

**Oral History Interview of
Darrell Vines**

**Interviewed by: Andy Wilkinson
December 11, 2009**

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Transcript Overview:

This interview features Darrell Vines as he discusses Texas Tech's Electrical Engineering program. In this interview, Vines describes the Electrical Engineering department and touches on the Crosbyton Solar Power Project.

Length of Interview: 01:15:53

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Andy Wilkinson (AW):

This is Andy Wilkinson, visiting with Darrell Vines in his home. It's two in the afternoon on the eleventh of December, 2009. We're going to be talking about the electrical engineering department at Texas Tech, in general. And Crosbyton project some in specific, and so on. So, Darrell, a good way to get this started, I think, would be for you to tell future listeners how you got interested in engineering and how you wound up at Texas Tech teaching? I know enough about you to know that you come from a part of the country that you could just have easily have wound up being a rancher or a roughneck or a driller as being an engineer. [Laughter]

Darrell Vines (DV):

Well, that's been a long time since I've been asked those kinds of questions. I think I can start. When did I discover that electrical engineering would be fun to do? When I was in high school physics class we had a relatively young physics prof that'd come from East Texas, and he turned us loose with lots of projects. We did lots of calculations and I was pretty confident in math, because of another guy you may know—Doug Crane—who died recently. When we were calculating the amount of heat dissipated in various things, iron was something that my mother used on a regular basis, and I said, "Gee, these calculations are fun!" To know how many watts are dissipated in an iron, what it takes to iron a shirt. "What do you do with this kind of information?" My teacher said, "Oh some people who like to do those calculations get into engineering." So I thought about that for a good bit and wandered around in some other areas for a while, but decided that electrical engineering probably would be—if there was an engineering area to work in—that would be preferable to petroleum engineering, because I knew too much about oil and gas, and I really wanted to get away from the oil and gas. I wanted to get out of that kind of area and that kind of work. Engineering seemed to be a good math application thing. I went to McMurry for a number of reasons right out of high school. Some of my classmates went to Texas Western, which is known as UT El Paso now. They invited me out for a weekend or two and I discovered in a hurry that if I'd been at UT El Paso, I probably would have entertained myself so much that I wouldn't have graduated. So McMurry is really good place to be. John Bradford had established a program in the early fifties between McMurry and Texas Tech, so that if a person spent three years of undergraduate program at McMurry and finished up two years of an engineering discipline at Texas Tech, that both institutions would grant degrees at the same time.

AW:

Really?

DV:

And that was really fascinating, so I checked enough on the electrical engineering and decided that is what I wanted to do. I was the first and last graduate to go through that program.

[Laughter] McMurry hired a really fast-track physicist from Arizona somewhere—I think he had

worked for Motorola—and all of my classmates and younger friends chose to get degrees in physics and stay there and study at McMurry. Now there are some students who did transfer to Tech and get degrees in engineering, but I went on that special program. And when I got to Texas Tech as an undergraduate, it was definitely an undergraduate master's degree program. It was a teaching program. C.V. Pullman [?] [00:04:33] was the department chairman, and I think he was the first full-time department chairman that had been at Tech.

AW:

What year was this, that you started at Tech?

DV:

I started in '60—I started in '57. In fall of '57.

AW:

Was Bradford dean?

DV:

Um-hm. He was dean and wore a flat top. Young guy. [Laughs] At that time the Dean's Office occupied the first floor on the south side of that building that is now known as the double EE building. EE was still on the first floor of the north side. So we were—we saw Bradford on a pretty regular basis. About half of the faculty at Electrical Engineering were graduate students, and who were a year to four years older than I. We treated those classmate graduate students with the respect that you would a faculty member. In fact I think there were a couple of graduate students who were really the best teachers in the department. They were really outstanding. Went on and got PhD's someplace. So that was a good time for me to be in the program. Paul Griffith came to Texas Tech in the year I was a senior, I think. He was a graduate of Texas Tech. He'd gotten his PhD from Stanford. One of his classmates was teaching in Mechanical Engineering—or two of them. Monty [?] [00:06:55] Davenport and Duane Crawford—not Crawford. Duane Jordan—and they encouraged Paul to come back. Or maybe Paul encouraged them to go to Tech to begin with. I'm not sure what that combination was. But Paul tapped me as a prospective graduate student. I had not thought about going to graduate school, but he pointed out the advantages of doing that. He let me do some things in the lab with him that were a lot of fun. So I did apply for graduate school and was—I didn't do that at that time. I graduated and went to TI [Texas Instruments] in Dallas for a couple of years, and then came back—No, I got confused there. I did get my master's degree with Griffith before I left. That's right. So I didn't leave Tech to go to TI until 1960, I guess. I graduated in '59, and finished the master's degree in '60.

AW:

And a master's degree at that time, and I guess still is the case, that's what you need to be an engineer, but not necessarily what you need to teach or—

DV:

That's right. It was a rather tumultuous year as a graduate student, though I was not a teaching graduate student. I was a research graduate student working in Griffith's lab. There was a faculty meeting and Dean Bradford came over and spoke to the faculty. He said, "Things are getting ready to change. Just as soon as we can, we're going to replace all of the current faculty who don't have PhD's, with faculty with PhD's. And those of you who want to stay in the teaching business should start looking for an opportunity to go to graduate school. Those of you who don't want to stay in the teaching business, I recommend you start looking someplace else." I'd been around long enough and had seen enough of those older faculty who were not going to back to graduate school, and it was a really, really hard time for them. Basically they found out they were going to get fired if they didn't go ahead and resign. Lot of tears on those grown men. A lot of the graduate students instead of staying there to continue to teach did go off to work on PhD elsewhere. Several of the faculty members who were there did go back to graduate school. Some of them did finish and came back and taught, and some didn't finish and came back and taught. But it was certainly a—In those early sixties, that was a major change in the shift of the department from being an undergraduate program into a program that had PhD's on the faculty. It was all tracked to move into a broad-based, research-based, program.

AW:

Was that following a national trend for the same thing?

DV:

I think it is. It was in the fall of '57 that *Sputnik* went. Of course, I'd only been at Tech a couple of months when that happened. There were National Defense Education assistantships. National Science Foundation provided assistantships and scholarships. And all of that was in full force by the early sixties. So going to graduate school was a really an easy thing to do. If you got accepted the University probably had some kind of scholarship or assistantship for you. I don't think we had—let's see—most of the classmates that—let's see. After I worked at TI for a couple of years and sat next to a guy every morning at coffee time would tell me the joys of teaching. He was writing proposals for TI and was really unhappy. He really wanted to be a teacher. So I thought, Well shoot. I ought to try that out. So I came out to Tech on a business trip to California, and stopped off here. I went to see the department chairman and said, "I think I'd like to teach. You think you could work that out?" And he said, "Well, yeah, I think we could. But you'd have to talk to the dean." So I went down to the Dean's Office and he waved me in because he had known me as an undergraduate. Asked what was up, and I told him I thought I'd like to come teach if he could afford me. He said, "How much do you want?" And I told him. He said, "Okay. The semester starts in the middle of September."

Mary:

Hi Andy.

AW:

Hi Mary. How are you?

Mary:

How are you?

AW:

Good.

Mary:

Good. I forgot to ask where the Academic Decathlon was going to be?

DV:

Coronado.

Mary:

Not in the gym.

DV:

Well David tried to call your cell phone.

Mary:

Well, okay. Thank you. Excuse me—

AW:

That's all right.

Mary:

--for putting that on your recording.

AW:

No, that's a nice touch. So he—[laughter] he says, "Come on."

DV:

Yeah. And a few years later applying for a teaching position was a long, laborious, paperwork infested thing. He was just really amused. "Okay." It was about—it's easier than hiring a part-time student. [laughter] So I taught for a year and then almost all of the graduate students at Tech at that time were finishing their master's degree and ready to go to graduate school. Some went to UT and some of us went to A&M, and some went someplace else. So that was in the fall of '63 or '64, I guess. Somewhere in there.

AW:

And so you went to A&M to do your doctorate?

DV:

Right.

AW:

What was your interest in electrical engineering? Did you have a specialty? A thing that—

DV:

You know with the time I spent at TI, I got pretty excited about electronic circuit design. In fact, the personnel guy tried to talk me out of leaving to come to Tech. He said, “Something really big is getting ready to start.” I said, “I don’t know what you’re talking about.” He said, “Well, Jack Kilby has just invented something that’s really going to change the face of TI and all of the world.” Jack had had a lab across the hall from where I was. I thought, Well that’s probably kind of interesting, but I just don’t see much reason to stay here with the electronics. But with the basis that I got in electronic circuit design and circuit analysis, the inspiration there at TI—and I built on that while I was at A&M. And then came back here and did a lot of electronic circuitry stuff. That was—the graduate area that I did at A&M was in control systems, because the faculty member that I thought was the shaker-mover there liked to do modeling and control systems, because there would be some kind of circuit that would measure something and then send out a signal to make good things happen. So I enjoyed working with him. The dissertation dealt with a sensor that would be able to detect seismic waves offshore. And when they pull these sensors along behind a ship, and then have a detonation someplace, the sensors were responsive to acceleration. When the boat or ship would speed up or slow down, depending on whatever it was, the long tail that was drug behind the ship would either accelerate or decelerate. And that sensitivity was just as great as the pressure reflections that would come from the bottom of the ocean up to the top. So I designed a combination of sensors that would cancel the—

AW:

[inaudible][00:16:55].

DV:

—effects of the acceleration. And Dr. Rickoff supervised that. I don’t think he was terribly excited about it. But that’s what we did. And then I came back here and picked up—taught—a good many controls courses and electronics courses. Spent a lot of time with the labs—especially the electronic circuits labs.

AW:

Was Russell Seacat one of the old guard that took the message and went off to—As I recall he didn't have a PhD to begin with, and left and got it, and came back. [Sound of cups] Does that figure in that same time?

DV:

Yeah, it figures exactly in that same time. When I started into graduate school, Russ Seacat—and that was in fall of '59, I guess—that was when Russ Seacat came to Tech. He came without a PhD. He and Paul Griffith were really good friends. Russ didn't get his PhD until about '66 or '67—somewhere at '65 or somewhere in there—he had been at Tech for a long time. And that was one of the things that he told all of us who came without having finished the PhD completely, is that, "Your first task the first semester you're here, is be sure you finish that PhD." As if to say, "Don't do like I did." But Russ got really excited about teaching, and just put his life into that. Put his PhD on the back burner, in spite of the fact with this mandate that Bradford had laid on the department, Russ continued to teach without his PhD. But he knew he was going to get around to it sooner or later. He did get his PhD, and he pushed on—Tom Burkes was another of our Tech classmates who went to A&M, and Bob Meeks. There was another guy—Wayne Wilkins, I think. There were several of us Texas Tech people who were at A&M at the same time. Russ pushed on us all to go ahead and get our PhD just as quickly as we could. He was, let's see, he was not the department chairman when I went back to teach from TI. The department chairman—maybe you remember his name. I'll think of it in a little bit.

AW:

Yeah, I don't remember off the top of my head who Seacat replaced.

DV:

Russ Seacat was—the department chairman had some health issues, and Russ Seacat was pretty well organized and doing things that were important. He wound up, essentially—according to the story he told me—taking care of all the paperwork. He knew what it took to run a department. And the department chairman left and Bradford was looking for somebody who could take care of the department. So Russ, in his delicate way, tried to persuade Bradford that he could be a good department chairman because he was prepared. Bradford said, "Well, I'd consider you, but I just really don't think you can hire any faculty." I think this was on a Friday, and Russ told him, "We'll see." And he called me on Saturday and said, "I'm going to be at College Station on Sunday night, and I want to meet with you and Tom Burkes at a local motel. I want to talk to you." So Tom and I showed up there and Tom's dissertation was taking a little longer than he had anticipated. I said, "So when do you want me to start teaching?" He said, "Here we are in—whenever that was. In the early summer—" "I want you there the first of September." I said, "Okay. And the salary will be all right?" He said, "It'll be the best we can come up with." Said, "Okay, well I'll go." So then he left there, and Tom Burkes said, "I'll wait a while." Then Russ

went over to UT Austin and visited with another of the fellows that left Tech to go to graduate school about the same time I did. It's Dave Ferry. Dave introduced Russ to Mike Kristiansen and Hagler. And of course, Dave Ferry was not quite finished with his PhD, so Russ offered those guys teaching positions. Chris and I came out here at the same time. My story is that because Russ stopped at College Station first and talked to me on that Sunday night, I was the first faculty member Russ hired as department chairman. [Laughter] And of course Chris had finished his PhD by the time he got here, so he hit the ground running and has continued to be doing that. Clive Langford was a really, really good right-hand man for Russ Seacat. Clive was the one who essentially looked after the labs, managed the finances within the department, and was a real asset to Russ and to the department. It was between Russ and Clive, I think, that the concept that has become known as the Projects Labs was really developed at that time, in which students were given an open-ended project to solve, build, create, test, or do something with. Seacat and Langford worked together really, really well to get that into the condition it is now. Which I guess is the only department in the whole United States that really utilizes that technique of teaching labs.

AW:

Really? It seems, like it's so logical that everybody would do it.

DV:

Well it would, except that it requires a whole lot of effort out of the faculty member who is managing the labs, to come up with meaningful projects that will challenge the students. And then to be supported by faculty members, who will challenge the students beyond what they see as a surface issue of a project.

AW:

Right.

DV:

It's harder on faculty, in some ways. But it's easier on faculty's time that they don't have to spend a lot of busy work time in a lab, in the way that traditional laboratories are conducted. I feel—I'm convinced—that Seacat was on the right track there for any institution that has limited graduate student assistantships, or limited graduate students need to go into a program similar to what we've got there in the department.

AW:

So what was the department like when you got back from A&M? What kind of department was it? It sounds like it was in a—

DV:

It was in a—

AW:

—building or rebuilding.

DV:

Yeah, it was in a transition. That's right. I think Paul Griffith had made some pretty serious stabs at bringing in some research funds. I've heard recently that Seacat got credit for having brought in the first—gotten—the first research grant. But I think that's not true. I believe that some combination of Griffith and Bradford or Griffith by himself had brought in some money at a little earlier time. But I do remember, specifically, when that contract came in for Russ Seacat. It was a modeling and control systems project. But there was no question, at that time, that writing proposals was a really important task.

AW:

A faculty task?

DV:

That's a faculty task.

AW:

Not something for Institutional Advancement or the Development people to do, but something that the faculty did.

DV:

That's right. We wrote proposals to get people to fund projects that we wanted to work on, and that would be mutually good for our industry as well as Texas Tech. And basically to provide graduate student assistantships for our students, so that we—doctoral faculty—would have money to pay students to work on projects that we were interested in. Prior to that time all the graduate students were funded with state money and budgets, very similar to what the faculty were supported. Kristiansen hit the ground running. He—and a year later when Marion Hagler and David Ferry showed up—those three guys had worked together really well at a really fast-paced research environment at UT Austin. All three of them extremely skilled in writing and creative thinking and problem-solving. They really made an impact. They changed the complexion of the department. The graduate students were just flocking to work in the area where those guys were teaching and providing assistantships. They did a good job.

AW:

Hagler was lasers and, later, plasma. What were Kristiansen and Ferry—what were their specialties?

DV:

Ferry was more in semiconductors and field theory, and a lot of—in fact, in field theory, I think he and one of the graduate students—Rob Fanon—coauthored a text in field theory—introductory field theory. Probably a junior level course. Dave Ferry was an excellent mathematician. Liked semiconductors and understood semiconductor physics really well. Marion did a good bit of laser stuff, but I think he was also—Marion was really versatile. Excellent mathematician and he could sit down and read something in a little while and talk for a long time like he had understood that for a long time. He had the ability to really comprehend in hurry. Kristiansen—I think Kristiansen and Hagler may have worked together doing nuclear kinds of instrumentation or fusion or something like that. It's been a while—a long time—since I thought about that. But I think Marion was teaching some courses on nuclear power generation and the pros and cons of that. By that time John Craig was back and working with them a little bit in those members. John Craig was one of my undergraduate faculty members who went on to UT and got a degree—an advanced degree—and came back. So that was a pretty good contingent of UT people who were in the department in the late sixties and early seventies. I guess it was about—I don't know for sure—when the proposal was written. I think Halger and Ferry and Kristiansen had written a proposal to—I believe it was National Science Foundation—that granted the department development grant. A major, major thing that allowed us to hire several faculty members. I remember that Kwong Shu Chao was one of the faculty members. Tom Trost came in. Don Gustafson. I think all of—well Chao and Gustafson have already retired. John Walker may have come in during that early time, also. That was a revolution within the college and within Texas Tech, to have lots of funds coming in to really begin building the department. Russ Seacat managed that exceptionally well and where those guys wrote the proposal—of course they had lots of control and the direction of spending the money. He assured them that they could do that and those of us who were not as closely tied to that proposal got picked up our share or maybe some other share of the classes to teach, but we went ahead and did that because some of us it was really fun to be doing what we did. Having those young faculty come in was a lot of fun.

AW:

Was that unusual in the context of the University as a whole, and even maybe within engineering?

DV:

Oh it was. It was really unusual. Prior to that time a major change would be if the college got from one legislative session two or three new faculty positions. And those were few and far

between. That was controlled—you had the department chairman would write a plan and the reason why he needed a new faculty member. The dean would put all of those together and then it'd go to the president. There'd be a lot of talk about that and then the decision was made. "Well, we'll seek three new faculty positions for the university from this next legislative session," perhaps. Or maybe ten new faculty positions and maybe one of them would go to engineering. So that was the funding of engineering faculty, as I understood it, before the department development grant came. Then, when all of the sudden, we were running ads and national publications and looking for faculty and bringing people in for interviews was a dramatic change. People in other colleges were startled to see the kinds of activity—recruiting activity—that we were involved in.

AW:

Did that put a target on your backs? [Laughter]

DV:

Oh, that's probably a good question. You might actually even suggest, by that question, that there was a bit of jealousy or a competition within Tech. I think probably, if I looked back at that, I would guess one of the saddest things about being at Tech was the level of jealousy and competition that existed. I think that might have been driven a bit by engineering students all getting their jobs when they graduated and things were fast and active and the engineering faculty members were fiercely independent. Some of the faculty who were not working in areas that were quite as exciting could be a little bit critical or jealous, and I wouldn't blame them for that. I just think that's just the way some of the people are at Texas Tech. Maybe still.

AW:

I've heard it characterized—Reichert especially—characterized the electrical engineering department of those years and into the seventies, and up until the Crosbyton project and all of the disruption that ensued at the close of that, that the department was one of the very best in the nation. In electrical engineering. Is that a fair thing to say?

DV:

[Laughs] Well I think Texas Tech electrical engineering was really well known across the country, because we had the number of good graduates who went out. But the other advantage we had, that Russ Seacat had the ability to communicate and he would go to—he would communicate, especially if he felt like engineering was being abused. Or if electrical engineering was being ignored. Especially within the American Society of Engineering Educators. There was a group of people who tried to talk about how the accreditation might be changed and how that would impact different departments. He weighed in on that and would speak loudly. And then there was another move afoot to—instead of awarding a bachelor's degree and allow engineers to go seek professional engineering status, that would require that students stay in school through

the master's degree before they could become a registered professional engineer. Russ weighed in on that, and corresponded with the key department chairman and deans all over the United States. Whenever there was a national meeting of one of the engineering programs, he was always sought out, and people were asking him his opinion and questions about how things—So I think Russ Seacat did a really good job of selling the department. And the philosophy of the department, that is, “We are creative, innovate people who are in engineering and we ought to be able to stand up and be counted out in the workplace.” TI hired lots of our people, but about the time that we started going off to graduate school, MIT got several of our graduates; and University of Illinois; of course Oklahoma State; the University of Oklahoma; SMU; a lot of our graduates did go to graduate schools like that. When they hit the ground running they were hard working guys and made a good reputation for all of us. I remember, there was another guy from Texas Tech who went to A&M—Merle Watley—was. So we wound up with—Texas Tech probably, during the time I was down there, probably had a headcount of half of the graduate students that were at A&M.

AW:
Really?

DV:
Russ Seacat sort of coached us and guided us down there, because he'd tell the department chairman that, “This fella—he's a good guy. He'll do whatever you ask him to do.” Or, “He'll study hard.” Some combination like that. I think A&M and Texas Tech had a really good working relationship in graduate schools in those times. And we tried to help A&M to change to a project-lab environment, but we—undergraduate—I mean, graduate students—were unsuccessful. [Laughter]

AW:
Well the—did you have much involvement in Crosbyton Project?

DV:
The Crosbyton Project was—No, I didn't have much, directly. I listened to stories. I knew, basically, what they were doing. The graduate students that were working on that may or may not have been in a class that I was teaching. I sort of knew what was going on. Travis Simpson is a fabulous promoter, and every time anybody would slow down for a little bit he'd tell us all the good stuff that was going on out there. But the other thing was that I taught at the Air Force Academy as a visiting faculty member from, I guess, from '81 to '82. Or maybe it was '82-'83. I think somewhere in the early eighties. But when I came back from the Air Force Academy I was—I discovered that the department was pretty much like a bucket of water. When you take your finger out of the bucket of water the department almost thinks you didn't exist there anymore. I had to come back and carve out a spot for myself, which was kind of nice. That gave

me time enough to walk up and down the halls and see what other people were doing. I was keenly aware that the Crosbyton Project was going. They needed a lot of people teaching classes, and I did not have research project, and I wound up getting lots of classes. So I was sort of aware of what was going on in Crosbyton, but was never asked to make any critical evaluation or any specific contribution. I had my task.

AW:

Was it a project that was—a really large project, in the context of what was going on in the double E department? Or was it just one among a number of things: For instance, Kristiansen wasn't really involved in it either.

DV:

That's right. Right. That's right.

AW:

Was Ferry still there?

DV:

I think Ferry had already left by that time. Kristiansen—and I don't know whether it was Kristiansen and Hagler or Kristiansen or just how that worked. Or maybe Walkup was involved with that. But they had some lab space and lots of activity going, and good contracts supporting that. And the graduate students were busy doing what they did. If anybody wanted to know what was going on in Kris's lab, they would walk down the hall and they could look in and see that. That's just the way it was. The Crosbyton Project, on the other hand, didn't have a lab in the building. It was in a remote location. We saw the city officials would come into the department for various meetings. So we had a lot of interaction with some of those kinds of visitors, much in the same way that Chris would have some of his funding representatives that would come on the campus. We'd see them. But the Crosbyton Project was more of a project lab in a remote location that we heard more about than we saw on a daily basis. I think all of us had a chance with probably three or four months to go out there to see something special that was happening.

AW:

So it didn't dominate the department by any stretch, then?

DV:

Oh no. No.

AW:

Lot of things going on?

DV:

Lot of things going on. It did turn out that—of course Kristiansen thought that the graduate students working in his area were the brightest of the bunch. But those working at the Crosbyton Project were believed to be the brightest of the bunch. Reichert was a good promoter. And I didn't see competition between Reichert and Kristiansen and Hagler. I saw a cooperative effort. In fact, I guess, one thing about Reichert is he's one of the most cooperative people that I have dealt with. One of the most brilliant and cooperative and idea generating guys that I've dealt with. I really, really admire him. But he never hesitated to promote the Crosbyton Project, either. So when the so-called firing came to be, I'd only been back in the department since—basically since the summer previous to that. So I had my teaching load and I was just still wandering up and down the hall, and was startled by the faculty meeting that we had in which there was a lot of emotion that was expressed there. I didn't—I had not been part of the stuff that led up to the department meeting. So it was—I was really shocked to see the intense anger that was being expressed. I had no idea where that was coming from. I was really startled.

AW:

Once that came down and they—I know, reading some of the newspaper accounts—was I was kind of surprised to see how closely it was followed in the local newspaper. Both the *Avalanche Journal* and the, at the time, *University Daily*. It was front page news, almost.

DV:

Well, interestingly, I think I read the same newspapers back in those times. But I had to ask my colleagues when that actually happened, a month or six weeks ago or three months ago, and then went back to the library and dug through and found all those articles and read them again within the last few months. It was really easy to find those things, and to get them located. There were—they did track that. I guess part of the reason was because the Crosbyton Project was important to Engineering and Crosbyton as part of the *Avalanche Journal*'s territory. So it was easy for them to write about those things. Then of course John Reichert, being pretty colorful and enthusiastic, it was a pretty hot topic at that time. I think that Dr. Cavazos was pretty well known in the community. He had his agenda that he understood really well. We had two or three graduate students who were really vocal. Probably not as intellectually equipped as some of the ones who were really doing good work out at the Crosbyton Project. But sometimes the really creative ones and the politicians don't turn out to be the same guys. [laughter]

AW:

I think that applies to a lot of things besides electrical engineering. [laughter]

DV:

It certainly did make for a lot of interesting stuff that happened during that time. But I think the—There was no doubt about it. I was on the periphery of the faculty in the department,

because I didn't have the vested interest in the Crosbyton Project and I hadn't been dealing with Seacat for a good while. In fact, I think if I had—oh I don't know—I think if I'd found another job somewhere else, Seacat would have patted me on the back and wished me well. So I was—I just didn't get involved in much of the departmental politics. Jimmy Smith has been a long term friend of mine. In fact, since virtually high school days, I've known him. Or at least our paths crossed a lot at that time. I thought that our faculty was really disrespectful of him, and said some really caustic things in the faculty meeting. And I didn't know where all that came from. I looked at the people who were saying those critical things, and I knew them to be really opinionated people, but they were not—they were also not west Texans who were speaking like that. So I felt sorry that Jimmy was getting the kind of treatment that he did. And I don't know where Larry Masden fit in in all of that. I don't know where Larry was. He was a classmate for a while, and then I think he was a student of mine once. Then he was department chairman. A good leader within engineering, and just did a lot of good things administratively that are important to the department—to the college. But I think the Dean's Office got caught in a bind, and the electrical engineering faculty didn't cut him any slack. I don't know what happened between the Dean's Office and the President's Office. I don't know what the conversation went like.

AW:

So the Dean's Office was in a bind between the President's Office and what was the flak that ensued over Reichert's remarks, or maybe the lobbying that had been going on? The whole thing had—

DV:

And who knows what all that is. I can't remember exactly where it was. Somebody said that maybe it wasn't what Reichert said or it wasn't a threat by a politician. But as I read through those articles as you did, it seemed almost like a conflict between the Department of Energy not wanting to spend the money on the Crosbyton Project, and Reichert virtually threatening them that our representatives would see to that. I think that was—as best I can tell—that was—proved politically inappropriate statement for him to have made. Whether it's true or not, he probably shouldn't have made that. But I didn't think that at that time. Only now, however many years later, I might have come to this conclusion. But at the time I thought it was sad that the Crosbyton Project was being shut down. I thought it was sad that Russ Seacat got in the conflict and resigned right there. I was sad that Marion Hagler was so discouraged, because he spoke to two or three student groups. Of course I was teaching lots of undergraduate classes at that time, and he told them that he wasn't—he told his students he wasn't sure that the department would survive. I took issue with him in his office. I said, "As interim chair, you just can't take that position. You've got to look forward and do whatever you can, whatever we can, to make this department survive." And he shrugged his shoulders and looked at me straight in the eye and said, "Well I can't predict that. I'm not convinced that we are going to survive. It's really bad." I said, "Well, whether you believe that or not, I don't think that's what you ought to be saying to

the student.” And he and I kind of left with the understanding that we sure didn’t agree on the future of the department. But Marion did a marvelous job of pulling the faculty together and putting—making things go just the way that I had hoped it would. And that’s what I had hoped that would have been the optimistic attitude that Marion would have conveyed to the students. I think eventually he did get around to doing that, because he was convinced that the department could survive, and would survive. But what made him change his mind, he never revealed to me.

AW:

Some people also—and particularly John Reichert—I’ve seen some other mention about it in a general sense, said that this was an apex, as it were, of the department. And when a lot of people left afterwards, that the department didn’t regain the same luster. I’m just curious if that make sense to you? And were those people leaving—were they all connected to this strife over the project and Seacat’s resignation?

DV:

Well that’s a good question. Of course, Seacat left. I think he—I think he probably did take care of himself in doing so. I didn’t see a wholesale exodus of faculty at that time. As an apex? I’ve seen lots of really good, bright spots that have been within Electrical Engineering since that time. Of course, the turmoil may have caused some folks to leave, but like that finger in a bucket of water; as soon as those people leave and that faculty position is open, they got filled in a hurry. So here we—I think the time that Marion was a department head, he brought the department along quite well. I think there was a lot of international exposure, especially through I Triple E that occurred during the time that Marion was department head. We had lots of graduate students who came in. We had lots of young, eager, aggressive faculty who came here to teach and were here two or three years and then got recruited off to other universities. I think all from Reichert’s perspective. Maybe you ought to hang on to that. That that was the apex, the best that ever was. But Reichert was here at that time, and I think Reichert made up an extremely valuable contribution all over the department. He’s kind of a funny guy, whereas he wore a straw—cowboy straw hat and wore tennis shoes, and you know those of us growing up in this part of the country just don’t see those as a good mix. [Laughter]

AW:
Yeah.

DV:

But that was John Reichert. He’d sit cross legged on a big table in a lecture room and just deliver a marvelous lecture. It was well thought out and conveyed lots of information. And puffed on his cigarette—that was back in the time that smoking in the buildings was acceptable.

AW:
Yeah.

DV:

John really, really made an interesting impact on the students. I do know that if he were teaching a class with—he had one section of class and somebody else had another section of class, that John's class usually moved along a little slower at getting through the textbook than the other parties. John was easily distracted and would tell wonderfully interesting stories, the students told me, instead of keeping up with the syllabus. I think John made good contributions in the research labs. There are two kinds of engineering faculty that I remember really well. One of them would be that you walk up and say to a student's project, "That's not how you should have done that. You should have done this, this, and this. You should have looked at that. You should have worried about this thing over here." John Reichert would walk up and look at that same project and said, "Gee, you've done some really good work here. What would happen if you did this over here? What do you think would happen?" And then all of the sudden the student was beginning to think creatively and Reichert was leading him in the thought process. I think that was just a marvelous skill that Reichert had. He'd use that on faculty as well as with students. He was—in fact I imagine that when he'd go in to tell Russ Seacat what Russ needed to do, he'd approach it the same way. [Laughter] "What do you think would happen if you--?" [Laughter] That's speculation. But John was a guy all about the department. Doing things that were fun for him, and people enjoyed being around him. That's—we were talking about competition or jealousies or things like that? I don't think anybody every regarded John as a threat, as a colleague that is fun to work with. You knew he was smart, and knew he would help make good things go. He was just a guy that people really enjoyed having around.

AW:

What about competition, though, not within Electrical Engineering? But between the Electrical Engineering and Mechanical or Civil, or other parts of the university? Especially, it seems like at this particular time, that there was a lot of money coming to Electrical Engineering that may not have been coming to other places. Or in the same amounts, and so forth.

DV:

Yeah, I think that's exactly correct. I do know that some folks in Mechanical Engineering came over and talked to Russ one day, and said, "Russ, we want to build an instrumentation lab because we want to do some things. What kind of lab do we think we—what do you think we ought to provide there?" So he talked to me for a little while and said, "Lay out the kind of test equipment that you think you'll need and about how much it costs. Let's work with the MEs and see if we can help them get their stuff together." They were writing a proposal. I don't know whatever happened to that, but I do know that they came over and asked for some suggestions, and he returned that. We had a pretty good working relationship with Civil Engineering, also.

They had some instrumentation projects that they needed help on and they'd tap several of the faculty in Electrical Engineering to help with that. Didn't have much interaction with the Petroleum Engineering folks. They were pretty newly off doing their thing. We had a good working relationship with the people in Chemical Engineering. So I think there was a pretty high respect—a level of respect—between the department chairman and the Chemical and Electrical Engineering, and some good working relationships there. But it was a—I'd say it's a good question about how those other engineering faculty really felt about the double E department. I do suspect that there's a really good chance that there were several Electrical Engineering faculty who expressed their genuine delight to be a part of the double E department instead of one of the other departments. [Laughs] I can imagine there were some of us who expressed ourselves, and that didn't create any goodwill. It's a possibility.

AW:

One other thing that I thought was really interesting that Marion Hagler said to me was that he saw the turmoil that developed and kind of came to a point at that—with that project and Seacat's resignation and John's dismissal, as it were—had as much to do with the clash of culture in the administration as a whole. The way he described it was that in universities that are principally undergraduate teaching institutions, it's a top-down structure. Because money comes in from the top through legislation, and is administered by the university administration, and it filters its way down. In a research-driven culture the money comes in from the bottom; it's the faculty—as you mentioned earlier—that is out raising. And it wasn't just where the money was coming from that was the clash, it was that when faculty is raising money they have more invested in that particular project, and they're also more independent. He felt like that that was the—that Texas Tech at that time was undergoing a change from the one to the other, and the other being the more research-driven model. I just wanted—does that make sense, from your perspective?

DV:

Oh absolutely. In fact, almost from the time that Chris and Marion and Ferry and those guys started bring in their research funds, and they began spending money and doing travel without having to count out the Dean's Office or get the president's okay to go someplace. They had money to travel on their own. That really shook the culture, yes. I believe he's exactly right about that. Let's see—I guess, how long did that—even after—I'm not certain what Bradford's role was after he left the College of Engineering. I did—he was in development, I think, for a while. He was really providing lots of monitoring. He knew what was going on all over the university. The records filtered into him, and he could see that. But I don't think he was—don't think he was functioning as a change agent there. I think the change had already started within the research faculty, and that may have hastened his departure from the Dean's Office. I'm not absolutely certain. But that was—I'm glad Marion put a culture-change name on that. That makes good sense.

AW:

Seemed to me like common sense to me. But I just wondered if it looked the same way to you, having been—especially not having been quite as emotionally involved in the Crosbyton thing as some of the others?

DV:

You know that was a good, public event, to allow people to know what was going on. Of course the work that was going on in the labs prior to the Crosbyton Project were really—we couldn't have moved the Crosbyton Project back to mid-sixties and have accomplished the same thing. The Crosbyton Project had to be sort of nurtured by and followed on by the stuff that was going on in the early seventies. And in some ways I could argue that that would be a turning point in the way the university began to look at things, because I hope in the process of these interviews you're going to find out what Cavazos really thought, and what drove him to do whatever it was that he did, and what impact that had on the upper-level administration of the university.

AW:

Yeah, I hope we will too. I don't know whether we'll get to. It sounds as if, from speaking with Marion yesterday, that Cavazos never would talk about it afterwards. It was like it was over with and done with and that was it. Could you, from your perspective as a faculty member in double E, could you see a change in administration that began with Cavazos that continued? Or was it a thing that was specific to his tenure?

DV:

Oh, I think Cavazos wanted to see things the way he wanted to see things, and he was on a city-wide study committee, and may have been the chairman of the committee, and the committee turned in their report. I was listening to a big-ad interview with him in the morning after the report was turned in. Cavazos did not, as I remember—and this could be faulty—Cavazos did not enumerate the recommendations that came from this committee, but he said, "Well, it's always been my belief this." And then he rolled out his little mantra about what had to be done. And it was soon after that that he did leave. And I think that he did what he had to do and then he had to go. It just wasn't—he couldn't control things here the way that he thought he would be able to when he came, I think. He was a really nice guy, and we saw each other on campus a time or two. For some reason I was in Washington after he took that job up there. I called him up and said, "I'm going to be in Washington in the afternoon of some day, and I'd like to come by and say hi to you." I told him, "Texas Tech faculty." Boy, he welcomed me in that big office, and he said, "Oh this is the most agonizing place to be. That Heritage Society is composed of a bunch of people who are really severe in their criticisms." [Laughs] And I think I was a friendly face for a few minutes. He could get some sympathy anyway. But I never had any conversation with him about the Crosbyton Project, or any of that change.

AW:

Well what else—what have I not asked you about that we should talk about while we've got the machine rolling?

DV:

Oh my. There were—Texas Tech was able to attract lots of international visiting faculty members—Electrical Engineering people that Kristiansen and Hagler and those guys knew and recruited. And I think they really did a good job for Texas Tech by bringing in non-west Texas thought processes. Of course Kristiansen started that. But we had lots of visiting faculty who were supported with grants or contracts that made really valuable contributions to the quality of our academic life within Engineering. They were not limited just to engineering. They were sociable people all over the campus and were well known and well respected. We've had, I guess in many ways, the young faculty who—the young faculty who came in right out of their PhD programs, stayed for two or three years and took off and have done really great things. So I guess if we looked at electrical engineering as being a really good launching pad for a good faculty that would be the case. They had good administrators. They were a lot of really high-quality folks that are out there who have had close ties to engineering and to Texas Tech—electrical engineering. And I think probably a lot of engineers, too. But I think we've spawned lots of good faculty all over the United States.

AW:

Which would seem to me to be certainly one measure of how good a department is.

DV:

I think that's right. I think the Industrial Engineering department claimed that they have more graduates who are department chairman of IE departments around the United States than any other department. So I think that's a good bragging point, if that turns out to be the case. I think we have—I don't know if we have done the kind of count of whether administrators are good measures of success, but we've had a lot of people who have built business and been very creative economically and with their engineering task. Many of them have launched businesses and have just done really well. I think our electrical engineers have done really quite well. I think there probably are some who regret that they got a degree from EE at Texas Tech, but it's been a long time since I heard even that as a possibility.

AW:

Well thanks.

DV:

Well I'm glad to get to talk to you. And if nobody else listens to this, that's okay with me. It's just been fun to have you sit and here and talk with me and listen to me tell stories that I like to tell. I can't get anybody else to listen to me this long, so thanks for that. [laughter]

AW:

Well, I'm an easy mark. I'll listen anytime. And in—as I pointed out to Marion Hagler yesterday—I know there's an effort underway to write a history of the department, and these interviews, of course, are available for that too.

DV:

Very good.

AW:

I know you've had something to do with that, do you not?

DV:

That's right. That's right.

AW:

Okay, well I'm going to stop the tape. Thanks, Darrell.

End of Recording