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Issue: September 12, 2016

CEOCFO Magazine



Tactical Engineering, Development and Manufacturing Support and Services for NASA, the DoD and the Commercial Space Sector



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“What has surprised me is that the industry is not as evolved entrepreneurially as I would have thought.” - Heather Bulk

CEOCFO: *Ms. Bulk, what is the idea or the focus of Special Aerospace Services (SAS) today?*

Ms. Bulk: Special Aerospace Services is focused on supporting NASA, Department of Defense and the commercial space sector from a tactical engineering and development/manufacturing perspective. Day to day, that means we help our clients; a very few and select clients, to solve problems and address issues from a very different perspective than the industry traditionally does. What that means is that our tactical engineers to come in and address things from a different perspective, always with cost and time efficiency in mind, but most importantly taking safety into account.

CEOCFO: *Why is it unusual for safety to be a concern where a company would need to turn to an outsider to recognize the issue?*

Ms. Bulk: That is a good question. My husband and business partner Tim and I started SAS by really looking at what the industry needs and how we can help. As we started getting more traction, we decided that as we grew the company the most important thing to do was to bring in people with very, very specialized expertise and history. For example, we have N. Wayne Hale, our Director of Human Spaceflight and Energy Services. He ran the shuttle program for NASA, so we brought him in from a safety and more importantly from a human safety and human space flight perspective. He is iconic in the industry and brings tremendous experience and know-how.

CEOCFO: *What might SAS uncover that a company had no idea about? What specifically might you find or have found? What would you look at that perhaps others do not think to take into account? What might your company look at when doing an assessment that others do not realize is important?*

Ms. Bulk: That is a great question! It caused me a little bit of pause to think about how our team approaches things and specifically our human space flight and space station cargo projects. It is not just from an engineering perspective. I think that is first and foremost. Many companies can get very focused on just solving the engineering problem, if you will. Our team is able to help our clients to look at it from a different perspective that is more comprehensive. Could the risk be: Do your parts have the longevity and will your vendors be there in ten years? What are those risks that maybe they are so engrossed in technical side that they do not see that the integration could be an issue? Maybe a risk had been minimized by the team because they think that they have addressed it, but it could be something that has raised its terrible head historically. You could have younger engineers, of which we have many, but we also have very seasoned engineers who have seen incidents happen. Having that, what we call “scar tissue”. Internally, we call that the “Been there, done that approach” in helping our clients to not miss those issues.

CEOCFO: Do clients come to you proactively or are they typically turning to you when something specific is wrong or they just might have a general feeling that something is not right?

Ms. Bulk: Yes to both. Let me be clear that we do not work with 50 clients. We hand pick our clients and they hand pick us. That is because when we support them, we support them entirely. That means that we have a very intense dedication to them, both time wise and project wise. Therefore, to answer your question, when we have a client, often they will facilitate the relationship with us and in doing so they will start to think about, "You know what, we should probably call SAS to address this particular issue." It is really being at the forefront of that relationship where they will say, "Those are the guys and gals!" (By the way, we do have many women engineers on the team, which is rare.) The clients will start to think about, "How can SAS help us to solve that issue?" Because A, they know we have the expertise, and B, they know that they can come to us and have it resolved quickly without bringing in an army of people and making this a bigger situation than it needs to be.

CEOCFO: What about Language & Logistics, which I see is one of the services that you offer? Where does that come in?

Ms. Bulk: Actually, oddly enough this goes right back to the question that you just asked. Do the clients come to you? Do they solicit? That is a great example where a client came to us and said, "I happen to know that you guys do a lot of work with foreign launch vehicles. You have got a lot of know how. You have spent some time in the Ukraine and Russia and you guys have dealt with translation and logistics before. Furthermore, you have a very good relationship with those interpreters and translators. Would you guys consider putting in a quote to help us to support a specific launch area here in the United States?" We took a look at that as far as what it would take to spin up a separate division to support a very critical need for an incredibly valued client and in three weeks we literally spun up an entirely new division! We had people hired. We had vehicles on the spot and that was the inception of the whole division. That is really what we enjoy; solving the client's problems. It does not always involve spinning up a new division, but that is how our team approaches things. It is very non-traditional. How can we fix it for the client? How can we make it right?

CEOCFO: Are there services or areas where you could provide services that do not get the attention you should?

Ms. Bulk: Yes! Great! That is a hot button for me. We have coined the term, and it is actually a product and it is called "Space flight safety." Safety is a significant piece of who we are as a team. I tell you that because the people that we have on the team are so focused. That is not to say that our clients are not focused, because our clients do care about safety. However, in a world that is so focused on budget constraints and time constraints, that safety can have some negative connotations to say, "How much more time and how much more money are you going to take?" We propose the idea that addressing safety at the inception, during the design phase and integrating early on, saves time and a heck of a lot of money. However, as this industry is evolving and those constraints on all fronts are so critical, a lot of times we will get brought in later in the process. I would love to be able to tell the industry that earlier is better, cheaper and faster and safer.

CEOCFO: How does security come into focus?

Ms. Bulk: It plays in for SAS, really in our internal infrastructure. We do not support clients from a safety perspective; *per se*. ITAR is International Traffic in Arms Regulations, which is the regulation that controls the export and import of defense-related articles and services on the United States Munitions List (USML). ITAR is something that is absolutely critical in our industry. When you talk about security I think about technological data that needs to reside in the United States. ITAR is a process and a registration that our company takes very serious to make sure the technologies that reside in the United States stay in the United States for types of things that hacking would try to attack as well. However, ITAR is how we help our clients, because we are compliant and registered and our company knows ITAR inside and out. That is one piece of it. We really have embraced that as a culture. The second piece of that is from a safety and protection standpoint. Any data that we have, we have intense firewalls internally to protect data. We have server protection and backup, so we take that seriously. It is very rare that you would find a company of our size to be that diligent and intense from an ITAR protection standpoint.

CEOCFO: Do you do much outreach or are you known throughout the industries in which you play?

Ms. Bulk: We do a lot of outreach. We do outreach both within the industry and externally. Our elected representatives are a big piece of – I do not want to say marketing – but really awareness for the industry. We spend time in DC talking with, not just our representatives, but also people that do not know enough about our industry. For example, we were at NASA headquarters last week in Washington DC meeting with people, explaining either if they are not familiar with us who we are and what we do and the impact we are having on the industry or if they do know us we can say, "Hi, it is great to see you and here is the update on what we are doing." SAS is not shy on being really at the forefront of what is happening in the industry. I often find myself sitting at the table as the only small business and certainly the only woman at

the table in many of these discussions. For example, two weeks ago I was at the Farnborough Air Show just outside of London. It is, if not the biggest, the second biggest air show in the world. I was finding myself sitting at the table with all the major primes and me. Therefore, yes, I think we are way ahead of the curve from an outreach perspective. From a non-industry perspective, we are also out there for STEM, (Science, Technology, Engineering and Math.) We talk to the schools. We try to encourage people to understand more of what the industry is doing, not just us and trying to help kids to understand that engineering is one piece of it, but there are many different things that you can go into from a space or aviation standpoint. Our goal is to really try to motivate, inspire and reach those kids that would not otherwise have access to information on the industry.

CEOCFO: *This is perhaps not politically correct but, does being a woman help?*

Ms. Bulk: No. It hurts. Let us just speak candidly here that this is an industry where women will still come to me for support and an entre in to the industry. I have three examples I can give you just right off the cuff for women working for SAS that could not get the attention of the companies that they wanted to work for until they came across our company and they said, "A woman CEO! Maybe I have a fighting chance of getting an interview!" Now, those three women are the first three that come to mind. One was a working mom. She said, "I just want to work part time, if I could work twenty hours a week. I have two small kids. I want to work full time as soon as the youngest one is in Kindergarten, which is two years away. Would you consider even just talking to me?" We brought her in for an interview. Her skill set was so critical that our client said, "We will take her tomorrow." I thought, "Well, is that not funny, because she cannot get the time of day from anybody else." The other example is with a young woman we will call Sandra. She said, "I see you went to DU, University of Denver. You are an Alum. I am just pulling my hair out. It has been six months and I cannot get anyone to take me serious. These are all very, very highly educated women. I said, "Come in, I will spend few minutes with you." That led to me saying, "Let us get you an internship," after we looked at her experience and what she had done for her thesis. She has been with us for four years; one of our top performers! The third example is someone who came in through a temp service to do something administratively. I said, "What do you really want to do," and she said, "I want to be an aerospace engineer." I said, "Are you saying that because you are sitting here?" She said, "No, I am saying that because I got my degree at the School of Mines and I cannot get an interview. I said, "Go get your real resume," so she went to down to the car and got her real resume and brought it back up. I said, "What are you doing," and she said, "I cannot get anybody to give me the time of day!" Therefore, it is the same thing! She has been with us for over a year and is blowing the doors off!

CEOCFO: *What surprised you as SAS has evolved and grown as a company?*

Ms. Bulk: What has surprised me is that the industry is not as evolved entrepreneurially as I would have thought. My background is working with affluent business owners, doing wealth preservation and transfer and so I am very accustomed to dealing with business owners and entrepreneurs and really doing what it takes to make something happen. I was always in awe of those business owners, and this industry; I will not say it is resistant, but it is definitely not up with the times in regards to different ways to do things and approaches. Much of it has to do with the idea that we have got to be very safe. We have got to make sure that the technology works. However, I think the old way of doing business is still being done and there is a lot of room in this industry to allow some of the smaller companies to do much of the research and development. That is not to say that the big boys do not have a seat at the table. They absolutely are paramount. This industry would not exist without them. However, I think that the crack in the door is there, but it is not at its full swing yet. I think the industry is going to evolve more in that direction, allowing newer, smaller companies to provide significant value in aerospace and aviation.

CEOCFO: *Why reach out to Special Aerospace Services? Why is SAS Manufacturing, LLC an important company?*

Ms. Bulk: If I may just talk a little bit about the manufacturing company as it weaves in; we have been talking about the engineering side of things. Much like the Language & Logistics question that you asked, SAS Manufacturing came about because a client came to us and said, I cannot get my launch vehicle parts on time. If it is even for the propulsion side I cannot get my part." The lead time, meaning how long it takes from the time someone puts in a purchase order to the time they receive a part, is unbelievably long. They said, "We have to worry about quality control," and in a joking manner they said, "Don't you guys want to start a manufacturing company as a separate division?" So we kind of laughed and said, "We do not know." Roll forward a year and we had acquired what we call a Mom & Pop shop down in Denver. This Mom & Pop shop is still and was ideal to be retrofitted to become a precision manufacturing shop, specifically for aviation and aerospace. Therefore, we have taken those quality machinists, we have upgraded their machines, we have upgraded the facility, we have put in the AS9100 process which is critical for the space and aviation. We came back to the client and said, "Hey look, we are ready to make those parts for you!" It has been a wild ride, watching this completely separate industry, meaning manufacturing, run in parallel with the engineering. As far as your sales pitch, why SAS and why SAS

Manufacturing? We have got a team of very experienced and motivated individuals from the engineering perspective; who support our clients intensely on that front. Then you roll over to the manufacturing side. We can support our clients. We can take it from design to prototype to manufacturing in one fell swoop. Add on to that the assembly that is coming into play in the next two months and it is a relationship that our clients can have that is incredibly comprehensive. The other piece to that, I will tell you, is that it is full and open disclosure. Therefore, when someone walks into our manufacturing company, they can walk in and see our five 3D printers and they can sit and watch their parts being made. They can know where we got our materials. We are actually building a portal so that our clients know, every step of the way, where their parts are in that process, so that we will not have to have the conversation with our client about, "Why are these parts late? Why do we not know what the status is and what is happening?" That is because in our world if those parts are late the launch date slips and that is huge.

