

**Oral History Interview of
Travis Simpson**

**Interviewed by: Lynn Whitfield
February 11, 2010
Lubbock, Texas**

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Transcript Overview:

This interview features Travis Simpson as he recounts his involvement with the Crosbyton Project. In this interview, Simpson discusses his early life, the Korean War, coaching football, and working in the electrical engineering department at Texas Tech.

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Keywords

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Lynn Whitfield (LW):

This is Lynn Whitfield. It is February 11, 2010 and I am interviewing Travis Simpson. Travis, could you tell us where you were born.

Travis Simpson (TS):

I was born in Alickchi, Oklahoma. It was a logging camp in 1928. Born in three bedroom what we called a shotgun house. You could pick it up, put it on a train and move it to the next logging camp. Then they moved through Clebit, Oklahoma. That was the next logging camp. Lived there for about two years. The strange thing is—we had a water pump in the front in the front yard, an outhouse in the backyard, a kerosene cook stove, an oven, wood heater. The strange thing is the man that was living there named Milt Simongton and he was exactly ten years old than I was. He moved from there through Arkansas and went to the university and I moved from there into Arkansas and went to the university. He played football at Arkansas and I did; ten years apart. So that was kind of interesting.

LW:

What are the names of your parents?

TS:

My parent's names are Jack Simpson is—Henry Lester was his name, they called him Jack, then my mother's name was Buena Mae Simpson.

LW:

Did you have any siblings?

TS:

Yeah. I had—later on I did. [Laughs] I have a sister that's about two years younger than I am. From there we moved to Wright City, Oklahoma, that was a lumber mill town, that's where the logs were sent, about 1934. And that's in the southeastern part of Oklahoma. We had four school teachers staying with us and my grandmother. We had a cow and some chickens. My dad would run a movie in his spare time. He was the office manager there. We moved from there to Pine Valley, Oklahoma. That's across—that's north across the Kiamichi Mountains in 1937 and he was the office manager there. I went to school at Pine Valley and Muse, Muse, Oklahoma. Muse was a mile away. Then in 1941, we moved to Dierks, Arkansas. Of course, that was the year we had Pearl Harbor. It was in December of '41 when we moved. I was captain of the football team. I pitched baseball. My school burnt down and we got to throw our school records in the fire so I got to stay another year and play football more. We didn't have a football field till my last year. Never played on the home field till my last year. Graduated in January of '46 and went to the University of Arkansas.

LW:

What did you major there?

TS:

I majored in physical education and minored in math. I wanted to be a coach and a math teacher. I played football there another three years. I was president of the Razorback Hall where the athletes stayed. Member of the letterman's club. At Arkansas, you had to take ROTC two years. That was required. Then after I took that, I found out that you could take advanced ROTC and get paid for it. So, I took advanced ROTC and made twenty-eight dollars a month and I thought that was big money. I had a—went to summer camp down at—pardon me—where'd I go to summer camp? I'll get that back in a minute.

LW:

Okay. No problem.

TS:

In 1950, of course, you know the Korean War started then in 1950.

LW:

You didn't get drafted during the 1940s, did you? Because you were in ROTC?

TS:

Unh-uh.

LW:

—because you were in ROTC.

TS:

Yeah. And I was just behind the draft day. So in '51, I went in the Air Force at Ellington Field at Houston, Texas as a Cadet athletic training officer. I coached football, basketball and softball then later on I became a military training officer and went to James Connally Air Force Base for some instruction. I had to learn how to do that. I coached football there and had a drill team. I got a nice story there. One of the football—we got to travel around and play up in Arkansas and play down here at—well, I'll think of it in a minute. I had a drill team. I took the drill team to the Mardi Gras in New Orleans. Colonel says, "Simpson, you know how to handle these people when they're traveling so I want you to do that." I said, "Okay." So we flew over there in two planes. These were Aviation Cadets. We landed and I looked out there and two of them bused all of us into town when we're going to stay. A lady came out and she looked at some of the cadets and she says, "We got some problems." I said, "What kind of problems?" She said, "You got some blacks on there." I said, "Yeah. They're in the Air Force, too." She said, "Well, we got to

figure out a way to get them fed and everything.” I said, “Well, let’s go downtown to a restaurant.” Went downtown to a restaurant, I went in there and tried to get them something to eat and they wouldn’t feed them in the restaurant. They said, “Well, what they can do, they can come out back and we’ll give them sandwiches and things and take them back.” So that’s the way we did it. And then when it came time, we were marching in the Krewe of Orion parade. And that was quite interesting. They had a dance afterwards and the black boys couldn’t go there. The strange thing is the Cadet Colonel was a black boy, a graduate of Michigan State. All of them were graduates and had degrees of some kind. So, I called out to base there and got a driver. He came in with a truck car and hauled them around and they run around all in the town after the parade. And that was kind of interesting. I tried to remind them then that is—we’re sitting here in 1952-3 and they’re still in the backwoods. She said, “I understand it but that’s the way it is.” So, I called the mayor, chief of police then I went to an Army Base, Fort Polk, Louisiana, we played football up there. We all—a bunch of us went over the Officer’s Club and the enlisted men, they were going away to Enlisted Club. The thing about it is there, we’re sitting there and here comes some of the boys. They said, “Coach, we can’t go in the Enlisted Club.” I said, “What do you mean?” They said, “Blacks are not allowed there tonight.” I said, “Well, let me go over there.” There was a lady running that and I asked, I said, “What’s the story here?” She said, “Well, we get girls from downtown to come in on Friday night and they won’t come in if there’s blacks here.” She said, “They won’t let them have mixed crowds.” So they said, “They can sit up there with the band and sing and listen to them.” I said, “I don’t think we’ll do that.” So, I made some more arrangements for that. So those are some of the kind of the experiences I had with—that’s a little different run-of-the-mill military.

LW:

I’m surprised because I would’ve thought there’d be more integration in Louisiana since there’s such a huge African American and Creole population there.

TS:

That’s a real booger.

LW:

When you were teaching football, were you playing with regular-sized teams or were you doing six man football?

TS:

It was regular football. I had college players. Had Zack Dinardo. He played at Rutgers. Had a bunch of good football players. I played. Jimmy Smith played. We played at Arkansas so we had some pretty good players. Then the year I left I was sitting there around the squadron and Sergeant Major came by and says, “We got a school working up over at Denver, Lowry Air Force Base. What it is is a nuclear weapons maintenance school. I looked through the records

and you qualify for that.” I had physics and math. “Do you want to go? I’ll put your name in.” I talked to my wife that night and I said, “Might as well go and see what the Air Force has.” So, in 1955, we moved to Denver and I started in the nuclear weapons school there. That was in August. I left there in May and went to Japan, Nagoya. That was quite an interesting deal. While I was in Denver, my oldest daughter was born.

LW:

And what’s your daughter’s name?

TS:

Vicki. Sweet mother. And she’s teaching over here at—I’ll get it after a while. And while I was at Denver, I met some—there was a—the Air Force Academy just moved there. That was the only place they had because they hadn’t built the academy down in Colorado Springs. I visited some cadets there that had been—they were lieutenants that had been cadets under me at Ellington. That was interesting. And then I ran across a boy that played at University of Colorado named Tom Brookshire. He later became a sports announcer with Pat Summerall and I’d played ball that summer all at Arkansas. Let’s see, what else do I remember. I went to the first Air Force Academy football game. That was at Colorado Springs and they played University of Utah freshman. Of course, I went up to Pike’s peak and all that. Visited Coors brewery until they turned me out. My daughter, Vicki, was born in December of 1955 at Denver. Then in ’56 I moved to Nagoya, Japan in June for the 9th Fighter-Bomber Squadron. They had F-84G’s that—they were pretty nice aircraft. I was a munitions officer and I coached there, too.

LW:

Did you fly as well?

TS:

No. And I taught loading and delivery tactics of weapons. Then I left there in ’58, went to Johnson Air Force Base at Tokyo. I was the munition officer and a football coach there. We won the Far East Air Force Championship 1959. Then I left—well, I go to work at Korea at the Kunsan Air Force Base. I’d go there once in a while. The reason I’m saying that is my grandson is over there right at Kunsan in the Air Force and he’s a Staff Sergeant.

LW:

And what’s your grandson’s name? We can come back to that.

TS:

He’s—I’ll get to it in a minute. He’s a Sweetman. My daughter married a sergeant and he’s out here at Tech, the electrical bunch [?] [0:16:34]. Daniel Sweetman. He’s an inspector out there now. He retired.

LW:

When you were doing all this traveling, were the squadrons integrated? You had those blacks and whites?

TS:

Oh yeah. That was over with. Won the Far East Championship. Left there in 1960 and went to Orlando, Florida and was there for—till '62. I was there when they launched Alan Sheppard down range. I was with the nearest man camera crew to launch.

LW:

What were you doing in Orlando?

TS:

I was the wing nuclear safety officer and the munitions officer too then I coached at Boone High School with one boy that played at Florida, Jack O'Brien. We still talk to each other. And I came here to Texas Tech in '61. The Air Force Institute of Technology sent me here. There was about a hundred students here, hundred Air Force officers. I coached football here, too, with coach J.T. King from '61-2-3. Dave Parks and Donny Anderson.

LW:

So they all played on the team while you were there?

TS:

While I was here.

LW:

Wow. What do you remember about J.T. King.

TS:

I remember he was a real gentleman, a real gentleman. A nice guy. Pleasant. His son is a doctor out here, Robert King. He's a surgeon. In fact, he just performed surgery—hip surgery on a friend of mine yesterday. He takes after his father. Let me see what else we got here. Oh, I was in I triple E [**Institute of Electrical and Electronics Engineers**]. I was the president of I triple E. I also got the award for outstanding leadership and service for I triple E and that was in '63.

LW:

Now, have the graduate programs started at this period in EE [**Electrical Engineering**]?

TS:

Yeah. Just started. The graduate program started but the PhD, that was just starting the next year.

LW:

Because I think Marion Hagler and Darrell Vines talked about the program starting how Russell Seacat was trying to send students off to get PhDs so he could have them come back.

TS:

Yes.

LW:

I think they said that you were one of those students.

TS:

No. I wasn't a graduate student.

LW:

Oh you weren't? Okay.

TS:

I just tried to get a degree. I was here when they were here. We had a fine department.

LW:

If you want to sit back, it'll still pick it up.

TS:

This is all right.

LW:

Well, can you kind of talk a little bit about what the department was like and some of the instructors?

TS:

Yeah. See, I was here '61-2-3 and Dr. Seacat was the head—he'd become the head of the department a little after I got here. Dr. Steele [?] [0:20:45] was head of it before that. So, I kept in—when I left here, I kept in touch with Dr. Seacat and the rest of them, and I'd give him some contracts to work on. Dr. Seacat and Chris—I believe it was Chris—came over to see me at the—where was I?

LW:

Were you at UT [**University of Texas**]?

TS:

No. I was at—let's see. Oh, I was at Albuquerque at the Air Force Weapons Lab. So, they come over there, talked to me and before long they offered me a job. They knew I was going to retire pretty soon with twenty years in the service. So they offered me a job. I talked to my wife and said, "Well, we can come to Texas Tech. We know the place. The kids can go to school here." And by that time, Leslie—I didn't bring this up—Leslie was born in Nagoya and Terrell was born in Tokyo. Then in 1964—'62—Scott William was born then. I got Outstanding Leadership and Service thing in '62 and moved to D.C. in '64. That was an Air Force technical application center and we did the timing studies and—what we'd do is we would monitor the atmosphere for nuclear detonations. So, we needed a time—we needed a time when it went off. Over here, "I got this time," and over here—you triangulate it and you can tell when the weapon went off and where. We had places—at that time I was traveling to—we worked with the University of Texas on the _____ [0:23:47] and the Denver Research Institute on system design. My travels involved Shemya, Alaska—you know that's out there on the Aleutian chain—Fairbanks, Moses Lake, Washington, Anchorage, Australia, New Zealand, Fiji, Chile, Panama, Uganda, Easter Island, London, Nairobi, Canada, Flin Flon, Alaska. There's a whole bunch of others but that's some of the interesting places, plus Sweden and Norway and Spain. So, I did—that was in a period of about four years. I visited pipe facilities out in Arizona and Arkansas, missile launch facilities. Did inspections there. I used to sit in the meetings with General Doolittle out in California with the—I'll have to fill in that too. [Laughs]

LW:

That's okay. No problem.

TS:

I worked on the Minuteman where they had Baltimore warheads. I worked with the Minuteman system, the interface to that one, one man did. Had a—called a hard rock silo where you put a silo in solid rock to protect it from blasts. Well, they ran some tests and they found out that a solid rock wasn't solid rock because when you dig down in there, you find cracks on the side. So, they put a cylinder inside and then put some gravel on the outside and ran a test. But then it come to—we finally thought about it and said, "If we're going to run tests like that, we're not going to make it because you might as well put the silo anywhere and put the gravel around it and that will protect it. So that didn't—that system—that was out at the Nevada Test Site when I was working there. Oh, I'll tell you a little bit—while I was at the Minuteman on the hunting ground tests at the Nevada Test Site was very interesting there. We had tests called the Minute Stake and the Diesel Train. That was a nice—those are nice tests but they were very, very hard to run because you had to—you set off the weapon and the radiation—you're just checking it against radiation. You drop a screen down, let the radiation go through, then drop the screen down to catch all the flying debris then see what the radiation did to the electronics. So, that's what—they had a big, long tunnel that they do that. Then they had one up—dug a big one in the

ground, straight in the ground, and put the system up on top. So, you'd set the weapon off down below, the radiation had come up and then you'd drop the lid over it to keep the debris from tearing it up. So, there was analysis done on that, too. Those are some—that was 1968 and so forth. People I've met here, oh shoot. Preston Smith was a good friend of mine. He'd come around and I'd visit his home and everything. Jim Wright, who was a—

LW:

From Dallas?

TS:

Yeah.

LW:

Now, he helped you guys with the funding for the Crosbyton Project.

TS:

Yes. Sure did. And Stenholm.

LW:

Um-hm. Charlie Stenholm.

TS:

Yeah. He was a very good man. Then in the meantime, I was traveling over to England, Scotland, Sweden, Spain—

LW:

And you were still with the military during this time period?

TS:

No. I got out of the military when I come back here at Tech in 1960—let's see, I was—I got out of the military in '71.

LW:

So all this travel was when you were with Texas Tech?

TS:

Up here, yeah.

LW:

Wow. Okay. I didn't realize that. Now, when they hired you to come back to Tech, what was the position for?

TS:

I was a Program—Project Administrator or Coordinator. They had a whole bunch of names. They had problems with people that doesn't have PhDs. I said I told you I was in Spain, and Switzerland, and Scotland. I've met some men in Scotland. I used to go by there and have a lunch with them there in London. Really was fun people there. Chief inspector, Derrick Driver, he was in Bosnia last I heard. I'd go sit in the parliament and watch them discuss the bills and, "Here. Here," and all of that. Of course, Reichert—Reichert was at Cal Tech [**California Institute of Technology**] and came here about the same time I did.

LW:

He talks about Christianson—Seacat sending Christianson out there, to talk him into coming back to Texas Tech.

TS:

Oh yeah. We had a man here by the name of Charles Watson-Munro from Australia. He was the head of the World Fusion Council. He worked with Christianson. He was a smart, nice old man. We were very good friends. I'd see him when I was in Australia. I flew over to England in the Concorde. I wrote some papers about missile safety, matador [?] [00:31:41] safety and training. That was a tactical missile like a—it was the size of an airplane and you'd launch it with a rocket-assisted takeoff bottle hanging on the end, kick it off there and then the engine would pick up, and then it'd drop the bottle on the ground, then go to the target. When it got to the target, it'd blow the wings off and it'd dive into the target. We did that down in Florida at the Space Center there. And let's see, what else?

LW:

We were talking about your Texas Tech time. Can you talk a little bit about Seacat, what else you remember about Seacat?

TS:

Well, Seacat was a hard-driving man and we understand that in each other because I took a bunch of courses under him when I got here. We'd go to football games together. We'd go to Texas A&M and he'd talk to the students about the graduate program and I talked to students about the undergraduate and about girls. I'd have a slide, "There's some girls there. That's what they are." So, we'd travel together there at Texas A&M and Rice. So I wound up—I was there '61-2-3, three years with him. He was my teacher. I was the head of the I triple E and we got some things done and we enjoyed each other's friendship. Dr. Seacat, his wife and son came up

to visit me where I stayed when I was stationed there in D.C. We had a nice visit there. He was a history buff so he liked to run around in D.C. So, he was something else. He built that department with—just by himself nearly, before going out, and getting these people, and bringing them in, finding out who fit in and who didn't. He requested to put in a lab with equipment. He got some other people. Portnaw [?] [0:34:38], he had a lab, a simple particle [0:34:41]. Now, Reichert didn't have much. Reichert did a lot of theoretical stuff before he got into the Crosbyton deal. He was good at that. Then John Craig was a theoretical man. He was a man that could teach any course. The faculty will tell you that, too. He was good. Of course, we had Dr. Sakes [0:35:18], the big Dr. Sakes. He was something else. He was a theoretical man. He'd write papers, give talks. He was a member of a lot of societies. He was an expert. Of course, Haber [0:35:42] came in and worked with Chris. They were great teammates. Both of them was interested in the same thing. Pulse power is what it started out as. Funny thing about it, I used to work with an old boy with the name of Dale Courtney that worked at the Dean's office, worked for the dean. I'd give these—since we had a thing on the books—Air Force surplus property books is what it—we'd come up under this _____ [0:36:32] program. You could fill out the forms, send it in, they'd go pick up the equipment, sign for it and bring it in. We made trips to Albuquerque, Los Alamos, New Orleans, all over the country; Oklahoma City, Dallas, El Paso. Dale and another man from there went up to Canada and picked up—this was equipment that you could put into labs. Racks. A lot of them, they just wanted racks to put their test equipment in. All kinds of voltmeters, and ammeters, and frequency meters, and generators, and things that we'd haul that in and put it in the labs there. That worked out pretty good. I could go on the base, knew a bunch of people and as a retired lieutenant colonel, I could just go in there and visit with them. Left at Albuquerque. That was a very interesting thing. So I'd take off, do that, come back, we'd unload it.

LW:

So you were getting spare parts from everywhere?

TS:

Yeah. That's right.

LW:

John Reichert refers to you as The Producer. He said if he needed anything, you found a way to find it, and that was his nickname for you.

TS:

Well, Reichert gets carried away sometimes but I have a lot of respect for him, too. He's a hard worker and brilliant man. I've never seen anybody that smart.

LW:

He also mentioned that when you were first—when he was first on board with—hired—that you sort of ran as a liaison between him and Seacat. So, if Seacat was in a bad mood, you flagged John and said, “Okay. Better stay out of his way today. He’s in a mood.”

TS:

I’d get him settled down. Seacat was just an unbelievable man. Down in the labs, you can see papers of—he helped set up those labs. Strangely enough—I don’t know what’s going to come out of this but—the man that set those labs up was by the name of Clive Lankford. He was a—he didn’t have a degree. He was a brilliant man and did—he had nothing—education but he never did get—reminds me of another gentleman on the campus in the same way. Very good. Very good teacher. But anyway, what else was going on?

LW:

How was Seacat as an administrator?

TS:

Very good. The one before him wasn’t too good.

LW:

Okay. Because I think Reichert, and Hagler and others said that he was—he wasn’t the greatest teacher but what he was is he had people skills that he could find the right people to do the job.

TS:

That’s right. That’s right. That’s what he could do. And he knew how to handle them, too, whether he needed to holler at them or not holler at them, things of that nature. He was different, real different. He loved sports. We had Pecos basketball team.

LW:

At tech?

TS:

In the department, you know, intramural.

LW:

I didn’t know that.

TS:

Oh yeah. I have some pictures up there I think. He coached—and he'd be all at the intramural games, football games, and the basketball games. We'd go to those. He was a little different, little different.

LW:

What about—what do you remember about John Bradford?

TS:

John Bradford was a—kind of aloof. He was a little aloof person. But sometimes he'd come down on the ground but—and he was pretty smart but I don't think he knew what he had over there in electrical engineering, really, because they were—I went around a lot of departments and a lot of engineers. I worked—when I left Ellington Field, everybody I worked with, nearly, 90 percent of them, had degrees in engineering or physics and many of them master's and PhDs. That was—that goes from up there at Denver to all the way to Japan, especially in Washington, D.C. at the Air Force Technical Application Center. Those were—they were all men—I had men with a PhD in physics, PhDs in math, and they were pretty good. So, I can imagine our department being filled with these kind of people. Had a bunch of Air Force Academy graduates working for me. So, I never did have any stumbling around people. They all knew what they was doing and pretty well trained.

LW:

What about—let's talk about the Crosbyton Project a little bit.

TS:

Okay.

LW:

How did you get involved with that?

TS:

They brought me over here to help with these projects then this come up and they needed somebody to coordinate the project at that—Crosbyton and here and then interface with the E-Systems and all the other bunch; set up meetings. It was interesting. So I was up there nearly every day, not all day but—you know another thing, that Crosbyton Project, there's people that work up there that got their PhDs working on the Crosbyton Project and got—it's kind of interesting. Bobby Green worked up there. Pardon me. A lady at—Karan Watson—got her PhD and she was—she's at A&M as an associate dean in education. I think that's where she is now. And then there's—I can dig out some names but [coughs] there was some good people there.

LW:

I know that there were several students who wrote theses, and I think possibly some dissertations out of that project.

TS:

That's right. Controls, tracking, [coughs] tips tier [?] [0:45:29] deals.

LW:

Now, do you remember—can you reflect on some of the folks in Crosbyton you worked with, like, is it Nolan?

TS:

Norton Barrett. He was interesting. A devoted man to Crosbyton. He was the City Secretary. He loved the city. He loved the people. He was a driver and he was a supporter and a real gentleman. He could get along—he could go to Washington, D.C. and move around up there real well. I kind of followed him around the first few times I was up there. Then Charlie Hudman at Hudman's Hardware. He was a nice guy and helped us a lot. Then the banker—Bobby will tell you that banker's name. We just talked about him. There's a banker up there that—

LW:

I think he had initials, like T.J., J.T., or something like that. But the citizens of Crosbyton embraced your project?

TS:

Yes. They helped us, and you could tell by—when we'd have something they'd all be there. We'd give talks at the rotary clubs and things. I really enjoyed working with them. I think they know we sure did the best we could, and it wasn't the working bunch that shut that thing down. Reichert can _____ [0:47:29].

LW:

There was a lot of politics going on but it was also in Washington that there was politics because—

TS:

That's right.

LW:

Wasn't—is it the DOE [Department of Energy] that was just established, right?

TS:

Yeah. There's a DOE man up there that—

LW:

Didn't like the project.

TS:

Unh-uh. Well, you know, a lot of people have a hard time understanding that to build something like that, you've got to know what you're doing and you got to believe in it. The thing about it is you've got to—solar has—inner solar system has to have a backup system, whether it's wind or solar. The maintenance of that thing, you just don't turn it on and let it go. You have to clean mirrors. You have to do all these things. We did some pretty deep studies—Ed O'Hare—Dr. Ed O'Hare did some good detailed studies on cost—operational cost of it and what they could do and couldn't do.

LW:

On the mirrors, did they test—I know they tested the strength against hail and dirt. Did they also have to, like, see—test how concave to make the dishes and like surface to put on it?

TS:

Oh yeah. There was a design to a particular curvature and they would check for that, check for reflectivity. We worked with a bunch down in Georgia on some of that. A mirror—you know, the back surface is where the reflectivity comes from, and so we looked at a lot of reflectivity material and something be strong enough to just say that [claps] [0:49:51], and mechanical engineering did that, Herb Carper and some of those people did all that. That isn't easy to design a bowl that's got to perfect because you put all these mirrors in there and they all, you know, line up. When the sun hits it, it tracks it.

LW:

The DOE, I think—the head of the DOE was interested in the Barstow Project, which I think was later called Solar One.

TS:

Yeah. That was a tower project.

LW:

What was the difference between the two designs? Because—

TS:

Well, the tower, the mirrors track the sun on the tower and ours, the bowl tracked the sun.

LW:

And which one required more man power? Would it be the Barstow Project or ours?

TS:

I think the Barstow. But see, here's the mirrors all here and here's the bowl. That thing—when the sun's—the sun, you can see the shadows here. The sun's coming out there and it hits here and here, bounces—everything got hit inside this thing here, hit that bowl right there, then it comes down here and into the powerhouse.

LW:

Is it steam that's going up through there?

TS:

Yeah.

LW:

Okay. So, did this system require a lot of water to run?

TS:

Yeah. Me and Bobby got into some arguments over that. It didn't require that much. You recycle it, it comes in, run the engines and turbines and that was it.

LW:

Just from the time—the conception time, drawing the design and working the dishes to actually building, how long did it take to actually put a small-scale model together?

TS:

Let's see. Nineteen—to build this or just design what that's going to be?

LW:

I guess from the time—when you got approval to build the model. How long did it take to actually build it?

TS:

That's a good question. I'd say it took about a year for this size. But it was—you've got some of these—

LW:

Somebody told me that part of the bowl was built through salvaging parts here and there.

TS:

Yeah. Some of these old beams that's underneath there, boy, that was a booger to put those—install those. I forgot how many there was there. Four-hundred and thirty-five.

LW:

Well, there's still a lot of interest in that dish. We still have people from around the world who call in and want to see the technical drawings for the dish.

TS:

It's simple. It works. And see where the—looking into more than we did but we did about all we could with the time and the money we had. Nobody put in more effort than we did in a project like that.

LW:

What were some of the challenges you had with that project? I know there was a lot of them but maybe—

TS:

Aligning the mirrors. They had to be aligned. So, you put a—we had a target up here on this and you'd go down here and make sure that the sun hit that target there. You had the mirrors. You'd adjust each mirror.

LW:

Manually or was it by computer?

TS:

Manually underneath there, crawling around underneath.

LW:

And how often, like within a testing period, did you have to do—align the mirrors? Was it every hour?

TS:

Oh no. Didn't have to do it very often. You just—because that—you could tighten it up and they'd stay that way a good while. So that was the advantage of that thing. Disadvantage was cleaning those mirrors was a problem. We put a thing up here, hose it down, run this thing around it and then had somebody walk—you could walk on those if you was careful.

LW:

What did you wash it with, just water?

TS:

Water and—not Clorox—Windex. Yeah, Windex.

LW:

Okay. So it didn't have a special coating on the mirror.

TS:

Unh-uh, no, unh-uh. Once you cleaned that off, you could watch the performance of that thing the next just come up and [makes sound] the sun hit it and it shined right.

LW:

So our dust was a big problem?

TS:

It wasn't that big of a problem. It'd blow off.

LW:

Did you ever have problem with, like, rocks or hail, like, chipping the mirrors?

TS:

Not enough to amount to anything. Sometimes you'd have something but it wasn't what you'd call a problem.

LW:

I think some of the photographs there's a—it looks like there's a room near the dish with all these computers and someone worked in.

TS:

That was the control center. What you did is you turn it on in the morning when the sun—and line it up. You could see that thing light up when the sun hit and then you switch it on and it tracked the sun. That was the control center tracking the sun. Now, what you had to do is make sure you control the flow of the water through the boiler because sometimes it would—you wouldn't have enough water and it'd get too hot. So, you'd like to have it at a thousand degrees at a thousand PSI [**pound per square inch**]. They'd be there checking to see if automatically we was doing it.

LW:

If you were running low on water, what would you do? Would you stop the system to put water in or was there a spot where you could just pour the water in?

TS:

There was a spot. You just move it off if you wanted to. We could—you could increase the water flow, increase the flow going there or decrease it, let it build up steam then increase it. You'd have more water but not much steam. Sometimes you'd have more steam and not enough water.

LW:

And the steam was important because wasn't that what generated the—

TS:

Yeah.

LW:

Now, did it make a difference how hot it got during the day? I mean, did the evaporation throughout the day—

TS:

You didn't want to get over a thousand degrees. That was just the best—that was the operation design points and everything; at a thousand PSI. That's enough pressure and that'd run the turbines inside.

LW:

Were the graduate students who usually ran—got their turn on the system—

TS:

Yeah.

LW:

—and stood on top of things.

TS:

Bobby, Karan Watson, whole bunch of them. They would rotate. They worked Saturdays, Sundays, holidays. Yeah.

LW:

While all this was going on, you had to make a couple of trips to Washington, didn't you?

TS:

Whole bunches.

LW:

What did you do on those trips?

TS:

We'll tell them how we're doing, what some of the problems were, what snags we were hitting in funding, what was some of the critical points of our tests and how we're doing it.

LW:

Did you ever meet with George Mahon to talk the project?

TS:

Yes.

LW:

And what was his attitude towards the project?

TS:

He liked it. He liked it. He was a—let get me this out of my—

LW:

Okay. I'm going to pause. [pause in recording] Okay.

TS:

I've had some discussions with Chris and the bunch up there on pictures in this report, or this write-up. "Just get a bunch of pictures of"—"No," I said, "people"—a picture says a thousands words.

LW:

So does identification. Most of the pictures don't have any ID. I've got to get you and Bobby to sit down and ID them. This picture right here, was this the day that they tested the solar dish?

TS:

No. He'd just come up there on a visit. That was a visit. Here's a bunch of faculty: walk up, football players. Chris's house. There's two different pictures of them. One of those was my retirement. We had a big party out at the Officer's Club [1:01:43].

LW:

Yeah, I saw that in here, about two-hundred people coming to the retirement. Now, Chris has been—is he the longest member of the EE faculty? Because he was before Reichert and before you, right?

TS:

Yeah. I don't know whether he's before Trost or not.

LW:

I don't know about that one.

TS:

That's Dale here.

LW:

I got to interview Trost at some point, too.

TS:

Let me see something else.

LW:

Okay.

TS:

I'll show you something interesting. It doesn't have anything—I'm really having a hard time getting around now. My legs have tightened up on me. Honorary Letterman's—member of the Letterman's Club.

LW:

Oh wow. Now, is that you up there playing?

TS:

Yeah.

LW:

And that's in Arkansas?

TS:

Arkansas. A long time ago. [Laughs] That was fifty something years ago.

LW:
Well—

TS:
I don't want to keep you here. Maybe my memory will be a little better the next time.

LW:
Want to stop here and we can do it again?

TS:
Yeah.

LW:
We can go ahead and do that.

TS:
And I can make some—

End of Recording

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