





Spruill Charts a Way Forward

ON DEC. 3, 2018, DEFENSE ACQUISITION UNIVERSITY (DAU) President James P. Woolsey sat down with Dr. Nancy L. Spruill, who is retiring as the director of Acquisition Resources and Analysis in the Office of the Under Secretary of Defense for Acquisition and Sustainment (USD[A&S]). In that role, she has been the lead for Business Cost Estimating and Financial Management (BCEFM) Functional Communities. The following is Mr. Woolsey's interview with Dr. Spruill:

Q. You are a degreed and published statistician. So before you came to the Office of the Secretary of Defense, before you were the executive secretary of Defense Acquisition Boards [DAB], before there even was DAB, you were a statistician first. Other than a strong distaste for ordinates that don't start at zero, how has this background influenced the work you have done and the way you see acquisition?

A. I really value data. I think of problems from the data perspective. What is the data that I have, what is the data I wish I had? And so that was kind of my first thinking. My dream is for there to be a "Statistics of Defense" data division in the Department of Defense [DoD]—similar to Statistics of Income Data Division in the Internal Revenue Service [IRS]. That IRS division's entire job is just take the information and to share it in different ways that informs the public. Now, the IRS folks have an additional constraint that we have sometime: They have to protect the confidentiality of the people, but they do that by grouping their data. And so I always thought it would be wonderful if the DoD took the budget information, the planning information, the scenario information, the threat information—and had it all organized in a way that you could go to one place and get data.

We need good data definitions, databases, and analysts who use the data. We haven't come very far in this area, but I believe the DoD Chief Management Officer is working on this now. However, it requires sharing, which DoD is not very good at.

Q. We haven't made it to your dream, but we have made progress, haven't we, in how much data we collect in a

Photos by Sam Parks, DAU Communications.

sensible way, and how it's available to lots of different people who are looking at problems?

A. Yes. We have made tremendous progress in managing and collecting acquisition data. It has been systemic and sensible. Our greatest partners have been the Services [components] in working with my office to help identify critical data and make that visible and accessible to us in OSD. You can see it today. If you go on the A&S [Acquisition and Sustainment] website, you'll find that you can get a link to our DAMIR [Defense Acquisition Management Information Retrieval], AIR [Acquisition Information Repository] and DAVE [Defense Acquisition Visibility Environment] for authoritative acquisition data. You can learn a lot from this acquisition information. So, yes, we have more work to do but have taken a big first step.

This data has been a beacon, sharing data based upon current access and dissemination rules. My office, through Mark Krzysko, enables others to solve their problems with the sharing of our acquisition data. Key partners—such as Bess Dopkeen in CAPE [the Office of Cost Assessment and Program Evaluation] and folks like Phil Anton, who was in PARCA [Performance Assessments and Root Cause Analyses]—are good examples of consumers, where our acquisition data assisted them with issues they were managing.

There still is a question of sharing between organizations. Everybody tends to be a bear with their data—"I want it for myself." But I suspect that will change, and it is moving it in the direction of change.

Q. But once you collect all the data, you have to do something with it. That brings to mind the famous Spruill Chart—what is it, what are its origins and how is it used?

A. Well, it provides cost information on weapons systems in a standard format, so that's the short version of it. But we were in a DAB one day maybe about 20 years ago and the then Under Secretary for Intelligence Steve Cambone said to me afterward, "Nancy, I can never follow your funding chart." And I said, "Aha. We're going to fix that," and so we just made it standard. And now it has gone from the longest chart and full of discussion to the shortest—because if there were no issues, people could see that; and if there were issues, they knew what they were talking about, they knew how it was calculated. There was no mystery. That allowed us to get to the main question: Is that the right number for this program?

Q. That's a long lifespan for a chart. Pretty impressive. You've seen acquisition go through a lot of things from the Cold War, the drawdown that followed the Cold War,

of course the 9/11 attacks and now the need to move faster to deal with a quickly changing environment. As you look back on all that, what has changed a lot, and what has been consistent? What are the patterns?

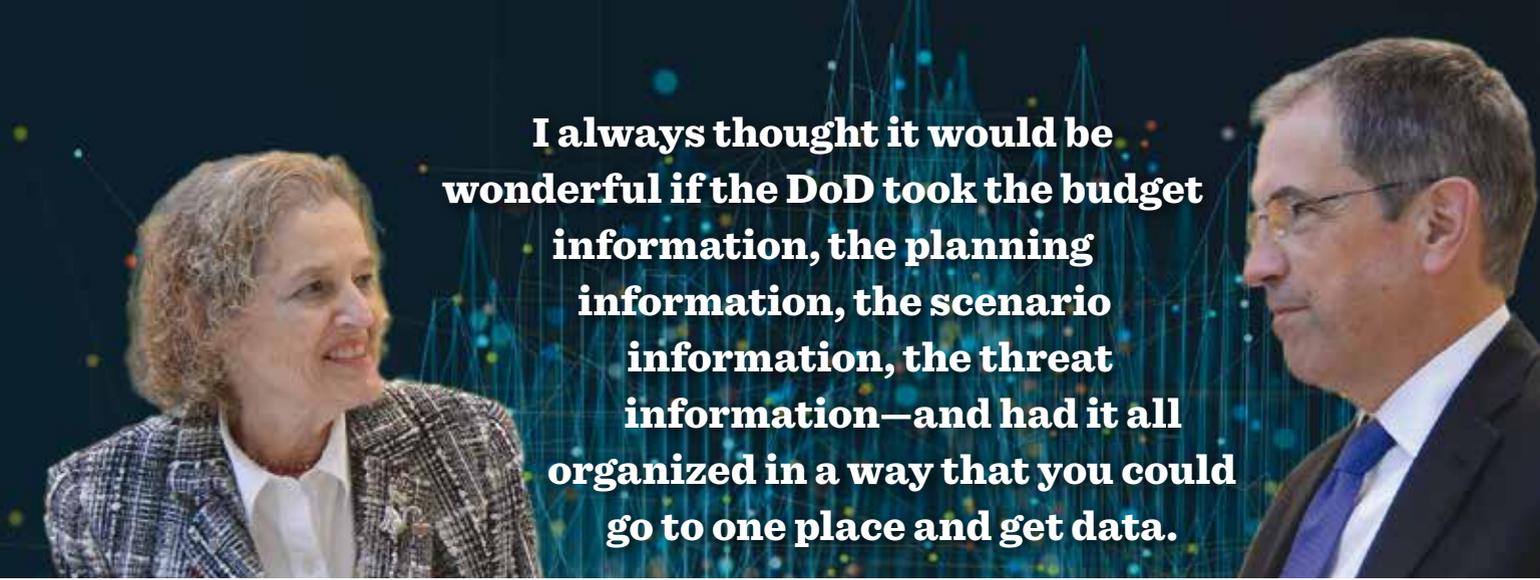
A. Well, there's a lot of consistency. Programs are the basis of what we do in A&S now and earlier, and how they interact with the budget system, the acquisition system. But they have a goal. They need to build a weapon system or whatever. So that, I think, is the same. But I think that there's a lot more shared information than when I first came. But, again, we've not come to the optimum of sharing that we could. But I think a lot of progress has been made over that time, a lot of good thinking by a lot of smart people on how to do acquisitions better, and sharing it among ourselves.

There have been big changes: The Weapons Systems Acquisition Reform Act (2009), and pushing acquisition decisions back to the Services in the current administration. Both are important and show that Congress wants improvements and really cares. However, we still don't share information and data like we should, in my opinion. And I'm talking about more than just acquisition data. We need to share program performance and budget data, too.

Q. The relationship between government and industry is critical, and it has gone through many cycles. Where do you view that relationship today?

A. In terms of shared information. I would give it a C-plus, or maybe a B-minus. It is hard to walk the line between sharing proprietary information and sharing other information. In terms of improving the overall relationship, I would like to see us work something out so government folks could go for 1 or 2 years to industry and vice versa. I know people smarter than me have been working on the exchange problem for a while but I think figuring it out—how to move back and forth between industry and government—would be valuable to both the government and industry (and I think most people agree, it is just that the devil is in the details).

Q. In your career, you've been known as somebody who can work across boundaries, and that's a natural thing to do in the positions you've had and in the Office of the Secretary of Defense [OSD], generally. You have had to work across multiple administrations, you have had to work across organizational boundaries within OSD and the military Services, and so on. When people are looking forward at their careers in OSD, or are in the midst of them now, what advice do you have about how to make that work? How do you work across boundaries and get people to work together who might not be used to it?



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A. That's an excellent question. I think it involves people. I really don't think you involve people in the way you need to if you only send them an e-mail and tell them to do something. You have to talk with people. Roberto [Rodriguez, from the OSD Comptroller Office] comes and sees us quite a bit. He says, "OK, I need this; I'm thinking about this." He wants to focus; he wants to hear our perspective and he wants to tell us if there is something different about it. Rick Burke [Director of Cost Analysis in CAPE] and I are great friends. I'll look up and in the door walks Rick Burke, and he sits down says, "I need this" or "You sent this and can you explain a little bit more about it?"

The other thing I believe is that you get a lot out of walking around the Pentagon. Do not sit in your office the entire time. I can't tell you how many times I've been walking in the hall and someone will say, "I meant to send this to you; it's really important—I will as soon as I get back," or they download it to me right then.

If you sit in your office and rely on e-mail, you're not going to get half as much done, or build the relationships you need. You have this wonderful, huge building with all these people in it. It's just something that shouldn't be passed up.

I'm an extrovert, so I'm prone to that approach. But I really think that it's the way to do your job.

Q. Are statisticians allowed to be extroverts? I know engineers are not.

A. No, it's discouraged (laughter).

Q. You're one of the first women to have a prominent role in defense acquisition and certainly a trailblazer. How has being a woman in this field affected you, and how has the environment for women changed over your career? What advice would you give to women at various points in their career, or for those who are interested in mentoring other women?

A. Well, let me start my answer with a story. Although I am probably most famous (or infamous) for the Spruill Chart, I also am famous (or infamous) for threatening to sue the U.S. Navy in 1979 because they said I could not go for 5 days on an aircraft carrier, which was deployed in the Mediterranean. For about 4 days I threatened to call my lawyer (I had only talked with the Women's Legal Defense fund—I really didn't have my own lawyer). The Navy got their folks involved—both the Chief of Naval Operations and the Secretary of the Navy—and I finally was able to do my job (looking at consolidating fighter and attack squadrons on aircraft carriers) and went for 5 days on the ship as it sailed from Alexandria, Egypt, to Naples, Italy, doing flight operations, a vertical replenishment, or resupply via helicopter, and other normal activities for a deployed ship.

The most common comment to me by the enlisted men (who had not been told that there was a woman onboard) was, "You are a woman." Usually with no good or bad inference, no nothing—just "you are a woman." A statement of fact. One sailor did ask me how it felt to be one woman on a ship with 5,000 men. I don't remember what I answered him. And, as you know, the Navy survived, and I would say no one was the worse for wear.

Now to your question. My advice to women at any point in their career is to do your job, don't be pushy but do insist on your rights. I kept a diary of who I talked to and what was happening during my back and forth with the Navy, and I'm glad I did. That included a diary of what I had to do to get on board—who I called and what they told me—and my experiences on the entire trip. But no one ever was impolite to me, even among the officers who must have known some of the backstory.

Q. Even as we work to simplify the process, delegate programs to the Services, and try to streamline things generally, coordination work and documentation and the like will still have to get done in some way for some audience, whether it be Congress or the delegated milestone



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decision authorities. What's the key to doing that as we go forward?

A. The key is working with the program office, but also working with the other parts of OSD or the Services or whoever has the requirements. We do it in the milestones. And that's one thing we especially do in the case of Nunn-McCurdy major program shortfalls. When people get a Nunn-McCurdy they kind of freeze: "Oh no, I have a Nunn-McCurdy breach." And you would say, "OK, this isn't the end of the world. Let's lay out what you have to do; let's figure out who you have to talk to." We have done it many times, so we can link them up to the right people and kind of say to them, "Your real job is to build this weapons system. Our job is to help you get through the bureaucracy so that you can get your chop to build your weapons system." And that's what I viewed as the role of the DAB executive secretary—to help the programs as they came in, wherever they were. If they need an affordability analysis, let's show what a good affordability analysis is. If they need a good acquisition strategy, show what a good acquisition strategy is. If they need an 808 Report, help them write it. And I think that will be a hard thing for the Services—they'll have to build their own capability of somebody who looks over the whole thing to help their programs.

Q. What have been the most rewarding experiences in your career?

A. Well, I've had a long career, so I will mention four experiences:
(1) Getting hired by the Center for Naval Analyses, after replying to a blind ad in *The Washington Post*. My dad worked for the Federal Reserve, my grandfather for the Bureau of Printing and Engraving. I never thought of working for the military, and in 1971 when I responded to the blind ad, the first thing they asked me, before bringing me in for an interview, was if I had any problems working for the DoD. My answer was, "I never thought about it, but no, I wouldn't have any problems." They had me in and offered me a job

as a research assistant in one of two research divisions, and I was off to a wonderful career.

- (2) Getting on that aircraft carrier, as I discussed earlier.
- (3) And getting a job in the Pentagon, as a GS-15, working in the OUSD for Manpower, Reserve Affairs and Logistics.
- (4) And a close fourth, getting hired as a Senior Executive Service member, working in the Office of the Under Secretary for Acquisition.

Q. If you had a magic wand and could change one thing about the acquisition system, what would it be?

A. That one is easy. I would set up that "Statistics of Defense Acquisition Division" that I mentioned earlier and have everyone—including the Services, the Comptroller and CAPE—share their acquisition, technology and logistics and their funding and expenditure data. And have it all in one place.

Q. After all this time herding cats at DoD, what are your plans now, other than spoiling your actual cats?

A. My husband and I are no longer going to get up every weekday at 0500. And we are going to "delayer" our house. After my dad passed away in 2011, I found in his files, a copy of the first federal taxes (1947) he submitted—by the way, it was 2 pages, and he owed less than \$1, which he paid. I got those same genes. And, I want to visit my sister in Muscatine, Iowa, and Steve's mom, who turns 100 in April, and who lives with Steve's older brother outside Chattanooga, Tennessee. And I do plan to spoil my cats—Bebop and Lula. But after that, I'm not sure.

Q. Well, Nancy, thank you for taking the time to offer us these hard-won bits of wisdom, and, more importantly, thank you for your long and extraordinarily dedicated service to the Department of Defense and to our nation. It has been rewarding and marvelous to work with you, and I wish you all the best.