B: Dr. Anderson, I am anxious to learn about you and your family and your background. Where and when were you born, I know in Tacoma, in 1912.

T: 1912 was the year I was born, in Tacoma.

B: What hospital were you born in, were you born in a hospital?

T: Tacoma General.

B: Can you tell me a little about your mom, dad, and brothers, sisters, where they originated?

T: My mother and dad were both born in Norway, immigrated to this country somewhere around the very early 1900's. My mother was about 22 when she came over with her sisters, two sisters. They landed in Minnesota, stayed for awhile, prior to coming out to the West Coast. My father came, he was about 19-years-old, pretty young when he came over. He came to Stanwood and in order to keep alive, he got a job sawing these big cedar logs into shingles, we call them shingle bolts. They are about this long and then they split them up and make shingles out of them. So he did that for awhile and it was a pretty tough life; so he came down to Tacoma and learned how to be a carpenter, so he got involved in building houses. He was a constructor.

B: Is that what he had done in Norway as well? Had he been in construction?

T: Well he was only a kid, you know. He did fishing and work at the farm.

B: About 19, he was just beginning his career.

T: Anyway, he was a pioneer because he had the urge to leave the country that he was born in, figuring that there was no future there for him, so he came over here.

B: Did he meet your mother here in Tacoma?

T: Yes...So I have a brother and a sister, so that's about where we started.

B: And then, so your family started off in Tacoma and your brother is Arthur?

T: Dr. Arthur Anderson.

B: And your sister name is?

T: Margrete.

B: Margretta..are they both still here in Pierce County as well?

T: My sister lives about three blocks away. My brother is now living at Toby Jones. He is fighting the battle of life with Altzheimer's disease.

B: Right by me, that's where I live right down on Vassault Street.

T: It's a beautiful area. He's...he doesn't know who I am. It's pretty sad.

B: It is. Well, let's start with your childhood. You were in Tacoma, born at Tacoma General. You lived right in the Tacoma area, where did you go to school?

T: I went to Sherman, you know where Sherman is?

B: I've heard of it.

T: It's a grade school.

B: Is it in the North End of Tacoma?

T: Yes, it's at about 36th and Stevens, not too far from where you live. I went to grade school there, then Stadium High School. Jason Lee was just opened and I was in the first opening group of kids. So I went to Jason Lee and then from there to Stadium. I graduated from Stadium in 1930.

B: Did you go straight to the University of Washington? out of Stadium?

T: Let's see..yes I did..

B: How did you select the University of Washington for a campus?

T: It was sort of natural, it was closer to home, cheaper than other schools.

B: Did you commute, or did you actually go up and stay on campus?

T: No, I went over and lived there.

B: Where you in the dorms? or where you in a fraternity.

T: No, I didn't join a fraternity and I stayed in a private home, not far from campus and I walked to and from classes. That's where I landed.

B: Did your brother and sister also go to the University?

T: Both of them did; at slightly different times. Arthur started earlier than I did, of course. He is two years older than I am. He paved the way and prevented some of the bumps that you take.

B: It helps, having an older brother and sister. So, we went to the University of Washington, you have a B.S.?

T: Bachelor of Science in Civil Engineering.

B: Was it your father's influence that got you into the engineering and the pioneering of...? how were you influenced by that? did you think of any other areas?

T: He didn't really resist it too much.

B: Did Arthur go into civil engineering as well?

T: Yes. Anyway, he didn't put any pressure on us to go, he insisted a little bit of course, but it cost him money.

B: Was financing something that you had to contribute to, Dr. Anderson? Were your parents able to finance it, or did you get into grants?

T: No, we were able to manage to exist on what he was able to give us. He didn't encourage indebtedness and so forth. So, we managed to...Fortunately it was much less costly at that time.

B: Did you work at all while you were going to college?

T: No, tuition at the U was pretty low, you know, actually compared to what it is now. We managed to get along and survive on what we allowed in the coffer?

B: And you had fun too?

T: Oh yes, we had fun.

B: Do you still participate in any of the activities at the University of Washington?

T: Go to the games.

B: Part of the alumni right?

T: Season tickets and support the alumni somewhat.

B: Your sister, what was her focus?

T: Her focus is in music and she is currently a music instructor in voice, teaches students who sing. Her husband is, of course, a voice teacher too. Has taught some metropolitan opera stars. He's very good.

B: That's wonderful, a real diversity in your family as well. So, you got your degree in civil engineering...

T: And I applied for a scholarship at MIT and was granted a $500 tuition scholarship. So, enough to get at least to pay that up front. I lived there..not on the campus but right near it. In the beginning we rented a ... house and joined up with several others that were also from Washington. Harry Wallin, now a retired admiral in the Navy, John Fluke, who started Fluke Manufacturing Company, have you heard of them?

B: I have not, are they based out of the East Coast or are they here?

T: No, they're in the Seattle area, near Seattle. He was a classmate of mine, but he was in the School of Electrical Engineering. His business is in electrical testing equipment. He is dead now. He died a few years back; but he did well in his business development, which companies now go to. It is a fairly prominent electrical product company.

B: Now MIT, was that kind of a natural transition for you, based on the degree that you got at the University of Washington, was that a natural goal to achieve if you really wanted to accomplish something in engineering, that was your...kind of a...

T: It had a reputation for being the finest engineering school in the world, so yes it did have an impact. It was in that same field that we had at the University of Washington but just an advancement.

B: Did you have any ideas at that stage, Dr. Anderson, what you wanted to be?

T: Not really.

B: You know you needed that foundation of knowledge to get...

T: That's about it primarily. But I guess Arthur started it, so I had to do it.

B: He also went to MIT?

T: Yes. He got his Doctorate in Civil Engineering at MIT.

B: The military, where did the military come in?

T: The military... at the University of Washington I was in the Naval ROTC unit there and I went through that program and got a commission as an ensign in the Naval Reserve. I had been in at the U of W and so that's how that stayed with me.

B: So that worked out well?

T: Yes.

B: Did you enjoy having both aspects? so, in the ROTC did they support your educational benefits when you were a member of the ROTC? was that part of it?

T: No, no financial support at all. It was just something that I participated in as a matter of choice. So anyway, my brother was in that same program and Fluke was in that same program. We competed with one another. So that worked out OK. That was the beginning of my Naval career. In about 1937 or 1938, I guess was in 1939 - 1940, 1940. I started getting advice from the government that maybe I would be promoted to active duty, so I got orders to go to Jacksonville, Florida and several other places which I managed to get changed because I was involved in some construction projects in this area that were also defense projects. So if I got pulled off of them it would leave that defense project here without a manager. I did get deferments for awhile and then it got tougher. I got ordered to active duty at the Naval Air Station in Alameda [California]. It was under construction and they were still building piers and runways and this kind of thing. One of the things that interested me there was when the Hornet came into the air station, a carrier right at the pier and Jimmy Doolittle's squadron was coming onto the air field in their B-25's, and were towed down to the carrier pier and the task was to put the B-25's on the deck of the Hornet. That was my job. We put a squadron aboard the Hornet and wondered what was going to happen. It was highly confidential project, we weren't suppose to know about. Anyway, they went

off and bombed Japan. That was the first time they every flew a bomber off the deck of a carrier.

B: So it was really a piloting project.

T: It was a piloting project, it sure was. Anyway, that was the highlight of Alameda. I spent three years there as Assistant Public Works Officer, did a lot of building around the base.

B: So this was after you completed your education at MIT, got your degree there, your M.S. and you were called to active duty?

T: At the Naval Air Station in Alameda in 1941. So, that was the beginning of my Navy career. I spent a couple of years over seas in the Philippines, started out in Australia and worked my way up into the Philippines where I took command of a naval construction battalion. We built a project at Subic Bay, it was a supply depot. We had to build a pier and big storage buildings to house all of the stuff they needed to have under cover. So, anyway I spent another couple years there and came home. Then I got assigned to a naval base, a naval training center in the Great Lakes. I spent two years there and got out in about 1948. I resigned from the Navy and came back out to this area. I had about twelve years total in the Navy.

B: So, being able to use your education in the Navy really made that...

T: It was in the engineering aspect of the Navy, building facilities and air stations, piers, waterfront structures.

B: You had been on the waterfront quite a bit; had that had an impact at that point? .. because civil engineering, it can be anywhere, but you've done a lot of work

with regards to on the waterfront kind..?

T: A lot of that kind of thing..as pertains to the water and so forth. So, I finished up my naval career as a commander, I got promoted several times. That was interesting.

B: A good experience?

T: Yes, good experiences. The kind of things that I would have been doing as a civilian as well as in the navy.

B: I keep thinking now, if I had it to do over again, Dr. Anderson, I might have considered one of the military branches to perhaps have developed that discipline, capitalize on some of the educational benefits and those kind of things. And now it's a different environment..

T: It was a good life for me. You don't get rich, but you see a lot..

B: And you learn a lot, I would think. Your travels, do you think you would have traveled as much had you not..

T: Probably not, no. I probably would have gotten established in a position and what not, and probably would have just stayed put.

B: Your decision to exit from the military, 1948, was that to develop a home base at this point?

T: That's primarily the reason.

B: Were you married? We didn't cover when you became married.

T: I was married in 1938, my wife was involved as well as one of my sons. They were involved in leading the navy life. In fact, an interesting thing was that at the Naval Air Station at Alameda, we were in the Chapel on Sunday, our son was being baptized and the word came in that the Japanese had bombed Pearl Harbor. The marine security officer came on down the aisle in the Chapel to get to the captain to tell him about this, at about the same moment, little Tom was waving to him. He was being baptized by the Chaplain at the Naval Base, so it was kind of a timely thing.

B: Is your wife Norwegian also?

T: No, she is Irish.

B: Ah, we broke tradition there, add a little more feistiness to the relationship.

T: But she became a Norwegian. We spent about 9 months in Norway.

B: When did that take place in correlation to the..

T: That was in '38 also, it was certainly after we were married. My brother had a job, after he was at MIT, in Germany with a particular engineering firm there that he had a lot of respect for and so anyway, he was going to work in Germany and his wife was with him, and we were traveling through Europe and we ended up in Norway. I have some relatives in Norway, in Oslo. We got together there and they said, 'why don't you stay here with us?' So, I said we can't do that because I don't have a job. ..... Anyway, I told Kathryn that if I could get a job we could stay. So I went down and talked to the engineering director of the highway program that built the bridges and the roads, and what not, and I got a job.

B: Great! Did you speak fluent Norwegian?

T: No, but the people there, a lot of them speak quite a bit of English there, but I could speak a little bit. Anyway I learned to speak the language significantly. I designed a number of small bridges during that period of time. I learned how to ski.

B: From the originators. I am Finnish by decent, but I've never been to Scandinavia.

T: We had a terrific time, I'd do it again if I had the chance.

B: What do you think, in terms of what you experienced in Norway, what you brought back from there? Was there something of the people, the culture? Of course, it had been so inherent in your family, anyway. But do you attribute anything to what you learned about Norway? Is there anything specific that you can think of? or just?

T: Well it was pretty much the same things that we had been doing here, they were doing there.

B: Were they as progressive as we are, say in the engineering area?

T: They are very progressive. They used some of the same techniques that we used.

B: So you were very comfortable there and it wasn't like working with archaic kind of systems, or anything like that?

T: No, it was just a continuation of what we were doing in this country.

B: We're going to talk a little bit about who or what events inspired and assisted you to become the individual you were at the time of co-founding Concrete Engineering Company. So, it was 1948 when you came back here, after you

exited from the military, and the company..

T: I built this house, that's the first thing I did.

B: It's beautiful. Were there any other houses around here when you found this piece of property?

T: It was pretty sparse, there was just one or two other houses, we were right at the beginning of this development.

B: So it was actually 1948-1949, then you two built this home and you had at least, how many children at this point?

T: We only had one. Well, let's see, we adopted two boys.

B: Tom was your first born?

T: He was the first. He was born in 1940, so he was pretty little. Jim and Steven were adopted and Stephen was born in 1956, Jim was born in 1953. Jim is now the president of Concrete Technology, probably for three years.

B: Is he the only one of your children who got involved in the engineering aspect?

T: No, Tom is also an engineer and also went to MIT where he got is B.S. degree.

B: Wonderful, the tradition.

T: Right. Jim studies business, he doesn't have an engineering background or experience.

B: Tom, where is he at, is he involved at Concrete Tech also?

T: He has been, but he is now the President, of Tacoma Industrial Properties. It is the land on which Concrete Tech is built. He extracts the rent from them.

B: The rent collector.

T: He is the president of TIPS (Tacoma Industrial Properties)... He lives over on Horsehead Bay.

B: Had he been involved? So, we'll go back. So, Concrete Tech, you and your brother came up with the idea in 1948, you built your home, established your roots here in Tacoma, again re-established your roots. Then, you were building homes. How did Concrete Engineering come about.

T: Concrete Engineering came about as a result of, it's kind of a long story. It starts out with my brother was living in Philadelphia, back East.

B: He had been in Germany, and then he moved to the states again?

T: He got a job in Philadelphia where they would test the girders for a new bridge being built in Walnut Lane, a street in Philadelphia. It had to be tested. The concept was that individual girders were cast, this was taken over and put under the structure after they'd been made. And that's the way that we'd been doing all the stuff around here. Making parts and putting them together in the field. Do the construction, the developing of the parts in our plants so we would have control over the quality of the work and were shipping them to the job site, and they're putting them in place, integrating pieces. So anyway, this bridge was being built in Philadelphia and the girders were being cast in another place and taken to the site. But the city required the full size girder be tested until it broke to see

how strong it would be. Arthur got the job of testing the bridge girders. He was so impressed with the performance of these girders that were prestressed. He said gee, this is something that is really a good thing and we ought to establish the making of these girders and things like that. Anyway, he came back home. Father, of course, wanted him to move out here, and he would help us if he could.

Anyway, he came out for a visit and we got together and talked about it, so we said we guessed we'll do that. I'll look for a place that we could use for a site to build a plant, while he's doing some other things back where he lived to move our here. That's how it got started, and we put it all together...

B: Had you understood about concrete and prestressed concrete yourself, or is that inherent in the civil engineering training and background? I've got a few text books on it, I've been kind of trying to brief myself so I have a better understanding.

T: Well you know what the idea is, you take a stack of books and set them on a table. They are all individuals, pieces that would just fall apart. Then if you take your hands and push against the stack of books you can let that stack of books go, yet they're still individual little pieces, and that is what prestressing does. It takes the place of what your hands would be to the stack of books. It squeezes the girder together in the right area where the stress is to be compatible with the length of the span and the size of the girder and all that. But you know, when you have a girder that's supported at its ends, and you put loads on it, it wants to bend down and when it wants to do that it also wants to crack because the bottom fibers are in tension, all of the fibers are being pulled apart and are in tension. If you get these cables in there and squeeze the thing back together again and you get rid of the tension; so that's what prestressing does.

Well anyway, where were we?

B: You found the property site.

T: That's another story. I tried to get the Port, you know about the Port?

B: I know about the Port, I'm learning about the Port.

T: Anyway, the Port owns the land and they rent it out. They don't sell the land, they keep owning it and they lease it. I said no way were we going to build a plant on property we don't own. It took me about three months, I guess, to get them to finally say they would sell a piece of land that we could build our plant on. They pretty much held that same policy right along. We were able to get another piece of land when we expanded to the point where we needed it, so we still got the land we wanted.

B: Were a lot of companies able to do that, or was it your tenacity that paid off here?

T: It probably was. Because I don't think that the rest of them bought...yeh they did sell to the refinery down there, but not very many of them.

B: So, the company that your son, Tom works for, Tacoma Industrial Properties, is that part of the Port or is it a separate entity?

T: No, its land that we have built Concrete Tech's plant on.

B: So, we got this property you acquired, through your tenacity, and meanwhile your brother, Arthur, came back to Tacoma while you were getting the ground work laid.

T: That's right.

B: How did you come up with the Port location? You knew you needed water access? Tell me a little about that, given the history of the Port.

T: We knew that many of the products that we would deliver from our plant would have to go by water, and so it was a natural that we had facilities at our plant to put these things on barges so that they could be towed off to where there going to have to be delivered to. We've done quite a few of the waterfront structures and facilities. We've got an ocean going terminal in Valdez, Alaska and that's a floating terminal. There the tides range some 28 feet from high to low and the ships that are tied up to a normal type of dock which is to the land, well, ships if they go up and down 28 feet a day, wow. You know how their lines go out and they have to tie all their lines to moor the ship, all of those have to be shifted again as the tide goes up and down because they would get too tight. So, we developed the Valdez terminal which is a floating structure that was made in two pieces, two parts, towed up to Valdez and then we put them together by stressing cables, squeezing two pieces together, and that's been working for quite awhile.

We developed the largest floating structure in the world at the graving dock that we built. We carved out the land and put a gate across it. We opened the seaside of it to the thing that we built in this basin; then we let the water flood the basin in order to float it out and close the gate again. So that's one of the exciting thing; towed it from our plant for 103 days--ocean voyage--being towed 103 days.

B: How long did it take you to build it?

T: Just about, oh it must have been about a year. It was quite a big vessel. This other one, the one I'm talking about now is one built for the Atlantic Richfield Company. This is to process the gasses coming out of the wells that were along the shoreline, not shoreline, they were 25 miles out to sea and then all these well

were gas producers but they didn't get any oil of out them so they had to have a system developed to take that gas into a compressor and compress it, put it under pressure to liquify it, so the gases were put into storage tanks in liquid form. Then the ships could come there with their tanks and transfer the cargo to big ships and hauled off to the places where they would use the gas. That's why we built that structure for Atlantic Richfield. That's been working now for 14 years anchored off the coast of Indonesia, making liquified gas.

B: Your company...Arthur knew that there weren't a lot of companies producing these kinds of products...

T: There weren't any in the United States.

B: Primarily in Europe?

T: Yeh, in Germany.

B: So you were the first company in the United States.

T: As far as I know.

B: So, it was a product that wasn't being provided, you two came together and put this company together. How far developed was the Port at this time? Do you know how many other companies were established in the Port?

T: The companies that were established in the Port were primarily plywood, processing lumber and lumber supplies of different sorts. There was an oil company and a plastic pipe company that I remember, but there weren't too many. Weren't very diversified.

B: We didn't have the volume of ships coming in the Port at that time?

T: No, we didn't have all of these big cranes along the Port, there where they take, load and unload cargo, those big boxes, you know. That's quite a development.

B: Were there companies that you aligned with, Tacoma Boat? do you align with any other companies in the area? Did you need any of their goods provided to you close by, or where you get your supplies from?

T: You saw that barge going up the waterway? [Dr. Anderson's home has a view of the passage that the Narrows Bridge spans. A tugboat had been guiding a barge along the waterway.] We needed aggregates [minerals materials, such as sand or stone, used in making concrete]. We got our aggregates from Steilacoom and we get the finest aggregates in the world. Really, they're tremendous.

[Steilacoom is south of Tacoma, approximately 15 miles].

That's another story that is part of the development. We were able to develop concrete strengths that were much higher than were normally used from ready-mix trucks, and all that stuff. The strength of their concrete was a fraction of what we were able to make using those aggregates from Steilacoom. We spent almost a year to be able to make concrete strengths up over 6000 pounds compressive strength. Those aggregates were one of the things that were important in that process, and the other thing was part of the technology on how to mix the concrete, as well as the cement.

B: Did you learn these techniques from Germany?

T: We learned some of it from Germany, because they developed some concrete mixers that did a better job of mixing the concrete. We bought one of those

concrete mixers from Germany. They were involved in making concrete for quite awhile.

B: How did you capitalize on Steilacoom's aggregates? Did you know that they were there?

T: Yes, we knew that they had a supply there. It wasn't hard to get because they were in business dredging out the land, shipping it out all over the Sound.

B: So, you were putting together this company, and you knew that...developing the resources you had to have available. So we had some real natural resources close at hand for you. Was there anything that you had to get? like Germany, you got one of the mixers from, was most everything that you need pretty well contained within this area, Dr. Anderson?

T: Yeh, pretty much so, because cement was available from Lone Star Company. They were helpful in trying to develop this higher strength.

B: Lone Star is in the Port area, not too far away, right?

T: Lone Star owns that concrete firm, Scofield's. Anyway, we were able to get concrete strengths, up over 6000 pounds, compressive strengths, before the cement companies could show us how.

B: Great! Another Front Runner here! [Set standards in this technique.]

T: They came back in about a year and said, 'we've been able to get 5000.' We said it's too late, we've got 6000 already [chuckle], and we have since been able to gt 10,000 pounds compressive strength.

B: So, did you share your technology with them?

T: We told them what they had to do to get it, sure. But, that was part of the trick in prestressed business, getting the concrete strengths higher where you can squeeze it together initially, harder, you know, so as to get rid of the process of cracking. When things bend they crack at the bottom, you know? The crack starts to go up. Here is what happens when you get a beam [Dr. Anderson was demonstrating with his drawings as to how this cracking process occurs.], you support it here, and you bend it and it cracks. In other words the bottom part is in tension and the top part of it is in compression, which is shown by, like this. This point in the mid part, called a neutral axis. When the stress go through that neutral axis - 0. Down here you have tension maximum and up here compression, pushing together. When you bend something the bottom stretches, the top is pushing together. So that's what happens with the stresses is at the beginning...so when you put these cables in the bottom area, pull them under high tension, then they pour the concrete around it and then the concrete sets up and holds that cable in there. That compensates the tension when they put compression artificially. It is subtracted when the ...

B: So those cables are in there and then you release the tension once that is all poured and put together and those cables are released. They are pulled tight up until and then once the product...then they release at some point.

T: Where we have the hydraulic rams stretch the cables there, we let them down at the end when the concrete is set up hard. That makes the compression. The concrete grips those cables so much that they don't slip, they just keep their strength, they're pushing it all the time.

B: How many cables are in...?

T: That varies. If it is a small beam, there are hardly any, if it is big beams, quite a few, 10 or 12 cables that are 3/8" in diameter.

B: So, you had a product you knew wasn't being provided. How did the company evolve? Did it take awhile for your company to...were people using this technology, or was it something...Did they come to you, said this is what I need from your company, help me. This was probably a learning process for a lot of ...

T: It didn't work that way. We know how to do this better in prestressing than it was done without it. We tried to sell them the idea that they should try it. Have you heard of Norton Clapp. He is a millionaire, businessman in this area. He built a building in Seattle, he thought prestressing was attractive and came to us and we worked out a design of beams that could be used in his building. He was sold on the idea so we did his job. Very few came to us and asked to develop it. We had to go to them and sell it.

That's what happened when we built the big barge for Indonesia. We had to sell the idea that it could be made out of concrete, because concrete doesn't float! We had to prove that it would be alright to build it out of concrete.

B: Did they put the project out for bid? Is that how you heard about?

T: Yes, it was put out for bid and they didn't get any bids to build it because all of the Japanese ship building places were busy, to the point where they couldn't build a steel barge for a couple of years. So we said, 'we'll build it out of concrete and you can have it in one year,' so they did. I can't understand why they accepted the idea [chuckle], but they did and we built the thing.

B: And that was the Atlantic Richfield structure, out by Indonesia?

T: Yes.

B: Do you remember what year that was?

T: I think it was 1976. Well let's see...

B: Some of your first projects, do you remember when the company was first getting off the ground, how did you make this work? You must have hit some times of uncertainty? or was it a natural from the beginning. I remember reading Mr. Andreason's letter to you, and said how your first year was. If there wasn't enough work to keep your employees busy, you had them doing something else to keep them going. How did you get this off the ground?

T: Well, that's how we did it. We struggled piece-by-piece. Every time we ran out of the job that we were doing, we had to have another one ready to go when that one was finished. It wasn't easy, that was a tough part of the thing, was getting the people to listen: #1. If they had a need for a project like that, #2. If the price is right, 3. If it could be delivered, and so forth. All of those things added to the profit.

Part of my job was learning how to account for all of this stuff. The business won't survive if you don't know what you're spending and how much it's costing and, where everything can be managed. I took a course in accounting. While my brother was out cranking out these designs in prestressed concrete, I was taking a course in accounting. I set up all of the accounting books for the company when we got started, and up until about two years ago most of that stuff was still working.

B: Is that right? Your system that you put in? And what did they do, computerize it?

T: Now it's all computerized. They've got everything down to the point where you push a button and know all the answers right away.

B: Did that influence your son, Jim, to go into the business end of things. He had been involved with the company?

T: He got started on the job as Project Engineer, so his involvement was out of the plant in making products and getting them ready for shipment and so forth, so he had had some experience in making prestressed concrete. He just sort of, it was natural for him to keep going up. He's doing a good job; he is competent, and progressive.

B: Let's go back to Concrete Tech, or Concrete Engineering [original company name], and some of things that I think are key in our project here, includes looking at the economy of Tacoma, the development of Tacoma. You've been a bit part of this community. Tell me a little bit about your impression of where it was when you first started off with Concrete Tech (Concrete Engineering), how it evolved, and perhaps where you saw Concrete Tech as a corporation contributing to the economy of our area in the business development, and then perhaps getting into the labor issues as well.

T: We didn't really put much emphasis on what we could do to the economy of the Northwest by building a plant. That didn't enter our minds at that time. nor ourselves. But anyway, we did make a contribution to the economy because we had, at times, over 200 employees working and, of course that helps families exist and build... Bought a lot of materials that we had to use, buying sand, gravel and cement, all those things.

B: That was all part of our environment too.

T: Not too much distance away, and I think all of those things contributed to the economy of the Northwest. Steel, prestressing steel, we'd buy big rolls of cable thousands of feet long, and other materials. Actually we then became a part of shipping, shipping by barge created work for the tugboat companies, so it all played a part of economy development.

B: Your role personally, Dr. Anderson, based on a lot of the acknowledgements you've received, you're a leader. From what I can tell you're a natural born leader as far as staying very much involved in your community and wanting to contribute to it. What do you think about the progress that we've been going through, and your handling the Port, if you will, or your battling with the Port to get something that you felt was necessary for your company to succeed, has that changed at all? Do you see a lot of the things still the same? To me, I feel like we're really going through a growth spurt these last five years or so, especially given our traffic issues. So you've really seen us go through some major changes.

T: It was pretty tough when we started because there really wasn't much that we could get people to do in our type of thing. It's new, how do you know it will work? We hadn't got anything to prove it, and all that stuff, so. There were some pretty bleak moments, especially when you're running out of work and then figuring what do we do next? We had an order or two to build some street light standards. The city was taking out some of their old ones, crumbling and falling apart. Anyway, they put out a bid for street lights. It didn't say it had to be prestressed because they didn't know there was such a thing. We designed a form that would make this in parts, and made a bid for furnishing quite a few street lights, standards, and we were low bidders so we got the job, at a time when we really needed the work. We didn't get very much for them but we didn't give them away either. But that was the beginning of that and if you drive around town, you see they're still serving in perfect shape. They are dirty, but at least they still work. So, that was a development that we made.

B: Concrete started with how many employees? and now it's grown to almost 200?

T: It started out with about 5 and Arthur and I were pouring concrete too. Jim Andreason, you know, was one of our first employees, he was just out of high school. We have quite a few who have gotten their awards for 25 years of service and more. Some of them have just been with us that long.

B: That's a wonderful reflection. Your participation in the community, you've been involved in different civic activities. Tell me a little bit about your feelings of participating in that kind of level in your community. That's where I see a lot of your activities have been too.

T: Well, I think we felt that we had a responsibility for being good community citizens, and had something to offer in the way of knowledge or filling in to help local economy and the city grow, and what not. It is the sort of thing that is pretty much in our minds. The city is giving us something, we've got to give it something back. So, we did get involved, it didn't hurt us any, because... well, it took time and all that but it also gave us experience. It was good, valuable; that's how we felt about it. Arthur was involved in education and so was I. Now, Karl is involved in community affairs, I guess he is carrying on the traditions of our firm. He is President of the Chamber of Commerce, and you say he is on the Board of the University of Washington - Tacoma.

B: Is he also employed by Concrete Tech?

T: Yes, he has been with the company ever since he got out of school. Sometimes it is pretty hard to get a family business, to get the young people involved in it... Then if you get two different families, such as we are. Arthur and me, and their kids, to get them to work together, that's another thing. Competition for getting promoted and all of that stuff.

B: So Karl is Arthur's son?

T: Yes.

B: Does he have any other children?

T: He has five.

B: Is Karl the only one who is involved?

T: No, Rick, his younger brother, he got involved. He is branching off into some other things now. He left the company. Karl is still there. Karl had three sisters but one of them died. Karl still has two sisters; there were three girls and two boys.

B: You were the front runner, as far as a U.S. company to establish this kind of product. Were you used as an example? Did other companies come to you? How many more have been established since you...?

T: Oh yes, in fact we had an arrangement with companies that were interested in prestressed concrete procedures, came and met with us, about fourteen companies or so, a couple of them were in Europe. We would go to meetings; we did research work and would give them all the answers that we developed in our research and they could take them and use them in their business. We don't have that now; they've grown up and so they don't need it.

B: When you are the premier in the technology, and then it makes sense..

T: We have a firm in Japan that has associated with us, and they do things over there and they pay us some royalties on some procedures that we developed. It

has expanded our income and stock quite a bit.

B: Did you say there were 14 other companies that actually came, but there may be more than that in the United States now? Do you have any idea how many are out there now?

T: I think there are 20 or more, that's kind of a guess.

B: Do you think most of them have established themselves in water, port areas?

T: No, I don't think so.

B: So some of them are transporting their products via land or other ways?

T: As we think about it now, we could probably do some of our things without the waterfront, but we couldn't do things like building these docks, or floating structures. We've been shipping up to Alaska on quite a few jobs. We shipped monorail beams to Florida, you've seen some of those pictures.

B: You and Mickey are in cahoots together too? That's a nice reflection. So, Dr. Anderson we have companies nation wide. We're a natural environment for your company, and I think part of the details of this company, to be one of the challenging areas for somebody who owns a company, or manages people, is not only the products you produce, but how to keep those people happy and treat them fairly, equitably. What has been your experience regarding the labor force of Concrete Tech? how its grown? your feelings? attitudes, some of the things that have gone on in Tacoma? What was your experience working with the employees of Concrete Tech?

T: We started out, we didn't have a union. As we grew and developed, we were put under pressure by the unions to have our people organized and come under the union. They finally developed their relationship. That got the people to be a unionized plant, the Laborer's Union, I believe is who they are affiliated with. They finally did get unionized. We didn't have any really labor problems until people had an opportunity to work with their own union for a few years and then they decided, "we can strike if they don't do what we want them to," and that's what they did finally, they went on strike. I think the issue was probably higher wages, but I don't think..., there may have been something like health benefits, and things like that.

We went along pretty well after we got that initial strike settled, and what not, we had labor peace ever since.

B: At what stage did the Union...do you remember the time frame that your laborers became unionized, was that very far along in the development of the company? you started in 1951, and you had 5 employees at that time. Was it when you became a force of?

T: About 25 or 30, something like that. I don't remember these dates, exactly.

B: When they had a nucleus of more employees. There was one article that I extracted that addresses the strike issue, that I pulled out. You were contributing jobs, that is an important factor. How was the area at that time, the 50's were a pretty developing time in our lives, if I remember correctly. We moved here from Minnesota in the 1960's. Minnesota had little or no employment going on, my dad is a laborer, so I can relate to some of that.

Some of your feelings...I know that in our class we're addressing Afro-Americans and what kind of role they participated in, in the labor force here in Tacoma. It

has been interesting to find out how much they have contributed. Were there ever any civil rights issues that you had experience. Were there any Blacks who did actually work at Concrete Tech?

T: Oh yes, we had Blacks [primarily in the labor jobs]. Not as many as you might expect, because they weren't trained for this kind of thing. They had to have at least a minimum amount of training, to be able work the kind of things that we were doing.

B: What kind of training would you require for someone to get hired on at Concrete Tech?

T: Mostly pick and shovel work for the labor jobs. It is a process of being able to put these things together. We had steel forms that maybe run the whole length of our plant, you know and start out with a number of cables in there and then they have to be tensioned, and then you have other reinforcement that goes in there. It's a matter of putting the steel reinforcement in to support the other prestressed part of it. So, it is a matter of just doing a little work and being able to take instructions by their supervisor.

B: It was physically intensive, was it hazardous at all?

T: Oh there are hazards, sure there are. Any kind of construction operations, there are hazards, fall off a ladder, stub your toes on something..

B: I really think the philosophy or how your workers perceive you, has been a good reflection. You have had minimal incidences with regards to striking and labor issues, that kind of thing. Has it been your philosophy to stay ahead of those issues? you've worked your way up yourself, and your family worked hard.

T: You know, one thing that impressed the workers was that either Arthur or I go out into the plant so that they can see us and that has had a big influence on the way they responded to some of the things we did.

B: Like you really have an interest in what they are doing and you really know what is happening at all levels.

T: Even if somebody comes along and speaks to them, knows them by their name.

B: Did you know the majority of your employees by name?

T: Pretty well, quite a few of them. Some of them I didn't come into contact with but there were others who I came into contact with quite regularly. They seemed to appreciate that. They felt they were part of the team.

B: And it's been a progressive company, which, in learning new technology, there's some curiosity with them, at least you stay ahead of the game and try to stay competitive. Were you and Arthur, equally involved with this? You were doing some of the financial systems, accounting systems for the company, and Arthur's role was doing a lot of the conceptual work on the projects?

T: Primarily the development and engineering part of it. We had people who did the bidding. That's a separate thing, part of the economics of it.

B: When we think in terms of--I know Kathryn [Tom Anderson's wife] mentioned my first time here, looking at the growth of Tacoma, and what's really been happening, and you've been involved in the health care environment to a certain extent. You've lived in the Northwest a long time, you've lived in other parts of the world. How do you perceive Tacoma and the Pierce County area in comparison.

T: About the time we were starting, the feeling was that we were living in an area where there was not much thought given to expansion, development, and providing new ideas in the city and entertainment facilities, and what not. But since that time we have developed to quite a nice extent. We have the Pantages, we have the Rialto rehabilitated, and we've got soccer team, hockey teams, more interest in sports, you know, that kind of thing. I think Tacoma's developed quite a bit here in the last few years. The growth of St. Joseph Hospital is another indication of what's happened in this area to take care of the people's health needs. They've grown from one very small brick structure to what it is now, and that's another place where I became involved is in the development of the new hospital. It was me who said we should have Goldberg [architectural firm] do the design of the hospital. So, they took my recommendation and they did hire him to do the hospital and the engineering of it. Well, I haven't told you much about the engineering part of our company, the fact that we spun off another engineering office to do strictly engineering work. ABAM, have you heard of that company?

B: ABAM, "A B A M".

T: Anderson, Birkland, Anderson and Masts. Now they are out in Federal Way, associated with another engineering firm, and they do engineering projects world-wide. But anyway, ABAM did the design of the structure, the tower, one with the curly que's.

B: I think we call that a honeycomb affect, the beehive affect [the design of St. Joseph Hospital tower], big oval windows.

T: In fact, the nurses could stand in the center part and could look over all the patients and keep track of all of the patients....Anyway, ABAM did the design. I was instrumental in getting them to do the work. I don't belong to ABAM

anymore, but I did for a number of years when we got it started. I got some projects that were significant.

B: At times, are they subcontractors with Concrete Tech, would they come up with the engineering, would they potentially use your products?

T: We quite often hire them to do some of the engineering work for us. Bob Mast is on our board so we had a pretty close relationship.

B: Did you do any of the concrete products that were part of St. Joseph?

T: I don't think so. We did, I think, in the expansion part of it, the parking lot down on the other side of the main building. We cast floor slabs and what not.

B: Have you seen a trend, given the earthquake situation, have you seen more concrete or prestressed concrete being used in the construction of buildings?

T: That provision in the main tower [St. Joseph Hospital] is a pretty innovative thing. The main tower, using cable in prestressing to keep it...In an earthquake, generally, move horizontally. It gets something down here where the ground is going like this [demonstrating with his hands] and there is a structure on the top and this reacts to the movement below. Having an "x" bracing it, a system like that, helps to keep the load sideways. St. Joseph Hospital is well provided in cables that do that, provide that kind of resistence. I don't think its had a very good test yet, but I hope we don't have to.

B: That was one of the other things, environmental issues. One of the projects that I read, and someone had done an oral history on ASARCO [copper rendering company located on Ruston Way, Tacoma, being demolished due to environmental concerns], for example. Have there been environmental issues?

T: We've had problems with environmental concerns. We had criticisms from the Environmental Protection Agency, that our ground has rain falling and it drains out into the Sound. The water just soaks down into the ground, or flows toward the low point, but can't go anywhere else, so we've had problems and have tried to develop some systems to take that ground water as it comes off the land and put it through a distilling process, some kind of an evaporation-filtration process before it is dumped into the waterway.

B: Are there concerns of chemicals being used?

T: We do use some acids in etching, some of these panels are hosed off under pressure and that's fairly young to expose the aggregates and that goes down on the ground. So, we do have some problems, but we're doing a good job of taking care of it.

B: How would you compare Concrete Tech, for example, to some other the companies in the Port area. Staying ahead of the game, always reacting based on pressures that are put on them? Your presence alone in the Port area.

T: We don't have much association with the other people that are in business, based on two things so we're not looking at what they're doing and therefore are not looking at what we are doing.

B: There have been some political issues that you have had to deal with, with the Port, but you've overcome many of the obstacles.

T: We have a good relationship with the Port Commission, I think we have a pretty good job working with them and they working with us. You know, most of the piers, waterfront structures, they're built by the stuff that we furnish, pilings, big deck sections on top. They are about this deep, you know. We furnished the

pilings on all of the piers and then there is a prescast deck section.

B: They used to use in the old days were wooden pilings, right? and now your product is being used, concrete floatation kind of docking. It holds up much better, I would think. Compared to what we see when we drive along Ruston Way [along Commencment Bay], the old pilings.

T: Yes, that's disgusting. It bothers me a lot to see all of the relics along there, the junk, degenerating, falling into the water.

B: You've seen some of the plans for the City Waterway Park? What do you think about that, and let's talk about some of your political views. You have pictures with President Reagan, President Bush, obviously you're an activist somewhat in the political arena. Tell me a little about that.

T: I'm disappointed that Mayor Hyde died. I think that Harold Moss will do a commendable job as mayor. He has some sound ideas and not racial at all, and I think that will work out all right.
Well, all these political people come to you to get money for their campaign. President Reagan was out here partying with a lot of different people to get support as well as the other candidates. Senator Gorton is doing a real good job, but they're trying to get him. He's doing a good job now raising campaign funds to fight a good battle but...It sure is dog-eat-dog...But that's primarily where my involvement is, I have to give some money to support their campaigns. I am not a big contributor.

B: So politics is something that you...

T: Tolerate.

B: Health care reform, that's going to have an impact on some of these employers if it goes through.

T: It's a terrible thing, it really is. I just oppose that kind of a concept. The government to provide everything for all of the people. It is contrary to the way my dad brought us up. You take care of yourself, choose your own doctor, for instance, which I think is important. They can't run an extensive program, the fact that they choose everything. It just isn't right.

B: What kind of impact to do you see it having on companies if they put a lot of pressure on companies? it is a big cost for them?

T: Oh sure, it is a good way to ruin a lot of good things. They can't possibly tolerate that much expense of taking care of all of the people.

B: Unless there was a better way to structure this program, make it available and accessible. But get the people accepting responsibility for a lot of things they're doing too.
Tell me how you are feeling about things. You have led a pretty full life from what I can tell and still going strong. Anything that you would have done differently? some of the key things that motivated you?

T: The things that are good, I should have done more. I don't think I wasted any time. I spent a number of years on the Utility Board of Tacoma, the first Utility Board that they had. I was chairman of the board for awhile. I have been with St. Joes Hospital on various projects, almost 30 years I guess. They have a great hospital there. I have been active with PLU [Pacific Lutheran University] for 25 years or more.

B: Tell me about your participation at PLU and the doctorate you were granted.

T: I am very, very attached to PLU and its' progress and development and service to the community, and even their football team. The coach, has some good ideas on how to work with people. We could learn a lot from him. As things developed and they needed somebody to be involved, I got picked out to do some things and so I just did them. I am not concerned that I wasted my time there because I didn't. I was on the advisory board, in fact I was co-chairman for fund raising for Olsen Auditorium and raised $3.5 million dollars, I've been involved with the Q Club and was president there. I was chairman for four years, of the Board. I had pretty good involvement. When I left the Board, they faculty voted me to be honored by having a Doctorate; it was good. So, that's pretty much it.

B: You strike me as an individual who keeps on thinking, thinking of new ideas. How would you describe yourself? You followed in some footsteps, but they are creative ones, entrepreneurial...what gets you excited?

T: I like to construct, I like to do wood carvings. I made all of this furniture, even those chairs over there, lamps. Do you want to see a neat job of carving I'll show it to you.

B: Kathryn [his wife], where did you two meet?

T: At the University of Washington.

B: When you were going to the University of Washington you met Kathryn? She was living with your sister as a roommate? Did she set you up?

T: My sister said, "you should meet my brother."

B: That's a nice way to meet someone. She was actually born in Friday Harbor? That's a pretty small community?

T: Yes, she was born there. She went to Western Washington University for her first year, in Bellingham, then she transferred to the University of Washington for the balance of her education.

B: You two have been married now for...?

T: 57 years. I think I jotted that down here someplace. It is 56 years.

B: Now your children, Thomas?

T: Thomas Raymond, Kathryn's father was named Raymond. Tom has two children, one of them just arrived in London. She's over there for six months, she's in a kind of exchange program, through college. She is a junior at UPS [University of Puget Sound]. Then they have a boy who is now 13...Christopher is 13. Jim has now four children, two of whom he acquired with his second wife. His first wife died. He has two of his own, so that is four for him. He's got Ashley and John, from his first marriage. I have nine grandchildren. Stephen is divorced and he has three kids, two girls and a boy. He's Mr. Mom now. He gets the kids most of the time. There is more and more of that now. You go to the supermarket now and see how many fathers are carrying their kids. I like it, I like little kids.