



Smithsonian  
*National Museum of American History*  
*Lemelson Center for the Study of Invention and Innovation*

## Computer Oral History Collection, 1969-1973, 1977

**Interviewee:** R.D. Parker

**Interviewer:** Richard R. Mertz

**Date:** July 13, 1970

**Repository:** Archives Center, National Museum of American History

**MERTZ:**

This is an interview conducted with Mr. R.D. Parker, conducted at his home at 3606 Chesapeake Street, N.W., Washington, D.C. on July the thirteenth, 1970. The interviewer is Dr. Richard Mertz. Mr. Parker has referred me to a publication in the McGraw-Hill series in Information Processing and Computers, a volume entitled Digital Computing Systems, by Samuel B. Williams. The book was published in 1959. Mr. Porter's first name is

**PARKER:**

Parker

**MERTZ:**

Mr. Parker's first name is Ralzemund: R-A-L-Z-E-M-U-N-D.

**PARKER:**

-M-O-N-D

**MERTZ:**

-M-O-N-D.

**PARKER:**

You've got it wrong--[laugh].

**MERTZ:**

Would you care to describe your early years, Mr. Parker? Where you come from--roughly, where?

**PARKER:**

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

Well, I was born and grew up in Detroit, Michigan. I went to Ann Arbor, and graduated in class--Engineering, class of 1905, and then stayed on for another year and got my Master's Degree in 1906. This was all in engineering. I started to work for the Western Electric Company, but after a few months I was offered a position to teach at the university, Ann Arbor, and went back there and remained until 1913. And the last few years of that period I was Assistant Professor of Electrical Engineering.

That was your field, Electrical Engineering?

**PARKER:**

Electrical Engineering, specializing in communications. I went--left the university on leave in 1913, and then I entered employment with the AT&T Company in New York City.

**MERTZ:**

Excuse me, are you a native of Michigan?

**PARKER:**

Yes. I was born in Detroit, Michigan,

**MERTZ:**

I see.

**PARKER:**

went to the public schools in Detroit. I stayed with the AT&T Company, in charge of some work in telegraphy until 1934, when the Development and Research Organization of the AT&T Company was merged with the Bell Telephone Laboratories. And I was then head of the development work at the laboratories in telegraphy: printing telegraph machines, picture transmission, and similar activities, until 1947, when I retired. I spent a year in Japan with the Signal Corps, and since 1948 have been employed by the United States government in Washington: first with the National Security Resources Board, and later as a consultant for the National Security Agency.

**MERTZ:**

If we might go--excuse me--if we could go back a little bit earlier in your career with--could you--would you care to mention some of the people you worked with during your days with AT&T, when you were in charge of the research group; some of the men that were—

**PARKER:**

Well, yes. While I was with the AT&T Company, a very well known engineer was Bancroft Gherardi; also Lyman F. Morehouse; General John J. Carty, who was head of the Development Research Organization following his return from the Civil--from World War I. Then there was Frank Jewett; and, incidentally, of course, I was acquainted with Samuel B. Williams, who was instrumental in developing the relay type computer put out by the Bell Telephone Laboratories during World War II. I also was involved in the development of a means for making secret the transmission of telegraphic impulses over electrical circuits, which has, of course, led to my employment as a consultant with the National Security Agency.

**MERTZ:**

Do you recall how you came to meet the late Mr. Williams?

**PARKER:**

Well, Sam was an engineer in the Bell system, in the Western Electric Company, which preceded the--the Engineering Department of the Western Electric Company, which preceded the Bell Telephone Laboratories. And I became acquainted with him simply through technical contacts along about--oh, it was along about, well, during World War I.

**MERTZ:**

World War I?

**PARKER:**

Yeah.

**MERTZ:**

I see.

**PARKER:**

1918, 1919.

**MERTZ:**

This was in New York?

**PARKER:**

This was in New York City, yes, right. We both lived in Brooklyn, as a matter of fact, so that was a common ground for acquaintanceship.

**MERTZ:**

I see. He worked in a different—

**PARKER:**

He worked--Sam was a design engineer--electrical design, especially with relays in the electrical circuits involving electromagnetic relays. He was a specialist. I was sort of an overall telegraph engineer with the overall problems, not specific designs, but the general, overall problems, looking ahead to development of teletype systems, TWX switching systems, and things of that kind.

**MERTZ:**

Uh—

**PARKER:**

And radio transmission of teletypes; overall problems.

**MERTZ:**

Did you, during World War I, have--play a role in connection with the Army Signal Corps with the Armed Forces?

**PARKER:**

I did, yes. I'm not so sure that Sam was involved so much in World War I. I was involved in the development of secret telegraph systems--not telephones--secret telegraph systems. We developed some very secure means for transmission of telegraph messages.

**MERTZ:**

Over lines? This is wire transmission?

**PARKER:** Not necessarily wire: any messages—

**MERTZ:**

Also wireless?

**PARKER:**

Yes.

**MERTZ:**

I see.

**PARKER:**

That's why I'm involved with NSA today: because of that early work. One of the reasons, at least. One of the reasons.

**MERTZ:**

Back in World War--during World War I?

**PARKER:**

World War I. Some of the equipment which we used, which we developed, was put to work during World War I.

**MERTZ:**

Did you—

**PARKER:**

I had a small group, and we developed some very important, exceedingly important means for making messages secret, making them secure as they are called, in those days. And it was put to work.

**MERTZ:**

One of the areas which has been, for me as someone who is interested in the history of different aspects of computer technology in the United States, was the work that was going on during World War I. It would appear that actually there was a good bit of the ground work done during World War I, which was never followed up too much after the war, as a sort of beginning spade work which could have led to the development of digital computing machines, in connection with fire control research, for example, which lay fallow for many years. And then World War II recreated the whole problem again.

**PARKER:**

Well, I simply can add that the work that I was involved in in World War I, having to do with obtaining security for messages, didn't lie idle for a long period following World War I, and was revived in World War II. Whether or not it has much bearing on the computer phase of activities, I can't say. Now let's take another start again. Just cut it off. [Recorder off] Samuel B. Williams was an engineer with the Western Electric Company. He graduated at Ohio State University in 1906. I graduated from the University of

Michigan in 1905. So when we became acquainted with each other, after he came to New York, when the Western Electric Engineering Department was moved to New York, we had something in common. In other words, the battles between the University of Michigan and the University--Ohio State University--relative to the--on the football field. Later on, in the twenties, Sam and I were on a committee to study--which was organized to study the operations of the New York Stock Exchange. And we had the privilege of traveling around on the floor, talking to operators to find out how the system--the stock exchange system--actually worked. And from that we were supposed to design electrical circuits and plan a future stock exchange that would sell American stocks--stocks of American companies--to the rest of the world. The Stock Exchange then had a plan to build a hundred-story building on Wall Street, which, of course, collapsed very flat at the time of the big stock selling of 1929.

**MERTZ:**

Excuse me, do you recall when you were doing this?

**PARKER:**

We were doing this in 1928, about '27-'28. Just before the crash. A man by the name of Green was the Secretary of the Stock Exchange, and he used to call his committee together and we would tell him--give him our ideas about what they should do to improve the operations, all having to do with the electrical communications which, of course, would in turn be provided by the Bell System. Those were very vain, glorious days, I must say. [Laughter].

**MERTZ:**

And Sam Williams had been in the switching, engine--design engineering business?

**PARKER:**

That's right. Sam had been in the--was looking at it from the designer's point of view. I, representing the AT&T Company, was supposed to look at it from the overall, general, operations point of view. The planning side of the job. Sam came up with ideas immediately, as to just how to devise some electrical circuits to do certain things; which rather [chuckling] upset me a little bit, because I thought the general plan ought to be worked out first.

MERTZ & **PARKER:**

[laughter].

**PARKER:**

Well, anyway--you'd better shut this off for a moment.

[Recorder off]

**MERTZ:**

I just asked Mr. Parker the question if he recalled either some of the people or the component of the Bell System that was interested in the network analyzers in research and development in the 1920s.

**PARKER:**

Well, I know an engineer who's retired from the Bell Laboratories, who lives in College Park, Edward B. Payne.

**MERTZ:**

Excuse me, is that P-A-I-N-E?

**PARKER:**

P-A-Y-N-E. And Ed Payne was a designer of networks, with a special emphasis--you'd better stop that for a minute because I can't remember the-- [Recorder Off] Mr. Payne was a filter designer--designed electrical filters--which, to my mind, is closely associated with network analysis. And I believe he might be helpful to Mr. Mertz in answer to his question.

**MERTZ:**

Fine, thank you. To get back to Mr. Williams now, and his work, this was in the late twenties. Do you happen to recall when Mr. Williams got involved with George Stibitz in relay machines? Not exactly, but in what way? Was he transferred to work with Stibitz?

**PARKER:**

Mr. Williams was in an organization headed by A. B. Clark, and it is my recollection that A. B. Clark brought Sam Williams out of his work in relay and circuit design and put him in charge of work having to do with the computer design when Mr. Clark learned about the work that Stibitz was doing, and the need for a practical designer to carry on this work to a practical and worthwhile conclusion. And I believe that that would be somewhere in the--during the twenties. I would guess about 1925, which, of course, antedates this work with the Stock Exchange. And I think that's correct, because I heard of the work that was going on to build computers to do work with complex quantities and, to my recollection, that was in the early 1920s. Let's stop at that. [Recorder off]

**MERTZ:**

We were just talking about the number five crossbar and its early development.

**PARKER:**

Well, I might add that H. M. Bascom, who was an engineer for the AT&T Company in the Equipment Development Department, went to Europe sometime during the twenties to report on the development of the crossbar switch by the L.M. Ericsson Company of Sweden. Now I would place his return from this trip as about 1924.

[Recorder off]

The D&R Department of the AT&T Company, which was organized following World War I, had three main divisions: Equipment Development, Transmission Development, and Outside Plant Development. L. F. Morehouse, to whom I reported, and to whom H. M. Bascom reported, was the head of the Equipment Development Department. O. B. Blackwell was head of the Transmission Department, and A. B. Clark was one of his engineers; and F. M. Rhodes--F. L. Rhodes--was head of the Outside Plant Department. Bascom went to Europe to report on the crossbar switch, which had been called to the attentions of the Bell System; how, I do not know, but probably from some technical magazine. And he came back, I think, to make his report, about 1924.

[Recorder off]

The D&R Department of the AT&T Company was merged with the Bell Telephone Laboratories in 1934, and Mr. H. M. Bascom reported to A. F. Dickson, as I did. Bascom, having a great deal to do with the general plans for the introduction of crossbar switching into the Bell System, the designs of which were in the hands of a man by the name--Oh, gosh, gee, I have to stop that.

[Recorder off].

The name of the man who was in charge of the switching design I just can't remember at the moment, but he was replaced later, after his retirement, by A. J. Busch, B-U-S-C-H; I'm quite sure of this. Dickson retired and was replaced by a transmission engineer, A. B. Clark, later on in this period, sometime in the forties, I think.

**MERTZ:**

But in--back here--during--at the time of the merger of the AT&T D&R component, with the Bell Labs, then you and many of these men you're talking about became incorporated with Bell Labs. Did that involve physically moving out to Murray Hill?

**PARKER:**

Oh, this was before Murray Hill.

**MERTZ:**

Before it was set up, I see.

**PARKER:**

Before Murray Hill. Of course, we were at 463 West Street in New York City in those days. I retired from--in 1947 and there were still many of us located at 463 West Street. Actually, I also worked at 180 Varick Street, in downtown Manhattan. The Murray Hill project was a thing talked about in the days in '34 to '47. And, of course, it was--many had moved by '47. But I never moved. I never worked at Murray Hill. The switching people stayed in New York.

**MERTZ:**

And, but it was from this group that most--would you say most of--would it be fair to say most of the Bell System's expertise in switching was in this group?

**PARKER:**

That's right. The research people moved out to Murray Hill first, as I recall it. I'm pretty sure that's right, the switching group remaining in New York, close to the operating people. The operating people being people like the New York Telephone Company.

**MERTZ:**

They represent one of the essential threads involved in the early development in computers in connection with the relay machines.

**PARKER:**

Oh yes, oh yes; yes, yes, that's correct. After coming back from Japan, I visited the--one of the relay computer installations at the Army test center up at--up in Maryland --

**MERTZ:**

Aberdeen Proving Ground?

**PARKER:**

Aberdeen, Maryland. And I did that as an engineer working for the National Security Research Board, and they were interested in computers. I went up there to learn a little bit about how this system was working, and got a very good report. [Chuckling]. They liked to set the thing going, and go home and go to bed, and come back in the morning and find the computing job all done for them. They liked that part of it.

**MERTZ:**

And, fairly early on, I guess it was Sam Williams who was the essential technical link between the development of the relay machines at Bell, and the construction of a relay machine for what came to be known as the Armed Forces Security Agency, in those days--this is pre-NSA. **PARKER:** Well, Sam was also involved in some of the early applications, early development of secure telephone systems, during the latter part of World War II. And he was down in Washington--was in Washington having to do with the installation of some of that equipment. **MERTZ:** This is scrambling equipment?

**PARKER:** The scrambler, the early voice scrambler. And that way became associated with the National Security people, and was employed by them as a consultant before I went to work with them.

**MERTZ:**

But wasn't he, even earlier, working with them when they were--during the war years, working on the—

**PARKER:**

On computers?

**MERTZ:**

On a relay machine? Design and installation.

**PARKER:**

Well, of course, this Aberdeen equipment was installed during the war, and, of course, I went to see it in '48, and it had been there for some little while. It must have been installed either during the war or very close to the end of the war, just after the war.

**MERTZ:**

And there was one, I believe, that was functioning in 1946 in the Armed Forces Security Agency.

**PARKER:**

Yes, I wouldn't be surprised.

**MERTZ:**

Which would mean, then, that someone would--in all likelihood from Bell--would have had to have been assisting in—

**PARKER:**

Yes, yes. But now Sam had an assistant whose name I just cannot place--it's either Anderson or Andrews. But, you know, Sam has a son living here. Did you know that?

**MERTZ:**

No, I believe you mentioned it to me over the phone.

**PARKER:**

And I tried to find him in the telephone directory. The old home was out at 307 Taylor Street. And Sam's middle name is Byron--B-Y-R-O-N. And there is a man in the telephone directory who lives out in Maryland--David, his name is David, the son's name--and it's David Byron Williams, so I'm pretty darned sure that he is the son. And he could give you, maybe, the name of this Bell Laboratory man who was so close to Sam in carrying out this relay development.

**MERTZ:**

That would be very helpful. Do you recall any others around him—

**PARKER:**

That would know?

**MERTZ:**

That would know about his work?

**PARKER:**

Oh, I think this chap Lovell might give you a hint there. As long as he knew--was so close to Stibitz. And then Sam has a daughter living in New York. Mrs. Elsie Lee.

**MERTZ:**

L-E-E? **PARKER:**L-E-E or L-E-A. I'm not sure.

**MERTZ:**

But not L-E-I-G-H.

**PARKER:**

No. But this is her--she's been married several times and she's got--she's a writer and she

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

uses as her pen name, and I think she's in the telephone directory under that name: Mrs. Elsie Lee, in New York. And she was very responsible in writing up the biographical sketch about Sam when he died.

**MERTZ:**

I see.

**PARKER:**

So she--she's a writer and she's keen on that kind of--keeping the records and things of that kind; where David is an engineer and maybe isn't quite so keen about that kind of activity.

**MERTZ:**

And when did he die?

**PARKER:**

Sam? This is '70 now; he died about '62 or '3, somewhere around there. '62.

**MERTZ:**

So this obituary that she wrote would appear, was it in the—

**PARKER:**

She wrote it

**MERTZ:**

IEEE? Or was it—

**PARKER:**

It was in the newspapers.

**MERTZ:**

Newspapers. Did she know quite a bit about his work actually, or—

**PARKER:**

Yes, I think she knew quite a lot about his work. She used to brag a lot about it. Well, her father invented the computer [chuckle].

**MERTZ:**

Pride in her father, no sin. But did she--but she, in all likelihood, would know the name of—

**PARKER:**

What's that?

**MERTZ:**

She would, in all likelihood, know the name of the fellow who was his assistant.

**PARKER:**

I think so, because this chap used to come down and stay with them when they lived on Taylor Street. Andrews, it seems to me, but then there's another man out at NSA that has that name too. I'm mixed up between those two. But this Sam, what's his name, out at NSA that you mentioned last night, or night before last, he should know.

**MERTZ:**

Sam Snyder?

**PARKER:**

Snyder, Sam Snyder would probably know other names.

**MERTZ:**

Yeah. I'll be seeing him. He has written a history of the NSA computers which they are going to try and declassify, at least, or sanitize.

**PARKER:**

I thought that he'd be mentioned in here, but he wasn't; that name would ring a bell. I didn't find it, a name that rang in the list in here.

**MERTZ:**

Well, do you recall some of the people who were--from time to time apparently people were placed on loan from this Switching Department, I guess it was a department of the lab, to help out in other areas. At one point, I believe, there was some extra switching equipment they didn't need anymore and they made it available through AT&T to MIT, shipped off up there; and then they sent some engineers up there to help hook it up and

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

get, show some uses they could put the equipment to in connection with their own computing equipment they had there, and some of their experimental computing equipment in the 1930s. It was being—

**PARKER:**

I saw that equipment at MIT, this analog machine. What's his name—

**MERTZ:**

Vannevar Bush?

**PARKER:** Yeah, Vannevar Bush. Yes. He showed that to me one time, along about 1930. I went up to give a talk on picture transmission—

**MERTZ:**

Oh yes?

**PARKER:**

See, we established a network for transmitting pictures. AT&T then established a network of about six cities which, to which you could go and give a photograph, or anything, a picture you wanted transmitted and they would transmit it for you, for a certain charge per unit area, which ran about from '27 for three or four years, but never paid for itself. And that became the, was redeveloped and became the Associated Press wire photo system.

**MERTZ:**

Wire photo system?

**PARKER:**

We put that in for the Associated Press. I was in charge, in general charge of all of that at one time.

**MERTZ:**

Was that in the early thirties?

**PARKER:**

Well, that system was turned over to the Associated Press about 1935.

**MERTZ:**

'35.

**PARKER:**

As I remember, it was '35.

**MERTZ:**

And this work you are describing was an early development of—

**PARKER:**

Oh yes, this was in the twenties. I got interested in picture transmission in the early twenties, and we devised equipment, well, it was all done at the laboratories. Actually, the AT&T just said--gave the general requirements and got that thing going, it was done by the Western Electric Company and the Bell Laboratories. When Coolidge was inaugurated, was in '24 wasn't it? '25.

**MERTZ:**

Was inaugurated in March of '25.

**PARKER:**

Yes, well, we had pictures of Coolidge sent all over the country.

**MERTZ:**

I see, through this system.

**PARKER:**

Yes.

**MERTZ:**

Of the inauguration?

**PARKER:**

And--yeah, yeah.

**MERTZ:**

And that was—

**PARKER:**

And I was in charge of, general charge of the whole affair. Getting this stuff going.

**MERTZ:**

Oh.

**PARKER:**

Yeah, it was a big thing. Made quite a splash in the newspapers in those days.

**MERTZ:**

And could the newspapers sort of lease—

**PARKER:**

The service was established on the basis of people going to an office and submitting their copy and having, with a request to have it transmitted to any one of the cities that were involved. But there wasn't enough business developed. And the Associated Press explained at that time to the heads of the AT&T Company that the way to make some money is to allow them to have a special network, and they will pay good prices as long as they are on top,

**MERTZ:**

Control.

**PARKER:**

control. They'd lease it from the Bell system. But to have a system which anybody has access to was not their way of doing business in those days. They wanted to have first control, and of course, they did. They bought, they entered into a contract, and they established a network all over the country; and they did have a big first name.

**MERTZ:**

One question: could you transmit a picture of a page of—

**PARKER:**

Type?

**MERTZ:**

of type less expensively than you could transmit in, say, wireless code, the text?

**PARKER:**

Oh, you mean by teletype?

**MERTZ:**

Yes.

**PARKER:**

No. It was cheaper to send it by teletype. But if you wanted a picture to go with it, that's something else again. You'd send the picture, and then send the story by teletype.

**MERTZ:**

But the resolution was such that, obviously, if you could transmit the picture clearly you could transmit the page.

**PARKER:**

Yes, but it was more expensive.

**MERTZ:**

It was just more expensive because of the area?

**PARKER:**

That's the way--I think so, yeah; oh yes.

**MERTZ:**

This was what? Half-tone, quarter-tone, sort of—

**PARKER:**

It was a hundred lines to the inch, and it permitted the newspapers to reproduce their picture in half-tone.

**MERTZ:**

In half-tone. But that was then later, by '35, used by Associated Press?

**PARKER:**

Yeah, yeah. And that's still, I think, a hundred lines to the inch is practically standard today.

**MERTZ:**

And, uh—

**PARKER:**

Some systems do better than that, I guess.

**MERTZ:**

Did you, so you were very early involved in problems of data transmission?

**PARKER:**

Turn that thing off for a minute and I'll show you.

[Recorder off]

I'll give you my--give you my recollections and my feelings about the records of the early days: I went to work for the AT&T Company in February 1913, after teaching at Ann Arbor, and was much impressed with the care taken by the administrative officers of the Engineering Department of the AT&T Company of the records which we--and notes--which we took, and the necessity for filing letters and notes in permanent files. Later on, a Mr. H. S. Shepard became the Administrative Officer for the, for General Carty, who was head of the D&R. And the filing system was put on a more scientific basis, but the care still--and the necessity for keeping records was still made a part of the engineer's education. However, when the D&R Department moved to the Bell Laboratories, I was somewhat dismayed by learning that the early AT&T engineering records were just kept in boxes without any particular references to the contents, and in the thirties had great difficulty in retrieving letters which I had written having to do with the development of early secure telegraph messages. That is, the development of so-called "one-time tape."

**MERTZ:**

Excuse me, was that--did you find—

**PARKER:**

I had to go to the--to a building across the street from 463 West Street--across Bethune Street to a storage building and rummage through boxes to find these, the early files, and then had great difficulty finding what I was looking for.

**MERTZ:**

Did you eventually find it, though?

**PARKER:**

Not all of the papers that I was looking for was I able to find.

**MERTZ:**

Mr. Parker, would you--one thing we neglected at the very beginning of this interview, and that was, would you care to tell us when you were born?

**PARKER:**

Oh. I was born December 20, 1881.

**MERTZ:**

December 20, 1881?

**PARKER:**

Yeah.

**MERTZ:**

It's been quite a long and very interesting career in a number of fields.

**PARKER:**

Yeah. I was at one time quite interested in the automotive game. My father was a patent attorney for Henry Ford at one time.

**MERTZ:**

Oh yeah?

**PARKER:**

He's all written up in the Ford books. There was a very famous patent suit, known as the Sultan Case. You probably never heard of it: wherein a man by the name of George B. Sultan claimed to have invented the automobile, especially the gasoline driven car, and that there was at one time, a trust, similar to the AT&T trust, which was based on the Sultan patent. The Bell Telephone Company was based on Bell's patent. But that was

held up in the courts, but the Sultan's patent didn't. And my father was one of the--was THE lawyer, probably, which defeated the trust in their claim to own a valid patent controlling the combination of a road carriage and a gasoline engine, which would have tied up the automobile industry, and did tie it up for a number of years, so that every manufacturer had to pay royalties to the trust. And that was busted in 1911, when Ford [had] fought it from 1902 to 1911, and, in the New York Circuit Court of Appeals, they reversed the lower court's decision, and Ford was then free to go on without paying any royalties.

**MERTZ:**

Mhm. So he mass-produced the automobile.

**PARKER:**

Yes. Otherwise, the Ford Company--well, I think my father should be given a great deal of credit for carrying on that battle, but [chuckle] he never made any money out of it. And, you know, he used to brag in his old age that Ford tried to pay him in stock and he had refused it.

MERTZ & **PARKER:**

[laugh].

**PARKER:**

I worked in some of the automobile factories.

**MERTZ:**

In Detroit?

**PARKER:**

In Detroit, as a kid. Well, not in high school days, but in college days. I went back and worked—

**MERTZ:**

What got you interested in electrical engineering?

**PARKER:**

Oh, I was always interested in electrical engineering--as a kid, always.

**MERTZ:**

Did you putter around, make—

**PARKER:**

Oh, yes, sure. I've still got some of the stuff I made.

**MERTZ:**

What kind of--was this in high school?

**PARKER:**

Yeah. Well, before high school. When you got into high school you got interested in other things. That was before high school.

**MERTZ:**

Tinkering around, what—

**PARKER:**

Little models and things like that, batteries; I made all kinds of junk.

**MERTZ:**

Oh, yes? Galvanic cells?

**PARKER:**

Yes, yes. And I tried to make a dynamo.

**MERTZ:**

So there was—

**PARKER:**

The idea was to make an electric light, you see. I was going to fix it so we could light the house with electric light. [Laughs]. That was before high school days.

**MERTZ:**

That was something that fascinated you and then you went on.

**PARKER:**

Yeah, oh yes. Magnetism, always did.

**MERTZ:**

In those days, when you got a Master's degree, as you did at Ann Arbor, did you have to write a paper?

**PARKER:**

We had a thesis to write.

**MERTZ:**

Uh huh, do you remember—

**PARKER:**

And it had do with--my thesis had to do with the planning and design of an electric railroad. Electric railroads in those days, you know, were THE thing. Trolley lines out through the Midwest.

**MERTZ:**

Uh huh. And this was the design of a power line transmission, or—

**PARKER:**

No, the overall design.

**MERTZ:**

The overall, I see.

**PARKER:**

That was the thesis. We never did a good job. I don't think it was worth much. [laugh]  
Anyway, we'd lay out plans.

**MERTZ:**

And how did you get involved with Bell? did you know about their work, or—

**PARKER:**

No. I went to work for the Western Electric Company in 1906.

**MERTZ:**

Was this in Chicago?

**PARKER:**

In Chicago, Hawthorne Plant. But I was in the power phase. And then L. F. Morehouse was working in the Physics Laboratory in West [?] Chicago, and was offered the job to go--in London, for the Western Electric Company in connection with the loading coils, the introduction of loading coils in England. You know anything about a loading coil? Inductances properly distributed along a line in order to get good transmission? The Pupin coil? Pupin was a Columbia professor invented the so-called Pupin coil. P-U-P-I-N. He was head of electrical engineering at Columbia.

**MERTZ:**

He was?

**PARKER:**

And Morehouse was given this job, but he had to find somebody to take his place at Ann Arbor, and he knew I was working there in the shops at Western, and he came to me to take the job in Ann Arbor. I never had planned to teach. And I wanted to get married.

[End of Side 1]

[Start Side 2]

**PARKER:**

Well, Mr. Morehouse, he was then a professor--this is 1906--had already started communications courses at Ann Arbor. And I had taken one of his courses, and because of that he thought of me as somebody to take his place when he was in London. And because I could earn a hundred dollars a month for ten months of the year, as against about sixty-five dollars a month as an apprentice at the Western Electric Company, the idea of going back to Ann Arbor looked very good, indeed, as I wanted to get married [Laugh]; which I proceeded to do in the course of the following year.

**MERTZ:**

Was this just for--he was going there for a year for—

**PARKER:**

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

He thought he'd be gone a couple of years, but he never came back. And, of course, I stayed on; I stayed on until 1913, when I went to work for him with the AT&T Company in New York.

**MERTZ:**

Oh, when he came—

**PARKER:**

When he came back from London, he became Head Equipment and Development Engineer for the AT&T Company in New York City.

**MERTZ:**

I see. And he had been in England all that time?

**PARKER:**

Been in New York all that time.

**MERTZ:**

Oh, I see.

**PARKER:**

Well, he came back about 1911; '10 or '11, somewhere around there, and went to work for New York--in New York for AT&T Company.

**MERTZ:**

And then by '13, you were at that time--had worked up to being an Assistant—

**PARKER:**

I was an Assistant Professor, but I was just--well, I wanted to get into more, other more active work. In a way it was a mistake, because I was--I became interested in radio, and I built a radio transmitter there at Ann Arbor, and was offering other courses and could have been the head of Radio Communications Department at some time. But—

**MERTZ:**

How did you find teaching? Did you enjoy it when you were there?

**PARKER:**

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

I'm not a good teacher. My wife used to say that I used to say that teaching was all right if it weren't for the damned students [laughter]. Research is my activity, alright. I like to play around with the tools in the laboratory.

**MERTZ:**

So, when this chance came along in 1913, at that point it was to work at a--more money and a higher level

**PARKER:**

Oh yes.

**MERTZ:**

than as an apprentice at Western.

**PARKER:**

The money and so on, the lure of the east, New York City. My sister was the--this is all crazy stuff now--but she was the first girl to graduate from engineering at Ann Arbor. She graduated in 1895, and went to New York. And she was instrumental in designing such buildings as the Flatiron Building.

**MERTZ:**

Oh yes.

**PARKER:**

She had charge of a group of men.

**MERTZ:**

Times Square.

**PARKER:**

Well, it's at Twenty-Third Street.

**MERTZ:**

Oh yeah, I know where it is.

**PARKER:**

The Flatiron Building.

**MERTZ:**

Right, right.

**PARKER:**

Very narrow.

**MERTZ:** Yeah.

**PARKER:**

She was specialized in the design of steel structures.

**MERTZ:**

So she'd been in New York

**PARKER:**

Yes, she—

**MERTZ:**

as an architectural engineer?

**PARKER:**

Yeah. But she had died meanwhile.

**MERTZ:**

Oh, before you

**PARKER:**

Before I went there.

**MERTZ:**

went. Oh, I see.

**PARKER:**

But I had a great lure to go to New York, anyway.

**MERTZ:**

What was her name?

**PARKER:**

Marian Sarah Parker.

**MERTZ:**

Marian?

**PARKER:**

Marian, yes. And we have a--there is a Marian Sarah Parker award for girl students at Ann Arbor right now. The best girl in the Engineering class each year gets a nice award.

**MERTZ:**

I see. In memory of her. So she wasn't there when you—

**PARKER:**

No, she had died.

**MERTZ:**

And then you set up in Brooklyn, and—

**PARKER:**

Well, I had some relatives, my wife had relatives in Brooklyn. But I went to work in the same building this girl--my sister had worked in; downtown, the Hoffmeyer [?] Building was the tallest building in New York at one time, when she went there. And when I went there I worked in the same building.

**MERTZ:**

What a coincidence.

**PARKER:**

Same building where she worked, but she--their firm had moved out of it by that time.

**MERTZ:**

I see. So, that's another question--at this point in your life it would look as if your boss had been a pretty big influence in your life?

PARKER

:Oh, yes. L. F. Morehouse, sure.

**MERTZ:**

He had sort of influenced your decision to go to the university at Ann Arbor,

**PARKER:**

Yes.

**MERTZ:**

and to eventually go to New York.

**PARKER:**

Yes, yes.

**MERTZ:**

So he--were there any other, would you say, influences on the part of teachers or any other people who helped stimulate your interest in electrical engineering or communications theory?

**PARKER:**

Oh, as far as electrical engineering is concerned, ever since I was a kid—

**MERTZ:**

It was just sort of something that—

**PARKER:**

Oh yes, yes. My communications came along at the university, and then when I went back and had--of course, I taught other subjects besides communications, well my

interests started to be excited and I became a communications fan, that's all there is to it.

**MERTZ:**

Well, and then—

**PARKER:**

And I realized--you see the power people were so set on sixty cycles, and the fact that power was everything, the students had no comprehension of the transmission of frequencies any higher than sixty cycles. And so we used to play around with tuning forks and transmission lines, and we had high frequency generators. As a matter of fact, Morehouse had built one, or you could rotate at a disk and got up to about 1000 to 2000 cycles a second. Oh, there's a new realm right away, you see, when you start thinking in terms of the higher frequencies. And so it became very intriguing--the flow of currents and transmission lines, and the problem of switching, and operation of relays, and polarized relays, and neutral relays, and all of the things which a power engineer had very little knowledge of in those days. Now it's tremendous to realize how the computer could help him a lot in connection with these power plants that are being tied together. Something happens here, and you don't know anything about it until everything goes to smashes--as it did in New York a few years ago.

**MERTZ:**

There's another element in this development of the technology of computers that is interesting, and that is counting equipment, counters. And the technology, for example, in a high speed electronic digital computer that is clocked, timed, and synchronous, you have to have--that presupposes a whole development in engineering of clocked, timed precision, synchronous equipment. And one--so in the thirties this—

**PARKER:**

My grandson, Mr. Mertz.

[Recorder off]

My activities in this communications thing at Ann Arbor were at the time in the so-called 'Audion', just coming in, that is, the vacuum tube. And I was instrumental in the construction of a radio transmission system there. And we bought a few Audions and played around with this, with Audions in connection with telegraph transmission. And I had the dream of radio telephony, but never produced anything. And I had the dream of broadcasting, and I went to see the police department in Ann Arbor about having broadcasting through their offices, but nothing ever came of it. but I did have the dream that I was going to produce a radio-telephone system with which they could talk to their offices. All kinds of crazy dreams.

**MERTZ:**

Did you get--did you ever get involved in some of the problems of pulse equipment?

**PARKER:**

No.

**MERTZ:**

Pulse related equipment?

**PARKER:**

No, I never did. No, I wish I had. I wish I knew more about it right now. [Laugh]. It's really part of my job right now.

**MERTZ:**

The--were there any other--aside from Morehouse, were there any other men that you feel were pretty influential in your career, say, during or after the war. [Chimes ring four times].

**PARKER:**

Well—

**MERTZ:**

World War I.

**PARKER:**

Let's see, I went to work for A. F. Dickson when he went up to the laboratories; H. M. Bascom; A. B. Clark.

**MERTZ:**

Were they fairly close—

**PARKER:**

No, they didn't have too much influence; I was getting along in years, anyway. I had some smart fellows working for me.

**MERTZ:**

Well, how about people that you influenced, now.

**PARKER:**

I don't know if I influenced them, but E. F. Watson was a Cornell graduate in 1914, a brilliant man. And then Fred Singer, later on went to Wisconsin and a chap--Fred Singer is, of course, retired. Then Bacon, Walter Bacon, who's now still at the laboratories; and Weaver, A. Weaver, whom you've already mentioned. Those are the--Lang, there's W.Y. Lang, he's still around. He's not at the laboratory. He's retired, but he's still active.

**MERTZ:**

He's up in New York?

**PARKER:**

Yes. He's a teletype man--of course, the teletype people.

**MERTZ:**

Were you involved in any of the developments of things like SQUIRT or any of these high speed transmission techniques that were developed fairly--well, after World War II?

**PARKER:**

No, no. That's since--no, I didn't have anything to do with those things at all. You see, I retired in '47. During the war we were very active in designing some--well, I was involved in what we called frequency shift operations, and getting teletype work over radio channels. Now, all--everything is teletyped these days, but in the thirties, and when we went into World War II, there was very little teletype on radio. Very, very little. And I think the Bell System was quite instrumental, and took the lead in getting teletype operations over radio links, by the use of what's known as frequency shift operations. When you shift the frequency back ...into, for a ...into space, one frequency from another, and we got--we provided equipment for the Signal Corps during the war, and designed and provided this equipment; also made a lot of equipment for getting security on messages. The teletype produced a lot of it which--in connection with the designs.

**MERTZ:**

This is, I assume—

**PARKER:**

We worked very closely with teletype.

**MERTZ:**

Inversion and—

**PARKER:**

Oh, yes. Well, yeah, but I knew the teletype people way, way back in the 1914 days. But they weren't teletype then. They were called 'marcoms' [?]. There was a Kleinschmidt [?] Company. Kleinschmidt was an engine--was a designer in New York with the Western Union Telegraph Company. We worked very close to the Western Union. Western Union was part of the Bell System at one time. You probably know that.

**MERTZ:**

Yes.

**PARKER:**

And then they separated about 1914. They just dissolved. Let's see, Vail--Theodore N. Vail--was the president of the telephone company when I went to work for them. And he had retired but was called back in 1908. There was a depression in 1908, somewhat similar to what's going on right now, only worse, I guess. And the Bell System was in a bad way. And he was called back and took over, and at the same time Crandall took over the Western Union Telegraph Company. And he revitalized the telegraph company by sending--putting engineers in charge of work in the Western Union. But, then, that was all done away with when they separated later on.

**MERTZ:**

I see. In your own career in Bell, were you doing unclassified work near the end there, before you retired in '47?

**PARKER:**

Well, we—

**MERTZ:**

Or was most of your research—

**PARKER:**

The idea of having classified work--we called it 'confidential' if we really had something we thought that shouldn't be publicized in that time. It seemed to me that came later. Now, this work having to do with making messages secret--we did it more or less on our own. The government had nothing to do--didn't know anything about it until we made a

demonstration in 1916--in 1918. Nobody said that it was classified or anything like that, except on our--we said it was 'confidential.' But this highly classified, top secret stuff that we have today wasn't realized by the engineers of those days; this was fifty or sixty years ago, now.

**MERTZ:**

Well, how about in your later career at Bell?

**PARKER:**

Oh, yes. Then, when we started in World War II, then there was a necessity, of course, then.

**MERTZ:**

Was your work pretty well in the classified area, then, during World War II?

**PARKER:**

Some of it was, yes, yes.

**MERTZ:**

Some of it wasn't?

**PARKER:**

The frequency shift operations, that wasn't classified. But when we were working with coding equipment, it was.

**MERTZ:**

In '46 and '47, as you were retiring, were you continuing on, essentially, in the same areas of—

**PARKER:**

Oh, I went to Japan with the McArthur staff in Japan the first year.

**MERTZ:**

After your retirement?

**PARKER:**

Yes. I went over--I retired in January, and in February I was in Japan. I should say it that way.

**MERTZ:**

I see. As a—

**PARKER:**

I worked on this staff--there was a Civil Communications Section in General McArthur's GHQ, and I was the head of Research and Development. We had a small group, headed by General Back [?]. General Back [?] became Chief Signal Officer here in Washington later on.

**MERTZ:**

And you were in Tokyo for a year?

**PARKER:**

Yes, yes. I came back expecting to go back for another year, but my wife was sick--she never was over there at all--and this opportunity came to go to work in Washington, and so I came down here. I've been in Washington since '48.

**MERTZ:**

Since '48?

**PARKER:**

Yes. Most of the time with NSA, part of the time with the National Security Resources Board, which you probably never heard of, one of Harry Truman's outfits. And then when the Korean thing came along, that turned into a National Production Authority. You see, they had--in that war, Korean War, we did have authority to curtail prices and use of materials, and they operated very differently than they did in this Vietnam thing. Really, there were controls in those days, there were controls.

**MERTZ:**

There were a number of boards that worked on scientific matters, both during World II and then later; some of them still exist under a different name—

**PARKER:**

That's right. This NSRB thing--the National Production Authority is gone, but I think this Presidential Board is the outcome of Communications, is the outcome of some of

**Computer Oral History Collection, 1969-1973, 1977**

R.D. Parker Interview, July 13, 1970, Archives Center, National Museum of American History

those early National Security Resources operations. And there's a--Well, one of the things that the National Security Resources people were working on was Civilian--what do they call it? Civil Defense?

**MERTZ:**

Oh yes.

**PARKER:**

Civil Defense. That's--some of that's still going on, but it is downgraded a lot.

**MERTZ:**

Then you are still active as a consultant to NSA, I gather.

**PARKER:**

Yeah, [laughter] one more year. They just called up from the office out there to tell me that the word had come through that I still had a job.

**MERTZ:**

Very good. Well, I'd like to thank you very much, Mr. Parker.

**PARKER:**

Well, you're very welcome. I hope you got something worth while.

[End of Interview]