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HOWARD G. DELONG

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INTERVIEW

Q: When and under what circumstances did you join the Voice of America?

DeLONG: I was a technician at a radio station in Hollywood when the war started. A friend of mine named Eddie Ruggles received a telephone call from the chief engineer of the Voice at that time, Carol Hauser, an early chief engineer of a radio station in Hollywood, asking him if he'd be interested in joining the Voice. He decided to go, and I said to him, "Well, if when you get back there it looks like anything worthwhile, let me know if they need somebody else. I might be interested."

Q: When was this?

DeLONG: This was probably February of 1942.

Q: So the Voice was just about on the air.

DeLONG: They were just getting organized. He went back, and a few days later I got a big stack of papers to fill out -- Form 57, security clearance requirements, and a whole bunch of stuff, which I sent in. A few days later I got a call -- it was on a Thursday -- from Hauser, who asked, could I be in New York a week from Sunday.

Q: That's calling it fast.

DeLONG: That's calling it fast. We didn't have any freeways in those days. I said, "Well, I can try." I had a house in California, and had to make arrangements for somebody to rent it, and we took off in a '37 DeSoto for New York. I got into New York just as I said I would, on the evening before I was due to go to work. I didn't have any idea where I was going to stay, and Eddie Ruggles put me up in his apartment overnight. I went into New York the following morning -- 270 Madison Avenue, fifth floor. That's where the studios were at that time -- if you can call them studios. They had some

makeshift studios, two small ones and one you might call a medium one. And that was it: three studios.

Q: Who was using them at the time?

DeLONG: They were used by the program staff that was headed by John Houseman. He had an assistant named Mary Wilder, as I recall. In any case, there was a small master control, and a recording system with three disk recorders.

Q: So this had not been used by a previous broadcast

DeLONG: No. No, it was all put in by Hauser and a few people that he'd managed to put together, probably right after Pearl Harbor, December of '41. It was March 15th, '42, that I joined the Voice.

A lot of the programming at that time was done by the networks, CBS and NBC basically. All of the transmitters were transmitters they'd acquired from the networks -- NBC, CBS, Westinghouse, Crosley, GE, WRUL Worldwide -- and they leased some stuff from Press Wireless shortly after that -- a communications outfit basically for telegraph transmission.

Anyway, they sat me down in this one studio, called Studio D, as I recall, and they'd have 15 minutes of English, 15 minutes of German, 15 minutes of French and 15 minutes of Italian, and then they'd repeat it -- hour after hour after hour. So that's how I got started at the Voice.

Q: How did the government go about taking over -- if that's what they did -- these transmitting facilities of the private companies?

DeLONG: I wasn't in on the negotiations, but I believe what they did was lease them from the various owners. They didn't actually commandeer them, so to speak, but they leased them. And of course these stations were not really financially supportive because of the fact that they were shortwave. You don't do much advertising on short wave.

Q: Did they have these operations just for the prestige of it, to have a presence in the world?

DeLONG: Essentially, yes. Partly I think they did it because they didn't know what future value these stations might have. And, at least to South America, I think the networks did a little commercial work on those stations. But for the most part they were money losers as far as the networks were concerned.

Q: Presumably they were just as relieved to have the government start paying them.

DeLONG: Oh, sure. Sure.

We had a very small master control. Our staff at that time was a total of maybe eight or nine technicians in that studio operation. As a matter of fact, when I first saw it, I was a little regretful that I had taken the job; I was about ready to turn around and go back. It didn't look like it was going to go any place. But it did.

When I first came to the Voice, one of the first people I met was Minnie Fleck, who was the administrative officer for the Facilities branch at 270 Madison Avenue. Minnie went on to a variety of different jobs in the Voice. And then there was a fellow by the name of Doc Andrews, who was an early George Jacobs; he scheduled frequencies and antennas and things like that for the Facilities branch. I don't remember him ever moving up to the Argonaut Building on 57th Street, but he was one of the first persons I met. Another person who was with the Voice in those early days at 270 Madison Avenue is Marian Edwards, who later married one of the studio technicians, Tom Kelly, and was known in later years as Marian Kelly, in the Traffic office.

Q: At what point do you recall other languages being added, beyond the four initial ones? Very soon, I gather.

DeLONG: It was very soon. As a matter of fact, we didn't stay at 270 Madison Avenue very long. Some time during the summer VOA took over the top floor of the Argonaut Building at 57th and Broadway in New York, and they had five studios on that top floor. The programs would be sent from there via telephone lines down to 270 Madison Avenue through that master control until we got something going on the fifth floor of the Argonaut Building. Hauser, who was in charge of the technical operations insofar as the studio plants were concerned, hired some CBS engineers to design and install the studio facilities in the Argonaut Building: a large master control, which consisted of, as I recall, about 26 outgoing channels to the transmitters; a recording system of 14 recording channels -- disk recording; that's before tape was ever heard of for broadcast purposes -- and we had 13 studios on the fifth floor, plus the five we had on the top floor. The program people had the fourth floor, and in the same building there were wirephoto facilities for transmitting still pictures overseas.

In the middle of this installation VOA started to build facilities on the West Coast, in San Francisco, and Hauser went to California to get that project going. He left a fellow by the name of George Herrick in charge of the technical operation in New York. George was a very ambitious fellow. He kind of took over when Hauser went to California, and by the time Hauser had finished in California and got back to New York he effectively didn't have a job left. Herrick had taken over the operation. Hauser soon resigned and returned to California. He later opened a broadcast station in Eureka, California.

Q: Who did Hauser or Herrick report to?
DeLONG: Hauser reported to James Weldon, who was the chief engineer for the OWI. You know, this started out to be what was called the Coordinator of Information.

Q: Right. VOA in COI preceded the OWI.

DeLONG: The COI was part of the Emergency Management thing of the President. And of course Robert Sherwood, as you know, was head of the operation.

Q: He took over the Overseas Branch of the OWI.

DeLONG: That's right.

Q: I've understood that the program operation on the West Coast was practically independent of New York. Was the engineering also, or was there any attempt to coordinate them?

DeLONG: There was an attempt to coordinate it. However, it did operate essentially independently of New York. Hauser went out to San Francisco to get it established, but once it was established it was on its own, more or less. Of course, the Voice still didn't have any transmitters of its own; they were still operating under lease. In California they had Associated Broadcasters and General Electric Company transmitters.

Anyway, Herrick had taken over. And as I started to say, in the middle of the installation of the studio plant in the Argonaut Building, Herrick came to me one day and said, "Do you think we can finish up this job, because I'm not satisfied with the way CBS is doing this." It wasn't CBS per se, it was a group of engineers who worked for CBS who were doing the work. CBS itself had no direct relationship; these fellows were on their own.

Anyway, he came to me and said, "Do you think we can finish up this job on our own?" I was young and foolish and said, "Of course we can." So he turned the whole thing over to me to finish up the studio plant. We had an electrical contractor who had been working with the CBS group and we kept them on. All I did was supervise the thing. Max Swoboda assisted. We doubled the capacity of master control; it started out as 20 and we doubled it to 40. They were adding more and more programs. I couldn't keep up with the programming. All we did was get the facilities ready. Of course, everything recorded in those days was done by disk.

We had a training program for technicians because there weren't any available. We robbed some of the broadcast stations. We had some fellows from WOR in New York and from WINS in New York -- that's where Herrick came from, by the way. Max Swoboda was also from WINS. We had Ed Scatterday and Joe Craig from WOR. They were in Master Control. Chuck Phillips headed up Recording. He was from California.

That's how it all got started. It was in the Argonaut Building that you might say the Voice hit its stride. It was a well-established operation by now. We stayed in that building all through the war.

Q: Did you stay in that part of the engineering operation?

DeLONG: I stayed in that part until the construction job was finished, and then I was put in charge of the plant operation, that is, the technicians who operated the equipment. We

had a supervisor for studio facilities; we had a supervisor for recording; we had a master control supervisor, each with their individual staffs. And then I had the job on top of that. I reported to Herrick and Herrick reported to the head of the Facilities branch, Pete Nelson. There were fellows like Gene Patterson, who was in charge of scheduling studios. John Dowd was in charge of scheduling transmitters. Ed Burgeni worked in Dowd's group. Herrick was chief of the technical operation. We continued right there throughout the war.

Q: And your relationship with the various language operations, I suppose, was like that that I experienced in VOA in Washington, in which all kinds of language services use the same studio.

DeLONG: That's right. It was the same kind of scheduling problem. Everybody wanted to do the same thing at the same time. Nobody wanted to work at night. We had a traffic operation. Such fellows as Perry Harten and Gene Patterson and Dowd were in that kind of an operation. Howard Hotchner at that time was in charge, I believe, of the production operation.

Q: I think that was after the war that he became head of production, wasn't it?

DeLONG: It seemed to me he was there during the war. I'm pretty sure he was there during the war. I remember we had a Broadcast Steering Committee for a short time. Gene Patterson, Howard Hotchner and I met every couple of weeks to try and work out differences that might come up. We wrote several papers for distribution to the staffs to help explain how certain operations were carried out.

Q: Werner Michel was in charge of production in the early days.

DeLONG: I remember that name, too.

Q: At least that's what Gene Kern told me. There was a triumvirate heading the program operation -- Houseman, Werner Michel and Connie Ernst, according to Gene.

DeLONG: They were all a little bit out of my area, so I don't know specifically where each one of them fit.

Q: Well, when you built this installation in the Argonaut Building and doubled the size of master control and increased the number of studios, was there any expectation that this was going to continue after the war?

DeLONG: No. As a matter of fact, I figured that when the thing was all over I would be going back to California. Of course, when the war ended, the State Department took it over, until Dulles became Secretary.

Q: Did VOA engineering have any liaison relationship with the military? I know it did with the BBC.

DeLONG: One studio at least was devoted to AFRS (Armed Forces Radio Service). They used to program part of the day on some of the transmitters for AFRS through our master control and using our studios.

Q: Gene Kern says that VOA did a number of programs for the troops -- jazz programs, pop music programs.

DeLONG: If they did I didn't know about it. If it came from VOA itself and they did that kind of programming, well then they did it and I didn't know about it. But I do know that AFRS did their own programming with their own people through our facilities in the Argonaut Building.

Q: I think it was in Houseman's book, but somewhere I have read that the first programs that went on the air from VOA were shipped, on disk, by bomber across the Atlantic and then played from transmitters of the BBC in London. Do you have any recollection of that?

DeLONG: I know we shipped records, that's all I know. I think he probably is right. He would know.

Q: But I can't imagine doing a news program and then shipping it across the ocean.

DeLONG: It probably wouldn't be a news program. I don't know. It could be something that was current but not necessarily news.

Q: I know there was an organization of broadcast operators in London for the United States called the American Broadcasting Station in Europe -- ABSIE. Was there any connection between you people and the ABSIE operation? I guess the technical side of ABSIE was run by the BBC, wasn't it?

DeLONG: That's right. Yes, there was some coordination because I remember the name being mentioned in New York when we were there. Herrick never was very communicative with respect to details, so I didn't personally handle anything like that. I know there were conversations back and forth, but the degree to which VOA controlled ABSIE, if any, I don't know.

Q: Were you aware, during the war, toward the latter days of the war, that a committee of top broadcasters in this country, including Sarnoff and Lemmon and a number of other big, top names in the industry, proposed the setting up of a foundation for broadcasting by short wave overseas for the United States government? And presumably they would turn over their facilities to the foundation. Nothing ever came of it, as far as I know.

DeLONG: I never heard of it. The State Department took over after the war. There was a short time after the war in which there was some kind of intermediate operation, but I don't know under what jurisdiction it fell.

Q: It was called something like the Interim International Information Administration; I don't remember the name of it.

DeLONG: For a very short time.

Q: Then of course in '47 most of the programming went to CBS and NBC. So at that time what happened to you people in engineering? Because they cut a lot of the broadcasting. Did they RIF you people, too?

DeLONG: As I recall, there wasn't too much in the way of layoffs. When the war ended, I think a number of the studio technicians were reduced. The rest of the operation wasn't, because even though some of the programming went to the networks, the programs were fed through our master control to the transmitters. We still did a lot of recording, all the time. So there was no substantial reduction in staffing when some of the programming was taken over, principally by CBS. We did set up a small facility at CBS for doing this stuff, which I'm sure VOA paid for. And undoubtedly they paid for whatever programming the networks did for them.

But that didn't last very long, Cliff. It was a very short period. And the stuff all came back again. We had to build studios finally after the war, about five studios, over in the Fisk Building, which was across the street from the Argonaut. They needed more space in the Argonaut, so they moved the engineering group into the Excelsior Bank Building, which was across 57th Street; we were on the second floor. It was in that building where we really started the expansion of the transmitter facilities for the Voice.

Q: That was my next question. When the war actually ended, did the broadcasters who had leased these facilities to VOA during the war ask for them back, or take them back? What did you start using instead of them if you didn't have those facilities any more?

DeLONG: No, they continued to use them until we constructed facilities. What financial arrangements were made? I don't know. But we continued to use them; the stations continued to operate. We didn't have our own staffs in those places. CBS and NBC operated the two transmitter plants in California, Dixon and Delano. Associated Broadcasters and GE transmitters in California disappeared. You see, Jim Weldon, who was chief engineer for OWI, did start some construction work. As a matter of fact, I think he was responsible for construction of the two plants in California that were operated by CBS and NBC -- Dixon and Delano. They replaced the San Francisco facilities.

Q: These were new facilities?

DeLONG: These were new facilities that he installed.

Q: And was this during or after the war?

DeLONG: It was probably done during the last half of the war, probably about 1944.

Q: At some point, we also had an installation in Honolulu, or somewhere in Hawaii.

DeLONG: That's true.

Q: Was that during the war?

DeLONG: I don't believe so. I think that came up after the war.

Q: So Dixon and Delano replaced the Associated and GE facilities.

DeLONG: That's right.

Q: What about Schenectady and Bound Brook (NJ) and Scituate (MA)?

DeLONG: Schenectady disappeared. We continued to operate Bound Brook. We continued at Brentwood, Long Island -- that was under CBS. Scituate operated for a long time. Walter Lemmon and the Voice were at odds because Lemmon wanted, I believe, to take the facility back but the government didn't want to give it up. It was a very poor installation, by the way; it was always a source of trouble. We sent inspection teams out to look at it, and they kept reporting deficiencies in the equipment. They had a lot of equipment failures. Eventually the government gave it up after the war.

But when the Voice started to build its own plants, principally overseas, of course -- when we invaded Germany and got as far as Munich, Herrick went over and took over the Munich Relay Station, which was a German installation.

Q: With Czech equipment.

DeLONG: With Czech equipment, that's right. And we added a medium wave transmitter there. While we were still in the Argonaut Building we started what we called the Ring Plan, which was Jade, John -- in Okinawa and the Philippines, two major plants on the East and West Coasts of the United States, Tangier -- all of that was going on after the war.

Q: That's when the Cold War had started, and the "Ring" was to ring the Soviet Union.

DeLONG: That's right. That's right. And the Vagabond. You've heard of the Vagabond, the transmitter on a ship.

Q: Which turned out to be the Courier.

DeLONG: The Courier, that's right. And we even had what I called the Great White Whale, which was a mobile unit on wheels, with recording equipment in it.

Q: Is that the thing that's down at Greenville still, in two parts? It's a massive thing, totally impractical.

DeLONG: No, I don't think so. This was one unit, and was operated by a fellow by the name of Lou Ross, who was a government employee. He was our mobile operator.

Q: He was an operator, all right.

DeLONG: You can say that again.

Q: So what happened to the Ring Plan?

DeLONG: The Ring Plan was going full steam. We'd broken ground in the state of Washington, and we had acquired sites and started to do some clearing work in North Carolina. The contracts had been let for all the transmitters. The Philippines and Okinawa got started, and we had contracts for the construction when Joe McCarthy hit the fan, and everything stopped cold, except the ones which we actually had construction contracts for. The two sites in the state of Washington and in North Carolina were stopped and the land sold off.

Q: We wound up with practically the same installation in North Carolina eventually anyhow.

DeLONG: That's right. That wasn't till quite some time later.

You asked earlier about cooperation between VOA engineering and the military. When they went to invade Italy, they wanted to set up an operation in Rome, which required a small master control. There was a lieutenant named Vic Terola, who approached us about designing -- or helping them design -- a small m.c. for the Rome operation. It was a very rudimentary thing, and I had the job of putting that thing together. We contracted with the Langevin Company to build it, essentially copied after an old Western Electric design. It was rudimentary but it did the job. In that sense, I personally did some cooperation with the military. Vic is still alive but he's in a nursing home down in Florida.

Q: Was this to broadcast to the Italian population?

DeLONG: Yes, it was a local broadcast operation by the military. In Germany they had military government. I presume they had something similar to that in Italy.

Q: But in Italy, as I recall, they assumed that they were reverting to democracy right off the bat.

DeLONG: That's right. But they needed something over there. Maybe the existing facilities had been so damaged that they had to set something up for them. I don't know. Of course, we had a liaison man in London with the BBC, Bill Brady. He was there for years and years.

Q: He was still there as liaison in 1959 when I met him.

DeLONG: He was there a long, long time.

Q: Back to the subject of the new construction after the war. You said that Scituate kept operating for a while, that Schenectady was turned back to GE, you kept Bound Brook going for a while, and Brentwood, Long Island

DeLONG: There was another one called Wayne, New Jersey. And Crosley in Cincinnati -- Bethany, we call it. It's still operating, as far as I know.

Q: You talked about the construction on the West Coast, at Dixon and Delano, but what construction was there on the East Coast?

DeLONG: We had these six 500-kilowatt transmitters in the warehouse in Brooklyn, because when the Ring Plan was cancelled as a result of the McCarthy thing -- or part of it, we got some of it built, the Asian part, but not the stateside transmitters -- we had the transmitters because we'd already bought them in preparation for the installation. And they were delivered and put in Brooklyn in storage, from approximately 1948.

When jamming started, George Herrick came up with the idea of using a "clipper" on the VOA transmitters. The clipper is a device which chops off the highest peaks in the sound as it's being transmitted through the transmitters, and effectively raises the average volume or loudness of the transmission. In addition to that, it provided for pre-emphasis, on the theory that the sibilant sounds add more to the intelligibility of the received signal than just an ordinary flat characteristic. So we pre-emphasized the higher tones in speech, and the "s's" and such sounds as that. Julie Ross did the development work on the clipper, and I had to write an instruction book for the overseas transmitters. These devices were used on the transmissions and effectively increased the loudness of VOA signals all during the jamming period, and we continued to use them right up until around 1977 or thereabouts.

They were controversial because the clipper causes distortion in the signal, known as harmonic distortion, and while it increases the intelligibility, it also makes the sound a little less desirable to listen to. There's no question that it did increase the loudness of VOA signals, but one of the things which developed later was when you used clippers on top of clippers -- that is, we used the clipper on this stateside transmitter and then it was clipped again on the transmitters overseas. If it's relayed more than once or twice the distortion becomes rather evident. And the pre-emphasis also causes what you might term distortion of the signal.

In about 1976 or thereabouts a big question arose as to whether we should continue to use clippers, and it was one of the things that Ed Martin and Ken Giddens had a difference of opinion on. Subsequently, the clippers were removed and a new version of a limiting-type amplifier, which was developed by John Birch, was used on the VOA transmissions.

But back to the story. In 1949 I was sent to Mexico City as part of the delegation to an international conference on broadcasting. The delegation was chaired by George Sterling of the Federal Communications Commission. The people from the Voice down there were Roger Legge, Muse Delgado, and me. The FCC had three or four people down there. And there was one representative from RCA. The purpose of the Mexico City conference, which was related to the ITU -- the International Telecommunication Union -- was to establish a broadcasting plan for sharing the high-frequency short wave broadcast channels, worldwide. The Russians, the French, the British, the Netherlands were there -- everybody was there. I went down in January and came back in March; I was there about three months. The conference came up with a plan for certain sunspots, sunspot 70 summer time. I don't want to get too technical but sunspots affect short wave broadcasting -- what frequency to use, night and day, at certain hours in order to reach a specific target.

Q: And they go in 11-year cycles, is it?

DeLONG: The sunspots go in approximately an 11-year cycle. So this was a median sunspot number, sunspot 70. Trying to put all the requirements of all these countries into a plan was something like trying to put a gallon of milk in a quart bottle. It just wouldn't work, without taking a lot away from countries in the way of facilities and frequencies to use. The Russians and the United States did not accept the proposals. As a matter of fact, I personally sent a note to George Sterling just before I came back to New York, saying the plan could never work. I opposed any signing of the plan by the United States. George Sterling and the FCC group were trying very hard to get a plan; they wanted to accept the plan. Roger Legge, I believe, was inclined to go along with them, but Delgado and I didn't like the idea at all.

Q: Delgado was then the program manager.

DeLONG: That's right. Anyway, the United States and the Russians did not accept the Mexico City plan, but a number of other countries did sign it. The way the thing works in practice is that the guy with the most power in transmitter kilowatts is the guy who gets what he wants. You just force your way in. That's the brute force system that we use now.

Q: You mean we're still not signatories?

DeLONG: We're signatories to the ITU, but not to the plan. And the way the system works is that the various countries register the frequencies that they're using with the ITU, so everybody knows what everybody else is using, and they try to fit their stuff in as best they can and if they can't, well, they just go on with them. Tough luck. And the guy with the most power wins, you might say. But it works something like that.

Anyway, the conference set up a committee to meet in Paris the following June, June of '49, and I was selected, along with Prose Walker of the FCC, to go to Paris representing

the United States as observers. The Russians also had observers there. And the rest of the people -- the Canadians, the British, the French, and so forth -- were charged with the responsibility of establishing plans for other sunspot numbers in other seasons.

Q: Of course, at that point, the Germans and the Japanese were not figuring into these international agreements -- big broadcasters today.

DeLONG: That's right. So, they worked there six months. The funny part of it is, all the technical information that was available was furnished by the United States, because the FCC had developed a set of charts, transparencies that you could slide back and forth for certain paths, certain frequencies, stuff like that, so it was quite easy to determine what the best frequency would be at any time under any set of conditions. This information was made available to the plan committee, but we didn't participate in the plan except to be there and report home.

Well, Prose Walker's mother died just a few weeks before the end of the committee so he had to come back to the United States and left me over there by myself. My contact back in the State Department was a fellow by the name of Fred Trimmer, who at one time was sort of associated with the Voice -- I don't know in what capacity, some kind of liaison type thing. The night before the closing of the committee I sent off a message from the embassy in Paris back to Trimmer and told him that the conference was closing and asked if there was anything I should say at the closing meeting. I never got an answer -- I mean, I got an answer but it didn't get there in time. It said just observe the reactions of the various countries to the proposed plan. It wasn't very hard to do.

But the following day I felt kind of like a bump on a log sitting there in the conference not knowing whether I should say something or not. I finally decided I would make some kind of innocuous statement, so after they had done all of the voting on it and were just about ready to close up, I raised my hand and asked for recognition -- the chairman was a Frenchman, host country. I made a short speech, something to the effect that I had observed their work over the past six months and recognized the fact that they had all worked very hard and diligently to come up with a plan but in my judgment the plan could never work because they could not possibly accommodate the requirements of all the countries in the plan. I felt sure that the United States could not accept their work, but the official position of the United States would be known at a later date -- words to that effect. I thanked them for their hospitality, et cetera, and that was my contribution to the Technical Planning Committee. I've got a certificate from the Department of State: Delegate to the Technical Planning Committee. So that was that.

Q: What was your job at that time?

DeLONG: They had pulled me out of the operating job that I had in New York, when I was plant manager -- plant supervisor, I guess you might call it. I don't remember what my civil service thing says. That was effectively what the job was. When I came back from Mexico City I went back in that job for three months, but when I went to Paris they assigned a fellow by the name of El Morde, who had been a master control man, to the

plant job. He was down in Washington, too, for a short time till he died. When I got back from Paris, George Herrick said to me, "Look, I don't want you to go back in operations." He had plans for a magnificent plant in New York -- 36 studios, a master control with 50 outgoing channels, a large recording operation. By this time we had started to use tape. We had one of the first tape machines, the Ampex 200, in New York -- two of them as I recall.

Q: This was before there was any idea of moving to Washington.

DeLONG: Before any idea of moving to Washington. We were going to have these 36 studios -- one auditorium-type and one large one -- and a big recording operation -- 40 recording channels. We were still dedicated to disk at that time; tape equipment in our judgment hadn't proven itself yet, although that 200 was a nice machine, the first one that Ampex made, and it ran at 30 inches per second. Later we started using 7 1/2 inches.

Q: When I joined the Voice in Washington, in the Interior Department penthouse, they were using Magnecorders, and tape exclusively. We didn't have any disk machines up there.

DeLONG: When was that?

Q: 1951.

DeLONG: That's when we were in the transition stage. Incidentally, I had to go down to Washington with Charlie Affelder once. The two of us rehabbed that equipment down there.

Anyway, when I came back from Paris, George says, "I don't want you to go back to operations. I want you to take on the job of the design of these facilities" -- this magnificent dream he had about 36 studios. Where he got the need for it I'll never know, but he apparently sold it to the director through the facilities manager at that time, a fellow by the name of Nelson. They had no idea of ever going to Washington.

So, okay, I take on the job. We contract with Smith Meeker Engineering Company of New York. I spent about nine months on the design. We got a complete set of specifications for the equipment -- blueprints, drawings, what have you, for the whole ball of wax, equipment-wise. In the meantime, the administrative people were looking for a building in New York in which to put these facilities. They never found one. Or before they found one the Congress decided that the Voice should be in Washington and not in New York. Of course, in the meantime my plans had gone on the shelf because there wasn't any place to build it. We had all these fancy plans and no place to put them. When the Congress decided we should come to Washington, I was put on the study team to come to Washington to find a suitable place in which to place the studios.

Q: It had to be a government building?

DeLONG: It had to be a government building, and GSA was supposed to provide it. First they thought maybe they could use NBC's Washington studios, because they were moving out on Nebraska Avenue and they had a facility above the Trans-Lux Theater, a tiny little place. I said, "No good." Then they thought maybe they could use the CBS studios which were down on 13th Street, just about the same kind of set-up. "No good." We couldn't possibly use it. It would only accommodate about two or three programs at one time so we couldn't possibly use it. Then they showed us the old Pension Building. It had this great big area down on the main floor where the dances used to be held and then all these balconies around for about four flights up.

Q: All that waste space. There's no way you could build offices in the middle there.

DeLONG: No. I said, "Well, I can tell you this much. I can build studios down there on that dance floor, but I don't know how people are going to get to them." (Laughter) So that was out. Then they showed us the attic of the General Accounting Office building, where there was a bunch of air-conditioning equipment running. I said, "Can't do it; can't use it." They wanted us to move out to Suitland, where the Census Bureau is, and I didn't even bother to go out because the director of USIA at the time, Ted Streibert, said it has to be inside Washington. So then we started to lay out some of the floors in 1778 Pennsylvania Avenue (later 1776). But when the administrative people got wind of that, that was nixed because they needed it for USIA, not for the Voice. Finally, after several months, GSA came up with the second floor of the HEW building for the studio plant. It was the best we had seen, and we were running out of time because we had a deadline to meet. So I said, "Okay, this will work. We can make studios here." So essentially I was responsible for us being in HEW.

We contracted with an architectural firm, Deigert and Yerkes here in Washington, and they did the design of the physical layout. I had an assistant named Ken Manhart who was an acoustical engineer. He helped with the acoustical layout of the studios -- the sound treatment. He subsequently went with Douglas Aircraft, one of the their best acoustical engineers. I still hear from him occasionally.

We got out our plans that had been on the shelf, for the grandiose plans in New York, dusted them off, cut hunks of it out, discarded part of it. We then issued invitations for bids, and got about four of them, one of them being Gates Radio Company in Quincy, Illinois. This was custom design. It wasn't standard equipment; all the result of my work with Smith Meeker Co.

Q: It was a beautiful set-up at the time.

DeLONG: Yeah. The Voice's director at that time was Jack Poppele, and he didn't like Gates Radio. He wanted Western Electric Company equipment. I guess he was brought up on Western Electric equipment.

Q: He was chief engineer of WOR, wasn't he?

DeLONG: In name. In any case, he had a fellow working with him who had been with him at WOR; I can't think of his name offhand. The contract people were going crazy. Gates Radio Company was the low bidder. They agreed to meet all the specifications, no questions asked, guaranteed. So all we really had to do was to build the stuff according to the plans. It didn't matter whether it was Gates Radio Company, Western Electric or somebody else, as long as it was properly built. In the meantime we were trying to meet a deadline. Finally, over in the contract office one day, this fellow I mentioned who worked with Poppele and I were trying to resolve this thing, and he finally picked up the phone and called Poppele and said, "Look, Jack, do you want to be responsible for not meeting the Congressional deadline for the Voice to be in Washington?" He explained to him that in spite of the fact it was Gates Radio Company it was still custom equipment. So Poppele finally gave in and said okay. So we got a contract with Gates Radio Company. I spent the next six months, at least, in Quincy, Illinois, off and on, traveling back and forth, checking the design out, testing stuff, making a few modifications where things didn't work quite the way we figured they would. John Birch, whom you may know, was at Gates; he worked for Gates at the time, and he and I worked together out there.

Q: So you, in effect, hired him.

DeLONG: Yeah. As a matter of fact, I've got one of the knobs like those we used on the consoles. (Laughter)

Q: Well, those studios have lasted a long time.

DeLONG: Twenty-five years, at least. So then we got into the construction. GSA had the contract for the construction, not the Voice. There were accountants on the floor, watching all the time. I have to say they did a pretty good job. We worked right along with them. One of the problems was that the architect had developed a color scheme for the studios as part of the design. The floor tile for the studios and the corridor was on order and virtually in shipment to the site, when Poppele found out what color they were, and didn't like it. GSA had to cancel the order and reorder, and it delayed the thing at least two weeks. In the meantime, we were gradually getting the stuff in from Gates Radio but not fast enough to meet our deadline. So in the back corner of what we called the equipment room, which is in that space between master control and central recording, we took a corner back there and threw in what was called a temporary master control. We had wires draped from the ceiling and all over the place.

We only had one studio ready to go, Studio 13 -- plus Interior -- and the night before the first broadcast out of Washington -- I remember it well -- at 2 o'clock in the morning, Julie Ross and I were on the floor under the console, wondering where in the world is this hum coming from. (Laughter) We were scheduled to go on the air at 10 o'clock the next morning. We spent at least an hour trying to find where this noise was coming from -- and finally located it as a misplaced ground on the installation. So we fixed it, made the deadline, and the thing went off without a hitch. We got on the air.

In the meantime, this big master control starts to arrive, and we put it in, and then had the problem of cutting over to it. I never will forget that day. When we cut over to it, all at once the whole studio plant took off in oscillation. The electricians were working all over the place, hooking stuff up, you know. All of this was going on, and I said, "Cut it!" So we cut everything off and went back to the temporary, and then tried it again. I told the electricians to stop working. Whatever it was cleared, and I presumed an electrician that was working some place was responsible. We tried it again and it worked.

Q: How long did it take, from the time you started construction of those studios to completion?

DeLONG: You mean actual physical construction? At least a year; probably more like 15 or 16 months to get it going, because we had to work around everything. We had temporary operations, and were trying to get our stuff in and get it operating.

Q: Were you able to start with some studios while others were still under construction?

DeLONG: Oh, sure. We'd bring studios on the line as fast as we could. As soon as we'd get a console we'd stick it in a studio, get it hooked up and in operation until we got finished. So that was a big job for me, and I was quite proud of it actually. I got an award for it, as a matter of fact.

Then for a short time I headed up what was called the Audio Engineering Section under Julie Ross. By this time Ed Martin was engineering manager, of course.

Q: What was Julie Ross's job?

DeLONG: Martin was engineering manager. Under him was Ross as chief engineer. He had a power plant engineer under him, Bill Walker, and a radio frequency engineer, Charlie Pease. In the audio engineering group I had Charlie Affelder and another fellow working with me. We were basically trying to clean up the data on the installation of the plant so everybody would know where everything was connected -- what we call running sheets, showing where wire terminals are and what's connected to them, and all that kind of stuff.

I was sitting in my office one day when Charlie Pease comes in to me and says, "You've been elected." I say, "Elected for what?" And he says, "You're going to be project engineer for the Greenville project." I'd heard about it. It wasn't called the Greenville project at the time because we hadn't yet picked Greenville as the site. The general area had been selected by Ross, but the specific sites had not been picked out.

The first thing I did was to go down with Ross to North Carolina, and we surveyed different areas near Greenville for the plants. We picked three places. GSA started condemnation proceedings for the land. I had to write up a specification for the development of a design for the plant. That is, what was to go into the plant, how many

antennas we needed, what their bearings should be -- I had to work with George Jacobs on this -- frequencies and bearings needed for specific antennas.

The Greenville project included a receiving station and two transmitting plants. The receiving station was to receive from overseas and pipe the stuff up to Washington. I know they used it on the two-ways and things like that. So, I had to write this design spec up, and we contracted with the Austin Company, after negotiating with several firms. The contracting officer, at my recommendation, and I guess Ross's, picked Austin Company, designing engineers. That picture over there on the wall shows me with Allen Austin and next to him, mugging the camera, is Dick Wittenmeyer, who was their project engineer for the project. That picture was taken in Greenville at the dedication of the plant; Ed Murrow and George Allen are there in the background. I went to Cleveland, where the Austin Company is, and I spent at least one winter out there. It took us about a year to develop the design for the plant. It was a CPFF contract.

Q: So you in effect moved to Cleveland.

DeLONG: I didn't move to Cleveland, but I'd go back and forth about once a week. When the design was finished, Charlie Pease and a couple of other fellows -- an electrical engineer, a civil engineer and I -- all went out to Cleveland for a final review of the plant specs. We were about a week out there doing that.

Q: Were the transmitters that were installed there the ones that were in the Brooklyn warehouse?

DeLONG: Yes. The 500 KW transmitters that were installed -- three of them went in Site A, three of them went in Site B, so we had six 500-kilowatt transmitters.

Q: To start with.

DeLONG: To start with. We also bought six General Electric 250-kilowatt transmitters that were installed there. The 500's consisted essentially of two 250-kilowatt amplifiers linked together through a combiner.

Q: Were they used with the full 500 kilowatts of power to start with?

DeLONG: Yes. To the best of my knowledge, they were.

Q: I didn't think we had any 500's until recent years.

DeLONG: No. Greenville started off with 500's. We had some trouble keeping them there because a lot of the vacuum capacitors had been in the warehouse for so long -- you know, they have shelf life. But they were put in as 500-kilowattt transmitters, and they were operated as 500 kilowatt transmitters -- at least after a short shakedown they were.

Q: Ed Martin said that somebody, I forget who it was, had said -- maybe it was the Congress -- that they didn't want a Latin American capability because Lemmon was doing our work for us in Latin America, and that George Allen insisted that we include a Latin American capability.

DeLONG: We put in Latin America antennas, that I know. You see, I was purely a hardware type. That was all I did. In Greenville we had approximately 100 antennas, we had six 250-kilowatt transmitters, six 500-kilowatt transmitters, and four 50-kilowatt transmitters, plus a couple of other smaller ones.

Q: At what point was the decision made, and the Congressional approval gotten, to go for Greenville? And who was responsible? After the McCarthy destruction of the Ring Plan, nothing was done for years. Was it Loomis or Allen or who got this thing moving again?

DeLONG: That I can't be sure of. I don't know whether Loomis was there at the outset of it. The money was appropriated, of course, by Congress, but the choice of Greenville was an engineering decision.

Q: Loomis joined VOA in '58. He told me his chief concern, when he took over, was to get this worldwide transmitter system back on the track.

DeLONG: I guess he was in charge of the Voice at that time. '58 was just about the time that thing started. I didn't keep dates.

Q: Ed Martin thinks that George Allen deserves the credit and not Henry Loomis.

DeLONG: Maybe both of them. It might have been a combined thing.

Q: So you say it took a year to do Greenville.

DeLONG: The design took almost a year, and another year, almost, to get it installed. We had a terrific problem down there with drainage, getting water off the land. We had to default one contractor on that job because he didn't complete on time. He got caught in the winter and couldn't finish his contract on schedule. The civil engineer and I went down to Greenville to review the situation, and there was mud all over the place -- terrible. So we came back to Washington, and Ed Noel, who was contracting officer at that time, wanted to terminate the guy because he wasn't meeting the schedule. Both the civil engineer and I recommended he not terminate because it would take somebody else the same amount of time to get that part finished. But he did it anyway. He called -- it was Christmas Eve, I remember -- he called Greenville on the phone and terminated the contract. It took three months to get somebody else on the job and to get going again.

Q: So when you completed Greenville, what then?

DeLONG: The next job I had was setting up two small receiving stations in California, one associated with Dixon, the other associated with Delano. The idea at that time -- we were security conscious -- was to establish a method of keeping in touch with the West Coast if we lost our transcontinental telephone facility -- the idea being that we could relay from Greenville to the West Coast, to those transmitters.

Q: We're getting to Greenville from Washington by microwave.

DeLONG: That's right. That was one of the shortcomings. I was in my office one day and a fellow from Philco Radio came in. He said, "How are you going to deliver your stuff to Greenville?" I said, "Oh, I don't know. I suspect we'll use AT&T lines like we've always done, for our service to Greenville." As a matter of fact, I think Marian Kelly (in the Traffic office) had already started to work on establishing the circuits. This is while the construction was going on in Greenville, of course. He said, "I think we can save you some money." I said, "Well, I can't stop you from making a proposal if you want to make one." A few days later we got a proposal from Philco, with the cost. We wrote a memo through Martin to Loomis, and Loomis bought the idea of using microwave.

The problem developed when we got competitive. I mean, the contracting officer as usual had to get bids. We couldn't negotiate with Philco without getting somebody else in, so we had to write a set of specs for a microwave system. We established reliability requirements -- 99.5% reliability, that sort of thing, and issued an invitation for people to bid. Philco bid. But because they knew they were competitive, Philco trimmed their original proposal, that they had made on an unsolicited basis, and left out one relay station, claiming that they could maintain the service with one less microwave relay station. They were the best bidder, so we awarded Philco the contract.

Q: Despite the trim-back.

DeLONG: Despite the trim-back. We had nobody, frankly, on our staff that had any great experience with microwave stuff, but the firm was reliable, we thought. The system went in and for a while it worked. Then we started having outages. The contract included service. They had to have a man down there on the system all the time on call, so when something happened he'd have to get to the relay station that was in trouble -- they had a monitoring system to tell him which one it was -- and get it fixed. Or try to get it fixed. But where it's a propagation problem, you can't fix it with equipment -- except to add more relay points within the system. So we suffered along with this for quite some time. VOA set up emergency back-up lines, low-quality service with the phone company. Anyway, later we had a fellow come on the job who knew a little bit about microwave, and after prolonged agonizing with the Philco set-up, we took the bull by the horns and decided to revamp the entire system. We added some additional antennas and some additional relay points -- one at least -- and I think the thing's been fairly reliable since then. It wasn't too long after that that I retired.

Q: You mentioned a satellite a minute ago. The satellite wasn't in the beginning of Greenville, was it?

DeLONG: No. That was an add-on. As a matter of fact, it was done after I left the Voice.

Q: When did you retire?

DeLONG: 1979. January.

Q: So what happened between the refurbishing or redesign of the microwave and your retirement?

DeLONG: Well, of course I was out of Greenville once that plant went into operation, except if they had a problem down there and they wanted some information I could provide it, maybe.

As I mentioned before, we built these two receiving stations in California. That was my next job, getting these two stations built. We had microwave links between the receiving stations and the two transmitting plants.

The next job I had was the rehabilitation of Bethany, Dixon and Delano. The big question that came up at that time -- Loomis was still in charge -- was whether to remove the old transmitters that had been put in out there during the last part of the war -- the original transmitters -- or to add new ones and leave the old ones in operation. Loomis's decision was to leave the old ones in, and supplement them with additional transmitters. So we had to contract for the design of a building expansion at both Dixon and Delano. In Bethany, instead of keeping the six transmitters that were originally there -- as I recall, they were 100 kilowatt transmitters; that's the Crosley installation, and Crosley was still operating it, by the way -- we decided to pull three of the 100s out and put in three 250s. Charlie Affelder wrote up a set of specifications for automated transmitters; I mean, automated to the extent that they could retune in 30 seconds to a new frequency, by pre-setting and pushing a button. So that was issued, and Collins Radio Company was the successful bidder. Continental bid -- Weldon's outfit -- and there might have been a couple of others. Anyway, Collins got the award. We were down to Dallas quite a bit during the manufacture of the transmitters. We went down as a team. Charlie Affelder was sparkplugging it. I was concentrating on building and installation design, and I needed the information from Collins in order to design the building, to tell the contracted design firm where to have openings and that sort of thing.

We eventually got this all put together, and we issued invitations to bid, and we got a West Coast outfit to bid on the jobs – they could bid them individually or as a group -- Dixon, Delano and Bethany. Incidentally, the building design at Bethany was a factor, too. We had to make some modifications in the building there in order to put the Collins in. So that was part of the A and E job -- architect and engineering job, we call it. Funny thing, Philco was successful in bidding for the A and E job, so Philco did the design work for the buildings, Collins was building the transmitters, and Philco was on Collins continually for information, and I had to arbitrate. Anyway, I spent many late hours in Philadelphia with Philco. We got the contract for construction in 1965 or 66.

Q: Loomis left in '65.

DeLONG: Work hadn't been finished, I believe, when he left. I know it started before he left, but he wasn't there for the finish of it, I believe. Anyway, one of the subcontractors on the West Coast job -- this guy bid for Dixon and Delano, we had another contractor for Bethany. So two contractors to deal with, one for Bethany and one for Dixon and Delano. We sent a crew out there. Tom Phillips was in charge of Delano construction, and Ted Hamel, who came on board while we were at Greenville, was in charge of the Dixon construction. Another fellow who came on board during the Greenville job was in charge of Bethany. I can't remember his name; he was the construction supervisor. We had three men at Dixon and three men at Delano. There was an electronic engineer and either an electrical or a civil engineer at each site.

Q: You were not involved with Tinang or Greece or Morocco?

DeLONG: Not at all. Not at all. I knew about them being done, but I didn't have any direct relationship with them. There were other project engineers.

Q: Since you retired, have you kept up with the developments in the place?

DeLONG: I went back once, about two or three months after I retired, but haven't been back since. I've read stuff from time to time, and I've heard things about how the engineering had fallen apart down there, and that sort of thing.

Q: The massive increase in size is what got me. Maury Raffensberger convinced Charlie Wick that he needed a vast expansion of the headquarters office, and he added 130 some people and went from four divisions to 17 divisions, and of course they still haven't got a transmitter built as far as I know. And BIB has taken over, they're the lead element in the joint construction of that transmitter in Israel.

I don't know whether you're interested in some of the details or not, but recalling the Dixon and Delano jobs -- the Bethany job went pretty well, we had a good contractor there, but the West Coast thing, we were fighting with the guy continually all through the job.

Q: Sure I want details.

DeLONG: Well, the brick and mortar stuff went pretty good. The prime contractor specialized in that so it wasn't any great problem. The electrical work was all right, that is, power type electrical work. Electronics -- that's where we had the problem. The prime contractor subcontracted the electronic installation to an outfit that specialized in refrigeration and air-conditioning. But he wanted to get into electronics, so he gave the prime a price for his work that was too low; this guy underbid everybody. One of the stipulations in our contract was that the contractor should hire a Collins Radio Company engineer; we had Collins' agreement for this. The subcontractor did not feel that he had

to hire a Collins Radio Company engineer; he thought all he would have to do if he had a problem was get on the phone with Dallas and find out what information he needed. So early on in the job we ran into trouble. I went out there once and talked to the prime contractor, and said, "You know, this guy's in trouble. He's going to lose his shirt." At the time we signed the contract, the contract officer and I went out on the West Coast to meet with the contractor, to interview them and find out what their capabilities were. I had a gut feeling at that time that this guy wasn't qualified to do the electronic work. But I said to myself, "He's going to have to have a Collins Radio man here all the time; all he's doing is hiring electricians and the Collins guys are going to tell the electricians what to do and how to do it." So, okay, let it go.

Q: But he can't if he's not there.

DeLONG: He can't if he's not there. Incidentally, the invitation to bid for that construction included great detail on the complexity of the Collins transmitter -- how many pieces were involved; we even gave them drawings of the Collins transmitters -- not all of them but enough for anyone to understand what he was up against -- with the package that went out on the invitation. He knew he had to assemble the transmitters essentially, on site. It didn't come in a box that you just set in place; you had to put things in it. And this guy had all kinds of trouble, particularly when we finally got it wired and started the testing. This was when the real trouble started. Parts kept failing in the transmitter, particularly vacuum capacitors. Collins Radio Company was replacing them free of cost, but the contractor was raising cain about having to replace them. We developed a system whereby we could record when the failures occurred, how long it took to replace it, how many men were delayed and all that sort of thing. So he had change orders for the failures, but all through this job he was fighting having to pay the Collins guy.

Well, to make a long story short, the subcontractor finally went virtually bankrupt, and it was necessary for us to terminate the contract before completion. And then we had to turn around and hire Collins Radio Company to come out and finish the job. Of course, we deducted the cost that we had to pay Collins from what we finally paid the general contractor. He in turn deducted it -- or didn't pay his subcontractor because of this.

The guy went bankrupt. He appealed to the Congress. We had to go to the House Office Building and the Small Business Administration and try to explain what had happened. The fellow came to Washington and presented his side of the story. It led to nothing. We couldn't do anything because it was in the contract. The Small Business people said to do whatever you can for him, but that's the most they could say. They couldn't order you to pay him anything. Well, he filed an appeal and went through the appeal procedures with the contracting officer. We had a hearing. They set up a hearing officer; not an Agency guy but I think a General Accounting Office person. We had a hearing out in California, with testimony just like a trial. I was a witness -- a principal witness, as a matter of fact. It took about two weeks to go through the hearing. Carlyle Dunaway was our lawyer. The subcontractor got peanuts. They did give him some award for some small things but not the major things. With the contract, it was cut and dried.

Q: How about some anecdotes from the past? Interesting characters who've come through the engineering shop -- and there have been some.

DeLONG: Well, let's see. Perhaps the most memorable character was a master control man in New York, whose name escapes me. This fellow was enamored with higher math, like calculus. He used to spend hours trying to figure out, for example, the optimum size of a tomato can so as to make the maximum content capability with the least amount of metal. He was so involved with this sort of thing that one day he forgot to make a program switch and sent program material scheduled for a European transmission to a transmitter in a South American program: Nobody knows for how long. He didn't stay with us long. I heard later -- but it was never confirmed -- that he joined the Manhattan Project, which developed the atom bomb.

Then there was Farrell, a project engineer for Jade and John. He was a bit of a prima donna, and he and Ross had quite a few arguments. Jade and John were part of the Ring Plan, and were the Okinawa and Philippines installations that went in in the fifties. There were two plants in the Philippines, as I recall, or used to be.

Q: There's Tinang. And there's Baguio, the receiving station.

DeLONG: That's it. I guess that's all there is.

Q: But there was something in the Philippines before Tinang was built.

DeLONG: Yes, that's what I'm trying to remember. There was something there before Tinang, and may still be operating. I don't know. I was never out in that area. I was never in the Pacific. Some other fellows -- Julie Ross probably would know. I'm sure he would. Hal Cupps is another.

Anecdotes. In the Greenville installation, one of the funny things that happened is, we designed a feed system for the antennas, going up the side of the tower, held away from the tower by insulators. On the end of the insulator, because of the weight and stress -- you see, that plant was designed for 100 mile-an-hour winds, so we have very massive towers. Anyway, this transmission line went up the side of the tower to feed the antenna. It had this stand-off arrangement on a long arm and on the end of it a flexible joint. When the thing was installed, the transmission line twisted all the way up the tower, so we had to redesign the stand-off arrangement.

Q: How was it held to the post?

DeLONG: It was on a hinge back at the tower, so the whole thing was swinging around up there in the breeze. I don't know why Austin ever did that. It was a structural thing. I think they were afraid of breaking the insulators. I think we wound up making the attachments rigid. A lot of funny things have happened, of course.

The last couple of years at the Voice were not very happy years for me because Ed Martin had left. I was in the middle of a project at that time, adding antennas to the Dixon and Delano jobs. I went away on vacation and while I was gone Ken Langenbeck (who succeeded Ed Martin) cancelled the project. We had already bought the land for it. It eventually got sold off, I guess.

Q: Why did he cancel?

DeLONG: Later on it developed -- I think he got in trouble later, after I left -- but he was promoting this outfit. There had been a salesman hounding Julie Ross about selling him a curtain antenna, which was supposed to be broad-banded. Julie didn't like the design at all. Langenbeck liked the design. We had a civil engineer do a study of the design and at a certain wind rate -- you know what a curtain antenna is, it's a reflecting element behind the radiating element so that it comes back in phase and adds to the outgoing signal. The distance is critical between the curtain and the reflector. So this civil engineer did a design study at a certain wind rate and found that the curtain would sometimes go beyond the radiating element. It couldn't work. Anyway, after I left, as I understand it, without getting bids, Langenbeck had this antenna installed at one of the sites, and I think he got into trouble.

There was a reorganization of the whole engineering group under Langenbeck. They brought in specialists to do a study, and divided us up into two groups, one called engineering, per se, and the other called operations engineering, whatever that means. I got the job as chief of operations engineering. About all I did was read the messages that came in from transmitters overseas and try to evaluate the problems they were having and what to do about them. Of course, I'd fought with Langenbeck about the antenna thing. I mean, after I came back and found out what had happened and his proposal to buy this other antenna which we opposed, we had arguments, and there are probably memos in the file some place, if they haven't been destroyed.

Q: I think I got out of VOA just in time.

DeLONG: I know I did. Charlie Affelder and I left the same day. I was just three months short of being 37 years with the Voice.

Q: Except for those last couple of years, did you ever have any regrets that you didn't go back to Hollywood?

DeLONG: No. I would never have gotten the experience in Hollywood that I got with VOA. If I'd stayed in Hollywood I might have wound up at CBS or NBC out there, something like that. That would have been about as far as I would have gotten.

Q: You wouldn't have attended conferences in Mexico City and Paris.

DeLONG: I wouldn't have had the world travel I've had. I've been to all the European relay stations and Liberia. Funny thing, they turned one project over to operations

engineering. Just before I left they had assigned the Botswana project to us. I left before that ever got off the ground, hardly. We'd done some preliminary work on it, that's all.

Q: So is there anything that you'd like to add that we haven't touched on?

DeLONG: For the record, I'm not really a graduate engineer. At the time I got out of high school I didn't know what I was going to do. I took a general course in high school. A shoe salesman I knew, who had turned into a radio salesman, suggested to me that I visit the local radio stations and see this equipment and talk to their chief engineers which I did. And I was impressed by the tubes and the glamour and whatever. So I asked, "Where do you find out about this stuff?" He said, "There's a school in Los Angeles called the Radio School of L.A., in the YMCA building." Remember this is 1929 I'm talking about -- 1929. Radio wasn't too old in those days, and universities weren't issuing degrees in electronics. You could be an electrical engineer, but you didn't have any real specialization.

I signed up and went to the Radio School of L.A. for nine months, learned all about electricity -- as much as necessary, say. They had a handbook called Morecroft's Principles of Radio Engineering, a book about two inches thick, which was our text book. I had to learn code. At this time I thought, "Gee, it'd be nice to go out to sea and be a ship operator." So after I finished the course and got my second class commercial radio license -- issued at that time by the Department of Commerce -- I thought, "Well, I'll go to sea." I ran into another salesman, who had been a theater manager at a theater I went to as a kid, and I told him what I was doing and he said, "Well, when you get your license, come and see me; I might be able to help you." He was selling time at a local radio station. So I went up to see him and got introduced to his boss. They had a nighttime job available on a small panel, on which it was necessary every half-hour to move some plugs around in jacks, so as to route some circuits. That's how I started, ten bucks a week.

I went back into the school one morning to see if they had any ships calling for operators. There weren't any, but my name was on the bulletin board: See Larry Snell at such and such a number. Incidentally, this is how I got the ten dollar a week job: I called Larry Snell on the phone and he said, "We've got this thing, and you have to work from six to midnight, and route these programs." There was one panel about 20 inches wide and about six feet high. There were two radio stations. One was in Inglewood, California, and one was in Hollywood, and this panel was in downtown Los Angeles. They had remotes at that time, dance pick-ups, various things downtown that they wanted to get to these stations. So instead of buying lines all the way to both stations they'd route them in to this place and then switch them around. That was my job. Ten bucks a week. Then I started doing remotes, going out and making pick-ups at dance halls and stuff like that.

In 1933, they moved one of the transmitting plants into L.A. from Inglewood, put the antenna towers on top of a building, and installed a new Western Electric transmitter. You only needed one studio for this station and one announce booth. I worked as an operator at the station, opened the station in the morning and ran the first half hour by

announcing records till the regular announcer showed up. I worked at that until 1935. I did a little bit of horse-work, too. The transmitter never worked right. They could hear us great in Denver and Columbus but not in Los Angeles -- way down in the mud. (Laughter) So every night the antenna would go up and down; we'd try something different. Nothing worked.

It turned out that the height of the building was such that the ground plane wasn't in the right place for the antenna, and we were getting all sky wave, nothing on the ground. So we got great DX but no local coverage, and of course the people buying time on the station were not very happy. We never did get rid of it, until we moved the transmitter out of that building. At that time, Cal Applegate was chief engineer of the station, but Cal soon went to Warner Brothers and two years later called me up and asked, "Would you like to come to Warner's?" I did. When he went to Warner's, I became chief engineer of KRKD at age 23. I was the youngest chief engineer in L.A. While I was in that job I doubled the power of the station by adding an amplifier to the transmitter which I built myself -- my first construction job.

So much for my lifetime at the voice.

Q: I thank you very much, Howard.

End of Interview