

Training & Tech - Dana Vilander

JON: My name is Jon Becker. For the past 4 decades, I've dedicated my life to protecting tactical operators. During this time, I've worked with many of the world's top law enforcement and military units. As a result, I've had the privilege of working with the amazing leaders who take teams in the world's most dangerous situations.

The goal of this Podcast is to share their stories in hopes of making us all better leaders, better thinkers, and better people. Welcome to The Debrief.

JON: My guest today is Dana Vilander. Dana spent 32 years with the Los Angeles County Sheriff's Department, working 26 of those years in the Elite Special Enforcement Bureau for SEB. First as a canine for 4 years, then as a SWAT operator for 4 years, and finally as a tactical medic with Emergency Services Division for 18 years. Because of his unique experiences and very broad skill set, Dana has trained with and provided training to some of the most elite military and law enforcement units in the world. Working in tactical combat casualty care as well as rural operations, vertical access, and rope and high angle rescue work. Dana, thanks so much for joining me on The Debrief.

DANA: Thanks for having me, Jon.

JON: First, let's kind of walk through your career path because it's kind of a unique one. You've worked kind of both sides of the tactical world. So, why don't we go back to the beginning.

DANA: Oh, to the very beginning?

JON: Yeah.

DANA: Ok well, that's a good one. In college, I actually met a PJ who just gotten. This is in the late '70s and we discussed it, and it really fascinated me what PJs were doing at that time. I don't know if he was in Vietnam or not, but he inspired me to delve into it. And when I went to the recruiter's office, it wasn't the pathway that they have today where they have a pipeline to prepare you for the testing and stuff like that.

So, that part of it didn't appeal to me but it was always in the back of my mind. So, in 1982, I enlisted in the Air Force Reserve as a security policeman. And what's interesting is that in that unit was an LA Sheriff's deputy there were a number of deputies and police officers that were in the unit. And that deputy at the time just happened to be Jack Ewell.

JON: Oh, man.

DANA: So, that's where we met was in the Air Force Reserve back about 1982-83.

JON: It's like saying, "Yeah, I met this guy named Babe Ruth and he's like, 'hey, you want to hit baseballs?'"

DANA: Yeah so, he encouraged me to apply to the sheriff's department. Set me up on a ride-along on Firestone Park with Vic Rodriguez and his partner, I believe it was John Holguin, who died a few months after that in a shooting. But I was really happy, I wanted to do that. So, I chose the sheriff's department, I applied to LAPD Long Beach PD Sheriff's Department, all at the same time. The sheriff's picked me up first and I'm glad they did. I had a blessed career.

While working patrol, I had some interaction with the Special Enforcement Bureau but not a lot. But I knew that was where I wanted to go. Because when I initially came on the department, they had a unit called the Emergency Services Detail which was essentially a civilian equivalent of the PJs. So, I was in the reserves until 1990. May of 1990, I tested for SEB itself, SCD for the SWAT side. And I was encouraged to try out for Canine as well. So, I tried out for Canine. During that time, Saddam Hussein invaded Kuwait in August of 1990. And if I had still been in the Reserves, I probably wouldn't have gotten to the Special Enforcement Bureau. So, it's kind of was fortuitous that I got out in May because the unit did go to Kuwait. Canine picked me up in January '91 and went through SWAT school after Canine.

I had countless operations like you do as a canine handler. And some years- It was about 4 years I went over to the SED on the SWAT side. Jon Aujay who passed in 1998, he and I did a body swap. He wanted to come over Canine, I wanted to go to SWAT. That was one of my goals, was to go to SWAT and work my way up through the teams. I was actively involved in the Sniper Program entry team member. And in 1998, I tested again for the Emergency Services Detail or ESD and was chosen to go there. So, in 1998, I went through paramedic school which is the first thing you have to do. And from there, Mountain Rescue Training and then dive training.

And I spent the next 18 years there as a hoist operator crew chief on Air Rescue 5, search and rescue medic, recovery diver, SWAT medic.

JON: So, Tom- So, maybe for those that don't know LA Sheriff's CSD, kind of give us a, you know, a thumbnail sketch of the unit.

DANA: So, when I got there, it was an 18-man unit. You had 3 sergeant, 15 deputies, deputy paramedics. So, everybody had to go to paramedic school. And you had all this training and experience. And at the time, we would have 5 guys on a shift, basically. So, you have 2 in Air 5 working as helicopter rescue medics. And then the other guys were on the ground driving Angeles Crest, Azusa Canyon, Tujunga Canyon. You know, you're up in the mountains. And if a SWAT activation happened, then you just drive out of the mountains to wherever the SWAT activation was. And so, you worked intimately with the volunteer search and rescue teams for LA County. And you pretty much were busy all the time. They had a unique schedule. It was a 72-hour on schedule. Three days on, 6 days off. And I can remember the longest shift I had was 70 hours of being awake for 70 hours, just going from call to call to call, which was great.

JON: So, I think one of the things that's unique about ESD is it's got this multi-mission profile. Right? Like, how do those missions silo out? Give me like the kind of- You know, they've got a rescue, obviously search and rescue mission. What else does ESD do?

DANA: Well, the tactical medics have every SWAT operation. And SWAT operations basically, we're the king. So, if you're actively involved in a search and rescue mission, say on the ground, they would just have to call guys in to cover the SWAT mission. But if you're just out patrolling, like I said, out on Angeles Crest or something like that and the SWAT mission came in, you'd have to respond to the SWAT call. And that was pretty much the primary function because when I first got there. If you think about warrant services and some of the barricades where the entry team wants to pull the front door, the front hardened door off of the house, it was the ESD that would do that. We had the only truck that had a huge boat cleat on the front of the truck. And somebody would go up with the big fishhook like this with the cables attached, and he'd hook them to the front door. And then we would tie them off real fast and then drive back, and then pull the door off the house. And that was one of our missions on for barricades but more particularly on the warrants, there was early morning warrants. Seriously, that was a real common thing they were used for. And then there were obviously used as medics.

JON: But there's also a dive component to ESD. Right?

DANA: Right. So, the history of ESD, let me do that real quick. The Special Enforcement Bureau or the Special Enforcement Details started in 1958. It was basically a saturation patrol team guys, you had to be over 6 feet to be in the unit at the time. So, real policemen

JON: That's a good squad.

DANA: Yeah, yeah pretty much. So, in 1966, Sheriff Bucher created the Emergency Services Detail. And the job was to have active-duty deputies up in the mountains on search and rescue missions. And the unit with Frank Waldron was a sergeant and that basically the founder of the unit. They picked up the recovery diving. So, anybody that goes missing, any object evidence, anything like planes in the ocean, if they need to be recovered, it was the ESD's job to dive on those things. So, typically it was in lakes, pitch black water, no visibility whatsoever, for evidence and dead body-

JON: Feeling your way around to look for a body.

DANA: Yeah, exactly. So, but we would also be out at Catalina, around Catalina Island and then also around San Clemente Island. So, San Clemente Island is actually a piece of LA County. And the waters around it, you know, you have a lot of active scuba divers, fishermen, things like that. So, if a scuba diver went missing or died off of San Clemente Island, ESD would do the scuba dive death investigation of that, which they still do today. They do all the dive accidents or dive death investigations out of the special ESD.

JON: So, I mean, that's a pretty- Especially for a law enforcement unit. That's a pretty broad skillset. You've got a dive component; you've got ropes and high angle rescue combined with tactical combat casualty care. All in one unit.

DANA: Right. So, it does take a lot but luckily- I mean, retraining, constant training- But luckily with the, let's say Rescue 5. You're using all of those skills on all on an almost daily basis. When you load the helicopter, you have your dive gear, you have your medic gear, you have your rope rescue gear, and you have your SWAT gear; that all goes in the helicopter and goes with you wherever you go. The only thing you don't have is tanks, because tanks are rather heavy, you know and so. But those are staged around the county. So, if a dive came up at the operation, you'd change into your wetsuit while flying to the scene to pick up your tanks or flying to the dive scene. And just make it happen like that.

JON: So, a big component of ESD is kind of the tactical medic thing. Early in your career, talk to me about what that was like. Like, what was the- At some point TCCC becomes a thing. Prior to that, what was the strategy.

DANA: That's a good question because there's a real good history of SEB in a book, I don't know if you've seen it, by John Coleman. But the history of

that is there and- Basically in the ESD, we're more like first aiders than anything else. They started going to paramedic school in the early '70s when LA County initiated the first paramedic institute. So, they were getting the paramedic training but still they were doing more like basic first aid. They could do IVs and things like that. And so, when they integrated with SED in, I want to say it was 1970 to '71. They were still kind of in a first aid mode. Roll into the '80s, there's a lot of doctors around the country who were interested in the tactical world. And Rich Carmona was one.

JON: Rich Carmona, eventually a Surgeon General Rich Carmona.

DANA: Yes, that Rich Carmona out of Pima County, Arizona. He has an interesting career, but- So, the development of, and the called it TEMS, Tactical Emergency Medical Skills. At the time were still more like first aid. You know, you could still do your paramedic skills, but the tactical component really hadn't gotten hold yet. So, fast forward to 1996- I'm sorry. So, 1989, NTOA and Rich Carmona, and SEB, they hosted the first actual NTOA TEMS course in the country. And then next year was held in Pima County in 1990. So, those are kind of the beginnings right there. Through the early '90s into about the time I came into the unit, they started a tactical EMT program. But it was still kind of a medic first aid kind of a course.

JON: Yeah, it's EMT-

DANA: We're not there to the TCCC yet. TCCC is a concept started in 1996.

JON: With Blackhawk Down.

DANA: Well, 1993 was Blackhawk Down, Battle of the Red Sea. And 18 dead and 73 wounded. And Frank Butler, John Hagman, and then there was another doctor out of the military with the last name of Butler. They wrote this paper, and what they did was they did retrospective studies back to World War II, Korea, what are the patterns of injury, what are the patterns of preventable death. And when they looked at what happened in Mogadishu, they're saying that there was a correlation there.

So, that you could die from getting shot in an extremity within 2 to 3 minutes if nothing is done for it. And my first EMT class back in 1978 at college, tourniquets were forbidden. You never put- If you put a tourniquet on that limb, you're going to lose that limb.

JON: Yeah, I remembered that.

DANA: So, you just didn't put a tourniquet on. And what these doctors advocated was tourniquets, pressure dressings, wound packing, things that were not in the normal world like you see today will stop the bleeding. So, it was revolutionary in 1996. There's only one military unit that actually adopted it back then. And that was when Stanley McChrystal the colonel, the regiment commander of the 75th Ranger Regiment. Instituted it, they have a great program to this day and- But it was still slow to pick up in the rest of the military. In the civilian world, there was still no knowledge of this, other than the fact unless you saw the paper itself, the tactical-

JON: Yeah, I mean, nobody carried tourniquets, no- Ambulances didn't have tourniquets. Like, it was not a thing. And when you say preventable death, if my understanding is correct, what you mean is, if we had had basic life-saving capability, that person survives. For instance, they bleed out from an injury that you could stop the bleeding.

DANA: Right. So, if you want to and look back at some of the old first aid training manuals from EMT classes from colleges, whatever it is. When they're talking about what's the common acronym for first aid. ABCs, right? Airway, breathing, circulation. Well, in those manuals if you actually go back and look at it, it will say in there, "And if by the way the person is bleeding severely, stop the bleeding first before you address anything else." But that was completely glossed over.

JON: Well, it was like, "Oh, put a little pressure on in."

DANA: Right, yeah. Oh yeah. Elevation.

JON: Yeah, yes. Elevate and put pressure. He's missing a foot. Uh, lots of pressure? Yeah.

DANA: So, that was what they did was they brought this to light. You know that this was good. Let's go up a few years, 2001 Operation Enduring Freedom Afghanistan. Even the military special units didn't really follow TCCC at the point early on. Getting into Iraq 2003, 2004, it still wasn't taught pretty much to most of the medical community within the military. Special Operations started to get that training. And they started to get like live tissue training to do it.

But what was the problem with all of the training that the military was getting these doctors identified that was the training. If you took Advanced Trauma Life Support, say as a course, as a doctor, as a medic, whatever you went to, it's based on being in a hospital. And you have every resource in the world or in your hospital. But when you're on a target house on a SWAT

operation or military operation, you could be hundreds of miles away from something or even in LA County. If you're in a high desert, you could be 60 miles from a trauma center, and what do you have as your medical supplies? Usually, it's going to be in a backpack. Or even smaller if you're a team without a, say a dedicated medic. And you may have an individual first aid kit.

JON: Yeah, but even. I mean, IFAKs even was not a thing.

DANA: Not a thing.

JON: Right. Like, people might have a boo-boo kit, but they weren't carrying Band-Aids.

DANA: Some gauze, Cobans, maybe Ace wraps, something like that.

JON: Yeah, but they weren't carrying IFAKs, or tourniquets, or compression bandages, or any of that stuff that now we regard as kind of de rigueur.

DANA: Right. When I got to ESD in 1998, I was given a Harper pack which is a butt pack. And you filled it up, basically with the gauze, the wraps, things like that. Not even chest seals at the time. You'd have Vaseline gauze to create a 3-sided occlusive dressing if you had a chest injury or an abdominal evisceration or something like that. So, that came later, 1998. When I got there, barometric school, like I said, dive school, mountain rescue school. I got on the helicopter, started flying. And then it was about that time we started to see a transition in guys from the unit. The older guys that were retiring and more guys were coming in. With Iraq and Afghanistan, you started to see how the tourniquet started to take hold. They had to because all the blast injuries that were happening in Iraq. I mean, it was pretty much a lot of catastrophic injuries. And the early tourniquets that they had was the CAT Tourniquet by North American Rescue. About 2004, TacMed Solutions, Ross Johnsons was a special forces medic, developed the SOF T. And that was basically the 2 basic tourniquets- Two go-to tourniquets on the market at the time. And there were others out there. You had the NATO tourniquet, you had different people doing different things. But those are the 2 basic tourniquets. I was fortunate enough in 2000 to be flying Air 5 when 2 PJs from a special tactic squadron on the east coast came out to fly on R5 with us.

And I maintained contact with one of them, Mike. And through the years, he guided me towards military courses. And one of them that he guided to me is John Hagmann, one of the writers of the TCCC paper. His company Deployment Medicine International, they were doing live tissue training for

the military. And I was lucky enough to get into one of those courses. And that's when I saw the tourniquets that were out there. And when you're working on something that's bloody, you have dirt and everything else going on, it makes a big difference when you're trying to turn as opposed to you and I sitting here and applying a tourniquet to your arm or to your leg. With live tissue training, there's real blood, there's real dirt. There's a lot of things going on. So, you can see how all these tools work in that environment.

JON: So, when is- Ok so, tourniquets start to come in. TCCC begins to really take hold of the military.

DANA: In the military, yes.

JON: And at what point is the MARCH acronym developed? Is that part of the initial launch of TCCC?

DANA: MARCH was- Yes, M A R. Originally it was M A R and then C H came later. But it was massive hemorrhage airways and then respirations or breathing. So, it wasn't ABC reversed because the C in MARCH is still circulation. But you're dealing with shock and you're dealing with any additional injuries that you may come across. But massive hemorrhage was the big one. Like you said, if your foot's missing and you've got blood squirting out, you need to stop it. And direct pressure and even putting a constricting band isn't going to work. You need a tourniquet that you have to stop the bleeding.

JON: When did we figure out that- Because I remember as a kid, my brother was hit on his motorcycle when he was really young. He had a compound fracture of his femur, would have bled out, severed femoral artery. And a med student from USC came by and improvised a tourniquet and shut the bleeding off. And I remember the discussion about they're going to cut his leg off, and it's going to cost him his leg, and you know. When did we figure out that that was just not true?

DANA: It was the data coming out of the war. Correct? Operation Iraqi Freedom, also the Israelis had experience with the tourniquets. And they found that you could have safely have a tourniquet on for 2 to 4 hours was the timeframe.

The Israelis actually had an experience with a guy having a tourniquet on for 11 hours with no loss of- With no nerve damage, no loss of sensation, anything like that. So, it was that experience that the military being the driver of this program in the beginning that, that's where they said, "Yeah,

these are safe." And it's about 2005, 2006 ESD, we continue to funnel guys into these live tissue courses. So, those concepts came with us, and we started teaching actually a TCCC program in about 2006, I want to say. Right before the NTOA conference in LA, we were already going down that path. And we started to do some, jut some kind of familiarization classes out of patrol stations about the MARCH algorithm and doing things. And you would hear patrol guys would come up and say, "Why aren't they teaching this to us in the academy." So, that was back then, which they do now. Probably nationwide they're doing that.

JON: I think so. I think most places now we've kind of developed that people are carrying IFAKs. Yeah, if there is a silver lining to the Afghan and Iraq wars, it is the massive expansion of TCCC knowledge. And understanding of hemorrhage control and the devices that work, the devices that don't work. You know, they were obviously born of tragedy but there are a lot of police officers that are alive today because TCCC was pushed down.

DANA: Absolutely, absolutely. Police officers, citizens, and then even suspects. So, the fact that it's out in the police community, it's great for everybody. There's that video of an Oklahoma officer that was shot just recently, making contact with a guy at this close. When the suspect pulls out a gun starts shooting at him, he gets hit in the leg. He follows the TCCC principals. He runs for cover, there's a vehicle there. While he's still engaging the guy as a suspect-

JON: Oh yeah, I remember this one.

DANA: You see that one?

JON: Yeah, yeah.

DANA: It's a great one. And then he come back out to see where the suspect is, the guy's running away. So, he pulls his tourniquet out and applies it to his leg, continuing to communicate on the radio. Did a fantastic job.

JON: Yeah, he released it.

DANA: And that's what you see.

You look at LAPD saving their own, also putting them on citizens downtown where they're having some of the riots and things like that there. A police officer, yeah, it's for him. But in that moment, you see a lot of police officers will apply it to the citizens or the suspects.

JON: Yeah, I mean, you even see- You see suspects that are surviving that have been engaging police and getting shot. And the team is rescuing the guy with their own medical gear. You know, it strikes me that it's kind of good all the way around. What from your experience, how do we maintain this? Like, we've had this big spike. And in the 35 years I've done this, you'll see things come into favor, and then you see them go out of favor. And you know, it's like, we built a capability. And then it gradually, attrition takes it down and go, "Oh my God, we have to do this." And we start over again. If you're an agency, how do you maintain this capability of TCCC, you think?

DANA: That's a good question. It takes somebody at the agency. Somebody, whether it's an appointed person or somebody takes it on themselves, which you see that in a lot of agencies. A guy just takes on a project and he own that project. But they need to have some sort of manager say that the training continues, and more importantly the budget for the equipment. Well, budget for the equipment and the training because training is money as well.

JON: Yeah, sure.

DANA: But definitely on the equipment side. I think as far as state of the art when it comes to the devices and all the techniques and things like that, I think we're probably there for a while. But it's just maintaining that budget so that supplies are replenished. You evaluate your training program. And then what are you giving the guys in their IFAK, and in their first aid kits?

JON: So, let's dissect that a little deeper. So, first starting with the training. What in your opinion- How many different levels are there of training here? Like obviously, we want first aid training, TCCC training for patrol officers, SWAT teams probably a little higher level, SWAT medics. How do you dissect that in an agency? Take a middle-sized agency, 500 officers. What- How many different levels of expertise would you try to implement?

DANA: Oh, I would keep it maybe just 2 levels. So, like for the SWAT team, because SWAT teams train more regularly than I think patrol officers do.

So, a one-to-two-day program every year for patrol is fine. Well, I wouldn't say fine because I would obviously want it better. But I think and on the SWAT side, every quarter they should have a day, at least. You know, you look at the initial training usually, you're talking about. You go through the

TCCC program. Then you're showing them the tourniquets, then everybody goes to the tourniquets. I think the next phase is that putting them into the training operational mode where they're coming upon casualties and having to deal with them. And SWAT teams are pretty good at doing that too.

JON: Yeah, it's interesting. One of the things that we're seeing emerging with a lot of the teams we're working with is kind of a, for lack of a better term, like a 3-tiered approach where you've got IFAK for the individuals. You have a team medic, who is carrying a backpack and has other levels of equipment. And then kind of a third tier of equipment which is really, mass casualty care. Right? It's throw-bags, it's you know- What are your thoughts on that?

DANA: I agree with it. We had bigger backpacks in our armored vehicles for calls. We would have rope access equipment in our Bearcats. And then we would also have the bigger ones for the mass casualty. And it makes sense to have the mass casualty stuff. Because you are going to be- You look at San Bernardino. And as the team makes entry and you have 30 casualties on the floor, you know. What do you do? And you know, the companies in ours done a very good job of it, TacMed has done a good job, I'm sure Safeguard Medical. They all have these mass casualty bags where you can just drop a kit as you go. Roll a person in the recovery position so, they don't die an airway death. But then people coming in will see an IFAK next to them or something like that. Or throw kit that's down on the ground next to the casualty absolutely.

JON: Yeah, I think one of the things that came out of San Bernardino is there are a lot of people that are alive today that would've died had there not been a tactical medic or medics. Who had the ability to quickly look at somebody and just put them in a recovery position. Right? They're unconscious, they're having a hard time breathing, just roll them into recovery.

DANA: And that's the thing that should go out even to patrol. Because who's going to be first on scene a lot of times?

JON: Almost always you.

DANA: I mean, luckily at San Bernardino, the teams were training just down the road. So, they were on scene like that.

But on a normal MCI, normal active shooter with multiple people down, it's going to be patrol. Just like the active-duty procedures have changed from Columbine where we're going to wait outside and wait for the SWAT team.

To now, if you're a lone officer, you're supposed to go in there and address this guy and eliminate the threat if you can. So, that's a quantum leap from where we were 25 years ago with Columbine.

JON: So, Dana, why don't we start with individual gear. Talk to me about an IFAK. What should be in an IFAK?

DANA: So, an IFAK is actually designed for you. It's not for you to take off and use what you have in your kit on somebody else. So, it's designed and- The commercial kits that are out there so, you'll have typically a tourniquet, you'll have 1 or 2 chest seals, preferably 2 chest seals which we can talk about. And then you have a gauze, whether hemostatic gauze or just regular gauze. And then you're going to have some sort of a compression wrap. You could have scissors, you could have gloves, you could have a casualty card in it to make notes if you wanted to. But that's typically what you see in an IFAK.

JON: So, why don't we walk through the components starting with a tourniquet. Two major tourniquets are still kind of CAT and SOF-T. Right?

DANA: Right, yeah. There are some really good ones from other ones, like I said, Safeguard Medical. Some of the companies have all come out with good tourniquets that are all committee on TCCC-approved.

JON: Ok so, is that kind of the industry standard, like look for something that's committee on TCCC-approved? And that's the Good Housekeeping seal as it were? Ok, then what about gauze?

DANA: Well, back up to tourniquets just for a second. So, for a SWAT guy, he should have a tourniquet where somewhere on his plate carrier vest whatever it is, where he can get to it with either hand. Because if he's shot in his left arm or right arm, he has to be able to reach it with either hand. And then in the IFAK, you should probably have a second tourniquet, because you could get shot more than once. You might have to treat yourself that way.

JON: Yeah, we just actually embedded into one of our play carriers. Now a tourniquet into the bottom of the vests where it's just at your stomach. It's there all the time. And that's the, I used this for you and-

What do you think about the idea of locating IFAKs, and tourniquets, and those kinds of things on, especially with SWAT cops, putting it someplace that everybody knows where it is on a guy.

DANA: There's philosophical differences on that. It's something that I think it's a good idea. If everybody has the IFAK in one place, everybody knows where to go to for that. If I come on Jon, and Jon has his IFAK on his right shoulder, and I go to look for you down where everybody else has it, you're just delaying care. Our job is to keep every drop of blood on them. So, you're just having that second's delay if you have to find the guy's IFAK, or whether it's in his cargo pocket, or whatever it is so. I like the idea of having him located the same.

JON: So, and- Does it make sense for a team to use the same IFAK, and the same gear. Because you'll see teams where everybody has the same gear, and you'll see other teams where everybody has individual gear. What are your thoughts on that?

DANA: Well, that's the individual gear because their having to buy it themselves. And that's an issue, right? So, if you're going to do something like that, everybody on the team should know what's in each person's IFAK. And then you have to pull it out and show them how to use it. If you have a different IFAK or different tourniquet than everybody else, you better show everybody how to do it. Because you might be unconscious, and they have to apply your tourniquet on you.

JON: And you said a second ago, we need to keep every drop of blood in their body. Talk to me about the significance of that.

DANA: Right. So, if you go back to MAR from the original TCCC paper, tourniquets stop the bleeding. The second part of massive hemorrhage that they identified, and they were throwing it out to industry. That if you think about the one ranger that died in the movie, Ranger Smith. The PJ or the SF medic, he's trying to clamp his artery because it was way up high in his pelvic region, right? He couldn't do it; couldn't clamp it and he end up bleeding out as a result of that. So, what they put out there in the TCCC paper was, we need a hemostatic agent embedded in the gauze so, that it can be packed into a wound. So, blood stopping agent commercially made by a number of companies now. But it's embedded in the gauze, and you're going to pack the wound just like you would with normal gauze.

JON: So, that's like Celox and their variety of-

DANA: HemCon, combat gauze.

JON: Yeah, variety of things. But you're not only packing gauze, but you're also packing in a clotting agent, basically.

DANA: Essentially, yes. Depending on what the chemistry is and how it's going to affect the clots, how it's going to create clots.

JON: What is it? Give me some- Give me more there.

DANA: On that? So, the one that is from- I'm sorry, is Z-Medica the combat gauze. So, originally there was HemCon, or something like HemCon which is a derivative from seafood or sea life casings.

JON: Yeah, like shellfish.

DANA: Yeah, which doesn't have any- It creates a clot at the site. So, with combat gauze what it is, it works on the clotting factor within your body. So, it's a, I forget the name off the top of my head right now, for the agent that they're using. Kaolin, they're kind of a kaolin-based agent that they use, and it works on actual clotting factors to build a clot at the site.

JON: To force the body into building the clot.

DANA: As opposed to creating a plug.

JON: Got it. And so, I heard conflicting arguments on using hemostatic gauze that you know, doctors don't like it, it complicates clean up, and all that. And then I've heard the exact opposite. That no, it doesn't matter. It stops bleeding immediately. That's the right answer.

DANA: Well, that's a really good thing to bring up. Because when you're teaching Stop the Bleed to civilians now and that's where we're at in society today. This all came from TCCC. But when you're talking to civilians, you say, "Put anything in that wound that you can possibly put into it." A t-shirt, a sock, underwear, anything. Dirt, grass, stuff it in that wound if you have to. If that's all you have available to try to stop the bleeding. So, to say that there's an argument from doctors that a hemostatic agent embedded in gauze is a problem. Nah.

JON: So, when you're doing that, right? When you're shoving gauze, you're shoving your sock, you're shoving whatever. What are you really trying to do?

DANA: You're trying to get in here so, that you're pinching the artery down. Packing it as tight as you possibly can to keep it that way. And then you're going to wrap it with a compression wrap to keep it right there.

JON: Is the goal at that point to cause the blood to clot. Or is the goal to pinch the artery down.

DANA: Both.

JON: Got it. Ok.

DANA: Because you might not be 100 percent successful in pinching that artery. But you're going to pack it, that wound, as tight as you can.

JON: Because again we're just trying to retain every bit of blood we possibly can-

DANA: In the body. Yeah.

JON: So, going forward with an IFAK tourniquet, some form of gauze-

DANA: Right. Compression wrap.

JON: Compression wrap, which is- How are we going to use a compression wrap?

DANA: So, typically like an Ace wrap or Coban, or something like that. You're going to bring it around tight, as tight as you possible can.

JON: Again, creating compression on the wound side. Got it. So, that's an individual first aid kit.

DANA: Right. I'm sorry, we skipped over the chest seals. So, when I started to create an occlusive dressing, you had petroleum gauze. And you would use tape to create that 3-sided occlusive dressing over a whole in the chest. What industry did was they created chest seals using a gel substance, hydrogel, kind of a substance that said it would stick. If you think about normal first aid tape that you have in the house. Or the white first aid tape that you have. If you're sweaty or if you're a hairy man-

JON: It doesn't work.

DANA: It's not going to work. Well, the creation of through industry of these chest seals, it will stick. And then they all have now- So, you had a 3-sided occlusive dressing so, that air could escape if it needed to. Now they all have vents in these chest seals so, that all you do is to put the chest seal over the wound. And then it should vent on its own.

JON: And the intent is to maintain the vacuum integrity of the chest.

DANA: Right. We don't want air coming in. We don't want any more air even exiting an injured lung into the chest cavity that can't escape, but we don't want any air coming in from the outside also.

JON: Got it. So, that's individual first aid kit. Let's move up to a team. What do you think the best methodology for a team to carry their gear?

Everybody's got an IFAK, I'm assuming to start. And then is each of the tactical medics going to carry a secondary backpack?

DANA: Right. So, when we were doing SWAT operations, war in service, or barricade suspect, or whatever, I had a small pack, but I had 4 additional tourniquets. I had more hemostatics, more gauze, more chest seals. And then some of the diagnostic stuff that you would need like a pulse oximeter, things like that.

JON: So, then when we're talking about a mass casualty event and these mass casualty bags, it's basically a series of throw bags. Right? It's a series of little individually. What do you see as in those individual throw bags?

DANA: Tourniquet, chest seal, if they can afford it. You don't see chest seals often in those casualty kits. But I would say, a chest seal. Hemostatic, if you can afford it. Remember, hemostatic start about the 50-dollar range. So, if you're a small agency, you put 20 kits together, that's a thousand dollars what's in your budget.

JON: Just on hemostatic.

DANA: Just on hemostatic.

JON: As opposed to Z-gauze or rolled gauze which is a dollar.

DANA: Rolled gauze is a dollar and a half. Yeah. So, you'll see rolled gauze, usually a space blanket to try to keep them warm, which is part of the H in MARCH. Chest seal, it'd be good. If not a chest seal, they'll have the petroleum gauze in it also. Compression wrap.

JON: Ok. And so, the methodology being if you have a mass casualty now, you can hand out these throw bags. Which then allows one medic to direct bystanders, helpers, people working on themselves. So, the idea being to scale the medic. Yeah, that makes sense.

DANA: Right. A lot of them you'll see, like up to 20 of these throw kits in there.

JON: What is your recommendation, like if an agency is starting a program or starting a tactical paramedic- a tactical medic program, what is your recommendation as to where they go for training? What do you see as the best resources?

DANA: There's good training agencies or training companies around the United States. I think one of the best ones if you looked at it was Strategic Operations, down in San Diego. They're non-stop teaching the military and

TCCC procedures both out of hospital and in hospital what they have down there at their location. But they're also into the TECC program. So, they're teaching a lot of police fire on the state exact same techniques.

JON: So, what's the difference between TCCC and TECC?

DANA: That's a good question. So, TCCC is military focused, the word combat. Some people not in the military or not in the SWAT world thought that might sound offensive. I think we all know that a gunfight is a gunfight, combat is combat. But they removed it so, that fire departments would be probably more amicable. Fire departments and others in the general public knowing that you have a TECC Tactical Emergency Casualty Care.

JON: Got it. So, before we wrap this up on TCCC stuff, is there anything else you think that teams should, or individual operators should be thinking about or looking at?

DANA: I think one of the things is have realistic training. Following up on your training question. Have realistic training and put your casualties when you're doing this training in unique positions. And just remember the guidelines are direct fire. You're in your return fire, get to cover first. Address a gunfight and then address the casualty when you can, if he can't be taken care of himself.

JON: Yeah, it's interesting. You know, one of the things that you'll see in training is people go, "That's unrealistic." That's an unrealistic scenario that casualty would be stuck on a roof. Or it's an unrealistic scenario that a casualty would be stuck behind the bookcase. And if we've learned anything through our lecture series, and if we've learned anything just through the debriefs, we've done through this show, you ask yourself as the story evolves; could it get worse, it can't get worse, and then it gets worse. And then it gets worse again, and then it gets worse again. And it's just- You know, you see these circumstances where it just gets perpetually worse. And the training seems to fall into these patterns of like, "Oh, Dana's going to be our test guy. He's in the middle of the room on the floor.

And the suspect is already dead." I just did an interview with Buddy Brown from York County, South Carolina. The suspect is under a deck, he shot 3 guys, he's killed one, and he's given up. And he's 30 feet from you. And 2 of your guys are bleeding to death. What do you do? And so, when you talk about realistic training and you ask Buddy, he said, "We never trained for that. We never thought the guy would give up. Now the guy is throwing his gun out, he's hands up." So, now you're holding in him. But you're either dealing with him or you're dealing with your guys. How are you getting the

guys out. You know, Buddy himself is a big guy. They had a hard time carrying him, they kept dropping him. I think- What would you recommend in those training iterations? What are the things that people need to think about when their designing a training scenario?

DANA: Well first off, I would say every time you do team training, you put casualties into it. The more often you include casualties in your team training, particularly for the part-time teams that maybe get once a month or twice a month. Every time you do entry training, you should be putting casualties in there. Because exactly what Buddy was saying, you know, you'd never train for that. If you never trained for that scenario, how will you react? And there's that old saying, "You don't rise to the occasion, you revert to your lowest level of training or highest level of training." Whichever that way that went. But if you've never even thought about this before this concept, you know that I can have a casualty with a suspect right here, what am I going to do? You know, and that's what you need to put into your team training. You have to put that in. And the military is really good at doing that, invoking casualties. And through the courses that we have, we do that a lot, so that guys get used to that. Not get used to it from the standpoint that if that's one of their friends. You know, they're going to be- They wouldn't be upset about it, but it's an immediate action drill.

JON: Yeah. That's a really good way to put it. It's an immediate action drill where you've conditioned the team that when this happens, we do this. And you know as you said, in all the debriefs I've attended over the years, that's exactly what happens. Everybody defaults to the level of their training. And so, I like that idea. One of the things that you and I have talked about and is kind of a logical extension of where we here is Ropework. And using Ropework specifically to evac people, to move them, to do whatever. Why don't we start with kind of Dana's thumbnail sketch of history of repelling and SWAT. Like you know, it all goes back to the SWAT TV show, and guys swinging through windows. But give me kind of your take on it.

DANA: Yeah. So, the Ropes haven't been used a lot in tactical situations other than in the, let's just say, the suicidal jumper type of a situation. But go back in history, everybody's familiar with the Prince's Gate, the Iranian Embassy storming by the SAS. You know, going through the windows. And I think that's what everybody's opinion is of repelling and Ropework. When I got to the team, we had to repel in SWAT school. And I think just about

every SWAT school probably has a repelling segment. But it's I think it's more of a hooyah, more of a-

JON: Confidence drill.

DANA: Yeah, something like that. And they're missing out on seeing the other applications. If your snipers are elevated. You know, how are they getting up there if there's not a ladder, if there's not a stairwell, or if they have to get down in a hurry. So, in addition to repelling though, for the Ropework side of SWAT, most teams don't do it. Like I said, they have the suicidal jumper considerations were negotiated to be out there. And there's very few teams that are actually doing that. I know San Diego is doing that, LAPD does that. ESD handles that at the Special Enforcement Bureau. And I'm sure NYPD and you know, agencies around the country are doing that. But it's an interesting thing when you talk about doing a tactical rope access course with teams and they're from small towns. They said, "Oh well, we only have 2 and 3 buildings. So, I don't worry about that. And if I could just tell a quick story of a conversation with an LAPD officer. Was they had a crazy guy on top of a restaurant. He's compliant but they got to get him down. The fire department won't help him help them because he's a suspect.

JON: He's a crazy guy.

DANA: Yeah. So, they have to get up there on their own and they get there on their own. So, they used a dumpster to climb up on top of the roof. Handcuffed the guy, he's compliant and then they had to get him down. And they kind of dropped him to the dumpster and then he rolls and falls on the ground, basically. They thought they did a great job until they watched the body camera footage of that. So, the question was, how could we do that? And there's simple inexpensive tools in the Rope world to do stuff like that, like webbing or short pieces of rope. And- But you have to learn those techniques too. It's going back to the training for the medical side, you have to understand what's potentially out there that you could do. And then you need see how you could do it. So, not what to do but how you can do things using different pieces of equipment.

JON: Yeah. And I think it goes back to the team having as broad a skill set as they possibly can. Right? Like it's- I think part of the challenge with the modern SWAT team is there's so many domains of knowledge that are required. And you see teams where they try to maintain that knowledge for everybody. You also see teams where they build cadres. And that seems to be kind of the emerging strategy, is that Dana's the rope guy, Jon is the

medic guy. And you can take the team to a deeper level. Is that kind of- What's your opinion on that?

DANA: No, I agree with that because are you going to be the drone operator? Are you going to be the aerial drone operator or are you going to be the ground drone operator? Or are you the planner for the hit that you're going to do? Because you could just keep going and going and going, right? Are you the weapons instructor for the team? And you have all these responsibilities or if everybody does that. I agree having a cadre because they can be specialists then. And for some of these skills you definitely want specialists to keep everybody on the team safe. And then in the liability side of it, they're protecting the team in liability also.

JON: Yeah, you know we're hearing- I'm hearing more and more from teams that kind of given up the idea of tactical repelling, where they're going to do the Prince's Gate swing down to the window and all of that. And so, you'll hear like, "Well, why do I need ropes? Why do I need repelling?" Talk to me about some of the reasons that in some of the applications that you see for Ropework in a modern tactical environment.

DANA: Sure. I mean again, getting a sniper up in position. That's really common here in LA because you know where they have the Academy Awards. They have all these things. It's really, even at SoFi Stadium now with the Rams and the Chargers over there, ESD is up on the rafters all the time. You have protesters that go up there. So, not necessarily on the SWAT operational side of it, but that's a specialty that somebody on the department has to have. And not, it's not going to be the fire you saw guys, particularly if these are suspects. So, the team needs to have that capability for those types of incidents. So, if you go to the Fifth and Main hostage rescue with LAPD, that developed so quickly because the suspect was acting erratically and violently. And then they did the dual explosive breach on that because it just happened that fast. And that what they would've done talking to the team. The climbing team over there, if they had had the time, they would've sent guys down on ropes. Whether it's to breach a window, whether it's to put a diversion outside, throw a drone in whatever it is. So, there's definitely some uses for it.

I think what teams aren't seeing is also that if, let's say the suspect sets a fire below you, you're 2 or 3 stories up. And now you have a fire that goes below it. It gets started by the suspect below you. Or they light off the natural gas pipe, and now you got natural gas filling the house, and you're 2 or 3 stories up. Are you going to run down the stairs or do you want to just go out that window that's right there. So, there are escape techniques that

are out there similar to what firemen use on and train at on a regular basis. But I think SWAT teams should know that because you just never know what's going to happen below you as well.

JON: Well and also, there's the whole to tie it back into the TCCC conversation. There's also like if one of your guys gets injured in an elevated position, you've got to get them down. Right? Like or a suspect, you know. It's, I mean you're probably a little less concerned with the suspect. But you know, if somebody gets injured in an elevated position and you can't bring fire in, what do you do?

DANA: Right. Or just think about being on the fourth or fifth floor and one of your guys is down. I mean are you going to- It's going to take a few guys because with equipment and everything else, you're going to be fairly heavy. But how many- How long will it take you to get the guy down to the ground floor as opposed to breaking out a window attaching a rope to them, because he's got some sort of a rigging belt or something. And then just dropping him to the ground. Not dropping him but lowering onto the ground which could be done in about 25 to 30 seconds.

JON: Yeah. No, it makes a lot of sense. I think it's trying to articulate to teams why they need to maintain this other capability with regard to gear for a team. What would you recommend a team carry with them.

DANA: I think- Well, I think everybody should have at least a rigging belt on, not just a Velcro belt or something like that. You need something like what Aardvark put out with the belt system that you guys have. We can actually put a rigging style belt, or a rated belt like from Misty Mountain or something like that, that can be integrated into a harness if you needed to. But you can repel off of that, and that is the first place with 2 carabiners. I think every operator on an entry should have 25 to 30 feet of 1-inch tubular webbing. Because you can escape yourself, you can use it to open doors, you can create a harness with it. There's a variety of uses of the 1-inch tubular webbing. That's what everybody should have. And agency that I worked with, quite often just did that after I did some training with them on what the possibilities of the webbing are.

And I'm not trying to sell my classes. I'm just saying those are the possibilities that are out there. But you should have a roping team guy. You were talking about specialists; you should have a specialist. And he should have a rope that depending on the size of the building is, that you can get down at least a hundred feet if not more. And then he would have the ability to anchor the rope, send the rope out, and then have a carabiner

or a device that the agency, the team wants to use so, that everybody can bail out. Again, this is more of the bailout mode. There's- You could for about 3 pounds weight and really not much money. You could have a kit that is fully capable to do whatever you want to do with it.

JON: That somebody just carries in a backpack and that's where it sits.

DANA: Yeah, on a rope.

JON: Stuck on a vest or- And even from a rope standpoint, it doesn't have to be a 7/16-inch current metal rope. It can be smaller.

DANA: Right. So, technology obviously has come a long way even in the rope community. So, with the PJs use is an 8-millimeter rope by Sterling. I know North American Rescue has a new 8-millimeter rope. So, 8-millimeter is down there in size so, where you would like to be because a hundred feet weighs maybe about 3 pounds as well. And it's very compressible when you're carrying it.

JON: So, Dana obviously these domains require a lot of expertise. What's the best way for people to get a hold of you to learn about the programs that you're running?

DANA: So, we have a website, it's www.vtctraining.com. And we offer about 14 different courses. The majority of them that we have are California posts approved. So, thought it was important to get the state's buy-in for the SWAT community and for the law enforcement community in general to see that we have an approved program. And guys will get the credits necessary for them when they take the classes.

JON: Are there any resources or websites you'd recommend? Do you have Dana's reading list or website list?

DANA: I really don't. I ponder that a lot. I do a lot of just the research myself. But on the rope side of it though, there's definitely if you looked at on YouTube. Not rescue craft, well there is Rescue Craft on YouTube, but also Element Rescue. Sean McKay, he does great videos, explains things very well. A lot of the techniques that we teach are the techniques that he's teaching.

And that's a good YouTube resource. On the tactical medicine side, North American Rescue has some really good content on their website, and also on their Instagram. They have a NAR doctor. They have some really good content going out, updating people on things that are happening regularly.

JON: Well, we'll link to all of that in the show notes and make these also linked to your website. So, Dana, thanks so much for joining me today. You taught me a lot.

DANA: Thank you, Jon.