

Transcript of "Don Berchoff, CEO, TruWeather Solutions in Reston, Virginia"

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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Kelly Savoie:

Welcome to the American Meteorological Society's podcast series on careers in the atmospheric and related sciences. I'm Kelly Savoie, and I'm here with Rex Horner, and we'll be your hosts. Our podcast series will give you the opportunity to step into the shoes of an expert working in weather, water, and climate sciences.

Rex Horner:

We're excited to introduce today's guest, Don Berchoff, CEO of TruWeather Solutions in Reston, Virginia. Welcome Don, thanks so much for joining us.

Don Berchoff:

Well, thanks for having me.

Kelly:

Don, could you tell us a little bit about when you became interested in meteorology and how it influenced your educational path?

Don:

The time was February of 1969, during the great Mayor Lindsay snowstorm in New York City. I probably was six or seven years old, and that snowstorm basically filled up my front yard and really got my interest in weather. And then I remember in second grade, Mrs. Okonsky was telling me how high pressure means cold and dry, and low pressure means wet and mild. And I asked the question, I said, "Well, how does it snow?" She couldn't answer the question, and that was just perplexing. And of course back then we didn't have the internet, right? So you had to go really try to figure things out, and that was the day I think I was hooked.

Kelly:

And so did you decide right away that you wanted to go off to college and major in meteorology, or did you start with a different major and then switch over?

Don:

Oh no, no, that was, basically, I knew I was going to be going to school for weather. I didn't know at seven that it meant three semesters of calculus, differential equations and dynamics. If I had known maybe I would have taken a different route, but no, I knew that day. And my parents always used to comment when I was younger, ask people, "Can somebody really know what they want to be at eight years old and follow through with it?" And I still remember those conversations and there was never a

question, never a question. I went to school to [SUNY] Oneonta, and I got my meteorology degree there, and rest is history.

Rex:

Were you doing things in high school that were meteorology related, were there any clubs or teachers that could eventually help you out, learn some of those questions about snow and other things?

Don:

Oh, sure. I had an earth science teacher in ninth grade that recognized my interest in meteorology. And he definitely helped to light that fuse a little bit more. But I don't think I had anybody really as a big — honestly, you know who one of my biggest influences was? Joe Whitty on New York City — Channel 2, I think — growing up. And also believe it or not, this is going to just inflate his head even bigger, but Joel Meyers. I used to listen to him when I was very young on WINS 1010 in New York City. And the thing I remember is how he was so descriptive about localizing the forecast for the heavy snow events on the East Coast. He would say, "Eastern Long Island will get this much, the city will get this much." And of course back then you're talking in the early seventies that wasn't something that you got from the National Weather Service. And I always tell him that story today and he gets a kick out of it.

Rex:

So what was your first job after finishing your degree in college? Where did you end up?

Don:

I was a meteorology major. I ran the meteorology club at Oneonta, and it was 1984, probably April, and I still hadn't yet figured out what I was going to do because the National Weather Service put a moratorium on hiring, that was during the Reagan years when they were cutting back a little bit on government. And so I was kind of up in the air. I knew I didn't want to go to get my graduate level at that point. So a MEP center — a Military Entrance Processing center — came down and asked if they could speak in the meteorology club, and I was probably the least likely to join the military of anybody in that group. But after listening to them speak about the opportunities, I actually decided that I was going to give it a shot and went in as a Second Lieutenant and was guaranteed a weather job. And I was, looking back now, that was a really good decision.

Rex:

What was some of those years like? How long were you in the Air Force?

Don:

24 years. 24 years.

Kelly:

Wow.

Don:

So I started as a Lieutenant and I actually got to fly. I was down at Langley Air Force Base and we used to, back then this was 1984, we were still flying reconnaissance aircraft across the ocean ahead of big movements of aircraft because satellite imagery at that time wasn't yet fully operational. And so they

would send back PIREPs all the way across the Atlantic. And we actually sent airborne meteorologists with some of the bigger groups, and I was one of those. I had 300 hours flying, I have non-rated crew member wings, and that's where I learned so much about aviation weather because when you fly through it and you experience it, it's a lot different than when you're trying to forecast it, especially when you don't have a lot of data. And so that was a pretty big influence on me at that time.

Rex:

So tell us how your career in the Air Force led to your current small business that you run?

Don:

Well, so what happened was I was very fortunate in Air Force. The Air Force is, you can be somewhat entrepreneurial and do some things that are very experimental because of the decentralized command control. And so I actually did a lot of work in the early 2000s and late 1990s on the impact of weather on operations. And we did a study out of Scott Air Force Base for the largest airlift tanker center in the world. They were flying 100,000 missions a year for tanker and airlift operations around the world. And I was running that organization. And I quickly learned that weather data was not getting well integrated into the planning — mission planning. And there was a Boeing study that came out in 1998 that said \$41 billion is the cost of weather to the airline industry and the U.S. economy, and \$28 billion was avoidable.

Don:

And that really caught my attention because I started doing more research and realized that there was a lot of low-hanging fruit there that if we can get weather information, even if it's not perfect, better integrated decision-making in the Air Force, we could save a lot of money and get more flight hours. And so we actually embarked on a study in 2001 that lasted for about a year. And what we did was we used a risk management framework in how we would advise the planners in how to use the weather data, and we integrated that into the decision-making and we cut the number of weather delays that were averaging 5,000 a year to 1,800 a year in one year, saving \$200 million. And we actually got nominated for the Air Force Chief of Staff award for that. So that was really where the beginning of my thinking about how you use data and weather data to save money. And that was part one of what led me to start my company.

Don:

The second part was when I retired in the 2008, I joined the National Weather Service for four years, and I was fortunate enough to serve as the Science and Technology Director. I spent a lot of time with the labs and universities and we were trying to figure out how to get the best science and technology into operations so we can improve forecasting. And I learned a lot about all the capabilities that were kind of in the labs and universities that we couldn't get into operations. And there's a lot of reasons for it. We've all heard about the Valley of Death. So after four years at the Weather Service, including getting dual polarization deployed, I decided that I wanted to embark on the private sector to see if I could maybe have a bigger impact. And I worked for Unisys for two years in their weather [department], doing weather stuff, and then finally I started my business in 2015. And really the whole focus of the business is how to unleash the power of science and technology to improve societal and business decisions that are impacted by weather.

Kelly:

So how many people work at your organization? Is it very small or do you have twenty-five staff members or is it like five on staff?

Don:

That's a good question. So right now I have seven full-time, six part-time, and we have lots of partners that we leverage. And the focus of my business is not necessarily having to solve everything myself. It's building a platform by which we can take lots of different types of weather data or information and fuse it together, and focus it on specific applications like right now we're focusing on the unmanned aerial systems industry because of the very weather-sensitive nature of it. And also there's a lot of challenges in micro-weather meteorology for the drone industry. And so what we do is we partner with a lot of folks that have these great technologies and science, and we just work with them and integrate into our platform and fuse it together to help folks make better decisions. And so it's a small company, but we have a big footprint right now.

Kelly:

So now that you're pretty established in your career, what courses or skills do you think would be most helpful to students or individuals wanting to pursue jobs in a type of field you're in?

Don:

Well, I think it's always helpful for meteorology majors and atmospheric scientists to have some computer science skills, some basic software skills. It's still very difficult — weather — the data's unique. And even in my company, it's difficult to just hire a software engineer that has never worked in weather data because it takes a long time to train them up to understand the data. So I think having those kinds of skills are always valuable to a business because in a small business or any business, the more positions you can help fill and field, the more valuable you are, right? The other thing is, is I think as we're moving into this era of big data, which weathers always been a big data, I always tell people that we were big data before people knew what big data was.

Don:

We had to build our own models and our own data simulation systems. But being in the field we're in, this is an era now where people really understand the value of data. And if you can become really professional at data science, understanding how to use tools that are around machine learning and AI, if you can understand risk management and how to leverage risk management principles, and weather data to help end users make better decisions and better decision-making, those are all things that, I think, would serve people well if they want to have a long career, and have the opportunity to do some really cool things.

Rex:

And you also went through some extra education as well after your bachelor of science in meteorology, is that correct? And when did those degrees — how do you become attracted to them?

Don:

Well, when I was in the Air Force, I got a degree in procurement and acquisition management. I thought that was important in understanding programs and programmatic, which obviously helped me when I was working as a Science and Technology Director at the Weather Service. And then more importantly, the Air Force sent me off to the National War College, which is a military senior school for military officers on international relations and national strategy. And one of the things that I really learned to appreciate is how influential weather and climate is on national security and not just in obvious terms like [that] sea level rise is not good for naval bases or things like that. But more importantly around how climate change and weather impact — and water and hydro — impact people who live on the edge of comfort, right, around the world.

Don:

There's a lot of people that don't have air conditioning, that don't have what we have here in the United States. And when the climate change is a little bit, or the weather becomes a little disruptive, it really disrupts their life. And that leaves it open for bad actors to come in and destabilize these governments because they claim that the government's not doing enough for you and we can do better. And when people are afraid, and they're insecure and not safe, they have a tendency to give up some of their liberties and freedom. So it's really interesting to watch as I was in the national military network, how you can watch the weather and watch the environment and these things, and you can actually start predicting where you would see insurgencies and things like that, that would start picking up in hotspots. So that's one of my main, I'm very focused on that also because it's one of my main concerns about climate change and how it's going to impact migration of people and how that's going to impact people defending their borders and causing the kind of strife that could lead to conflict.

Rex:

So can you walk us through a typical day on the job as a CEO? I know we usually get the response, "There is no such thing as a typical day." So that's okay if that's how you preface your answer as well.

Don:

Well, I'll tell you, I've been one of those few folks that have been fortunate enough to work in the government — in the military — work in the civilian [sector], work in the private sector for a federal contractor, and now a startup. And they're all different, right? So a CEO of a small company, the first thing they've always got to be focused about is, will they have the resources to get the job done, right? Every day you have to worry about having enough revenue to pay your people, and that's very different than my 28 years in government. I never worried about that. So always looking at, where are the opportunities for us to produce new capabilities and new products that are going to excite somebody out there? And somebody that's willing to pay for them, right? So I spend a lot of my day thinking about that.

Don:

We also do a lot of software development and we're building a lot of capabilities, I like to think they're cutting edge. So I spend quite a bit of my day reviewing progress on different software projects that we're doing, new datasets we're trying to integrate into our software to improve our forecasting and to improve our decision tools for end users. And of course there's always problems, no software development effort is problem-free. So I solve a lot of problems every day, trying to help folks think

through problems and solve them. And I'm also very focused on the aspects of being quality-focused. We want to be, TruWeather wants to be really true to the science. And sometimes that's hard when you're trying to make revenue. And you have to always remind yourself of what your roots are and why you're in this business.

Don:

And it's really important from a cultural perspective to hold the line on your values about true science and doing the best you can, but also going out and making sales, right? It's a really interesting dichotomy at times. And I'm very proud to say, I think we've done a really good job of really staying true, as true as we can to the science while also building some products that are really innovative, especially for the unmanned aerial systems industry. And we're starting to get a lot of folks that are recognizing that sometimes you do have to pay for a better weather product and a better service. So that's what keeps me going every day, right, is that feedback and taking care of my people, who we have some really good people, young people who are working very hard. So that's pretty much, in a nutshell, my day.

Kelly:

What do you like most about your job?

Don:

I love — so I'm a really curious guy by nature, and I love chasing ideas and trying to see if there's something there, and turning it into an effort that can actually result in a better outcome. And again, I'm a meteorologist, I'm an operational meteorologist. I have a lot of forecast experience, and I always look at these problems from the perspective of the client and how weathers impacting their capabilities and their needs. And then I'm always looking for the better science and then figuring out how you're going to fuse that together and turn it into something insightful, you can't throw data at these folks, you've got to give them intelligence, right, and insights so they can make good decisions. Make it simple for them. And I think that, to me, is what I really enjoy about doing this, and being creative, and solving problems, and trying to have better outcomes for the people who are trying to do better, right, with their businesses.

Rex:

And what are some of the largest challenges you face in your work?

Don:

The largest challenge is always there's never enough money, right? There's never enough resources to do the things that I would love to do. And you have to be patient. I'm not a patient person as most people in the industry know, they've known me for years. I like to get things done. But you have to be patient, you've got to pick and choose your battles. And that's the biggest challenge. It's not really — I always tell people that the only limitation in our business for us to really be great to help the end user is our creativity, is imagining what's possible knowing that most everything we want to do that's going to help an end user in an application is possible. And then having the resources to do it because we can do a lot of things if we have the resources. And I think that's the biggest challenge I have, and that's the frustration that I run into every day.

Kelly:

So how's the work-life balance for you as a CEO of TruWeather Solutions? Do you have a set schedule? Is there a lot of travel? How is it for you?

Don:

Well, I always like to tell people, it's a good thing weathers a hobby, right? So that way when I work 80 hours in a week, I really don't always feel like I'm working, right? So if you're going to do a business and you're serious about a business, and especially in weather, weather's a hard sell and we can get into a lot of that. And you would think, why is that? People experience weather every day. Well, there's a lot of free weather out there and people don't understand that to get to the next level of being able to leverage weather data and exploit it for what you need, right place, right time. It really requires better capabilities that you may have to pay for. So weather's a tough sell. So I work a lot of hours. I travel probably — well not recently, right? But before COVID, I probably was on the road two weeks a month.

Kelly:

Wow.

Don:

And I was up here in Syracuse, which is where our main office is at least a week every month or two. And then I spend whatever time I could back in Virginia, where my original home is, and I keep my home there because that's one of the pulse centers of weather, right? NOAA and the Weather Service and FAA. And I do work very closely with the FAA in trying to look at how to solve this weather problem for UAVs. I just started, I was able to convince a major international standards body, ASTM, to add weather as a standard to develop the UAVs, because we need something better than what we have right now. And so we're leading that effort, and I have 50 folks including the FAA now on that.

Don:

And I think the main point of that is as an entrepreneur, if you want to influence and lay the groundwork for what you're trying to accomplish in your business, you've got to be involved in influencing outside the business too, right? Whether it's working with the regulators at the FAA to try to move the ball down the court on improving weather standards for certain types of things, or whether it's traveling to industry shows and being involved with the operators and getting out to the test range. Because we spend a lot of time here in the New York State test range with the UAV operators looking at how we can improve weather integration into the decision-making. So it takes a lot of hours. But it's a passion, and like I said, it is a hobby. And I don't know if I could do this for 15 years, but there's a lot of reward that comes from it that makes it worthwhile. And then of course it's growing the young people, the next generation, that gets me excited.

Rex:

Speaking of the next generation, what do you see the future job market will be like for careers in your field? I know you span different sectors, so maybe you have a good view of which sector you would maybe advise students or early career professionals to head towards, or I know you're also working in the startup area, so do you see other startups in meteorology forming as well?

Don:

It's funny you mention this. So right now I'm working with the American Meteorological Society, leading the Committee on Environmental Information Services. And as you know, NOAA now has a big data project that they've now formally institutionalized with three cloud providers: Google, Amazon, and Microsoft. And what I see happening in our industry is that the fungibility of data and the ability to share data to make it easily available and to build applications, and providing the sandboxes for people to work on those applications where they can get the access to the data through things like the big data project. And also the fact that we're seeing so many commercial companies now that are starting to develop their own datasets, and collecting their own data, and writing their own modeling, and making that available, of course for a fee. But the point is, is that I think that this is as great a time as ever for small businesses in weather.

Don:

In the past, you had the big weather businesses. Really, it was the government, it was the military, and it was the big weather businesses, right? And in order to have a mass of capability or resources to compete in the weather business, you had to have a lot of computer scientists, you had to run your own equipment, you had to run everything. But now everything can be done as a service, right? That's the beauty of the cloud. And you can, it is possible with creativity and with access to the data, and just some software chops to start your own business. So I think there's so many applications out there that have not been addressed in weather, in different industries. There's so many of them.

Don:

And I think that what we're going to see now is, I think it's going to be the rise of weather information, it's going to become more critical to society and businesses as we're able to get more data, as we're able to fuse it and do machine learning, and improve things with it, improve our forecast. I think you're going to see the ability for small businesses to step in and develop applications and serve different segments of different businesses with different capabilities. So that's one thing, I think we're democratizing weather, is what I like to say. The other thing is that obviously impacts are the main push of the future, right? And trying to get ahead of understanding how you could reduce and mitigate impacts, whether it's to lives, property, or even the ROI — the return on investment — for a company.

Don:

And those who understand the operations of these different industries and understand the workflows, you're going to see more and more meteorologists getting deeply integrated into businesses and industries where they're going to be part of the team to help mitigate these risks and take advantage of the data. Because there is a lot there. So I think that's — and emergency management is another area, we have a lot of folks getting into emergency management. And again, and with climate change, and with resiliency that needs to come from that. And folks that have to be able to advise local cities and municipalities about how climate change can impact them. I think those are all the areas that I think are ripe for the future for meteorologists.

Kelly:

So looking back, is there anything you wish you had done differently in your career?

Don:

Nope. Mm-hmm (negative).

Kelly:

Good.

Don:

I look back and the military was really one of the best things that ever happened because they always challenge you to lead, they always challenged you to solve problems. I got to forecast, and I've got to build regional weather center, I built a 180-person regional weather center from the ground up. And then it really allowed me to be where I am today. And if I could give back everything I've learned, if I could somehow help others take it to the next level or two levels, that's kind of where I am right now in my life, and I'm enjoying it. I enjoy it, and I really have no regrets at all. I don't think I would want to do anything different.

Rex:

While we're in the mode of reflecting, can you share some of the most exciting moments that have happened from your career?

Don:

Oh, boy, there's so many of them. There's when you're a lieutenant and there's a hurricane that's coming up the coast and you've got — it was a major deployment of fighters, and they wanted to get them out, and they wanted to get them overseas. And back in the 1980s our forecasting for hurricanes were good but they weren't as good as they are today. And you just had to make a decision and tell the general, "Go for it. You're going to make it." Right? That's exciting, right, that's like — and of course being right, right? If you're wrong, you want to go hide. So there's so many of those stories, the thrill of victory and the agony of defeat in weather, right? It's just a very humbling experience too.

Don:

In terms of excitement in other areas, I got to run an Air Force base in Central Asia, believe it or not, in my career, because I did well enough. And I ran the main staging base in Afghanistan, had 1,500 folks. And that was really the best job I ever had in my career. It was exciting, right? I got to work with a foreign government and there was another Russian Air Force base in the same country, and that's the first time there's ever been an American and a Russian Air Force base in the same country. And they used to play little games with us. So that was exciting, right? You didn't expect that, right? You didn't expect me to talk about that.

Kelly:

No.

Rex:

No.

Don:

And then of course the other excitement was when I got the dual-pol out. Dual polarization on the WSR 88D is such a game changer for debris balls and hail, hail size, precip[itation] amounts. And there was a lot of challenges getting that out because we had to give up a little bit of reflectivity and a very light end of the spectrum, because we had to split the power. But I had a fight with folks to say, "Look, we don't want to ever give anything up, but we're getting so much more back in return." And we had to make that case very high up in NOAA, and we made it. And of course now everyone knows how powerful dual polarization is. But there's a lot of stories, but if you asked me off the top of my head, those are the things I think about.

Kelly:

So if you were hiring someone at your organization, what would you look for on a resume or a cover letter?

Don:

It's very interesting. I hire for talent and culture, values, attitude, and aptitude, right? Obviously, anybody who's been to school, most people have the standard things you need to be successful. But to me, I'd rather bring somebody in that I'm looking for them to show me that they are a good person, that they're selfless, that they have great communication skills, that they can think on their feet, they can solve problems. And if they have those and they're smart, of course, have good aptitude, and they're intellectual, then I can teach them and train them to do anything.

Don:

And so that's what I hire for first. And it's kind of interesting, so that's what I look for in a resume. I look for the whole person concept. And it's kind of interesting because if you ever watch football, they always say, "Do you draft for talent, or you draft for a position that you have?" And I always go back to, I draft talent first. And it pays off. And that's what I look for. So really looking for the whole person and not just — obviously all things being equal, if somebody is a whole person and they have the right values, and they have the best GPA, and the best coursework, they go first, right? But if there's any disparity between that I will always go for the talent and the aptitude.

Kelly:

So could you give us an example of something that would catch your eye on a resume? Would it be community service? Would it be a leadership position and something that's outside of the person's work? What are some of the things that you would look at and be like, "Oh, I'm going to put this one aside."

Don:

It would be somebody who I see has taken on a problem or challenge that may be above their pay grade, so to speak, right, and tried to solve it, and then did it in a way that they worked within a team. And it was apparent that they had to be able to work with other people to be successful at it. Because, to me, that's the key to success is teamwork and collaboration. And so if you could show me that on a resume that you led a project or did something that indicated to me you took on a hard problem, and you had to work within a team, whether it's leadership or just being a good follower or being a good partner in the team, right? Because at a young age you may not have that opportunity to be a leader.

But just to see that they were able to work that way. Ego, no ego, right, is the key, right? You want to find people who are not in it for themselves and their ego, but they're in it for the cause. So that's why I look for projects that indicate that.

Rex:

Don, we always ask our guests one last off-topic question, nothing to do with meteorology, at the end of each podcast. I've heard you're interested to tell us who you could meet — one famous person alive or dead, who would it be?

Don:

Yeah, that's a tough one. I think if I had to meet somebody, if I had to, I would love to, I'd like to go have a chat with George Washington when he was trying to keep the ragtag army together in Pennsylvania there. And to me, I just sometimes can't imagine how difficult of an environment that was, and the leadership that he had to exhibit in order to do what he did, and then to become a president who was really viewed as a God back then in our country. And then just tell everybody, "You know what? My time's up and I'm leaving, it's somebody else's turn." And it really takes a lot to do that. So I think that would be the person that I would love to spend some time with. And Benjamin Franklin after that, because he was just a jack of all trades, right? And of course he started the Pony Express, right, to get some weather data moving around, right? So I have to throw a little weather pitch in there. But you think about how smart these people were, how we had really brilliant people in a small country like that, right?

Kelly:

Well, thanks so much for joining us, Don, and sharing your work experiences with us.

Don:

Well, thank you for having me. I'm happy to be able to contribute. And I'm always available to young people if they ever need advice, or they want to talk with me about anything weather and anything around their careers, because we got to build that next group, right, to come behind us and do better things.

Kelly:

That's right. Well, that's our show for today. Please join us next time — rain or shine!