ORAL HISTORY: William Smanko

About William Smanko

William Smanko was born in Woodbridge New Jersey in 1928, and moved to Rahway when he was ten. After graduating from high school, he enlisted in the Navy V5 program. After the Navy, Smanko attended St. Louis University, earning his degree in aeronautical engineering in 1951, then went on to join the Air Force. After the Korean War broke out, he was assigned to Wright Field Development Center in Dayton, Ohio for two years. After leaving the Air Force, he joined Westinghouse as an applications engineer in the Baltimore Air Arm Division in 1953. In 1958, he was promoted to Manager of Military Requirements and later held positions such as Director of Marketing for Corporate Market Research (a job which took him to Pittsburgh where he remained for eight years), marketing manager for the Defense Company, general manager of Systems Development Division, and finally department manager for Ground Radars. Throughout his career, Smanko worked with many divisions within Westinghouse – such as the Electronics Division and Marine Division – and on many important projects like the AWG10 Pulse Doppler, F15 bid and UKADGE. Smanko retired from Westinghouse in the mid-1980s.

This interview covers Smanko's long career at Westinghouse and the various positions he held and projects he worked on. He talks about becoming a manager and the change of roles that entailed, such as being less 'hands on' with customers. Smanko discusses losing project bids such as the F15 and UKADGE, but the value that such bids could still produce. He also covers his international work with such projects as the UKADGE and AWG10, where he worked with the British military, and radar projects in Morocco, Jordan and Egypt. The atmosphere in both Westinghouse Baltimore and Pittsburgh are also discussed, along with important changes at Westinghouse over the years, such as the transitions from solid state to digital signal processing, and vacuum tubes to transistors. Smanko also talks about various colleagues he had over the years such as Ray Fields, Tom Murrin, Nick Petrou and Harry Smith.

About the Interview

WILLIAM SMANKO: An Interview Conducted by Sheldon Hochheiser, IEEE History Center, 13 April 2010

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Interview

Interview: William Smanko

Interviewer: Sheldon Hochheiser

Date: 13 April 2010

Location: The National Electronics Museum, Baltimore, Maryland

Background, Military and Education

Hochheiser:

This is Sheldon Hochheiser of the IEEE History Center, it's April 13th, 2010. I'm here at the National Electronics Museum in Baltimore with Bill Smanko. Good Morning.

Smanko:

Good morning to you.

Hochheiser:

Okay, if we can start with some background.

Smanko:

Okay.

Hochheiser:

When and where were you born?

Smanko:

I was born in 1928, in a small town called Woodbridge, New Jersey.

Hochheiser:

I know it well.

Smanko:

Oh you do?

Hochheiser:

Well I grew up in Scotch Plains and I live in Highland Park.

Smanko:

Oh my goodness. We moved to Rahway when I was ten years old, and then I went to school there, graduated from Rahway High School in 1945.

Hochheiser:

What did your parents do?

Smanko:

My father worked for American Smelting and Refining. He was an electrician and in the maintenance department, and I think he worked there his whole life.

Hochheiser:

Were you interested in technology and science growing up?

Smanko:

Yes, in fact I was one of those kids that built model airplanes, flew them out of the attic window and all that sort of stuff. In fact, I was interested in becoming an aeronautical engineer. We used to talk about that in high school, my friends and I, and several days before I graduated a group of us who were in the college preparatory course, we just were having a BS session and they said the Navy flight program is opening for candidates, let's all go over to New York and see if we can get aboard.

Hochheiser:

So you enlisted in the Navy specifically for the flight program.

Smanko:

Yes in the Navy V5 Program. I mention that because that led to their sending me to Dennison University, then Union College up in Schenectady, and Rutgers before I went to flight training. Now there's a kind of a twist - I really wanted to be an aeronautical engineer, so I later went to St. Louis University, graduated with a degree in aeronautical engineering.

Hochheiser:

So was St. Louis University after you left the Navy?

Smanko:

After I left the Navy.

Hochheiser:

So did you indeed become a pilot in the Navy?

Smanko:

No, about halfway through - remember now the bomb had dropped - things had changed, things had changed a lot, and there was a big battle between the Air Force and the Navy. I don't know if you remember it was carriers versus the B36, strategic bomber. At that time the flight program was kind of last priority almost. I had an opportunity to resign so I did and finished up and got my degree at St. Louis University in aeronautical engineering.

Hochheiser:

And when did you get your degree?

Smanko:

In 1951. And I had thought to myself, if I ever go back in the military, it's a little nicer as an officer, so I took ROTC. Guess what? Korea broke out.

Hochheiser:

So you left the Navy, got your degree in aeronautical engineering, and then went back into the Navy as an officer.

Smanko:

Well this time I went back in the Air Force.

Hochheiser:

Oh, you took Air Force ROTC.

Smanko:

Yes, and since I was an aeronautical engineer and assigned to the Wright Field Development Center in Dayton, Ohio. That was an interesting tour of duty. I was a project engineer in the aircraft laboratory, and got involved in a lot of interesting projects.

Hochheiser:

How long were you in the Air Force?

Smanko:

Two years.

Going to Westinghouse

Hochheiser:

And then when you left the Air Force did you go from there to Westinghouse?

Smanko:

Yes, surprisingly jobs were easy to get in 1953, maybe it was because the war was on and the demand for military. I had planned to go with an aircraft company since I was an aeronautical, and I had read this article about this Air Arm Division of Westinghouse in Baltimore, and I had no idea what an air arm was, so I wrote them a note and said, "I might be interested in employment, please tell more." They invited me for an interview in their Dayton office. The next day I got a call from Baltimore, "we'd like you to come down to Baltimore for discussions about employment." I did. At the time I was being discharged in another two weeks, so I had arranged an interview tour: an aircraft engine company up in New Jersey, and Republic and Grumman Corporations on Long Island. However, after I had the interview with Westinghouse, the other interviews just didn't seem that interesting anymore. So I elected to join Air Arm Division in Baltimore.

Hochheiser:

So, by now you knew what the Air Arm Division was.

Smanko:

Yes, I was very interested.

Hochheiser:

So what was your first assignment in - so did you start directly in Baltimore, or did they send you to Pittsburgh first?

Smanko:

No, I started directly in Baltimore. The first thing I remember was my boss said we're getting pressure from Lockheed out in Los Angeles. We had developed the W3A Autopilot, and Hughes fire control system was in the F94C and we were working on what they called the radar coupler, to connect the autopilot directly with the fire control system. And all kinds of problems were occurring, so the LA office kept screaming, "you've got to get this thing under control." Not me. Heck, I just came aboard.

Hochheiser:

Right.

Smanko:

But you know, [I] went back in the engineering department and told them that Lockheed was very unhappy. I think they put some renewed effort on it and I think they were still doing some flight testing at that time. I remember going down to the flight test department and I just happened to come in when they were running one of the flight tests on the auto-coupler to the fire control, it was kind of interesting time.

Applications Engineer, Customers

Hochheiser:

So your first position was?

Smanko:

They called it an applications engineer, and that was a polite name for sales engineer.

Hochheiser:

So you were interfacing with the customers?

Smanko:

With the customers and the engineering department.

Hochheiser:

So this way were you involved at trying to do new sales, rather than -

Smanko:

New sales and mostly in advanced development. I think Westinghouse hired me because of my duty at Wright Field in the aircraft lab. I knew my way around the Wright Air Development Center.

Hochheiser:

So I take it therefore that among the customers that you were trying to sell to was the Air force at the Wright Air Development Center.

Smanko:

Yes.

Hochheiser:

What were the things you were selling, and what were the things that you succeeded in selling specifically?

Smanko:

Well at that time my boss - who was a gentleman by the name of Ray Fields and a magnificent guy - he really got me started in the right direction. He wanted me to concentrate on whatever advanced development projects I could get, that fit in with the direction that we at the Air Arm Division wanted to go. I think the first development job that we got involving me was the magnetic modulator for $100,000. I don't know why that sticks in my mind, but it's the first job. Over the years, I became very close to Harry Smith when he was a section manager in engineering. Harry was really the heart and soul of Pulse Doppler radar. We would go out to Wright Field, make presentations, and

we eventually got some very significant advanced development funding, which was essential to our program, but also to working with key people in the Air Force.

Hochheiser:

Right, so you can go back and develop the Pulse Doppler system to the point where you can start to apply it to operational aircraft systems.

Smanko:

Correct. Fighter aircraft, which was the heart and soul, and also we were developing an airborne warning and control, which later became AWACS.

Hochheiser:

What other customers were you working with besides the folks at Wright?

Smanko:

The Bureau of Aeronautics. I remember the first meeting I had with the Navy. It involved Nick Petrou. He was the Advanced Development Engineering manager at the time. He said, "I'm scheduled for a meeting with the Navy tomorrow, so why don't you pick me up at my house at 8:00 AM, and we'll drive over and talk about the MIT integrated gyro?" That was another area that was of interest at Westinghouse.

Hochheiser:

And about how long were you in this position?

Smanko:

From 1953 to maybe late '58, when I got a promotion to Manager of Military Requirements.

Hochheiser:

Okay, well before we go onto your next position, is there anything else you would like to add about things you did during your first five years at the company?

Smanko:

Yes. All new business decisions were made by a group called the Applications Committee. This consisted of the Division General Manager, the Marketing Manager, the Air Arm Division Engineering Manager and the Manufacturing Manager. These individuals controlled the resources to develop, manufacture, test and support whatever the division brought to the marketplace. One of my duties was to review all request for proposals from the customers, discuss them with the appropriate group in engineering and manufacturing to obtain their inputs as to how it fit with our objectives from their department, and make a presentation to the Application Committee as to why we should bid the program, or in cases, why we should "pass," and not bid.

I mention this, because this responsibility "plugged" me into the heart and soul of the division's planning and objectives. Perhaps more so than any other person.

Baltimore in the 50s, 'Picking Up' Electronics

Hochheiser:

Yes. What did you find Baltimore as a place to work in the '50s?

Smanko:

I found it outstanding. We had great people, and they tolerated me, you know, being an aeronautical, and they were very kind, and taught me everything I know about electronics.

Hochheiser:

You didn't take much electronics during your schooling as an aeronautical engineer?

Smanko:

No, and the paradox is Union College was one of the colleges that the Navy sent me to, and they were a preeminent electrical engineering school, as I look back..

Hochheiser:

All the GE connections.

Smanko:

Yes, Union College was in Schenectady, New York, GE was Schenectady. And as I look back, there's one of the forks in the road. I never even thought of taking electrical engineering, and where did I wind up? An electronics firm.

Hochheiser:

So you picked it up on the job.

Smanko:

I picked it up on the job.

Manager of Military Requirements

Hochheiser:

Okay, so 1958, you've now been promoted to a Manager of Military Requirements.

Smanko:

Yes, and I had a number of people working under me. Al Spencer who's associated with the museum, Norm Molz, Col. Joe Gerath, Jerry McKindles.

50 years is a long time, and it's difficult to remember all the names. Faces, yes; names, no. It had nothing to do with me, but Air Arm as a division was expanding, and the opportunities in electronic counter measures, electro-optical. We were just on a threshold as Westinghouse technology kept growing and expanding, and paying off so to speak.

Hochheiser:

About how many people did you have in total reporting to you?

Smanko:

At that time I'd say a half a dozen.

Hochheiser:

And who in turn did you report to?

Smanko:

I was still reporting to Ray Fields.

Hochheiser:

How were your activities different now that you were in the same piece of the business but were a manager with a half a dozen folks reporting to you?

Smanko:

Less hands on with the customer, a lot more within the division, within the engineering department. More responsibility in terms of working with the management and helping to decide which programs should we pursue, how much money should we allocate in trying to get this kind of business. That, in turn, influenced the advanced development direction. The advanced development direction told me where to be seeking, more kinds of programs with the customer, etc.

Hochheiser:

Then it was the people who reported to you who then really spent most of the time out with the customers.

Smanko:

Yes.

Hochheiser:

What were some of the key projects that you considered whether to try and fund for advanced development, and which ones worked?

Smanko:

Oh, that's a long time ago.

Hochheiser:

Well that's okay, maybe another way to ask this is do any particular projects stick in your mind from this period?

Smanko:

Yes, going back to Pulse Doppler, that just sticks in my mind because of the trips that I made with Harry Smith to the advanced development at Wright Patterson , and the aircraft companies, Lockheed and Northrop, in Los Angeles, and Grumman in Long Island, New York.

Hochheiser:

There's three parts to your relations, there's folks here who are developing the Pulse Doppler radar, there's the real customers, the Air Force and other parts of the government, and then there are the aircraft manufacturers which is where the radar is going to end up.

Smanko:

Right.

Hochheiser:

How did that three sided relationship work?

Smanko:

Well, we felt it very advantageous to make sure that the aircraft companies first knew what we thought could be done so that they would put that in their thinking for the next generation. They in turn were closing the loop at the Air Force, who was defining the total weapon system. And other laboratories were bringing along the technology for the subsystems. You know, radars, autopilots, things like that.

Hochheiser:

Was it the same type of business that you were seeking in this position that is development work rather than specific weapon system work?

Smanko:

Yes, I spent almost all of my early career in the development work. There are other groups within the division that were focusing on the programs.

Hochheiser:

Right. Indeed some of the other people we've interviewed [who] interface[d] with the customers were on that piece of it.

Smanko:

Right. In fact some of the people that worked for me - like in countermeasures, Norm Molz who, in turn, spent many years working with Joe Legin - they would go out for specific programs like the ALQ131, electronic countermeasures pod and equipment programs like that.

AWG10 and the British Military

Hochheiser:

And you were in this position for -

Smanko:

Until about 1965, and one day I got called into the office, or actually my boss Ray Fields came into the office and he kind of sat down and he said, "Bill," he says, "how compatible are you with Dave Arnold?" And I thought to myself that's a very strange question. Dave was the program manager on the AWG10.

Hochheiser:

What was the AWG10?

Smanko:

That was the Pulse Doppler fire control system for the F4. In fact, it was the F4J, the Navy's interceptor at that time. And it turned out that the British, because one of their aircraft programs didn't turn out quite the way it was expected to be, became interested in the F4, and they were very interested in the fire control system. And they made plans I think to buy 300 aircraft, 100 for the Navy, for the Royal Navy, and then another 200 for the Royal Air Force. And the reason Ray Fields asked me how compatible I was with

Dave Arnold, the British had said, "you have a program manager with the Navy, we'd like to have somebody that we can put our hands on if something doesn't turn out quite the way we want." And I don't know whether Nick Petrou, who was the general manager at that time, chose me or what, but they designated that I would be the program manager for the British buy.

Hochheiser:

So I gather you answered Ray that yes you were compatible with Dave Arnold.
[Laughter]

Smanko:

Yes, once I got over the – "what's going on here?" You know, who's doing what to who? It was a very interesting time in my life, yes.

Hochheiser:

What made it a particularly interesting time in your life?

Smanko:

Well, dealing with the British was very enjoyable. I remember on the first trip we made so that we could visit the Royal Air Force bases and Royal Navy bases, we got to meet operational people, and their development people. One of the things that sticks in my mind was that we asked if we could go aboard one of their aircraft carriers just to see how it was compared to ours in terms of maintenance, storing of equipments, etcetera. And the HMS Eagle was in dry dock in Plymouth, so they made the arrangements to go aboard. As we approached the aircraft carrier, there was a "gang plank/ ladder." All of a sudden, six [of] what the Navy called "side boys," and [the] Bosun Mate piped us aboard. And the hair on the back of my neck stood up. When you're piped aboard [a] British man of war. That was an interesting experience.

Hochheiser:

Did you move to England to live?

Smanko:

No

Hochheiser:

Or did they just send you over as needed?

Smanko:

Yes, because at that time both the aircraft people and the electronics people and the British government insisted that there would be co-production. So that was a significant part of the role. I had to work closely with the Ferranti company up in Edinburgh to make sure that their people were brought into Westinghouse and technically trained, manufacturing was set up, which parts of the system would be co-produced by them, the final test, all that sort of thing.

Hochheiser:

Now I would assume that this moved you to a different part of Westinghouse.

Smanko:

No, I was still in the Aerospace Division.

Hochheiser:

Still in the division.

Smanko:

Still in the same division, just down the hall a little bit. [Laughter]

Hochheiser:

Now as a program manager were you now no longer a supervisor?

Smanko:

No, the position was still, you know, equivalent to a supervisor.

Hochheiser:

Did you have people reporting to you on this project?

Smanko:

On a "dotted line" basis.

Hochheiser:

It's the same level, but it's a different sort of position. You were managing this group of people, and now you're [the] same level but you're not managing a group of people.

Smanko:

You're not managing, you're persuading. But I worked very closely with Dave. That was the genesis of that question, are you compatible with Dave Arnold? We got along very, very well.

Hochheiser:

Yeah, and what was his position in this program?

Smanko:

He was the program manager of the AWG10 Program and all related "thereto." Overall, and really even the 11s and 12s with the modifications were still under his domain, it's just that the British wanted somebody that they could put their hand on.

Hochheiser:

Right. This is a big enough contract, what they wanted Westinghouse to do is have someone for whom this is what they do.

Smanko:

Yes, exactly. And I had a counterpart in the Royal Navy, a Commander Marlin, and he and I spent a lot of time together. Whenever he got charged with something he'd immediately pick up the phone in Washington and call me and say, "Hey Bill, we've got to get together."

Hochheiser:

So you were working with the British Naval attaché in the embassy in Washington.

Smanko:

I think he was stationed actually in the Navy department in Washington.

Hochheiser:

How often did you need to go over to the UK in this position?

Smanko:

Probably between the Royal Navy, the Royal Air Force and the Ferranti needs, we would go every couple of months, so it was quite a bit to travel, and we would come on short notice, usually a problem, that's what brings about quick trips and things like that.

Hochheiser:

Sure, sure, and were there any particularly notable problems that came up in this process that you recall?

Smanko:

Well, one of the ones that sticks in my mind not as being a problem, other than the change in requirements - the Royal Navy, their aircraft carriers, unfortunately the elevators weren't quite as big as the US Navy, and the Phantom just wouldn't fit to be taken below decks unless you opened up the radome, swung it open, and that exposed the antenna and the wave guide, and they put the requirements of I think they called it monsoon conditions of 90 knots of wind and six inches of rain per hour. So the Westinghouse engineers had to redesign the wave guide so that it could be split under those conditions without water getting onto the wave guide. And then once you got it ready for flight, you could just snap it back. They came up with a very unique design. They were able to pop it open, swing it sideways, and when it was time to close it just bring[s] it back like that.

Hochheiser:

And ultimately I assume this project was successful and the several hundred systems were delivered to the British.

Smanko:

They were delivered and there was a twist I believe years afterwards. The Royal Navy gave up its big carriers, and the F4s that they had were transferred to the Royal Air Force. So the Royal Air Force wound up with a hundred that had a quick disconnect and wave guide.

Hochheiser:

Which of course they didn't need.

Smanko:

Yes, they didn't need any more but probably surprised the daylights out of them - what the heck that was all about? But it was a great program, and it was a very successful program. I think the British were very pleased with the F4s, and with our equipment. In fact, it provided an entrée for Westinghouse into the Ministry of Defense and the operational people that we never had before. We got to know them, they got to know us, and they were very impressed with Westinghouse and Pulse Doppler radar. In fact, I remember after I left the program and went back into marketing and sales, they requested that we come over and talk to them about airborne early warning control. I remember a trip with John Stuntz. We visited a number of people - they had a program that they were trying to do airborne early warning. I can't remember the name of the aircraft, but their solution to the airborne warning was to attach a humongous radome on the nose of the airplane, which had a lot of disadvantages in terms of aerodynamics and the ability that you could point the antenna, etcetera. And at that time we were trying to persuade them to put the antenna on top of the fuselage, as it later became on AWACS. At that time they weren't quite ready to make that change in their thinking.

Hochheiser:

According to what you sent me you worked on a second program with the British.

Smanko:

UKADGE.

F15, Going to Pittsburgh, Defense

Let me defer that just for a second so we stay in the sequence of things, because when I got back into marketing, we had a major effort to compete for the F15 fire control system, and everybody put everything into it that you can imagine, and we lost.

Hochheiser:

Yes.

Smanko:

You talk about a hard loss to take.

Hochheiser:

And what was your role in the F15 program?

Smanko:

I was the marketing manager at the time, the division marketing manager. And it's just that everybody put so much into it because we thought that's when the Air Force would really recognize what we had accomplished, and we were beaten by our arch enemy Hughes. That was a hard one to lose.

Hochheiser:

Yes, what factors led to the Air Force choosing the Hughes project over yours?

Smanko:

You never really know the answer to that question. You have to give credit to Hughes, they did a good job.

Hochheiser:

What did your efforts as the marketing manager involve? Did you again now have a group of people under you?

Smanko:

Yes, and the breadth and scope of the programs and activities increased considerably.

Hochheiser:

Yes.

Smanko:

Now the reason I suggested we postpone discussing UKADGE was only the time sequence.

Hochheiser:

Right, and obviously I didn't know the time sequence, and I asked something out of order.

Smanko:

Shortly after the loss of the F15, the Vice President for Marketing at the Corporation called the general manager and said, "I'd like to be able to speak to Bill Smanko for a position at Corporate Headquarters in Pittsburgh." And they called me and asked if I would like to be the Director of Marketing for the Corporate Market Research. So here I was offered a position from the aerospace industry into industrial products, I said yes and I went. And it was quite a change.

Hochheiser:

I bet. So you picked up and moved to Pittsburgh for this.

Smanko:

Yes, moved the family to Pittsburgh, and went to an entirely different world.

Hochheiser:

I'm sure, what did you find that world like?

Smanko:

Not as disciplined as we were, and in fact I think that's why the vice president picked me. He had talked to some of his people in Washington, and our Washington people

talked to their Washington people, and somehow they must have been talking about that, and somebody said well why don't you go and get somebody from the defense group to help you do that? That was my role - to try to get them to be a little bit more disciplined in their gathering of data and working more closely with the rest of the functions and the group at the center.

Hochheiser:

How did you go about doing that?

Smanko:

A lot of meetings, I travelled a lot to all of the divisions, and I think we were making progress. And then one day about a year after I had made the change, I was in my office, and Tom Murrin who is the president of the defense company at that time called me one evening at about 5:30. And he says, "would you mind coming up to the office? I'd like to talk to you about something." "Well," he said "how about coming back into the defense group?" I had known Murrin on some of his visits to Baltimore, and I was very impressed, he was quite an individual. I got to know him very well. He played football under Vince Lombardi at Fordham as a guard. If you looked at Tom, he looked like a football player, but he was an individual that could sit down and just listen to what everybody said and just pick his way through the land mines. One of the most outstanding people that I've ever worked for.

Hochheiser:

Well, before we get back to Baltimore, what were the big products of the industrial division? I'm not familiar with it at all.

Smanko:

Everything from heavy motors, to just about anything electrical you would need in the industrial world.

Hochheiser:

Okay, now I understand. Okay so Tom Murrin calls you in and asks you if you -

Smanko:

Would like to be the marketing manager for the defense company. I said yes, and I'm back in defense, only now I'm up in Pittsburgh.

Hochheiser:

Okay so you're still in Pittsburgh but you're now--

Smanko:

I'm still in Pittsburgh but now I'm working directly for the president of the defense company.

Hochheiser:

Okay, and what are you doing in this job?

Smanko:

Well, I took over the responsibility for the field sales marketing, the international marketing, and I'll say a very close relationship to all the division marketing managers.

Hochheiser:

And what led this position to be in Pittsburgh rather than Baltimore?

Smanko:

It was traditional within the corporation that the company president would be in Pittsburgh, and his executive vice presidents would also be in Pittsburgh, and obviously he wanted his marketing manager to be there as well. I turned out to be eyes and ears for Tom Murrin because of all of the contacts I had within the corporation and in the field organization.

Hochheiser:

So what were your main activities as the marketing manager for the defense company?

Smanko:

To stay close to them, stay on top, look for problems. Tom's philosophy in life is [to] know where the problems are and if you can get your hands on a problem you can solve it. It's when you don't know that there are problems brewing out there is where the difficulties really lie. So I was eyes and ears for a lot of things. I made a lot of visits to all the divisions, not just to aerospace, but to the Electronics Division, the Marine Division, Lima in Ohio, etcetera.

Hochheiser:

So you made many, many trips between Pittsburgh and Baltimore I take it.

Smanko:

Oh yes. Many, many trips. Sometimes I wondered where did I really belong. You know, I belonged with Murrin obviously. It worked out great because of my past years at Baltimore, I was accepted at any place, I could walk into engineering or manufacturing.

Hochheiser:

Right, you weren't some alien creature from headquarters, they knew you.

Smanko:

That's what made it so good, they knew I wasn't going to come down and rattle the cages and cause problems.

Hochheiser:

Now you mentioned that a lot of your activities were figuring out where the problems were, and then figuring out how to solve them.

Smanko:

Yes.

Hochheiser:

Recall any particularly notable problems that you had to address in this position?

Smanko:

Well, one was that Tom said the Marine Division who had built the launch tubes for all of the nuclear submarines, their business was into a kind of a trough, and he said go out, talk to Herb Cabrelli the general manager, and see what you guys might be able to find in the way of business to help him through this period of time. So I went out. That was an education process for me, you know. I'm used to microchips, they build launch tubes. So it was a different kind of a facility, different kind of engineering.

Hochheiser:

And where were they located?

Smanko:

Sunnyvale, California. And while we were talking and one of the marketing guys said, "why don't we build slow speed diesel engines here?" And I couldn't quite figure out what he was getting at. They had the facilities to do that heavy kind of thing. When I say slow speed diesel engine, think of an engine for a container ship or an oil tanker, where the engine is literally forty feet tall and the cylinders are a meter in diameter. That's a big engine. Now they weren't about to design it, but the most preeminent manufacturer and designer of that kind of engine was the Sulzer company in Switzerland. The thought came out during this brainstorming session on how do we get new business was to build that engine under license at the Marine Division. You'd say well why do a thing like that? There was a maritime act that the ships would be built in the United States by US manufacturers, and manned by US seaman,so everything had to be US. So, it all began to make sense - if we could persuade Sulzer to let us build the engine under license, that would provide maybe ten years worth of manufacturing for the Marine Division. So several of us went over and had discussions with the Sulzer company, and they quickly saw a business opportunity for them under licensing, and we got the manufacturing in the Marine Division in Sunnyvale, so it worked out very well.

Hochheiser:

About when was this?

Smanko:

This was 1975 when I was still working in Pittsburgh.

Hochheiser:

Right, right. Are there other particular problems and opportunities that stick in your mind from your time in this position?

Smanko:

No. I think we were functioning pretty well as a company, and as divisions. The other thing that sticks in my mind was that Nick Petrou was promoted to executive vice president during my time in Pittsburgh. And it was traditional that the executive vice presidents would be in the same location as the company president. And he said, "Bill, you've been in Pittsburgh now for about five years, you used to work in the industry company, you know a lot of people. I think I can persuade Tom that you can be the eyes and ears for me and I can stay in Baltimore." And I said, "you sure this is going to work?" And he says, "I promise you if you ever call with a problem, I'll answer the phone immediately." And he did, so then Nick Petrou remained in Baltimore, as the executive vice president, and I was his unofficial eyes and ears up in Pittsburgh for him. It worked out pretty good.

Hochheiser:

How were you and Nick on the phone?

Smanko:

Actually not that bad because he made it a point of coming to Pittsburgh, not only for me, but almost weekly. So the night before his meeting with Murrin, we'd always have dinner and I'd go through all the list of things, and I'd say how about this, and he'd say sure, or, no we can't do that. Yes, yes, yes. And the relationship between the three of us - I had a good relationship with Murrin, Nick already had one, and my being the go-between on quick problems that popped up helped a lot.

Hochheiser:

How long in total were you in Pittsburgh?

Smanko:

Eight years.

Hochheiser:

Okay, and was it in these two positions or was there still another position in Pittsburgh?

Smanko:

No, just those two positions. One year as the director of marketing for the industry company, then back to marketing manager for the company.

Hochheiser:

In what ways was the environment in Pittsburgh different from the environment in Baltimore? You're working for the same corporation in what I assume are different environments.

Smanko:

Totally different environments. I'm not sure I can simply explain them, it was a hard working crew in corporate headquarters. A lot of times people joke about everybody goes out and plays golf at 3:00 in the afternoon. I don't know anybody that ever played golf. The vice presidents that I knew, they always came in at 7:00 in the morning. In fact, Tom and I use to go to the Y after work, around 6:00 in the evening, and we'd play racquetball with two or three of the other executive vice presidents, and they were top notch people, hard working. It's just that all of their divisions were out in the country some place, so they had to work through their general managers and a structure like that to make sure that everybody was on track and meeting objectives.

Returning to Baltimore, Harry Smith

Hochheiser:

And what circumstances led to your going back to Baltimore from Pittsburgh?

Smanko:

Harry Smith became the executive vice president. And I think a precedent had been set with Nick Petrou remaining in Baltimore, so he remained in Baltimore, and he said, "would you like to be the general manager of the Systems Development Division?" And well that kind of caught me by surprise, I didn't anticipate that. I said yes. I was, you know, I won't say anxious, but quite interested in returning to Baltimore. Baltimore is really where the action is, or always was, in terms of new things. So, I agreed to become

the general manager of the Systems Development Division. That was the biggest challenge of my life. I mean there were absolutely incredible people, John Stuntz, Wayne Fegely, Gene Strull, Joe Legin. These were the heart and soul of the defense company in my opinion.

Hochheiser:

And these people are now reporting to you?

Smanko:

No, not all of them, but it was that level of talent that had been in the System's Development Division over its existence.

Hochheiser:

What can you tell me about Harry Smith? Unfortunately we started the program just a little bit too late to interview him. His name not surprisingly pops up in an awful lot of the interviews we've been doing, so if you have things you can share about Harry, I would greatly appreciate it.

Smanko:

Harry without question was the smartest man I ever met. Whether he was a genius I don't know, but smart - he could think his way through things. I remember a presentation we were doing at Wright Field one day, and the Air Force project engineer said "Harry, can you explain that a little bit better?" So Harry went up to the blackboard and he starts writing this equation, and it's about that far, and the guy says, "I don't understand that." Harry says "Oh, you're right," and he rubbed out the error, and on he went. He just had a brain that was unbelievable. His people, I'd say everybody that knew him, must have been as loyal to him as you can imagine, at least that is my impression. People loved Harry. They would joke with him, they would take some of his idiosyncrasies. I remember reading that little thing by Bill Jones where they put the Harry Smith button on a radar set because he always had a - I remember a time when we had a penthouse on the old aerospace division. We would do our initial breadboard testing up there on radar systems. We had the breadboard for the Pulse Doppler radar, and we had some generals coming in that day to see the demonstration, and Harry said there will be an aircraft coming in from the west, and the radar will pick it up, track it in the presence of this heavy ground clutter, etcetera. And at one point the general says, "are we still tracking it?" I think we had lost the target, but without skipping a beat,

Harry says, “look at those prf switching.” He just had a humility about him that was fantastic. We traveled a lot to aircraft companies, to the Air Force, etc. One of the finest persons I’ve ever known in my entire life. But I’d have to say, the smartest guy I have ever known, and we used to joke about - “and you went to the Missouri School of Mines?” he said Bill…that was a pretty top notch university now, stop that. [Laughter]

Hochheiser:

So what year did you move back to Baltimore?

Smanko:

1978.

Hochheiser:

What were your main activities as vice president?

Smanko:

More general manager, vice president was just a title.

Hochheiser:

That was a title, not really your job, your job was general manager.

Smanko:

The System Development Division was unique because that’s where things were started. Actually, it turned out to be not a good fit. I didn’t have the engineering background to do that. Harry thought I had enough because we had worked together for 15 years, but it was a bigger challenge than I was really capable of doing, as it turned out.

UKADGE

Now I’ll get back to UKADGE. That was the time when this opportunity opened up, and believe it or not, some high level person at the NATO called the Westinghouse headquarters and they must have talked to Tom Murrin, and they said “Hughes has had this business to itself too long, we’d like to get some competition, and we’d like Westinghouse to bid this particular job as the system contractor.” And UKADGE is

United Kingdom Air Defense Ground Environment. It's a massive air defense system that would cover all of the UK, but in addition to covering the UK, it was to be the interface with the NATO air defense ground environment system, and the ballistic missile early warning system. It was a pretty humongous - their defense system out of the British Isles.

Hochheiser:

And so they call Tom and ask for Westinghouse to bid on -

Smanko:

To bid this as a system contractor.

Hochheiser:

Okay, and then did Tom turn to you? How did you get involved?

Smanko:

Well, it was just about the time that we were agonizing about my being the general manager of the System's Development Division. And I forget who contacted me, whether it was Harry or Maurice Ani who was then the general manager of the Command and Control Division, the former Electronics Division. And they needed somebody to be program manager. It was more than that - we had a British company to do the computing and data processing, we had a French company who had a very similar software system that they were doing for the French air defense system. They needed somebody to assume the role of prime and tie it all together. So they asked us if we would do that, and I went over and had a crew of about eight to ten people. We thought we'd be there for four months, four months turned out to be nine months. That was quite a challenge. We did the bid and presentations, and I really thought that we were going to win that one, and we didn't. That was another tough one.

Hochheiser:

After being asked to bid, still the business then stayed with Hughes?

Smanko:

Yes. What we had, unique at that time, was this was the beginning, the thrust of solid state and the data processing. Instead of one big central computer for this, we were going to distribute the computers and tie them all together that way. And I don't know, do you remember a company by the name of Wang?

Hochheiser:

Of course.

Smanko:

Well Wang had a computer that was excellent for our approach that we replicated throughout the system. I think Hughes found out quite far along in the bidding process of what we were doing, and they switched. And they in essence duplicated what we were going to do, so we didn't make it, but maybe we advanced the state of the technology, I don't know. But yes, word processing was just coming into its own in the late '70s - '79, '80.

Hochheiser:

Yes I certainly remember that. So, you actually then spent about nine months in England?

Smanko:

Nine months.

Hochheiser:

To do this did you then leave that general managers position?

Smanko:

Yes, I left that to assume this role. And you know, if we were successful than -

Hochheiser:

It would have gone on for longer.

Smanko:

Yes, it would have gone on for longer. At that time I was making the transition to ground based systems with Maurice Ani. In fact, when we weren't successful on that, I became his department manager for ground radars.

Hochheiser:

And so is that back in Baltimore?

Smanko:

Yes, and that brought me back to Baltimore in what we call the West building, the Command and Control Division.

Hochheiser:

Was this a long enough time in England that you brought your family with you?

Smanko:

No.

Hochheiser:

That must have made it tougher when it turned into nine months instead of four.

Smanko:

Yes, it was tough on all of us. The whole crew, they didn't get antsy, but - hey we're just going to be here to write a proposal, and the requirements kept changing and kept being extended and stuff like that. I remember we went over in September, and I said, "fellows why don't you all go home and see your families for Christmas?"

And instead of my going home, I asked my wife and two daughters to come visit me in London, and they thought that was fantastic so they had a great time. Christmas in London.

Ground Radar Systems, Retirement

Hochheiser:

So, you don't get the bid and then you come back to Baltimore, and you started telling me about the position you had when you came back to Baltimore and I interrupted you because I wanted to ask you something else about England.

Smanko:

Oh that's okay.

Hochheiser:

If you can get back now - so you come back to Baltimore and you're in a [new] position?

Smanko:

In the radars field. The ground radar systems department, under Maurice Ani.

Hochheiser:

What was your role in the department?

Smanko:

Well, we were doing a lot of international business, we had put in a system for Morocco. And by the way, I just went on and Googled a couple of things, you'd be surprised what you can find on Google. I can find you pictures of the AWG10 that we're still classifying.

Hochheiser:

Well of course that happens in general. Things that were highly classified when there were new projects here are now no longer classified, there's no longer a reason for them. So anyway, you're telling me about coming back here.

Smanko:

Yes, and then we were doing radar projects for Jordan, Egypt, Morocco, and we were just starting to contemplate whether we're going to go prime on an air defense system for the country of Saudi Arabia. And it was shortly after that that I guess I was getting a little tired or so, and I elected to retire.

Hochheiser:

How old were you when you retired?

Smanko:

58, I took an early retirement.

Hochheiser:

What led you to decide that it was time to retire?

Smanko:

I was tired. It had been pretty hectic - the last ten years. No, the reason I did it, I did the arithmetic, and said oh okay, I had had some investments that worked out well.

Hochheiser:

So you could afford to retire early.

Smanko:

I could afford to retire, and you know I had a magnificent retirement.

Hochheiser:

And in what ways have you kept yourself busy and engaged?

Smanko:

I travel a lot, I take courses at universities, I learn languages - Italian, Japanese - things that force me to keep that brain stimulated.

Hochheiser:

Yes, that's the important thing, [whatever] thing you can one way or another, figure out a way to keep yourself active and involved.

Evolution at Baltimore, Career

In what ways if any did the operation here in Baltimore evolve or change over your many years?

Smanko:

I'd say the biggest thing that struck me was the work that Gene Strull started. Obviously the rest of the industry saw what was coming. I remember meeting with John Stuntz once in the late '60s. He said "Bill, we're on the cusp of a revolution, and that's when solid state meets digital signal processing, things are going to change like you never saw before." And that's what I say is the revolution. Just look - when I first came to Westinghouse, the Aero 13 system had vacuum tubes, then we went to transistors, then you now look at the F16s and the F22s. We had things this big, now they can do them in sizes like this. MTBFs that were ten hours are now hundreds of hours, self testing, yes, just unbelievable. It then transitioned into the real world, and look what has happened in terms of personal computers, and iPods, and you know. And I think the genesis of all that is what happened in the aerospace defense industry, ARPA, all of those things I think created what we're taking the benefit of now.

Hochheiser:

Looking back, how would you characterize your career as a whole?

Smanko:

Oh magnificent, I just had one marvelous time. I got to meet people that I had the most profound respect for, both at home and in a customer's organization. They're very smart individuals, we could have never done what we did without people like that and the travel. I've been to places that when I was in high school I never thought existed. I think I counted one time, I've been to like 40 of the 50 states, I've been to 22 foreign countries, learned foreign languages. I couldn't have asked for a better career, could it have been different? Sure, I guess, but would I undo it? No, not in a million years.

Hochheiser:

Were you active, or involved, in any professional organizations of engineers or anything like that?

Smanko:

When I was in college I belonged to the AIAA, the aeronautical equivalent of the IEEE, but no - no I guess it might have been my insecurity about not being an electrical [engineer] that I probably didn't join the organization.

Hochheiser:

Yes, that makes sense. I think we've gone through your entire career. If there is anything that I didn't think to ask you that you would like to add, I would be happy to hear it.

Smanko:

Okay, let me just think a little bit.

Hochheiser:

Sure, we have time.

Smanko:

Let me look at this and see if that rings any bells.

Hochheiser:

Sure.

Smanko:

No, other than I'd like to say I guess I was blessed with getting to meet and work with people that I thought were great. Harry Smith, you know how I feel about Harry, Nick Petrou -

Hochheiser:

And if you want to tell me more about Nick, I'd certainly be delighted to hear.

Smanko:

Well, Nick was a wonderful man, he almost - no, that wouldn't be fair, but I regarded him almost like my father, in terms of helping me grow and develop as an individual. I remember trips we would take. At one time we were going to London and onto

Germany and I think he had a daughter Stacy who was probably about 26 years old, and she had a very good job with a bank in London, and he said he was worried, and I said, why? Well she's 26, and she's not married yet. I don't know how to express it. We talked about Harry - John Stuntz is an incredible individual, and did a lot to contribute to the success, and I think if I could choose one thing that accounted for the success of Westinghouse, [it] were the people that it had. It really, really had great people.

Hochheiser:

Anything else you would like to add?

Smanko:

No, I don't think so.

Hochheiser:

In that case, we're finished, and I thank you very much for coming here and sharing your recollections of your career.

Smanko:

Thank you.