



1918 yearbook photo

EARL MENDENHALL
(1895 – unknown)

INTERVIEWED BY
RUTH POWELL

April 28, 1981

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Subject area

Throop, alumnus

Abstract

An interview with Earl Mendenhall, graduate of Throop College of Technology, which in 1920 became the California Institute of Technology. Mr. Mendenhall entered Throop in the fall of 1914 and graduated April 1918 (commencement date had been moved up from June so graduates could participate in the war effort). He discusses the Throop curriculum and his work with Royal W. Sorensen (electrical engineering). Recalls part-time work at Pasadena's Municipal Light Plant; acquaintance with John Pendleton of Plomb Tool, Los Angeles. Anecdotes of student life, including the pole rush and various pranks.

Recollections of Throop's president, James A. B. Scherer; professors Franklin Thomas (civil engineering); Howard Lucas (organic chemistry); W. Howard Clapp (mechanical engineering); Lucien Gilmore (physics); H. C. Van Buskirk (mathematics); Harry Batemen (mathematics); Frederick Beckmann (German).

Recalls establishment of Reserve Officers' Training Corps, 1916; Thomas Edison's visit to campus; trustee Henry M. Robinson. Discusses early interest in electrical engineering. Works with Carl E. Johnson; joins U.S. Electrical Manufacturing Company. Social life at Throop.

Administrative information

Access

The interview is unrestricted.

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CALIFORNIA INSTITUTE OF TECHNOLOGY ARCHIVES

ORAL HISTORY PROJECT

INTERVIEW WITH EARL MENDENHALL

BY RUTH POWELL

PASADENA, CALIFORNIA

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Interview with Earl Mendenhall
Pasadena, California

by Ruth Powell

April 28, 1981

POWELL: Would you like to start by telling us where you were born and when?

MENDENHALL: I was born in the little town of Selma, fifteen miles south of Fresno, on October 12th, 1895. I lived there until I was seventeen years old, when we moved to Los Angeles in 1913.

POWELL: You went to high school in Los Angeles?

MENDENHALL: I spent my first three years of high school in Selma—two and a half years, really—and when I moved to Los Angeles I went to the old Los Angeles High School up on top of the hill, on Hill Street between Temple Street and Sunset Boulevard. It was the first high school that Los Angeles ever had, and by the time I got there, Polytechnic High School had been split off as the second high school in Los Angeles. I graduated in 1914.

When I started high school, I knew very definitely that I wanted to be an electrical engineer. So, I went to my science teacher and asked him where would be the best place to go to college to get a first-class engineering course? “Well,” he said, “Earl, the best place in Southern California is Throop College of Technology in Pasadena. Also, the University of Southern California has a course, but it doesn’t compare with Throop College, so you better investigate both of them.” So, I did investigate both of them. In fact, if I had chosen USC, we lived near 39th and Western in Los Angeles and I could have ridden my bicycle there in fifteen minutes.

But after going to Throop College and checking their facilities, their laboratories, and the professors and all, and then going back to USC, I was sure I wanted to go to Throop College, despite the fact that I couldn't afford to live in Pasadena. Instead of riding my bicycle for fifteen minutes, I elected to ride the streetcars for two hours each way, every day. And that was quite a chore.

POWELL: What time did you have to be to school?

MENDENHALL: I had to leave home at six o'clock in the morning, and I got there in time for classes to start, at eight o'clock. We had classes all day, then I had to catch the Pacific Electric car back, at California and Lake Street. I left there at four o'clock and returned home at six. Then I had my dinner, then I studied for several hours, and then I had to crawl out of bed early in the morning. I tell you, as I look back, I wonder why I did it. But I'm certainly glad I did. It was a wonderful place and I learned a lot.

The beauty of it was also that in my particular class, although they had more when we started, we ended up with sixteen. We had wonderful relationships with all the professors. You could always talk to them, and they would talk to us. If you needed any advice, they were always willing; they were wonderful fellows. So, I'm very proud of the fact that I went to Throop College of Technology. And I'm also proud of the fact that it finally became California Institute of Technology.

POWELL: So, you entered in the fall of 1914?

MENDENHALL: I entered Throop College in September 1914, and that year went through to June 1915.

POWELL: Your impressions were favorable from the very beginning?

MENDENHALL: Oh yes. Sure, absolutely. I thoroughly enjoyed it.

POWELL: Do you want to talk a little about the courses you took as a freshman?

MENDENHALL: Yes. The first two years were pretty much general courses for all of us, because they only had electrical, mechanical, civil and chemical engineering courses. That was it. We all had the same basic classes for the first two years, then the last two years we started to specialize in our particular subject—electrical or whatever it was. The first year it was mathematics, English, and German for me, and chemistry and several other things. But I enjoyed all those courses. Some of them I didn't know particularly why we had to take—for instance, German, or a foreign language, because I never did use it. But it was training for you, that's what it was.

POWELL: Did you get the feeling that there was an emphasis on the humanities?

MENDENHALL: No, none of that at all in those days. None whatever. No. Just basically engineering.

POWELL: English, however, was—?

MENDENHALL: That was Professor [Clinton K.] Judy. He was wonderful. But it was, oh, regular studies, English—like poetry and prose and literature.

POWELL: And this helped you in writing your papers, which you undoubtedly had to write?

MENDENHALL: Yes, yes. Now, talk about writing papers, I think we were the only class that ever existed that did not have to write a thesis to graduate. The reason for that was that the war was on. They shortened our courses, and instead of getting out in June [1918], we got out in April, two months early, to get into the war effort. In order to get us out of there in a hurry, they postponed writing the thesis, which I think is all right. I don't know if it is really necessary to have a thesis or not.

POWELL: Did you eventually have to write one?

MENDENHALL: No, never did. We got out and were so busy trying to win the war I guess they forgot about our theses.

POWELL: Shall we go back a little to the beginning? Apparently, you had assemblies. Now, was that a weekly occurrence?

MENDENHALL: Yes. Once a week, the first class every Wednesday was the assembly. And Dr. [James A. B.] Scherer [Throop's president] always chaired those things, and we all sat around. Sometimes general discussions, sometimes some fellow would get up and explain something he thought we'd all be interested in. And they had a deal that the fellow who got the best marks in the junior year got a trip to Europe. When he got back, he had to come to an assembly and tell us all about it. They also had a deal that the fellow who got the highest marks in the freshman class got a trip all over the United States, and he came and talked to us about it. They had fellows like [the representative of the Los Angeles Symphony] orchestra come and talk about those kinds of things. Well, it seemed to us a little out of our class, but they were good.

POWELL: Wouldn't this be an area where there was some feeling for the humanities? That is, to broaden your education, so that it wouldn't be just a practical one?

MENDENHALL: I would say so.

POWELL: They wanted to expose you to music and some of the cultural things.

MENDENHALL: And we had a little Glee Club. They would perform quite often for us. It was a start on the humanities, but I never thought of that before. Now that you mention it, it really was.

POWELL: And I believe that both [George Ellery] Hale and [Arthur A.] Noyes were interested in giving a broader education, perhaps, than they had in the old Throop—before it became the College of Technology.

MENDENHALL: I'm sure of that, and I think it's well that they did. I think all those things helped you. One thing they did, they encouraged us to do outside practical work. They were afraid that all we'd have was book knowledge when we graduated, so Professor [Royal W.] Sorensen had it fixed up with the City of Pasadena that any young fellow that had time could go down and work at the Municipal Light Plant anytime. You didn't have to tell them you were coming or what. Put in all the time you could. Well, that was wonderful, because any way in the world to make a dollar, and I went there quite often. And I really got experience.

I'll never forget the first morning [laughter] I went there, they were cleaning the calcium out of the tubes in the boiler. They were water-tube boilers, and they put me up in the drum to chip the calcium out of that with an air hammer. Well, I was in there working in that drum in close quarters; and all of a sudden, they started to drill those tubes down there with a big drill. I thought the whole world had blown up. So, I went popping out the back, the manhole, falling all over myself, and a whole bunch were there waiting for me. [Laughter]

POWELL: Sounds like they were playing tricks on you.

MENDENHALL: We had a lot of fun down there. They knew sooner or later we'd be there, and if they had any dirty jobs, they always saved them for us.

POWELL: Was this when you were a freshman?

MENDENHALL: All the way through—all the way. I had to do that.

POWELL: And they paid you?

MENDENHALL: Yes. Freshmen got 20 cents an hour; sophomores got 25 cents an hour, juniors 30 cents, and seniors 35 cents.

POWELL: In those days, however, that was a big help.

MENDENHALL: I thought I was really fortunate to have a job like that. You could go any time you wanted to, you know. If you wanted to go, all right, or if you didn't want to go.

POWELL: You mentioned Professor Sorensen. You were quite impressed with him? In many ways?

MENDENHALL: Oh, I loved him. He and I were just so friendly. In later life, after I graduated, he and I worked together. He was a consulting engineer for the people I worked for, and—oh, I don't know, I kind of looked at him as my father. And I think he somewhat looked at me as his son. Because he was always willing to talk, and I was always wanting to talk to older people. I'd say, "Now, listen, you've been through work and all this sort of thing, here I am a young fellow trying to get started, now what should I do, what shouldn't I do?"

I knew Mr. [John L.] Pendleton. He was the father of Morris Pendleton. Everybody knows him. The first job I had, on a service job, I went over to Plomb Tool [in Los Angeles], where he [John L.] was the president, and we got everything fixed up and he said, "Earl, come on in the office when you get through, I'd like to talk to you." We had the nicest talk and I said, "Mr. Pendleton, is it all right with you if I come every once in a while and just sit down and talk to you? I want to know what this business is all about, and you certainly know it."

POWELL: Was this while you were in school?

MENDENHALL: No, this was just after I graduated.

POWELL: Did you talk with Sorensen outside of the classroom?

MENDENHALL: Yes, yes.

POWELL: So, you had a one-to-one relationship. Did he come to the lab when you might be doing lab work?

MENDENHALL: Well, yes, things like this: Under the steps of the old Throop Hall was a great big vacant place. And he started an experiment on a transformer, some kind of a special transformer, and he wanted someone to help try the thing out before they put it into service, and so he asked me: "Earl, would you like to make a little extra money? We'll pay you 20 cents an hour." I said "Sure." So we worked at that, and all the way down, he'd have a little repair work to do in the laboratory, changing things around, and fortunately he seemed always to want me to work with him, which I was so grateful for. He was wonderful—everybody loved him. I think he was the best-liked professor there. Later on, he got into athletics—in charge of athletics, football, baseball, and all that.

POWELL: Was he an athletic-type person?

MENDENHALL: No, he wasn't, but I guess none of the rest of the professors wanted the job, so if there was anything that no one else wanted to do he seemed always to be willing to help, no matter what.

POWELL: When you say you worked at the light plant, and you also worked on the campus, did you do this during your class hours? I mean, was your schedule flexible?

MENDENHALL: No, no. I'd either have to work Saturdays or Sundays or holidays. If for some reason I didn't have to go to class, why, I'd run down and put in a couple of hours or whatever was available. I'd just go and work whenever I wanted.

POWELL: You had some pranks going on there at Caltech. Do you want to talk about the pole rush, which you were involved in as a freshman?

MENDENHALL: Well, they call it the Mudeo now. A big mud hole and the pole with the flag. We were the first ones that started that, in 1915. The freshmen took on the sophomores.

POWELL: You mean the freshmen took on the sophomores, so that the sophomores got the rotten end of the deal?

MENDENHALL: The sophomores were around that pole—and the pole was greased; we were not supposed to get near that pole—to get up it and get the flag. It was a muddy affair. Now, it's still going on; I read about it in the alumni news every year. Very interesting.

POWELL: You had a lot of fun doing it, though?

MENDENHALL: Sure, we did. We were always up to pranks. I remember, on the north end of Throop Hall [then called Pasadena Hall; the name was changed to Throop Hall in 1920—ed.] there was a little balcony, on the second floor. There was an entrance down on the ground floor, and we'd get up there and fill a brown bag with a little water in it, and if anybody came along coming in, we'd drop it on their heads. Silly things like that.

POWELL: Just on students, not on professors?

MENDENHALL: No, no, no, we didn't tackle the professors, no sir. There was a great big fellow—Jack [Jackson] Kendall was his name. His father was B. O. Kendall, the real-estate man here in Pasadena. He was a big fat boy. We got into a scuffle one day, the freshmen and the juniors, and we ran into one room and locked the door. It had a glass door, so we all got to pushing on Jack and pushed him right into it and broke the window. Dr. Scherer didn't like that very well. He gave us a little talking-to. But he was nice.

POWELL: No discipline other than just a talking-to?

MENDENHALL: Yes, that's right. I think I told you about the orange business. Everything back of Throop Hall clear out to Hill Street was orange trees. After we had our lunch, we'd go out in the orange trees and throw oranges at each other. We had a lot of fun, but one day one fellow got hit right next to his eye. Why it didn't put his eye out we'll never know, but at the next assembly Dr. Scherer said, "Bill, how old are you?"

“Oh, I’m twenty-one.”

“Harry, how old are you?”

“Oh, I’m nineteen.”

“Walt, how old are you?”

“Oh, I’m twenty,” and on down the line.

“Well now, you know, you fellows are not supposed to be children anymore. You’re grown up, you’re supposed to be young men. What are you doing throwing oranges at each other?” That’s all he said. And we stopped throwing oranges. He didn’t reprimand us or anything—just “You’re too old for that.” He was a wonderful fellow.

POWELL: Did you find that his religious background seemed to be evidenced in his work on campus? Were you aware that he had been a preacher?

MENDENHALL: Yes, he had that aura around him—religious. He was a nice fellow. And he was always fair about everything. In fact, when I went to high school, graduated from L. A. High, his son, Paul, was in my class, and I didn’t even know about Caltech. Then I went over there and started school, and there is Paul sitting there. I said, “Paul, what are you doing here?”

“Well, my father runs this place.”

POWELL: He was a modest person?

MENDENHALL: Oh, yes, sure. All the professors—they were down-to-earth people, you know. They were all right.

POWELL: Is there someone else you’d like to mention particularly?

MENDENHALL: Yes, I’d like to mention this. Now, Franklin Thomas was my mechanical-drawing professor in freshman class. He was a wonderful fellow, and we were in there one day and we got into a scuffle—you know, kids playing around. Somebody made a pass at another and [physics professor] Jesse DuMond—he’s one of the famous fellows, there was a great big write-up on him in the alumni news some time

ago. He came to be one of the greatest professors there, eventually. But anyway, somebody took a drafting stool as though he was going to hit somebody, trying to bluff him—and hit him [Jesse] right in the nose and bent his nose. His nose was crooked, and everybody said, “Why don’t you go and get it fixed?”

“Well, what difference does it make if it’s a little crooked?” [Laughter]

POWELL: Just kept his nose the way it was.

MENDENHALL: All a joke. Just things like that going on all the time.

POWELL: It was a lively bunch of people.

MENDENHALL: We were all friendly; we liked each other, and everybody got along well.

POWELL: Now, the war started in 1914, although the United States didn’t get into it until much later.

MENDENHALL: In 1917.

POWELL: Did you, in your first year, begin to feel an awareness of the war?

MENDENHALL: Well, it was on when I registered there.

I tried to get into the service, but they said I shouldn’t, because they wanted us fellows to finish our education, and we could be more help in the war in an engineering way than we could out on the front lines. So, we were all deferred until we graduated. But, of course, that war was horrible for everybody. Oh, it was terrible. But anyway, we finally went on through, and as I said a while ago, that’s the reason they shortened it [the senior year] down, so we could get into it sooner.

POWELL: They had an ROTC [Reserve Officers’ Training Corps] program. I don’t believe it was organized until 1916, so that would have been in your junior year.

MENDENHALL: Yes, I would say it was 1916 when they started the ROTC. Professor [Walter H.] Adams [professor of mechanical engineering]—he was a retired colonel in the Army and a professor there—[was in charge]. It was once or twice a week. We would get out there in the front yard, in front of Throop Hall, out in the dirt, no lawn anywhere, go through all sorts of exercises, have wooden guns, you know. We'd fuss around with all this kind of stuff, so we got some basic training.

Now, some of the fellows went on further. I didn't like that; I thought that was interference in my education. I wanted to get my education first, so I didn't do much with it. But they did have it. In fact, everybody had to get out there and exercise with them.

POWELL: It was required? Or just the exercise program?

MENDENHALL: I think a combination of both. They turned the exercise thing into a ROTC. I didn't pay too much attention to it, because I wasn't in it. But they did have it.

POWELL: It was also in your sophomore year that Thomas Edison came to the campus. Do you want to talk about that?

MENDENHALL: Yes. Dr. Scherer arranged for Thomas Edison to come there. Mr. Edison was an old man, and he and Dr. Scherer sat in the rear seat of a car—a touring car, no top on it—and drove all around the campus, all around. He just sat in the car, and we had a meeting out on the steps so we could all listen to what Edison had to say. And it was very interesting. He was really a wizard, that fellow.

POWELL: Did he talk about his inventions?

MENDENHALL: Yes, some of them. Some he liked more than others. He talked about the phonograph. He had so many inventions I don't know how he kept them straight. But he was ever so nice; we were all inspired because of what he had done. He was a famous person. And we all hoped maybe someday we might be. [Laughter]

POWELL: Well, there was a reason for having him come then? To inspire you?

MENDENHALL: Sure, you bet. Dr. Scherer was always doing things like that. Anything to get us going, to want to do something. Inspire us. Get ahead. Don't just sit back and take things as they come, do something special.

POWELL: Did most of the professors seem to be that way?

MENDENHALL: Yes, they did.

POWELL: Anxious to prepare you for a working world? In other words, so that you could go out and get a job?

MENDENHALL: That's right; and know more than just ABC and mathematics. And things like, "Don't be on a drafting board as an engineer—get up and be the manager!" And to do that, you've got to contribute. You have to contribute other things than just basic engineering. You have to know about life if you're going to contribute very much as you go along. And that was their attitude all the time. It was well worthwhile; it made a lot of impression on us fellows. Because some pretty smart fellows came out, even before it was California Institute of Technology. I think that's the reason it became California Institute of Technology, because it was doing such a good job as Throop College.

POWELL: Something like this no doubt influenced [Robert A.] Millikan and Noyes to come there?

MENDENHALL: That's right. I think the one who did more to get Millikan there was Henry M. Robinson.

POWELL: He was on the Board of Trustees.

MENDENHALL: He was a wonderful fellow. How he became famous: They had a lot of steel companies there around Pittsburgh, and they were all competing and cutting prices

and everything else, so they got together and formed the U. S. Steel Corporation—took a lot of these little companies and put them all together. And Robinson was one of the attorneys who helped put that U. S. Steel corporation together. He was a brilliant fellow. I think he had a lot to do with getting Millikan there.

POWELL: Did he come and talk to the students from time to time?

MENDENHALL: Not very often. Very seldom. No.

POWELL: You didn't really have any contact with the trustees?

MENDENHALL: No, no, not to amount to anything.

POWELL: Did you hear Dr. Millikan lecture?

MENDENHALL: No, he wasn't there when I was there.

POWELL: He came part-time during your junior year.

MENDENHALL: Did he?

POWELL: During 1916-1917.

MENDENHALL: I didn't think he came there until 1920.

POWELL: He didn't come on a full-time basis, but he came on a part-time basis.

MENDENHALL: Oh, that's interesting. No, I didn't know that.

POWELL: As the director of physical research, in the school year of 1916-17. But you don't recall ever hearing him?

MENDENHALL: No, no, I never had contact with him at all. I didn't know about him. Of course, when I was in high school, I had my physics book, Millikan and Gale.¹ He and another fellow wrote the physics book. I knew all about him before I ever heard of him here.

POWELL: You knew Noyes? Did you have any [chemistry] classes [with him]?

MENDENHALL: Very little, very little. He would come and talk to us once in a while in our assembly.

POWELL: In your junior year, you went after electrical engineering, and you had decided, as you said, long ago that this was what you wanted.

MENDENHALL: Before I went to high school, I wanted to be an electrical engineer.

POWELL: Was there some particular reason?

MENDENHALL: Yes, I'll tell you. Up in that little town where I was born and raised, there was no electric power, and the San Joaquin Light and Power Corporation, up there at Fresno, finally brought power into Selma, and my brother got a job with the company. He was out making service calls and that sort of thing, and every once in a while he'd take me with him. I was very intrigued with the electrical thing, you know, so right then I decided I wanted to be an electrical engineer.

Just a little point here, amusing: There were no numbers on the houses in Selma, and the San Joaquin Light and Power billed all the bills out of Fresno and mailed them to Selma. Well, the mail department didn't know where to take them, so the San Joaquin Light and Power decided they'd put the numbers on the houses. So I got the job running around nailing numbers on the houses. [Laughter] I'll never forget, I ran into one lady, Mrs. [John] Rorden. I just went and nailed the numbers on and went on my way. Well, she heard me: "What are you doing out here?"

"I'm putting the numbers on."

¹ Robert Andrews Millikan & Henry Gordon Gale, *A First Course in Physics*.

“Well, I don’t want a number on mine. Why are you putting a number up?”
I had a lot of fun putting the numbers on the houses anyway.

POWELL: From then on, you were interested in getting into electrical engineering. You never changed your mind?

MENDENHALL: Never changed my mind one bit. I knew exactly what I wanted to do.

POWELL: When you were a senior, then you began thinking about getting a job?

MENDENHALL: Yes.

POWELL: Do you want to tell us how?

MENDENHALL: Well, even when I was a junior. As I said, I was very close to Professor Sorensen, and there was a young fellow in Los Angeles named Carl [E.] Johnson who was manufacturing electric motors. He quoted on a bunch of 25-cycle motors for the Panama Canal and he got the job, but he got a whole bunch of specifications about an inch thick. Well, he wasn’t the kind of a fellow who had specifications. He was a practical fellow; he’d build a motor the best he knew how. So, he went to Professor Sorensen: “Prof, I think I’m in trouble. What am I going to do?”

[Sorensen] said, “Carl, I’ll tell you what you do. You make a 5-horsepower, 25-cycle, 750-rpm motor the best you know how, and bring it over here, and I’ll get a couple of these kids here to put it in the laboratory and run tests on it. When we get all the tests, a bunch of us will sit around and see if it meets the specifications, and if it doesn’t, we’ll try to figure out why, and then we’ll figure out what to do to make another one we think would.”

So, we worked on that old motor there three or four times, doing it over. I got one of the jobs running the tests in the laboratory. So that went on through my senior year. That’s the reason I was going to have my thesis on the design and manufacture of electric motors—because I had gotten a lot of information on these tests.

So, about the time, a month or so before I was supposed to graduate, Carl said, “What are you going to do when you graduate?”

“Oh, I’m going down to the shipyards, I’m an expert on building ships.”

Because when we were seniors, they sent a fellow out here from Pittsburgh to tell us all how to design steel ships, and in a six-week course we were experts. I’d go down there and get \$12 an hour and all the overtime I wanted, because they made cost plus 10 percent. They didn’t care what the cost was.

“Oh,” he said, “Earl, now listen, you’re not looking for money, you’re looking for an opportunity. You’re young, you’re staying home with your folks, you’re not tied down anyway, and after this war is over, that shipbuilding will just dry up completely. On the other hand, the Edison Company is putting big hydroelectric plants up there in the mountains. There is going to be a bigger demand for electric power around here than you can think of. Why don’t you get in on the ground floor?”

All the materials were rationed in those days; they made motors, copper wires, steel, and all that. Well, he had the deal with the government that they would allow him all his materials if he would make the motors for the shipyards up and down the Pacific Coast. Didn’t have to compete—just make them and let them have them. So, he said, “Look at that. Isn’t that an opportunity?” So, I went to work for him. Finally, I said, “Carl, all right, how much are you going to pay me now?”

“Well, Earl,” he said, “I can’t possibly pay you over \$75 a month.”

I decided, “I guess, Carl, I want to take you up on that.” And I did. The best decision I ever made in my life, and he and I worked together for thirty-seven years before he passed away. He and Sorensen and I were the best of buddies.

POWELL: That was in Los Angeles. And the name of the company?

MENDENHALL: U. S. Electrical Manufacturing Company.

POWELL: So, you were all set. Now, what about some of the other students? Did they have jobs, too?

MENDENHALL: A few days before we graduated, Professor [Howard J.] Lucas, in the chemistry department—we were sitting around talking, you know—said, “What are you fellows going to do? Have you got jobs?”

“Well, yes,” I said, “I have a job all lined up.” And two or three other fellows said, “Yes, we have.” One fellow said, “Well, I have an uncle with the Western Electric Company, and he says he will see that I get a job if I want it.” Well, there is always one crab in the place, so [Noel A.] Pike steps up and says, “Well, there you go, my God, I haven’t any pull with anybody. I don’t have a job.” So, Lucas said, “Listen, now I want to tell you something. Don’t you forget it. A good push is as good as a pull any day, and don’t sit around looking for a pull when you’ve got all the push you want, if you use it.” I never forgot that.

Also, we were talking to Sorensen the same way one day, talking around, and his advice was, “Now, fellows, you boys go out and go to work and put on your overalls and find out how much you don’t know.”

POWELL: Practical advice. There was one other little item about Sorensen—the time he brought the electronic tube into class.

MENDENHALL: Oh, yes. He brought in a little tube, oh, about twice as big as your thumb. He said, “Boys, here’s something new.”

“Well what is it?”

“Well, we’re not sure. We think it has a lot of possibilities.”

Then we said, “So what, sure, we’ve got all kinds of oddities here already. What will we do with that thing?” Well, the irony of the thing was that it revolutionized the world. All of our electronics today, and everything, came out of that tube. And we thought it was an oddity, we kids sitting there.

POWELL: That was the De Forest vacuum tube.

MENDENHALL: Yes, the De Forest vacuum tube; he [Lee de Forest] invented the tube and General Electric made them. And they loaned one of these tubes to our college on the

basis that when it wasn't in the classroom it had to be locked up in a safe up in the office. On loan to the college by the United States Army Air Corps.

POWELL: Did you do anything with it at that time? Conducting experiments?

MENDENHALL: It hadn't developed far enough—just invented, really new, brand-new. And then we got busy with our classes, trying to get out two months early, so we never did a thing with it. In fact, we didn't get a bit of electronics. There wasn't a bit of electronics in our course.

POWELL: That was a new field?

MENDENHALL: Absolutely. Brand-new field.

POWELL: All in all, then, your experience with Throop was very much as you thought it would be?

MENDENHALL: Oh, absolutely. It was one of the highlights of my life. I'll never forget it. I really have appreciated this opportunity to sit down and talk to you, because many of these things I had forgotten. Now I have three children, eight grandchildren, and eleven great grandchildren, and as soon as I get this, I'm going to have every one of them read it.

POWELL: Try to inspire them, as you were inspired? Did you have much social life when you were there?

MENDENHALL: Practically none, no. Oh, they'd have a dance. They brought over an old dormitory [from the old Throop], and they'd have a dance there once in a while, but I didn't know how to dance. In fact, I was afraid of the girls, so I never went.

POWELL: Where did the girls come from?

MENDENHALL: Oh, Pasadena High School. PCC [Pasadena City College] was the Pasadena High School then. And various schools around. Then the fellows would invite them from anywhere, you know. So finally, I was coming home from Catalina one time. There were two nice girls there and I got to talking to them, and they found out that I went to Throop College. They said, "What kind of a thing is that over there? I hear a lot about it. What kind of a place is it? It's all for men, isn't it?"

"Yes, yes, it's a men's college," and all that. I got very well acquainted with them, and I got their phone number—sisters. Shortly after that, they had a dance, so I got up the nerve and took another fellow and we decided I'd call. They said they'd go. They were curious to see what it was about. So, I borrowed a car from one of the guys down at the light plant. They lived way up on Fair Oaks Avenue, way up there. So, we went up and got them and went over, and while we were having our fun, some of the guys over there at the dance went out and drained all the gasoline out of our car—not all, quite. So, we got down between Lake and Los Robles and ran out of gas. We were sitting there, and some fellow drives up and goes into his driveway there, and the girls say, "Oh, we know that fellow."

So, he came out and gave us a gallon of gasoline. Well, the gas tank was under the [front] seat. If you went up much of a hill, it didn't work, so we got halfway up and we couldn't go. So, we turned around and backed up and took them home. [Laughter] Then we coasted clear back to the light plant, where we had to leave the car, down at Fair Oaks.

POWELL: This was in your senior year?

MENDENHALL: Yes.

POWELL: You graduated in April of 1918?

MENDENHALL: In 1918.

POWELL: You were going to tell us a little about [W.] Howard Clapp.

MENDENHALL: Oh, yes. He was in strength of materials, part of the mechanical engineering department. As I said, the first two years we got a little bit of everything. Even got things like strength of materials and that sort of thing in with all the rest. And we would take field trips every once in a while, out to different places, and he usually was in charge of these field trips. For instance, we went out to California Portland Cement Company in Riverside, and things like that, and we would learn a lot, going on those field trips.

POWELL: Did they have a testing lab?

MENDENHALL: Oh yes. Oh, a wonderful one. Oh yes, all kinds of testing.

POWELL: That was extremely important at that time.

MENDENHALL: That's one thing that made an impression on me. That part, and then Sorensen's electrical lab. You never could see anything like it. USC had two or three old broken-down motors and scales there they'd try to break.

POWELL: You had very good equipment?

MENDENHALL: They did. Perfect equipment. You couldn't ask for more.

POWELL: Did you have much to do with Lucien [H.] Gilmore?

MENDENHALL: Yes, he was in the physics department. He was a nice old fellow. Sure.

POWELL: Now, you say "old fellow." Was he old at the time?

MENDENHALL: I'd say he was probably one of the older ones, yes.

POWELL: At that time, someone who was fifty might have seemed old to you.

MENDENHALL: Yes, that's right. I would say he was in his mid-fifties, I would guess. He was a nice old fellow. Very patient, and we'd have to do all kinds of experiments. We'd have classes and we'd have certain things we'd have to do, setting up Wheatstone bridges to measure resistance and voltage and all. There again, the equipment they had was just about the best you could get. USC didn't have hardly anything like it. No wonder I took four hours a day out of my life running back and forth on the streetcar. It was worth it.

POWELL: Did you study on the streetcar?

MENDENHALL: Oh, yes. I did a lot of studying on it. Sure, I did.

POWELL: How close did the streetcar come to the campus?

MENDENHALL: Lake and California. It came up Lake. The Oak Knoll car came up Huntington Drive, up Oak Knoll, and came around and got onto Lake and then we got off at Lake and California and walked down to the campus. Then when I went home, I'd walk back to Lake and California. There was a bench, and I'd sit there and wait for the car. All the things around that corner—it's unbelievable what's happened around that corner. It was wilderness when I was there—in the country, nothing around. Now it's all built up.

POWELL: That was the Pacific Electric that came through there?

MENDENHALL: Yes, the one from Los Angeles to Pasadena was the Pacific Electric. The one from my home to downtown in Los Angeles was the Los Angeles Railway—yellow cars.

POWELL: So, you transferred down at the old PE Station?

MENDENHALL: Yes. They were building the Huntington Hotel, and every morning there'd be a whole bunch of carpenters get on. The whole back end of that thing was full

of toolboxes. They'd work all day, and when they'd come back, they'd file in and go back [in the car]. To the Huntington people I said, "You know, I helped build this place in 1914. I brought the carpenters over from Los Angeles." Well, there is a funny waitress there—I've known her for twenty-five years, knew my wife. She'd say, "Aw, that's nothing, I brought the plumbers over." [Laughter]

POWELL: There are a couple of others here. [H. C.] Van Buskirk?

MENDENHALL: Van Buskirk was in mathematics, and he was also registrar later. I'd say about 1916 he became registrar. But he was a nice fellow, and he was good at mathematics and we could understand what he was talking about. Now, compared to him, there was another fellow; his name was [Harry] Bateman, and he taught us advanced calculus. We didn't know what he was talking about. He came in one morning and said, "Boys, I think I have a wonderful idea. You know, I think every city should have all their streets named after diseases: Pneumonia Street—"

POWELL: What was the point of this?

MENDENHALL: Just to show you he was kind of an eccentric old guy. No one liked him, and [we] didn't know what he was talking about. I don't know how we ever got through that course.

POWELL: Whereas the German professor, how did—?

MENDENHALL: [Frederick E.] Beckmann. Well, he was an old character. He was just full of the old Nick, and he made it interesting, funny.

POWELL: Was he German?

MENDENHALL: As German as he could be.

POWELL: There was no feeling—?

MENDENHALL: I think he was kind of sidetracked while the war was going on, you know. I don't know, but everybody seemed to think they hid him away over there.

POWELL: I wondered about that, because there was some anti-German feeling.

ADDENDUM

When I first entered Throop, the only main building they had was Throop Hall [then known as Pasadena Hall]. In 1917, the Gates chemical building [Gates Laboratory of Chemistry] was built. On the east side [of Gates] was a little balcony with steps running up from the ground—and I say “ground” because there was no lawn, nothing. It was here that we had our ceremony. Henry M. Robinson gave our graduation speech, which was very inspiring to all of us. The guests who attended the service sat in folding chairs on the ground below the balcony, and we graduates sat on the balcony. It was really full. Dr. Scherer handed out the diplomas. It was one of the great accomplishments of my life when I received my diploma from Throop College of Technology. — E. M.