

# The Art of Engineering with Denise McIntosh

Episode 009: Lynn Aurelius, Business Development Manager at [Bollé Safety](#)

A fascinating conversation about the personal safety equipment used in industrial plants around the world. Lynn talks about how she made the unique leap from being a calligrapher to her current position at Bollé Safety. In March, her company made the decision to begin creating safety protection for health care and first responders. Lynn and Denise also discuss what it was like breaking into an industry that traditionally didn't have many women, as well as how to encourage more young women to get into the industry.

**Denise McIntosh** *Into the podcast. My guest today is [inaudible] from sunny, California. And while Lynn and I, neither one are engineers. We've probably spent the bulk of our career dealing with engineers. And since we'd like to expand the conversation so that we encourage young girls and women to look at all of the possibilities in the sciences and engineering and in the sales world and manufacturing welcome Lynn.*

**Lynn Aurelius** *Well, thank you very much. I'm happy to be here with you.*

**Denise McIntosh** *You and I met lots of years ago at an American glovebox society meeting. So the company that I'm with integrated containment systems and custom powder systems actually builds the glove boxes and, or the isolators as we refer to them on the pharmaceutical side. But since you were selling the gloves and dealing with the operators who actually worked in those glove boxes, can you just give us a description of what kinds of operations happen in those glove boxes say in the national lab? Okay.*

**Lynn Aurelius** *So in the national labs, they are in full containment, right? And everything is highly secure for many, many reasons. So they're working on applic or jobs that are dealing with highly sensitive materials. And so in that regard with the, the gloves that we we made at pier con and Honeywell also makes these gloves there are 32 inch long drugs, and these gloves are attached to what is called an isolator and or a glove box. And what happens once the gloves are attached and secure they're tested for, to make sure that there are, there is no leaking. So there's often a positive or negative pressure test done on the gloves when they are received by the, the nuclear labs before they placed them on the equipment. They're also tested prior to that at manufacturers and there's three or four different manufacturers.*

*Now there's young out of Germany, there's Honeywell that used to be north safety. And of course there's pure con and there's another company guardian out of Ohio. So when the gloves were placed onto the equipment and allows the workers to work with the radioactive materials or whatever, it might be in a safe environment the gloves are made typically on these very large forms. Again, the gloves are 32 inches long and they, when they're attached to the glove box, they have to be positioned in specific ways so that the thumbs are up and that they can reach into the glove boxes and reach to the right to the left up and down and prefer it without hurting themselves with repetitive motion. So that's kind of the adjust on the operation of the glove. And the gloves are manufactured in a pretty, a very special way.*

*There's not too many products like this in the, in the, in the world or in the glove industries. And the gloves are multiple dips in a large VAT. So the, the most popular material today is called CSM or Chlor close alternated, polyethylene monomer. And this is a it's an all white glove and the gloves are tested for pinholes. The beading on the shoulder of the glove has to be a specific dimension per the regulations from the glove box group. And with that, they are on, on the glove box. And that allows the the workers to work in the safe environment and hopefully a comfortable environment. So they don't do damage their hands, their fingers, carpal tunnel, things like that. So it's a, it's a very, very specialized industry to make the gloves it's typically in the olden time, they used to dip like eight gloves at a time.*

*And these are made on dipped onto into that. The metal is probably if the glove is 32 inches, the mold is probably 40 to 42 inches long, and they're, they're all dipped at the same time so that they get the same conformity and, and sickness of material from the fingertip to the cuff of the glove. That's the goal. And it goes from there. So to make a, to make the gloves of course they're going to dip multiple molds at the same time and or there have gone to robotics since I kind of left that industry. But the reality is, is that the it takes 48 hours to make the gloves because once they're dipped multiple times, then they have to be cured at specific temperatures to be able to harden the gloves, but keep them soft enough that they perform and don't tear, or have pinholes things like that.*

**Denise McIntosh** *It's all about keeping the operator safe,*

**Lynn Aurelius** *All about safety. Yes.*

**Denise McIntosh** *And I was fascinated to learn in that in that industry, how many of the operators were women work in those labs every day and do virtually eight hours of operations in those, in those glove boxes? Yeah. Fascinating.*

**Lynn Aurelius** *It's a hard job, and it's amazing to watch them. And it was amazing to actually work with all the people, including the academic specialist to get the gloves as good as we could get them, the, the hand forms and things like that. Cause there's ambidextrous and there's left right versions. So it it was very very interesting to work. Like I said, with the mix and just the teams that had to work with the gloves in the gloves and the gloves.*

**Denise McIntosh** *So let's roll back the years of you, Lynn, did you get started in all of this?*

**Lynn Aurelius** *Oh, goodness. So then, okay. My history goes back way back. So I, when I got out of college, I was a teacher, I was a PE teacher and a coach. And I got a little tired of that. It was a little monotonous for me and decided to get into the, to the business world, had no clue what I wanted to do or what I wanted to get into. And one thing led to another and it was pretty boom, boom, boom kind of sequential along the, my path. But it's an odd path to put it mildly. So after, after I got out of teaching, I'm like, okay, I can do calligraphy. So I started my own little calligraphy business and I started doing certificates and things like that. And then I was introduced to a company safety distributor in Indianapolis, and it was called safety corporation pretty basic.*

**Lynn Aurelius** *And I was in there trying to sell them something a shipping system, right. And from there, the they said, well, we're really not interested in the shipping system, but we like you, I'm like, that's nice. What does that mean from there? It went to they hired me and I was green to the whole safety industry. So really fast learning curve. And I was there for a few years and decided to go out on my own after that. And it's, it's been several different steps along the way to, to get to where I am today at bullae safety.*

**Denise McIntosh** *Well, and let's talk about bullae safety and how the pandemic has helped change what you've done there. Yeah.*

**Lynn Aurelius** *So at Beaumont safety it's been, it has been a really a good ride and we're very happy that we've been able to help the market. The, not just the hospitals, but everyday people everyday lives. So, so bully safety, we manufacture safety glasses and goggles. We didn't really do face shields before the pandemic, but when the pandemic hit and we found that there was an absolute need our company bullae is headquartered out of France. Everybody got together and said, okay, this is what we need to be doing. And started getting into the face shields immediately. When the pandemic started immediately, we were out, we goggles were flying off the shelf, just, we couldn't keep them in stock. And now mind you, we bullied carries at least in United*

*States, five to 10,000 pair or more of each skew, right. And we many, many skews of goggles and safety glasses. So the fact that we ran out of goggles on a very, very quick basis was pretty shocking. So we were that's when we started bringing in fields by the millions. And then from there, it was bringing in more, more product to back up what we were doing you know, on the, the general side of the marketplace in the safety industry. So we, you know, the, the end users, it wasn't just the hospitals. It was everyday industry that had to have the product to keep moving forward.*

**Denise McIntosh** *So I was curious about that. Who are your typical customers prior to COVID?*

**Lynn Aurelius** *Industrial customers are probably top of the line construction you know, just any manufacturing organization is wearing safety glasses or goggles. And yeah, so that's, that's the, the key industries markets right now, or have been,*

**Denise McIntosh** *So it quickly pivoted to healthcare and, and the frontline workers. Yes.*

**Lynn Aurelius** *Yeah, it did very, very, very quickly when this it's kind of interesting when this happened, I was up in when I learned of the pandemic before it was called a pandemic. I was up in the state of Washington area, Seattle and I was walking into the Grangers and the fastener holes. And I did three of them in one day. And I was like, what's going on? You know, you're selling out original your product. And they said, it's flying off the shelf. It's being sold to people who are shipping it to China. I'm like, what's happening. I don't really know. So I talked to my boss, I said, something big is really going on. I don't know what it is. And with, and again, this is before most people knew that there, I mean, nobody knew that there was a pandemic. But then we knew that I found out that they were, you know, things were going to China. So same as rapidly change from just a general safety call, you know, sales call to, Hey, let's figure this out, you know, and move forward. What can we do and where are we going with this? And let's get prepared.*

**Denise McIntosh** *So, Lynn, you bring up a good point. That's one of the things I have found so interesting about you is your, your willingness to jump in, to learn new things. You are a lifelong learner and, and understand what the current situation is and how can we respond to this?*

**Lynn Aurelius** *Yeah. And I'll, I'll tell you the whole bull light team responded just as quickly as anybody in the marketplace.*

**Denise McIntosh** *Wow. So are the face shields actually being made at Boley in France? Nope.*

**Lynn Aurelius** *We have our facilities in China and Taiwan and we have the majority of our face shields were coming out of Taiwan. We did probably bring in some from China, but the reality is, is that's a more difficult situation. So Taiwan is our main, main locations. We have there's several factories over there that make our glasses goggles and that can be sold as*

**Denise McIntosh** *Interesting. Yeah. So it's, it takes, it takes a whole village to get all that put together.*

**Lynn Aurelius** *Absolutely, absolutely. A very big village*

**Denise McIntosh** *Over the years of the different things you've sold. I'm fascinated by what I, what I think is your ability to leverage what, you know, in one aspect of safety to another, and also leverage those customers. So tell me about the, just the variety of customers over the years.*

**Lynn Aurelius** *Well, it's a pretty big variety, but you know, it's all of those that that require higher levels of safety. Like one of the fondest industries, hardest industries as well is fires, firefighters and the need. So when I first started out, I got, went on my own after I left the safety distributorship in Indianapolis. I got into self-contained breathing apparatus and gas rap. I had a partner and we did we covered central us, like Indiana, Indiana, Kentucky, Ohio, and a few other states, Michigan. And the company's name was inner spiritual, and we sold their breathing apparatus. It really wasn't known here in the United States that well, particularly in the central us. So we pioneered that, that breathing apparatus in here in the United States and, you know, things just kind of move forward from there, but it was exciting because it was it was an industry that every their life was right on every call.*

*Right. So everything has to be right. It has to be a good product. They can't, you know, have a glitch here, can't have, you know, a problem. And if there is a problem, then it's, then it's crazy. It's, it's it's very frightening. And, you know, it's one of those industries where you have got to have the best product and you've got to be able to make them assured that they're safe with your product. And it goes through tons of testing and things like that. So I worked for as an independent referee in your Spiro and then Karen's and brother, all the fire helmets they came to me and I went to work for them as a product manager for self-contained breathing apparatus.*

**Denise McIntosh**

*So I'm just guessing, but I think our career paths were, were pretty similar in that most of our customers and the people we were dealing with were not women. Correct. So where we're breaking into were we're I know I'm older than you are, but I don't think so. And we were both breaking into industries that just weren't paved by women in front of us. Right.*

**Lynn Aurelius**

*And we got to prove ourselves on many occasions.*

**Denise McIntosh** *Yes, yes. So now, any experiences you'd like to share there*

**Lynn Aurelius** *On the firefighting world? I really did have to prove myself. And when I was at Karen's and brother, I went through a whole fire school. And then I got to know different fire chiefs and different people in different areas of the country with within the firefighting. And I was, I would go there with our breathing apparatus and I would, you know, show people, you know, train people on the breathing apparatus and I would do all their, their I don't want to call it routines, but, you know, they, they teach people how to go through the buildings and how you, you know, with the reading apparatus on and stuff like that. So it was, it was one of those things where I just jumped right into that and did it with*

**Denise McIntosh** *Them well, and, and having a background as a teacher, to me,*

**Lynn Aurelius** *Everything's about education and being honest about your selling, right. You don't like it. Okay. I'm okay with that. But the reality is that in the safety side of things, it has to be at that next level.*

**Denise McIntosh** *My, my longest career before this fun was in agriculture and I was not an agronomist, even though I was selling plant food, my CA my degree is in economics, but because plant food is such a commodity, I did just like you do. I educated people on the supply and demand because it's a worldwide commodity. And I essentially became a customers' assistant buyer, which I'm sure drove my bosses crazy from time to time. But but I studied the market. So I knew when it was time to buy and when it was time to back off. And, and I also knew if we were running long on product, where I could go to say, you have the storage, I need some help. There you go. So it's building that trust and that relationship. And I think that's why you and I have clicked over the years is that we are of the same. Yeah.*

**Lynn Aurelius** *One of 'em you've triggered some memories here. And one of the scariest times it was with a firefighting group is there was a fire department, the bot if I see cylinders and I worked for EFC after I left the breathing apparatus manufacturer. And so the cylinders are either 60 minute or 30 minute or 45 minutes cylinders, and they're carbon wrapped or fiber wrapped, you know, for safety and things like that. Well, I got a call one time and I was like, what's a similar exploded within a truck that was in the fire department. You know, it was in the big trucks. So that was in the bay at the fire department. And I just, I recall just going, running into my bosses office, I said, I'm outta here on the first flight. Somebody get me a flight. I have to go up to, it was somewhere here in California and I'll think of it, but it was I said, I got to get there.*

*Somebody has to be on. So I get there, I get my butt chewed by the chief. Right. And he's like right in my face. And I'm like, okay, I'll take this. I, you know, I know it's not the cylinder, but what, what happened? So they showed me the cylinder and I had a goose egg bump on it. Right. And it exploded. Wow. But what had happened longterm? Two, three weeks later, I stayed up there with them for a week. Tried to resolve all the issues with all the cylinders around the county that were using these our cylinders. So that was the only cylinder at the time. That was the only cylinder that they had found. And so we took it, we had it tested. In fact, some chemical had gotten onto that cylinder and it had degraded the co the, the fiber, the, the fiberglass wrapping.*

*And over time, it it exploded. And I got a call almost a month later from the fire department. And they found another cylinder there. They started doing checks on the cylinders, right. And on a daily basis. And what happened was, is this young rookie pulled the cylinder out and he saw a little bump on it and he opened it up, rolled it out the door and rolled it out of the bay as fast as he could, because it was in the process of coming apart. But it had been affected by this chemical that had gotten onto the cylinders after that, the chief and I, we did at one of the, of the biggest fire department instructor conference in the country typically happens in FDRC Indianapolis. And we together did a meeting and we had a room full of firefighters that were like all, you know, wanting to hear what happened and his side, my side, and all that kind of stuff. It was crazy.*

**Denise McIntosh** *They were in their respect, obviously. Yeah, yeah. Yeah. So*

**Lynn Aurelius** *Lots of things, lots of things in my lifetime of working. Yes.*

**Denise McIntosh** *So do you, are you seeing things changing in regard to women in the business?*

**Lynn Aurelius** Yes, absolutely. There's a lot more firefighter fire fighting women in the out there today. I couldn't tell you what the difference in the numbers, but back in the day when I was selling into the fire service, I saw maybe 1, 2, 3 max. Okay. You know, there's a, I had met a fire chief. She was out of Atlanta. She was a very strong personality and, and really enjoyed hearing her, trying to get recruits women recruits, recruits into the business and stuff.

**Denise McIntosh** Yeah. What about in, in your company in particular, and then even your other customers? Well, here

**Lynn Aurelius** At Valais, we have it's kind of interesting. We, three of us have known each other for quite some time. And there's a younger, younger girl myself and, and a good long-term friend who we are, these three sales women, and there's one gentleman, who's a sales person. And then our boss is a as a male, but you know, the three of us, three women you know, we very strong personalities, very very active and very vocal,

**Denise McIntosh** Not shy, retiring violet. No, no. So w how can we, you and I, and the rest of us who have been for a while in these industries that where we've paved the way, how can we encourage more young women to join us and to look, I am particularly interested in how we can encourage women to join manufacturing sales roles all of that, because we need to close the wage gap, we need to close the wage gap. We need to close the gender gap. We need to close the diversity gap, because that lets my friend Jack sex is if you lift the bottom, you're automatically lift the top.

**Lynn Aurelius** Well, I think one of the things that I mean, you know, having been in these industries for a long time, it's that, you know, encouraging these people don't, you know, look at every aspect of it. And I S you know, maybe even 10 years ago, I didn't really think, oh, I need to try and go for 20 grand more in, in the, in the offer or something like that. But the reality is, is we need to share these experiences, like what we're talking about here, share these experiences. So they have the confidence to, oh, she did it. I can, I can do, then she can do it better. Right? Yeah. I'm thinking of one step at a time. And, and, you know, some, you know, I've seen a lot of, a lot of younger women do soup, you know, really, really well out there in the industry. And I don't mind sharing what I make. I don't mind sharing, you know, the different steps that I took to get to where I am. But know that you have to ask for it. You just don't expect it, you know, sometimes that happens, but you know, and that's wonderful, but that's not the norm.



**Denise McIntosh** *No, no, it's not. There's still a reason why women are making 85 cents and men are making a dollar. Right. Yeah. And, and if it's as simple as we didn't ask, that's a pretty easy one. Yeah.*

**Lynn Aurelius** *There's been a couple of cases in time. Somebody offered me a position I'm like, you know, okay. So we talk about it and they sent the other, so I'm like, okay, what's the, what's the number? And they shoot it up. Like, are you crazy*

**Denise McIntosh** *Not happening? Your ROI on me is going to be way higher than that.*

**Lynn Aurelius** *Oh yeah, exactly. So, yeah, I think just being able to like I work with the different women's sales reps and guys as well not so much on a daily basis because of COVID. But the reality is, is that when I do have the chance to talk with women in there and they want, you know, information of, how did I get here, I'll tell them. And I, you know, just say, you know, here's the dollars you should asking for them.*

**Denise McIntosh** *Yes. Yes. Well, and our idea is to share these podcasts as many places as we can. So feel free to share yours and, and help us find the outlets where we can make the most impact with, with sharing our information.*

**Lynn Aurelius** *Yeah, absolutely. And don't be afraid, just go out and try something, do something, ask the questions.*

**Denise McIntosh** *Well, so you and I both been members of the American glovebox society. How has membership in that impacted your career or your opportunities?*

**Lynn Aurelius** *Well, it just, you know, it's interesting because it's, she a whole new light on an industry that I really didn't know very well before I got into the, the glove box glove, you know, marketplace. And even when I first started at at pure con, it was originally called latex technology incorporated. And then in the United States and then went to we changed the pier con, which the parent companies out of France and you know, jumping in saying, you know, meeting some of the women that were forces within the glove box society. That was pretty, pretty interesting. And, and just the the things that they went through and the personalities and things, thinking to myself, oh, I can pick from that, that part of her personality is I need to try that because it certainly works. Right. And she has the respect of everybody, not just the men and the women and the higher ups, you know, the rankings that go up the, up the ladder. So, yeah, pretty interesting place. And there's still several there's many women in the in the nuclear labs that are very interesting to talk to.*

**Denise McIntosh** Yes, yes. Now that we've been to a few more of them it's and it seems like every time we go somewhere, we, there are more women and more elevated positions. So that's, so that's another whole arena of, of opportunities for women because it runs the whole gamut of opportunities from accounting to health and safety, to all, all of that. Yeah.

**Lynn Aurelius** Yeah. It's fun to see. It's fun to see it.

**Denise McIntosh**

Yes. Yes. Well, Lynn, this has been delightful, as I knew it would be. Thank you very much. It was fun.

**Lynn Aurelius**

I enjoyed it. Thank you very much.

**Speaker 1:**

The art of engineering engineers, talking about their process principles and personal stories on the next episode, my grain

**Speaker 4:**

As an early professional might go into well, that's because I'm a woman and I would be challenged by some of these conversations. Some of my mentors would say, no, wait a minute. Are you sure about that? No, again, that can be hard to take, but at the same time, I think it's very honest feedback. In some cases you were spot on

**Speaker 1:**

That's next time on the art of engineering presented by custom powder systems, the containment company, [custom-powder.com](http://custom-powder.com).