PROFILES OF SWE PIONEERS

ORAL HISTORY PROJECT

Yvonne Young Clark and Irene Sharpe Interview

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Yvonne Young Clark and Irene Sharpe

Yvonne Clark was the first woman at Howard University to complete a bachelor's degree in mechanical engineering, graduating in 1951. She became a licensed professional engineer and was the first woman to receive a master's degree in engineering management from Vanderbilt University. Clark began her career working at Frankford Arsenal-Gage Laboratories and at RCA. She became the first female faculty member in the College of Engineering and Technology at Tennessee State University and has taught at TSU for over 50 years, where she has served twice as department chair and eventually became an associate professor. Clark joined the Society of Women Engineers in 1952, has served on its Executive Committee, was elected to its College of Fellows in 1984 and received its Distinguished Engineering Educator Award in 1998.

Irene Sharpe studied engineering at Howard University and earned her degree in 1963. She spent the first 14 years of her career designing power distribution and control systems for the U.S. Bureau of Reclamation, the Bureau of Land Management, and the National Park Service. Sharpe changed her career focus in 1977, working on automotive electrical systems at Ford Motor Company and General Motors Corporation. She joined United Technologies in 1988 and remained there as a principle engineer until her retirement in 1999. A Fellow of the Society of Women Engineers, Sharpe became a member in 1962, has been an officer for several sections, served on the national Executive Committee, and chaired the 1982 national convention.

In their 2001 Profiles of SWE Pioneers Oral History Project interview, Clark and Sharpe discuss how they became interested in engineering; their experiences in college and in the workplace; overcoming racial and gender discrimination; and the challenges of work/life integration.

- July 2016

INTERVIEW OF YVONNE CLARK AND IRENE SHARPE

LAUREN KATA: It's Friday, June 29th, and we're here to conduct an interview with Yvonne Clark, otherwise known as "Y-Y," and Irene Sharpe, long-time SWE members. They're going to talk about their engineering experiences and experiences working with SWE. Do you want to start, Yvonne? Introduce yourself, your current title.

YVONNE CLARK: Oh. Yvonne Y. Clark, P.E., Associate Professor, Tennessee State University, Mechanical Engineering Department.

LK: Irene?

IRENE SHARPE: Irene Sharpe, retired principal engineer from United Technologies Automotive.

LK: Yvonne, where are you from originally?

YC: A native of Houston, Texas. Reared in Louisville, Kentucky, educated on the east coast at Howard University in Washington, D.C., went further north and had some good opportunities, job opportunities. And I worked with Frankford Arsenal Lab. And I started there in March, got my degree in December. For three months I refused to unpack my trunk. I just knew a job was coming.

LK: And what year was this?

YC: '51. I finished in '51, so March of '52 is when I first started really working as an engineer. And then there was, oh the job at Frankford Arsenal Lab, in Philadelphia. At

that time, the government just -- to get a raise you had to have a chair, a seat, a place to go. Now it's automatic, once you put in -- you got the right credentials -- and you put in your six months to a year. You don't have to wait for a seat to get a raise.

And my seat, at that point, depended on two men getting a loan to open up their own business. So therefore, I started looking for another job, because I didn't know if they would get their loan. Therefore, I, you know, wasn't getting my raise, et cetera. So my life didn't depend on what other people did, but what I did.

So I went out and interviewed and got an interview with RCA -- Harrison -- in Camden, New Jersey. And the interview was very unique. The man asked me a question about who would I choose to be president, Eisenhower or Truman. And at that point I didn't know industry was Republican, so I said Truman. The man asked me that question, then he asked me why did I choose Truman. And I made the remark, Well, the president of the United States is Commander in Chief. He gives orders. Eisenhower has been trained to take orders because he's a West Point man and Truman is a civilian. Therefore, I would choose Truman because he would be able to give orders since he's not trained to take orders.

LK: Interesting.

YC: And my interview ended. And I went on back the next day back to the Lab, Frankford Arsenal. And in the meantime, I told mom what had happened. Mom said, You did what? I said, I

chose Truman over Eisenhower and told the man why. Well, Mom, she said, Well, you can forget that. Didn't you know industry was Republican? I said, The man asked me why, I gave him my answer, Mom. And if he doesn't like it, well that's all right. I was truthful. I'm an engineer, I propose to be truthful and protect the public. And mom said, Okay.

So then I went on back to work and I got a telegram within two weeks. When can you start working? I called Mom. I said, Mom, how much time should I give Frankford Arsenal Lab. She said, two weeks. Thank-you. I told the guy, I'll see you in two weeks. I gave the man my two weeks notice.

LK: And you started working for RCA?

YC: Mm-hmm. Went on their training program. They had a bunch of students coming in at that time. I had only been out of -- let's see, I finished in December and October, that's when I started with RCA. I gave the [Frankford] Lab six months.

LK: Is that the only time in your career that your personal opinion might not have been the same as, quote/unquote, industry's opinion?

YC: Yeah. I don't how to answer that question, because if I have enough information and you ask me where I stand, I'll give you my opinion.

LK: Okay.

YC: And that's gotten me this far and I'm still walking upright in a man's world. Yeah.

LK: I'm going to move to Irene—what your background is, where you're from and your engineering education.

IS: Gee, let's see. I was born and raised in a rural area of Campbell County, Virginia. I went to college at Howard University, same school that Yvonne went to. Of course I was a bit behind her. I started there in '59. She was already gone. Graduated with an electrical engineering degree in 1963. I was the third electrical degree for a woman coming out of that school, even though it was about a hundred years old by then.

I had a lot of discouragement from almost everybody I came in contact with, including my high school principal, other women in the dorm, professors, chemistry teachers. Everybody was telling me what I couldn't do. And of course, that was my motivation. You tell me I can't do it, I will show you I can or I'll die trying. It's going to be one or the other. And I'm still alive, so I guess, you know, that motivation has always been with me and is still with me. Anytime I was challenged that I couldn't do something, that was my incentive to do it.

I was Tau Beta Pi. They said all three of the women in electrical engineering were Tau Beta Pi, so I was keeping up the trend. Of course at that time, women couldn't be in Tau Beta Pi, so they gave us a little badge called the woman's badge. Then in the 70's, they decided women could be in Tau Beta Pi, so I was initiated right here at the Colorado School of Mines and got my bent. Then we started wearing our bents to SWE and Engineering Foundation conferences. A man attending one conference said, I can't get used to women with bents hanging around their neck. Well, anytime I knew I was going to an

engineering affair and anytime I knew men were going to be there, I wore mine on (gestures to chest area). Got to show it.

My incentive for going into engineering was that—(from the time I was very small, there were nine siblings)—dad had always told all of us that any of us who wanted to could go to college. So we knew from Day One if we wanted to go to college, we could go. He was going to see to it that we went.

He, by the way, was a self-employed farmer, so I grew up on a farm. And I hated the work we had to do on the farm. The main crop was tobacco. That's where he got most of his money. And I was afraid of the worms that ate the tobacco. And because I was afraid of them, he would call me crazy. And I didn't know what he meant at the time, but it just irked me that he would call me crazy, because I was really afraid of the worms. He didn't want the worms to eat the tobacco, so we were supposed to pick them off and break the heads off and thrown them away to keep them from eating the tobacco. I was just deathly afraid of worms.

So anyway, that was my incentive to get off the farm, was to go to college. And until I was in ninth grade I wanted to be a math teacher. My sister is about -- one of my sisters was -- I think she was eight years older than I am -- she was the first to finish high school and the first to go to college. And she was a math teacher, graduated from college when she was nineteen.

My fifth grade teacher said, Oh, you could to college. You don't have to work hard. You just follow in your sister's footsteps. She's paved the way for you.

And I didn't want to follow in my sister's footsteps. So I had to find something to do that was going to get me away from having to go to the Virginia State -- College at that time -- it was called. And they didn't teach engineering at Virginia State College. But of course, when I was in the ninth grade was when I decided I didn't want to be a math teacher. But I didn't know what I wanted to be. I just knew I wanted to go to college.

And when I was in twelfth grade, I enjoyed physics, especially the magnetism and electricity part of it. That was my thing. And I had a physics teacher who wanted to be an engineer and didn't have the money to go, so he encouraged me.

And a professor from Howard came to my school for career day, Professor Rich, I'll never forget him.

YC: Oh yeah.

IS: And he told us about engineering. And my light bulb went on. That's for me, engineering, it's going to be it.

I went home. I told my mother I was going to go to Howard and I was going to take engineering. And of course, it broke her heart. She wanted me to be a math teacher, just like my sister. And she looked at my sister and she said, What do you think of her going off to Washington D.C. to be an engineer? And my sister said, I wish I had done something other than be a math teacher. That was it. I told her I was going to Howard. I didn't care if she didn't send me any money. I was going to

find my own way. I was going to do my thing, you know. I'm actually like seventeen years old, talking to my parents.

And I got a couple of little scholarships but nothing that was going to get me through. And of course back then you could take a whole twenty-two hours for $107. So, I'm looking at, I'm going to get $107 from somewhere. And one of the students from my area of Virginia told me that because they didn't want black students at the University of Virginia, they would pay us the difference between going to Virginia State College and Howard.

And so for seven of the eight semesters that I went to Howard, I got a check from the state of Virginia -- too naive to know what it was for, but I was taking it. You know, you send them your grades every semester and they sent you another check. And so I think I went to school for eight semesters for less than $3,000. So I got out of school with no bills. And I think after I had been out a while, I realized they paid me to stay out of the University of Virginia.

But Jill -- I can't pronounce her last name -- but [Jill] Tietjen said that she was in the first class of women to go to the University of Virginia. Not only when I applied there was I the wrong color, I was also the wrong gender. Naïve! Didn't know all of this! They never even bothered to answer my application. And this Professor Rich had told us if we went to engineering school, be sure to go to one that was accredited, E.C.P.D., at that time.

YC: That's right.

IS: I got out my little, [hand gestures], E.C.P.D. book, all this research in the library, and found out that Southern and Howard were the only two that were accredited that would accept black students. I had no idea where Southern was, so I picked Howard. Then I got into which engineering -- at that time they only had three. They had mechanical, electrical, and civil. I knew I didn't want to do civil. And I thought mechanical was auto mechanics. I had no idea what they were. So what was left was electrical, so I picked electrical.

And I had grown up and gone to a one-room school. No electricity, no running water, outdoor toilets. First four years, one-room school, four grades, in one classroom, one teacher. And so people say it was ironic that I would want to be an electrical engineer, starting out like that. And of course, the house I lived in, even though it was built in 1946 and wired for electricity, it didn't have electricity until probably I was in about fourth or fifth grade.

Because even though my father owned his farm, all of the farms around him were owned by white people. And there was one guy -- he appeared to be as congenial as anybody you wanted to ever meet -- he'd come and talk to my dad. And they would share farm equipment. They would do all these things. He wouldn't let him plant a pole on his property to get electricity to our house. And Rural Electric -- I don't know whether it was REA -- I don't remember what the "A" stood for.

YC: Association, most likely.

LK: Authority?

IS: Authority. But it was the REA that was wiring up all across the rural areas of the country. And they talked to him. They promised him they would plant the pole in the right-of-way for the highway, they would plant the poles on the edge of the woods, they'd plant the pole anywhere. He still wouldn't let them plant the pole. So they threatened to take the electricity that was going to his house away from him if he didn't allow them to plant the pole. And that's how we got electricity.

Then once we had electricity, of course, then we could have running water because we could put a pump in the well. And that's when the house got indoor plumbing and all of that. So I was probably eleven or twelve years old, I guess, before we had electricity. And we didn't get the plumbing in until I was probably ready for high school.

Of course, we had five-year high schools there. You started high school in eighth grade and went straight through to twelfth grade. And lucky for me, I went to a high school, even though it was segregated, that had what you might call "majors". If you were going to college, you took college prep. If you were going to be a secretary, you would take business. If you were going to be a farmer you'd take agriculture. And they had like five, pretty much, majors. And if you were going to college, you took all the English, all the math, all the science that was available. So whenever you got ready to go, you were fully prepared for any college you wanted to go to. And so, in that sense, I felt like I was really prepared to go to Howard.

Once I got there, the discouragement started all over again. There were professors that didn't believe women belonged there. There were people that thought you went there looking for husbands. I did get one, so it worked. I didn't go there looking for one, but I got one while I was there.

I had a chemistry teacher I never will forget, Professor Morton Taylor. I hope he's not still alive and hears this, but it must have been about 300 people in his lectures for chemistry, almost all of them engineering students. But the ones who were majoring in chemistry would be there, too. The first semester I took chemistry from him, I worked so hard because I had not been taught that you had to memorize chemistry. I thought you could figure it out like you do physics and math and all. And I was trying so hard to figure it out rather than memorize it. And I got an eighty as my average.

And he said that only "X" number of people could have A's, only "X" number could have F's, and so everybody else had to get C's. He gave me a C with my eighty and he gave the guy with thirty a C. So the next semester I did zero and still got a C. I learned no chemistry. I didn't want to learn any chemistry. But he was one of -- and when I complained to him about getting an eighty, he said, A "C", that's pretty good for a woman engineer. And so that was one of the discouragements. I never wanted to take another class from him.

Just the opposite when I went into physics. Three hundred people in physics, only three women, the other two were math majors. I'm in there setting the curves and the professor is

using me to shame the guys into trying to do better. He wants to know where Miss White is, and I raised my hand not knowing that's what he's going to do. And he tells about the grade that Miss White got and how all of these men sitting here are being shown up by Miss White. And of course, the guys decided they want to study with me and that kind of stuff.

That's kind of how I ended up with a husband, because he would study with me and claim he was flunking out of school. And I kind of felt sorry for him and was trying to help him and all this stuff. Come to find out, he's trying to hit on me and I'm too dumb to know it.

But I knew him from when I was a freshman. I didn't start dating him until I was probably halfway through my junior year, maybe even my senior year -- I don't remember now. Even though I knew him, I really didn't date him as somebody that I would even think of marrying at the time.

From Howard, I had one summer job with the Bureau of Ships in Washington, D.C., and that was my first paid job. When I worked with my dad I certainly didn't get paid, except he helped me with my tuition. I had wanted to go work for Baltimore Gas and Electric, but I got the government job offer first. And then when Baltimore Gas and Electric came, they talked to my counselor instead of me, and he told them I already had a job. Broke my heart because I wanted to go to Baltimore Gas and Electric. He kind of turned down my job at Baltimore Gas and Electric for me before I knew it.

So I worked for the Bureau of Ships. That was an interesting summer. I got to go to the White House and meet John F. Kennedy. I had no idea when he asked us how many of us were going to work for the government -- that none of us raised our hands. Like, you know, it was kind of an embarrassing question. And then he asked us -- because he expected all of us to say we were going to work for the government. It was just an interesting summer.

Then I still had another year of college back at Howard to finish after that. When I left, actually, I guess had several job offers. And I would talk to my professors about the job offers, and they advised me to take the government job. And that's how I ended up at the Bureau of Reclamation out here in Denver. So I'm back to where I started, when I come to this convention.

I worked for the Bureau of Reclamation from June of '63 until, I think it was probably around March or April of -- maybe even May of '75. But I did take a break, and I lived in France for two years. And the two years I was in France, I taught GI's. They had been denied re-enlistment if they didn't have a G.E.D. equivalent diplomas or degrees or whatever they call it, G.E.D -- General Education Diploma, I guess, is what it stands for.

LK: What year was this?

IS: '65 to '67. I went there in January of '65, came back in February of '67. And I did that for most of the two years that I was over there. That was very gratifying, teaching adult

education. I didn't have a single student who didn't want to learn.

And that was the difference in my ninth-grade experience with teaching and saying, I don't want to teach. The students were there because they had to be there. Most of them weren't interested in learning.

But those guys who couldn't re-enlist unless they got GED's wanted to learn because they wanted to re-enlist. Some of them had seventeen years already; they only needed three more. You can't re-enlist, you can't get twenty. But that was enlightening, I think I could teach adult education. I just couldn't teach teenagers, especially thirteen-year-old teenagers.

LK: Yvonne, how did you get involved in engineering education?

YC: Well, when I was very small, I liked to take things apart and fix things around the house that needed repair. And Mom and Dad found out that I was a little bit mechanically inclined when I would take the -- we had a stoker furnace, which is coal, and the stoker automatically feeds the furnace. And sometimes, due to quality control, it would be too big. And I would have to go down and get a large clunker, or whatever you might want to call it, a piece of coke, out of the feeder so we wouldn't get too cold that night. And I enjoyed doing that immensely.

But I wanted an erector set for Christmas and I got one. And I had my dolls, but as long as I could play with my hands

and build things and make things work I was very happy. And I had my sports, but -- lifeguard for the summer, Red Cross and those types of things. But Irene, I have a spin-off for her. I was the first female to finish mechanical engineering in the history of Howard University. And at that time, I was the only female in the school. So me and the boys, the boys and me. And Dean Downing, was he still there when you got there?

IS: Mm-hmm.

YC: Every time Dean Downing would see me in a group of people he'd have me stand. That's my first mechanical engineer. I said, Thank-you, Dean.

But your spin-offs helped me out. I couldn't take drawing in high school because I was a female. They've changed that rule now. And I wanted to finish in June and not in January, so I didn't take any -- what do they call it -- library study periods -- I bought me a class in there.

So I didn't like chemistry. No, I didn't. I took a year of chemistry. I didn't like science, zoology. So the only science I had was general science in the ninth grade. Then I had chemistry a year, physics a year, and aeronautics a year.

{You didn't like worms? I didn't want nothing crawling. Until today, all of my fishing equipment lures -- I got a lure of worms, a lure of crickets, you name it. As long as they got it artificial, mother has it.}

But when I went to RCA they had a training program. And you alternated, every three months they'd send you to another group. And I really enjoyed the one that we had on drafting

designer. When I got to Howard -- now, I didn't have any drawing skills at all. I had to learn from scratch. Now, I was about the only one who had not had any drawing. So that was a little bit disturbing but I caught on real quick and had no problems.

Then I went to another class, manufacturing, that's when you made things. And I still have the project that I made. But it was a vice that I made. And we had to make sand molds and things like this. And the teacher would call off things for the students to do, and I'd end up in the sand area. So I'm in there shoveling sand for the molds and my teacher took me aside and said, Miss Young, What are you doing? I said, I'm shoveling sand. You can't do that! I'm not taking big shovels. I'm just -- I'm good at that. So they picked me off of that sand bog, but…

Then when we -- I don't like my hands dirty. So we were getting ready to go into the machine area where I could see all these dirty hands. I said, don't we have something that I can put on my hands so that they won't get dirty? Looked at me. So he called a technician over. Technician said, What's the problem? I said, There ought to be something that I can keep my hands clean.

So he says, We've got some salve that you can put on your hands and get them dirty, but then you can take ivory soap and they come clean again. Had no problems with that class the rest of that semester. I mean, you know, it's okay to be an

engineer, but there's nothing wrong with wanting clean hands and clean fingernails. So we got through that all right.

But when the guys wanted to become boys, I always was told, You want some water, Young – or Kentucky — which was my nickname. So that meant drop everything you were doing and go get some water because somebody getting ready to be a sailor. And there were only two of us in that class -- Hull and myself -- who were not vets. Everybody else in the school was a veteran. And interesting, but they were still students to me, so I didn't worry about it.

LK: Were you in the RCA training program before you were at Howard or after you were at Howard?

YC: I backed up on you. After Howard, after the degree, and Frankford Arsenal, then I went to RCA. I said I had a spin-off. She reminded me when she said the third electrical, I was the first mechanical at Howard.

LK: That's right.

YC: That was a spin-off on that one. But RCA, I was still the only female -- other than the secretary. I was on the girls' softball team. And the guys were getting ready to go to a baseball game over in New York and they were taking, -- you know, they had a bus, they were going to charter a bus. Well, I was going to go. And I didn't see nothing wrong with it. So one of the engineering students -- not students, employees -- said, Don't think you want to go on this bus, because you can't -- you're stuck. You can't go and not hear the kids -- the fellows, employees when they decide to let their beer and

whatever else go -- so I was told not to go on that bus. So I didn't. I believe guys in a certain way, when they say, Don't do it, you listen to them, because they really are protecting your ears. And I learned that when you can't get out of a situation, you get -- but...

But we had -- there was another guy there who was also not a vet, and single. And we had different supervisors. And we would talk to each other. He would say, I want to go get off this weekend. Can you get off? I said, Mm-hmm. The idea was if I went, and he went, the bosses wouldn't get upset. But if he went, they would say, Well, what you want to go off for?

And we were going different directions. I might be going to a party up in Boston, and he was going somewhere, in a different direction. But we were both single and everybody else was married and the -- you know how supervisors are -- She's still working, why you going off? I mean, you know, so we found out how to handle the two supervisors. But we both are mechanical and we work with electrical engineers and things of this order.

My first job was with the Pentagon. It was the summer before I got my degree, and I was working. And in those days they would tell you, You have put in two months. You have to go home. Because if you were dependent and you made too much money, then your parents lost you as dependants. So they were watching how long I worked and they would tell me, You got another week, and then you're going to have to quit, because then you won't be your father's or mom's – your parents, they'll

lose you as dependents. So in those days everything -- they were looking after everything, the government was.

So I was working the hardship cases, typing, and yet I had one more quarter -- I was on the quarter system -- to work and get my B.S.M.E. degree, and here I am working at the Pentagon typing, and I'm trying to answer hardship cases for the guys in the Army. But it's amazing how things paralleled. I never thought about it. You know, it's just one of those things.

LK: How many women when you were there?

YC: Where?

LK: Pentagon.

YC: I don't know, just because you're in an area -- and I might have been the only person typing in that area.

LK: The nature of your work was isolated?

YC: Mm-hmm. Mm-hmm. Isolated, yeah. Hardship cases. That's when I said "I do" to a good friend of mine in Nashville, Tennessee. My regular boyfriend at Howard -- I had two or three. Two or three boyfriends. I was a cheerleader. And my roommate as a freshman was a cheerleader at home, and I never even thought about cheerleading. We just cheered in the stands. I made the squad and she didn't. And I was on the cheering squad for four years. There was football and basketball. I also did basketball, intramural. I did exhibits for fencing for the athletic department. I also was on the rifle team. I was lifeguard for the faculty. I'm trying to think. I think that's about -- everybody who didn't know me thought I was in physical

Ed, because that was my outlet. I went to the show on Sunday, matinee, after church, chapel.

But the boyfriend I thought I was going to marry -- we both finished college and I was over there going to Stevens in New Jersey. And he asked me one year, Why are you still going to school? And I -- you never quit learning, in my opinion. And he questioned me on going to school. I wasn't taking but one course a semester. And then I knew he wasn't for me. It's amazing how, --what you -- what happens in your life will turn you around. We stayed good friends, kept in touch with him. But I knew, I won't be marrying you, because I don't intend to quit my going to school.

Then I had some friends who ran with my cousins in Nashville. And that's when I went down to Nashville one summer, and this particular man wasn't there during the two weeks that I normally stayed in Nashville. I think I -- my cousin tells me -- I stayed in town two days. He wasn't there, so I went on back Louisville.

When he got back home, he found out that I had been there. Then my first cousin said, Hmm, she only stayed in town two days and you weren't even here. So, hmm. So that was the beginning of a relationship that was really good friends. He ran with two of my first cousins and another fellow who was good in physics. He worked for a physicist, well-known. So I left industry and said, I do. I left industry in December and said "I do" in December and started for Nashville in January. And the Ford

Glass Plant at that time was building their glass plant in Nashville, Tennessee.

LK: Ford?

YC: Ford Glass Plant. And I had just -- I wasn't -- I was still working in industry, I hadn't left yet. And they had no use for me. That was what the man said, we have no use for you. Okay.

LK: What year was this?

YC: '51.

LK: '51.

YC: No, no, no, no. '55.

LK: Mid '50s?

YC: '55, mm-hmm.

ANNE PERUSEK: And what were you taking at Stevens? Were you taking classes at Stevens?

YC: Economics, just a course. Just a course. Just wanted to stay with it. And -- oh! One of my football friends, who was an E.E. [electrical engineer], Minton, said, how'd you get in? I said, what you mean, how did I get in? He said, Is your average that good? I said, Well, it must have been all right. I'm not on probation. I got in. I got a degree just like you have from the same school. So that shut him up. But he was football and E.E., and you know, men have an idea that we don't have it. And Stevens in Hoboken is -- I guess it's a pretty good school. I was just wanting to take a course.

So but anyway, then I started working. I got a job in Nashville, Tennessee, at Tennessee State. I got a phone call

January the 1st from my dean. It was in the middle of the week, like on Wednesday. He said, Mrs. Clark, are you coming today? And I said, Dean Dutton, today? This is January the 1st. He said, We're working. I said, Dean Dutton, I'm too close to industry. I had planned to watch my football games today. Will tomorrow at 8:30 be all right, or do you really want me to come there today? Well, we're working, Mrs. Clark, but how about my office tomorrow morning at 8:30? I said, Thank-you sir. Click. I started off wrong. I was too close to industry. We got football games on TV. Mmmm. So that's where I am now, still teaching.

AP: When did you get your master's degree?

YC: In '72 at Vanderbilt. Kellogg Foundation came through and said, do you have anybody who wants to go for another degree? I jumped right on it. And that's when I went. I took a leave of absence for two years, engineering management at Vanderbilt. And I was their first female also in engineering management, which was in the umbrella for mechanical engineering.

ISABELLE FRENCH: How many children do you have Yvonne?

YC: Two children. Boy and a girl. They're about ten years apart. And I wanted three in that time, so I was thankful to get the two, boy and a girl. One's a "when" and one's a "why" child. First one, was: When do you want me to do it, Mom? And the second one, a girl, wanted to know, Why I got to do it, Mom? Both the same mom and same father, but, you know, when and why. Both of them doing all right. Finished college.

IF: You have a boy, is it?

IS: I have one of each.

IF: One of each, too.

IS: A boy and a girl, two years apart.

LK: Any of your children in engineering?

YC: Nope.

IS: My son is about as close to it as you can get. He has an industrial management with a manufacturing minor from Purdue. And of course, the first thing they put him in was engineering.

YC: My son finished University of Louisville, which I couldn't go. They'd pay my tuition. And I asked, Mom, make them pay room and board, 'cause I was at home. But she said, I don't rock the boat.

AP: How did you handle -- did you work when your kids were little?

IS: I did. I went back when my son was thirteen weeks old and continued to work until about two weeks before my daughter was born and then I went back when she was, I think, thirteen weeks also. And I quit a couple of times, thinking that I was going to stay home with them. But neither one of them wanted me around. I think the longest I ever stayed home with them was about six months. I'd have live-in babysitters to come or day babysitters to come. And when I came home, she would give the babysitter her purse, and when the babysitter came, she gave me my purse. So we weren't supposed to be at the house at the same time. But I couldn't handle taking them out. I'd have somebody come in.

YC: Well, mine was a little bit different. They called me back to work. My son was born in October, and the quarter started in December. They asked me to come back. I was not ready to go back, but I went on.

And had a girlfriend who was a sorority sister and her baby -- the babies were born a week apart. And her husband worked in industry, in technology. So I carried my baby to her. And I breast-fed so I take my lunch hour and go to her house. She wasn't but about maybe five blocks from school. And then I picked him up in the evening after work. And he was on self demand, whenever he want to eat I fed him. But he had to have lunch at noon and she knew that, so she wouldn't give him any orange juice or water so he wouldn't be full.

And then my mom said, You're taking my grandchild out for a whole year. And she finally put her foot down and said, Have somebody come in. And I did. And she [mom] didn't even help me take care of them. So I had somebody come in. And I kept her for a long time. She knew that when -- and particularly in the summer when I went home -- I had the best of two worlds. I worked at home for nine months, and went back to industry during the summer.

And my husband and my son had man-to-boy talks. And the lady would come in. When Eleanor got in, he'd go to work and she would leave when he came home from work. So I did the same thing.

And one weekend, I think it was about my third or fourth summer at Huntsville -- which is another story altogether,

because they came and found me in ’62, because I had been trying to get in since ‘57, ‘58 – because I was “down south”--

Anyway, one weekend I decided to stay home because I would [usually] leave the house at 4:00 on Monday morning, go to where I was staying. And on Friday, I’d come back to Nashville when I got off work at 4:30. So this particular Monday I stayed home.

And when Eleanor came in, I said, I got some good and bad news for you. She said, What’s wrong Mrs. Clark? I said, Which one you want first, the good news or the bad news? She said, I don’t care. I said, Okay, the good news is: I’m giving you two weeks pay, the bad news is: Give me my key. You’ve been late too many times and making my husband late going for work. So that’s how I got rid of her. And then I went on to work. We drove to Huntsville, Alabama, after I took the keys. But it was fair. I gave her two weeks’ salary. And I had told her -- I had asked her, Now don’t -- I had warned her: You’re coming in late. My husband’s late going to work. He didn’t have a class during the summer, he still had time to make, so -- and I did that.

LK: In the last few minutes that we have -- can you talk a little bit about your involvement in SWE--

YC: I am the integration for SWE. I have dealt with men all my life and all of my education, and I heard about SWE when I went to Philadelphia. Don’t ask me how I heard, but I heard. I joined SWE in ‘52. And my reason was, ah-ha, a bunch of women with the same idea, and background! And I’ve enjoyed it ever since. But that was my reason. Now I was number eight that

year. (SWE has a way of putting the number of the year that your application is processed)

IF: I remember processing your admissions.

YC: I'll be darned. And I'm just now finding out. Yes.

LK: What about you, Irene?

IS: I joined while I was still a student.

LK: Okay.

IS: The school did not have a student section, but Baltimore/Washington Section knew about me when they had their meetings. Margaret Fox or -- gosh, I'm looking right at her now – she's still here -- president Naomi McAfee (phonetic) -- one of two of them would come and get me and bring me back to the dorm. So I remember them from when I was a student and of course, they remember me. And I've been with SWE ever since '62.

I've been in the Denver section, I've been a MAL [Member-at-Large], and I've been in the Detroit section, served in many of the offices, chair of the national convention and all, been on the Executive Board a couple of times. I just enjoy being around the people in the industry.

LK: SWE, is that the only professional society that you're members of, or --

YC: Oh, no.

IS: No.

LK: I figured not.

IS: I'm on the Membership Grading Committee right now, of the Society of Automotive Engineers -- even though I'm retired,

I still process difficult applications, not just ordinary ones -- the staff in headquarters takes care of those -- and a couple of social organizations. In fact, I learned from one of her [Yvonne Clark's] students that she and I belong to the same sorority. I didn't know it until one of her students told me.

AP: What sorority?

IS: Delta Sigma Theta

YC: Delta Sigma Theta. I'm Alpha chapter at Howard University.

IS: So am I.

YC: Small world.

IS: Yeah, sure is.

YC: Yeah, but the organizations -- I joined one just because a student wanted to go to the meetings. And, that's ASHRAE. I said, I'll get you there, but I need to join so that you go -- it's good to want to go, but you need -- you just don't go as an outsider, you have somebody take you. So that was my last one I joined was ASHRAE.

But when I got my P.E. license in '60, they mailed it to me. They invited me to join in '64. That's when I found out that they were…They had the guys in for lunch and gave them to them, but they mailed me mine. But they honored me this year, the first Friday in March, because Engineers Week is always the week that has Washington's birthday in it. And they changed locations for the banquet. And I went. And they surprised me with a Distinguished Service Award.

LK: Oh, nice.

YC: Yeah. I tell you, it still surprises people, what they did. And I got through it all right. But ASME, ASEE -- no, I know I'm wrong -- ASME, Mechanical Engineering Society. ASEE is Engineering Education.

LK: Right.

YC: TSPE is Tennessee Society of Professional Engineers, SWE. National Education Association because I am a teacher and I -- T.E.A., I joined them. And I let the Society of Engineering Management go away. I just turned it loose, and AAUW. But I'm on the Educational -- I'm chair of Education, ASME-- I'm not the advisor, but I'm chair at the Nashville Chapter. And the same thing with ASHRAE. And then AEE is Association for Energy Engineers, because energy is what we need to look at right now. I just do that for the students' sake and for my own. I like to just be involved, and it also helps the students.

AP: What about awards? What kind of awards did you both receive?

YC: SWE gave me, in '98, the Distinguished Engineering Educator. I got that award in Houston, Texas. And then different little areas inside the university -- when I say "little areas", I got the Service Award for the College of Engineering and Technology, and I got the Outstanding Professor Award. And I'm trying to think what else. Doctor Buzbi (phonetic) in the Senate of Excellence Information Systems, they honored me with an Outstanding Professional Service Award. And the sorority in Nashville gave me an award in community service.

LK: Irene?

IS: So long ago I can't remember what they were. I have some business contributions I had done when I worked with the Bureau of Reclamation. I still have a certificate, but I can't remember what it was. It had to do with career guidance for high school students. I've done that quite a few times.

I've worked with Junior Achievement. I've done nine years of Girls + Math + Science = Choices. And of course, they give you little tokens, and I guess you could call those awards in that sense. I have a few certificates that if I took them out and hung them up, I guess I could paper my walls. But I can't tell you what all of them were for. Usually, they give you a certificate of appreciation for this, that and the other.

I can't think of any -- plaques hanging on the wall generally are from SWE. I was president. They gave me a plaque and the Gold Award from SWE-Detroit. Of course, when I was chair of a convention I got the big plaque with the gavel, and those kinds of awards.

LK: Are you a --

YC: You Life Member?

IS: A Life Member, a Fellow.

YC: We're both Life Members and Fellows. Boy Scout counselor in Nashville. I have the Long Life Award because I've been involved with Boy Scouts. That's because of my son. And then the Explorer Scouts, and then things of this order. But I was very active, and they didn't miss a beat.

LK: So mentoring is important.

IS: Oh, absolutely.

YC: Yeah, yeah, yeah.

IS: In fact, I think I'm mentoring students here tonight. I got a stack of e-mails to do. And I have my own business cards that I make up on my computer -- so my e-mail -- they got that. They say I'm going to hear from them. I'm sure I will. But even with students that were co-ops when I was still working, I have a relationship going with them. And with e-mail, it's easy for them to e-mail me, and I can e-mail them, e-mail a reply right away. And I'm amazed at some of the things they write and ask.

LK: Like what?

IS: Well, they have to make business decisions or career decisions. Or somebody has said something to them at work that rubbed them the wrong way, and they need to let it go. And they'd rather tell me than to tell the guys at work. They want to know how their response -- was it appropriate. You know, I said this to such-and-such a person. And it's amazing that it goes back and forth like that, because I feel like they value my opinion because they keep asking.

One of them was a co-op student that I supervised one summer while she was still going to the university. Another one was a friend of hers that, they were both going to the same university but they didn't meet until they were both co-oping at the company where I work. And another one was a graduate that I hired. And we go to lunch every summer, still. And so while

I'm here, they're setting up which Saturday we're going to go to lunch.

But one of them has two kids. The other two are not married yet. One of them has both parents that are ill. One parent has Alzheimer's and the other one has just found out he's got cancer. And I just feel sorry for her with the burdens that she has with her new career. She's only been out of school, maybe, three years at the most, and she's trying to do all these things.

So I just feel like my experiences and being able to converse with them helps them. And I had a human resources person tell me that, You've become her mentor without even realizing that you're her mentor. Because she called me, And I got this job offer from such-and-such a place, and I don't know whether to take this one or the other one. I said, Well, what do you want to do? I make her decide. I wouldn't give her an answer. But I would prompt her with questions, and eventually she'd make her decision based on her answering the questions that I asked her.

And she really -- this one, her parents are from the Philippines. And she became quite Americanized herself. But her parents wanted her to be a nurse. And she went off to nursing school. And of course, she was at the university that taught engineering, too. And she felt real bad, she told me, about getting out of nursing after they had paid all these years of her going to school, and getting into engineering. So she came home and commuted while she was going to the engineering.

And she was a bright student. I mean, she'd just make her own way anywhere she went. But the burden of having the two ill parents now is just weighing on her mind. I'm still there for her when she wants to talk.

[END OF TAPE 1]

[START TAPE 2--]

IS: My first SWE convention-- The 1968 SWE convention in Los Angeles. I only wanted to go to go to Disneyland because it had "Behind the Scenes at Disneyland" on one of the things on their packet that they sent out for people to come to the convention. And I had never been to Disneyland, so I wanted to go, and my company was sending me. I didn't tell them that's why I wanted to go. But I wrote a nice little thing about how there was an Executive Order from President Kennedy saying that he supported women and minorities, or whatever it was, the Executive Order. And I had the numbers of the Executive Order and all in my appeal to my company to send me. I was working for the government. That right there -- all I had to do was write a report when I came back. That was my first SWE convention.

YC: And I was there because I've been active in SWE really ever since I joined. Because I was a MAL and we only meet once a year at conventions, I would try to always get to conventions because that was my, quote, section meeting.

LK: Right, right. And how did you two meet?

YC: I think everybody knew me, because I was carrying my daughter. And she was born in August, and we're talking about the last week in June. But I had my doctor's approval. So, I mean, you know, everybody worked but me. And I had a ball. I didn't go on no rides, though. No rides.

IS: No rides.

YC: That's when we first met up. But in '58. Was it '58, or '57? '58, the convention met in Houston, Texas. I can see the girl, but I can't recall her name, the president. Was it Gerlin?

IF: Mickey Gerla.

YC: Mickey Gerla. And they had -- a committee had spoken with the Sheraton, wasn't it? The Sheraton Hotel? I'm not positive. We'll just leave that alone.

Anyway, they [SWE] told the hotel that they were integrated, and the hotel said, Oh, no problem. Well, I got everything I was supposed to have, reservations and everything, and I show up at the hotel. And I said, I'm here to attend the Women Engineers Convention, and here's my reservation for your hotel with guarantee. And the man reached for my [hand gesture] -- I said, no, no, this is mine, you find yours. And I found out that they wouldn't let me stay there. Now that was a good ruckus.

And somebody wanted to pull the convention out of the hotel. And I said, No, no, no, no, too much time has been [pause]-- it takes time to get a convention, national convention, moving smoothly. So I wouldn't let them pull it,

now, on my account. And we went on. And they sent me over to another hotel – they recommended a segregated hotel – black. And that's when I called my aunt. I said, I'm here for the women engineers convention, but I don't have a place to stay right now. She said, Okay, I'll come get you.

The convention and the hotel compromised. I was met at the front door every day to go to the convention, and I was let out at the front door every night. And I got picked up by my aunt and uncle.

But we had a ball. Anytime somebody wanted some cigarettes, they came and found me and we walked. Because as long as I had a person with me I could move around the hotel, but I had to be accompanied at all times, from the front door and back. So I'd been to the newsstand and coffee shop. We went everywhere that one week. We had a ball. And I did go to some of the meetings because I had to.

But it was interesting. And the SWE Executive Committee canceled Atlanta -- that was the next convention. They made a statement or whatever that they wouldn't go south anymore until the Civil Rights Bill was passed--And in '98, I went back to Houston and that's when I got a plaque.

IF: We did go to Atlanta later.

YC: Oh, we went everywhere, but we went back to Houston in '98. And we did go back south. Oh, yes. I just don't remember when. But the organization didn't go south until all the members were protected.

LK: And did you go back to that same hotel in Houston?

YC: I don't have a clue. We went back to Houston, a different hotel, though.

AP: You also got a plaque from there in Houston?

YC: Yes, they gave me a plaque wishing me a good time this time. Yeah, yeah. But if you roll with the punches and you don't wear other people's problems, you can make it with a smile. But when you start worrying about other people and their problems, it's just -- it hurts you. And I try to keep the students out of trouble. And I don't let one student tell me I can't do something with another student. Everybody stands on his own two feet until I decide he did wrong. I don't let what you do to me affect anybody else. And it works. Yeah, it works. It works very well. [pause]

Oh! President Davis, when I first started working in Tennessee State -- once again, me and a secretary were the only people there -- I was the only lady engineer they had, naturally. And I think I was their first department head female in engineering also. I was the department head twice. Should have had my head examined. A total of seventeen years, I was department head.

And when I stepped down [from department head] I had close to, I guess, 200 students in my department. I really worked at it -- from no girls – to about twenty-five percent female now, as opposed to none when I got there. I worked at it. And at one point, we had a female in every department at one point.

LK: That's impressive.

YC: Yeah, yeah. Now we only have -- we still have a female in civil, we have a female in architectural engineering, and I'm in mechanical, and we had one in electrical engineering. We got about twenty-five percent female now in the school.

LK: Have either or both of you gone back to Howard's Engineering School?

IS: Oh yeah.

YC: Oh yeah. I go back -- I just left my fiftieth reunion this past year, but I had a ball.

IS: I have gone back for all the class reunions for every ten years and on the twenty-fifth one. And after twenty-five, they started having them every five years. So, I don't know how many times that would have been, but the last one was the thirty-fifth, I think -- or the thirty-fifth one is coming up in a couple of years. It would have to be thirty-five, because I worked thirty-seven years, so I've already been back to the thirty-fifth one.

And every time I went back, I went back to the engineering school. And this Professor Rich was the last of my professors to leave. I understand he's passed away now. But he must have worked until he was seventy or so. And he always remembered me, and I always remembered to go see him. And he'd tell all kinds of stories of things that went on. He was the secretary to the faculty for when they had meetings of the faculty. And he said all of the other professors always thought he knew something that he didn't know because he was the secretary. And so they would try to pick his brains about what was going to happen and

what was going to happen to, and all. And he lasted all those years without becoming a doctor. And last time I talked to him, he said he was the only professor in the whole school of engineering that didn't have a Ph.D. But he had been there so long I guess they just wouldn't throw him out for not having a Ph.D.

But he was a good professor. All of the students just loved him dearly. He took such an interest in your well being. As opposed to just, you know, the classroom, he looked out for you in your personal life, too, and gave you words of wisdom, stuff like that. So I always had to go back to see him.

If I go back now -- there was one young instructor at the time I was there that grew into being a dean. And whether or not he's still there now I don't know, but I'll find out when we go back.

YC: What was his last name? Was it Walker?

IS: Walker, yeah.

YC: I don't think Walker's in there.

IS: Well, then nobody's there now that was there when I was there. He was the last one.

YC: I had a spin-off and I lost it. Senior moment. Senior moment.[pause]

LK: As you go back -- and this is probably an obvious question -- does it feel like the department has changed much?

YC: Oh, that's what I was going to tell you. Back in, quote, those days, a lot of your professors were industrial people who had left industry and were teaching.

LK: Okay.

YC: Everybody didn't have PhD's. And that's the same thing at Tennessee State.

LK: Okay.

YC: They had industrial experience and they were teaching us really useful stuff.

LK: Hands-on.

YC: They took the practical stuff and made you understand it. And Dr. Davis wanted to know who brought this rabble-rouser in, talking about me, female engineer, on his campus.

But back at Howard, I had a professor at Howard, and he said, Whatever you do, when you get where you're going and drop anchor, give back to the community. And that's how I stayed involved, I give back. Once I got to Tennessee State and Nashville, I've been involved.

In the Chamber of Commerce, when I was able to join it, I joined it, so I got grand fathered in. Everybody now goes in under the umbrella of their employer. But I went in as an individual member. So I'm still an individual member. When you do things right, it just stays right, you know? I don't know. It's just nice.

LK: How many different companies did you work for?

IS: I was about to get into that. I haven't said much about where I worked. I worked for the Bureau of Reclamation first, after coming out of college. Of course, I talked about the Bureau of Ships earlier. And I think I talked about working in France.

LK: Yes.

IS: So when I came back to the Bureau of Reclamation, I continued to work for them until '75. And then that was one of those times when I thought I was going to stay home with the kids. And I left and ended up working for the Bureau of Land Management, probably within two months of the time I left. Worked on the Environmental Impact Statement for the Alaska Natural Gas Pipeline to get gas from up in Alaska down to the lower Forty-eight. That was just a six-month project in which I did a lot of traveling back and forth to Washington, D.C., and working on that.

After that, I went to Rocky Mountain Arsenal. They riffed me after about two months. I started in February, and they had a RIF [Reduction in Force] in April, and I was right in the middle of it. But lucky for me, they gave us time to go look for another job. And I found one with the National Park Service immediately. I mean, work over there one day and over at the Park Service the next day. So I'm still within the Department of the Interior.

And that was one of the most interesting jobs I ever had. They had two electrical engineers assigned to seventy national parks located in eleven states. And I was on a plane every Monday, and I got to come home every Friday. And in the meantime, you knew which gate to go to, what they were going to serve on the plane, and that kind of stuff. I did that from April until December.

I had one kid that was in first grade and one kid that was in third grade. Being away from home that long was not going to work. And a recruiter came looking for engineers for the automotive industry. And apparently they had a big thing on to hire minorities. So they hired both my husband and me to work at Ford Motor Company.

LK: What year was this?

IS: This was toward the end of '77. We actually went to Ford, started working about a week before they had the big Christmas break, and then we came back here and packed up during the Christmas break. So we were on both payrolls for about two weeks.

I stayed at Ford not quite four years. They had us in the same building on the same floor. And my husband thought it was the greatest thing since sliced bread. He always wanted to know, What you doing? And his little fingers, like Kilroy over the banker's rail, were looking at what I was doing. Or somebody in the building telling him, Your wife is buying a car, your wife is doing this. And he was so into it he would call and ask -- just drove me batty.

And I decided, right then and there, it was not going to work. So, the kids being as small as they were at the time, I said, if somebody's not going to be working it's going to be me, not him. So I quit. I quit under the guise of going back to grad school. And I did go to grad school from leaving Ford. But I left Ford in September, and I started working in an architecture and engineering firm in October, so, like thirty

days being there. I was taking ten credit hours at night, working a forty, fifty-hour week.

LK: Where were you taking classes?

IS: At the University of Michigan. And I was so worried about these classes. And I got two A's and two B's. And the guys are teasing me, What did you think you were going to get? What did you want?

And I worked for the architecture and engineering firm only six months because they started losing business. They did a lot of work for the automotive industry, and that was like '81, and there was a big downturn in the automotive industry. And I left there and went to work for a construction management firm.

They were doing renovations of some public housing in the Detroit area, and I became the second -- no, third -- in command. There was the president, the vice-president and then me, only seven people in the whole company. They did some things that brought the FBI in investigating them. They thought I was going to be the one to spill the beans, so they laid me off on the spot, no notice whatsoever. Couldn't ask any questions because I was no longer on the payroll. And of course, the guys I had been working with on the construction site told the FBI where I lived. And they were out at my house within three days, and I spilled my guts.

Then I was unemployed for almost a year, and I was having a ball. I was getting my unemployment check and I was traveling, I was doing all these things I never had time to do. And then it dawned on me, it's almost time for these checks to run out.

I better go get a job. And I almost panicked then because I thought it would be easy to get a job, and it wasn't so easy.

And one day at a SWE meeting, I said, You know what, I don't want to work on cars. I want to work on buildings. And Lydia Lazurenko told me somebody to call at GM, because they had their own internal architecture and engineering firm. I went down and I talked with Tony Brown. And he was really impressed, and he knew all about what I wanted to do. But he thought I had a better chance for promotions if I stayed with the cars rather than come with the architecture and engineering part of it.

So he sent me over to interview with the car part of it. And they had just started the systems engineering group, and they were just staffing up, and I was going to be in on the ground floor. It was just down my alley. I really loved wiring, because that's what I had done at Ford. And they talk amongst themselves and they decide who's going to hire you and then the others kind of back off, and they let the one who really wants you do the negotiating. So I went to work for GM in November.

In the meantime, I had this big thing with the IRS that they were going to hire me after October. But they didn't call, so I was panicking, thinking they weren't going to call. Two weeks after I started at GM, then the IRS calls, and they have a job for me. All the jobs come in, and you know, I have one. When you don't have one, you can't get one.

And I worked with GM until I was three-months short of being vested. I had four years and nine months. And there was

a six-month period in which I got five different supervisors. And each one was worse than the previous one. And I thought, I don't need this. And it was a small group.

And I have always said what I think. I don't care whether it's the boss or who I'm talking to. And the guys used to egg me on to do things that they were afraid to do. And then they would listen through the wall, and they would go get the rest of the group, Irene's in there bouncing them off of the wall again. And then they would cheer me when I come out. And this guy was just so bad. I mean, I just could not envision staying with him another three months.

So I call up the pension people and I say, If I stay with GM another three months, what do I get as a pension? They said, $90. I said, forget it. I'm going now. Used GM's fax machine to fax my resume to the headhunter. He faxed me back -- no, he called me. He wanted to know if wiring assemblies were the same as wiring harnesses. And I told him, Yes. He had me three interviews within two days. And I got a job offer, and I gave GM my notice that I was leaving in two weeks.

And then they let me interview all over General Motors, anywhere I wanted to go, if I would just stay, I could have a job. And I mean, they sent me to so many -- there was one job I really would have taken had I not already gotten another one. But I came to the conclusion that this supervisor wanted me to quit on somebody else's watch, and I said, No, I'm leaving because of you. I'm quitting on your watch. It's going on your

record that you lost a female minority engineer. That was my thing to get back to him.

And I went to work for United Technologies Automotive. And I tell a lot of people I lost a lot of money when I left GM, because the matching funds in my 401K that had not matured stayed with GM. But I made it all back in overtime in the first eighteen months I was at United Technologies. I became a supervisor there, I became a principal engineer.

And I enjoyed my work. That was the thing about it. The systems engineering thing at GM didn't fly because they reorganized the whole company and came up with the CPC. And we used to call them cheap plastic cars, which really – oh, the little Chevrolet, Pontiac --

YC: Who had the last one?

LK: Saturn?

IS: No. This was before Saturn's time.

YC: What was the --

IF: Cadillac?

IS: CPC. And then BOC was Buick, Oldsmobile and Cadillac.

YC: It wouldn't be Camaro?

IS: CPC. They only had five divisions. So now I can't remember what they were even calling them -- big old cars, that was Buick, Oldsmobile, and Cadillac. That was big old cars. And CPC was cheap plastic cars.

Anyway, they wanted to do their own thing. They didn't want the systems group to do it for them, and so that's why it didn't materialize. And then they -- you know how you take

round pegs and put them in square holes and squares and put them in round holes? They tried to put me in, oh, testing. They wanted me to generate tests in a lab that would simulate driving a car 100,000 miles through ice and snow and sand and all this kind of stuff. I had no interest in it whatsoever, no interest in it. But still, that's what I was going to do. And that's, I guess, one of the reasons why I didn't care about what I said to the supervisor, because I wasn't going to stay no matter what. So they tried to make a test engineer out of me, and it just didn't work.

But when I got to United Technologies, I initially was designing wiring, engine compartment wiring systems for the Ranger and Explorer. And I was supervising a bunch of techs and some guys who were not engineers that had been trying to do it for years and couldn't get it right. So I had to get it right. And then once I got it right, they decided, well, then make sure I be the supervisor.

And I got my own little car group and I was doing Lincoln Town Car for about -- from '96 until the '98 models came out. And I had my own group of engineers and technicians and what-have-you. And then, again, I couldn't move to another job because they were going to get some new contract and they wanted me to supervise that. And every year the contract moved out another year and moved out another year and moved out another year. And finally got to the point I was doing absolutely nothing. I learned so much about the Internet, because I had my

own little computer and I could sit there and play with it all day long.

They finally decided they weren't going to get this contract that they wanted me to have, so they put me on tracking parts for Chrysler. And I had to work with this guy who nobody liked that worked at United Technologies. And he tried to intimidate me. Well, he didn't know that Irene doesn't get intimidated by anybody. And it was so much fun working with him because he tried to scare me and do things like that, and it didn't work.

And he was going to call these people -- and I even did this when I was at Ford when people would tell me, I'm going to call your boss, I'm going to call -- hey, call Henry Ford. What do I care? Do you want his number? And so the same thing happened when this guy was trying to threaten me. Call George David back up at Hartford – and we were in Dearborn -- he's like the CEO of United Technologies. You want me to give you his number?

And so I'd tell my manager what had happened. She said, I think you're the right person. We needed somebody that would stand up to him. We back you all the way. I mean, he had called them on their cell phones while they were at lunch. And they come in, What happened? And everybody would stand around cheering me while I'm giving this guy what for. And they said, Somebody needs to tell him where to get off. I'm glad it was you that did it.

I'm too old to do anything I don't want to do. I told my doctor that one time and he said, Yeah, I'm the same way. I tell my wife, that includes putting up with her family. But I was to the point then where, you know, I was old enough to retire. I felt that I was financially able to retire. And it was just like that, I don't do anything I don't want to do.

IF: Is Manny retired too?

IS: Oh, he retired before I did. He retired in January. I lasted until May.

LK: So he's retired from Ford? Did he work for Ford, or--

IS: He worked for Ford for the whole time. I mean, the same old desk, he dragged it around with him for twenty-one years. Not me. I couldn't stay in the same place that long. Even when I worked for the Bureau of Reclamation here, I changed jobs every three months -- I mean, three years, rather, not months.

And once I learned to do something, then I could do it with my eyes closed. It was never a challenge to keep doing that. I always wanted to do something different. And I learned that about myself. I knew that I can't do the same thing in and out forever.

But with the cars it was different because every model year the wiring on the car changes. It might look the same to you, but it's different because they put new bells and whistles on. And we used to compare it to plumbing. Most people that didn't do wiring couldn't understand wiring, but they could understand plumbing. So people would tell you, I want to use the wiring on

this car that was used on the one last year. I say, you going to have the same features on it? Oh, no! Well, how am I going to use the same wiring? But people that don't do wiring couldn't understand that. And they would change the switches or they would change the lights in the roof liner. But they want the same wiring. Well, the same wiring won't work.

And I never will forget a guy who -- they kept moving the horn on the first cars I worked on. One day it would be over here, the next day it would be over there, and then it would be down under here. And I'd have to keep trying to get the wire to it so it would work. So he asked me, well, can't you just cut the wire that's going to the headlight and hook it to the horn? I said, yeah, if you want the horn to blow every time you turn your lights on. Or your lights would come on only when you blow your horn. And he looked at me like I was crazy. And, I mean, you know, I wasn't being facetious to him

But then I started realizing that not everybody understands wiring the same way as those of us that work with wire. But then we could kind of talk to them in layman's terms, and some people would eventually realize they didn't understand and admit it. Others, I can't tell you how -- I don't -- I really was at a loss for words when this happened.

But lucky for me, there was a gal that worked for Ford that I had worked with at GM who took it up to explain to this guy. But he was like, you know, the head honcho for a car that was going to be built in Europe. And they started out in America. And they would send the suppliers in for these meetings. And he

was sitting there trying to figure out how he was going to build this car real cheap. And this was going to be a new spin-off from the Escort.

And he sat there in that meeting and insisted that he wanted the wiring on this car to be exactly the wiring that's on the Escort today. And this car is not going to be the same physical size, it's not going to have the same features, but he wanted that same wiring on that. I kept telling him he couldn't have it. And I didn't know how to tell this big head of Europe that, you know, he was blowing smoke.

But this gal finally took it upon herself to kind of whisper in his ear and tell him some things, and he got off of it. But I was just trying to tell him, You can't do that. I said, I can't even put '98 wiring on the '99 car, because you guys always change the features. How am I going to take an Escort from 1998 and put it on 2003 whatever you're going to call your new car? It's just fascinating. I enjoyed doing the wiring but it was frustrating trying to explain it to somebody who didn't understand it.

And that's what I did with the students who came who were interviewing for the job. And the first thing I would tell them is, If you can't stand frustration, keep looking for a job. You don't want this one. Your work is never done. And people couldn't believe that. They thought you designed the wiring one time and that you're finished. The car that's built in October does not have the same wiring on it that the one that's built in November, because somewhere in between October and November,

somebody's going to change something that's going to affect the wiring. And unless you understand that and can put up with all those changes, you would be one frustrated person.

But I understood it and I enjoyed doing it and I continued to do it. That was the most -- I was happiest when I was doing that, because you saw the results almost immediately. If we designed cars, you would be out driving along, and there goes one that has your parts on it. And that to me was the most exciting part of my engineer career, was to be out there on the road and have those cars go whizzing by me, or I would see them or drive behind them, and...

LK: There are times when you don't see your finished product of a work, like something that's tangible like your car--

IS: Right, right. But seeing it was to me very exciting. My husband and I worked on the same vehicle when we first went to Ford, the Escort, which replaced the Pinto and the Bobcat. And he was designing rear lights. That's how specialized working in the automotive industry can become, he only designed rear lights. And I was doing only engine compartment wiring. But, you know, the battery and the generator and all of that's up front. So I said, if you don't treat me right, your lights will not work because I won't send you any power. You got to be nice to me or your lights won't work because you won't get any power for them.

YC: Well, talking about Ford, when I was at Vanderbilt, we had an advisory committee to help us find jobs for the one year

that you needed to get data for your thesis. And I couldn't leave town because my daughter was two or three years old. And so I had made arrangements with Tennessee State to go back into another area to do a different kind of work, you know, data, anything, except I couldn't go back to my own engineering area. And Mr. Charlie Mullins was supervisor of the physical plant, engineering part, engineering plant, out there at Ford, the company that had no use for me in '55. And this is now '71. (I was called Vonnie in that group). And the guys wanted me to have an engineering job like they had, because some of them went back to their jobs. You had to work that year between two semesters to get your data for your thesis for your master's.

So Charlie Mullins said to me, Vonnie, you want to work at Ford? I said, Mr. Mullins, they don't have any use for me. Vonnie, you want to work at Ford? I said, Yes. He said, Show up. And I went out there, and he introduced me around. And the manager of Ford Glass Plant in Nashville called me into his office. If you have any problems, please come and tell me. Thank-you. And then Mr. Mullins introduced me to his two secretaries, and then to my supervisor.

So when we got to my supervisor, I said, Are you going to talk about me having troubles and things? He said, yes. Let me get my cigarettes. So I went back. We closed the door. Since this is my supervisor, I'm going to be on the same level, quote, unquote. I told him, I said, I tell you one thing. If there's a problem, please let me know because I'm not looking for one;

therefore, I won't recognize it. So I now am telling you, if I've got a problem, you tell me, and I'll handle it. Okay.

So he showed me my desk and everything. So I'm at my desk and security comes over. I said, Yes? They said, We got a problem. I said, Yes? We need you to fill out an application. I'm on the job now. Mr. Mullins just brought me into his group. I said, Okay, let me have it and I filled it in.

And I was their first female that they hired, period, white or black. And I ate with the secretaries at first, and then after about four or five weeks, one of the guys came over and said, You want to eat with us? I said, Ain't no problem. But in the meantime, I would be there with -- the guys ate first, and then the secretaries ate. We had a little cafeteria. And a million times I would be in there -- engineer, summer job, research area, graduate school -- and the secretaries would say, Oh, there's nobody here right now. Call back in about an hour. And there I sat. So I've heard that a million times. And I'm an engineer. And I'd just eat with them until the men invited me to eat with them.

But now they've got co-ops. They hired two of my girls, M.E.'s, out there. And we've come a long ways in Nashville. And one girl has gone on up to headquarters. Where is Ford's headquarters?

LK: Dearborn.

YC: Dearborn. She's up there now. Dow is her last name. And it's just nice. You know, a lot of times the students will call me and say, Mrs. Clark? I say, Okay, what's the problem?

I don't have a problem. Oh, you called me to tell me some good news. What's the good news? I got my P.E., I mean, both of us, there's electricity on the wire, because the kid has gotten his professional license. And he knew I would understand that, where his mom and dad wouldn't.

The reason I got my license is I didn't want a Ph.D. And I had told my dean many times, if I need a Ph.D., let me know now, because I'll tell you goodbye. I'll go back into industry. But I got my P.E. for the students' sake. Because I didn't want -- you have to want a Ph.D., and I didn't want it. I really didn't want the master's when my daddy tried to get me to get a masters and I had my B.S. I said, No Daddy. I went to school two years after I got my diploma because you and Mom didn't think I was old enough to go to college. I want to work. I want a car. I want, I want, I want. So, I will get -- I'll promise you, Daddy, I'll get the Master's. And I did get it before he died. That's all I wanted to do.

DIANNE DETURRIS: So what advice are you giving the students?

YC: What you mean? In what respect?

DD: To get ahead in their career. What advice do you give them when they're students for how to deal with the world when they get out of school?

YC: Okay. First year you really get them into an internship as well as a co-op, either one. But they need to go in there while they're still in school. I had one guy -- more than one -- but one guy right now did not like an 8:00 to 5:00.

His daddy was a physician. I said, Why don't you go into pre-med? Just try it, since you know what you don't want. And then he ate it up. Got him a residency. He works now from six a.m. to midnight. But he did not like 8:00 to 5:00.

An internship or a co-op also tells you what you don't want. That's very important, what you don't want. And if you like it, then you eat it up. But I do that.

And I also, I see a student can handle -- I had a girl who was taking fifteen and sixteen hours. But when she only took twelve or thirteen she'd get A's and B's. As soon as she took more than, I'll say, maybe four courses, she'd drop down to a B and C. So I told her, I said, You need to have good grades. So ask your mom and dad if they will let you just take thirteen or fourteen hours, or three or four classes, whatever. But don't go higher than fifteen. And mom and dad allowed her to do that.

I had some more students who'd come in and Mom and Dad wanted them to be a physicist, and they wanted to be engineers. So I'd tell the kid, hey, Mom and Dad want to pay for it. Give them what they want. Physicist is a good opportunity. I tell you, [my] hubby is a physicist. He's gone wrong, but he's a physicist. And when you get to your degree and you've satisfied Mom and Dad, you can work and go get your engineering degree. But give Mom and Dad -- because you do need a degree.

Dry your eyes now, and just grow up and be thankful that somebody sent you to college, and things of this order. But I try and keep their feet on the ground. And somebody will say something wrong to them, and I'll be explaining -- if I hear it,

I'll explain to them what they meant. As long as a kid can understand, they can accept it. Kid come in mad. You gave me an F. No, you earned an F. Now sit down, please. I'll get my book and tell you where your F came from. And I'd just explain to them, Well, you had four quizzes and your best quiz was seventy. That means everything under that was below that. And your mid-term, you did a seventy-five. And then on the other quizzes you came down below sixty. And when you average everything in, you got a fifty-nine Daddy, sixty is D. And we had different -- we got six areas to get you a grade. I can't raise it, because there are six areas and each area had its own percentages. So fifty-nine, you know what you did. Let's build on that. Take the course next semester. I don't care who you take. Take the course next semester, something will stay with you. Build on it and go for an A.

All of my freshman, I tell them, you have an A in this course. I make them repeat it, let them hear it. They have to tell me, I have an A in this course. Then I explain to them what I mean. I haven't given you a quiz yet, so you got an A in the class until I give you a quiz. And then your quiz performance takes you toward the "F"lag and I will help you keep an "A"pple.

LK: What do you think about up and coming generations of engineering students?

YC: I have to teach them respect first, respect each other. They're going to respect me. I've got a problem with a hat in my class. And I tell them up front, It's not your

problem, it's my problem. But I'm your teacher and I don't like hats in my classes. So when I come into my classroom, I'll say, Good morning. If somebody has a hat, and they forget it, I don't get upset. Are you in my class today? Oops. And they take it off. And sometimes they'll see me in the hallway that -- we're outside the classroom, okay -- and they'll see me and they'll take their hat off. I'll say, Thank-you.

But you stroke them, but you also walk up one side and down the other, and remind them that you're a teacher. I'm still teaching. That gives it -- puts them -- it doesn't -- what's the word I want to use -- it's not so strong, they can accept it when I correct them. And I will correct you, and then I'll say, I'm teaching. And they can take it then. It's a mindset. But they'll tell you I'm hard. And somebody will say, Oh, she's easy. And somebody will say, Oh, she's fair. And so I've had all of the terms, adjectives that you can get.

But Ford Motor Company was very nice. They put me in charge of a glass rebuild, $9 million rebuild, float number one. It was two years behind schedule. Now, engineers, we are hoarders. And I knew that if I could find the engineer that was on the job two years ago that everything that they ordered was in their bottom drawer. They had every piece that had been ordered. I found it with the engineer. No, you keep it. I just want to know where it is. You can keep holding onto it.

And the guys on third shift would move my stuff, my blocks around, because you use blocks to rebuild things. I wouldn't get upset. Go get me somebody to drive a cart, and I'd go find

my blocks and relocate them in the factory or warehouse. And they finally decided, She's not going to complain. So they quit moving my blocks around.

And then one day -- oh -- I had to always go from the warehouse, which was about a block from the roof, back to the air conditioning area to the bathroom. Everything I did in that area was "men." So one day I didn't quite make it, so I went to one of the construction trailers and asked the secretary, May I use your bathroom, please? Sure, come on in.

And then one day, someone said, Where are your earrings? Oops. I forgot. Bring you a set and put them in your drawer. Because we can tell -- see I had on a hardhat, and I got on my Ford coat, I got on low-heeled shoes, I got on pants. And they can't tell who it is because my hair is underneath the hat. But they could just see my earrings. And they asked me to always wear my earrings out there, because they'd quit cussing when I was around. This is '71 now. They would quit cussing when I was around. I never have liked to hear those words. Shakespeare had some of the dirtiest literature written, but he wrote it right.

And so one day I was out there and I missed my coffee break. And one of the guys says, Where's your coffee, Vonnie? I said, I missed my break. Oh, over there, see those two things? Open them up. There's a coffee cup, the dime and there's a coffee. Go get your coffee over there. So then, I got my coffee now out there in the warehouse. I didn't have to run back to the air conditioning office to get it. I mean, if

you just go on and do your work, they'll come around and you can -- they'll let you. You become one of them and we'd rebuild and fire up on time.

And the only thing I lost is a wire that we used to raise the gate -- that's also the same size as wreckers, that they pick up cars with. Only thing I ever lost. Now, it's known that they say that construction workers are usually rehab criminals. They could have picked that lock anytime they wanted to and walked in there and gotten anything, but they respected me because I was a graduate student trying to get a degree and I was getting my data for my thesis. And they respected me for that. And I've always been thankful for that little bit, because those guys can turn them loose, make a sailor's ears burn. I have very good hearing, but I try not to hear, but sometimes it just comes on through.

And that was one year, and I went on back to school and wrote my thesis. And Dr. Goshman said, Clark, what you going to write on? I gave him my idea, thesis name. And I said, Dr. Goshman, how many pages do you want? Because I'd always heard that they always want a certain number. Now, Dr. Goshman, was an engineer, Ph.D., also an M.D., a psychiatrist. And he says, Clark, if you can do it in one page, I'll accept it. I thanked him.

I had no problem. I wrote and wrote and wrote. I surprised myself. But he took the -- you've heard, I want 100 pages. He said, If you can do it in one page, I'll take it. And that just cleared up my mind. And you know, he psyched me

into -- like that -- you got an A. Came right on through to me. And I think I may have had one mistake in that paper, my thesis. I think I got one. And I wondered, how in the devil did I miss that? But I think I found one after you all signed off and everything, you know, and I looked through stuff. I think I found one I didn't catch. But I was pleased with that thesis.

LK: You must have been in a lot of situations where you were the only woman around. Did that make you uncomfortable?

YC: Didn't bother me one bit, because I didn't need you to work. I had a job. At Frankford Arsenal -- I think that's the summer job -- this supervisor was expecting two people: an engineer and a secretary. I was on time at 8:30. He said, I need this. I said, where's the typewriter? I went over there and started typing like this, and then the secretary showed up about forty-five minutes late. Well, I was still typing by this time. He looked at me and at his secretary. He said, are you my engineer? I said, yes sir. Now, don't have a heart attack, I said, you just needed something typed. He was turning red in the face, and I was trying to keep him calm. Come on. It's okay, all right. But you're my engineer. But you needed something typed, okay? I had to calm him down. He was getting -- I mean, he -- I felt sorry for him, because he had assumed I was the secretary. And when the secretary showed up, she knew she wasn't the engineer. And that's when he found out that he's given the engineer something to type that he needed. I'm a team man. I had no problems with that. Doesn't bother me one bit. But it was -- those are the things that happened.

LK: Yeah. What about you, Irene?

IS: I was going to come back to do my field trips. My first field trip I did at the Bureau of Reclamation they sent the secretary with me. A woman couldn't travel alone. And it turned out, I found out later, that I was the first woman to ever travel for that organization.

LK: What year was this, this time frame?

IS: '63, '64 time frame. Initially, when I went into work, somebody from the personnel office told me that I couldn't go on a field assignment. We did the rotation thing where you worked thirteen weeks here and thirteen weeks there. And they specifically told the guys to take a field assignment and told them that the reason to take it was to get per diem to buy furniture for their houses. And he looked right at me and said, You can't do it because you're female.

And it turned out that one of the guys whose permanent job was in the field came into our headquarters office and sat at a desk just like mine doing the same thing as I was doing. And he was drawing per diem. And so I looked at that and said to my supervisor, If he can come from the field and work at a desk, why can't I go from the headquarters office to the field and work at a desk and get per diem like -- And he said, Who told you you couldn't go? And I told him, personnel. From that minute on, he went down and got all the paperwork changed and I ended up going on a field trip. And the same guy in personnel wants to know, What the hell are you going to do out in the

field? I said, I'm going to sit at a desk and do the same thing the guys out there do.

But while I was out there I did get sent to a switchyard, because we were doing designs for transmission lines and we had these substations around. And at that time women couldn't wear pants. And so I had to go to this place with this dress on. And of course, I knew I was going to be climbing ladders and stuff, so I put these little underwear that was like pants underneath. And knowing that these guys were all going to be out there looking and everything, I was all set for it.

But everywhere I went, this secretary was sent with me. We had to stay in a hotel and she had to stay in the same hotel. I went to the substation, she had to go the substation -- everywhere we went. And I came back to my headquarters office and was kind of sitting around with the women complaining about, why did this secretary have to go with me, kind of thing. And that's when the women told me, would you believe you're the first woman to ever travel? Said that one time when the chief engineer had to go overseas, he took his secretary with him to do his typing. But other than that, no woman had ever worked -- and this agency was seventy years old -- no woman had ever gone on a field trip. So I was kind of like asking the right questions, I guess. And because nobody had a good answer, they'd let me do things they had never let anybody else do.

But I was always asking questions. I mean, you know, I was like the "why?" child, you know. That's, I guess, what made me want to be an engineer, because I always wanted to know why, you

know. You can give me the what and the when, but you still got to tell me why.

And I have this little daughter now. She's a tiny little thing. And she's a sergeant at the sheriff's office down in Florida. But she called me one day and was telling me that she just couldn't do things because people tell her to do it; she has to know why. And she wasn't making a big splash with the new supervision, because the old supervision always wanted to tell her why. And when she understood, there was no problem, she'd do it. These guys, you're not supposed to ask questions, you're just supposed to do it. She said, mom, I think I got that from you. You probably did. You probably did.

But you learn a lot of things from people around you. I mean, you learn from young people, you learn from people your age, you learn from older people. And it's amazing the number of things I think children, just raising children, will teach you. We came up in the era where the women were supposed to keep a clean house, do everything for their husband, raise the kids, keep the kids fed, clothed, clothes washed, all of that. And somehow people thought, you know, they [women] were supposed to do all these things.

And I never will forget once -- and you had to do all this stuff on the weekends because you had to work Monday through Friday -- so I'm out here with the piles of clothes laying around in the laundry room, getting ready to throw them into the washing machine and washing and drying and carrying on, and this little boy said to my daughter, Your house is a mess! She said,

I know, we made it that way! I thought, she's so proud of this messy house, why am I worried about it, you know? Yeah.

From then on I just started watching my daughter, you know. She's happy with her messed-up house and she's the one bringing her friends -- and my friends never come because they're busy working. I look at that child sometimes and say, Gee, she taught me a lot about a lot of things. You just reach a point where you prioritize. You know, I think if I had started prioritizing much sooner, things would not have been as difficult as they were in the beginning.

And another thing that happened along the way: My husband, of course, you know, he and the kids would have their noses pressed up against the glass when I come in waiting to be fed. And I thought, all of you got two hands, why are you waiting for me?

So, I think around '81 we were really -- I mean I was really stressed out. This was just about the time I was quitting Ford, too. We did some marriage counseling, and what-have-you, and I was going to leave my husband. He didn't want me to go, but hey, I had all I could stand, I couldn't take any more.

Some of the things we talked about that I wanted him to do, he just thought were -- you know – so one of the counselors said that he had to stop coming home being the guest. You know, he'd come home, get into his easy chair and kick off his slippers and get the paper. And I'm out there working, working, working besides this second job when I got home. And it turned out we

set up this thing where he would shop and cook for seven days, and then I would shop and cook for seven days. And we've been doing that since '81. And when the kids got old enough to drive then they had to shop and cook. So we had this four-week rotation where -- I even made this schedule and put it on the refrigerator. So-and-so cooks this week, so-and-so washes the dishes this week, so-and-so does this, and the other person has the week off. And we went through that until both kids left and then when both kids were gone. Then we fell back to he shops and cooks one week, I shop and cook one week. So now we don't get the week off because I have to wash the dishes the week that he shops and cooks. It's worked wonderfully.

LK: Do you see yourself as pioneers?

YC: No. I wanted to do it and had the opportunity. Now, you might call me a pioneer, but I don't see myself as one. I am tired of being the first person doing something. Where's the rest of these people? 1986 I went to a school for, what, a couple of PDU's, professional development units. Only female. Well, we got some black Indians. Do you see what I'm saying? Where are -- why don't people want to learn? That's how I get in trouble. I want to learn. I go to -- when I get funded, I go to classes, things of this sort.

But talking about cooking, society says I'm supposed to cook. Hubby was a gourmet cook. I had to go buy the food so I could control the budget, because gourmet cooking was our budget busters. But my kids knew how to cook TV dinners. You ease off the aluminum foil, put some butter over the potatoes and put it

back over and throw it in the toaster oven. Both of them knew how to cook, how to put on things, because I wanted to see my football just like they did. Hey, Mom, hurry up, they're going to have the rerun!

LK: So it's about being creative.

IS: Oh yeah.

YC: Oh yeah.

IS: And you got to share. Oh yeah, those chores have to be shared. Otherwise, I mean, you become a nervous wreck. Can't do it all.

YC: So that's how we do it.

IS: And you have to learn how to prioritize. I just wish I had learned it earlier.

LK: Well, I guess the tape is out again.

YC: Yep, boy, oh boy.

LK: Thank-you so much for your life stories!

YC: I can see now why Wade wants to write a book on me. Two hours we've been here!

END OF VIDEOTAPE

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