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Interview with Sam Pietrofitta

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[START OF TRANSCRIPT]

[0:00:08] Sam Pietrofitta: Sure, yeah. I was very lucky to get a summer internship right after my freshmen year at Villanova. My name is Sam Pietrofitta, originally from Hammonton, New Jersey but Cherry Hill is where I live. Albeit, most of the time I worked here for RCA. My first year was, I believe, 1956 but that was in Moorestown on the TALOS Program where I worked for three months there. But since I was a ham radio operator and was really interested in radio rather than computer things and stuff that blew things up I asked if I could be in something that did something with radios. So, they sent me to Camden and I round up working for Herb Joffe on the ARR-48 Data Link Receiver.

They had problems when we went at the end of the summer and was always wondering if they solved their problem and the group was really great and they had a DC shift in the output of an FM discriminator. What they did was they used a differentiator and then reconstituted it and that's when I knew I was working with a good group of guys, great group of guys. Then, I came back and continued working on that job and I wound up with some very good assignments and as I graduated they gave me a good offer and started working in the summer of 1959.

I came in and started working on that same receiver actually and then with some modifications of some existing UHF ..VHF/UHF transceivers, build ARC-27 which was made by Collins and the ARC-34 was made by RCA. So, we made them. They were just a plain old AM transmitter. We made an FM transmitter output also. That was one of the assignments.

[0:02:14] Male Speaker 1: So, as you were starting out, did you have a mentor or a senior engineer or somebody that showed you the ropes?

[0:02:20] Sam Pietrofitta: Pretty, much Herb Joffe was the guy that I worked for. I worked for him, he was my engineer and then he became my manager when I was an engineer. One of the jobs that I worked on after that was called a Dinosaur Project or the X-20 and that was in, let's see, that was in '61 or '62 but that was a great big job. It was very similar to the space shuttle but it was a strictly an air force job and they wound up having a budget that was way too small for what they wanted and the job was canceled.

However, one of the things that we did on that job was make a search and rescue transceiver such the landing parameters were that they didn't know where it was going to land. It didn't have wheels and brushes for the landing gear and they wanted to have a good range. They wanted like a 5-watt transmitter and receiver.

So, we did that and we had a one of the first pretty high-powered VHF transceivers, like, 5 watts and you couldn't get transistors at that time to give you that kind of power at that frequency, 243 megahertz. So, Bob Riese designed a multiplier, a tripler, so we had our power at 81 megahertz and tripled it and they worked out very well. So when they canceled the Dinosaur Job they did continue development. They allowed us to continue development of that transceiver. So, we round up making two models and it used a modulation technique that we called infinitely clipped speech. It was just on/off modulation instead of linear modulation.

[0:04:19]:

But we just amplified the voice, not quite infinitely, obviously, but to a great degree and of course that would be very noisy when you're not speaking. So, what we did was we inserted a 30 kilohertz subcarrier and that quieted it down until you spoke.

The reason that's important is after that we had the contract with the lunar module transmitter and receiver, VHF transceiver and we used that same modulation technique with the lunar module. We had that contract and it worked out pretty well. But then they had the death of the three astronauts on the command module due to the 100% oxygen atmosphere. So, there was a big hiatus in the program at that time.

On the command module, the VHF transceiver contract was with Collins, so during that time we had the opportunity to go to North American Aviation down in Downey, California and demonstrate our VHF transceiver and we did it through the Collins receiver and it sounded like a Hi-Fi set The Collins engineer there was running back and forth thinking we had direct wires going back and forth. So he looked on a spectrum analyzer and had all this grass when you weren't speaking and then you spoke and carrier narrowed up and it sounded great.

We wound up taking the job away from Collins at that time. Collins has a great bunch of engineers. I think that's one of the only times that we took a job away from them. So, I believe was also using the command module, we did that.

[0:06:18]:

Also the astronauts backpack had, I believe had the same type of technique. That worked out very well.

[0:06:25] Male Speaker 1: While you were working through this, did you feel that RCA valued what you did? Did people around you value it?

[0:06:34] Sam Pietrofitta: Yeah, sure, yeah. Like I said, that was the opportunities for great assignments through my whole carrier and I appreciated them and they appreciated me, I believe.

[0:06:49] Male Speaker 1: Okay. And then, you went on from there?

[0:06:52] Sam Pietrofitta: Let's see. What did we do after that? We did things like a 2000-watt transmitter at 150 kilohertz that had to be done in one month. We scrounged up gigantic power supplies from Doc King. He didn't know it was going to be donated. He thought he was going to get it back, but he never really did and the purpose of that was to check what the propagation of 150 kilohertz was through the last atmosphere nuclear test and they flew it in a KC-135 with about half a mile antenna hanging out the back. I actually went and listen to it at a friend of mine's place – Phil Catona – by the way. He was a very good guy at RCA and I knew him since I was 12 years old down in Hammonton, New Jersey and rode with him on the train for a couple of years and knew him for the rest of his life.

[0:08:05] Male Speaker 1: You also worked on the rendezvous radar? Is that correct?

[0:08:09] Sam Pietrofitta: No, I worked on the VHF and UHF on the command module and lunar module and after we were finished with that job, Ed Nossion took those two units and made a backup to the rendezvous radar and that worked out very well.

[0:08:31] Male Speaker 1: Okay. Why did he have to make a backup to the rendezvous radar?

[0:08:33] Sam Pietrofitta: I think they had some problems with the original rendezvous radar and they wanted a backup for it.

[0:08:44] Male Speaker 1: What about your coworkers?

[0:08:46] Sam Pietrofitta: Well, there were a lot of them obviously and Al Cashock, good guy, Bob Riese obviously. That's it.

[0:09:02] Male Speaker 1: Did you get along okay?

[0:09:05] Sam Pietrofitta: Oh, yeah. We got along great with everybody except one gentleman who shall not be named, which is natural for any environment.

[0:09:16] Male Speaker 1: Was there any activity outside of work that you ever get together with any of the RCA people?

[0:09:23] Sam Pietrofitta: Yeah, we've had duplicate bridge at each other's house and what have you and the RCA parties. The RCA parties, the RCA Victor AA,

we went to a lot of those dances, dinners and had a great time. Usually had about four a year of those, so that was a good chance to get together with people from outside of work.

[0:09:44] Bob Riese: Sam, did you take at refrigeration course at a local school?

[0:09:48] Sam Pietrofitta: Yes, we did take a refrigeration course at the Camden County Vocational School among other things.

[0:10:00] Male Speaker 1: So, what was it like working for a company like RCA?

[0:10:05] Sam Pietrofitta: I'm sure everybody had different experiences but mine was good in that, like I said, I did get very good assignments and then later on worked on things like the C4 and D5 translators for the instrumentation on the Trident missiles. They would fire, I believe, one missile a year just to check out the trajectory of the missile to make sure it goes where it's supposed to and it received the GPS signals and retransmitted it back down to ground for immediate and also a post flight analysis of where are the missile was, that as a good time.

[0:10:49] Male Speaker 1: How did RCA support your technical know-how with your learning environment?

[0:10:55] Sam Pietrofitta: We did have some after-hours courses with hybrids, down with Frank Farmer, down at the fourth floor. There were the early versions of not quite integrated circuits but hybrid circuits. There were other after-hour courses that we took also – digital courses. Mike Kleidermacher taught the course and so we had the RF engineers learning a little bit of digital. Max terms and min terms, all that kind of good stuff.

[0:11:30] Male Speaker 1: There has been some discussion about RCA actually with changing South Jersey. Do you have any impressions in that area?

[0:11:40] Sam Pietrofitta: Well, South Jersey has changed with or without RCA but I remembered the early days. Cooper Street was a great street with doctors and lawyers along Cooper Street and Campbell Soup's tomato trucks coming up the street which was interesting and we'd buy the tomatoes plants from Campbell Soup for about a penny each and that's some great tomatoes.

RCA, I'm sure it was one of the two big employers in Camden and Moorestown and Hightstown. I did work in Hightstown also for about three months stint when work was a little low here. That was an interesting challenge also.

[0:12:27] Male Speaker 1: Did any of your neighbors work for RCA also?

[0:12:31] Sam Pietrofitta: Oh, yes. Roger Devantier, yeah, Al Nelson. There was quite a few in the area so much so that I was able to get carpools all the time.

[0:12:50] Male Speaker 1: With your supervisors, what was your impression of your supervisors?

[0:12:54] Sam Pietrofitta: Well, they're all different obviously. Mostly good, so yeah. There were some challenges sometimes with the one I talked to you about the challenges but we had some German guy that came in here that was the manager that was really just a consultant. That was a difficult time, so there were times like that also. That's life.

[0:13:28] Male Speaker 1: How do you feel RCA was viewed in the industry itself?

[0:13:35] Sam Pietrofitta: Well, it was supposedly the most trusted name in electronics and I guess at one time it was until then we got bought up. So, it is just a name that is left right now but it was a very trusted name.

[0:13:51] Male Speaker 1: We've also heard of the RCA family.

[0:13:56] Sam Pietrofitta: Yes, we had the family again, like, with the Victor AA and we had the Victor Family Magazine also. It would come out occasionally and I got to see other parts of the company and the outside activities of the people.

[0:14:12] Male Speaker 1: But did you feel like you were a part of a family?

[0:14:16] Sam Pietrofitta: Yes. We had a lot of friends, obviously. Like I said we even had duplicate bridge of about eight people at our house playing duplicate bridge and we just exchange houses and do those kinds of things.

[0:14:42] Male Speaker 1: So in summary, your career at RCA, was it a good, good ride, just a job? How would you summarize it?

[0:14:52] Sam Pietrofitta: It was a great job. Again, the last job I was on was space station. I was responsible for the KU-Band transceiver that coincidentally is visible from outside of the space station on pictures that you see of it and see it on some models in some of the museums. It communicates with TDRSS satellite to rebroadcast video and high data rate payload data down to earth in White Sands in Mexico. That's been an ongoing program and it's still working after all these years.

[0:15:37] Male Speaker 1: What about the personnel department, the benefits? Did RCA look after their people?

[0:15:48] Sam Pietrofitta: Do you really want the truth?

[0:15:48] Male Speaker 1: Yes.

[0:15:51] Sam Pietrofitta: I had a little problem so you don't want those parts.

[0:15:56] Male Speaker 1: Yes, actually this is a history.

[0:15:58] Sam Pietrofitta: This is a history.

[0:15:59] Male Speaker 1: We absolutely do want to know.

[0:16:00] Sam Pietrofitta: Okay. Well, I kind of think I didn't get the amount of retirement pay that I should have gotten due to a technicality that where I should have done it because I was born New Year's day. If you look at the pension plan in the social security if you're born January first your date is really the previous day, so I should have gotten more money because I was born officially the previous year.

[0:16:36] Male Speaker 1: Now, which company did you actually retire from?

[0:16:38] Sam Pietrofitta: Retired from L-3.

[0:16:44] Male Speaker 1: L-3 and what date was that?

[0:16:46] Sam Pietrofitta: That was January 1999.

[0:16:50] Male Speaker 1: Okay, so actually got the L-3 pension then?

[0:16:54] Sam Pietrofitta: L-3 pension, yes.

[0:16:59] Male Speaker 1: Alright, anything else that you'd like to add as far as your impressions, the journey that you were on in this?

[0:17:07] Sam Pietrofitta: Okay, the journey I was on, I think, was great until I retired. Looks like things have gotten a little tighter since I've left. That's my impression right now. It seems to be a lot more fast-paced right now. We were always schedule driven before but it seems more intense right now.

[0:17:28] Male Speaker 1: Okay, super.

[0:17:32] Male Speaker 2: Can I ask a question?

[0:17:32] Male Speaker 1: Sure, you're on.

[0:17:36] Male Speaker 2: Could you take a minute to go over the transition from the RCA to L-3?

[0:17:46] Sam Pietrofitta: Okay, well, I guess 1985 GE bought us. I think that's when that was and that was a little culture shock, as they sent some of their people in and they didn't seem quite family-like at that point. Then, we were sold to Martin Marietta and I remember giving a little talk on

space station one time and pointed out that the name on the podium was on with Velcro, so it can be changed at any time, which came true when we merged with Lockheed to become Lockheed Martin and subsequently sold Spin Off to L-3 Communications.

[0:18:35] Male Speaker 2: Over all of those companies where would you say was the best work environment?

[0:18:41] Sam Pietrofitta: Definitely RCA. Definitely RCA.

[END OF TRANSCRIPT]