I always try to make sure when I got a new supervisor, because you know, over the years you're going to change supervisors — I was an assistant by this time. I always made sure — oh, when anybody came to my squad — we called them "squads" at the time — and they wanted to know the answer to something, if I didn't — they wouldn't necessarily ask me, but they may ask somebody in the squad. And if nobody knows the answer, I would find the answer. I refuse to have somebody come and ask a question and not get an answer. I will find an answer. And that's just me.

Whenever I got new supervisors, I would always make sure that they — you know, a lot of times — I can remember one time they put a woman in charge of us over in the Civil Rights Section. She was being relocated from another state agent, so she wasn't that involved with Caltrans. I made sure she knew what she had to know — because the guys were talking about her. You know, they really didn't want her to come, but she was sent there.

But even when the guys came, when we got a new supervisor, I would make sure he knew what he had to know. If anybody came to my squad and asked a question, if I didn't know the answer, I would find the answer. I don't believe in telling people, "I don't know," and that's it. That's no such answer. (laughs)

But there are a lot of people that will not – if they don't know the answer, they're just, "I don't know," and that's the end of it. That's just not me. Huh-uh.

DR: I wanted to ask you, too: What advice would you have for women today considering engineering careers, having gone through a full career yourself?

LC: Well, I think for one thing you have to respect yourself, and respect others. Don't try to shame anybody. I don't care who it is. You can know all the information in the world, don't make somebody else feel bad about it – about the fact that they don't know. There's a way you can teach somebody something without making them feel ashamed. And I think that's why the guys liked to talk to me.

Anytime the guys didn't know the answer to a lot of things, they'd come to me, because they knew I was going to find an answer. If I didn't know the answer – see, that was the other thing, I made sure I knew the answer to most of the questions that everybody wanted to ask. I hate to – well, if you're supposed to know the answer to something, and if I come and ask you, it hurts me if you don't know the answer. (laughs) So I just feel that I need to know. I guess that's why I buy so many books.

But I have seen guys – people who come to the squad, and they'll ask for something. And sometimes the person who they ask may not – they don't know, or they won't – and they won't look it up. If I don't know the answer, I will look it up. So

I refuse to say, “I don’t know the answer to that,” and that’s the end of it.

DR: Well, is there any further experiences you’d like to share?

LC: Further experiences...

DR: Anything we haven’t discussed already?

LC: (laughs) Well, I sew, I knit, I crochet. Hmm, it’s kind of hard to think. And I sing in the choir. We mentioned my cancer, didn’t I?

DR: Briefly. Do you want to talk more about that?

LC: Yes, yes. I had breast cancer back in ‘97. And I had my breasts removed. They took out twelve lymph nodes. And I’ve been passing this story while I was here. So when I was diagnosed, you know – well, later – I have an ear problem so periodically I have to go to the ENT [Ear, Nose, and Throuat] doctor. So I was in talking to her, and I told her I had cancer. And she said, “Do you know one in eight women has cancer?” And I thought, well, I’m the member of a church that has 1,200 people. I don’t know a soul who has cancer. And she’s telling me one in eight people has cancer. And I don’t know a soul. Most people do not like to admit they have cancer. I think it’s a shame that we’re so in the dark about cancer.

I did go to the support groups that Kaiser had set up. But it’s not like cancer is syphilis, something that you get from associating with somebody else. It’s something that you have no control over, and yet nobody likes to talk about it. I look at the obituary section of the LA Times. Almost every day somebody

— two or three people have died from cancer. And yet, here in America, we're not talking about it on a personal level.

They'll have these sessions like this is Breast Cancer Awareness Month in October. In fact, when I was at home convalescing, when the choir members would call, I would tell them I had cancer. Nobody would tell anybody else that I had cancer. So every time I'd talk to somebody, I'd say, "You know I had cancer." "No!"

DR: So they thought it was sort of like your secret or something.

LC: Yeah! And so I'd tell everybody, "I had cancer." It's not contagious, and it's something that we all need to be concerned about. My next-door neighbor died of cancer. In the last couple weeks, a man that was in a group that I'm involved with, he died from cancer. It's all around, and yet nobody wants to talk about it. And I think the more we talk about it the more chances we have of finding it out before it gets to the place where it's going to kill you. But if you don't talk about it…

I went for a colonoscopy in May. They did a mammogram, and they found something. Then I had to go for another mammogram. And then I went for the needle biopsy, and I've got to go back again this month.

But you've got to talk about it. If you don't talk about it, for sure you die. It's not something that's going to go away. It will not go away. But if you don't talk about it, you're going to die. So I think we need to talk about it more

so people don't die from cancer. I mean, you can die, but don't help yourself to die. (laughs) So that's kind of one of my bandwagons now. Between the education system and the cancer subject, those are kind of my...

DR: Thanks for sharing that.

LC: Yeah, thanks. I guess I've talked too much.

DR: Well, thank you very much.

LC: Okay. And thank you for asking me. I don't know if I given you anything worthwhile.

DR: Definitely. That's why we have you here.

END