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### Interview with Jim Hemshoot

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**[START OF TRANSCRIPT]**

**[00:00:00] Speaker 1:** My name is Jim Hemschoot and I worked at RCA in Camden in government communications systems. I started in 1972 and my first program was the Small Terminal. I had been a co-op during my Bachelor's at the University of Cincinnati and I picked up a rather unique experience called ferroresonant power supplies. That's the only reason I got hired by the way at RCA. I didn't do terribly well in my interviews, but I had this one thing and they needed it so they set me to work on the Small Terminal power supplies. The Small is a super high frequency satellite terminal and, of course, without the power supplies it doesn't work very well. That was my first assignment. As a young engineer, of course, I was set to work for a more experienced engineer, whose name was Don, and it was kind of interesting because Don was very experienced and didn't always like to listen though. One time I found a defect in our power supply where we were actually over dissipating a component and brought it to him and Don would sit there with his pipe and he'd say, "No, I don't think so." And that was it.

**[00:01:56]** I took that to his supervisor and he listened and then he called in Don and Don said, "No, I don't think so." And that's where it basically died. Very early in my career I learned that sometimes instead of butting your head against a wall you need to go around a wall so I sat down with him very humbly and asked him if he would please explain the circuit to me because I wasn't sure I understood it. He started very patiently explaining the circuit to me then he got to this one component and "Hmm, I guess there's a problem here." And so we went and fixed the problem. Tact is not something I was noted for but every once in a while it happened, so that was the Small Terminal program. That was my first one as a young engineer, first job out of college.

**[00:03:00] Speaker 2:** Any other major projects you worked on?

**[00:03:03] Speaker 1:** Oh, yes. Well from the Small Terminal power supply once we finished that of course the next thing you have to do is do what they call qualification testing, which was vibration and shock, cold soak, hot soak where they would put the thing into that environmental chamber and take it down to minus 32 degrees Fahrenheit. They'd put a parka on me, open the door and say okay, go start her up now. Minus 32 is pretty darn cold and I remember sitting in the Small Terminal shelter trying to get it to run and actually taking and holding onto a light bulb just to try to get my hands warm enough. The light bulb was a standard light bulb but at that temperature it was a low enough temperature I could actually hold it and warm my hands and then start working on the equipment. The quall testing was fun. From the Small Terminal after we did the quall testing and the field testing I went on to the

Integrated Radio Room for the Trident submarine, 24 racks of communications equipment. This was the only room ever in the Navy where a sailor could sit at a console and totally configure everything – configure the antennas, tune the radios, receive the messages and every radio from what they called extremely low frequency, ELF, which is similar to a big foot stomping on bedrock, all the way up through super high frequencies. The one thing the Trident needed to do was stay in communication, very important for the nuclear deterrent.

**[00:05:03]**

So I worked on the IR squared, the Integrated Radio Room. I went in and there was a concept basically that said do your software, do your hardware, put them together and deliver it; well, that never works. There's a thing called hardware/software integration and that was a term my team basically coined and we basically took the position "I don't care how much you've debugged your software, I don't care how thoroughly you've tested your hardware. When we put them together I guarantee you it won't work the first time." I developed a team – a hardware/software integration team – funny people, rather strange. We would work, oh my goodness we would work. We would show up at seven o'clock in the morning and by 10 o'clock at night we'd decide to go home and get a few hours sleep and get back and do it again and that was because the Trident was so important. It got to a year behind schedule. The Navy was talking about canceling the program and it was up to us to get this darned thing done, so we did. Our job was to break the system and we did it very well, but we finally got the thing done. I remember one software engineer came over with a change to his system and said, "You don't have to test this, I've already thoroughly tested it and it is ironclad." Well that to us was just a challenge.

**[00:07:02]**

I had one guy working for me, his name was Roger and Roger loved to break things. I said, "Roger come over here." Roger comes over and I said, "This guy said that his software can't be broken". I said, "I want you to do it." Roger would get all giddy and his eyes would bug out and he'd tear into the thing; well, a half hour later the thing was on its knees and we called the guy back over. We put up a big banner saying 'Welcome Back' and things like that but to demonstrate that you have to be able to do hardware/software integration. That's a discipline that we introduced to the RCA plant. It turned out to be rather successful and the Navy backed off from wanting to cancel it and we ended up with a production line. Now, you have to understand a production line of an entire radio room they expect these things to turn out about once every nine months. Again, I challenged Roger. We had two sites set up and I challenged Roger to take the one and beat the other one and god we worked crazy hours but, anyway, that happened. We got our stuff delivered, it was put on – the first Trident Submarine was the USS Ohio – it was put on there and it worked well but I guarantee you it still had bugs in it. We got a call one day from the Chief of Naval Operations the Ohio had been out on its first leg of performance and things had not gone well.

**[00:09:04]**

The Chief of Naval Operations said get a Tiger Team out to the west coast and fix it period, don't care how long it takes, how hard you have to work and we did. We got our team out there. We found out what was wrong. We made the changes and, of course, a fair amount of it was bugs that were still in the system, but we got it fixed. It was a very exciting time being out there with the operational Navy on a nuclear boat with the Marines guarding the nuclear missiles. We went out on sea trials to prove that it was working. It's a strange thing being on a large silent submarine. You're standing there in the room and all of a sudden your perspective shifts because the submarine has just gone into a turn. That's all that you know because, obviously, there are no windows in that thing. They would do a thing called the emergency blow. If a Trident had to get to the surface it would blow all its tanks and it would shoot up like this and then settle back in, very interesting experience. Working with the Navy it was an incredible experience and we were all proud to be out there, all proud to do it so that was probably my best program, the one that I enjoyed the most. I worked on it for 10 years. Very, very successful program in the end it brought in – we were doing 150 million dollars a year in production and then maintenance and instruction of the sailors and things like that. Good program.

**[00:11:04] Speaker 2:** You talked about working really hard. How was the social life outside of work?

**[00:11:09] Speaker 1:** Well, I like to say we worked hard but we played hard. When it was time to work we worked; I mean there was a six-month period there where we were up in Rhode Island at the Land Based Evaluation Facility and there were things that needed to be fixed and that Trident needed to make its schedule, we would go into work before dawn and we would leave work well after dark and then we'd go back and do it again. We did that for six months and as things let up, as we got everything under control and as everything eased up, I remember one day we knocked off at five o'clock in the afternoon and I walked out that door and I was shocked because there was the sun. That was the working hard but when things did ease up and got down to a regular routine we had a group we'd sneak off at least once a week and go play golf. We had our parties; oh, did we have our parties. Hugh Montgomery ran the IR Squared as a Program Manager and if there was nothing else Hugh knew how to party, good Program Manager too. We would play. We would socialize. I wasn't much with the softball games and things like that, the golf leagues, but a lot of people were. It was one of these things where life was just continuity and your coworkers were also your friends and the respect we had for each other was just incredible.

**[00:13:07]**

We wouldn't tolerate the goof-off's. That's one thing, RCA didn't have to worry about it because the working people wouldn't tolerate them and they just got marginalized and ended up giving up and going somewhere else so we had a really good crew left.

**[00:13:28] Speaker 2:** Any other supervisors or coworkers that you have specific memories with?

**[00:13:32] Speaker 1:** Oh, sure. I started under Ed Sigich and Bob Lawton and they were good solid people. The Integrated Radio Room I mentioned Hugh Montgomery and ended up ultimately working for Challie Schmidt. Challie worked his way up from a Technician up to Executive Vice-President. You either loved Challie or you hated Challie, there was no in between. I was on the side that loved Challie and Challie got me my break into management. One day I just sent up a note and said Challie I've done this 10 years now I need something more, I need something to challenge me so he called me in and said, "All right, well we've got this program called Bullseye, it's in trouble, they're behind schedule, here it's yours." That was kind of a fun thing but it was his confidence and the first thing I had to do was break into the team because they didn't particularly like it that a young upstart would come in and take over the program; but, we got it straightened out and we ended up getting our productivity up by a factor of three and the customer was fairly impressed with that. It became a successful program but it was a difficult thing. Challie was a supervisor that I had a lot of respect for.

**[00:15:17] Speaker 2:** How would you say RCA impacted South Jersey as a whole?

**[00:15:25] Speaker 1:** Well it was really hard to find somebody who didn't know somebody who was working at RCA and it was fathers, grandfathers, sons, daughters, wives, all working together, and neighbors. In South Jersey just about everybody worked for RCA it seemed. Now, that wasn't really true but I do believe RCA planted that seed. I have heard a statistic that says even today there's a greater density of engineers in South Jersey than anywhere else in the world. That's a huge impact on a region.

**[00:16:17] Speaker 2:** You were with RCA, obviously, for quite a bit of time so how were you personally affected when GE and RCA merged?

**[00:16:29] Speaker 1:** Yeah...the RCA family was something that you have to really experience it to understand it. We looked out for each other. We took care of each other. We cared about each other and RCA cared about us and we felt like that. Then one day we heard that GE was buying RCA – all right, fine. Jack Welch very, very smart guy, great businessman and then GE started dumping in what they called their HI-POTs – high potential individuals – young people who were selected for a management program but had very little experience, especially with customers. Oh my goodness the change. We basically were nudged out of the Integrated Radio Room Support programs because the GE management started simply maximizing their profit, even at the expense of the customer, wherever they had something sole source they were ruthless as far as the bids went. I remember receiving a phone call once from a guy fairly high up in the SPAWAR, which was the Navy Development Organization, and he called me up and he said "Jim, what's happening?" He said, "You guys are our sole source." He said, "But the way

you're treating us we're going to train another company to take over and you're going to lose your business." That wasn't really terribly important to the HI-POTs because they were there for a period of a maximum of 90 days and they wanted their performance maximized for that period of 90 days while RCA was one of these companies that talked in terms of 10, 20, 30, 50 years so that was really a shock.

**[00:18:49]**

I had a tremendous respect for Jack Welch – very, very smart guy – his policies incredibly smart, his ability to select management people. Oh my goodness! I guess you just can't do everything, but it was a real serious shock. The frustration that GE had was they were never quite able to uproot the RCA family and I went through all five transitions – GE sold us to Martin Marietta, Martin Marietta merged with Lockheed to form Lockheed Martin and Lockheed spun us off to L3 Communications. From GE - people are commodities maximize your profits. With Martin Marietta, Norm Augustine, he stopped everything GE started as far as getting rid of the experienced people who were higher paid and he said you will not retire my most valuable people early so it felt almost like coming back to RCA. Merging with Lockheed we ended up with this huge, huge conglomerate that was centralized down in Bethesda, Maryland. I remember going down to visit or make presentations there and this long hallway with Vice-President after Vice-President after Vice-President, each one with a secretary outside the door, it was a huge conglomerate.

**[00:20:45]**

And then, we finally got spun off to L3 under Frank Lanza and Frank Lanza was another one of these geniuses, who cared about his people, but he also cared about the technology and it was almost like coming home again; but, nothing quite matched the RCA family.

**[00:21:03] Speaker 2:** How did it feel to retire from RCA?

**[00:21:11] Speaker 1:** That was a hard one. I mentioned I took over as Director of the Classified Programs. I can't tell you a lot about them, but I can tell you the security profile of the country was hugely improved by the work they were doing. The effectiveness of the work that we did behind closed doors was that people thought it was impossible. The Chief Engineer used to complain to me that we had an inordinate amount of the best engineers in Camden and I said, "I have absolutely no apologies for that, our work is so important." This group was one we were behind closed doors. My people worked without windows. They worked under intense scrutiny. If you were going to be more than two hours late to work you had to phone in and yet they stayed and they stayed because the work was so exciting and so incredibly important. Me retiring, great we had a good pension, I had savings, why not; but, letting go of my people then turning them over...thank goodness I was able to manipulate it where I turned it over to someone I really trusted, Dave Micha, who, by the way, is now running L3. That's the only reason I could

even feel comfortable about retiring was that my people would be taken care of.

**[00:22:58] Speaker 2:** Overall can you just...was RCA just a job for you or was it, obviously it was fun.

**[00:23:06] Speaker 1:** RCA was a life. RCA was so much more than a job. Yeah, they paid me and they paid me reasonably well, it was fair payment. I remember being told a couple of times by some consultants and some customer types that I was really underpaid, but it was fair and I felt it was fair and the atmosphere was right. I mean RCA I stayed there the whole 37 years and yeah I felt that it's so integrated into your life that it's really hard to imagine...I've heard of people who separate their career from their life. I had a situation where RCA called, for instance we got a call that I think it was the (USS) Florida, which was another Trident submarine, had some serious problems and they told us that we needed to meet an oceangoing tug the next morning at 0600 and go out there and fix the problem. Well, my children were waiting for me and I had to tell them I'm sorry I have to – this is really, really important and I have to do it, okay – 9/11 we were right smack dab in the middle of responding to that and we had some really seriously important stuff to do. Well, I missed most of my son's birthday party at 5 years old because we had to get this stuff done. You made serious sacrifices, ones that wives sometimes didn't understand, sometimes they'd ask where you going and all you could say was down south and that did not bode well for that; but, the totality and the life wouldn't have traded it for anything in the world.

**[00:25:40] Speaker 2:** Is there anything else you wanted to sum up with?

**[00:25:43] Speaker 1:** I think you've pretty much hit on it all. The people talk about coworkers, I mentioned we had a lot of respect for each other but oh my goodness we played such incredible tricks on people. It was just one thing after another and it didn't matter whether you were a supervisor or a coworker that thing just all blurred. We were all just working together with one purpose and those people even today I have such incredible respect for them. They do such incredible work. In all the time that I was in management I terminated one person for cause because I gave him an assignment and he said no, I don't think that's an assignment I'm going to take and I said well, that's fine then you're without a job and I had to lay one person off; but, that just shows you the caliber of the people that were working with us. We didn't think of ourselves as managers versus subordinates we were just all together. If I would go down into what we called The Tank and tell somebody I needed something sometimes I got yelled at and one of my favorite expressions they still joke about today was, "Stop telling me what you can't do, tell me what you can do." And then they would stop and they'd say well what you're asking for is ridiculous, but if you want to do this and this and this we can do the same thing; oh, okay, we'll do that.

**[00:27:55]**

That kind of thing with coworkers, supervisors it all just blurs together into a team. That's about all I can say about it.

**[END OF TRANSCRIPT]**